Environmental Impact Assessment (EIA) Report

For

IBIS Styles Hotel Project

Holding No. 2-A, 2-B, 2-D, 2-F, Block No. (111), Taw Ywat Ward,
Muse Economic Zone-1, Muse Township, Muse District, Shan State (Northern)

PROPONENT

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ENVIRONMENTAL IMPACT ASSESSMENT (EIA) REPORT

FOR

IBIS STYLES HOTEL PROJECT

(Part-I)

IBIS Styles Hotel Project ၏ (Environmental Impact Assessment - EIA) အစီရင်ခံစာအပေါ် စိစစ်တွေ့ရှိချက်နှင့် သုံးသပ်အကြံပြုချက်များ

စဉ်	စိစစ်တွေ့ရှိချက်	အကြံပြုချက်	ပြင်ဆင်ဆောင်ရွက်မှုများ
၁။	**အကျဉ်းချုပ်အစီရင်ခံစာ**		
	အစီရင်ခံစာအကျဉ်းချုပ် (Executive Summary) တွင် အင်္ဂလိပ်ဘာသာဖြင့်သာ ဖော်ပြထားပြီး စီမံကိန်းသည် မူဆယ်မြို့နယ်၊ရှမ်းပြည်နယ်(မြောက်ပိုင်း) တွင်တည်ရှိပြီး အခန်း (၂၆၀) ပါဝင်သည့် 9-storey ဟိုတယ်တစ်ခုဖြစ်ကြောင်း၊ အစီရင်ခံစာတွင် အပိုင်း (၁) အနေဖြင့် ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်း၊ အပိုင်း (၂) လူမှုပတ်ဝန်းကျင် ထိခိုက်မှုဆန်းစစ်ခြင်းနှင့် အပိုင်း (၃) တွင် ကျန်းမာရေးထိခိုက်မှုဆန်းစစ်ခြင်းဟူ၍ပါဝင်ကြောင်း၊ စီမံကိန်းတွင် အပိုင်း (၁၀) ပိုင်းပါဝင်ပြီး အပိုင်း (၁) ပိုင်းစီတွင်ဖော်ပြထားသည့် အကြောင်းအရာများကို အကျဉ်းချုပ်၍ ဖော်ပြထားပါသည်။	အကျဉ်းချုပ်အစီရင်ခံစာတွင် အောက်ပါအချက်များကို ထည့်သွင်းဖော်ပြရန် လိုအပ်ပါသည်- ▪ အကျဉ်းချုပ်အစီရင်ခံစာကို အင်္ဂလိပ်-မြန်မာ နှစ်ဘာသာဖြင့် ထည့်သွင်းဖော်ပြရန်၊ ▪ စီမံကိန်းအကြောင်းအရာဖော်ပြချက်၊ စီမံကိန်းမှလိုက်နာဆောင်ရွက်မည့်ဥပဒေများ၊ အစားထိုးနည်းလမ်းများ၊ ထိခိုက်နိုင်မှုများနှင့် လျော့ပါးစေရေးနည်းလမ်းများ၊ ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှု အစီအစဉ်၊ ပတ်ဝန်းကျင်စောင့်ကြပ်ကြည့်ရှုမည့်အစီအစဉ်၊ အများပြည်သူနှင့် တိုင်ပင်ဆွေးနွေးခြင်းလုပ်ငန်းစဉ်များနှင့် အစီရင်ခံစာ၏ နိဂုံးနှင့် သုံးသပ်အကြံပြုချက်များကို အစီရင်ခံစာပါ အခန်းအလိုက် အကျဉ်းချုပ်ဖော်ပြရန်၊ ▪ ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုအစီအစဉ်နှင့် စောင့်ကြပ်ကြည့်ရှုမည့်အစီအစဉ်တို့ကို ဖော်ပြထားသည့် အကျဉ်းချုပ်ဇယားကို ဖော်ပြရန်။	ညွှန်ကြားချက်အတိုင်း ပြန်လည်ပြင်ဆင် ဖော်ပြထားပါသည်။

စဉ်	စိစစ်တွေ့ရှိချက်	အကြံပြုချက်	ပြင်ဆင်ဆောင်ရွက်မှုများ
၂။	**နိဒါန်း အကြောင်းအရာဖော်ပြချက်**		
	▪ စီမံကိန်းအကြောင်းအရာများအနေဖြင့် စီမံကိန်းသည် မူဆယ်အထူးစီးပွားရေးဇုန် (၁)၊ မူဆယ်မြို့နယ်၊ ရှမ်းပြည်နယ် (မြောက်ပိုင်း) တွင် တည်ရှိကြောင်း၊ စီမံကိန်းဆောင်ရွက်ရခြင်းကြောင့် အလုပ်အကိုင်များရရှိပြီး လူမှုစီးပွားများဖွံ့ဖြိုးတိုးတက်နိုင်ကြောင်း၊ နိုင်ငံတော်အစိုးရမှအခွန်အခများရရှိနိုင်ကြောင်း စသည့် စီမံကိန်းဆောင်ရွက်ရခြင်း၏ရည်ရွယ်ချက်ကို ဖော်ပြထားသော်လည်း စီမံကိန်းလုပ်ငန်းအရွယ်အစား၊ အမျိုးအစားတို့ကို ဖော်ပြရန် လိုအပ်ပါသည်။ ▪ EIA ဆောင်ရွက်ရခြင်းရည်ရွယ်ချက်၊ အစီရင်ခံစာရေးသားပြုစုသည့်အဖွဲ့၏အမည်၊ တာဝန်ယူမှုအစိတ်အပိုင်းများ၊ ဆောင်ရွက်နေသော အလုပ်အကိုင်၊ စီမံကိန်းပိုင်ရှင်အဖွဲ့ဝင်များနှင့် Shareholdersများ၊ စီမံကိန်းမှ လိုက်နာဆောင်ရွက်မည့်ဥပဒေများကို ဖော်ပြထားသော်လည်း စီမံကိန်းလုပ်ငန်းအဆင့်အလိုက်	▪ စီမံကိန်းဆောင်ရွက်မည့် ဟိုတယ်ဧရိယာ၊ အဆောက်အဦအမျိုးအစား၊ အခန်းပမာဏ၊ အဆောက်အဦအထပ်အရေအတွက်တို့ကို ဖော်ပြရန်၊ ▪ စီမံကိန်း၏လုပ်ငန်းအဆင့်အလိုက်ဆောင်ရွက်မည့် စီမံကိန်းအချိန်ဇယား (Project Schedule) ကို ထည့်သွင်းဖော်ပြရန်၊ ▪ အစီရင်ခံစာရေးသားပြုစုမည့်တတိယအဖွဲ့အစည်းတွင်ပါဝင်သည့် အဖွဲ့ဝင်တစ်ဦးချင်းစီ၏ ကျွမ်းကျင်မှုနယ်ပယ်ကို ထည့်သွင်းဖော်ပြရန်၊	❖ 3.6 တွင် ဖော်ပြထားပါသည်။ ❖ Table 3-3 တွင် ဖော်ပြထားပါသည်။ ❖ 1.4 တွင် ဖော်ပြထားပါသည်။

စဉ်	စီစစ်တွေ့ရှိချက်	အကြံပြုချက်	ပြင်ဆင်ဆောင်ရွက်မှုများ
	ဆောင်ရွက်မည့်အချိန်ဇယား (Project Schedule) နှင့် အစီရင်ခံစာရေးသားပြုစုမည့် တတိယအဖွဲ့အစည်း၏ ကျွမ်းကျင်မှုနယ်ပယ် တို့ကို ထည့်သွင်းဖော်ပြရန် လိုအပ်ပါသည်။		
၃။	**မူဝါဒနှင့် ဥပဒေ၊ ကတိကဝတ်များနှင့် အဖွဲ့အစည်းဆိုင်ရာမူဘောင်**		
(က)	စာမျက်နှာ 10 တွင် စီမံကိန်းမှ လိုက်နာဆောင်ရွက်မည့်ဥပဒေများကို ဖော်ပြထားပါသည်။	▪ စီမံကိန်းမှလိုက်နာဆောင်ရွက်မည့်ဥပဒေ၊ နည်းဥပဒေများကို သက်ဆိုင်ရာဥပဒေပုဒ်မများကို ညွှန်း၍ ဖော်ပြရန်၊ ▪ စီမံကိန်းမှလိုက်နာဆောင်ရွက်မည့်ဥပဒေများတွင် အောက်ပါတို့အား ထည့်သွင်းဖော်ပြရန်- (၁) The Environmental Conservation Rules (2014) (၂) Environmental Impact Assessment Procedure (2015) (၃) National Environmental Quality (Emission) Guidelines (2015) ▪ စီမံကိန်းနှင့်သက်ဆိုင်သည့် နိုင်ငံတကာကွန်ဗင်းရှင်းများ၊ စာချုပ်များနှင့် သဘောတူညီချက်များကို ဖော်ပြရန်၊	❖ 2.3.5 တွင် ဖော်ပြထားပါသည်။ ❖ 2.3.4 တွင် ဖော်ပြထားပါသည်။ ❖ 2.3.7 တွင် ဖော်ပြထားပါသည်။ ❖ 2.6 တွင် ဖော်ပြထားပါသည်။

စဉ်	စီစစ်တွေ့ရှိချက်	အကြံပြုချက်	ပြင်ဆင်ဆောင်ရွက်မှုများ
		▪ စီမံကိန်းမှလိုက်နာဆောင်ရွက်မည့် လေအရည်အသွေး၊ ရေအရည်အသွေး၊ ဆူညံသံ၊ တုန်ခါမှု၊ အနှံ့၊ စွန့်ထုတ်အရည်အဆင့် သတ်မှတ်ချက်များနှင့် ပတ်ဝန်းကျင်၊ လူမှုရေးနှင့် ကျန်းမာရေးဆိုင် ရာစံနှုန်းများကို သတ်မှတ်ဖော်ထုတ်ရန်၊	❖ 2.8 တွင် ဖော်ပြထားပါသည်။
(ခ)	**လိုက်နာရန် ကတိကဝတ်များနှင့် ပတ်သက်၍-** ▪ စီမံကိန်းပိုင်ရှင်မှ အစီရင်ခံစာကို ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဥပဒေ၊ နည်းဥပဒေများနှင့်အညီ ဆောင်ရွက်ထားကြောင်း၊ အစီရင်ခံစာကို ပြင်ဆင်ရာတွင် အတွေ့အကြုံရှိသော ESIA အဖွဲ့၊ အခြားသောလူပုဂ္ဂိုလ်များ၊ အဖွဲ့အစည်းများမှ ရရှိသောအချက်အလက်များကို ထည့်သွင်းရေးသားထားကြောင်း ဖော်ပြထားသဖြင့် စီမံကိန်းပိုင်ရှင်မှ စီမံကိန်းတွင်ပါဝင်သည့် အချက်အလက်များ၊ ကတိကဝတ်များကို အမှန်တကယ်လိုက်နာဆောင်ရွက်မည် ဖြစ်ကြောင်း ထည့်သွင်းဖော်ပြရန် လိုအပ်ပါသည်။ ▪ စီမံကိန်းရေးဆွဲမည့်တတိယအဖွဲ့အစည်းမှ စီမံကိန်းနှင့်ပတ်သက်၍ အစီရင်ခံစာပါအချက်	▪ စီမံကိန်းပိုင်ရှင်မှ Commitment Letter အား ရေးသားရာတွင် စီမံကိန်းတွင်ပါဝင်သည့်အချက်အလက်များ၊ ကတိကဝတ်များကို အမှန်တကယ် လိုက်နာဆောင်ရွက်မည်ဖြစ်ကြောင်း ထည့်သွင်းဖော်ပြရန်၊ ▪ တတိယအဖွဲ့အစည်းမှရေးသားထားသည့် စီမံကိန်း၏အစီရင်ခံစာပါအချက်အလက်များမှာ တိကျမှန်ကန်မှုရှိကြောင်း ဖော်ပြချက်တွင် လက်မှတ်ရေးထိုးဖော်ပြရန်၊ ▪ စီမံကိန်းမှလိုက်နာဆောင်ရွက်မည့်ဥပဒေ၊ နည်းဥပဒေများရေးသားရာတွင် စီမံကိန်းတည်ရှိရာမြို့၏သက်ဆိုင်ရာမြို့နယ်စည်ပင်သာယာရေးကော်မတီ၏ဥပဒေ၊ နည်းဥပဒေ၊ လုပ်ထုံးလုပ်	❖ 2.9 တွင် ဖော်ပြထားပါသည်။ ❖ COMMITMENT LETTER တွင် ဖော်ပြထားပါသည်။ ❖ မူဆယ်မြို့တွင် Muse City Development Committee Law ဟူ၍ သီးခြားမရှိပါ။

စဉ်	စီစစ်တွေ့ရှိချက်	အကြံပြုချက်	ပြင်ဆင်ဆောင်ရွက်မှုများ
	အလက်များမှာတိကျမှန်ကန်မှုရှိကြောင်း ဖော်ပြထားသော်လည်း လက်မှတ်ရေးထိုးထားခြင်းမရှိကြောင်း တွေ့ရှိရပါသည်။ ▪ စီမံကိန်းမှသက်ဆိုင်ရာမြို့နယ်စည်ပင်သာယာရေးကော်မတီ၏ဥပဒေ၊ နည်းဥပဒေ၊ လုပ်ထုံး လုပ်နည်းများကို လိုက်နာဆောင်ရွက်မည်ဖြစ်ကြောင်း ဖော်ပြရန် လိုအပ်ပါသည်။	နည်းများကို လိုက်နာဆောင်ရွက်မည့် အချက်အား ဖြည့် စွက်ဖော်ပြရန်၊ ▪ စီမံကိန်းမှလိုက်နာမည့် ဥပဒေ၊ နည်းဥပဒေ၊ လုပ်ထုံးလုပ်နည်းများကို အခန်း(၁)၊ Introduction အခန်းတွင် ရောၫ် ဖော်ပြထားသည့်အတွက် မူဝါဒ၊ ဥပဒေနှင့် အဖွဲ့အစည်းဆိုင်ရာမူဘောင်ဟူၫ် အခန်းတစ်ခန်း သီးသန့်ခွဲၫ် ဖော်ပြပေးရန်၊	❖ 2.0 POLICY, LEGAL AND INSTITUTIONAL FRAMEWORK တွင် ဖော်ပြထားပါသည်။
၄။	**စီမံကိန်းအကြောင်းအရာဖော်ပြချက်**		
(က)	စီမံကိန်းအကြောင်းအရာများ ဖော်ပြချက်တွင် - ▪ စီမံကိန်းသည် 3.5 star ဟိုတယ်ဖြစ်ပြီး အခန်း ၂၆၀ ပါဝင်မည်ဖြစ်ပြီး ဧရိယာအဆောက်အဦဖြစ်ကြောင်း၊ စီမံကိန်းမှ US$ 30,000,000 ရင်းနှီးမြှုပ်နှံမည်ဖြစ်ကြောင်း၊ စီမံကိန်းသည် 2.74 ဧက (119480.72 ft^2) ကျယ်ဝန်းပြီး အဆောက်အဦဧရိယာမှာ 28298 ft^2 ဖြစ်ကြောင်း၊ စီမံကိန်းပတ်ဝန်းကျင်တွင် Conventional Center၊ ရုံးနှင့်ဘဏ်များ တည်ရှိကြောင်း ဖော်ပြထားပါသည်။	▪ Fig 2-1,2-2, 2-3 တို့ကို ရှင်းလင်းစွာ ကြည့်ရှုၫ် ရအောင် သင့်တော်သောစကေးဖြင့် ပြန်လည်တင်ပြရန်၊ အဆောက်အဦ၏တစ်ထပ်ချင်းအလိုက် Layout Plan ပုံနှင့် Front, Back, Left, Right Elevation ပုံများအား ထည့်သွင်းဖော်ပြရန်၊ ▪ စီမံကိန်းကြောင့် ထိခိုက်ခံစားရနိုင်သည့် Area of Influence (AOI) နှင့် Study Area တို့ကို ပုံနှင့်တကွ ထည့်သွင်းဖော်ပြရန်၊	❖ 3.6.3 နှင့် Appendix 11 တို့တွင် ဖော်ပြထားပါသည်။ ❖ 3.1, 3.3, 4.1 တို့တွင် ဖော်ပြထားပါသည်။

စဉ်	စိစစ်တွေ့ရှိချက်	အကြံပြုချက်	ပြင်ဆင်ဆောင်ရွက်မှုများ
	▪ Fig 2-1, 2-2, 2-3 တွင် Hotel Layout Plan, Ground Floor Plan နှင့် ဟိုတယ်အခန်း တို့၏ detail drawing တို့ကိုဖော်ပြထားသော်လည်း ရှင်းလင်းစွာကြည့်ရှုရှုရအောင် ဖော်ပြရန်နှင့် အဆောက်အဦတစ်ထပ်ချင်းအလိုက် plan ပုံနှင့် အဆောင်အဦ၏ Front, Back, Left, Right Elevation ပုံများအား ထည့်သွင်းဖော်ပြရန် လိုအပ်ပါသည်။	▪ စီမံကိန်းမှ လိုက်နာဆောင်ရွက်မည့် Building Code များကို ထည့်သွင်းဖော်ပြရန်၊	❖ 3.4.2 တွင် ဖော်ပြထားပါသည်။
		▪ စီမံကိန်းမှ မြေယာပိုင်ဆိုင်မှု၊ အသုံးချမြေအမျိုးအစားတို့ကို သက်ဆိုင်ရာဌာနများ၏အထောက်အထားများဖြင့် ဖော်ပြရန်၊	❖ 3.3.2 နှင့် Appendix 5, 6, 7, 8 တို့တွင် ဖော်ပြထားပါသည်။
		▪ စီမံကိန်း၏ လုပ်ငန်းလည်ပတ်သည့်အချိန်တွင် အသုံးပြုရန်လျာထားသည့် စက်ပစ္စည်းကိရိယာများကို ခန့်မှန်းဖော်ပြရန်၊	❖ 3.8 တွင် ဖော်ပြထားပါသည်။
	▪ စီမံကိန်းကြောင့်ထိခိုက်ခံစားရနိုင်သည့် Area of Influence (AOI) နှင့် Study Area တို့ကို ဖော်ပြထားသည့်ပုံအား ထည့်သွင်းဖော်ပြရန် လိုအပ်ပါသည်။	▪ စီမံကိန်းမှလုပ်ငန်းလည်ပတ်သည့်ကာလတွင် ခန့်ထားမည့် ခန့်မှန်းဝန်ထမ်းအရေအတွက်ကို ဖော်ပြရန်၊	❖ 3.9 တွင် ဖော်ပြထားပါသည်။
	▪ စီမံကိန်းသည် အထပ်မြင့်အဆောက်အဦဖြစ်သည့်အတွက် စီမံကိန်းအဆောက်အဦမှ လိုက်နာဆောင်ရွက်မည့် Building Code များကို ထည့်သွင်းဖော်ပြရန် လိုအပ်ပါသည်။	▪ စီမံကိန်းအကြောင်းအရာဖော်ပြချက်တွင် golf courses အကြောင်းအရာအား ထည့်သွင်းဖော်ပြရန်၊	❖ golf courses မပါဝင်ပါ။
	▪ စီမံကိန်းမှမြေယာပိုင်ဆိုင်မှုနှင့်ပတ်သက်သည့် အချက်အလက်များကို ထည့်သွင်းဖော်ပြရန် လိုအပ်ပါသည်။	▪ စီမံကိန်းလုပ်ငန်းဆောင်ရွက်ရာတွင် လုပ်ငန်းဖျက်သိမ်းခြင်း အစီအစဉ်ရှိ/မရှိနှင့် မည်သည့်ကာလခန့်တွင် လုပ်ငန်းဖျက်သိမ်းခြင်း ဆောင်ရွက်မည်တို့ကို ဖော်ပြရန်၊	❖ 3.4 တွင် ဖော်ပြထားပါသည်။

စဉ်	စိစစ်တွေ့ရှိချက်	အကြံပြုချက်	ပြင်ဆင်ဆောင်ရွက်မှုများ
	▪ စီမံကိန်း၏လုပ်ငန်းလည်ပတ်သည့်အချိန်တွင် အသုံးပြုမည့်စက်ပစ္စည်းများနှင့်ပတ်သက်၍ ဖော်ပြရန်လိုအပ်ပါသည်။ ▪ စီမံကိန်းလုပ်ငန်းလည်ပတ်သည့်ကာလတွင် ခန့်ထားမည့် ခန့်မှန်းဝန်ထမ်းအရေအတွက်ကို ဖော်ပြရန် လိုအပ်ပါသည်။ ▪ စာမျက်နှာ ၅၄ တွင်သန့်စင်ပြီး gray water များအား golf courses များတွင် ပြန်လည်အသုံးပြုမည်ဟုဖော်ပြထားသော်လည်း စီမံကိန်းအကြောင်းအရာဖော်ပြချက်တွင် golf courses အကြောင်းအရာအား ထည့်သွင်းဖော်ပြထားခြင်းမရှိသည့်အတွက်ဖော်ပြရန် လိုအပ်ပါသည်။ ▪ စီမံကိန်းလုပ်ငန်းအဆင့်များအားဖော်ပြရာတွင် လုပ်ငန်းဖျက်သိမ်းခြင်းအဆင့်အား ထည့်သွင်းစဉ်းစားဖော်ပြထားသော်လည်း စီမံကိန်းသည် လုပ်ငန်းဖျက်သိမ်းရန် အစီအစဉ်ရှိ/မရှိ၊ မည်သည့်ကာလခန့်တွင် လုပ်ငန်းဖျက်သိမ်း	▪ စီမံကိန်းဧရိယာအား ခွင့်ပြုလုပ်ကိုင်ခွင့်ပြုထားသည့် အစိုးရဌာန၏လက်မှတ်ရေးထိုးထားသောပုံအား ထည့်သွင်းဖော်ပြရန်၊ ▪ စီမံကိန်းဧရိယာပတ်ပတ်လည်အား ကိုဩဒိနိတ်အမှတ်များဖြင့် ဖော်ပြထားသည့်ပုံအား ထည့်သွင်းဖော်ပြရန်၊	❖ Appendix 3 တွင် MIC Permit နှင့် Appendix 4 တွင် Construction Permit တို့ကို ဖော်ပြထားပါသည်။ ❖ 3.2.1 တွင် ဖော်ပြထားပါသည်။

စဉ်	စီစစ်တွေ့ရှိချက်	အကြံပြုချက်	ပြင်ဆင်ဆောင်ရွက်မှုများ
	ခြင်းဆောင်ရွက်မည်တို့ကိုဖော်ပြရန် လိုအပ်ပါသည်။ ▪ စီမံကိန်းဧရိယာအား ခွင့်ပြုလုပ်ကိုင်ခွင့်ပြုထားသည့်အစိုးရဌာန၏လက်မှတ်ရေးထိုးထားသောပုံအား ထည့်သွင်းဖော်ပြရန် လိုအပ်ပါသည်။ ▪ စီမံကိန်းဧရိယာအားကိုဩဒိနိတ်အမှတ်များဖြင့် ဖော်ပြထားသည့်ပုံအား ထည့်သွင်းဖော်ပြရန် လိုအပ်ပါသည်။		
(ခ)	▪ လျှပ်စစ်လုပ်ငန်းအတွက် ထရန်စဖော်မာ, Switchgear, Generator, Main switchboard, Distribution boards, Busducts, Diesel Tank, ပါဝါမီတာနှင့် လျှပ်စစ်ကေဘယ်ကြိုးအပါအဝင် မီးသွယ်တန်းရာတွင် လိုအပ်သောပစ္စည်းများ ပါဝင်ကြောင်းဖော်ပြထားသော်လည်း ထရန်စဖော်မာနှင့် Generator တို့၏အသေးစိတ်အချက်အလက်များကိုဖော်ပြပေးရန် လိုအပ်ပါသည်။	▪ လျှပ်စစ်လုပ်ငန်းနှင့်ပတ်သက်၍ စီမံကိန်းတွင် အသုံးပြုမည့် Transformer, Generator တို့၏ အသေးစိတ်အချက်အလက်များ ဥပမာ- kVA or Volt မည်မျှရှိသည်၊ မည်သည့်လောင်စာဆီသုံး generator ဖြစ်သည် စသည်တို့အား ဖော်ပြရန်၊ ▪ စီမံကိန်းမှတစ်လအသုံးပြုမည့် လျှပ်စစ်ပမာဏကို ခန့်မှန်းဖော်ပြရန်၊ စီမံကိန်းအတွက် လိုအပ်သော လျှပ်စစ်ဓာတ်အားကို မည်သည့် အရင်းအမြစ်မှ မည်သို့ရယူမည်တို့ကို ထည့်သွင်းဖော်ပြရန်၊	❖ 3.11.1 တွင် ဖော်ပြထားပါသည်။ ❖ 3.11.1 တွင် ဖော်ပြထားပါသည်။

စဉ်	စီစစ်တွေ့ရှိချက်	အကြံပြုချက်	ပြင်ဆင်ဆောင်ရွက်မှုများ
	▪ စီမံကိန်းအတွက်လိုအပ်သော လျှပ်စစ်ဓာတ်အားကို မူဆယ် Central Business District Project Sub-station မှ ရယူမည်ဟု ဖော်ပြထားသော်လည်း မည်သည့်နည်းလမ်းဖြင့် ရယူမည်၊ စီမံကိန်းမှ လျှပ်စစ်ဓာတ်အား မည်မျှသုံးစွဲမည်တို့ကိုဖော်ပြရန်လိုအပ်ကြောင်း စီစစ်တွေ့ရှိရပါသည်။	▪ ဟိုတယ်စီမံကိန်းလုပ်ငန်းတွင်ခန့်အပ်ထားရှိမည့်ခန့်မှန်းဝန်ထမ်းအင်အားစာရင်းနှင့်ဝန်ထမ်းများ၏တစ်နေ့အလုပ်လုပ်ချိန်တို့ကို ဖော်ပြရန်၊	❖ 3.10 တွင် ဖော်ပြထားပါသည်။
	▪ စီမံကိန်းလုပ်ငန်းတွင်ခန့်ထားရန် လျာထားသည့် ဝန်ထမ်းအင်အားနှင့်ပတ်သက်၍ လုပ်ငန်းအခြေအနေပေါ်မူတည်သည်ဟု ဖော်ပြထားသဖြင့် စီမံကိန်းမှခန့်ထားရန်လျာထားသည့် ဝန်ထမ်းအင်အား ခန့်မှန်းစာရင်းနှင့် အဆိုပါဝန်ထမ်းတို့၏တစ်နေ့အလုပ်လုပ်ချိန်တို့ကို ဖော်ပြရန်လိုအပ်ပါသည်။	▪ စီမံကိန်းမှသုံးစွဲမည့်စက်ပစ္စည်းကိရိယာများအနက် လျှပ်စစ်လုပ်ငန်းတွင် Diesel Tank ဟူ၍ ထည့်သွင်းဖော်ပြထားသဖြင့် ထည့်သွင်းရခြင်းအကြောင်းရင်းအား ဖော်ပြပေးရန်၊	❖ Construction Phase တွင် Bleaching Plant နှင့် Compressor တို့အတွက် အသုံးပြုရန်ယာယီသိုလှောင်သိမ်းဆည်းထားခြင်းဖြစ်ပြီး Operation Phase တွင် မီးစက်အတွက် အသုံးပြုရန် ဖြစ်သည်။
	▪ စီမံကိန်းမှတစ်နှစ်လိုအပ်သော လောင်စာဆီအနေဖြင့် ဒီဇယ် ၁၁,၈၈၀ Lit ခန့် လိုအပ်မည်ဖြစ်ကြောင်းဖော်ပြထားပြီး စီမံကိန်းမှ သုံးစွဲမည့် စက်ပစ္စည်းကိရိယာများအနက် လျှပ်စစ်လုပ်ငန်းတွင် Diesel Tank ဟူ၍ ထည့်သွင်း	▪ စီမံကိန်းမှသုံးစွဲမည့် တစ်ရက်ခန့်မှန်းရေပမာဏ၊ Water Supply System (ရေရယူမည့် Main Source အပါအဝင်)၊ ရေသိုလှောင် အရေအတွက်နှင့် ထားရှိမည့်နေရာ၊ လိုအပ်သောရေကို တရုတ်နိုင်ငံမှ ရယူမည်ဖြစ်သဖြင့် သက်ဆိုင်ရာဝန်ကြီးဌာနများ၏ခွင့်ပြုမိန့်တို့ကို ဖော်ပြရန်၊	❖ Water Supply System နှင့်ပတ်သက်သော အကြောင်းအရာများကို 3.11.3 တွင် ဖော်ပြထားပြီး ဟိုတယ်လုပ်ငန်းလည်ပတ်ကာလတွင် လိုအပ်သောရေကို တရုတ်နိုင်ငံမှ ရယူမည်ဖြစ်ပြီး ယခုအချိန်တွင် ဆောက်လုပ်ရေးကာလတွင်သာရပ်တန့်ထားရသဖြင့်သက်ဆိုင်ရာဝန်ကြီးဌာနများ၏ခွင့်ပြုမိန့်အား မဆောင်ရွက်ရသေးပါ။
		▪ စီမံကိန်းမှထွက်ရှိလာသော စွန့်ပစ်ရေများကို sand filter နှင့် chlorine နည်းတို့ဖြင့် သန့်စင်ခြင်းသည် လုံလောက်မှု ရှိ/မရှိကို ဖော်ပြရန်၊	❖ Operation Phase တွင် ရေနမူနာများကောက်ယူတိုင်းတာပြီး လုံလောက်မှုရှိ/မရှိကို ဆန်းစစ်သွားပါမည်။ စွန့်ပစ်ရေများကို ဗဟို

စဉ်	စီစစ်တွေ့ရှိချက်	အကြံပြုချက်	ပြင်ဆင်ဆောင်ရွက်မှုများ
	ဖော်ပြထားသဖြင့်ထည့်သွင်းရခြင်းအကြောင်းရင်းအား ဖော်ပြပေးရန် လိုအပ်ပါသည်။ ▪ ရေသုံးစွဲမှုအနေဖြင့် အကြိုတည်ဆောက်ခြင်းနှင့် တည်ဆောက်ခြင်းကာလတွင် စီမံကိန်းဧရိယာအတွင်း 4" အဝိစိတွင်း (၂) တွင်း တူးဖော်၍ ထုတ်ယူသုံးစွဲသွားမည်ဖြစ်ပြီး လုပ်ငန်းလည်ပတ်သည့်ကာလတွင် စီမံကိန်းအတွက် လိုအပ်သောရေကို တရုတ်နိုင်ငံ၊ Ruli မြို့မှရယူသွားမည်ဖြစ်ပြီး 436 m^3 အသီးသီးရှိသည့်ရေလှောင်ကန်များတွင် ရယူသိမ်းဆည်းသွားမည်ဟုဖော်ပြထားသဖြင့် ရေလှောင်ကန်အရေအတွက်ကိုဖော်ပြရန်၊ တူးဖော်ထားသည့် အဝိစိတွင်းများကို လုပ်ငန်းလည်ပတ်သည့်ကာလတွင် အသုံးပြုခြင်းရှိ/မရှိ ကို တိကျစွာဖော်ပြရန်နှင့် Water Supply System တို့ကို ထည့်သွင်းဖော်ပြရန် လိုအပ်ပါသည်။ ▪ စွန့်ပစ်ရေနှင့်ပတ်သက်၍ စီမံကိန်းမှ တစ်နေ့လျှင် စွန့်ပစ်ရေခန့်မှန်း 161.5 m^3/day ထွက်သန့်စင်ပြီး ထွက်ရှိလာသောရေများကို စိုက်ပျိုးရေအဖြစ်အသုံးပြုမည်ဟု ဖော်ပြထားသဖြင့် မည်သည့်စိုက်ခင်းများတွင်အသုံးပြုမည်ကို ဖော်ပြရန်နှင့် စီမံကိန်းမှအများဆုံးတည်းခိုနိုင်သည့် လူဦးရေတွင် ထွက်ရှိမည့်စွန့်ပစ်ရေပမာဏနှင့် ပြန်လည်အသုံးပြုမည့်ရေပမာဏကို ချိန်ညှိရန်နှင့် ပိုလျှံသည့်ရေများကို မည်သို့ဆောင်ရွက်ရန် လျာထားသည်ကို ဖော်ပြရန်၊ ▪ စီမံကိန်းမှ အများဆုံးတည်းခိုနိုင်သည့် လူဦးရေတွင်ထွက်ရှိမည့် sewage ခန့်မှန်းပမာဏကို ဖော်ပြရန်၊ sewage နှင့် wastewater များကို septic tank (၂) ကန်တွင် ထားရှိမည် ဖြစ်သည့်အတွက် အဆိုပါကန်များမှ မည်သည့်ပမာဏသို့လှောင်သိမ်းဆည်းနိုင်သည်ကို ဖော်ပြရန်၊ Muse Central Business District (MCBD) ၏wastewater plant သို့ ပို့ဆောင်သွားမည်ဟုဖော်ပြထားသည့်အတွက် မည်သည့်နည်းလမ်းဖြင့်ပို့ဆောင်မည်၊ မည်သည့်ပမာဏရောက်လျှင် ပို့ဆောင်မည်တို့ကို ဖော်ပြရန်၊	ရေဆိုးသန့်စင်စက်သို့ပို့ဆောင်သန့်စင်ပြီး ထွက်ရှိလာသောရေများကို ဟိုတယ်ဧရိယာတွင် စိုက်ပျိုးရေအဖြစ် အသုံးပြုခြင်း မရှိပါ။ ❖ 3.12.1 တွင် ဖော်ပြထားပါသည်။ ကန်တွင်းပြည့်ပါက ပိုက်လိုင်းဖြင့် ဗဟိုရေဆိုးသန့်စင်စက်သို့ အလိုအလျောက် ပို့ဆောင်ပါသည်။

စဉ်	စီစစ်တွေ့ရှိချက်	အကြံပြုချက်	ပြင်ဆင်ဆောင်ရွက်မှုများ
	ရှိမည်ဖြစ်ပြီး ထွက်ရှိလာသောစွန့်ပစ်ရေများကို Sand filter နှင့် chlorine တို့ဖြင့် သန့်စင်မည်ဖြစ်ပြီး ထွက်ရှိလာသောရေများကို စိုက်ပျိုးရေးရေအဖြစ် အသုံးပြုသွားမည် ဖြစ်ကြောင်း ဖော်ပြထားပါသည်။ ▪ စီမံကိန်းမှထွက်ရှိမည့် Sewage နှင့် မီးဖိုချောင်မှထွက်ရှိမည့် wastewater များကို septic tank (၂) ကန် ထားရှိမည်ဖြစ်ပြီး စုဆောင်းထားရှိသည့် sewage နှင့် wastewater များကို Muse Central Business District (MCBD) ၏ wastewater plant သို့ ပေးပို့သွားမည်ဟု ဖော်ပြထားပါသည်။ ▪ စာမျက်နှာ 20 တွင် MCBD wastewater treatment plant ၏လုပ်ငန်းစဉ်အဆင့်အလိုက်ဖော်ပြထားသော်လည်း အဆိုပါ plant ကို စီမံကိန်းတွင်တပ်ဆင်အသုံးပြုမည် (သို့မဟုတ်) MCBD သို့ ပို့ဆောင်သန့်စင်စေမည်ကို ဖော်ပြရန် လိုအပ်ပါသည်။	▪ စီမံကိန်းမှလျှပ်စစ်ဓာတ်အားရယူခြင်း၊ sewage နှင့် wastewater များကို ပို့ ဆောင်မည့် wastewater plant တို့မှာ Muse Central Business District (MCBD) ဟု ဖော်ပြထားသည့်အတွက် အဆိုပါအဖွဲ့အစည်းမှာ မည်သို့အဖွဲ့အစည်းဖြစ်သည်ကိုဖော်ပြရန်နှင့် အဆိုပါအဖွဲ့အစည်းတွင် သက်ဆိုင်ရာဝန်ကြီးဌာနများ၏ လုပ်ငန်းဆောင်ရွက်ခွင့်အခြေအနေတို့အား ဖော်ပြရန်၊ ▪ MCBD wastewater treatment plant ကို စီမံကိန်းတွင်တပ်ဆင်အသုံးပြုမည် (သို့မဟုတ်) MCBD သို့ ပို့ဆောင်သန့်စင်စေမည်ကို တိကျစွာ ဖော်ပြရန်၊ ▪ စီမံကိန်းမှသန့်စင်ပြီးထွက်ရှိလာသောရေ၏သန့်စင်မှုပမာဏကိုဖော်ပြရန်နှင့် wastewater treatment plant ၏ ပုံ (Fig 2-6) ကို ရှင်းလင်းစွာ ကြည့်ရှုရ၍ ရအောင် ထည့်သွင်းပေးရန်၊	❖ Muse Central Business District (MCBD) သည် မူဆယ်ဗဟိုစီးပွားရေးဇုန်အတွက် ရှမ်းပြည်နယ်အစိုးရဒေသန္တရဖွံ့ဖြိုးရေးစီမံကိန်းကော်မတီနှင့် နယူးစတားလိုက်ဆောက်လုပ်ရေးကုမ္ပဏီလီမိတက်တို့ အကျိုးတူပူးပေါင်းဆောင်ရွက်နေသော Developer ဖြစ်ကြောင်းကို 3.1 Project Background တွင် ဖော်ပြထားပါသည်။ ❖ ဟိုတယ်မှထွက်ရှိသော စွန့်ပစ်ရည်များကို Septic Tank (2) ခုတွင် ယာယီသိုလှောင်၍ MCBD wastewater treatment plant သို့ ပို့ဆောင်သန့်စင်ကြောင်းကို 3.12.1 တွင် ဖော်ပြထားပါသည်။ ❖ 4.3.3 ရှိ Table 4.-10 နှင့် Appendix 16 တွင် ရေနမူနာဓာတ်ခွဲမှုရလဒ်များကို ဖော်ပြထားပြီး treatment plant ၏ပုံကို 3.12 နှင့် Appendix 12 တို့တွင် ဖော်ပြထားပါသည်။

စဉ်	စိစစ်တွေ့ရှိချက်	အကြံပြုချက်	ပြင်ဆင်ဆောင်ရွက်မှုများ
	▪ စာမျက်နှာ ၂၁ တွင် solid waste နှင့် ပတ်သက်၍ အိမ်တွင်းသုံးအမှိုက်များသာ ထွက်ရှိနိုင်ကြောင်း၊ ထွက်ရှိလာသောအမှိုက်များကို အမှိုက်ပုံးများတွင် ပုံမှန်စုဆောင်း၍ ခွဲခြား စွန့်ပစ်မည်ဖြစ်ကြောင်း ဖော်ပြထားသော်လည်း စီမံကိန်းမှ တစ်ရက်ထွက်ရှိမည့် စွန့်ပစ်အမှိုက်ခန့်မှန်းပမာဏ၊ စွန့်ပစ်မည့်နေရာနှင့် စီမံကိန်းတွင် ယာယီအမှိုက်သိုလှောင်ကန် ထားရှိမည့်နေရာတို့ကို ထည့်သွင်းဖော်ပြရန် လိုအပ်ပါသည်။ ▪ စီမံကိန်းတွင်ထားရှိမည့် Ventilation System၊ Drainage System၊ Water Supply System၊ Electrical Installation Plan တို့ကို ထည့်သွင်းရေးဆွဲဖော်ပြရန် လိုအပ်ကြောင်း စိစစ်တွေ့ရှိရပါသည်။	▪ စီမံကိန်းမှတစ်နေ့ထွက်ရှိမည့်စွန့်ပစ်အမှိုက်ခန့်မှန်းပမာဏ၊ အမှိုက်စွန့်ပစ်မည့်စနစ်နှင့် စီမံကိန်းဧရိယာတွင်ယာယီသိုလှောင်ထားမည့်နေရာ တို့ကို ဖော်ပြရန်၊ ▪ စီမံကိန်းတွင်ဆောင်ရွက်မည့် Ventilation System၊ Drainage System၊ Water Supply System၊ Electrical Installation Plan တို့ကို ရေးဆွဲဖော်ပြရန်။ (main source အပါအဝင်)	❖ 3.13 တွင် ဖော်ပြထားပါသည်။ ❖ Ventilation System ကို Appendix 13 (HVAC System)၊ Drainage System ကို 3.12.5၊ Water Supply System ကို 3.11.3 နှင့် Electrical Installation Plan ကို 3.11.1 တို့ တွင် ဖော်ပြထားပါသည်။
(ဂ)	စာမျက်နှာ ၂၃ စီမံကိန်းမှ အသုံးပြုမည့် ဧရိယာများကိုဖော်ပြရာတွင် Parking နှင့် ပတ်သက်၍ထည့်သွင်းစဉ်းစားခြင်းမရှိဟု ဖော်ပြထားပြီး စာမျက်နှာ ၂၄ တွင် Car parking အတွက် အစီး	▪ စီမံကိန်းဆောင်ရွက်မည့် Car Parking ကို မည်သည့်နေရာတွင်ထားရှိမည်ကို ပုံနှင့်တကွ ဖော်ပြရန်၊	❖ စီမံကိန်းဆောင်ရွက်မည့် Car Parking ကို Table 3-8 နှင့် Table 3-12 တို့တွင် ဖော်ပြထားပြီး ပုံကို Figure 3-12 Car Parking Layout Plan တွင် ဖော်ပြထားပါသည်။

စဉ်	စီစစ်တွေ့ရှိချက်	အကြံပြုချက်	ပြင်ဆင်ဆောင်ရွက်မှုများ
	(၅၀)၊ Taxi (၄) စီးနှင့် ဝန်ထမ်းများအတွက် တိကျစွာဖော်ပြထားခြင်းမရှိကြောင်း တွေ့ရှိရပါသည်။	▪ ဟိုတယ်စီမံကိန်းတွင် အခန်းအရေအတွက် (၂၆၀) ခန်းပါဝင်သည့်အတွက် ဖော်ပြထားသော အစီး (၅၀) ခန့် ကားပါကင်သည် လုံလောက်မှုရှိ/မရှိအား ဖော်ပြရန်၊ ▪ စီမံကိန်းမှဝန်ထမ်းများအတွက် Parking စီမံဆောင်ရွက်ပေးရန်နှင့် ဆောင်ရွက်ထားရှိမည့် နေရာကို ဖော်ပြရန်၊	❖ Table 3-12 ၏အောက်တွင် စီမံကိန်းမှ လျာထားပေးသောကားပါကင်သည် လုံလောက်မှုရှိကြောင်းနှင့် မလုံလောက်ပါက တိုးချဲ့သွားမည် ဖြစ်ကြောင်း ဖော်ပြထားပါသည်။ ❖ စီမံကိန်းမှဝန်ထမ်းများအတွက် ပါကင်နေရာကို Table 3-8 နှင့် Table 3-12 တို့တွင် ဖော်ပြထားပါသည်။
(ဃ)	အခြားနည်းရွေးချယ်ခြင်းနှင့် ပတ်သက်၍- ▪ စီမံကိန်းတွင် အခြားနည်းရွေးချယ်ခြင်းနှင့် ပတ်သက်၍ ဖော်ပြထားခြင်းမရှိသည့်အတွက် အခြားနည်းရွေးချယ်ခြင်းများအပြင် စီမံကိန်းမရှိသည့်အခြေအနေတို့ကို ထည့်သွင်းစဉ်းစား၍ ပြန်လည်ဖော်ပြရန် လိုအပ်ပါသည်။	▪ စီမံကိန်းမှအခြားနည်းရွေးချယ်ခြင်းနှင့်ပတ်သက်၍ထည့်သွင်းဖော်ပြရန်၊ (ဥပမာ-တည်နေရာရွေးချယ်ခြင်း၊ လျှပ်စစ်နှင့်ရေအသုံးပြုမည့် Main Source ရွေးချယ်ခြင်း၊ Waste Management Plan ရွေးချယ်ခြင်း၊ စီမံကိန်းအဆောက်အဦအမျိုးအစား၊ဒီဇိုင်းနှင့်အဆောက်အဦ structure ပိုင်းအရ ရွေးချယ်ခြင်း၊ Greening Plan စသည်) ▪ အခြားဆောင်ရွက်နိုင်သောနည်းလမ်းများကို ထည့်သွင်းစဉ်းစား၍ရွေးချယ်ရသည့် အကြောင်းအရင်းကို ခိုင်လုံသော အကြောင်းပြချက်များဖြင့် နှိုင်းယှဉ်ဖော်ပြရန်၊	❖ 3.14 တွင် ဖော်ပြထားပါသည်။

စဉ်	စိစစ်တွေ့ရှိချက်	အကြံပြုချက်	ပြင်ဆင်ဆောင်ရွက်မှုများ
		▪ အစားထိုးနည်းလမ်းများကို နှိုင်းယှဉ်ဖော်ပြရာတွင် စီမံကိန်းမရှိသည့်အခြေအနေ (No Project) ကို အခြားဆောင်ရွက်နိုင်သော နည်းလမ်းအဖြစ် ထည့်သွင်းစဉ်းစားရန်၊	
၅။	**အနီးပတ်ဝန်းကျင်အကြောင်းအရာများဖော်ပြချက်**		
(က)	**လေ့လာမည့်နယ်နိမိတ်သတ်မှတ်ခြင်းတွင်** စီမံကိန်းမှလေ့လာမည့် နယ်နိမိတ်သတ်မှတ်ခြင်းကို သတ်မှတ်ဖော်ထုတ်ထားခြင်း မရှိသည့်အတွက် Study Area သတ်မှတ်ဖော်ထုတ်ရန် လိုအပ်ပါသည်။	▪ စီမံကိန်းမှလေ့လာမည့်နယ်နိမိတ်သတ်မှတ်ခြင်း (လေ့လာမည့်နယ်ပယ်ဧရိယာ၊ နယ်နိမိတ်၊ မျှော်မှန်းထားသည့် တိုက်ရိုက်(သို့) သွယ်ဝိုက် သက်ရောက်မှုများ) ကို သတ်မှတ်ဖော်ထုတ်ရန်၊	❖ Chapter 4 နှင့် 5 တို့တွင် ဖော်ပြထားပါသည်။
(ခ)	**ရုပ်ဝိုင်းဆိုင်ရာအစိတ်အပိုင်းများအနေဖြင့်** ▪ မြေမျက်နှာသွင်ပြင်နှင့်ဘူမိသွင်ပြင်၊ မိုးလေဝသဆိုင်ရာအချက်အလက်များကို secondary data များဖြင့် ဖော်ပြထားသော်လည်း မည်သည့်အရင်းအမြစ်မှ ရယူထားသည်ကို ဖော်ပြရန် လိုအပ်ပါသည်။	▪ မြေမျက်နှာသွင်ပြင်နှင့်ဘူမိသွင်ပြင်၊ မိုးလေဝသဆိုင်ရာအချက်အလက်များကို ရယူထားသည့် secondary data source ကို ဖော်ပြရန်၊	❖ 4.2.2 နှင့် 4.4 တို့တွင် ဖော်ပြထားပါသည်။
(ဂ)	**လေအရည်အသွေးတိုင်းတာခြင်းနှင့် ပတ်သက်၍ -**	▪ လေအရည်အသွေးတိုင်းတာရာတွင် တိုင်းတာချက်ရလဒ်များအား NEQEG Guideline နှင့် နှိုင်းယှဉ်ဖော်ပြပေးရန်၊	❖ ယခင်အစီရင်ခံစာတွင် Ambient Air Quality ကို တစ်နာရီစာသာတိုင်းတာထား၍ ၂၀၂၀ ခုနှစ်တွင် နေရာ (၃) နေရာတွင် တစ်နေရာ

စဉ်	စိစစ်တွေ့ရှိချက်	အကြံပြုချက်	ပြင်ဆင်ဆောင်ရွက်မှုများ
	▪ လေအရည်အသွေးတိုင်းတာရာတွင် အမှတ် (၄) မှတ်တွင် တိုင်းတာထားကြောင်း၊ တိုင်းတာရာတွင် အသုံးပြုသည့် Instrument များ၊ တိုင်းတာမည့် ပါရာမီတာများကို ဖော်ပြထားသော်လည်း တိုင်းတာချက်ရလဒ်များကို ဖော်ပြရာတွင် O_2၊ $PM_{2.5}$ ၊PM_{10} ၊Wind Speed and Wind Direction တန်ဖိုးများကိုသာ ဖော်ပြထားပြီး အခြားသောပါရာမီတာများ၏တန်ဖိုးမှာ ရှာဖွေ၍မရဟု ဖော်ပြထားပါသည်။	▪ Table 3.5 တွင် ND (Not Detected) ဟု ဖော်ပြထားသည့်ပါရာမီတာများအား အခြားသင့်တော်သော instrument များသုံး၍ ပြန်လည်တိုင်းတာ၍ နှိုင်းယှဉ်ဖော်ပြပေးရန်၊ ▪ လေအရည်အသွေးတိုင်းတာထားသည့် အမှတ် (၄) မှတ်အား ကိုဩဒိနိတ်အမှတ်များဖြင့် ဖော်ပြရန်၊ ▪ Total Volatile Organic Compound (TVOC) ၏ တန်ဖိုးအား zero ဟု ဖော်ပြထားသည့် အတွက် zero ဖြစ်ရခြင်း အကြောင်းခြင်းရာအား ဆန်းစစ်ဖော်ပြရန်၊	လျှင် ၂၄ နာရီကြာတိုင်းတာခဲ့ပြီး 4.3.1 တွင် ဖော်ပြထားပါသည်။ ❖ လေထုတိုင်းတာခြင်းကို သင့်တော်သော instrument များသုံး၍ ပြန်လည်တိုင်းတာထားပြီး ယင်းကို 4.3 တွင် ဖော်ပြထားပါသည်။ ❖ အသစ်ပြန်လည်တိုင်းတာထားသော အမှတ်နေရာများကို ကိုဩဒိနိတ်အမှတ်များဖြင့် Table 4-2 တွင် ဖော်ပြထားပါသည်။ ❖ အသစ်ပြန်လည်တိုင်းတာဖော်ပြထားပြီး ယင်းပါရာမီတာအား Ambient Air Quality တွင် ဖော်ပြရန်မလိုပါ။
(ဃ)	**ရေအရည်အသွေးတိုင်းတာရာတွင် -** ▪ အမှတ် (၃) နေရာခွဲ၍ ရေနမူနာ ရယူထားကြောင်း၊ အဆိုပါနေရာ (၄) နေရာတွင် ရွှေလီမြစ်ရေ၊ စီမံကိန်းအတွင်းရှိ အဝီစိတွင်းရေနှင့် စွန့်ပစ်မြောင်းရေ (မိုးရေ) တို့ကို နမူနာကောက်ယူထားကြောင်း၊ တိုင်းတာထားသည့်	▪ ရေအရည်အသွေးတိုင်းတာသည့် အမှတ် (၃) နေရာ၏ကိုဩဒိနိတ်အမှတ်များအား ဖော်ပြရန်၊ ▪ မြေပေါ်ရေအရည်အသွေးတိုင်းတာသည့် ရလဒ်များအား WHO Drinking Water Guidelines ဖြင့်ထပ်မံနှိုင်းယှဉ်ဖော်ပြရန်နှင့် Total	❖ Table 4-7 တွင် ဖော်ပြထားပါသည်။ ❖ ညွှန်ကြားချက်အတိုင်း WHO Drinking Water Guidelines ဖြင့် ထပ်မံဖြည့်စွက်ဖော်ပြထားပြီး TSS များနေရခြင်းမှာ မြစ်၏သဘာဝအရ ဖြစ်၍ စီမံကိန်းမှလည်း မြစ်ထဲသို့ စွန့်ပစ်ရည်

စဉ်	စိစစ်တွေ့ရှိချက်	အကြံပြုချက်	ပြင်ဆင်ဆောင်ရွက်မှုများ
	ပါရာမီတာများ၊ ရလဒ်များ ဖော်ပြထားသည်ကို တွေ့ရှိရပါသည်။ ▪ Surface Water Quality အား တိုင်းတာရာတွင် တိုင်းတာသည့်ရလဒ်များအား NEQEG Guideline မှ ဟိုတယ်နှင့်ခရီးသွားလုပ်ငန်းစွန့်ထုတ်အရည်အဆင့် သတ်မှတ်ချက်များနှင့် နှိုင်းယှဉ်ဖော်ပြထားသဖြင့် WHO Drinking Water Guidelines ဖြင့် ထပ်မံနှိုင်းယှဉ် ဖော်ပြရန် လိုအပ်ပါသည်။ ▪ Waste Water Quality အား တိုင်းတာ ရာတွင် စီမံကိန်းအပြင်ဘက်ရှိ စွန့်ပစ်ရေမြောင်းမှ ရေအား ရယူတိုင်းတာရာတွင် Oil and Grease, Total Suspended Solid တို့မှာ NEQEG မှ သတ်မှတ်ပမာဏထက် မြင့်မားနေပြီး အဆိုပါ စွန့်ပစ်ရေမြောင်း အနီးတွင် လူနေအိမ်ရာများ၊ အလုပ်သမားများ နေထိုင်ရာရပ်ကွက်များ တည်ရှိနေသည့်အတွက်ဟု ဖော်ပြထားသည်ကို တွေ့ရှိရပါသည်။	Suspended Solid ပမာဏများပြားနေရခြင်း၏ အကြောင်းရင်းအားဖော်ပြရန်၊ ▪ Waste Water Quality အား တိုင်းတာရာတွင် စီမံကိန်းမှ ထွက်ရှိလာသည့် စွန့်ပစ်ရေများအား တိုင်းတာ၍ NEQEG Guideline ဖြင့် နှိုင်းယှဉ် ဖော်ပြရန်၊	ကို တိုက်ရိုက်စွန့်ထုတ်မှုမရှိကြောင်း ဖော်ပြထားပါသည်။ ❖ Table 4-9 နှင့် Table 4-10 တို့တွင် ဖော်ပြထားပါသည်။

စဉ်	စီစစ်တွေ့ရှိချက်	အကြံပြုချက်	ပြင်ဆင်ဆောင်ရွက်မှုများ
(ငး)	**ဆူညံသံနှင့် ပတ်သက်၍** ဆူညံသံကိုတိုင်းတာရာတွင် အမှတ် (၄)နေရာ ခွဲ၍ တိုင်းတာထားပြီး ရလဒ်များကို ဖော်ပြထားပါသည်။	▪ ဆူညံသံတိုင်းတာထားသည့်အမှတ်များ၏ ကိုယ်စားပြု ဒီနိုတ်အမှတ်များအားဖော်ပြ၍ ရရှိလာသည့် ရလဒ်များကို NEQEG Guideline ဖြင့် နှိုင်းယှဉ်ဖော်ပြရန်၊ ▪ ဆူညံသံအား တိုင်းတာရာတွင် Day time နှင့် Night time ဟူ၍ ခွဲခြားဖော်ပြရန်နှင့် NEQEG Guideline ထက်ကျော်လွန်နေပါက ကျော်လွန်နေရသည့် အကြောင်းရင်းအား ဖော်ပြရန်။	❖ Table 4-5 နှင့် Table 4-6 တို့တွင် ဖော်ပြထားပါသည်။ ❖ 4.3.2 တွင် ဖော်ပြထားပါသည်။
(စ)	**သက်ရှိဇီဝဆိုင်ရာအကြောင်းအချက်များနှင့် စပ်လျဉ်း၍** စီမံကိန်းအနီးတွင် တောရိုင်းတိရစ္ဆာန်များ နေထိုင်ကျက်စားခြင်းမရှိကြောင်း၊ ရှားပါးမျိုးစိတ် စာရင်းဝင် အပင်၊ တိရစ္ဆာန်နှင့် ဌက်များ မရှိကြောင်းဖော်ပြထားသော်လည်း စီမံကိန်းပတ်ဝန်းကျင်ရှိ အပင်၊ တိရစ္ဆာန်နှင့် ဌက်မျိုးစိတ်များကို ဖော်ပြရန် လိုအပ်ပါသည်။	▪ စီမံကိန်းတည်ရှိရာဒေသရှိ အပင်၊ တိရစ္ဆာန်နှင့် ဌက်မျိုးစိတ်များကို ဖော်ပြရန်၊	❖ 4.6 နှင့် 4.7 တို့တွင် ဖော်ပြထားပါသည်။
(ဆ)	**စွန့်ပစ်ပစ္စည်းစီမံခန့်ခွဲမှုနှင့် ပတ်သက်၍** စီမံကိန်းမှ solid waste များကို ဥပဒေများ၊ အလေ့အထများအတိုင်း စွန့်ပစ်သွားမည် ဖြစ်	▪ စီမံကိန်းမှထွက်ရှိမည့်စွန့်ပစ်ရေများကို စည်ပင်ရေဆိုးမြောင်းသို့ တိုက်ရိုက်စွန့်ပစ်ခြင်းမပြုဘဲ သင့်တော်သော Treatment System အသုံးပြု	❖ Environmental Monitoring Plan တွင် ဟိုတယ်မှစွန့်ပစ်ရေများကို ရေနမူနာများ ကောက်ယူတိုင်းတာပြီး MCDC WWTP သို့ ပို့

စဉ်	စိစစ်တွေ့ရှိချက်	အကြံပြုချက်	ပြင်ဆင်ဆောင်ရွက်မှုများ
	ကြောင်း၊ စွန့်ပစ်အမှိုက်များကို အမျိုးအစား အလိုက် ခွဲခြားစွန့်ပစ်သွားမည်ဖြစ်ကြောင်း၊ စွန့်ပစ်ရေများကို စည်ပင်ရေဆိုးလိုင်းတွင် စွန့်ပစ်သွားမည်ဖြစ်ကြောင်း၊ စွန့်ပစ်အမှိုက်များကို စည်ပင်သာယာနှင့် ချိတ်ဆက်ဆောင်ရွက်သွားမည် ဖြစ်ကြောင်း ဖော်ပြထားပါသည်။	၍ NEQEG Guideline မှ စွန့်ထုတ်အရည် အဆင့်သတ်မှတ်ချက်စံနှုန်းများအတွင်း ရရှိ အောင် စီမံဆောင်ရွက်ပြီးမှ စွန့်ထုတ်ရန်၊ ▪ စာမျက်နှာ ၅၄ Wastewater Management Plan တွင် သန့်စင်ထားသည့် gray water ကို ကြမ်းပြင်သန့်ရှင်းရေးလုပ်ခြင်း၊ flushing toilets, ပန်းပင်များရေလောင်းခြင်းနှင့် golf courses များတွင် ပြန်လည်အသုံးပြုသွားမည်ဟု ဖော်ပြထားသည့်အတွက် gray water များကို မည်သည့်နည်းစနစ်သုံး၍ သန့်စင်မည်ကို ဖော်ပြရန်နှင့် ပြန်လည်အသုံးပြု၍ရအောင် မည်သည့်ပမာဏခန့် သန့်စင်နိုင်သည်ကို ဖော်ပြရန်၊ ▪ စာမျက်နှာ ၅၅ Waste Management Plan တွင် စီမံကိန်းမှ စွန့်ပစ်မည့်အမှိုက်များကို "Municipality or other disposal entities" တွင် စွန့်ပစ်မည်ဟု ဖော်ပြသွားသည့်အတွက် မည်သည့်အဖွဲ့အစည်းနှင့် ချိတ်ဆက်စွန့်ပစ်မည်ကို တိကျစွာ ဖော်ပြရန်၊	ဆောင်သန့်စင်ပြီးမှ စွန့်ပစ်မည်ဖြစ်ပြီး သန့်စင်ပြီးရေကိုလည်း နမူနာကောက်ယူတိုင်းတာသွားမည်ဖြစ်ကြောင်း ဖော်ပြထားပါသည်။ ❖ စီမံကိန်းမှထွက်ရှိသောစွန့်ပစ်ရေများကို MCDC WWTP သို့ပို့ဆောင်သန့်စင်ပြီး ပြန်လည်အသုံးပြုခြင်းမရှိပါ။ ❖ 6.2.2.3 တွင် ပြန်လည်ပြင်ဆင်ဖော်ပြထားပါသည်။

စဉ်	စိစစ်တွေ့ရှိချက်	အကြံပြုချက်	ပြင်ဆင်ဆောင်ရွက်မှုများ
(၈)	**အနီးပတ်ဝန်းကျင်အကြောင်းအရာများဖော်ပြချက်တွင်-** ▪ တုန်ခါမှုနှင့်ပတ်သက်၍ တိုင်းတာဖော်ပြရန် လိုအပ်ပါသည်။ ▪ စီမံကိန်းသည် အထပ်မြင့်အဆောက်အဦ ဖြစ်သည့်အတွက် စီမံကိန်းဆောင်ရွက်မည့် မြေနေရာ၏အမျိုးအစားကို ဖော်ပြရန် လိုအပ်ပါသည်။ ▪ စီမံကိန်းပတ်ဝန်းကျင်ရှိ ယဉ်ကျေးမှုအမွေအနှစ်များ၏အချက်အလက်များအား ဖော်ပြရန် လိုအပ်ပါသည်။ ▪ စီမံကိန်းတည်ရှိရာဒေသ၏ဖြစ်ပွားခဲ့သော ဖြစ်နိုင်ခြေရှိသော သဘာဝဘေးအန္တရာယ်များနှင့် ပတ်သက်၍ ဖော်ပြရန် လိုအပ်ပါသည်။	▪ စီမံကိန်းတွင် တုန်ခါမှုနှင့်ပတ်သက်၍ တိုင်းတာပြီး တိုင်းတာသည့်အမှတ်များကို ကိုဩဒိနိတ်အမှတ်များဖြင့် ဖော်ပြရန်၊ ▪ စီမံကိန်းဆောင်ရွက်မည့်မြေနေရာ၏အမျိုးအစားနှင့် စီမံကိန်းပတ်ဝန်းကျင်ရှိ မြေအသုံးချမှုများအား ဖော်ပြရန်၊ ▪ စီမံကိန်းပတ်ဝန်းကျင်ရှိ ယဉ်ကျေးမှုအမွေအနှစ်များနှင့်ပတ်သက်သည့် အချက်အလက်များအား စီမံကိန်းနှင့်ကွာဝေးသည့် အတိုင်းအတာများနှင့် တကွ ဖော်ပြရန်၊ ▪ စီမံကိန်းတည်ရှိရာဒေသ၏ဖြစ်ပွားခဲ့သော သဘာဝဘေးများအကြောင်းနှင့် ဖြစ်ပေါ်နိုင်သည့် သဘာဝဘေးအန္တရာယ်များ (ဥပမာ-ငလျင်၊ လေပြင်းမုန်တိုင်း၊ ရေကြီးခြင်း၊ မိုးခေါင်ခြင်း၊ မြေပြိုခြင်း စသည်) ကို ဖော်ပြရန်၊	❖ တုန်ခါမှုကိုမတိုင်းတာထားပါ။ နောင်တွင် ECD မှ လိုအပ်သည်ဟုညွှန်ကြားပါက တိုင်းတာသွားပါမည်။ ❖ 3.3.2 နှင့် Appendix 4,5,6,7 တို့တွင် ဖော်ပြထားပါသည်။ ❖ 4.9 တွင် ဖော်ပြထားပါသည်။ ❖ 4.4.6 တွင် ဖော်ပြထားပါသည်။
(၈၂)	လူမှုစီးပွားရေးအခြေအနေနှင့်ပတ်သက်၍ ဖော်ပြထားခြင်းမရှိသည့်အတွက် ပြည့်စုံစွာ ဖော်ပြရန် လိုအပ်ပါသည်။	လူမှုစီးပွားအခြေအနေနှင့် ပတ်သက်၍ အောက်ပါတို့အား ထည့်သွင်းဖော်ပြရန်- ▪ စီမံကိန်းတည်ရှိရာရပ်ကွက်၏လူဦးရေ၊ အိမ်ထောင်စုစာရင်း၊ ကျား၊မအချိုးအစား၊ အလုပ်	❖ SIA Report ၏ 3.2.2 တွင်ဖော်ပြထားပြီးဖြစ်သည်။

စဉ်	စိစစ်တွေ့ရှိချက်	အကြံပြုချက်	ပြင်ဆင်ဆောင်ရွက်မှုများ
		အကိုင်၊ ပျမ်းမျှဝင်ငွေရရှိမှု၊ လျှပ်စစ်မီးနှင့် ရေရရှိမှု၊ လူမျိုးနှင့်ကိုးကွယ်သည့်ဘာသာ၊ ပညာရေးအခြေအနေနှင့် စာတတ်မြောက်မှုတို့ကို ဖော်ပြရန်၊ ▪ ရပ်ကွက်အတွင်းရှိ ပညာရေး၊ ကျန်းမာရေး၊ ဘာသာရေးနှင့်သက်ဆိုင်သည့်အချက်အလက်များ (ဥပမာ- စာသင်ကျောင်း၊ ဆေးရုံ၊ ဆေးခန်း၊ ဘုရားစေတီ၊ ဘုန်းကြီးကျောင်း စသည်) ကို ဖော်ပြရန်၊ ▪ ကျန်းမာရေးအချက်အလက်များအနေဖြင့် မွေးဖွားနှုန်းနှင့် သေဆုံးနှုန်း၊ ဖြစ်ပွားတတ်သောရောဂါများ၊ ကူးစက်ရောဂါနှင့် မကူးစက်တတ်သောရောဂါများ၊ အာဟာရဆိုင်ရာပြဿနာ တို့ကို ဖော်ပြရန်၊	❖ SIA Report ၏ 3.2.2 တွင်ဖော်ပြထားပြီးဖြစ်သည်။ ❖ HIA Report တွင်ဖော်ပြထားပြီးဖြစ်သည်။
၆။	**ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်း၊ လျော့ချမည့် နည်းလမ်းများ**		
(က)	**ပတ်ဝန်းကျင်အပေါ် သက်ရောက်မှုများအနေဖြင့် တည်ဆောက်ရေးကာလတွင်** ▪ မြေဆီလွှာထိခိုက်ခြင်း၊ မြင်ကွင်းပိုင်းအရ ထိခိုက်နိုင်ခြင်း၊ ဖုန်နှင့်အမှုန်အမွှားများ ဖြစ် ခြင်း၊	လျော့ပါးစေရေးနည်းလမ်းများအတိုင်း လိုက်နာဆောင်ရွက်ရန်၊	ညွှန်ကြားချက်အတိုင်း လိုက်နာဆောင်ရွက်သွားပါမည်။

စဉ်	စိစစ်တွေ့ရှိချက်	အကြံပြုချက်	ပြင်ဆင်ဆောင်ရွက်မှုများ
	သယ်ယူပို့ဆောင်ရေးယာဉ်များကြောင့် ဓာတ်ငွေ့များထွက်ခြင်း၊ ဆူညံသံနှင့် တုန်ခါမှုများဖြစ်ပေါ်ခြင်း၊ လုပ်ငန်းခွင်တွင် မတော်တဆထိခိုက်မှုများဖြစ်ပေါ်နိုင်ခြင်း စသည်တို့ ဖြစ်ပေါ်နိုင်ကြောင်းနှင့် လျော့ပါးစေရေးနည်းလမ်းများကို ဖော်ပြထားပါသည်။		
(ခ)	**လုပ်ငန်းလည်ပတ်သည့်ကာလတွင် သက်ရောက်မှုများအနေဖြင့်** ▪ Solid Wastes များသည် အဓိက ပြဿနာတစ်ရပ်ဖြစ်ကြောင်း၊ အမှိုက်စွန့်ပစ်သည့်ကန်သည် လုံလောက်မှုမရှိသည့်အတွက် အဆိုပါအမှိုက်များကြောင့် မိုးရာသီတွင် ရေမြောင်းများပိတ်ကာ လမ်းမများပေါ်တွင် ရေကြီးရေလျှံမှုများ ဖြစ်ပေါ်နိုင်ကြောင်း၊ စီမံကိန်းထွက်ရှိလာမည့် food wastes များကို အပူချိန် 4°C ရှိသောအအေးခန်းတွင် နေ့စဉ်သိုလှောင်သိမ်းဆည်းမည်ဖြစ်ကြောင်းနှင့် အမှိုက်များကိုသီးခြားစွန့်ပစ်သွားမည်ဖြစ်ကြောင်း၊ စွန့်ပစ်ရေဆိုးများမှလည်း ညစ်ညမ်း	▪ food wastes များကို အမှိုက်ပုံးများထဲတွင် ထည့်ပြီး အဆိုပါအမှိုက်ပုံးများကို 4°C ရှိသော အအေးခန်းတွင် သိုလှောင်ပြီးပါက ဆက်လက်၍ မည်သို့ချိတ်ဆက်စွန့်ပစ်မည်၊ နေ့စဉ် စွန့်ပစ်မည် (သို့မဟုတ်) တစ်ပတ်လျှင် အကြိမ်ရေမည်မျှ စွန့်ပစ်မည်တို့ကို ဖော်ပြရန်၊ ▪ 4°C ရှိသော အအေးခန်းနှင့်ပတ်သက်သည့် အချက်အလက်များကို ပြည့်စုံစွာဖော်ပြရန် (ဥပမာ- မည်သည့်နေရာတွင် တည်ဆောက်မည်၊ မည်သို့အသုံးပြုမည်၊ အဆိုပါအခန်းတွင် မည်သို့သောစနစ်နှင့် ပစ္စည်းကိရိယာများ အသုံးပြုမည်)	❖ 4°C ရှိသော အအေးခန်းတွင် မသိုလှောင်ပါ။ ၄င်းကို Food wastes များကို မည်သို့ ချိတ်ဆက်စွန့်ပစ်မည်ကို 3.13 Solid Waste Management တွင် ဖော်ပြထားပါသည်။ ❖ ပြန်လည်ပြင်ဆင်ဖော်ပြထားပါသည်။

စဉ်	စီစစ်တွေ့ရှိချက်	အကြံပြုချက်	ပြင်ဆင်ဆောင်ရွက်မှုများ
	မှုကို ဖြစ်ပေါ်စေနိုင်ကြောင်း စာမျက်နှာ ၄၀ တွင် ဖော်ပြထားပါသည်။ ▪ Drainage and Run-off၊ Sewage နှင့် Wastewater တို့ကြောင့် ဖြစ်ပေါ်နိုင်သော သက်ရောက်မှုများနှင့် လျော့ပါးစေရေးနည်းလမ်းများကို ဖော်ပြထားသည်ကို တွေ့ရှိရပါသည်။ ▪ စီမံကိန်းမှအရေးပေါ်မီးစက်နှင့် ယာဉ်အသွားအလာများကြောင့် ဆူညံသံများ ဖြစ်ပေါ်နိုင်ကြောင်းနှင့် လျော့ပါးစေရေးဆောင်ရွက်သင့်သည့် နည်းလမ်းများကို ဖော်ပြထားပါသည်။	▪ စွန့်ပစ်ရေကိုသန့်စင်ရာတွင် သင့်တော်သော treatment ကိုအသုံးပြုမည်ဟု ဖော်ပြချက်အစား မည်သည့် treatment system ကို သုံးစွဲမည်ကို တိကျစွာ ဖော်ပြရန်၊ ▪ ဆူညံသံနှင့်ပတ်သက်၍လျော့ပါးစေရေးနည်းလမ်းများကို ဖော်ပြရာတွင် "ဆောင်ရွက်သင့်သည်" ဟူသော အသုံးအနှုန်းအစား စီမံကိန်းမှ အမှန်တကယ်လိုက်နာဆောင်ရွက်မည်ဟု ပြောင်းလဲရေးသားရန်၊	❖ ပြန်လည်ပြင်ဆင်ဖော်ပြထားပါသည်။ ❖ ပြန်လည်ပြင်ဆင်ဖော်ပြထားပါသည်။
(၈)	စီမံကိန်းကြောင့် တည်ဆောက်ရေးကာလနှင့် လုပ်ငန်းလည်ပတ်သည့်ကာလတွင် ဖြစ်ပေါ်နိုင်သည့်သက်ရောက်မှုများကို ဖော်ပြထားသော်လည်း ထိခိုက်မှုများကိုဆန်းစစ်သည့် နည်းစနစ်နှင့် ချဉ်းကပ်ပုံ၊ ထိခိုက်နိုင်မှုပမာဏ၊ ထိခိုက်မှုများကို ဆန်းစစ်သည့်နယ်ပယ်ဧရိယာ၊ စီမံကိန်းကြောင့်ဖြစ်ပေါ်နိုင်သည့် Direct Impact အပြင် Indirect Impact၊ Cumulative Impact	ထိခိုက်မှုများကိုဆန်းစစ်သည့် နည်းစနစ်နှင့် ချဉ်းကပ်ပုံ၊ ထိခိုက်နိုင်မှုပမာဏ၊ ထိခိုက်မှုများကို ဆန်းစစ်သည့်နယ်ပယ်ဧရိယာ၊ စီမံကိန်းကြောင့် ဖြစ်ပေါ်နိုင်သည့် Direct Impact အပြင် Indirect Impact၊ Cumulative Impactများ၊ ကောင်းကျိုးနှင့် ဆိုးကျိုးသက်ရောက်မှုများ၊ သက်ရောက်မှုဖြစ်ပေါ်နိုင်သည့်ဧရိယာကို ဖော်ပြထားသည့် မြေပုံတို့ကို ဖော်ပြရန်၊	5.0 POTENTIAL ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES တွင် ဖော်ပြထားပါသည်။

စဉ်	စိစစ်တွေ့ရှိချက်	အကြံပြုချက်	ပြင်ဆင်ဆောင်ရွက်မှုများ
	များ၊ ကောင်းကျိုးနှင့်ဆိုးကျိုး သက်ရောက်မှု များ၊ သက်ရောက်မှုဖြစ်ပေါ်နိုင်သည့်ဧရိယာကို ဖော်ပြထားသည့်မြေပုံတို့ကိုထည့်သွင်းဖော်ပြရန် လို အပ်ပါသည်။		
(ဃ)	**သက်ရောက်မှုများနှင့် ပတ်သက်၍ -** ▪ ရုပ်ပိုင်းဆိုင်ရာသက်ရောက်မှုများအနေဖြင့် လေ၊ ရေ၊ မြေ အရည်အသွေး၊ ဆူညံသံနှင့် တုန်ခါမှုအပေါ် သက်ရောက်မှုများ၊ ▪ လူမှုစီးပွားဆိုင်ရာသက်ရောက်မှုများအနေ ဖြင့် လူမှုရေး၊ စီးပွားရေး၊ စီမံကိန်းမှ လျှပ် စစ်နှင့် ရေအရင်းအမြစ် အသုံးချမှုများကြောင့် စီမံကိန်းပတ်ဝန်းကျင်အပေါ် သက်ရောက်နိုင် မှုများ၊ ▪ ယဉ်ကျေးမှုပိုင်းဆိုင်ရာသက်ရောက်မှုများ အနေဖြင့် ယဉ်ကျေးမှုအရအရေးပါသော နေရာ များအပေါ် သက်ရောက်နိုင်မှုများ၊ ▪ မြင်ကွင်းဆိုင်ရာသက်ရောက်မှုများအနေဖြင့် စီမံကိန်းသည် အထပ်မြင့်အဆောက်အဦဖြစ်	အောက်ဖော်ပြပါအချက်များ၏ သက်ရောက်နိုင်မှု များနှင့် လျော့ပါးစေရေး နည်းလမ်းများအား ဆန်း စစ်ဖော်ပြရန်- ▪ ရုပ်ပိုင်းဆိုင်ရာသက်ရောက်မှုများအနေဖြင့် လေ၊ ရေ၊ မြေအရည်အသွေး၊ ဆူညံသံနှင့် တုန်ခါမှု၊ အပေါ် သက်ရောက်မှုများ၊ ▪ လူမှုစီးပွားဆိုင်ရာသက်ရောက်မှုများအနေဖြင့် လူမှုရေး၊ စီးပွားရေး၊ စီမံကိန်းမှ လျှပ်စစ်နှင့် ရေ အရင်းအမြစ်အသုံးချမှုများကြောင့် စီမံကိန်း ပတ်ဝန်းကျင်အပေါ် သက်ရောက်နိုင်မှုများ၊ ▪ ယဉ်ကျေးမှုပိုင်းဆိုင်ရာသက်ရောက်မှုများအနေ ဖြင့် စီမံကိန်းသည် အထပ်မြင့်အဆောက်အဦ ဖြစ်သည့်အတွက် မြင်ကွင်းဆိုင်ရာအစိတ်အပိုင်း များအပေါ် ထိခိုက်နိုင်မှုများ၊	❖ ပြန်လည်ပြင်ဆင်ဖော်ပြထားပါသည်။ ❖ ပြန်လည်ပြင်ဆင်ဖော်ပြထားပါသည်။ ❖ 4.10 Visual Component ၏အောက်ဆုံးစာ ပိုဒ်တွင် ဖော်ပြထားပါသည်။

စဉ်	စီစစ်တွေ့ရှိချက်	အကြံပြုချက်	ပြင်ဆင်ဆောင်ရွက်မှုများ
	သည့်အတွက် မြင်ကွင်းဆိုင်ရာအစိတ်အပိုင်းများအပေါ် ထိခိုက်နိုင်မှုများ၊ ▪ စီမံကိန်းရှိဝန်ထမ်းများ၊ တည်းခိုသူများ၊ စီမံကိန်းပတ်ဝန်းကျင်ရှိလူများ၏ ကျန်းမာရေးနှင့် ဘေးအန္တရာယ်ကင်းရှင်းရေးနှင့် ပတ်သက်သည့် သက်ရောက်နိုင်မှုများ၊ ▪ အရေးပေါ်အခြေအနေများနှင့်ပတ်သက်၍ မီးဘေးအန္တရာယ်တစ်မျိုးတည်းသာ ထည့်သွင်းစဉ်းစားထားသည့်အတွက် အခြား ဖြစ်ပေါ်နိုင်သော သဘာဝဘေးအန္တရာယ်များ (ဥပမာ- ငလျင်၊ ရေကြီးခြင်း၊ ရေရှုးပါးခြင်း၊ မြေပြိုခြင်း၊ မုန်တိုင်းအန္တရာယ်စသည်) ▪ Social Impact Assessment နှင့် Health Impact Assessment Report အား အစီရင်ခံစာနောက်ပိုင်းတွင် ပူးတွဲဖော်ပြထားသည်ကို တွေ့ရှိရပါသည်။ ▪ Social Impact Assessment Report တွင် စီမံကိန်းမှခန့်အပ်သွားမည့် ခန့်မှန်းဝန်ထမ်းအင်အားစာရင်း၊ အစီရင်ခံစာဆောင်ရွက်ရ	▪ စီမံကိန်းရှိဝန်ထမ်းများ၊ တည်းခိုသူများ၊ စီမံကိန်းပတ်ဝန်းကျင်ရှိလူများ၏ကျန်းမာရေးနှင့် ဘေးအန္တရာယ်ကင်းရှင်းရေးနှင့် ပတ်သက်သည့် သက်ရောက်နိုင်မှုများ၊ ▪ အရေးပေါ်အခြေအနေများနှင့်ပတ်သက်၍ မီးဘေးအန္တရာယ်တစ်မျိုးတည်းသာထည့်သွင်းစဉ်းစားထားသည့်အတွက် အခြားဖြစ်ပေါ်နိုင်သော သဘာဝဘေးအန္တရာယ်များ (ဥပမာ- ငလျင်၊ ရေကြီးခြင်း၊ ရေရှုးပါးခြင်း၊ မြေပြိုခြင်း၊ မုန်တိုင်းအန္တရာယ်စသည်) ▪ Table 1.29 Monitoring Schedule for Social Monitoring Plan အား Environmental Monitoring Plan တွင် ခန့်မှန်းကုန်ကျစရိတ်များ ဖြည့်သွင်း၍ ဖော်ပြရန်၊	❖ 6.5 Occupational Health and Safety Issues တွင် ဖော်ပြထားပါသည်။ ❖ ပြန်လည်ပြင်ဆင်ဖော်ပြထားပါသည်။ ❖ Table 7-2 တွင် ဖော်ပြထားပါသည်။

စဉ်	စိစစ်တွေ့ရှိချက်	အကြံပြုချက်	ပြင်ဆင်ဆောင်ရွက်မှုများ
	ခြင်းရည်ရွယ်ချက်၊ စီမံကိန်းပတ်ဝန်းကျင်ရှိ ရွာများနှင့် Project Affected Persons (PAPs) များ၊ Household survey ကောက်ယူမှုများ၊ လူမျိုး၊ ကိုးကွယ်သည့်ဘာသာ၊ လျှပ်စစ်မီးနှင့် ရေရယူသုံးစွဲမှု၊ သောက်သုံးရေသန့်ရရှိမှု၊ ချက်ပြုတ်ရေးအတွက် စွမ်းအင်သုံးစွဲမှု၊ ပညာရေး၊ အသက်မွေးလုပ်ငန်း၊ ကျန်းမာရေးစောင့်ရှောက်မှု၊ လူဦးရေနှင့် ကျား/မအချိုးအစား၊ ဖြစ်ပွားတတ်သောရောဂါများ၊ မွေးဖွားနှုန်းနှင့် သေဆုံးနှုန်း၊ Economic Infrastructure၊ စျေး၊ စက်ရုံ၊ ဟိုတယ်၊ သယ်ယူပို့ဆောင်ရေး၊ မူခင်းများ၊ မီးသတ်ဌာန၊ NGOs၊ INGOs၊ CBOs၊ အများပြည်သူနှင့်တိုင်ပင်ဆွေးနွေးခြင်းအချက်များ၊ စီမံကိန်းလုပ်ငန်းအဆင့်အလိုက် Socio-economic နှင့် ပတ်သက်သည့် ဖြစ်ပေါ်နိုင်သောသက်ရောက်မှုများနှင့် လျော့ပါးစေရေးနည်းလမ်းများ၊ Social Management Team၊ CSR တို့ကို ဖော်ပြထားသည်ကို တွေ့ရှိရပါသည်။		

စဉ်	စိစစ်တွေ့ရှိချက်	အကြံပြုချက်	ပြင်ဆင်ဆောင်ရွက်မှုများ
၇။	**ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုအစီအစဉ်နှင့် စောင့်ကြပ်ကြည့်ရှုမည့်အစီအစဉ်**		
(က)	**ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုအစီအစဉ်တွင် အောက်ပါ Management Plan များ ဖော်ပြထားပါသည်-** ▪ Energy Management Plan ▪ Water Management Plan ▪ Wastewater Management Plan ▪ Waste Management Plan ▪ Hazardous Wastes Management Plan ▪ Purchasing Management Plan ▪ Noise Management Plan ▪ Air Management Plan	▪ Water Management Plan အား ဖော်ပြရာတွင် "Choose Plants that are suited to your region's climate and rainfall" ဟူသော အရေးအသားအား your အား ပြန်လည်ပြင်ဆင်ရေးသားရန်၊ ▪ Water Management Plan ၏ Good Practices တွင် "Encourage guests to use their towels or linens for more than one day" ဟု ဖော်ပြထားသည့်အတွက် ပြန်လည်ဆန်းစစ်ရန်၊	❖ ပြန်လည်ပြင်ဆင်ဖော်ပြထားပါသည်။ ❖ Good Practices များအား မထည့်သွင်းတော့ပါ။
(ခ)	Management Plan များကို ဖော်ပြထားသော်လည်း အချို့သော Plan များ ထည့်သွင်းဖော်ပြရန် လိုအပ်ပါသည်။	အောက်ဖော်ပြပါ Management Plan များအား ထည့်သွင်းရေးဆွဲ ဖော်ပြရန်- ▪ Emergency Response Plan ▪ Occupational Health and Safety Plan ▪ Corporate Social Responsibility Plan ▪ Noise Management Plan ▪ Traffic Management Plan	❖ Impact Assessment ပြုလုပ်ပြီး ထင်ရှားသောသက်ရောက်မှုများအတွက် Management Plan များအား ပြင်ဆင်ဖော်ပြထားပါသည်။

စဉ်	စိစစ်တွေ့ရှိချက်	အကြံပြုချက်	ပြင်ဆင်ဆောင်ရွက်မှုများ
(ဂ)	စုစုပေါင်းရင်းနှီးမြှုပ်နှံမှု၏ 0.1% ကို စီမံကိန်းလုပ်ငန်း၏ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှု အစီအစဉ် နှစ် ၃၀ အတွက် အကောင်အထည်ဖော် ဆောင်ရွက်သွားမည်ဖြစ်ကြောင်း စာမျက်နှာ ၆၄ တွင် ဖော်ပြထားသည့်အတွက် ယေဘုယျ ဖော်ပြခြင်းမျိုးမဟုတ်ဘဲ တိကျစွာဖော်ပြရန် လိုအပ်ပါသည်။	ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုအစီအစဉ်အား စီမံကိန်းလုပ်ငန်းအဆင့်အလိုက်ဆောင်ရွက်မည့် လုပ်ငန်းစဉ်၊ ခန့်မှန်းကုန်ကျစရိတ်နှင့် တာဝန်ယူဆောင်ရွက်မည့်အဖွဲ့အစည်းတို့ပါဝင်သည့် ဇယားဖြင့် ဖော်ပြရန်၊	❖ ညွှန်ကြားချက်အတိုင်း 6.2 တွင် ပြန်လည် ပြင်ဆင် ဆောင်ရွက်ထားပါသည်။
(ဃ)	ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုအစီအစဉ်အား အကောင်အထည်ဖော်ဆောင်ရွက်ရာတွင် လွယ်ကူချောမွေ့စွာလုပ်ဆောင်နိုင်ရန် စီမံကိန်းမှ ဝန်ထမ်းများအား သင်တန်းပေးခြင်း၊ အသိပညာပေးခြင်းလုပ်ငန်းများအား ထည့်သွင်းဖော်ပြရန် လိုအပ်ပါသည်။	ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုအစီအစဉ်အား အကောင်အထည်ဖော်ဆောင်ရွက်ရာတွင် လွယ်ကူချောမွေ့စွာလုပ်ဆောင်နိုင်ရန် စီမံကိန်းမှဝန်ထမ်းများအား သင်တန်းပေးခြင်း၊ အသိပညာပေးခြင်းလုပ်ငန်းများအား ထည့်သွင်းဖော်ပြရန်။	6.11 တွင် ဖော်ပြထားပါသည်။
c)	ပတ်ဝန်းကျင်စောင့်ကြပ်ကြည့်ရှုမည့် အစီအစဉ်အား Table 6.1 တွင် ဖော်ပြထားသော်လည်း တာဝန်ယူဆောင်ရွက်မည့် အဖွဲ့အစည်းနှင့် တိုင်းတာမည့်ကြိမ်နှုန်းတို့ကိုသာ ဖော်ပြထားပြီး တိကျစွာ ဖော်ပြရန် လိုအပ်ပါသည်။	ပတ်ဝန်းကျင်စောင့်ကြပ်ကြည့်ရှုမည့်အစီအစဉ်တွင် စောင့်ကြပ်ကြည့်ရှုမည့်အချက်များ (ဥပမာ- လေ၊ ရေအရည်အသွေး၊ ဆူညံသံ၊ တုန်ခါမှု၊ စွန့်ပစ်ပစ္စည်း၊ စွန့်ထုတ်အရည်၊ Socio-economic စသည်)၊ တိုင်းတာမည့်ပါရာမီတာများ၊ စစ်ဆေးမည့်ကြိမ်နှုန်း၊ စစ်ဆေးမည့်နေရာ၊ တိုက်ဆိုင်စစ်ဆေးမည့်စံနှုန်း၊ ခန့်မှန်းကုန်ကျစရိတ်၊ တာဝန်ယူဆောင်	7.4 တွင် Operation Phase အတွက် Environmental Monitoring Plan ကို ထည့်သွင်းထားပါသည်။

စဉ်	စိစစ်တွေ့ရှိချက်	အကြံပြုချက်	ပြင်ဆင်ဆောင်ရွက်မှုများ
		ရွက်မည့်အဖွဲ့အစည်းတို့အား စီမံကိန်း၏လုပ်ငန်းအဆင့်အလိုက် ဇယားဖြင့် ပြည့်စုံစွာ ဖော်ပြရန်။	
(စ)	▪ အခန်း (၇) တွင် Fire Safety and Emergency Plan ဖော်ပြထားသည်ကို တွေ့ ရှိရပါသည်။ ▪ Fire Safety and Emergency Plan တွင် Fire Sprinklers, Smoke and fire detectors, Dust Smoke Detectors, Automatic alarm systems, Exists & Exist signs, Staff training စသည့် အချက်များ ပါ ဝင်ကြောင်း၊ မီးသတ်ဦးစီးဌာန "Fire Safety Certificate" ရရှိအောင်သတ်မှတ်ထားသည့် လမ်းညွှန်ချက်များကို စီမံကိန်းမှလိုက်နာသင့်ကြောင်း ဖော်ပြထားသည်ကို တွေ့ရှိရ ပါသည်။ ▪ Fig 7-1 တွင် Fire hydrant and sprinkler system ပုံကို ရှင်းလင်းစွာ ကြည့်ရှုရှုရအောင် ဖော်ပြရန် လိုအပ်ပါသည်။	▪ Fire Safety and Emergency Plan အား ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုအစီအစဉ်တွင် ပြောင်းလဲဖော်ပြရန်၊ ▪ Exits & Exit signs များ တပ်ဆင်ထားသည်ဟု ဖော်ပြထားသဖြင့် Emergency Exit အား Layout Plan တွင် ထည့်သွင်းဖော်ပြရန်၊ ▪ စီမံကိန်းသည် မီးသတ်ဦးစီးဌာနမှ မီးဘေးလုံခြုံရေးနှင့်ပတ်သက်သည့် ထောက်ခံစာများရရှိပါက အစီရင်ခံစာတွင် ပူးတွဲဖော်ပြရန်၊ ▪ Fig 7-1 တွင် Fire Hydrant and sprinkler system ပုံကို ရှင်းလင်းစွာ ကြည့်ရှုရှုရအောင် သင့်တော်သော စကေးဖြင့် ပြန်လည်ဖော်ပြရန်၊	❖ Fire Safety and Emergency Plan အား ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုအစီအစဉ်တွင် ပြောင်းလဲ ဖော်ပြထားပါသည်။ ❖ Appendix 21 တွင် ဖော်ပြထားပါသည်။ ❖ Construction Phase ပြီးဆုံးရှုလုပ်ငန်းဆောင်ရွက်မည့် Operation Phase တွင် သက်ဆိုင်ရာဦးစီးဌာနတွင် လျှောက်ထားဆောင်ရွက်သွားပါမည်။ ❖ Appendix 18, 19 နှင့် 20 တို့တွင် ဖော်ပြထားပါသည်။

စဉ်	စိစစ်တွေ့ရှိချက်	အကြံပြုချက်	ပြင်ဆင်ဆောင်ရွက်မှုများ
(ဆ)	▪ အခန်း (၈) တွင် Occupational Health and Safety Issues ကို ဖော်ပြထားသည်ကို တွေ့ရှိရပါသည်။ ▪ အခန်း (၉) တွင် Social Acceptability အား ဖော်ပြထားသည်ကို တွေ့ရှိရပါသည်။	▪ Occupational Health and Safety Plan အား ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှု အစီအစဉ်တွင် ပြောင်းလဲ ဖော်ပြရန်၊ ▪ အခန်း (၉) မှ Social Acceptability အား ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုအစီအစဉ်တွင် ထည့်သွင်းရမည့် Socio-economic Management Plan တွင် ထည့်သွင်းပေးပြီး လိုအပ်သည့် အချက်များ ထပ်မံဖြည့်သွင်းပေးရန်၊	Chapter-6 Environmental Management Plan တွင် ပြောင်းလွှဲဖော်ပြထားပါသည်။
(ဇ)	▪ Social Impact Assessment Report ၏ စာမျက်နှာ ၆၃ တွင် ဖြစ်ပေါ်နိုင်သော သက်ရောက်မှုများနှင့် အဆိုပါသက်ရောက်မှုများအတွက် ပြန်လည်ဆောင်ရွက်ပေးမည့် လုပ်ငန်းများကို CSR လုပ်ငန်းများအဖြစ် ဖော်ပြထားပါသည်။ ပြန်လည်ဆောင်ရွက်ပေးမည့် လုပ်ငန်းစဉ်များမှာ Environmental Management Plan များဖြစ်သည့်အတွက် ပြန်လည်ဆန်းစစ်ရန်လိုအပ်ပါသည်။ ▪ CSR Fund အား ကျန်းမာရေးဆေးခန်း၊ အမှိုက်စွန့်ပစ်ခြင်း၊ စာသင်ကျောင်း၊ ဘုန်းကြီး	▪ Socio-economic Management Plan နှင့် CSR Plan အား ပြန်လည်ခွဲခြားဖော်ပြရန်၊ ▪ CSR လုပ်ငန်းများအား ဆောင်ရွက်ရာတွင် ခန့်မှန်းကုန်ကျမည့်ကုန်ကျစရိတ်များကို ထည့်သွင်းဖော်ပြရန်၊ ▪ စီမံကိန်းမှ CSR အနေဖြင့် စွန့်ပစ်ပစ္စည်းများ စွန့်ပစ်သည့်စနစ်တွင် မည်သို့ကူညီဆောင်ရွက်မည်ကိုဖော်ပြရန်၊	❖ CSR Program အား 6.9 တွင် ဖော်ပြထားပါသည်။ ❖ CSR Program အား 6.9 တွင် ဖော်ပြထားပါသည်။ ❖ 6.9 တွင် ဖော်ပြထားပါသည်။

စဉ်	စိစစ်တွေ့ရှိချက်	အကြံပြုချက်	ပြင်ဆင်ဆောင်ရွက်မှုများ
	ကျောင်းများတည်ဆောင်ခြင်း၊ လမ်းများဖောက်ခြင်းတို့တွင် အသုံးပြုမည်ဖြစ်ပြီး ရာခိုင်နှုန်းများဖြင့် ဖော်ပြထားသည်ကို တွေ့ရှိရပါသည်။		
(ဈ)	▪ Health Impact Assessment တွင် HIA ဆောင်ရွက်ရခြင်း၏ ရည်ရွယ်ချက်၊ မူဆယ်မြို့နယ်အတွင်းရှိဆေးရုံ၊ ဆေးခန်း၊ ဆရာဝန်၊ သူနာပြု အရေအတွက်၊ ဖြစ်ပွားတတ်သောရောဂါများ၊ HIV/AIDS ဖြစ်ပွားမှုအခြေအနေ၊ မွေးဖွားနှုန်းနှင့် သေဆုံးနှုန်း၊ ရေရရှိမှု၊ အလုပ်အကိုင်ရရှိမှု၊ Methodology၊ စီမံကိန်းအဆင့်အလိုက် ဖြစ်ပေါ်နိုင်သည့်သက်ရောက်မှုများနှင့် လျော့ပါးစေရေးနည်းလမ်းများ၊ သက်ရောက်မှုပမာဏ၊ တာဝန်ယူဆောင်ရွက်မည့်အဖွဲ့တို့အား ဖော်ပြထားသည်ကို တွေ့ရှိရပါသည်။	ဖော်ပြထားသည့်အချက်အလက်များအတိုင်း တိကျစွာ လိုက်နာဆောင်ရွက်ရန်၊	လိုက်နာဆောင်ရွက်သွားပါမည်။
၈။	**အများပြည်သူနှင့် တိုင်ပင်ဆွေးနွေးခြင်းနှင့် သတင်းအချက်အလက်များ ထုတ်ဖော်တင်ပြခြင်း**		
	▪ အများပြည်သူနှင့် တိုင်ပင်ဆွေးနွေးခြင်းတွင် ပထမအကြိမ်ဆွေးနွေးခြင်းကို (၁၉-၉-၂၀၁၅)၊	▪ CSR Plan တွင် လမ်းဖောက်လုပ်မည့် အစီအစဉ်ပါရှိသည့်အတွက် နောက်တွင် လမ်း	❖ ထိုဆွေးနွေးပွဲတွင် ဦးမောင်စိန် (Director, New Starlight Construction Co., Ltd.) မှ

စဉ်	စိစစ်တွေ့ရှိချက်	အကြံပြုချက်	ပြင်ဆင်ဆောင်ရွက်မှုများ
	ဒုတိယအကြိမ်ဆွေးနွေးခြင်းကို (၂၂-၁၀-၂၀၁၅) တွင် ဖွေးဟုန်းရပ်ကွက်ဓမ္မာရုံတွင် ကျင်းပခဲ့ကြောင်း၊ တွေ့ဆုံပွဲဆောင်ရွက်ရခြင်းရည်ရွယ်ချက်၊ တက်ရောက်သူများစာရင်း၊ အစည်းအဝေးတွင် တင်ပြဆွေးနွေးချက်များ၊ စာဖြင့်အကြံပြုဆွေးနွေးချက်များအား ဖော်ပြထားပါသည်။ ▪ ပထမဆွေးနွေးပွဲမှ ဒေါ်နန်းရွှေဟန်၏လမ်းများဖောက်လုပ်ပါက ၎င်းပိုင်ခြံမှာ လမ်းပိတ်ဆို့သွားမည်ကိုစိုးရိမ်ကြောင်း၊ ခြံပိုင်ရှင်များအား အသိပေးရန် အကြံပြုကြောင်း ပြောကြားချက်တွင် စီမံကိန်းပိုင်ရှင်ဘက်မှ လမ်းများဖောက်လုပ်ရန်အစီအစဉ်မရှိသေးကြောင်းဖြေကြားထားပါသည်။ ▪ ဒုတိယအကြိမ်ဆွေးနွေးပွဲမှဦးသိန်းဇော် (မြန်မာ့အလင်းသတင်းထောက်) မှ စောင့်ကြည့်လေ့လာရေးအဖွဲ့နှင့်ပတ်သက်၍ ပြောကြားရာတွင် စီမံကိန်းပိုင်ရှင်ဘက်မှမြေယာလျော်ကြေးများအား ၂၀၁၂ ခုနှစ်တွင် စတင်	ဖောက်လုပ်ပါက ဒေါ်နန်းရွှေဟန်၏ အကြံပြုချက်အား မည်သို့ဆောင်ရွက်မည်ကို ဖော်ပြရန်၊ ▪ စီမံကိန်းပိုင်ရှင်မှ မြေပိုင်ဆိုင်မှုနှင့်ပတ်သက်၍ လိုအပ်သော အထောက်အထားများအား ပြည့်စုံစွာ ပူးတွဲဖော်ပြရန်၊ ▪ ရိုးရာဓလေ့အရကာလသားခေါင်းများ ထောက်ပံ့မှုအား မည်သို့ဆောင်ရွက်မည်၊ CSR Fund မှ သုံးစွဲမည်ဆိုပါက CSR Plan တွင် ထည့်သွင်းဖော်ပြရန်၊	လမ်းများ "ဖောက်လုပ်ရန်အစီအစဉ်မရှိသေးပါ" ဟုဖြေကြား ထားပြီး ယင်းကို SIA Report ၏ Appendix II တွင် ဖော်ပြထားပြီး IBIS Styles Hotel အတွက်လည်း လမ်းသစ်ဖောက်လုပ်ရန်မရှိပါ။ ❖ Appendix 5,6,7,8 တွင် ပူးတွဲဖော်ပြထားပါသည်။ ❖ ကာလသားခေါင်းများလာပြီး တောင်းဆိုညှိနှိုင်းသည့်အပေါ်မူတည်ပြီး ဆောင်ရွက်ပေးသွားပါမည်။

စဉ်	စီစစ်တွေ့ရှိချက်	အကြံပြုချက်	ပြင်ဆင်ဆောင်ရွက်မှုများ
	ပေးအပ်ပြီး ၂၀၁၆ အတွင်း အပြီးသတ်နိုင်ရန် ဆောင်ရွက်သွားမည်ဖြစ်ကြောင်း ဖြေကြားထားသည်အား တွေ့ရှိရပါသည်။ ▪ ရှမ်း/မြောက်လူငယ်ကွန်ရက်အဖွဲ့မှ ရိုးရာဓလေ့အရ ကာလသားခေါင်းများအား ရွာမှလစဉ်စပါးပေးရပြီးယခုလယ်မြေများမရှိတော့သဖြင့် ကုမ္ပဏီမှဖြေရှင်းပေးစေလိုကြောင်း ပြောကြားချက်အား အဆိုပါထောက်ပံ့မှုကို ဒေသဖွံ့ဖြိုးရေးအသုံးစရိတ်ထဲမှ ခွဲဝေသုံးစွဲပါက သင့်လျော်ကြောင်း ဆွေးနွေးထားသည်ကို တွေ့ရှိရပါသည်။		
၉။	**အထွေထွေ**		
(က)	စီမံကိန်းတွင် လုပ်သင့်သည်ဟူသော အသုံးအနှုန်းများနှင့် "your region", "your suppliers'" စသည့် အသုံးအနှုန်းများအား ပြင်ဆင်ဖော်ပြရန်၊		ပြန်လည်ပြင်ဆင်ဖြည့်စွက်ထားပါသည်။
(ခ)	အဆိုပြုစီမံကိန်း၏ အစီရင်ခံစာကို အများပြည်သူကြည့်ရှုရှုရအောင် website တွင် လွှင့်တင်ပေးရန်နှင့် အဆိုပါ website လိပ်စာကို ဖော်ပြပေးရန်။		www.newstarlight.com.mm တွင် အများပြည်သူကြည့်ရှုနိုင်အောင် လွှင့်တင်ပေးပါမည်။
(ဂ)	စီမံကိန်း၏ အစီရင်ခံစာတွင် လိုက်နာဆောင်ရွက်ရမည့် List of Commitment ကို ထည့်သွင်းဖော်ပြပေးရန်။		2.9 တွင် ဖော်ပြထားပါသည်။
(ဃ)	စီမံကိန်းမှ လက်ရှိဆောင်ရွက်နေသည့် လုပ်ငန်းအဆင့်အခြေအနေကို ဖော်ပြရန်။		3.4 တွင် ဖော်ပြထားပါသည်။

စဉ်	စိစစ်တွေ့ရှိချက်	အကြံပြုချက်	ပြင်ဆင်ဆောင်ရွက်မှုများ
(c)	စီမံကိန်းနှင့် ပတ်သက်၍ အကြံပြု၊ တိုင်ကြားလိုပါက ဆောင်ရွက်ပေးနိုင်သည့် Grievance Mechanism ထားရှိရန်။		6.9 တွင် ဖော်ပြထားပါသည်။
(စ)	ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်း လုပ်ထုံးလုပ်နည်း အပိုဒ် ၆၃ ပါ အချက်များအတိုင်း ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်း အစီရင်ခံစာအား ပြုစုတင်ပြရန်။		ပြန်လည်ပြင်ဆင်ဖြည့်စွက်ထားပါသည်။

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ACRONYMS

AMP	Air Measuring Point
BDD	Business Development Department
BSC	Business Support Center
CO	Carbon Monoxide
CO_2	Carbon Dioxide
ECC	Environmental Compliance Certificate
ECD	Environmental Conservation Department
EIA	Environmental Impact Assessment
EMP	Environmental Management Plan
EMoP	Environmental Monitoring Plan
EPA	Environmental Protection Agency
GAD	General Administration Department
GMES	Green Myanmar Environmental Services Company Limited
HIA	Health Impact Assessment
HVAC	Heating, Ventilation and Air Conditioning
MCBD	Muse Central Business District
MIC	Myanmar Investment Commission
MONREC	Ministry of Natural Resources and Environmental Conservation
NEQEGs	National Environmental Quality (Emission) Guidelines
NMP	Noise Level Measuring Point
NO_2	Nitrogen Dioxide
NSLC	New Starlight Construction Company Limited
PM	Particulate Matter
$PM_{2.5}$	Particulate Matter 2.5 Micrometer or Less in Diameter
PM_{10}	Particulate Matter 10 Micrometer or Less in Diameter
S & M	Sales & Marketing
SO_2	Sulfur Dioxide
TIM	Testing, Inspection and Maintenance

COMMITMENT LETTER

The project proponent, New Starlight Construction Company Limited refer to Environmental Impact Assessment (EIA) report for **IBIS Styles Hotel Project** has been prepared by Green Myanmar Environmental Services Company Limited.

According to the Article 35, EIA Procedure (2015), New Starlight Construction Company Limited endorse this IEE Report as follow;

a) The EIA is the accurate and complete.
b) The EIA has been prepared in strict compliance with applicable laws including EIA Procedure (2015), and
c) The Project will at all times comply fully with the commitments, mitigation measures, and plans in the EIA Report.

New Starlight Construction Company Limited commits to minimize the impact of its activities on the environment. Key points of its strategy to achieve this are:

1. Make compliance with environmental, legal and other requirements by minimum standard
2. Commit to improve the Environmental Management Plan in all direct and indirect activities.
3. Continue to save energy and resources by "Reduce, Reuse, and Recycle"
4. Commit to manage and prevent the generation of wastewater, air emission and solid waste material from out activities by setting objective and target for continual implementation and review
5. Proper storage and handling of fuel and systematic practice and plan for emergency cases
6. To reduce environment impact due to the hotel's operation and service for customer
7. To train all employees and concerned person for environmental care awareness, and responsible for doing compliance with all standards and procedures.

Hence, we will appropriately proceed and disseminate the policy to all employees and public.

Signature : .....

Name : .....

Designation : .....

Tin Ngwe
Deputy Managing Director
New Starlight Construction Co., Ltd.

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Tel: 02-2000247, 02-2000248
Email: cmoffice@newstarlight.com.mm, tinngwe@newstarlight.com.mm

Date: 10 . 12 . 2022

COMMITMENT AND ACKNOWLEDGEMENT

An Environmental Impact Assessment (EIA) which includes Environmental Management Plan is a procedure that identifies potential impacts of a proposed activity on the environment, recommends environmental mitigation and enhancement measures for the impacts, prepares and implements an environmental monitoring plan (EMoP) for the project.

This EIA report was prepared using information from the following sources: review of selected literature and reports, meetings with several interested parties and advisory group; personal visitation with several persons; the experience of the EIA team; and other information solicited from baseline data and stakeholders. Moreover, we strongly commit that this report was prepared in compliance with Myanmar Environmental Laws and Regulations.

The EIA team is grateful to the project proponent – **New Starlight Construction Company Limited** - for commissioning us to conduct this Environmental Impact Assessment Report in respect of the proposed project. We would like to further acknowledge with great appreciation all those neighbors who participated in the public consultation process for their cooperation throughout the exercise.

We further acknowledge the support, either direct or indirect, from the various parties who assisted the EIA team towards the successful completion of this report.

Signature : .....

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Designation : Managing Director

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Green Myanmar Environmental Services Co., Ltd. GMES

Date: 6/12/2022

အကျဉ်းချုပ်အစီရင်ခံစာ

New Starlight ဆောက်လုပ်ရေးကုမ္ပဏီလီမိတက်သည် **"IBIS Styles ဟိုတယ်"** စီမံကိန်းကို အကောင်အထည်ဖော်ဆောင်ရွက်ခဲ့ပါသည်။ ယင်းစီမံကိန်းအတွက် ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်း (EIA) လုပ်ငန်းများကို ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဦးစီးဌာန (ECD) သို့ အစီရင်ခံစာတင်ပြရန်အတွက် Green Myanmar Environmental Services Co., Ltd. မှ ဆောင်ရွက်ခဲ့ပါသည်။

စီမံကိန်းအဆိုပြုသူက IBIS Styles ဟိုတယ်စီမံကိန်းကို မြန်မာနိုင်ငံ၊ ရှမ်းပြည်မြောက်ပိုင်း၊ မူဆယ်မြို့တွင် တည်ဆောက်ပါမည်။ တည်ဆောက်မည့်လုပ်ငန်းသည် အဆင့်မြင့် ၉ ထပ် ဟိုတယ်ဖြစ်ပြီး၊ အခန်းပေါင်း ၂၅၂ ခန်း ပါဝင်ပါမည်။ ဝန်ဆောင်မှုလုပ်ငန်းများပေးနိုင်မည့် လူ ၁၈၀ ဆန့်ခန်းမ (နံနက်စာစားသောက်ခန်း)၊ အဖျော်ယမကာခန်း၊ အစည်းအဝေးနှင့်လုပ်ငန်းဆောင်တာများလုပ်ဆောင်နိုင်မည့်ခန်းမ၊ စီးပွားရေးစင်တာများနှင့် စီမံခန့်ခွဲရေး (ဧည့်ကြိုကောင်တာ)၊ ကိုယ်ကာယလေ့ကျင့်ရေးခန်းမများ အစရှိသည်တို့ပါဝင်ပါသည်။ စီမံကိန်းပုံစံကို သေချာစွာရေးဆွဲထားပြီး သက်ဆိုင်ရာအာဏာပိုင်အဖွဲ့များမှ ခွင့်ပြုချက်ရယူခဲ့ပြီးဖြစ်ပါသည်။ တာဝန်ယူဆောင်ရွက်မည့်အဖွဲ့သည် ပတ်ဝန်းကျင်ဥပဒေ၊ လုပ်ထုံးလုပ်နည်းများနှင့် ယခုစီမံကိန်းသည် ကိုက်ညီမှုရှိကြောင်းတင်ပြရန်လိုအပ်ပါသည်။ ယခုအစီရင်ခံစာတွင် စီမံကိန်းကြောင့် ပတ်ဝန်းကျင်အပေါ်သက်ရောက်မှုများကို အနှစ်ချုပ်အစီရင်ခံတင်ပြထားပါသည်။

ယခုအစီရင်ခံစာ၏ အပိုင်း (၁) တွင် ပတ်ဝန်းကျင်ထိခိုက်မှု ဆန်းစစ်ခြင်း၊ အပိုင်း(၂)တွင် လူမှုထိခိုက်မှုဆန်းစစ်ခြင်းနှင့် အပိုင်း(၃) တွင် ကျန်းမာရေးထိခိုက်မှုဆန်းစစ်ချက်များပါဝင်ပါသည်။ ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်းအစီရင်ခံစာတွင် အခန်း (၉) ခန်းပါဝင်ပါသည်။

ပတ်ဝန်းကျင်ဆန်းစစ်မှုအတွက် နယ်ပယ်အကျယ်အဝန်း

ယခုပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်းအစီရင်ခံစာတွင် လေ့လာရေးကာလအတွင်း သိသာထင်ရှားသော အောက်ပါဖော်ပြပါအချက်အလက်များနှင့် လေ့လာချက်များကို ထည့်သွင်းစဉ်းစားထားပါသည်။

(၁) စီမံကိန်းကြောင့် မြေပေါ်ရေအပေါ်သက်ရောက်မှုကို ဆန်းစစ်ခြင်း၊

(၂) စီမံကိန်းအတွင်း ဒေသအတွင်း၊ ပြည်နယ်အတွင်းနှင့် နိုင်ငံတော်အတွင်း ဖွံ့ဖြိုးတိုးတက်မှုအတွက် လူမှုဆောင်ရွက်ချက်များကို လေ့လာဆန်းစစ်ခြင်း၊

(က) စီးပွားရေးဖွံ့ဖြိုးတိုးတက်မှုများ၊

(ခ) အလုပ်အကိုင်ခန့်ထားမှု၊

(ဂ) အသက်မွေးဝမ်းကျောင်း၊

(ဃ) အခြေခံအဆောက်အအုံများနှင့် လူမှုဖူလုံရေးဆိုင်ရာ လိုအပ်ချက်များနှင့် တိုးတက်မှုများ၊

(၃) ပတ်ဝန်းကျင်သက်ရောက်မှုများကို လျော့ပါးသက်သာစေမည့် ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုနှင့် စောင့်ကြပ်ကြည့်ရှုရေးအစီအစဉ်ကို ရေးဆွဲအကောင်အထည်ဖော်ခြင်း

အဆိုပြုစီမံကိန်းတွင် အောက်ပါအချက်များ ပါဝင်ပါသည်။

စီမံကိန်း၏အဓိကအချက်များ

အကြောင်းအရာ	ဖော်ပြချက်/အရေအတွက်
စီမံကိန်းအမည်	IBIS Styles ဟိုတယ်
စီမံကိန်းအကောင်အထည်ဖော်မည့်သူ	New Starlight ဆောက်လုပ်ရေးကုမ္ပဏီလီမိတက်
စီမံကိန်းလိပ်စာ	ဦးပိုင်အမှတ် (၂) အေ, (၂) ဘီ, (၂) ဒီ, (၂) အက်ဖ်, အကွက်အမှတ် (၁၁၁)၊ တော်ရွက်ရပ်ကွက်၊ မူဆယ်စီးပွားရေးဇုန် (၂)၊ မူဆယ်မြို့၊ မူဆယ်ခရိုင်၊ ရှမ်းပြည် (မြောက်ပိုင်း)
ရုံးလိပ်စာ	အမှတ်၃၃/အေ၊ ၂၉လမ်းနှင့် ၇၃လမ်းထောင့်၊ စိတ္တရာမဟီရပ်ကွက်၊ ချမ်းအေးသာဇံမြို့နယ်၊ မန္တလေးမြို့၊ မန္တလေးတိုင်း။
ပထဝီဝင်အချက်အလက်များ	မြောက်လတ္တီတွဒ် : ၂၃ ဒီဂရီ ၅၉ မိနစ် ၄၄.၉၀ မိနစ် အရှေ့ လောင်ဂျီတွဒ် : ၉၇ ဒီဂရီ ၁၃ မိနစ် ၂၇.၅၈ မိနစ်
မြေအမျိုးအစား	ဖွံ့ဖြိုးမှုစီမံကိန်းမြေ
မြေဧရိယာ	၄.၇၄ ဧက (၂၀၆,၄၇၄.၄ စတုရန်းပေ)
အဆောက်အဦအမြင့်	၃၅.၃ မီတာ
မြေပိုင်ရှင်	New Starlight ဆောက်လုပ်ရေးကုမ္ပဏီလီမိတက်
အဆိုပြုရင်းနှီးမြှုပ်နှံမှုကာလ	နှစ် ၅၀
တည်ဆောက်ရေးကာလ	၁ နှစ်
ရင်းနှီးမြှုပ်နှံမှုအမျိုးအစား	၁၀၀% ပြည်တွင်းရင်းနှီးမြှုပ်နှံမှု
စုစုပေါင်းရင်းနှီးမြှုပ်နှံငွေ	အမေရိကန်ဒေါ်လာ ၃၀,၀၀၀,၀၀၀
လုပ်ငန်းအမျိုးအစား	ဟိုတယ်လုပ်ငန်း
ဆက်သွယ်ရမည့်ပုဂ္ဂိုလ် ရာထူး ဖုန်းနံပါတ် အီးမေးလ်	ဦးတင်ငွေ Deputy Managing Director (1) ၀၂- ၂၀၀၀၂၄၇, ၀၂- ၂၀၀၀၂၄၈ cmoffice@newstarlight.com.mm, tinngwe@newstarlight.com.mm
ထူထောင်သည့်နေ့	၇. ၁၀. ၂၀၁၀
ပတ်ဝန်းကျင်အနေအထား	အရှေ့ ကွန်ဗန်းရှင်းစင်တာ အနောက် ရုံးခန်း တောင် ရုံးခန်းနှင့် ဘဏ် မြောက် ရုံးခန်းနှင့် ဘဏ်
အနီးစပ်ဆုံးရေအရင်းအမြစ်	ရွှေလီမြစ် (၀.၅ ကီလိုမီတာ)

အကြောင်းအရာ	ဖော်ပြချက်/အရေအတွက်
ရေသုံးစွဲမှု အရင်းအမြစ် သိုလှောင်ကန်ပမာဏ ခန့်မှန်းသုံးစွဲမည့်ရေပမာဏ	 အချင်း ၄ လက်မ အဝိစိတွင်းရေ ၂ တွင်း ၂၀၈ ကုဗမီတာ တစ်နေ့လျှင် ၂၆,၀၀၀ ဂါလံ (လည်ပတ်ရေးကာလ)
လျှပ်စစ်မီးရယူသည့် နေရာ	တရုတ်နိုင်ငံဓာတ်အားလိုင်း
လျှပ်စစ်ခန့်ခွဲမှု	၅၀၀ kVA ထရန်စဖော်မာ ၂ လုံးမှ ၁လလျှင် ၈၆,၄၉၃ ယူနစ် ၅၀၀ kVA မီးစက် ၂ လုံးမှ ၁လလျှင် ၉၆၀ ယူနစ်
ဒီဇယ်သုံးစွဲမှု	၁၁,၈၈၀ ဂါလံ/ ၁ နှစ်
ဝန်ထမ်း	၁၀၆ ဦး (ပထမနှစ်)
လည်ပတ်ချိန်	အဆိုင်း - ၂ ဆိုင်း လုပ်ရက် - ၆ ရက် ပထမဆိုင်း - နံနက် ၇:၀၀နာရီ- ည ၇:၀၀ နာရီ ဒုတိယဆိုင်း- ည ၇:၀၀ နာရီ - နံနက် ၇:၀၀နာရီ (အလှည့်ကျ ၁ ပတ်လျှင် ၁ ရက် နားရပါမည်။)
၁ နှစ် လျှင် အလုပ်လုပ်ရက်ပေါင်း	၃၆၅ ရက် (လုပ်ချိန် ၂၄ နာရီ)

မူဝါဒ၊ ဥပဒေနှင့် အဖွဲ့အစည်းဆိုင်ရာမူဘောင်

မြန်မာနိုင်ငံတော်အစိုးရမှချမှတ်ထားသည့် ပတ်ဝန်းကျင်ထိန်းသိမ်းကာကွယ်ရေးဆိုင်ရာမူဝါဒများသည် စဉ်ဆက်မပြတ် ဖွံ့ဖြိုးတိုးတက်ရေးလုပ်ငန်းစဉ်များသို့ ဦးတည်ရည်ရွယ်ပုံဖော်ထားပါသည်။

အခန်း (၂) တွင်ဖော်ပြထားသည့် မူဝါဒနှင့်ဥပဒေများကို စီမံကိန်းအဆိုပြုသူသည် လိုက်နာဆောင်ရွက်ရပါမည်။

New Starlight ဆောက်လုပ်ရေးကုမ္ပဏီသည် အောက်ပါတို့ကို ဆောင်ရွက်ပေးရန် ကတိကဝတ်ပြုပါသည်-

- ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဥပဒေ (၂၀၁၂ ခုနှစ်) ၏ အပိုဒ်ခွဲ ၁၄ နှင့် ၁၅ အားလည်းကောင်း၊ မြန်မာဥပဒေ၊ နည်းဥပဒေနှင့် လုပ်ထုံးလုပ်နည်းများအားလည်းကောင်း၊ ၂၀၁၄ ခုနှစ် ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးနည်းဥပဒေအားလည်းကောင်း၊ ၂၀၁၅ ခုနှစ် ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်း လုပ်ထုံးလုပ်နည်းများနှင့် ကိုက်ညီမှုရှိခြင်း။
- ဥပဒေနှင့် အခြားလိုအပ်ချက်များသည် စီမံကိန်းလုပ်ထုံးလုပ်နည်းများ၊ ထိန်းသိမ်းဆောင်ရွက်မှုများနှင့် ပေါင်းစပ်ပါဝင်မှုရှိခြင်း။
- သက်ဆိုင်ရာပုဂ္ဂိုလ်များနှင့် ကန်ထရိုက်တာများအား ဥပဒေရေးရာနှင့်အခြားလိုအပ်ချက်များ တာဝန်ခံဆောင်ရွက်ရန်အတွက် ဆက်သွယ်ဆောင်ရွက်ပေးခြင်း။

- ❖ စီမံကိန်းတာဝန်ရှိပုဂ္ဂိုလ်များ၊ ကန်ထရိုက်တာများ၊ ကန်ထရိုက်တာခွဲများနှင့် အကြံပေးပုဂ္ဂိုလ်များသည် သက်ဆိုင်ရာဥပဒေရေးရာနှင့် အခြားဆက်စပ်စာရွက်စာတမ်းများကို စီမံကိန်းတာဝန်ခံရုံးတွင် ကြည့်ရှုနိုင်ခြင်း။
- ❖ စံချိန်စံညွှန်းများအတိုင်း ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုအစီအစဉ်အား တိကျစွာ အကောင်အထည်ဖော်ရန်။ ဌာနမှထုတ်ပြန်ထားသည့် ပတ်ဝန်းကျင်ဆိုင်ရာလိုက်နာဆောင်ရွက်ခြင်း အသိအမှတ်ပြုလက်မှတ်အား ထပ်တိုးလိုအပ်ချက်အဖြစ် လုပ်ဆောင်ခြင်း။

ပတ်ဝန်းကျင်အနီးဝန်းကျင်အခြေအနေအားဖော်ပြခြင်း

ပတ်ဝန်းကျင်၏အခြေခံအရည်အသွေးများကို တိုင်းတာခြင်း

Green Myanmar Environmental Services ကုမ္ပဏီလီမိတက်သည် ၂၂.၈.၂၀၂၀ မှ ၂၅. ၈. ၂၀၂၀ ရက်နေ့အထိ စီမံကိန်းအနီးပတ်ဝန်းကျင်ရှိ လေအရည်အသွေး၊ ဆူညံသံအနေအထား၊ ရေအရည်အသွေးနှင့် မြေဆီလွှာအရည်အသွေးတို့ကို ကွင်းဆင်းတိုင်းတာခဲ့ပါသည်။

လေထုအရည်အသွေး

စီမံကိန်းဧရိယာအနီးရှိနေရာ (၂) နေရာ တွင် ၂၀၂၀ ခုနှစ် ဩဂုတ်လတွင် လေထုအရည်အသွေးကို ၂၄ နာရီဆက်တိုက် ကွင်းဆင်းတိုင်းတာခဲ့ပါသည်။ တိုင်းတာခဲ့သည့်နေရာ (၂) နေရာကို ဇယား (၄.၂) တွင် ဖော်ပြထားပါသည်။ တိုင်းတာခဲ့သည့် နေရာ (၂) နေရာကို ဇယား (၄.၂) တွင်ဖော်ပြထားပါသည်။ တိုင်းတာရရှိသည့် အချက်အလက်များနှင့် စံသတ်မှတ်ထားသည့် အချက်အလက်များကို ဇယား (၄.၃) တွင် ဖော်ပြထားပါသည်။ တိုင်းတာရရှိသည့်အချက်များသည် အမျိုးသားအဆင့်ပတ်ဝန်းကျင်အရည်အသွေး (ထုတ်လွှတ်မှု) လမ်းညွှန်ချက်များအတွင်းတွင် ရှိနေကြောင်း တွေ့ရှိရပါသည်။

ဆူညံသံအနေအထား

လေထုအရည်အသွေးတိုင်းတာသည့်နေရာအနီးတွင် ဆူညံသံအနေအထားကို ၂၄ နာရီဆက်တိုက် တိုင်းတာခဲ့ပါသည်။ တိုင်းတာရရှိသည့်အချက်အလက်များအရ နေ့ပိုင်းနှင့်ညပိုင်းဆူညံသံအနေအထားမှာ လမ်းညွှန်ချက်များထက် အနည်းငယ်မြင့်နေသည်ကို တွေ့ရပါသည်။ လူနေဆိုင်ခန်းများတည်ဆောက်ရေးကာလအတွင်း ပေါ်ထွက်လာသည့်အသံများကြောင့် တိုင်းတာအမှတ် NMP – 1 နေရာတွင် သတ်မှတ်ချက်ထက် အနည်းငယ်မြင့်နေသည်ကို တွေ့ရသည်။ တိုင်းတာသည့်နေ့တွင် ညအချိန် မိုးသည်းထန်စွာရွာသဖြင့် ဆူညံသံအဆင့်မှာ သတ်မှတ်ချက်ထက် အနည်းငယ်မြင့်နေပါသည်။

ရေအရည်အသွေး

အဆိုပြုစီမံကိန်းနေရာအတွင်း မြေအောက်ရေ၊ မြေပေါ်ရေနှင့် စွန့်ပစ်ရေတို့၏အရည်အသွေးနှင့် ဖြစ်ပေါ်လာနိုင်သည့် ထိခိုက်မှုများအတွက်လည်း လေ့လာခဲ့ပါသည်။ ရေနမူနာများကိုကောက်ယူခဲ့ပြီး Green Myanmar Environmental Services ကုမ္ပဏီ၏ဓာတ်ခွဲခန်းနှင့် ပတ်ဝန်းကျင်ရေးရာဓာတ်ခွဲခန်းများတွင် စမ်း

သပ်ခဲ့ပါသည်။ စီမံကိန်းနေရာ (၄) နေရာမှ ရေနမူနာများကို ရယူစမ်းသပ်ခဲ့ပြီး ယင်းနေရာများကို ဇယား (၄.၇) တွင် ဖော်ပြထားပါသည်။

မြေအောက်ရေအရည်အသွေးရလဒ်များ (ဇယား ၄.၈) မှာ ကမ္ဘာ့ကျန်းမာရေးအဖွဲ့မှ သတ်မှတ်ထားသည့် သောက်သုံးရေစံချိန်စံညွှန်းများနှင့် ကိုက်ညီကြောင်း တွေ့ရပါသည်။

မြေပေါ်ရေအရည်အသွေးရလဒ်များ (ဇယား ၄.၉) အနက် စုစုပေါင်းအနည်ပါဝင်မှုရလဒ်မှာ သတ်မှတ်ချက်ထက်များနေပါသည်။ အဘယ်ကြောင့်ဆိုသော် မြစ်၏သဘာဝအခြေအနေကြောင့်ဖြစ်ပါသည်။ စီမံကိန်းမှ စွန့်ပစ်ရေကို ရွှေလီမြစ်ထဲသို့ တိုက်ရိုက်မစွန့်ပစ်ပါ။ အခြားရေအရည်အသွေးရလဒ်များမှာ သတ်မှတ်စံနှုန်းအတိုင်းရှိနေသည်ကို တွေ့ရပါသည်။

စွန့်ပစ်ရေအရည်အသွေးရလဒ် (ဇယား ၄.၁၀) အရ အားလုံးမှာ သတ်မှတ်နှုန်းထားအတွင်း ရှိနေသည်ကို တွေ့ရပါသည်။

မြေဆီလွှာအရည်အသွေး

မြေဆီလွှာအရည်အသွေးကိုသိရှိရန်အတွက် ဟိုတယ်အနီးရှိ မြေဆီလွှာနမူနာများကို ရယူခဲ့ပြီး GMES ဓာတ်ခွဲခန်းတွင် စမ်းသပ်ခဲ့ပါသည်။ ရလဒ်များကိုအခြေခံ၍ အနာဂတ်တွင် တိုင်းတာရရှိမည့်ရလဒ်များနှင့် နှိုင်းယှဉ်သွားပါမည်။ နှိုင်းယှဉ်ချက်ရလဒ်များမှ ကောင်းကျိုး၊ ဆိုးကျိုးများကို တွေ့ရပါမည်။

ထိခိုက်မှုဆန်းစစ်ခြင်းနှင့် လျော့နည်းသက်သာစေမည့်နည်းလမ်းများ

အောက်ဖော်ပြပါဇယားတွင် ထိခိုက်မှုနှင့် ကုစားရမည့်နည်းလမ်းများကို ဖော်ပြထားပါသည်။ အသေးစိတ်ဆန်းစစ်ချက်နှင့် ကုစားရမည့်နည်းလမ်းများကို အခန်း (၅) တွင် ဖော်ပြထားပါသည်။

ဇယား (၁) တည်ဆောက်ရေးကာလ ထိခိုက်မှုနှင့် ကုစားရမည့် နည်းလမ်းများအကျဉ်းချုပ်

ပတ်ဝန်းကျင်အပေါ်ထိခိုက်မှု	ကုစားရမည့် နည်းလမ်းများ
လေအရည်အသွေး	✓ ဖုန်မှုန့်များဖြစ်ပေါ်နိုင်သည့်နေရာများတွင် ရေဖြန်းခြင်းကို ထိရောက်စွာ ဆောင်ရွက်ပေးရန် ✓ လုပ်ငန်းခွင်အတွင်းမှ အမှုန်အမွှားများအား ဖုံးအုပ်ထားရန် ✓ မော်တော်ယာဉ်များ လုပ်ငန်းခွင်မှမထွက်ခွာမီ ဘီးများအား ဆေးကြောသန့်စင်သည့်စနစ်တစ်ခု တပ်ဆင်ထားရန် ✓ မြေပုံများအား မြေအနိမ့်တွင်ထားခြင်းနှင့် အိတ်များဖြင့် စနစ်တကျ ထည့်သိုထားရန် ✓ ဆောက်လုပ်ရေးလမ်းများတစ်လျှောက် မော်တော်ယာဉ်သွားနှုန်းကို ကန့်သတ်ရန် (ဥပမာ- ၃၀ကီလိုမီတာ/နာရီ) ✓ မော်တော်ယာဉ်များအား သင့်တော်စွာ ပြုပြင်ထိန်းသိမ်းရန် ✓ စိမ်းလန်းသစ်ပင်များ ပေါများစွာ စိုက်ရန်

ပတ်ဝန်းကျင်အပေါ်ထိခိုက်မှု	ကုစားရမည့် နည်းလမ်းများ
	✓ ကန့်ပါဝင်မှုနည်း (ဆာလဖာ< 50 ppm) သည့် ဆီများဖြင့် မော်တော်ယာဉ်များ မောင်းနှင်ရန်၊ ဒီဇယ်အင်ဂျင်သိုလှောင်ရန်
	✓ ဒီဇယ်အစားဖြစ်နိုင်ပါက လျှပ်စစ် (သို့မဟုတ်) အစားထိုးလောင်စာများဖြင့် လုပ်ငန်းခွင်သုံးပစ္စည်းများတွင် အသုံးပြုရန်
	✓ သန့်ရှင်းရေးစနစ်အတွက် လုံလောက်သော ရေသုံးစွဲရန်နှင့် အနှံ့အသက်မထွက်အောင်ရေဖြန်းစနစ်သုံးစွဲရန်
	✓ မီးပျက်သည့် အချိန်အတွင်း ဒီဇယ်ဂျန်နရေတာ သုံးရန်
	✓ သုံးစွဲမည့် ဒီဇယ်ဂျန်နရေတာ စက်သည် သတ်မှတ်ထားသည့် လေထုထုတ်လွှတ်မှုအဆင့်နှင့် ကိုက်ညီမှုရရှိရန်
	✓ ဒီဇယ်ဂျန်နရေတာ set ကို လုံလောက်သည့် အမြင့်တွင်ထားရှိရန်
	✓ မြေကြီးပုံခြင်းကို တတ်နိုင်သမျှ နိမ့်စေခြင်းဖြင့် လေတိုက်ခြင်းဖြင့် ဖုန်ထခြင်းကို ကာကွယ်ရန်
မြေပေါ်ရေ	✓ သင့်တော်သည့် ရေမြောင်းစနစ် စီစဉ်ထားရန်
	✓ ရေသန့်စင်စနစ်ထားရှိရန်
	✓ ပုံမှန်သန့်ရှင်းရေးနှင့် ပြုပြင်ရေးလုပ်ငန်း၊ လုပ်ငန်းမှ ထွက်ရှိသည့် အနည်များအား စနစ်တကျဖယ်ရှားသည့် စနစ်အသုံးပြုရန်
	✓ အိမ်သာသုံးပစ္စည်းများအတွက် ဓာတုစွန့်ပစ်ခံအမှိုက်ကို အသုံးပြုရန်
	✓ အိမ်သာသုံးပစ္စည်းများကို ပုံမှန် ရှင်းလင်းဆောင်ရွက်ရန်
ဆူညံသံ	✓ ဆူညံသံထွက်စေမည့် ဆောက်လုပ်ရေးလုပ်ငန်းများကို နေ့ဘက်တွင်သာ လုပ်ဆောင်ရန်
	✓ အသံထိန်းများတပ်ဆင်ရန်
	✓ ပစ္စည်းကိရိယာများအား ပုံမှန်စစ်ဆေးပြုပြင်ရန်
	✓ သေချာစွာ ထိန်းသိမ်းထားရမည့် ကိရိယာများတွင် အသံထိန်း တပ်ဆင်ထားရန်
	✓ သင့်တော်သည့် တစ်ကိုယ်ရည်ကာကွယ်ရေးပစ္စည်းများသုံးရန်
အန္တရာယ်မရှိသော စွန့်ပစ်ပစ္စည်း	✓ အမှိုက်များကို အမျိုးအစားအလိုက် ခွဲခြား၍ စုဆောင်းသိမ်းဆည်းခြင်း
	✓ အမှိုက်များကိုပြန်လည်သန့်စင်အသုံးပြုခြင်း
	✓ အစားအသောက်အကြွင်းအကျန်များနှင့် ဥယျာဉ်မှထွက်ရှိသော အမှိုက်များကို အနီးအနားရွာရှိ တိရစ္ဆာန်မွေးမြူရေးသမားများထံသို့ ထောက်ပံ့ပေးခြင်း
	✓ အမှိုက်များကို မူဆယ်မြို့နယ်မြူနီစပါယ်သို့ ချိတ်ဆက်စွန့်ပစ်ခြင်း
	✓ လိုအပ်ပါက အနီးတစ်ဝိုက်ကို သန့်ရှင်းရေးလုပ်၍ ပိုးသတ်ဆေးဖျန်းခြင်း
	✓ ဝန်ထမ်းများအားလုံးအတွက် စွန့်ပစ်ပစ္စည်းများကို ကိုင်တွယ်ဖြေရှင်းနည်းနှင့် ပတ်သက်သည့် အသိပညာပေးသင်တန်းအစီအစဉ်များ စီစဉ်များပေးခြင်း

ပတ်ဝန်းကျင်အပေါ်ထိခိုက်မှု	ကုစားရမည့် နည်းလမ်းများ
စွန့်ပစ်ရေနှင့် ရေဆိုး စွန့်ထုတ်ခြင်း	✓ စွန့်ပစ်ရေမြောင်းစနစ်တကျ တည်ဆောက်ထားရန် ✓ မြောင်းများအတွင်း ရေများသွယ်တန်းသွားစေရန်၊ စနစ်တစ်ခု ဆောင်ရွက်ခြင်းဖြင့် ရေစီးပြင်းအားကို လျော့ကျအောင်ပြုလုပ်ရန် ✓ ရေမြောင်း၏စွမ်းရည်ကောင်းမွန်အောင် သင့်တော်သည့် ဒီဇိုင်းဖြင့် ဆောင်ရွက်ရန် ✓ မြောင်းဖုံးသံဇကာများတပ်ဆင်ရန်
လုပ်ငန်းခွင် ကျန်းမာရေးနှင့် ဘေးကင်းရေး	✓ ကန်ထရိုက်တာသည် လုံခြုံရေးအကာအကွယ်ပစ္စည်းများ (မီးသတ်ကိရိယာများ အပါအဝင်)၊ ငြမ်းများ၊ အကာအရံများ၊ ပလပ်ဖောင်းများ၊ မီးသတ်ပိုက်များ၊ လှေခါးများ၊ ဖြတ်သန်းသွားလာမည့်လမ်းများ၊ ဓာတ်လှေခါး၊ လျှပ်စစ်မီး၊ အချက်ပြဆိုင်းဘုတ်နှင့် လုံခြုံရေးပစ္စည်းများအား ပုံမှန်စစ်ဆေး စမ်းသပ်ပြုပြင်ရန် ✓ အထွေထွေသန့်ရှင်းရေး၊ အမှိုက်များအား ချက်ချင်းရှင်းရန်၊ ဖုန်များအား ပုံမှန် သန့်ရှင်းရေးလုပ်ရှင်းလင်းရန် ✓ ကောင်းမွန်စွာ စီးနှောင်ထားသည့် လုံခြုံရေးဖိနပ်များ သုံးစွဲရန် ✓ နေရာတိုင်း၌ လျှပ်စစ်မီးများတပ်ဆင်ရန် ✓ စက်သုံးဆီ၊ စက်ပစ္စည်းသုတ်ဆေးများ ဖိတ်စင်သွားပါက ချက်ချင်း ရှင်းလင်းသန့်စင်ရန် ✓ အင်္ဂါစာချုပ်သက်တမ်းအတိုင်း ဝန်ချီစက်များကို ထိန်းသိမ်းစစ်ဆေးရန် ✓ လေ့ကျင့်သင်ကြားထားသည့် ဝန်ထမ်းများသာ မော်တော်ယာဉ်ကြီးများကို မောင်းနှင်စေရန် ✓ လူသွားလမ်းများအား အမှတ်အသားပြုလုပ်ပေးရန် ✓ တာဝန်ရှိသူများသာ ပစ္စည်းတင်၊ ပစ္စည်းချနေရာများသို့ သွားခွင့်ပြုရန် ✓ ယာဉ်မောင်းများအား ပစ္စည်းအတင်/အချပြုလုပ်ချိန်တွင် လုံခြုံသည့်နေရာ၌ နေစေရန် **လေထုညစ်ညမ်းမှု** ✓ PPE ဝတ်စုံများပေးထားရန် ✓ အမှုန်အမွှားများနည်းပါးစေရန်အတွက် ရေဖျန်းပေးရန် ✓ လေအရည်အသွေးတိုင်းတာရန် ✓ ယာဉ်နှင့်စက်များကို ပုံမှန်စစ်ဆေးပြုပြင်ရန် **အသံနှင့်တုန်ခါမှု** ✓ PPE များပေးထားရန် ✓ ဆူညံသည့်နေရာတွင် တာဝန်ထမ်းဆောင်မည့်ဝန်ထမ်းများအတွက် အလှည့်ကျအဆိုင်းစနစ်ဖြင့် စီစဉ်ပေးရန် ✓ ဆူညံသံနှင့်တုန်ခါမှုတိုင်းတာရန် ✓ ယာဉ်နှင့်စက်များကို ပုံမှန်စစ်ဆေးပြုပြင်ရန်

ပတ်ဝန်းကျင်အပေါ်ထိခိုက်မှု	ကုစားရမည့် နည်းလမ်းများ
	✓ အသံလုံနံရံရှိသည့် အခန်းတွင် DG set ထားရန် ✓ ကွန်ကရစ်အုပ်မြစ်ဖြင့် တည်ဆောက်ထားသည့် အပေါ်တွင်သာ တုန်ခါနိုင်သည့် စက်များထားရန် **အလုပ်ခွင်အတွင်း မတော်တဆထိခိုက်မှုကာကွယ်ခြင်း** ✓ ရှေးဦးသူနာပြုသင်တန်းပေးရန်နှင့် အထောက်အကူပြုပစ္စည်းများပေးရန် ✓ PPE ဝတ်စုံများပေးရန်နှင့် သင်တန်းပေးရန် ✓ အလုပ်သမားများအား လုပ်ငန်းခွင်ကျန်းမာရေးနှင့် ဘေးအန္တရာယ်ကင်းရှင်းရေး အတွက် အရာရှိတစ်ဦး တာဝန်ပေးပြီး စနစ်တကျ ကာကွယ်ရန် ✓ အရေးပေါ်ဖုန်းနံပါတ်များပေးထားရန် ✓ ယာဉ်နှင့်စက်များ၏အမြန်နှုန်းကို သတ်မှတ်ရန် ✓ အန္တရာယ်ရှိပစ္စည်းများထိမိပါက ဆေးကြောရန်အတွက် မျက်စိဆေးကြောသန့်စင်စနစ် တပ်ဆင်ထားရန် ✓ ဘေးအန္တရာယ်လုံခြုံရေးဆိုင်းဘုတ်များထားရှိပြီး လုပ်သားများအား ဆိုင်းဘုတ်၏ရည်ရွယ်ချက်ကို နားလည်အောင် ရှင်းပြသင်တန်းပေးရန် **ကူးစက်ရောဂါမှ ကာကွယ်ခြင်း** ✓ အိမ်သာနှင့်အညစ်အကြေးကန်များကို နည်းစနစ်တကျ သန့်ရှင်းခြင်း၊ မြို့နယ်စည်ပင်သို့ အကြောင်းကြား၍ ပုံမှန်စွန့်ပစ်ရန် ✓ အနီးဝန်းကျင်ရွာများတွင်ရှိသည့် စွန့်ပစ်နေရာများသို့ သွားရောက်စွန့်ပစ်ခြင်းမပြုဘဲ မြို့နယ်စည်ပင်အဖွဲ့သို့ အကြောင်းကြားစွန့်ပစ်ရန် ✓ အစားအသောက်သုံးဆောင်ရန် နေရာသတ်မှတ်ပြီး ယင်းနေရာတွင်သာ စားသုံးရန်အတွက် ညွှန်ကြားရန် ✓ ဝန်ထမ်းများကို ဆေးစစ်ပေးခြင်းနှင့် ကူးစက်ရောဂါများမဖြစ်ရန် သင့်တော်သော ဆေးများပေးရန်။

ဇယား (၂) တည်ဆောက်ရေးကာလ ထိခိုက်မှုနှင့် ကုစားရမည့် နည်းလမ်းများအနှစ်ချုပ်

ပတ်ဝန်းကျင်အပေါ်ထိခိုက်မှု	ကုစားရမည့်နည်းလမ်းများ
လေအရည်အသွေး	✓ လုပ်ငန်းခွင်ဧရိယာအတွင်း ဖုန်ထခြင်းလျော့နည်းစေရန်အတွက် ရေဖျန်းပေးရန် ✓ ဖုန်ထခြင်းကိုလျော့နည်းစေရန် သင့်တော်သည့်သန့်ရှင်းရေးလုပ်ငန်းများ လုပ်ဆောင်ရန် ✓ အပူနှင့်မလိုလားအပ်သော အင့်ဇ်အသက်များမဖြစ်ပေါ်စေရန်အတွက် လေဝင်လေထွက် စနစ်ပြုလုပ်ပေးရန် ✓ လေဝင်လေထွက်ကောင်းသည့်နေရာတွင်သာ အန္တရာယ်ရှိဓာတုပစ္စည်းနှင့် စက်သုံးဆီများ သိုလှောင်ရန် ✓ အသုံးမပြုသည့်အချိန်တွင် စက်များ၊ အင်ဂျင်များကို ပိတ်ရန်

ပတ်ဝန်းကျင်အပေါ်ထိခိုက်မှု	ကုစားရမည့်နည်းလမ်းများ
	✓ ရေဆိုးစွန့်စနစ်တွင် ယိုစိမ့်ခြင်း မဖြစ်ရန်နှင့် အချိန်မီစွန့်ပစ်ရန် ✓ မီးစက်များကို ပုံမှန်ပြုပြင်ထိန်းသိမ်းရန် ✓ မီးစက်မှ ထုတ်လွှတ်ခေါင်းတိုင်ကို သေချာစွာ တပ်ဆင်ထုတ်လွှတ်ရန် ✓ လိုအပ်ပါက ဝန်ထမ်းများအား နှာခေါင်းစည်းများပေးရန်
မြေပေါ်ရေ	✓ လုံလောက်သော ရေမြောင်းများထားရန် ✓ ရေမြောင်းမှ အနည်အနှစ်များကို ပုံမှန်ဖယ်ရှားသန့်ရှင်းရန်နှင့် အချိန်မှန် လုပ်ဆောင်ရန် ✓ အိမ်သာသုံးပစ္စည်းများအတွက် ဓာတုပစ္စည်းစွန့်ပစ်စနစ်သုံးရန် ✓ အိမ်သာမှ စွန့်ပစ်ပစ္စည်းများအတွက် ပုံမှန်သန့်ရှင်းရေးလုပ်ရန် ✓ ရေမြောင်းများတွင် ဆီစစ်ပစ္စည်းတပ်ဆင်ပေးရန် ✓ စက်သုံးဆီယိုစိမ့်ပါက စုယူရန် ဗန်းများထားရှိသုံးစွဲရန်
စွမ်းအင်သုံးစွဲမှု	✓ လျှပ်စစ်သုံးစွဲမှုကို ဖြစ်နိုင်ပါက ပြန်လည်အသုံးပြုနိုင်သော စွမ်းအင်အရင်းအမြစ်များမှ ရယူသုံးစွဲရန် ✓ ဝန်အားသုံးစွဲမှုနဲ့သောနေရာများတွင် နေစွမ်းအင်အရင်းအမြစ်မှရသည့် လျှပ်စစ်ကို သုံးစွဲရန်အတွက် ထည့်သွင်းစဉ်းစားရန် ✓ စွမ်းအင်လိုအပ်ချက်လျော့နည်းစေမည့် နေ့ဘက်အလင်းရောင်သုံးစွဲမှု၊ သဘာဝလေသုံးစွဲမှုများပါဝင်သည့် အဆောက်အဦကို ဒီဇိုင်းဆွဲတည်ဆောက်ရန် ✓ စွမ်းအင်သုံးစွဲမှုနည်းသည့် လျှပ်စစ်မီးစနစ် သုံးစွဲရန် ✓ ကိုယ်တိုင်ပိတ်ရသည့် ရေဗားများတပ်ဆင်ရန် ✓ အချို့ရေသုံးစွဲရမည့်နေရာများတွင် မိုးရေကို စုဆောင်းသုံးရန် ✓ လျှပ်စစ်နှင့်ရေသုံးစွဲမှုမပြုန်းတီးရန် ဝန်ထမ်းများအား ပညာပေးဆွေးနွေးရန် ✓ ယာဉ်သုံးဆီလျော့ကျရန်အတွက် မော်တော်ယာဉ်ခရီးစဉ်များကို တိုက်စွာ သွားလာသုံးစွဲရန် (ဥပမာ - သွားမည့် ခရီးစဉ်တူပါက ပူးတွဲသုံးစွဲရန်)
စွန့်ပစ်ရေနှင့် ရေဆိုး စွန့်ထုတ်ခြင်း	✓ စွန့်ပစ်ရေများကို သင့်တော်အောင်ပေါင်းစပ်စုဆောင်းရန် ✓ စွန့်ပစ်ပစ္စည်းများ ပြန်လည်အသုံးပြုသည့် အလေ့အကျင့် ပြုလုပ်ရန် ✓ အထူးသဖြင့် ဥယျာဉ်များမှ စွန့်ပစ်ပစ္စည်းများကို သဘာဝမြေဩဇာ ပြုလုပ်ရန် စားသောက်ပြီးစွန့်ပစ်ပစ္စည်းများကို အနီးဝန်းကျင်ရွာများမှ တိရိစ္ဆာန်အစာအဖြစ် အသုံးပြုရန် ✓ မူဆယ်မြို့နယ်စည်ပင်သာယာရေးအဖွဲ့နှင့် ဆက်သွယ်၍ စနစ်တကျ စွန့်ပစ်ရန် ✓ လိုအပ်ပါက လုပ်ငန်းခွင်နေရာတွင် သန့်ရှင်းရေးပိုးသတ်ဆေးများဖျန်းရန် ✓ စွန့်ပစ်ပစ္စည်းများကို စနစ်တကျ ကိုင်တွယ်စွန့်ပစ်ရန်အတွက် ဝန်ထမ်းများအား ဂရုပြုဆောင်ရွက်ရမည့် သင်တန်းများပေးရန်

ပတ်ဝန်းကျင်အပေါ်ထိခိုက်မှု	ကုစားရမည့်နည်းလမ်းများ
မီးဘေးအန္တရာယ်	✓ အရေးပေါ်မီးဘေးကာကွယ်ရေးပစ္စည်း (မီးသတ်ဥဩ၊ မီးသတ်ဗူး၊ မီးသတ်ပိုက်၊ ရေလှောင်ကန်၊ ရေစုပ်စက်နှင့် ကြက်ခြေနီဆေးဗူး) များအား လုံလောက်စွာ တပ်ဆင်ထားရန်နှင့် မြင်သာသည့်နေရာတွင် ထားရန် ✓ ပုံမှန်စစ်ဆေးထိန်းသိမ်းရန် ✓ အရေးပေါ်မီးဘေးကာကွယ်ရေးပစ္စည်းများကို ပုံသေတပ်ဆင်ထားခြင်းအပြင် ရွှေ့ပြောင်းရသည့် မီးဘေးကာကွယ်ရေးပစ္စည်းများကိုလည်း ထားရှိရန် ✓ မီးဘေးလုံခြုံကာကွယ်ရေးမူဝါဒကိုရေးဆွဲပြီး အကောင်အထည်ဖော် ဆောင်ရွက်ရန် ✓ လုံလောက်သောအကျယ်အဝန်းရှိသည့် လမ်းလျှောက်နေရာ၊ ပြေးလမ်း၊ အရေးပေါ်ထွက်ပေါက်၊ စုဝေးရန်နေရာများကို ပုံမှန်စစ်ဆေးထိန်းသိမ်းရန် ✓ စက်များ၊ ဝါယာကြိုးများနှင့် လျှပ်စစ်ပစ္စည်းများကို ပုံမှန်ထိန်းသိမ်းပြုပြင်ရန်

ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှု အစီအစဉ်

New Starlight ဆောက်လုပ်ရေးကုမ္ပဏီသည် ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုအစီအစဉ်တွင် ဖော်ပြထားသည့် ပတ်ဝန်းကျင်နှင့်လူမှုရေးထိခိုက်မှုများကိုကုစားရမည့်နည်းများအတိုင်း လက်တွေ့ကျစွာဖြင့် အကောင်အထည်ဖော်ဆောင်ရွက်ရပါမည်။ ထို့ကြောင့် ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုအစီအစဉ်တွင်ပါဝင်သည့် အောက်ပါအချက်များကို အကောင်အထည်ဖော် ဆောင်ရွက်ပါမည်။

တည်ဆောက်ရေးကာလအတွက်

၁။ လေညစ်ညမ်းမှုနှင့်အမှုန်အမွှားများအတွက် စီမံခန့်ခွဲမှုအစီအစဉ်

၂။ စွန့်ပစ်ရေနှင့်ရေမြောင်းများအတွက် စီမံခန့်ခွဲမှုအစီအစဉ်

၃။ ဆူညံသံအတွက် စီမံခန့်ခွဲမှုအစီအစဉ်

၄။ စွန့်ပစ်ပစ္စည်းအတွက် စီမံခန့်ခွဲမှုအစီအစဉ်

၅။ လုပ်ငန်းခွင်ကျန်းမာရေးနှင့် လုံခြုံရေးအတွက် စီမံခန့်ခွဲမှုအစီအစဉ်

၆။ လူထုအဖွဲ့အစည်းကျန်းမာရေးနှင့် လုံခြုံရေးအတွက် စီမံခန့်ခွဲမှုအစီအစဉ်

စီမံကိန်းလည်ပတ်ရေးကာလအတွက်

၁။ လေညစ်ညမ်းမှုနှင့်အမှုန်အမွှားများအတွက် စီမံခန့်ခွဲမှုအစီအစဉ်

၂။ စွန့်ပစ်ရေနှင့်ရေမြောင်းများအတွက် စီမံခန့်ခွဲမှုအစီအစဉ်

၃။ စွန့်ပစ်ပစ္စည်းအတွက် စီမံခန့်ခွဲမှုအစီအစဉ်

၄။ စွမ်းအင်နှင့်စွမ်းအင်အရင်းအမြစ်စီမံခန့်ခွဲမှုအစီအစဉ်

၅။ အရေးပေါ်တုန့်ပြန်မှုနှင့် သဘာဝဘေးအန္တရာယ်ရှိစီမံခန့်ခွဲမှုအစီအစဉ်

အထက်ဖော်ပြပါအချက်များ၏အသေးစိတ်ကို အခန်း (၆) တွင် တင်ပြထားပါသည်။

ပတ်ဝန်းကျင်စောင့်ကြပ်ကြည့်ရှုရေးအစီအစဉ်

ပတ်ဝန်းကျင်စောင့်ကြပ်ကြည့်ရှုရေးအစီအစဉ်သည် လုပ်ငန်းအများစု၏အခြေခံကျသည့်လိုအပ်ချက်ဖြစ်ပါသည်။ ယင်းသည် အဆိုပြုစီမံကိန်း၏ ပတ်ဝန်းကျင်လုံခြုံမှုနှင့်ထိန်းသိမ်းမှုအတွက် ဆောင်ရွက်ချက်များကို တိုင်းတာသတ်မှတ်နိုင်ပါသည်။

ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်းလုပ်ထုံးလုပ်နည်းအခန်း ၁၀၈ အရ စီမံကိန်းအကောင်အထည်ဖော်မည့်သူသည် ပတ်ဝန်းကျင်စောင့်ကြည့်ရေးအစီအစဉ်တင်ပြချက်ကို ဝန်ကြီးဌာနသို့ ၆ လ ၁ ကြိမ် ပုံမှန်တင်ပြရပါမည်။

ဇယား (၃) လည်ပတ်ရေးကာလအတွက်ပတ်ဝန်းကျင်စောင့်ကြပ်ကြည့်ရှုရေးအစီအစဉ်အသေးစိတ်ဖော်ပြချက်

ပတ်ဝန်းကျင်ဆိုင်ရာပြဿနာများ	ပါရာမီတာများ	စောင့်ကြည့်ရေး အကြိမ်အရေအတွက်	တာဝန်ယူရမည့်အဖွဲ့	တည်နေရာ	ခန့်မှန်းကုန်ကျစရိတ်
လေအရည်အသွေး	ပတ်ဝန်းကျင်လေအရည်အသွေး (NO_2, SO_2, PM_{10}, $PM_{2.5}$ နှင့် O_3 တို့ပါဝင်ရမည်)	၁ နှစ်လျှင် ၂ ကြိမ်	ပတ်ဝန်းကျင်စောင့်ကြည့်ရေးအဖွဲ့	ဟိုတယ်ဝန်းအတွင်းနှင့် အခြေခံအချက်အလက် ကောက်ယူသည့် နေရာ	၅,၄၀၀,၀၀၀
	အခန်းတွင်းလေအရည်အသွေး (PM_{10}, $PM_{2.5}$ နှင့် VOC)	၁ နှစ်လျှင် ၂ ကြိမ်	ပတ်ဝန်းကျင်စောင့်ကြည့်ရေးအဖွဲ့	လုပ်ငန်းခွင်အတွင်း	၁,၁၂၀,၀၀၀
	မီးစက်မှ ထုတ်လွှတ်ဓာတ်ငွေ့ (CO_2, O_2, CO_2, SO_2, ΔT နှင့် PI)	၁ နှစ်လျှင် ၂ ကြိမ်	ပတ်ဝန်းကျင်စောင့်ကြည့်ရေးအဖွဲ့	မီးစက်ခန်း	၄၀၀,၀၀၀
ဆူညံသံ	နေ့အချိန်နှင့် ညအချိန် ပတ်ဝန်းကျင်မှအသံ	၁ နှစ်လျှင် ၂ ကြိမ်	ပတ်ဝန်းကျင်စောင့်ကြည့်ရေးအဖွဲ့	ဟိုတယ်ဝန်းအတွင်းနှင့် အခြေခံအချက်အလက် ကောက်ယူသည့် နေရာ	၉၀၀,၀၀
	အခန်းတွင်းဆူညံသံ (ဒက်စီဘယ်)	၁ နှစ်လျှင် ၂ ကြိမ်	ပတ်ဝန်းကျင်စောင့်ကြည့်ရေးအဖွဲ့	လုပ်ငန်းခွင်အတွင်း	၁,၁၂၀,၀၀၀

ပတ်ဝန်းကျင်ဆိုင်ရာပြဿနာများ	ပါရာမီတာများ	စောင့်ကြည့်ရေး အကြိမ်အရေအတွက်	တာဝန်ယူရမည့်အဖွဲ့	တည်နေရာ	ခန့်မှန်းကုန်ကျစရိတ်
ရေအရည်အသွေး	မြေအောက်ရေအရည်အသွေး (ကော့ပါး, ဆိုင်ယာနိုက်, မဂ္ဂနီးစ်, pH, ဆာလဖိတ်, $CaCO_3$ ဖြင့်ဖော်ပြသည့် စုစုပေါင်းအယ်ကာလီမာတ်, စုစုပေါင်းအနည်အနှစ်ပါဝင်မှု, $CaCO_3$ ဖြင့်ဖော်ပြသည့် ရေစေး, စုစုပေါင်း သံဓာတ်, နောက်ကျိမှု)	၁ နှစ်လျှင် ၂ ကြိမ်	ပတ်ဝန်းကျင်စောင့်ကြည့်ရေးအဖွဲ့	အဝိစိရေ	၃၀၀,၀၀၀
	မြေပြင်ရေအရည်အသွေး (BODs, COD, နိုက်ယ်, pH, အပူချိန်နှင့် စုစုပေါင်းပျော်ဝင်သည့် အနည်အနှစ်ပမာဏ)	၁ နှစ်လျှင် ၂ ကြိမ်	ပတ်ဝန်းကျင်စောင့်ကြည့်ရေးအဖွဲ့	အခြေခံ အချက်အလက်ကောက်ယူသည့် နေရာ	၁,၁၂၀,၀၀၀
	စွန့်ပစ်ရေအရည်အသွေး (ကော့ပါး, ဆိုင်ယာနိုက်)	၁ နှစ်လျှင် ၂ ကြိမ်	ပတ်ဝန်းကျင်စောင့်ကြည့်ရေးအဖွဲ့	ဟိုတယ်မြောင်းအတွင်း၊ ဟိုတယ်မှနောက်ဆုံးစွန့်ထုတ်နေရာ၊ အခြေခံအချက်အလက် ကောက်ယူသည့် နေရာ	၂,၀၀၀,၀၀၀
မြေဆီလွှာအရည်အသွေး	မြေဆီလွှာအရည်အသွေး (အလူမီနီယံ, အာဆင်းနစ်, ကလိုရိုဒ်၊ ကော့ပါး, ဆိုင်ယာနိုက်, စုပ်ယူ အက်စစ် ခါတ်, P, အယ်ကာ လီခါတ်, pH, စုစုပေါင်းအယ်ကာလီနှင့်	၁ နှစ်လျှင် ၂ ကြိမ်	ပတ်ဝန်းကျင်စောင့်ကြည့်ရေးအဖွဲ့	အခြေခံအချက်အလက်ကောက်ယူသည့်နေရာ	၄၀၀,၀၀၀

ပတ်ဝန်းကျင်ဆိုင်ရာပြဿနာများ	ပါရာမီတာများ	စောင့်ကြည့်ရေး အကြိမ်အရေအတွက်	တာဝန်ယူရမည့်အဖွဲ့	တည်နေရာ	ခန့်မှန်းကုန်ကျစရိတ်
	စုစုပေါင်း အိုင်းယွန်းတို့ပါဝင်ရမည်)				

လည်ပတ်ရေးကာလအတွင်း ပတ်ဝန်းကျင်စောင့်ကြပ်ကြည့်ရှုရေးအစီအစဉ်အတွက် ခန့်မှန်းနှစ်စဉ်ကုန်ကျငွေမှာ ၁၂,၈၄၉,၀၀၀ ကျပ်ဖြစ်ပါသည်။

ဇယား (၄) စောင့်ကြည့်ရေးအစီအစဉ်ကိုလိုက်နာမှု

ပတ်ဝန်းကျင်ဆိုင်ရာပြဿနာများ	အကောင်အထည်ဖော်ခြင်း	စောင့်ကြည့် အကြိမ်အရေအတွက်	တာဝန်ယူမည့်သူ	နေရာ
စွန့်ပစ်ပစ္စည်းစီမံခန့်ခွဲခြင်း	အမှိုက်အမျိုးအစားပေါ် မူတည်၍ သီးသန့်အမှိုက်ပုံးထားရန်	နေ့စဉ်	ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးအရာရှိ	ဟိုတယ်ဝန်းအတွင်း
	စွန့်ပစ်အမှိုက်နှင့် စွန့်ပစ်ရမည့်ပမာဏကို အရေအတွက် သတ်မှတ်ရန် (ထုထည်ပမာဏ, အလေးချိန်, စျေးနှုန်း)	လိုအပ်ချက်အရ	ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးအရာရှိ	ဟိုတယ်ဝန်းအတွင်း
စွမ်းအင်သုံးစွဲမှု	ဒီဇယ်သုံးစွဲမှု မှတ်တမ်းထားရှိရန် မီတာသုံးစွဲမှု မှတ်တမ်းထားရှိရန်	လစဉ်	ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးအရာရှိ၊ စောင့်ကြည့်ရေး အဖွဲ့	မီးစက်လျှပ်စစ်မီတာ
အရေးပေါ် တုန်ပြန် ကိရိယာများ	မီးသတ်ကိရိယာများ (မီးသတ်ဆေးဗူး, မီးသတ်ရေဖြန်းစနစ်, မီးသတ်ပိုက်)	အပတ်စဉ်	မီးသတ်တပ်ဖွဲ့	ဟိုတယ်ဝန်းအတွင်း
	မီးသတ်ဇာတ်တိုက်ခြင်း	လစဉ်	မီးသတ်တပ်ဖွဲ့	ဟိုတယ်ဝန်းအတွင်း
	မီးသတ်ကိရိယာများအား စစ်ဆေးပြုပြင်ခြင်း	၃ လလျှင် ၁ ကြိမ်	မီးသတ်တပ်ဖွဲ့	ကိရိယာအားလုံး
	ပတ်ဝန်းကျင်အန်းအနားဒဏ်ခံဖြစ်သည့် မတော်တဆ ထိခိုက်မှု မှတ်တမ်းများ ကြည့်ရှုခြင်း	၃ လလျှင် ၁ ကြိမ်	မီးသတ်တပ်ဖွဲ့	

ပတ်ဝန်းကျင်ဆိုင်ရာပြဿနာများ	အကောင်အထည်ဖော်ခြင်း	စောင့်ကြည့် အကြိမ်အရေအတွက်	တာဝန်ယူမည့်သူ	နေရာ
အရင်းအမြစ် သုံးစွဲမှု	အသုံးမပြုသည့် ကိရိယာများအား ပိတ်ထားခြင်း	နေ့စဉ်	ဌာနကြီးကြပ်ရေးမှူး	မီးဖြန့်ဖြူးသည့် ခုံနေရာ
	အသုံးမပြုသည့် ရေဘားများအား ပိတ်ထားရန်	နေ့စဉ်	လုပ်သားအားလုံး	ရေဘားအားလုံး
လူထုကျန်းမာရေးနှင့် လုပ်ငန်းခွင်လုံခြုံရေး	သန့်ရှင်းရေးအတွက်အလေးထားဆောင်ရွက်ရန်	အပတ်စဉ်	စောင့်ကြည့်ရေးအဖွဲ့	ဟိုတယ်ဝန်းအတွင်း
	စွန့်ပစ်ပစ္စည်း စနစ်တကျကောက်ယူခြင်းနှင့် စွန့်ပစ်ခြင်း	နေ့စဉ်	စောင့်ကြည့်ရေးအဖွဲ့	ဟိုတယ်ဝန်းအတွင်း
	ရှေးဦးသူနာပြုဆေးသေတ္တာများထားရှိရန် ပါဝင်ပတ်သက်သူများ၊ အလုပ်သမားများအား ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှု အစီအစဉ်အား ပညာပေးဆွေးနွေးရန်	နေ့စဉ်	စောင့်ကြည့်ရေးအဖွဲ့	ဟိုတယ်ဝန်းအတွင်း
	ရှေးဦးသူနာပြုနှင့် လုပ်ငန်းခွင်ကျန်းမာရေးနှင့် ဘေးကင်းလုံခြုံရေးအတွက် အလုပ်သမားများအား သင်တန်း ပေးရန်	လိုအပ်ချက်အရ	စောင့်ကြည့်ရေးအဖွဲ့	ဟိုတယ်ဝန်းအတွင်း
လုံခြုံရေး	လုပ်ငန်းခွင်အတွင်း နှောင့်ယှက်မှုများနှင့် အခြားအဖြစ်အပျက်များ ဖြစ်ပေါ်ပါက လုံခြုံရေးဝန်ထမ်းအနေဖြင့် အမြဲတမ်း အဆင်သင့် ဖြစ်နေစေရန်	နေ့စဉ်	လုံခြုံရေး	ဟိုတယ်ဝန်းအတွင်း
	လုပ်ငန်းခွင်အတွင်း လုံခြုံရေးမီးကို တပ်ဆင်ထားရန်	နေ့စဉ်	လုံခြုံရေး	ဟိုတယ်ဝန်းအတွင်း

လူထုတွေ့ဆုံပွဲနှင့် သတင်းအချက်အလက်များထုတ်ပြန်ခြင်း

စီမံကိန်းဆောင်ရွက်စဉ်အတောအတွင်း လူထုတွေ့ဆုံပွဲများစွာကို ကျင်းပခဲ့ပါသည်။ လူထုတွေ့ဆုံပွဲ (အိမ်ထောင်စုအချက်အလက်များကောက်ယူခြင်းနှင့် စီမံကိန်းအတွင်း ဝန်ထမ်းများနှင့် မေးမြန်းဆွေးနွေးချက်များအပါအဝင်) များတွင် စီမံကိန်းနှင့်ပတ်သက်သည့် အစီအစဉ်များ၊ သက်သာလျော့ပါးစေမည့် နည်းလမ်းများကို လူထုနှင့်တွေ့ဆုံဆွေးနွေးတင်ပြခဲ့ပါသည်။

နိဂုံးချုပ်

အဆိုပြုစီမံကိန်းသည် စီမံကိန်းဒီဇိုင်းဆွဲစဉ်နှင့် အကောင်အထည်ဖော်နေစဉ်အတွင်းမှာပင် ပတ်ဝန်းကျင်ကာကွယ်ရေးနှင့်ထိန်းသိမ်းရေးလုပ်ငန်းများကို ရည်မှန်းချက်အတိုင်း အကောင်အထည်ဖော် ဆောင်ရွက်ရန် ပိုင်းဖြတ်ထားပါသည်။

ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးအတွက်ဆောင်ရွက်ရာတွင်ဖြစ်ပေါ်လာသည့် အခက်အခဲများ၊ စိုးရိမ်ပူပန်မှုများကိုဖော်ထုတ်ရုံတွင်သာမက လျော့နည်းသက်သာစေမည့်ကုထုံးများကိုပါ သတ်မှတ်ချက်အတိုင်း ဆောင်ရွက်ရပါမည်။ ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်းတွင် စီမံကိန်းစတင်စီစဉ်သည့်ကာလ၊ တည်ဆောက်ရေးကာလ၊ လည်ပတ်ရေးကာလများအတွက်ပါ ဆောင်ရွက်ရန် အကြံပြုထောက်ခံထားပါသည်။ စီမံကိန်းတွင် ပါဝင်ပတ်သက်သူအားလုံးသည် ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုအစီအစဉ်အပေါ် အကြံပြုဆွေးနွေးခြင်းဖြင့် စီမံကိန်းသက်တမ်းကာလတစ်လျှောက်လုံးတွင် ဖွံ့ဖြိုးတိုးတက်မှုများ ဆက်တိုက်ရရှိစေမည် ဖြစ်ပါသည်။

ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်လေ့လာခြင်းအစီရင်ခံစာတစ်ခုလုံး၏တွေ့ရှိချက်အရ အဆိုပြုစီမံကိန်းသည် ပတ်ဝန်းကျင်ဆိုင်ရာထိခိုက်မှုများမဖြစ်ပေါ်စေရန် ကောင်းစွာစီမံခန့်ခွဲနိုင်ပါသည်။ ထောက်ခံတင်ပြထားသည့် လျော့နည်းသက်သာစေမည့် ကုစားရေးနည်းလမ်းများကို ထိရောက်စွာ အကောင်အထည်ဖော်ခြင်းဖြင့် စီမံကိန်းသည် ရေရှည်တည်တံ့သည့်ပတ်ဝန်းကျင်ကို ထိန်းသိမ်းဆောင်ရွက်နိုင်မည်ဖြစ်ပါသည်။

လူမှုထိခိုက်မှုဆန်းစစ်ခြင်းအစီရင်ခံစာအရလည်း ဖြစ်လာနိုင်ခြေရှိသည့် လူမှုစီးပွားထိခိုက်မှုများကို ကုစားရမည့်နည်းလမ်းများအတိုင်းဆောင်ရွက်ပါက လက်ခံနိုင်သည့်အဆင့်သို့ လျော့ကျသွားမည်ဖြစ်ပါသည်။ ယခု လူမှုထိခိုက်မှုဆန်းစစ်ခြင်းအစီရင်ခံစာသည် ဌာနလူထုနှင့်တွေ့ဆုံကာ ၎င်းတို့၏စိုးရိမ်ပူပန်မှုများ၊ လူထုဆွေးနွေးပွဲမှအချက်အလက်များနှင့် ကွင်းဆင်းဆောင်ရွက်ချက်များကို ဖော်ပြထားပါသည်။ ထို့ကြောင့် စီမံကိန်းအကောင်အထည်ဖော်မည့်အဖွဲ့သည် ဖြစ်နိုင်ခြေရှိသည့် လူမှုစီးပွားအချက်အလက်များကို ကုထုံးနည်းလမ်းများဖြင့် ဆောင်ရွက်အကောင်အထည်ဖော်ပါက စီမံကိန်းသည် စဉ်ဆက်မပြတ် ဆောင်ရွက်နိုင်မည်ဖြစ်ကြောင်း ထောက်ခံတင်ပြနိဂုံးချုပ်ပါသည်။

EXECUTIVE SUMMARY

New Starlight Construction Company Limited had been operating a project of "**IBIS Styles Hotel".** Green Myanmar Environmental Services (GMES) Company Limited commissioned to carry out the Environmental Impact Assessment (EIA) for that project and prepared to submit the EIA report to the Environmental Conservation Department (ECD).

The proponent aims to construct IBIS Styles Hotel Project in Muse Township, Northern Shan State, Myanmar. The construction works will include a high-class 9-storey hotel which will comprise of 252 rooms. Many facilities will include such as All-Day Dining (The breakfast room): 180 Pox, Lobby Bar, Meeting & Function Rooms, Breakout area, Business center through administration (reception counter), Fitness Center, etc. The project is well presented in drawings and has been approved by the Local Authorities. The proponents are required to present this report in order to comply with the Environmental Law and Regulations. The report has provided a summary statement of the likely environmental effects of the proposed project.

This report contains Part I- Environmental Impact Assessment, Part II- Social Impact Assessment and Part III, Health Impact Assessment. Part I, EIA report is composed of nine sections.

Scope of environmental assessment

This Environmental Impact Assessment (EIA) Report considers the following aspects and others that may approve of significance during the study.

1. Assess the project's impacts on surface run-off water
2. Assess social implications of the development within the locality, region and nationally:
    a) Economic implications of the development.
    b) Employment.
    c) Livelihoods.
    d) Demand and development of infrastructure and social amenities.
3. Develop an Environmental Management and Monitoring Plan (EMMP) that would mitigate the possible impacts on the environment.

The proposed project has the following features.

Salient Features of the Project

Characteristics	Description/Quantities
Project Name	IBIS Styles Hotel
Project Proponent	New Starlight Construction Company Limited
Company Registration No.	112539743 (7.10.2010)
Project Address	Holding No. 2-A, 2-B, 2-D, 2-F, Block No. (111), Taw Ywat Ward, Muse Economic Zone-1, Muse Township, Muse District, Shan State (Northern)

Characteristics	Description/Quantities
Office Address	No. 33/A, Corner of 29th & 73rd Street, Seiktayamahi Quarter, Chanayethazan Township, Mandalay, Mandalay Region
Geographical Information	Latitude: 23º 59' 44.90" N Longitude: 97º 53' 27.58" E
Type of Land	Development Project Land
Area of Land	4.74 Acres (206,474.4 ft^2)
Building Height	35.3 m
Owner of the Land	New Starlight Construction Company Limited
Proposed Duration of Investment	50 years
Construction Period	1 year
Type of Investment	100% Local Investment
Total Amount of Investment	About USD 30,000,000
Type of Business	Operation of Hotel
Contact Person **Designation** **Mobile Phone** **Email**	U Tin Ngwe Deputy Managing Director (1) 02-2000247, 02-2000248 cmoffice@newstarlight.com.mm, tinngwe@newstarlight.com.mm
Established Date	07.10.2010
Surrounding Environment	East Conventional Center West Office South Office and bank North Office and bank
Nearest Water Bodies	Shweli River (about 0.5 km)
Water Consumption Sources Capacity of storage tank Estimated consumption amount	 4" diameter tube wells 2 units 208 m^3 26,000 gallons per day (for operation phase)
Source of Electrical Power	China Grid
Electricity Consumption	Transformer 500 kVA (2) units - 86,493 units per month Generator 500 kVA (2) units - 960 units per month
Diesel Consumption	11,880 gallons per year
Employees	106 Persons (in the first year)
Operation Time	**No. of Shifts:** 2 shifts **Working Days:** 6 days Shift 1: 07:00 a.m. ~ 07:00 p.m. Shift 2: 07:00 p.m. ~ 07:00 a.m. (One day per week can be alternately rested)
Hotel Operating Days per Year	365 days (24-hr Services)

Policies, Legal and Administrative Framework

The relevant environmental policies established by the Government of Myanmar for purposes of environmental protection towards the process of sustainable development are also depicted.

As explained in the policy and law in Chapter 2, these are followed by the project owner. It is stated in the Commitment that the owner of the project must follow it properly.

New Starlight Construction Co., Ltd. has committed to:

- Comply with all Myanmar laws, rules and regulations, including Clauses 14 and 15 of the Environmental Conservation Law (2012); Environmental Conservation Rules (2014) and Environmental Impact Assessment Procedure (2015).
- Ensure that legal and other obligations are incorporated in the procedures and project controls.
- Communicate legal and other requirements to personnel and contractors accountable for compliance.
- Ensure all relevant legal and other requirements and associated documentation (e.g. licenses, permits, approval applications) are readily available on site to the responsible personnel, contractors, subcontractors and consultants.
- Implement the project EMP strictly by complying with these standards and any additional requirements set out in the project Environmental Compliance Certificate (ECC) adopted by the Department.

Description of the Surrounding Environment

Environmental Baseline Quality Measuring

Green Myanmar Environmental Services Company Limited had done measuring primary data or baseline environmental parameters such as ambient air quality, ambient noise levels, water quality and soil quality from 22.8.2020 to 25.8.2020.

Ambient Air Quality: In August 2020, the **ambient air quality** was measured two points for 24 hours within and near the project area. The locations of air quality measuring points are tabulated in **Table 4-2**. The results with the target values are tabulated in **Table 4-3** and all parameters are within the National Environmental Quality (Emission) Guidelines.

Ambient Noise Levels: The **ambient noise level** was measured for 24 hours continuously near the ambient air quality measuring points. The observed values of the noise level for daytime and night time are slightly higher than the limit of Guideline. Due to the operation phase of shop house area, the noise level for daytime at NMP-1 are slightly higher than limit. Due to the heavy rain at night of the measuring day, the noise level for night time are slightly higher than limit.

Water Quality: For water quality, selected water quality parameters of ground water, surface water and wastewater have been studied for assessing the water environment and evaluating the anticipated impact of the proposed project. The water samples were collected and analyzed at the laboratory of Green Myanmar Environmental Services Co., Ltd. and Ecological

laboratory. Water qualities at the project site and its surroundings were measured at the four sampling points and detail locations of sampling points are shown in **Table 4-7**.

According to the **ground water quality** results (**Table 4-8**), all of the parameters were within the acceptable limit of WHO drinking water standard (2011).

According to the **surface water quality** results (**Table 4-9**), the total suspended solids are higher than the Guideline Value because it may be the natural conditions of the river and the final effluent water from the project is not directly discharged to the Shweli River. The other parameters are within the limits.

According to the **wastewater quality** results (**Table 4-10)**, all of the parameters were within the acceptable limits.

Soil Quality

In order to monitor the soil quality, soil sample near the hotel premise was taken and tested at GMES laboratory and these results are described in **Table 4-12.** These results are noted as baseline data and it will compare with the future results. Comparison will show better or worse.

Impact Assessment and Mitigation Measurement

The summary of impacts and mitigation measures are described the following table. Details of assessment and mitigation measures are described in Chapter 5.

Table (1) Summary of Impacts and Mitigation Measures for the Construction Phase

Environmental Impact on	Mitigation Measures
Air Quality	✓ Effective water sprays should be used in working areas that can generate dust ✓ Fine particle materials on site should be enclosed and covered ✓ Wheel washing facilities shall be installed and used by all vehicles leaving the site ✓ Employ transfer processes with small dump heights, low exit velocities and closed receptacles ✓ Restrict maximum speed on construction site pathways, e.g. to 30 km/h ✓ Proper upkeep and maintenance of vehicles ✓ Lush green plantation ✓ Employ low-sulfur fuels (sulfur content <50ppm) for machines and equipment powered with diesel engines ✓ Use electricity or alternate fuels for on-site mobile equipment instead of diesel equipment to the extent feasible ✓ Ensure that adequate water flow in the sanitation system and aeration to reduce the potential of odor formation ✓ DG sets will be used only during power failure ✓ DG sets will comply with the applicable emission norms ✓ Adequate stack height for DG sets will be provided

Environmental Impact on	Mitigation Measures
	✓ The amount of exposed ground and stockpiles will be minimized so that re-suspension due to wind and subsequent dust fall is prevented
Surface Water	✓ Adequate arrangements for proper drainage ✓ Provision of proper sanitary facilities with treatment ✓ Regular cleaning and maintenance of the sediment removal facilities to ensure that the facilities are in normal function at all times ✓ It is recommended to provide chemical toilets and for collection of toilet wastes ✓ Cleaning of toilet wastes should be carried out regularly
Noise Levels	✓ Noisy construction activities will be carried during the daytime only ✓ Enclosure shall be provided ✓ Undertake proper maintenance of equipment ✓ Use of well-maintained equipment fitted with silencers ✓ Use of proper personal protective equipment
Solid Waste Generation (Non-hazardous)	✓ Proper segregation in collection of wastes ✓ Practice recycling of wastes ✓ Implement composting of wastes especially garden refuse and provide food wastes to nearby villages for animal fodder ✓ Contact Muse Township Municipal for proper disposal ✓ Clean around and spray insecticides when necessary ✓ Arrange awareness training programs for all personnel on how to handle solid wastes
Wastewater Generation and Sewage Disposal	✓ Proper installation of drainage structures ✓ Install cascades to break the impact of water flowing in the drains ✓ Ensure efficiency of drainage structures through proper design and maintenance ✓ Provide gratings to the drainage channels
Occupational Health and Safety	✓ The Contractor should regularly inspect, test and maintain all safety equipment (including firefighting equipment), scaffolds, guardrails, working platforms, hoists, ladders and other means of access, lifting, lighting, signing and guarding equipment. ✓ Generally good housekeeping - debris cleared away promptly, dust cleared regularly, etc. ✓ Staff wears strong safety shoes that have a good grip ✓ Good lighting in all areas ✓ Remind staff to clear up spillages of oil or paint immediately, even very minor spillages ✓ Fork-lift truck maintained and inspected as per lease contract

Environmental Impact on	Mitigation Measures
	✓ Heavy vehicles operated only by staff who have been trained to use it ✓ Pedestrian walkways marked ✓ Only authorized people allowed in yard for deliveries/dispatch ✓ Ensure drivers get out of their vehicle and stand in a safe area while it is being loaded/unloaded ***Air Pollution Affect*** ✓ Providing the PPE ✓ Water spraying to reducing the particulates matters ✓ Air Quality measuring ✓ Regular maintenance of vehicles and machines ***Noise and Vibration Affect*** ✓ Providing the PPE ✓ Providing the shift working system for worker working near the noisy ✓ Noise and Vibration measuring ✓ Regular maintenance of vehicles and machines ✓ D.G set will be placed with the Sound proof wall ✓ Vibrated machines will be placed with solid concrete foundation ***Protection the Working Area Accident*** ✓ Providing the first aid, medicines and training ✓ Providing the PPE and giving the PPE using training ✓ Assigning the Safety Officer who systematically implement OHS plan to protect the OHS for workers ✓ Providing the emergency contact phone number ✓ Designation the speed limit for vehicles and machines ✓ Installing the eyes washer for contacting the hazardous materials. ✓ Providing the safety sign and give training for the worker for understanding this sign purposes ***Protecting Infectious Diseases*** ✓ Systematically cleaning for Toilets and septic tanks and regular disposing to City Development Committee ✓ Systematically disposing the food waste at designated area, designated waste disposal yard, covering the waste bin and regularly disposing City Development Committee ✓ Providing the dining area and give instruction to eat the designated area ✓ Providing the medical check-up and appropriate medicals for worker to protect infectious diseases Enforcement of Public health and safety regulations

Environmental Impact on	Mitigation Measures
Community Health and Safety	***Air Pollution Affect*** ✓ Water spraying the project site ✓ Raw material transportation is systematically covering, ✓ Water spraying the vehicles wheel before leave from the project site ✓ Regular maintenance of vehicles and machines ***Noise and Vibration Affect*** ✓ Avoiding the noisy work activities at night time ✓ Noise and Vibration measuring ✓ Regular maintenance of vehicles and machines ✓ D.G set will be placed with the Sound proof wall ✓ Vibrated machines will be placed with solid concrete foundation ***Protection the Working Area Accident*** ✓ Providing the First Aid, medicines and training at villages ✓ Providing the emergency contact phone number at villages ✓ Designation the speed limit for vehicles and machines ✓ Inspection the driver license has or not and drivers are driving the car types according to their license's types. ✓ Avoiding transportation of construction and closing materials at the traffic peak hours and school starting and ending times ***Protecting Infectious Diseases*** ✓ Systematically cleaning for Toilets and septic tanks and regular disposing to City Development Committee ✓ Avoiding the waste disposal at nearest villages waste disposal yard and regularly disposing City Development Committee ✓ Providing the dining area and give instruction to eat the designated area ✓ Providing the medical check-up and appropriate medicals for worker to protect infectious diseases

Table (2) Summary of Impacts and Mitigation Measures for the Operation Phase

Environmental Impact on	Mitigation Measures
Air Quality	✓ Spray water to reduce dust generation in outdoor area ✓ Do proper housekeeping to reduce the dispersion of the dust ✓ Provide good exhaust ventilation system in the process area to reduce heat and fugitive emission ✓ Provision of fuel and hazardous chemicals in a separate room with good ventilation system ✓ Turn off the machineries /engines while not in use

Environmental Impact on	Mitigation Measures
	✓ Ensure of no leakage in sewage facility and timely disposal ✓ Do regular maintenance of the generators ✓ Install the stack for generators exhaust which is oriented away from people ✓ Provide dust mask to employee when necessary
Surface Water	✓ Adequate arrangements for proper drainage ✓ Regular cleaning and maintenance of the sediment removal facilities to ensure that the facilities are in normal function at all times ✓ It is recommended to provide chemical toilets and for collection of toilet wastes ✓ Cleaning of toilet wastes should be carried out regularly ✓ Oil traps should be installed on drainage ✓ Drip trays should be used to collect oil leakage
Energy and Resource Utilization	✓ Use of electricity from renewable power source when available ✓ Consider the use of solar power for partial and small load usage ✓ Building design can incorporate day light and natural ventilation to reduce energy requirement ✓ Energy efficient lighting can be used. ✓ Self-closing water tap can be used ✓ Rain water harvesting can be considered for some minor use ✓ Educate the workers not to waste electricity and water ✓ Vehicle trip schedule can be controlled for efficient use to reduce fuel consumption. (e.g., combining trips of convenient direction)
Solid Waste Generation (Non-hazardous)	✓ Proper segregation in collection of wastes ✓ Practice recycling of wastes ✓ Implement composting of wastes especially garden refuse and provide food wastes to nearby villages for animal fodder ✓ Contact Muse Township Municipal for proper disposal ✓ Clean around and spray insecticides when necessary ✓ Arrange awareness training programs for all personnel on how to handle solid wastes
Wastewater Generation and Sewage Disposal	✓ Proper segregation in collection of wastes ✓ Practice recycling of wastes ✓ Implement composting of wastes especially garden refuse and provide food wastes to nearby villages for animal fodder ✓ Contact Muse Township Municipal for proper disposal ✓ Clean around and spray insecticides when necessary

Environmental Impact on	Mitigation Measures
	✓ Arrange awareness training programs for all personnel on how to handle solid wastes
Fire Hazard	✓ Ensure sufficient emergency firefighting tools (fire alarm, fire extinguishers, fire hoses, standby water tanks, water pumps, and first aid boxes) should be installed in the visible places and regularly checked and maintained ✓ Not only fixed but also portable fire equipment should be installed ✓ Firefighting training and regular fire drills for all workers should be provided ✓ Fire safety policy should be designed and implemented ✓ Keep enough spaces for sidewalks, escape routes, emergency exists, assembly area with regular inspection and maintenance ✓ Proper maintenance of machines, wires and electrical appliances should be done

Environmental Management Plan

New Starlight Construction Company Limited will implement Environmental Management Plan (EMP) to take specific actions for mitigation measure measures of environmental and social issues and also will implement all mitigation measures as soon as practically. So, New Starlight Construction Company Limited will implement the following environmental management plans.

For the construction phase,

1. Air Pollution and Dust Management Plan
2. Wastewater and Drainage Management Plan
3. Noise Management Plan
4. Solid Waste Management Plan
5. Occupational Health and Safety Management Plan
6. Community Health and Safety Management Plan

For the operation phase,

1. Air Pollution and Dust Management Plan
2. Wastewater and Drainage Management Plan
3. Solid Waste Management Plan
4. Energy and Resource Management Plan
5. Emergency Response and Disaster Management Plan

Details of above each plan will be described in Chapter 6.

Environmental Monitoring Plan

Environmental monitoring is a basic requirement for many industries. It measures the degree of maintaining environmental control and, therefore, the safety of the environment due to the operation of the proposed project.

According to the section 108 of EIA Procedure, the project proponent will submit the Monitoring Report prescribed in the schedule of the EIA report to the Ministry every (6) month or as may be prescribed by the Ministry.

Table (3) Details of Environmental Quality Monitoring Plan for the Operation Phase

Environmental Issues	Parameters	Monitoring Frequency	Responsibilities	Location	Estimated Cost
Air Quality	Ambient air quality (Including NO_2, SO_2, PM_{10}, $PM_{2.5}$ and O_3)	Twice a year	EMC	Within the hotel compound and the same baseline location	5,400,000
	Indoor air quality (PM_{10}, $PM_{2.5}$ and VOC)	Twice a year	EMC	Workplace	1,120,000
	Stack emission of generator (CO_2, O_2, CO, NO_2, SO_2, ΔT and PI)	Twice a year	EMC	Generator room	400,000
Noise Level	Ambient noise level of day-time and night-time	Twice a year	EMC	Within the hotel compound and the same baseline location	900,000
	Indoor noise level (Noise level in decibel)	Twice a year	EMC	Workplace	1,120,000
Water Quality	Ground water quality (Including copper, cyanide, manganese, pH, sulfate, total alkalinity as $CaCO_3$, TDS, total hardness as	Twice a year	EMC	Tube well water	300,000

Environmental Issues	Parameters	Monitoring Frequency	Responsibilities	Location	Estimated Cost
	$CaCO_3$, total iron, turbidity)				
	Surface Water Quality (Including BOD_5, COD, nickel, pH, temperature and TSS)	Twice a year	EMC	Same baseline location	1,200,000
	Wastewater quality (Including copper, cyanide, oil & grease, pH, total nitrogen, total phosphorus and TSS)	Twice a year	EMC	Drain inside the hotel and hotel final discharged point and the same baseline location	2,000,000
Soil Quality	Soil quality (Including aluminum, arsenic, chloride, copper, cyanide, extractable acidity, P-alkalinity, pH, total alkalinity and total iron)	Once a year	EMC	Same baseline location	400,000

The annual total estimated cost of the environmental monitoring for the operational phase is 12,840,000 MMK.

Table (4) Compliance Monitoring Plan

Environmental Issues	Implementation	Monitoring Frequency	Responsibilities	Location
Waste Management	Separate bins for different kinds of waste	Daily	Environmental officer	Hotel compound
	Set quantified waste reduction and disposal targets (in volume, weight or costs)	As necessary	Environmental officer	Hotel compound
Energy Consumption	Record diesel consumption	Monthly	Environmental officer and EMT	Generator
	Record electricity usage	Monthly	Environmental officer and EMT	Electric meter

Environmental Issues	Implementation	Monitoring Frequency	Responsibilities	Location
Emergency Response Equipment	Firefighting equipment such as extinguisher, fire hydrants, fire hose, etc.	Weekly	Fire brigade	Hotel compound
	Fire-drill testing	Monthly	Fire brigade	Hotel compound
	Servicing firefighting equipment	Quarterly	Fire brigade	All equipment
	Reviewing records of accidents which is recorded on & around the entire facility	Quarterly	Fire brigade	-
Resources Usage	Power off the unused equipment	Daily	In-charge in each section	Power distribution panel
	All water taps shut when not in used	Daily	For all workers	All water taps
Public Health and Occupational Safety	Special attention should be paid to the sanitary facilities that should be kept clean and well lit.	Weekly	EMT	Hotel compound
	Ensure proper solid waste disposal and collection facilities	Daily	EMT	Hotel compound
	Provide first aid kits on the site. Educate stakeholders/workers on environmental management.	Daily	EMT	Hotel compound
	Workers should be trained on occupational health & safety and first-aid administration	As necessary	EMT	Hotel compound
Security	Security men should always be available to alleviate cases of harassments and other related incidences on site.	Daily	Security (In-charge)	Hotel compound
	Installation of security lighting especially at the site	Daily	Security (On-duty)	Hotel compound

Public Consultation and Information Disclosure

A series of public consultation meeting were conducted during project preparation. Public consultations (consultation through household surveys and as well as ad hoc discussions

on site) have been used to discuss the project and involve the community in planning the mitigation measures.

Conclusion

The EIA undertaken for the proposed IBIS Styles Hotel project has determined that the Project can meet the objective of being a sustainable development if early measures for environmental protection and conservation are taken into account during its design and implementation.

The criteria of environmental sustainability require not only identifying the issues and concerns but taking action to prevent and mitigate those that have negative impacts. Environmental management of the Project is recommended to be given due consideration in the planning, execution and operation of the Project. Suggestions, opinions and comments by all parties involved should be considered during the EMP review process as well as throughout the life span of the development.

The overall findings of the EIA have shown that the environmental impacts due to the Project are mostly manageable and the Project can meet the criteria of a sustainable development with effective adoption of the mitigation measures recommended.

According to the key findings from the SIA study, all of the anticipated socioeconomic impacts are mitigated to acceptable levels by the proposed mitigation measures in this report. The social study, survey and public meetings identified the concerns of the local people. So, it can be concluded that the proposed project should be allowed to operate if the developer commit to conduct all of the mitigation and enhancement measures for potential socio-economic impacts described in this report.

1.0 INTRODUCTION

1.1 Project Rationale and Background

The global lodging industry will continue to adapt as new accommodation platforms. Traditional lodging types now exist in a shared economy with apartment rental services and other alternative offerings, including membership clubs, hostels and avant-garde lifestyle brands. As global travel increases across leisure, corporate and group segments, destinations must effectively implement and invest in their tourism strategy to differentiate themselves. Furthermore, the continued increase in cross-border capital flows will intensify competition in gateway markets among traditional financial investors, presenting new financial and tax implications for both domestic and foreign investors. Hotel demand has continued to rise in hospitality industry and Myanmar as a whole due to rise in population and tourists entering the beautiful and picturesque country. To fulfil this condition, New Starlight Construction (NSLC) Company Limited proposed to develop a 3-stars Hotel in Muse Township. The proposed project, IBIS Styles Hotel, is developed by New Starlight Construction Company Limited in 2010 with 100% local investment. The objective of this company is to operate the hotel as per MIC Permit.

In accordance with the Myanmar Investment Law, NSCL will need to secure the environmental approval or Environmental Compliance Certificate (ECC) from MONREC to develop the project. This report is prepared for assessing the environmental impact due to the hotel operation in accordance with the existing policy, laws, rules, and instructions and submitted as a requirement to receive the Environmental Compliance Certificate (ECC) from the Ministry of Natural Resources and Environmental Conservation (MONREC).

1.2 Approach and Methodology

1.2.1 Terms of Reference for the EIA Study

IBIS Styles Hotel Project is located in Taw Ywat Ward, Muse Central Business District Project Zone, Muse Township, Northern Shan State. The Terms of References (TORs) for undertaking this Environmental Impact Assessments (EIA) has been prepared to pave way a road mark for consulting company in carrying out a full Environmental and Social Impact Assessment (EIA) for IBIS Styles Hotel Project.

According to the set TOR, the study area outlined to be the project area and other areas that could be affected by the proposed project in one way or another.

The EIA documents the existing environmental conditions at the proposed site and its environs, including physical, biological and socio-economic aspects. The TORs are based on the generic guidelines by Ministry of Environmental Conservation and Forestry MOECAF, and are given below.

The environmental assessment report will be concise and limited to significant environmental issues. The main text will focus on findings, conclusions and recommended actions supported by summaries of the data collected. The environmental assessment report will be organized according to the outline below.

- Executive Summary

- Policy, Legal and Administrative Framework
- Description of Proposed Project
- Description of the Environment
- Significant Environmental Impacts
- Impact Mitigation and Management Plan
- Environmental Monitoring Plan

1.2.2 Objectives of EIA

The main objective of this EIA is to carry out a detailed environmental impact assessment.

Specific areas to be addressed include:

- Impacts addressing socio-economic and socio-cultural aspects
- Impacts related to ecological aspects of the project area and its surroundings
- Environmental and social problems as a result of project development and implementation
- Issues of health risks and safety
- Public participation
- Proposed mitigation measures for identified negative impacts
- Development of an environmental and social management plan for construction, operation and management of the project

1.3 Identification of the Project Proponent

1.3.1 Proponent Information

The IBIS Styles Hotel is developed by New Starlight Construction Company Limited, a private company limited by shares and it is 100% local investment. The objective of this company is to operate the hotel as per MIC Permit. The details of the proponent are presented below:

Table 1-1 Proponent Information

Project Name	IBIS Styles Hotel
Proponent Name	New Starlight Construction Company Limited
Company Registration Number	112539743
Established Time	07.10.2010
Construction Period	1 Year
Proposed Duration of Investment	30 Years
Contact Person	
Name	U Tin Ngwe
Designation	Deputy Managing Director (1)
Telephone	02-2000247, 02-2000248

Email	cmoffice@newstarlight.com.mm, tinngwe@newstarlight.com.mm
Contact Detail	
Hotel/Project Address	Holding No. 2-A, 2-B, 2-D, 2-F, Block No. (111), Taw Ywat Ward, Muse Economic Zone-1, Muse Township, Muse District, Shan State (Northern)
Office Address	No. 5, Thazin Street, 73 Street & 74 Street, Mingalar Mandalay Villa, Ta-10, Myo Thit (1) Ward, Chan Mya Thar Si Township, Mandalay Region, Myanmar
Telephone	+ 95 2 24562, +95 2 2844519
Email	cmoffice@newstarlight.com.mm

1.3.2 Particulars of Shareholders/Directors

The shareholders/ directors of the NSCL are listed in the following table.

Table 1-2 List of Shareholders/Directors

Sr. No.	Name	Nationality	Nationality & NRC No.	Address	Other Business Occupation	Changes
1.	U Kyaw Kyaw Win @ U Yan Kywe Yon	Myanmar	13/Ta Ya Na (Naing) 000305	No.273/274, Yin Pyan Butar Street, Between (34^{th} x 35^{th}) Street & (59^{th} x 60^{th}) Street, Kan Kauk Quarter, Chan Aye Thar Zan Township, Mandalay Region.	Merchant	Chairman
2.	Daw May Yin @ Daw Than Than Aye	Myanmar	1/Ma Ka Na (Naing) 020908	No.273/274, Yin Pyan Butar Street, Between (34^{th} x 35^{th}) Street & (59^{th} x 60^{th}) Street, Kan Kauk Quarter, Chan Aye Thar Zan Township, Mandalay Region.	Merchant	Managing Director
3.	Daw Yan Khwe Kan	Myanmar	9/Ma Ma Na (Naing) 020908	No.292, Corner of 58^{th} x 33^{rd} Street, Chan Aye Thar Zan Township, Mandalay Region.	Merchant	Director
4.	Daw Law Sone	Myanmar	9/Ma Ya Ta (Pyu) 0000001	No.648, 78^{th} Street, Between (36^{th} x 37^{th}) Street, Haymamarlar Quarter, Mahar Aung Myay Township, Mandalay Region.	Merchant	Director
5.	Daw Shwe Shan	Myanmar	9/Ma Ya Ta (Naing) 106727	No. (Ta-3/82), Myothit 1^{st} Quarter, Chan Mya Tharsi Township, Mandalay Region.	Merchant	Director
6.	Daw Kya Chi Phone	Myanmar	13/Ta Ka Na (Naing) 068388	Block No. (157), Palae Ngwe Yaung Quarter, Aung Myay Thar Zan Township, Mandalay Region.	Merchant	Director
7.	U Aung Kyaw Oo	Myanmar	9/Ma Na Ma (Pyu) 000006	Block No. (76), Pyi Gyi Yan Lon Quarter, Aung Myay Thar Zan Township, Mandalay Region.	Merchant	Director
8.	U Htay Myint	Myanmar	1/Ma Ka Na (Ei) 001371	No. (147/9), Block No. (704), Mawraglwar, Between (33^{rd} x 34^{th}) Street & (74^{th} x 75^{th}) Street, Chan Aye Thar Zan Township, Mandalay Region.	Merchant	Director

Sr. No.	Name	Nationality	Nationality & NRC No.	Address	Other Business Occupation	Changes
9.	U Myo Latt	Myanmar	9/Kha Ah Za (Ei) 000006	Block No. (760), Between (32n^{d} Street & 33rd Street), Between (68th Street & 69th Street), Pat Kone Pyaw Bwe Quarter, Chan Aye Thar Zan Township, Mandalay Region.	Merchant	Director
10.	U Li Kyar Hoke	Myanmar	1/Ma Ka Na (Naing) 083201	No. (108), Block No. (722), 74th Street, Between 27th Street & 28th Street), Seitttamahi Quarter, Chan Aye Thar Zan Township, Mandalay Region.	Merchant	Director
11.	U Ye' Myint Win	Myanmar	9/Ah Ma Ya (Naing) 038645	No. (35), Block No. (763), Corner of (67th Street & 31st Street), Pat Kone Pyaw Bwe Quarter, Chan Aye Thar Zan Township, Mandalay Region.	Merchant	Director
12.	U Aik Pin	Myanmar	13/Ta Ya Na (Naing) 022066	No. 459-469, G_2, Lower Pazundaung Road, Pazundaung Township, Yangon Region.	Merchant	General Manager

1.3.3 Implementation Date

New Starlight Construction Company Limited management are ready to implement the proposed project as soon as all the approval requirements are met and done through the various relevant line organizations and institutions which include the EIA approval process by MIC.

1.4 EIA Working Group

The planning and conduct of the EIA report for IBIS Styles Hotel Project was carried out by a team of GMES together with the support of relevant personnel such as Human Resources Manager and Managing Director from New Starlight Construction Company Limited.

Table 1-3 GMES's EIA Team

No	Title of post and working duration	Term of Reference	Nominee and Organization
1	Project director	Overall management of EIA operation a. Manning & Team building b. Budget and Financial management c. Procurement d. Logistics e. Work plan f. Coordination among stakeholders	U Sein Thaung Oo Green Myanmar Environmental Services Professional Engineer No. 0023
2	Chief Technical Manager	a. Design of EIA b. Technical meeting & Workshop c. Monitoring of EIA process d. Public consultation e. Quality Control and Check f. Data compilation & analysis g. Reporting template & reporting (EMP)	U Kyaw Soe Win Green Myanmar Environmental Services Experience in EIA processing No. 0019
3	Environmental Consultant	a. Advise on the design of EIA b. Develop term of reference for duty and responsibility among EIA team c. Advise on the environmental baseline d. Advise on the field survey e. Advise on data processing and laboratory testing f. Facilitate technical analysis g. Streamline the EIA report and Environmental Management Plan	Daw Khin Swe Aye Former Lecturer. YTU Experience in EIA preparation No. 0023
4	Environmental Consultant	a. Advise on the design of EIA b. Develop term of reference for duty and responsibility among EIA team c. Advise on the environmental baseline	Daw Hnin Hnin Aye Superintendent Engineer, Ministry of Myanma Electric Power Enterprise

No	Title of post and working duration	Term of Reference	Nominee and Organization
		d. Advise on the field survey e. Advise on data processing and laboratory testing f. Facilitate technical analysis g. Streamline the EIA report and Environmental Management Plan	
5	Environmental Operation and Field Coordinator	a. Develop operational checklist for Environmental Survey b. Facilitate technical meeting and record keeping c. Assist in data mining and secondary data collection d. Supervise field survey e. Coordinate with local authority and communities for village level meeting	U Khin Aung General Manager, GMES Co., Ltd. No. 0025
6	Environmental Operation and Field Coordinator	a. Develop operational checklist for Environmental Study b. In charge for preliminary field visit c. Assist in data mining and secondary data collection d. Facilitate Initial Environmental Examination e. Establish field operational office for EIA field survey f. Supervise field survey g. Assist technical consultant for technical observation and measurement	Dr. Phyo Thu Aung Former Associate Professor, Myanmar Aerospace Engineering University
7	Consultant on Environmental Baseline	a. Design of environmental baseline; methodology, sampling framework, field testing method, and analytical tool b. Training of field staff for baseline data collection c. Analysis and Report Preparation for Industrial Process, Potential Impact, Alternative Design, and Pollutant Control d. Brainstorm for Environmental Monitoring and Management	Dr. Maung Maung Win, Retired Professor and Consultant for Chemical Engineering and Environmental Management in Myanmar, Thailand and USA
8	Consultant on Environmental Quality Management	a. Assist in preparation of guideline for environmental sampling of air and water quality b. Monitor the sample collection	Daw Khin Shwe Htay Former Lecturer, YTU Environmental Engineer

No	Title of post and working duration	Term of Reference	Nominee and Organization
		c. Register and inspect the sample collected d. Prepare instruction for laboratory testing e. Check the result of environmental laboratory testing f. Compare the laboratory result and verification. g. Assist in report preparation for environmental baseline	No. 0022
9	Consultant for Environmental Management Plan	a. Advise on EIA design and field data collection b. Analyze environmental impact report c. Advise on the selection of environmental technology option d. Write environmental management plan together with other consultants	U Win Thoung Green Myanmar & Pioneer Environmental Technology Pte. Ltd, Singapore. Experience in pollutant monitoring & control
10	Specialist on waste management	a. Collecting field data for industrial and municipal waste b. Assist in Laboratory Testing c. Data processing, computing, projection, modelling and analysis d. Assist in report preparation	Daw Tin May Soe, Former Professor, YTU Experience in environmental toxicology and pollution control No. 0028
11	Specialist on Water Quality	a. Collecting surface and ground water quality samples b. Assist in Laboratory Testing c. Data processing, computing, projection, modelling and analysis d. Assist in report preparation	Daw Aye Aye Kyaw Former Professor,YTU Experience in Water Management

A team of technical specialists as detailed below is recruited to undertake further detailed investigation in order to determine which activities are likely to result in significant environmental effects.

Table 1-4 EIA Project Consultant List of GMES Co., Ltd

No	Title of post and working duration	Term of Reference	Nominee and Organization
1	SIA Consultants	• Advise on the design of SIA • Develop term of reference for duty and responsibility among SIA team • Advise on the environmental baseline • Advise on the field survey • Advise on data processing and laboratory testing	U Kyaw Swar Tint Social Expect Dr. Than Aung Htwe Dr. Thein Tun

No	Title of post and working duration	Term of Reference	Nominee and Organization
		• Facilitate technical analysis • Streamline the SIA report and Social Management Plan • SIA team Leading	Dr. Myo Min Htun
2	Biodiversity Consultant	• Design of flora and fauna survey • Supervise flora and fauna field survey • Data processing and analysis • Report on relevant section	Biodiversity Experts (flora & fauna) 1. Dr. Kyaw Zay Moe Flora Expect, 2. Dr. Ko Myint Fauna Expect, Transitional Consultant Registration No. 0037
3	Public Health Consultant	• Design of public health survey • Supervise public health field survey • Data processing and analysis • Report on relevant section	Dr. Khon Aung
4	Hydrology Consultant	• Design of hydrological survey • Supervise hydrological survey • Advise impacts of Jetty design • Report on relevant section	U Sai Soe Thant Hydrological Expert
5	Legal Consultant	• To manage environmental conflicts • To arrange resettlement discussion for resolution of environmental disputes • To create a mechanism for the resolution of land-use conflicts • To review relevant environmental impact assessment law for the proposed project	Daw Tin Yi Win Director (Retired), Union Attorney General's Office

1.5 Timeframe of the EIA

The EIA started from July, 2015 and ended in March, 2016.

The first version of EIA report was reviewed by ECD. On 25th February 2021, Environmental Conservation Department (ECD), Nay Pyi Taw issued the Letter No. EIA- 1/7 (288/2021) to NSLC to undertake the replying and refilling the comments and instruction and resubmit this EIA to ECD, MONREC. The detailed information of the instruction letter is as followed and attached as **Appendix 1**.

GMES revised the EIA report and the unclear and required facts are rearranged and ended in November 2022.

1.6 Structure of the Report

This report was compiled and presented in (9) chapters excluding executive summary. An Executive Summary is also prepared and presented in both Myanmar and English Languages in the report. The report structure is as shown below.

Table 1-5 Structure of the Report

Sr. No.	Chapter	Content
1.	**Executive Summary**	Provides an overview of the main findings of the study. (Both in Myanmar and English Languages)
2.	**Chapter 1**	**Introduction** Provides the details of the project proponent and the study team, the methodology and scope of work.
3.	**Chapter 2**	**Policy, Legal and Institutional Framework** In accordance with the EMP Regulations, all legislation and guidelines that have been considered in this Chapter.
4.	**Chapter 3**	**Project Description and Alternative Selection** Provides an overview of the proposed project, project location, project activities (technical design specifications), and the details of the project, waste management and so on.
5.	**Chapter 4**	**Description of the Surrounding Environment** This Chapter provides a description of the current surrounding environment of the project surrounding.
6.	**Chapter 5**	**Potential Environmental Impacts and Mitigation Measures** The Chapter describes key environmental issues associated with the proposed project and mitigation measures relevant to the operation and were subjected to the impact assessment.
7.	**Chapter 6**	**Environmental Management Plan** Management plan for the impacts due to the project activities, roles and responsibilities of stakeholders involved in the implementation of the environmental plan during the operation phase are described.
8.	**Chapter 7**	**Environmental Monitoring Plan** The implementation of the environmental monitoring plan during the operation phase are described.
8.	**Chapter 8**	**Public Involvement** This chapter describes the public consultation meeting with local residents.
9.	**Chapter 9**	**Conclusions and Recommendations** This chapter presents the main conclusion of the report and recommendations for future action to be taken.

2.0 POLICY, LEGAL AND INSTITUTIONAL FRAMEWORK

2.1 Background

The emerging environmental scenario calls for attention on conservation and judicious use of natural resources. There is a need to integrate the environmental consequences of the development activities and for planning suitable measures in order to ensure sustainable development. The environmental considerations in any developmental process have become necessary for achieving sustainable development. To achieve such goals, the basic principles to be adopted are:

- To enhance the quality of environment in and around the project area by adopting proper measures for conservation of natural resources;
- Prevention of adverse environmental and social impact to the maximum possible extent;
- To mitigate the possible adverse environmental and socio-economic impact on the project-affected areas.

Policy, legal and institutional framework of the proposed project relating to the environmental, social, health and economic conditions are discussed in this section.

2.2 Policy Framework

This section highlights the relevant environmental policies established by the Government of Myanmar for purposes of environmental protection towards the process of sustainable development. The Government, through the Ministry of Natural Resources and Environmental Conservation (MONREC), has established environmental policies which broadly aim at:

- Encouraging respect for the environment by all and being mindful and taking care of the environment;
- Ensuring environmental issues are integrated with economic matters to attain sustainable development;
- Reviewing and evaluating development plans to ensure they follow the set environmental guidelines/policies;
- Encouraging the public to take part in environmental matters so as to enlighten them on the same hence improve on environmental performance.

2.3 Myanmar Regulatory Framework for Environmental Assessment

Myanmar Government issued:

- National Environmental Policy in 2019,
- Myanmar Agenda 21 in 1997,
- National Sustainable Development Strategy in 2009,
- The Environmental Conservation Law in 2012,
- The Environmental Conservation Rules in 2014,
- Environmental Impact Assessment Procedure in 2015,

- Environmental Impact Assessment Procedure and National Environmental Quality (Emission) Guidelines in 2015.

2.3.1 National Environmental Policy of Myanmar (2019)

Myanmar National Environmental Policy, which already included for social policy, subsequently gazette on 10th June 2019 is as follows:

To establish sound environment policies in the utilization of water, land, forests, marine resources and other natural resources in order to conserve the environment and prevent its degradation, the Government of the Union of Myanmar hereby adopts the following policy:

"The wealth of a nation is its people, its cultural heritage, its environment and its natural resources."

The objective of Myanmar's environment policy is aimed at achieving harmony and balance between these through the integration of environmental considerations into the development process to enhance the quality of the life of all citizens.

Every nation has the sovereign right to utilize its natural resources in accordance with its environmental policies, but great care must be taken not to exceed its jurisdiction or infringe upon the interests of other nations. It is the responsibility of the state and citizen to preserve its natural resources in the interest of present and future generations. Environmental protection should always be the primary objective in seeking development."

2.3.2 Myanmar Agenda 21 (1997)

The commission also formulated a blue print, the Myanmar Agenda 21, in 1997 as a follow up of national environmental policy in response to the call of the Earth Summit to develop national strategies to implement the Global Agenda 21. Myanmar Agenda 21 serves as a framework for integrating environmental considerations in future national development plans as well as sectorial and regional development plans in Myanmar and recognizes the need of environmental impact assessment, integrated economic development and sustainable social development respectively.

2.3.3 National Sustainable Development Strategy (2009)

National Sustainable Development Strategy was formulated to implement the National Environmental Policy in 2009 by Ministry of Forestry with the vision of wellbeing and happiness of Myanmar people. Three overarching goals identified are sustainable management of natural resources; integrated economic development and sustainable social development. In order to achieve these goals, a series of objectives are set along with activities. In addition, leading institution and collaboration institutions are identified to perform the activities.

2.3.4 The Environmental Conservation Law (2012)

The principle law governing environmental management in Myanmar is the Environmental Conservation Law, which was issued in March, 2012 (The Pyidaungsu Hluttaw Law No.9/2012). The law stipulates that government bodies are in charge of environmental conservational as well as their relevant roles and responsibilities. It

touches on water, noise, vibration and solid waste qualities but does not provide specific standards to be met.

It also mentions that any new development project must perform a system of Environmental Impact Assessment (EIA) and Social Impact Assessment (SIA) in order to find out whether or not a project or activity to be undertaken by any government department, organization or person may cause a significant impact on the environment or not. In the context of project development, it is important to note that the law adopts the notion of 'Polluter Pays Principle' as it implies that the project proponents are responsible for covering all environmental and social costs generated by the project.

The law serves as the basic for founding of Environmental Conservation Department (ECD) under the Ministry of Natural Resources and Environmental Conservation (MONREC), both of which will be explained later. Following the Environmental Conservation Law are two legal instruments: Environmental Conservation Rules (2014) and EIA Procedures (2015).

The main objectives of Environmental Conservation Law related to this Project are abstracted from ***Section 3*** as follows.

(a) To enable to emerge a healthy and clean environment and to enable to conserve natural and cultural heritage for the benefit of present and future generations;

(b) To reclaim ecosystems as may be possible which are starting to generate and disappear;

(c) To enable to manage and implement for decrease and loss of natural resources and for enabling the sustainable use beneficially;

As the important reference, the following sections are excerpted: Section 7 for provisions of duties and powers of MONREC, Section 10 for Environmental Quality Standards, and Section 13 for monitoring as well as Section 14 and Section for polluter's responsible.

Section 7: Duties and Powers relating to the Environmental Conservation of the Ministry

(g) To specify categories and classes of hazardous wastes generated from the production and use of chemicals or other hazardous substances in carrying out industry, agriculture, mineral production, sanitation and other activities;

(h) To prescribe categories of hazardous substances that may affect significantly at present or in the long run on the environment;

(i) To promote and carry out the establishment of necessary factories and stations for the treatment of solid wastes, effluents and emissions which contain toxic and hazardous substances;

(j) To prescribe the terms and conditions relating to effluent treatment in industrial estates and other necessary places and buildings and emissions of machines, vehicles and mechanisms;

(m) To lay down and carry out a system of EIA and SIA as to whether or not a project or activity to be undertaken by any Government department, organization or person may cause a significant impact on the environment;

(o) To manage to cause the polluter to compensate for environmental impact, cause to contribute fund by the organizations which obtain benefit from the natural environmental service system, cause to contribute a part of the benefit from the businesses which explore, trade and use the natural resources in environmental conservation works.

Section 10: Environmental Quality Standards

The Ministry may, with the approval of the Union Government and the Committee, stipulate the following environmental quality standards:

(a) Suitable surface water quality standards in the usage in rivers, streams, canals, springs, marshes, swamps, lakes, reservoirs and other inland water sources of the public;

(b) Water quality standards for coastal and estuarine areas;

(c) Underground water quality standards;

(d) Atmospheric quality standards;

(e) Noise and vibration standards;

(f) Emissions standards;

(g) Effluent standards;

(h) Solid wastes standards;

(i) Other environmental quality standards stipulated by the Union Government.

Section 13: Monitoring

The Ministry shall, under the guidance of the Committee, maintain a comprehensive monitoring system and implement by itself or in co- ordination with relevant Government departments and organizations in the following matters:

(a) The use of agro- chemicals which cause to impact on the environment significantly;

(b) Transport, storage, use, treatment and disposal of pollutants and hazardous substances in industries;

(c) Disposal of wastes come out from exploration, production and treatment of minerals, industrial mineral raw materials and gems;

(d) Carrying out waste disposal and sanitation works;

(e) Carrying out development and constructions;

(f) Carrying out other necessary matters relating to environmental pollution.

Section 14: A person causing a point source of pollution shall treat, emit, discharge and deposit the substances which cause pollution in the environment in accord with stipulated environmental quality standards.

Section 15: The owner or occupier of any business, material or place which causes a point source of pollution shall install or use an on-site facility or controlling equipment in order to monitor, control, manage, reduce or eliminate environmental pollution. If it is impracticable, it shall be arranged to dispose the wastes in accord with environmentally sound methods.

2.3.5 The Environmental Conservation Rules (2014)

Environmental Conservation Rules provide a platform to bridge the Environmental Conservation Law with more specific and practical rules and guidelines including EIA Procedures and environmental quality standards, the rules stipulate that the Ministry of Environmental Conservation and Forestry will adopt and carry out the environmental impact assessment system which includes determination of categories of plans, business or activity that requires Environmental Impact Assessment (EIA).

Rule 61: The Ministry may approve and reply on the EIA report or IEE or EMP with the guidance of the Committee.

2.3.6 Environmental Impact Assessment Procedure (2015)

The objectives of the EIA procedures are to provide a common framework for EIA reporting and to ensure that EIA reporting is in line with legal requirements, good practices and professional standards.

Section 76: For Project types which require EMP according to the Article 55 (a) of the Rules or Article 24 of the Procedure, the Project Proponent may prepare an EMP by itself or may appoint a person or organization who/which is registered according to the Article 18.

Section 77: The Project Proponent shall issue a letter of endorsement in a format prescribed by the Ministry according to the Article 63. Such letter shall be submitted to the Department prepared either in the Myanmar language, or in the English language or both. The Project Proponent shall submit the EMP to the Department in both digital form and complete paper copies, together with the required service fee as prescribed by the Department, and confirming:

a) the accuracy and completeness of the EMP;

b) that the EMP has been prepared in strict compliance with applicable laws including this Procedure; and

c) that the Project will at all times comply fully with the commitments, mitigation measures, and plans in the EMP.

Section 78: Upon Receipt of the EMP from the Project Proponent, the Department shall review and submit to the Ministry to enable it to make a final decision on approval of the EMP.

Section 79: If it is determined by the Ministry that the EMP does not satisfy requirements, then the Project Proponent shall be called upon by the Department to undertake necessary amendments and/or to provide supplementary information as directed by the Ministry.

Section 80: Upon completion of its review of the EMP, the Ministry shall;

a) approve the EMP, subject to any conditions it may prescribe, and issue an ECC; or

b) require that the Project carry out an IEE or EIA, citing the reasons for this decision and informing the Project Proponent of its decision; and, in either case

c) publicly disclose its decision.

Section 81: The Department shall deliver the final decision of the Ministry within thirty (30) working days of receipt of an EMP. If the Ministry requires an EMP to be amended,

2.3.7 National Environmental Quality (Emission) Guidelines (2015)

The objective of these national guidelines is to provide the basis for regulation and control of noise and vibration, air emissions, liquid discharges from various sources. According to these guidelines, all projects subject to EIA procedure have to comply with and refer to applicable national guidelines standards or international standards adopted by the Ministry. In addition, a project proponent shall be responsible for the monitoring of their compliance with general and applicable industry- specific guidelines as specified in the EMP and ECC (Environmental Compliance Certificate). In addition, the Project Proponent is responsible to monitor the environmental quality based on the developed EMP as specified in the following sections.

Section 12: As specified in the EIA Procedure, projects shall engage in continuous, proactive and comprehensive self- monitoring of the project and comply with applicable guidelines and standards. For purposes of these Guidelines, projects shall be responsible for the monitoring of their compliance with general and applicable industry-specific Guidelines as specified in the EMP and ECC.

Section 13: Air emissions, noise, odor, and liquid/ effluent discharges will be sampled and measured at points of compliance as specified in the project EMP and ECC.

2.4 Environmental-related Laws and Regulations in Myanmar

There are several laws and regulations relating to the environmental matters administered by various relevant ministries in Myanmar. The environmental-related laws and regulations are tabulated in following table.

Table 2-1 Environmental-related Laws and Rules

Sr. No.	Laws and Regulation	Year
I.	**Environmental Framework**	
1.1	Myanmar Agenda 21	1997
1.2	National Sustainable Development Strategy	2009
1.3	The Environmental Conservation Law	2012
1.4	The Environmental Conservation Rules	2014
1.5	EIA Procedures	December 2015
1.6	National Environmental Quality (Emission) Guidelines	December 2015
1.7	Draft Guideline on Public Participation in Myanmar's EIA Processes	2017
1.8	National Environmental Policy of Myanmar	June 2019
1.9	Myanmar Climate Change Policy	June 2019
II.	**Infrastructure/Economic Development/ Administration**	
2.1	The Towns Act	1907
2.2	The Village Act	1907
2.3	The Income Tax Law	1974 Amendment in 2011
2.4	The Commercial Tax Law	1990 Amendment in 2014
2.5	The Myanmar Insurance Law	1993

Sr. No.	Laws and Regulation	Year
2.6	The Myanmar Hotel and Tourism Law	1993
2.7	The Constitution of the Union of Myanmar	2008
2.8	The Ward or Village Tracts Administration Law	2012 Amendment in 2019
2.9	Myanmar Investment Law	2016
2.10	Myanmar Investment Rules	2017
III.	**Water Environment**	
3.1	The Canal Act	1905
3.2	The Ports Act	1908
3.3	The Embankment Act	1909
3.4	The Water Power Act	1927
3.5	The Underground Water Act	1930
3.6	The Myanmar Lighthouse Act	1937 Amendment in 2016
3.7	The Territorial Sea and Maritime Zone Law	2017
3.8	The Law on Aquaculture	1989
3.9	The Law relating to the Fishing Rights of Foreign Fishing Vessels	1989 Amendment in 1993
3.10	The Marine Fisheries Law	1990 Amendment in 1993
3.11	The Freshwater Fisheries Law	1991
3.12	The Conservation of Water Resources and Rivers Law	2006
3.13	The Conservation of Water Resources and Improvement of River Systems Rules	2013
3.14	The National Water Policy (NWP) of Myanmar	2014
3.15	The Myanma Port Authority Law	2015
3.16	The Myanma Port Authority Rules	2016
IV.	**Land Use**	
4.1	The Farmland Law	2012
4.2	The Farmland Rules	2012
4.3	The Vacant, Fallow and Virgin Lands Management Law	2012
4.4	The Vacant, Fallow and Virgin Lands Management Rules	2012
4.5	The National Land Use Policy	2016
4.6	The Land Acquisition, Resettlement and Rehabilitation Act	2019
V.	**Cultural Heritage**	
5.1	The Heritage Goods Protection Law (or) The Protection and Preservation of Ancient Monuments Law	2015
5.2	The Protection and Preservation of Cultural Heritage Regions Law	2019
VI.	**Forestry/Biodiversity/Agriculture**	
6.1	The Pesticide Law	1990
6.2	The Forest Law	1992
6.3	The Plant Pest Quarantine Law	1993

Sr. No.	Laws and Regulation	Year
6.4	The Protection of Wildlife and Wild Plants and Conservation of Natural Areas Law	1994
6.5	The Animal Health and Development Law	1994
6.6	The Forest Rules	1995
6.7	The Fertilizer Law	2002
6.8	The Protection of Wildlife and Wild Plants and Conservation of Natural Areas Rules	2002
6.9	The Protection of Biodiversity and Protected Area Law	2018
VII.	**Hotel and Tourism Sector**	
7.1	National Food Law	1997
7.2	Procedure relating to the Myanmar Tourism Law	1990
7.3	Myanmar Tourism Law	2018
VIII.	**Working Environment**	
8.1	The Workmen's Compensation Act	1923 Amendment in 2011
8.2	The Shops and Establishment Act	1951
8.3	The Leave and Holiday Act	1951 Partially Amendment in 2014
8.4	The Labor Organization Law	2011
8.5	The Labor Organization Rule	2012
8.6	The Labor Dispute Settlement Law	2012 Amendment in 2019
8.7	The Social Security Law	2012
8.8	The Employment and Skill Development Law	2013
8.9	The Minimum Wage Law/Rules	2013
8.10	The Social Security Rules	2014
8.11	The Law Protecting Ethnic Right	2015
8.12	The Payment of Wages Law	2016
8.13	The Myanmar Occupational Health and Safety Law	2019
8.14	Child Rights Law	2019
IX.	**Public Health**	
9.1	The Penal Code of Offences Affecting the Public Health, Safety Convenience, Decency and Morals	1961
9.2	The Public Health Law	1972
9.3	The National Drug Law	1992
9.4	The Narcotic Drugs and Psychotropic Substances Law	1993
9.5	The Prevention and Control of Communicable Diseases Law	1995 Amendment in 2011
9.6	The Traditional Drug Law	1996
9.7	The National Food Law	1997
9.8	The Control of Smoking and Consumption of Tobacco Product Law	2006
9.9	The Law related to Private Health Care Services	2007

Sr. No.	Laws and Regulation	Year
		Amendment in 2013
X.	**Emergency/Disaster**	
10.1	The Natural Disaster Management Law	2013
10.2	The Myanmar Fire-brigade Law	2015

2.5 Myanmar Legislation Relevance to the Project

Legal and approval requirements applicable to the project related to the environmental and social will be identified by New Starlight Construction Company Limited.

New Starlight Construction Company Limited must comply with the following Myanmar Acts and Rules related to the project.

Table 2-2 Laws and Rules Relevance to the Project

Sr. No.	Laws/Rules/Regulation	Description
I.	**Environmental Framework**	
1.1	Myanmar Agenda 21 (1991)	See **2.3.2**
1.2	National Sustainable Development Strategy (2009)	See **2.3.1**
1.3	The Environmental Conservation Law (2012)	See **2.3.4**
1.4	The Environmental Conservation Rules (2014)	See **2.3.5**
1.5	EIA Procedures (2015)	See **2.3.6**
1.6	National Environmental Quality (Emission) Guidelines (2015)	See **2.3.7**
II.	**Infrastructure/Economic Development/ Administration**	
2.1	The Constitution of the Union of Myanmar (2008)	***Section 45:*** The Union shall protect and conserve natural environment. ***Section 390 (b):*** Every citizen has the duty to assist the Union in carrying out the environmental conservation:
2.2	Myanmar Investment Law (2016)	***Section 3:*** The objectives are: (a) to develop responsible investment businesses which do not cause harm to the natural environment and the social environment for the interest of the Union and its citizens; (b) to protect the investors and their investment businesses in accordance with the law; (c) to create job opportunities for the people; ***Section 50 (b):*** Foreign investor may lease land or building either from the government or government organizations or from owners of private land or building from commencing on the date of receipt of the permit or endorsement of the Commission up to an

Sr. No.	Laws/Rules/Regulation	Description
		initial period of (50) years in accordance with the stipulation. Section 52: The Government guarantees not to nationalize any investment carrying out in accordance with the law. Except under the following conditions, the Government guarantees not to take any measures which expropriate or indirectly expropriate or is likely to effect a result in the termination of an investment: (a) actually necessary for the interest of the Union or its citizen; (b) non-discriminatory manner; (c) measures in accordance with the applicable Laws; (d) prompt, fair and adequate payment of compensation; ***Section 65 (g):*** The Investor shall abide by applicable laws, rules, procedures and best standards practiced internationally for this investment so as not to cause damage, pollution, and loss to the natural and social environment and not to cause damage to cultural heritage;
2.3	Myanmar Investment Rules (2017)	***Section 189:*** After obtaining the permit, the investor who requires environmental and social impact assessments shall submit the required performances on environmental and social impact assessments to the Commission along the course of operating business.
III.	**Water Environment**	
3.1	The Water Power Act (1927)	Prohibitions on the pollution of public water; and provisions for the use of water in the pursuit of energy production and mining in a manner which does not harm land, watersheds or "localities"
3.2	The Territorial Sea and Maritime Zone Law (2017)	***Section 3:*** The objectives of this Law are as follows: (a) to have security, rule of law and tranquility for the interests of the State in the territorial sea, contiguous zone, exclusive economic zone and continental shelf; (b) to protect and conserve, and excavate natural resources systematically for long term in the territorial sea and maritime zones of the State and to do marine scientific researches; (c) protect and conserve from the pollutions on the sea, airspace and impact on marine environment through the territorial sea and maritime zones of the State.

Sr. No.	Laws/Rules/Regulation	Description
		Section 8: If a foreign ship engages in any of the following activities while innocent passage through the territorial sea, it shall be considered to be prejudicial to the peace, rule of law and stability or security of the State: (h) act to pollute and affect the sea, airspace and impact on marine environment; (i) catching aquatic animals including fishes, by any way, fishing, supporting and preparing for these businesses, and making to damage the natural resources. ***Section 9:*** The Foreign ship shall observe the relevant existing laws and international rules for protection of collision at the sea in the innocent passage through the territorial sea. ***Section 20:*** The State has the following rights and jurisdiction to exercise within exclusive economic zone: (d) rights and jurisdiction to protect and conserve the marine environment sustainability and to prevent and control marine pollution. ***Section 25:*** The State has the right to exercise the following rights and jurisdiction in the continental shelf: (d) conservation and protection of marine environment, and reduction, prevention and control of marine pollution due to submarine cables, pipelines and its related facilities;
3.3	The Conservation of Water Resources and Rivers Law (2006)	***Section 3:*** The aims of this Law are as follows: (a) to conserve and protect the water resources and rivers system for beneficial utilization by the public; (b) to smooth and safety waterways navigation along rivers and creeks; (c) to contribute to the development of State economy through improving water resources and river system; (d) to protect environmental impact. ***Section 11 (a):*** No person shall dispose of engine oil, chemical, poisonous material and other materials which may cause environmental damage, or dispose of explosives from the bank or from a vessel which is plying, vessel which has berthed, anchored, stranded or sunk.
IV.	**Cultural Heritage**	

Sr. No.	Laws/Rules/Regulation	Description
4.1	The Protection of Preservation of Cultural Heritage Regions Law (2019)	***Section (3):*** The objectives of this law are: (b) to protect and preserve the cultural heritage regions and the cultural heritage therein so as not to deteriorate due to natural disaster or man-made destruction; (e) to protect the cultural heritage regions from destruction.
V.	**Forestry/Biodiversity/Agriculture**	
5.1	The Protection of Wildlife and Wild Plants and Conservation of Natural Areas Law (1994)	***Section 3:*** The objectives of this law are: (a) to implement the policy of protecting wildlife of the State; (b) to implement the policy if conserving the protected area of the State; (c) to carry out in accordance with International Conventions agreed by the State in respect of the protection of wild species of both flora and fauna and representative ecosystems occurring in the country; (d) to protect endangered species of wild flora and fauna and other habitats; (e) to contribute for the development of research on natural sciences; (f) to establish zoological gardens and botanical gardens for the protection of flora and fauna.
VI.	**Hotel and Tourism Sector**	
6.1	National Food Law (1997)	The aim of this law are as follows: ➢ To enable the public to consume food of genuine quality, free from danger and hygienic; ➢ To prevent the public from consuming food that may cause danger or are injurious to health; ➢ To surprise production of controlled food systematically; ➢ To control and regulate the production, import, export, storage, distribution and sale of food systematically.
6.2	Procedure relating to the Myanmar Tourism Law (1990)	***Section 8:*** Requirements for a License to operate a hotel as follow; ➢ License issued by the township municipal concerned if it is a lodging-house. ➢ Registered in accordance with the Myanmar Company Act if it is a limited company or joint-venture. ➢ Certificate of the standard of health hygiene for the hotel or lodging-house by the department concern.

Sr. No.	Laws/Rules/Regulation	Description
6.3	Myanmar Tourism Law (2018)	The main objectives of this laws are as follows: ➢ To support effective domestic and international tourism marketing activities in visioning Myanmar as one of the International Tourist Destinations; ➢ To protect the rights of Tourism operators and Tourists and ensure they understand and adhere to their responsibilities; ➢ To ensure the adequate quality and safety of Tourism services; ➢ To enhance cooperation and coordination in developing and managing tourism; ➢ To develop human resources and increase employment opportunities by enhancing knowledge of Tourism; ➢ To promote responsible tourism activities that will contribute to the country's sustainable development, ecotourism and conservation of the natural environment; ➢ To support community tourism related businesses, SMEs and to create regional economic opportunities for communities, as well as the development of Community based Tourism by relying on the tourism sector; ➢ To coordinate with domestic and international institutions and tourism experts in conducting tourism sector development research.
6.4	Order for Licensing of Hotel and Lodging-House Business (1st September 2011): Annexure (A); The minimum standard requirements for the Hotel business	***Location and Building*** ➢ Location of the hotel must be suitable for hotel business and the environment must be healthy and hygienic; ➢ The building must be in the safety condition and separate with its own stair-case; ➢ The hotel must be adequately lit and ventilated. ***Bedroom*** ➢ All bedrooms must be adequately lit and ventilated; ➢ All bedrooms must be built to ensure privacy and safety; All bedrooms must be kept free from mosquitoes, flies and insects;

Sr. No.	Laws/Rules/Regulation	Description
		➢ Electric fan or air-conditioner or heater and blanket etc. Must be arranged according to the climate of the place. ***Bathroom and Toilets*** ➢ A bathroom must be hygienic and adequately lit and ventilated; ➢ Shall have toilet, a hand-basin, mirror, shower and bathtub; ➢ Shall have water-purified system and hot water/cold water. ➢ A toilet must be hygienic and adequately lit and ventilated. ***Dining Room*** ➢ Food and beverage provided must be fresh, clean and hygienic; ➢ Restaurant and Dining room must be kept clean and hygienic and provide the protective system from mosquito, fly and any insects; ➢ Dining room and kitchen must be separate. ***Kitchen*** ➢ Arrangements must be made to keep the kitchen clean, hygienic, adequately lit and ventilated to protect from insects and free from bad smell; ➢ Food and beverage provided must be fresh, clean and hygienic; ➢ Kitchen equipment, crockery and cutlery of the restaurant must be clean and hygienic; ➢ A system must be made to provide a sufficient supply of hot and cold running water; ➢ Areas for cooking place, washing dishes and for food must be placed separately; ➢ A system must be made for disposal of leftover food rubbish; ➢ There must be adequate store room and refrigerator connected with the kitchen;

Sr. No.	Laws/Rules/Regulation	Description
		➢ Finished foods must be stored as warmer for fresh and not poison. ***Security and Fire Prevention Arrangements*** ➢ Shall provide arrangement for security of guests and their properties; ➢ Shall arrange fire preventive planning in accordance with stipulations of relevant departments; ➢ Shall rehears trainings for fire security services; ➢ If the building is over 3-storeyed shall install emergency exit; ➢ The emergency stair must be strong for use actually. Shall arrange prevention and security of worksite for staffs.
6.5	The Electricity Law (2014)	***Section 45:*** No permit holder shall operate any other electrical business except the business contained in the permit. ***Section 47:*** No person shall operate the generation, transmission, connection of electric power without obtaining the electrical safety certificate. ***Section 52:*** No person shall connect, waste, utilize the electric power without the permission of the permit holder. ***Section 53:*** No person shall divert the electric current, cut-off the electric power line, destroy any equipment being used in any electrical business.
6.6	The Automobile Law (2015)	***Section 3:*** The main objectives of this law are as follows: (c) For the easy flow of road users and for the protection against road risks and vehicle perils. (d) To avoid traffic congestion and to use high technology transportation systems efficiently in order to implement protection against road risks and vehicle perils. (e) To reduce environmental pollution caused by motor vehicles.
VII.	**Working Environment**	
7.1	The Workmen's Compensation Act (1923)	Required to employees who become injured or who die in any accidents arising during and in consequence of their employment. Such compensation also must be made for diseases which arise as a direct consequence of employment, such as carpal tunnel syndrome.

Sr. No.	Laws/Rules/Regulation	Description
7.2	The Leave and Holiday Act (1951)	To allow worker for leave and holiday allowances, religious or social activities with earn allowance, and benefits for Health allowances. Concerned workers: Daily wage workers/temporary workers/permanent workers.
7.3	The Labor Organization Law (2011)	***Section 17:*** The labour organizations shall have the right to carry out freely in drawing up their constitution and rules, in electing their representatives, in organizing their administration and activities or in formulating their programs. he labour organizations have the right to negotiate and settle with the employer if the workers are unable to obtain and enjoy the rights of the workers contained in the labour laws and to submit demands to the employer and claim in accord with the relevant law if the agreement cannot be reached. ***Section 18:*** The labour organization has the right to demand the relevant employer to re-appoint a worker if such worker is dismissed by the employer and if there is cause to believe that the reasons of such dismissal were based on labour organization membership or activities, or were not in conformity with the labour laws. ***Section 19:*** The labour organizations have the right to send representatives to the Conciliation Body in settling a dispute between the employer and the worker. Similarly, they have the right to send representatives to the Conciliation Tribunals formed with the representatives from the various levels of labour organizations. ***Section 20:*** In discussing with the Government, the employer and the complaining workers in respect of worker's rights or interests contained in the labour laws, the representatives of the labour organization also have the right to participate and discuss.
7.4	The Labor Organization Rules (2012)	***Section 34:*** The labour organizations and Executive Committee members may hold meetings outside of working hours. However, meetings may be held during working hours with the agreement of the employer. ***Section 35:*** The labour organizations and Executive Committee members shall obtain the permission of the employer if it is desired to hold meetings in the factory, mill or work centre.

Sr. No.	Laws/Rules/Regulation	Description
		Section 36: The management should make available to workers' representatives, under the conditions and to the extent, which may be determined by agreement, such material facilities and information as may be necessary for the exercise of their functions.
7.5	The Labor Dispute Settlement Law (2012)	***Section 38:*** No employer shall fail to negotiate and coordinate in respect of the complaint within the prescribed period without sufficient cause. ***Section 39:*** No employer shall alter the conditions of service relating to workers concerned in such dispute at the consecutive period before commencing the dispute within the period under investigation of the dispute before the Arbitration Body or Tribunal, to affect the interest of such workers immediately. ***Section 40:*** No party shall proceed to lock-out or strike without accepting negotiation, conciliation and arbitration by Arbitration Body in accord with this law in respect of a dispute. ***Section 51:*** If any employer, in the course of settlement of dispute, commits any act or omission, without sufficient cause, which by causing a reduction in production resulting so as to reduce the workers' benefits shall be liable to pay full compensation in the amount determined by the Arbitration Body or Tribunal. Such money shall be recovered as the arrear of land revenue.
7.6	The Social Security Law (2012)	***Section 3 (e):*** The objective is causing to obtain the right to continued medical treatment, family assistance benefit, invalidity benefit, superannuation benefit, survivors' benefit, unemployment benefit, the right to residency and ownership of housing after retirement in addition to health care and pecuniary benefit for sickness, maternity, decease and employment injury of the workers. ***Section 11(a):*** The following establishments shall be applied with the provisions for compulsory registration for social security system and benefits contained in this Law if they employ minimum number of workers and above determined by the Ministry of Labour in co-ordination with the Social Security Board: (i) industries which carry out business whether or not they utilize mechanical power or a certain kind of power, businesses of

Sr. No.	Laws/Rules/Regulation	Description
		manufacturing, repairing and servicing, or engineering businesses, factories, warehouses and establishments; (ii) Government departments, Government organizations and regional administrative organizations which carry out business; (iii) development organizations; (iv) financial organizations; (v) companies, associations, organizations, and their subordinate departments and branch offices which carry out business; (vi) shops, commercial establishments, public entertaining establishments; (vii) Government departments and Government organizations which carry out business or transport businesses owned by regional administrative body, and transport businesses carried out with the permission of such department, body or in joint venture with such department or body; (viii) constructions carried out for a period of one year and above under employment agreement; (ix) businesses carried out with foreign investment or citizen investment or joint ventured businesses; (x) businesses relating to mining and gem contained in any existing law; (xi) businesses relating to petroleum and natural gas contained in any existing law; (xii) ports and out-ports contained in any existing law; (xiii) businesses and organizations carried out with freight handling workers; (xiv) Ministry of Labour and its subordinate departments and organizations; (xv) establishments determined by the Ministry of Labour, from time to time, that they shall be applied with the provisions of compulsory registration for Social Security System and benefits contained in this Law in co-ordination with the Social Security Board and with the approval of the Union Government.

Sr. No.	Laws/Rules/Regulation	Description
		Section 15 (a): The following funds are included in the Social Security Fund: (a) The following funds are included in the Social Security Fund: (i) health and social care fund; (ii) family assistance fund; (iii) invalidity benefit, superannuation benefit, and survivors' benefit fund; (iv) unemployment benefit fund; (v) other social security fund for social security system of compulsory registration and contribution stipulated by the Ministry of Labour, in co-ordination with the Social Security Board, under clause (ii) of sub-section (e) of section 13; (vi) other social security fund stipulated that contribution may be paid after voluntary registration under clause (ii) of sub-section (e) of section 13; (vii) Social Security Housing Plan fund. ***Section 18 (b):*** The employer shall deduct contributions to be paid by worker from his wages together with contribution to be paid by him and pay to the social security fund. The employer shall also incur the expense for such contribution. ***Section 48 (b):*** The employers may effect insurance by registering voluntarily for the workers who are not applied to provisions of compulsory registration for employment injury benefit insurance system and by paying stipulated contribution to employment injury benefit insurance fund. ***Section 75:*** The employers of establishments applied by this Law: (a) shall prepare and keep the following records and lists correctly and submit to the relevant township social security office in accord with the stipulations: (i) records and lists of workers' daily attendance; (ii) records on appointment of new workers, employing worker by changing of work, termination, dismissal and resignation; (iii) records on promotion and paying remuneration;

Sr. No.	Laws/Rules/Regulation	Description
		(iv) records and lists of employer, manager, and administrator and records on change of them; (b) shall inform the relevant township social security office if the following matters arise: (i) changes in number of workers and address of establishment; (ii) change of employer, change of business, suspension of work, and close-down of work; (iii) employment injury, decease and contracting diseases; (c) shall submit records of work and lists if requested by inspectorate or official assigned by the Social Security Head Office and various levels of Regional Social Security Office under this Law.
7.7	The Employment and Skill Development Law (2013)	***Section 5 (a) :*** (1) If the employer has appointed the employee to work for an employment, the employment agreement shall be made within 30 days. But it shall not be related with government department and organization for a permanent employment. (2) If pre training period and probation period are stipulated before the appointment the said trainee shall not be related with the stipulation of sub-section (1). ***Section 5(b):*** The following particulars shall be included in the employment agreement: (1) the type of employment; (2) the probation period; (3) wage, salary; (4) location of the employment; (5) the term of the agreement; (6) working hour; (7) day off, holiday and leave; (8) overtime; (9) meal arrangement during the work hour; (10) accommodation; (11) medical treatment; (12) ferry arrangement to worksite and travelling; (13) regulations to be followed by the employees;

Sr. No.	Laws/Rules/Regulation	Description
		(14) if the employee is sent to attend the training, the limited time agreed by the employee to continue to work after attending the training; (15) resigning and termination of service; (16) termination of agreement; (17) the obligations in accord with the stipulation of the agreement; (18) the cancellation of employment agreement mutually made between employer and employee; (19) other matters; (20) specifying the regulation of the agreement, amending and supplementing; (21) miscellaneous. ***Section 14:*** The employer shall carry out the training program in accord with the work requirement in line with the policy of the skill development team to develop the skill relating to the employment for the workers who are proposed to appoint and working at present. ***Section 30:*** (a) The employer of the industry and service business shall put in to the fund monthly as put in fees without fail for the total wages of the subordinates and the supervisors' salary for not less than 0.5%; (b) Put in money paid under sub-section (a) shall not be deducted from the wage and salary of the employees. ***Section 34:*** If anyone is convicted of committing the imitation on skill recognized certificate, he shall be punished with imprisonment for not more than 7 years and with a fine.
7.8	The Minimum Wage Law/Rules (2013)	***Section 7:*** The following particulars shall be based and considered in suggesting by the Union Committee, Region and State Committees after making study, scrutiny and calculation or, in determining the minimum age by the National Committee, relating to the determination of minimum wage: (a) the needs of workers and their families; (b) existing salaries; (c) social security benefits; (d) living cost and changes of such living costs; (e) compatible living standard;

Sr. No.	Laws/Rules/Regulation	Description
		(f) employment opportunities in conformity with the needs for State's economy and development of production; (g) gross domestic production value of the State and per capita income; (h) hazardous to health and harmful to work, nature of the work; (i) Other facts stipulated by the Ministry with the approval of the Union Government. ***Section 12:*** The employer: (a) shall not pay wage to the worker less than the minimum wage stipulated under this Law; (b) may pay more than the minimum wage stipulated under this law; (c) shall not have the right to deduct any other wage except the wage for which it has the right to deduct as stipulated in the notification issued under this law; (d) shall pay the minimum wage to the workers working in the commercial, production and service business in cash. Moreover, if the specific benefits, interests or opportunities are to be paid, it may be paid in cash or partly in property, with prevailing regional price, jointly according to the desire of the worker; (e) in paying minimum wage to the workers working in the agricultural and livestock business, some cash and some property at prevailing regional price may be paid jointly according to local custom or desire of the majority of workers or collective agreement. Such payment shall be for any personal use and benefit of the worker and his family and the value shall also be considerable and fair. ***Section 13:*** The employer: (a) shall inform the workers the rates of minimum wage relating to the business among the rates of minimum wage stipulated under this Law and advertise it at the workplace to enable to be seen by the relevant workers; (b) shall prepare and maintain the lists, schedules, documents and wages of the workers correctly; (c) shall report the lists, schedules and documents prepared and maintained under subsection(b) to

Sr. No.	Laws/Rules/Regulation	Description
		the relevant department in accord with the stipulations; (d) shall accept the inspection when summoned by the inspection officer. Moreover, he shall produce the said lists and documents upon asking to submit; (e) shall allow the entry and inspection of the inspection officer to the commercial, production and service businesses, agricultural and livestock breeding workplaces and give necessary assistances; (f) if the workers cannot work due to sickness, shall give them holiday for medical treatment in accord with the stipulations; (g) if the funeral matter of the member of the family of worker or his parent occurs, shall give holiday without deducting from the minimum wage, in accord with the stipulations. ***Section 18:*** The inspection officer: (a) has the right to enter and inspect the relevant commercial, production and service workplaces, agricultural and livestock breeding workplaces and inspect whether or not they comply with and carry out in accord with the rules, notifications, orders, directives and procedures under this Law, whether or not the lists, schedules and documents, wages relating to the workers are prepared correctly, and whether or not such lists, schedules and documents are reported to the Department in accord with the stipulations; (b) may summon, inspect the relevant persons under the assignment of duty by the Department, asking and copying for the relevant lists, schedules and documents. (c) if there are outside workers at employer, has the right to inspect information relating to such outside workers, their names and addresses and the right to ask for and copy their lists and documents and lists relating to minimum wage; (d) in carrying out under sub-section (a), (b) and (c) relating to inspection, if required by the employer to produce the document, shall show the civil service identify card issued by the relevant department;

Sr. No.	Laws/Rules/Regulation	Description
		(e) report to the Department in accord with the stipulations relating to the finding under sub-sections (a), (b) and (c), and documents and papers called for.
7.9	The Social Security Rules (2014)	***Section 24:*** (a) The account of the Social Security Board includes two main funds: the Social Security Fund and Employment Injury Benefit Fund, and three accounts shall be opened and maintained as follows according to the requirement in the implementation of work: (i) Social Security Fund Accounts; (ii) Employment Injury Benefit Fund Accounts; (iii) Administrative Accounts. (b) The Administration expenditure of the Social Security Board shall not be over 25 per cent of the total receipt of the contributions within a financial year.
7.10	The Payment of Wages Law (2016)	***Section 4:*** An employer must pay for: (a) Part-time, daily, weekly or other part-time job, temporary or piecework when the work is done OR at the agreed time. (b) According to the Article (a), the time frame shall not exceed one month. (c) Wages for the permanent work must pay per monthly basis. If so (i) Must pay at the end of the payment period when there are not more than 100 workers. (ii) If there are 100 workers and above, pay must not be administered later than 5 days after the end of the payment period. (e) If a resignation letter is submitted, wages must be paid at the ending day of the payment period.
7.11	The Myanmar Occupational Health and Safety Law (2019)	***Section 3:*** The objectives of this law are: (a) to implement Occupational Safety and Health matters effectively in the respective Industries/Businesses; (b) to determine the duties of relevant persons applicable under this Law including Employers and Workers to lessen and mitigate occurrence of Occupational Diseases and Occupational Accidents;

Sr. No.	Laws/Rules/Regulation	Description
		(c) to cause relevant persons applicable under this Law, Employers and Workers to take precaution and prevention against occupational hazards and Occupational Diseases; (d) to improve the productivity and health of Workers by preventing the occurrence of Occupational Accidents and Occupational Diseases for their safety; (e) to create Workplaces that are safe and good for health by prescribing the Occupational Safety and Health standards relevant to the Union's status after considering international and regional standards; and (f) to support and help research activities carried out for the development of Occupational safety and Health matters.
VIII.	**Public Health**	
8.1	The Penal Code of Offences Affecting the Public Health, Safety Convenience, Decency and Morals (1961)	Provisions related to prohibitions against contaminating public springs or reservoir and "making atmosphere noxious to health"
8.2	The Public Health Law (1972)	This law is concerned with protection of people's health by controlling the quality and cleanliness of food, drugs, environmental sanitation, epidemic diseases and regulation of private clinics. ***Section 3*** prescribed that advising the health problems, medical checkup, supervising, prohibition, etc. would be carried out to improve and protect the public health. According to ***Section 5:*** the organization which is developed by this law or the government organizations could check and instruct about the health-related cases to the factories, shops, places and buildings etc. at any time.
8.3	The Prevention and Control of Communicable Diseases Law (1995)	***Section 3 (a):*** In order to prevent the outbreak of communicable diseases, the Department of Health shall implement the following activities systematically under the guidance of the Ministry of Health: (i) immunization of children by injection or orally. ***Section 4:*** The public shall comply with the measures undertaken by the Ministry of Health and the Department of Health under section 3 in respect of prevention of the occurrence and spread of communicable disease and control thereof. ***Section 8:*** For prevention of the outbreak of Communicable Disease and effective control of

Sr. No.	Laws/Rules/Regulation	Description
		Communicable Disease when it occurs, the public shall, under the supervision an guidance of the Health Officer of the relevant area, undertake the responsibility carrying out the following environmental sanitation measures:- (a) in-door, out-door sanitation or inside the fence, outside the fence sanitation; (b) well, ponds and drainage sanitation; (c) proper disposal of refuse and destruction thereof by fire; (d) construction and use of sanitary latrines; (e) other necessary environmental sanitation measures. ***Section 9:*** When the head of the household, any member of the household or any entrepreneur knows the occurrence of any of the following matters, he shall report immediately to the nearest health department or hospital: (a) en masse death of animals including chicken and birds; (b) rat fall; (c) suspicion or occurrence of epidemic disease; (d) occurrence of notifiable disease. ***Section 11:*** In order to prevent and control the spread of an Epidemic Disease, the Health Officer may undertake the following measures: - (a) investigation of a patient or any other person required; (b) medical examination; (c) causing laboratory investigation of stool, urine, sputum and blood samples to be carried out; (d) other necessary investigation; (e) prohibition of the right of movement of the vehicle carrying animal or animal product suspected of having epidemic disease.
IX.	**Emergency/Disaster**	
9.1	The Natural Disaster Management Law (2013)	***Section 3:*** The objectives of this law are: (a) to implement natural disaster management programmes systematically and expeditiously in order to reduce disaster risks; (d) to conserve and restore the environment affected by natural disasters; (e) to provide health, education, social and livelihood programmes in order to bring about better living conditions for victims.

Sr. No.	Laws/Rules/Regulation	Description
		Section 13 (a): The department, organization or person that has been assigned responsibility under this Law: (a) shall undertake the following functions after laying down the plan in accord with the natural disaster management plans in order to reduce damage and losses that are likely to be caused by natural disaster; (i) preparatory and preventive measures for natural disaster risk reduction in pre-disaster period; (ii) emergency responses including search and rescue during natural disaster; (iii) rehabilitation and reconstruction activities for improving better living standard in post disaster period and conservation of the environment that has been affected by natural disaster. ***Section 17:*** When the natural disaster strikes, emergency responses including search and rescue include the following: (h) conducting emergency responses including search and rescue according to the type of natural disaster; (i) performing other duties assigned by this Law in respect of emergency responses including search and rescue. ***Section 18:*** Rehabilitation and reconstruction activities to be carried out after disaster include: (a) data collection and confirmation of damage and losses due to natural disaster. ***Section 37:*** Aggrieved person who has been directly affected in any of the private own properties and has been loss of life or has been affected to the member due to any of the disaster risk reduction activities is entitled to compensation in accord with the stipulations.
9.2	The Myanmar Fire-brigade Law (2015)	***Section 3:*** The objectives of this Law are as follows: (a) to prevent destruction of State-owned property, private property, cultural heritage and the lives and property of the public by fire and other natural disaster; (b) to organize the Fire brigade systematically and to train members of the fire brigade;

Sr. No.	Laws/Rules/Regulation	Description
		(c) to carry out extinguishing fire, prevention and search and rescue when fire, other natural disaster, epidemic disease or any kind of sudden disaster occurs; (d) to educate, organize and incite extensively so as to achieve public cooperation when any disaster occurs; ***Section 25:*** The owner or manager of the factory, workshop, bus terminal, airport, port, hotel, motel, lodgings, condominium, market, department, organization or business exposed to fire hazard shall, in accord with the directive of the Department of Fire Services: (a) not fail to form the Reserve Fire Brigade; (b) not fail to provide fire safety equipment.

2.6 International Conventions, Treaties and Agreements

Myanmar has signed several international treaties related to the environment. The following table presents a list of the conventions signed by Myanmar.

Table 2-3 International Treaties and Conventions

Sr. No.	International Convention, Treaties and Agreements	Remarks
1.	Relevant ILO Conventions in force in Myanmar C1 Hours of Work (Industry) C14 Weekly Rest (Industry) C17 Workmen's Compensation (Accidents) C19 Equality of Treatment (Accident Compensation) C26 Minimum Wage Fixing Machinery C29 Forced Labour Convention C42 Workmen's Compensation (Occupational Diseases) Revised 1934 C52 Holidays with Pay C87 Freedom of Association and Protection of the Right to Organize	Ratified: 1921 1923 1956 1927 1954 1955 1957 1954 1955
2.	Plant Protection Agreement for the Southeast Asia and Pacific Region, Rome	1959 (Ratification)
3.	Treaty on the Prohibition of the Emplacement of Nuclear Weapons and other Weapons of Mass Destruction on the Sea Bed and Ocean Floor and in the Subsoil there of, London, Moscow, Washington, 1971	1971 (Signatory)
4.	MARPOL: International Convention for the prevention of pollution from ships. November 2, 1973	1988 (Accession)
5.	MARPOL: Protocol of 1978	1988 (Accession)
6.	Convention for the prevention of marine pollution from Land-Based Sources June 4, 1974	-

Sr. No.	International Convention, Treaties and Agreements	Remarks
7.	ICAO: ANNEX 16 to the Convention on International Civil Aviation Environmental Protection Vol. I and II, Aircraft Noise and Aircraft Engine Emission	Accession
8.	Agreement on the Networks of Aquaculture Centers in Asia and the Pacific, Bangkok 1988	1990 (Accession)
9.	Convention on the Rights of the Child	1991 (Accession)
10.	Convention on the Prohibition of the Development, Production, Stockpiling and Use of Chemical Weapons and their Destruction, Paris, 1993	1993 (Signatory)
11.	Vienna Convention for the Protection of the Ozone Layer, Vienna 1985	24-11-1993 (Ratification)
12.	Montreal Protocol on Substances that Deplete the Ozone Layer, Montreal 1987	24-11-1993 (Ratification)
13.	London Amendment to the Montreal Protocol on Substances that Deplete the Ozone Layer, London, 1990	24-11-1993 (Ratification)
14.	Agreement to Promote Compliance with International Conservation and Management Measures by Fishing Vessels on the High Seas, Rome, 1973	1994 (Acceptance)
15.	The Convention for the Protection of the World Culture and Natural Heritage, Paris, 1972	29-4-1994 (Acceptance)
16.	United Nations Framework Convention on Climate Change, New York, 1992 (UNFCCC)	25-11-1994 (Ratification)
17.	Convention on Biological Diversity, Rio de Janeiro, 1992	25-11-1994 (Ratification)
18.	International Tropical Timber Agreement (ITTA), Geneva 1994	1996 (Ratification)
19.	Agreement Relating to the Implementation of Part XI of the United Nations Convention on the Law of Sea of 10 December 1982, New York, 1994	21-5-1996 (Accession)
20.	Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), Washington DC 1973; and as amended in Bonn, Germany 1979	1997 (Accession)
21.	United Nations Convention to Combat Desertification in Those Countries Experiencing Serious Drought, Paris 1994	1997 (Accession)
22.	Convention on Elimination of All Forms of Discrimination against Women (CEDAW)	1997 (Accession)
23.	Cartagena Protocol on Biosafety, Cartagena, 2000	2001 (Signatory)
24.	ICAO: ANNEX 16 to the Convention on International Civil Aviation Environmental Protection Vol. I and II, Aircraft Noise and Aircraft Engine Emission	Accession
25.	Kyoto Protocol to the Convention on Climate Change, Kyoto 1997	2003 (Accession)
26.	Declaration on ASEAN Heritage Parks	2003 (Signatory)
27.	International Treaty on Plant Genetic Resources for Food and Agriculture, 2001	2004 (Ratification)

Sr. No.	International Convention, Treaties and Agreements	Remarks
28.	Stockholm Convention on Persistent Organic Pollutants (POPs)	2004 (Accession)
29.	Ramsar Convention on Wetlands of International Importance	2005 (Accession)
30.	Establishment of ASEAN Regional Centre for Biodiversity	2005 (Signatory)
31.	Universal Declaration of Human Rights (UNDHR)	Signatory
32.	Convention for the protection of marine environment of the North-East Atlantic September 9, 1992	-
33.	Convention on the protection of the Marine Environment of the Baltic Sea Area April 9, 1992	-
34.	United Nations convention of the law of the sea December 10, 1982	-
35.	The Convention on the prevention of marine pollution by Dumping Waste and Other matter December 29, 1972	-
36.	Protocol to the convention on the prevention of marine pollution by Dumping of Waste and Other matter 1996	-

2.7 Application of International Guidelines

Specifically, the Environmental Assessment for this project will follow not only the national regulations such as the Environmental Conservation Law, Environmental Conservation Rules and relevant regulations of the Government of the Republic of the Union of Myanmar but also International Guidelines such as WHO standards, IFC Environmental Health and Safety Guidelines for environmental and social considerations.

IFC Guidelines for Tourism and Hospitality Development (2007)

The EHS Guidelines for Tourism and Hospitality Development contain information relevant to tourism and hospitality facilities, including business and city hotels, resorts, eco-lodges, and other accommodation and catering facilities.

IFC Environmental, Health and Safety (EHS) Guidelines (2007)

The World Bank Group Environmental, Health and Safety Guidelines (EHS Guidelines) are technical reference documents with general and industry-specific examples of Good International Industry Practice (GIIP). The EHS Guidelines contain the performance levels and measures that are normally acceptable to IFC and that are generally considered to be achievable in new facilities at reasonable costs by existing technology. The General EHS Guideline contains information on crosscutting Environmental, Health, and Safety issues potentially applicable to all industry sectors. It should be used together with the relevant industry sector guideline(s). When host country (Myanmar) regulations differ from the levels and measures presented in the EHS Guidelines, projects are expected to achieve whichever is more stringent.

IFC Guidelines on Water and Sanitation (2007)

The EHS Guidelines for Water and Sanitation include information relevant to the operation and maintenance of potable water treatment and distribution systems, and collection of sewage in centralized systems (such as piped sewer collection networks) or decentralized

systems (such as septic tanks subsequently serviced by pump trucks) and treatment of collected sewage at centralized facilities.

IFC Guidelines on Waste Management Facilities (2007)

The EHS Guidelines for Waste Management cover facilities or projects dedicated to the management of municipal solid waste and industrial waste, including waste collection and transport; waste receipt, unloading, processing, and storage; landfill disposal; physico-chemical and biological treatment; and incineration projects. Industry-specific waste management activities applicable, for example, to medical waste, municipal sewage, cement kilns, and others are covered in the relevant industry-sector EHS Guidelines, as is the minimization and reuse of waste at the source.

2.8 Standards and Guidelines for the Surrounding Environment of the Project

According to Article 10 of the Environmental Conservation Law (2012), (now MONREC set up some environmental quality standards, with the approval of the Union Government and the Committee. (*See* section 2.3.4)

As of 29 December 2015, emission guideline and target values of ambient air quality, air emission, wastewater, and noise levels were set in NEQG, while other standards have not been set yet by MONREC.

In this Project, the Project Proponent, New Starlight Construction Company Limited basically apply the NEQG and in case of no quantitative target values in NEQG, the quantitative target values of other country and international organizations will be referred. Each quantitative target value to be applied is described below sections.

2.8.1 Air Quality

Since there is no ambient air quality standard in Myanmar and only air emission guideline values in National Environmental Quality Emission Guidelines (NEQG) (2015) referred from WHO's air quality guidelines, these guideline values shown in below table will be set as target values for both ambient and emission air quality for operation and closing phases.

Table 2-4 Air Emission Guidelines

Sr. No.	Parameter	Averaging Period	Guideline Value (µg/m^3)
1.	Nitrogen dioxide (NO_2)	1-year	40
		1-hour	200
2.	Ozone (O_3)	8-hour daily maximum	100
3.	PM_{10}	1-year	20
		24-hour	50
4.	$PM_{2.5}$	1-year	10
		24-hour	25
5.	Sulfur dioxide (SO_2)	24-hour	20
		10-minutes	500

Source: National Environmental Quality (Emission) Guidelines (NEQG) (29 Dec 2015)

2.8.2 Water Quality

According to International Water Quality Guidelines Study report published by United Nation Environment Program, there are various water quality standards and they are:

a) Water Quality Standards
   - ❖ Water Quality Standards for Conservation of the living Environment (Rivers)
   - ❖ Water Quality Standards for Conservation of the living Environment (Lakes)
   - ❖ Water Quality Standards for Protecting Human Health (Rivers and Lakes)

b) Ground Water Quality Standards

c) Coastal Water Quality Standards
   - ❖ Coastal Water Quality Standards for Conservation of the Living Environment
   - ❖ Coastal Water Quality Standards for the Protection of Human Health

d) Drinking Water Quality Standards

Although the water quality standards are widespread, for this EIA, Study GMES EIA Team selected WHO Drinking Water Standards - 2011 and also selected National Environmental Quality (Emission) Guidelines (2015) as effluent water standards for general effluent runoff.

Table 2-5 National Drinking Water Standards (2011)

Sr. No.	Parameter	Guideline Values	Unit
1.	Aluminum	0.2	mg/l
2.	Arsenic	10	µg/l
3.	Chloride	250	mg/l
4.	Copper	2	mg/l
5.	Cyanide	0.07	mg/l
6.	Manganese	0.4	mg/l
7.	pH	6.5~8.5	-
8.	Sulfate	250	mg/l
9.	Total Alkalinity	-	mg/l
10.	Total Dissolved Solids	600	mg/l
11.	Total Hardness	500	mg/l
12.	Total Iron	0.3	mg/l
13.	Turbidity	5	NTU

The guideline values for effluent water quality are referred to tourism and standards of NEQG (2015) and tabulated in **Table 2-6.**

Table 2-6 Effluent Water Standards for Tourism and Hospitality Development

Sr. No.	Parameter	Guideline Values	Unit
1.	5-day Biological oxygen demand (BOD)	50	mg/l
2.	Chemical oxygen demand (COD)	250	mg/l
3.	Oil and grease	10	mg/l

Sr. No.	Parameter	Guideline Values	Unit
4.	pH	6-9	S.U.[a]
5.	Total coliform bacteria	400	100 ml
6.	Total Nitrogen	10	mg/l
7.	Total phosphorus	2	mg/l
8.	Total suspended solids	50	mg/l

[a] Standard unit

2.8.3 Noise Levels

According to the NEQG, the noise levels are set as shown in the following table and noise prevention and mitigation measures should be taken by all projects where predicted or measured noise impacts from a project facility or operation exceed the applicable noise level guideline at the most sensitive point of reception. Noise impacts should not exceed the levels shown below, or result in a maximum increase in background levels of three decibels at the nearest receptor location off-site.

Since the project is located in the Muse Central Business District Project Zone-1 and the surrounding receptors are residential areas, the target noise level targeted to residential receptors will be applied during the operation phase of the project.

Table 2-7 Ambient Noise Level Standards for Operation Phase

Receptor	One Hour L_{Aeq}, dB (A)	
	Day time 07:00-22:00 (10:00-22:00 for Public holidays)	Night time 22:00-07:00 (22:00-10:00 for Public holidays)
Resident, Institutional, Educational	55	45
Industrial Commercial	70	70

Source: National Environmental Quality (Emission) Guidelines (NEQG) (29 Dec 2015)

Table 2-8 OHS Noise Exposure Limits for the Work Environment (Noise Exposures in dBA)

Noise (dBA)	Permissible exposure Noise (hours and minutes)
85	16 hrs
87	12 hrs 6 min
90	8 hrs
93	5 hrs 18 min
96	3 hrs 30 min
99	2 hrs 18 min
102	1 hrs 30 min
105	1 hr
108	40 min
111	26 min
114	17 min
115	15 min

Noise (dBA)	Permissible exposure Noise (hours and minutes)
118	10 min
121	6.6 min
124	4 min
127	3 min
130	1 min

note: exposures above or below the 90 db limit have been "time weighted" to give what ohsa believes are equivalent risks to a 90 db eight-hour exposure. [source: marsh (9)]

2.9 Key Commitment of Proponent for Environmental Management

The commitments regarding with environmental, social and health related considerations by New Starlight Construction Company Limited and its principal contractor for respective environmental components are described in below table.

Table 2-9 List of Key Commitments

Sr. No.	Field	No.	Commitment	EMP Reference	Responsible Organization	
					NSLC	Contractor
I	**General**	1	The relevant Myanmar laws, rules and regulations as follows will be complied with: ➢ National Environmental Policy (2019) ➢ Environmental Conservation Law (2012) ➢ Environmental Conservation Rules (2014) ➢ EIA Procedures (2015) ➢ National Environmental Quality (Emission) Guidelines (2015)	Chapter-2	√	√
		2	NSLC/Contractor will comply with relevant targeted air quality, water quality and noise level.	Chapter-2	√	√
		3	NSLC/ Contractor will comply and implement the environmental management plan (EMP), mitigation measures and monitoring plan formulated from this EIA report.	Chapter-6 and Chapter-7	√	√
		4	The company will implement all of the items in the list of commitments.	Chapter-2	√	√
II	**Air Quality**	1	The project proponent set the target values of ambient air	Chapter-2	√	√

Sr. No.	Field	No.	Commitment	EMP Reference	Responsible Organization	
					NSLC	Contractor
			quality in accordance with the NEQG and US - EPA Guidelines.			
		2	To prevent air contaminants such as dust, particulate matters and exhaust gases during the construction and operation phases, the adequate mitigation measures will be implemented at both the construction and operation phases of the project.	Chapter-6 and Chapter-7	√	√
		3	Monitoring of air quality will be conducted in accordance with the EMP and respective monitoring reports will be submitted accordingly to ECD.	Chapter-7	√	
III	Water and Wastewater Quality	1	During the operation phase, the domestic wastewater will be discharged into the river through the drainage only after doing test to comply with NEQG target values for effluent.	Chapter-2, Chapter-4 and Chapter-5	√	
		2	During the operation phase, the wastewater generated from hotel operations, repair and maintenance activities will be collected into the oil separating pond and only effluent from this pond after removing the oil wastes collected by outsourced contractor will be discharged into the river.	Chapter-2, Chapter-4 and Chapter-5	√	
		3	Direct discharges of all kinds of wastewater into the drainages will be strictly prohibited at any phase of the project.	Chapter-5	√	√
		4	Monitoring of water quality will be conducted in accordance with the EMP during operation and decommissioning phases to comply with target values set and respective monitoring reports will be submitted accordingly to ECD, Bago Region.	Chapter-2 and Chapter-6	√	√

Sr. No.	Field	No.	Commitment	EMP Reference	Responsible Organization	
					NSLC	Contractor
IV	Noise	1	For the construction phase, the noise control measure will be applied to all project equipment by using low noise equipment where practicable. For high noise which cannot be reduced, the mitigation measures will be applied such as using acoustic shielding, silencer for blow down operation and hydraulic piling hammers instead of diesel driven one.	Chapter-2 and Chapter-5	√	√
		2	For the operation phase, sufficient noise mitigation measures would be adopted in operation phase to comply with noise level standards by national regulation like NEQG Guidelines for ambient noise level.	Chapter-2 and Chapter-5	√	√
V	Soil Contamination	1	For the construction phase, the contractor is committed to follow the soil contamination management plan and monitoring plan.	Chapter-2, Chapter-6 and Chapter-7		√
		2	For the operation phase, NSLC will implement the mitigation measures for reduction of soil contamination effectively.	Chapter-5	√	
			NSLC will provide training programs to related employees for handling and storage of chemicals.	Chapter-6	√	
VI	Wastes Disposal	1	For the construction phase, the contractor will follow the waste segregation plan, waste disposal plan and waste handling procedures described in EMP.	Chapter-6		√
		2	For the operation phase, NSLC is committed to follow the waste management plan and the brief descriptions of it is: ***Waste segregation*** ➢ Food waste	Chapter-3, Chapter-5 and Chapter-6	√	

Sr. No.	Field	No.	Commitment	EMP Reference	Responsible Organization	
					NSLC	Contractor
			➢ Hazardous waste ➢ Non-hazardous waste ***Waste minimization*** ➢ Reuse and recycle where possible ***Waste disposal*** ➢ Dispose and handle according to ECD Guideline ➢ Dispose by the authorized waste collector ➢ Sell to recycler for recyclable waste			
VII	Local Economy and Social Consideration	1	Number of local staff and workers in NSLC will be recorded as necessary to know the job employment for local people.	Chapter-5	√	
VIII	CSR Activities	1	Donations at wards and villages nearby and Social Welfare Programs, etc. will be recorded yearly.	Chapter-6	√	
		2	Social welfare program for employees will be implemented and recorded.	Chapter-6	√	
IX	Occupational Health and Safety	1	The relevant regulations/ rules of labors' rights, health and safety as follows will be complied with: ▪ The Workmen's Compensation Act (1923, Amendment in 2011) ▪ The Leave and Holiday Act (1951, Partially Amendment in 2014) ▪ The Labor Organization Law (2011) ▪ The Labor Organization Rule (2012) ▪ The Labor Dispute Settlement Law(2012, Amendment in 2019) ▪ The Social Security Law (2012) ▪ The Employment and Skill Development Law (2013)	Chapter-2	√	√

Sr. No.	Field	No.	Commitment	EMP Reference	Responsible Organization	
					NSLC	Contractor
			▪ The Minimum Wage Law/Rules (2013) ▪ The Social Security Rules (2014) ▪ The Payment of Wages Law (2016) ▪ The Myanmar Occupational Health and Safety Law (2019)			
		2	The adequate measures and plans for occupational health and safety of staff and workers will be implemented in accordance with EMP to comply with Myanmar laws and regulations and other international practices for OHS during operation and decommissioning phases of the project.	Chapter-6	√	√
		3	Accidents and incidents, OHS trainings and drills, Health Check-up and other OHS concerned issues will be recorded and prepared the report yearly. Reports for claims from workers will be prepared monthly during operation stage.	Chapter-6	√	
X	Community Health and Safety	1	Ensuring that vehicles are delivering materials preferably during weekend and off-peak hours as much as possible when traffic volume is low. Covering of materials is to be done during transportation. Strict enforcement of on-site speed controls.	Chapter-5	√	√
XI	Emergency Risks	1	Occurrences of the risks of flood, fire and earthquake will be recorded at the time of occurrence and included in the monitoring report to be submitted to ECD, Shan State.	Chapter-5	√	√
		2	The hotel has been installed suitable firefighting system and established the emergency	Chapter-5 and Chapter-6	√	

Sr. No.	Field	No.	Commitment	EMP Reference	Responsible Organization	
					NSLC	Contractor
			response team for the fire and natural disaster emergency.			
XII	Training and Education	1	NSLC will implement ▪ the training program for new workers ▪ Other capacity building program for skill workers and ▪ Emergency response training for all workers for fire and natural emergency.	Chapter-6	√	
XIII	Reporting	1	NSLC and the contractor will submit monitoring reports regularly to the ECD, Shan State according to the EIA procedure or as necessary.	Chapter-7	√	√

3.0 PROJECT DESCRIPTION AND ALTERNATIVE SELECTION

3.1 Project Background

Muse, the main border gateway between Myanmar and China, continues to contribute the growing trade between Myanmar and China. The development of Muse Central Business District (MCBD) endeavors to bring the trade and tourism activities to higher level. The Muse Central Business District Project (referred to as "MCBD) is mainly commercial and residential development that is intended to capitalize on the potential for strengthening economic and cultural exchanges between Myanmar and PRC and to promote the development of Muse city into a modern urban center and economic hub.

The project is jointly developed by the Regional Development Project of the Shan State Government Committee and New Starlight Construction Company Limited since the beginning of April 2013. All the projects will be finished in 2017.

The development sits on an area of 294 acres, comprising of 6 zones. Zone 1 and 3 are commercial zone. Zone 2 houses the main utilities. Zone 4 to 5 are residential zones. Zone 6 is zoned for recreational purposes. Through careful planning and integrating local cultures, the new Muse Central Business District will balance social, environmental and economic factors through sustainable development.

Among these Muse Central Business District Project Zones, the IBIS Styles Hotel at Zone-1 is designed by Singapore SCP Consultants Pte. Ltd. and operated by New Starlight Construction Company Limited.

Figure 3-1 Project Area Among Muse Central Business District Project Zones

3.2 Objectives of the Project

The main objectives and benefits of the proposed project will be the following:

- To construct a 3 star, 9-storey hotel in Muse Township. The project seeks to promote and improve the hospitality industry whilst meeting an international standard of accommodation in Muse, the most booming area in Myanmar;
- To develop an environmentally sustainable project that will meet the surrounding developments, improve the economy and the livelihood of the people in the area;
- Contribute to national Growth Domestic Product (GDP) by enhancing infrastructural development in Muse;
- Provide employment opportunities for the skilled, semi-skilled and casual workers through direct and indirect job opportunities;
- Contribute revenue to the Government and the Local Authority through payment of corporate taxes, rates and personal levy; and
- Contribute to reduction of poverty levels in Muse Township through people employment for local people.

3.3 Project Location and Surrounding Area

3.3.1 Project Location

The IBIS Styles Hotel is located in Taw Ywat Ward, Muse Central Business District Project Zone-1, Muse Township, Northern Shan State. The hotel is surrounded by multi-storey air-conditioned office buildings with shopping arcades, banks and apartments.

The approximate geographical coordinate of the project site is as follows:

Latitude: 23° 59' 44.90" N

Longitude: 97° 53' 27.58" E

Figure 3-2 Location of Project Area in Muse Township

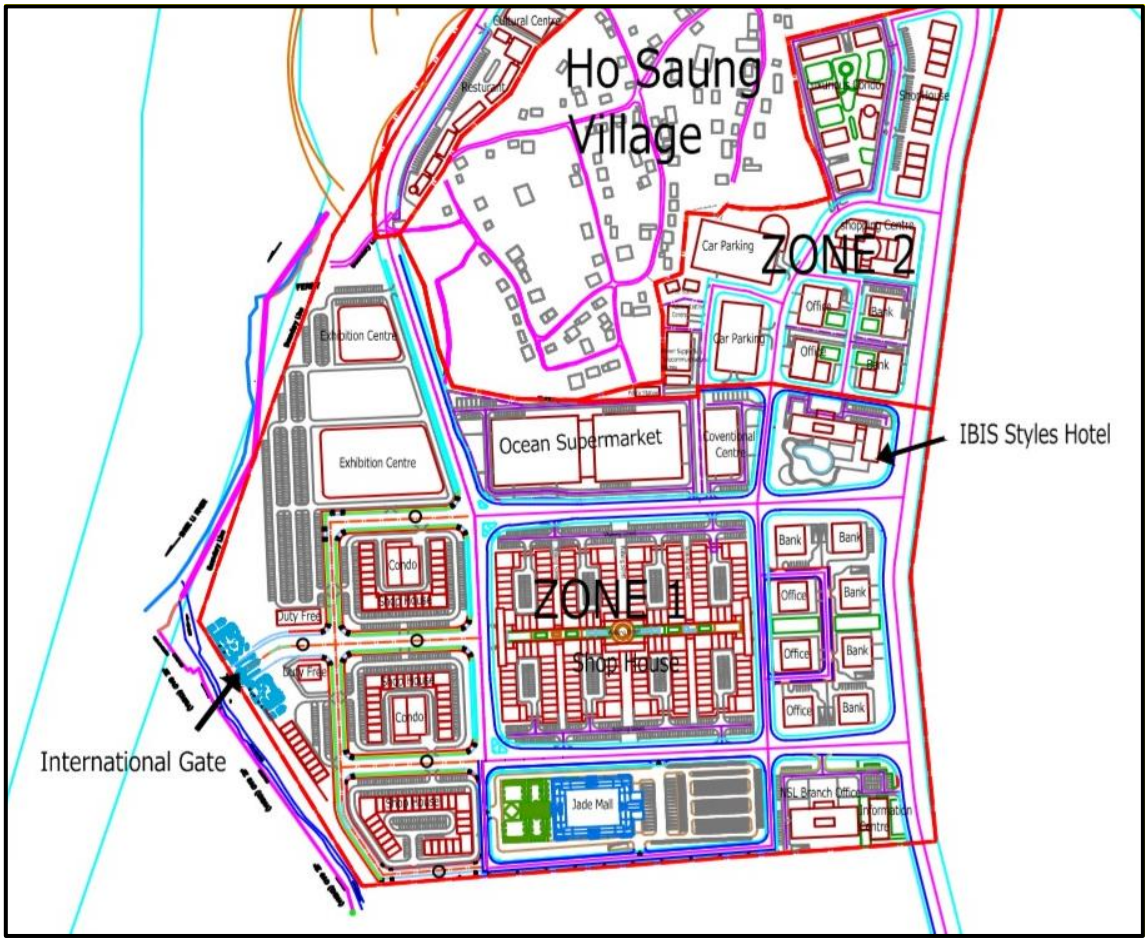


Figure 3-3 IBIS Styles Hotel Project in Zone -1

Figure 3-4 Location of IBIS Styles Hotel Project with Boundary Points

Table 3-1 Boundary Points of Hotel Compound

Sr. No.	Boundary Points	Geographical Coordinates		Remarks
		Latitude	Longitude	
1.	Point-A	23° 59' 46.49" N	97° 53' 25.72" E	See Error! R eference source not found.
2.	Point-B	23° 59' 45.90" N	97° 53' 30.08" E	
3.	Point-C	23° 59' 43.79" N	97° 53' 29.68" E	
4.	Point-D	23° 59' 43.53" N	97° 53' 25.47" E	

3.3.2 Area and Land Ownership

The area and land ownership of the hotel is as follows:

Type of Hotel: 3-star hotel, Nine-storey Building
Total Land Area: 4.74 Acres (206,474.4 ft^2)
Type of Land: Development Project Land
Land Acquisition: Lease Land
Owner/Lessor of the Land: New Starlight Construction Co., Ltd.

The area of the proposed project is leased for 30 years and the land lease grants are attached as Appendices 4,5,6 and 7.

Table 3-2 Description of Land Lease Grants for Hotel Project in Zone-1

Sr. No.	Case No.	Date	Address	Area (Acres)	Remarks
1.	398/MaSa/ 2016	7.7.2016	Plot No. (111), Holding No. (2-A), Taw Ywat Ward, Muse Township	0.6991	**Appendix 5**
2.	399/MaSa/ 2016	8.7.2016	Plot No. (111), Holding No. (2-B), Taw Ywat Ward, Muse Township	0.636	**Appendix 6**
3.	400/MaSa/ 2016	8.7.2016	Plot No. (111), Holding No. (2-F), Taw Ywat Ward, Muse Township	0.739	**Appendix 7**
4.	401/MaSa/ 2016	8.7.2016	Plot No. (111), Holding No. (2-D), Taw Ywat Ward, Muse Township	0.667	**Appendix 8**

3.3.3 Site Boundaries

The site boundaries of the project are as follows:

- East: Conventional Center
- West: Office
- South: Office and bank
- North: Office and bank

3.3.4 Site Accessibility

The site is well connected with the surrounding areas. It is located with Conventional Center on the East, office and bank on the South, North and West. Ideally, land should be acquired only after the suitability of the site has been established. The

global best practice is to assess alternative locations to identify the most appropriate site. In Myanmar however, in most cases, the land is already allotted to the developer without site screening and environmental appraisal.

As the chosen site is located in Zone 1, Muse Township Planning Project, which is a well-organized project, it is expected the proposed activities will hardly have any major impacts on the surrounding region.

3.4 Proposed Implementation Schedule

According to the site visit of the old EIA report, construction is estimated to be at 60% completion for this project. With other activities nearly complete, the outstanding work is mainly on the construction of IBIS Styles Hotel together with electrical and water services; installation of furniture, fittings and equipment; landscaping and other external works. The construction site will be completed in 2016. The hotel is expected to open in 2016.

As there are some changes in timeframe. The new working schedule of the IBIS Styles Hotel is as follows.

Table 3-3 Working Schedule for IBIS Styles Hotel

Sr. No.	Description	Schedule	Phase
1.	Soil Test Work	January 2014 ~ March 2014	Construction Phase
2.	Earth Work	April 2014 ~ December 2014	
3.	Infra Work	October 2014 ~ March 2015	
4.	Open Drain Work	July 2015 ~ June 2017	
5.	Building Construction Work	January 2015 ~ March 2020	
6.	Operation Work	Extension	Operation Phase

Figure 3-5 Construction in Progress (Right Sided View)

Figure 3-6 Construction in Progress (Left Sided View)

Current Status of the Project

The project is pending in construction phase and operation is not done. When the operation phase is expired, the project proponent will extend the MIC permit and the hotel operation will continue.

Figure 3-7 Current Condition of Project Site

3.5 Project Investment

Total investment cost of the project is estimated about USD 30,000,000.

Table 3-4 Capital Investment in Thousand

Sr. No.	Description	USD
1.	Capital Investment	15,000,000
2.	Equipment & Machinery	4,000,000
3.	Buildings: Hotel Units	6,100,000
4.	Materials & Equipment	4,300,000
	Total	**29,400,000**

3.6 Design Criteria and Standards

3.6.1 Project Component

The project will be 3-star with 252 rooms and it has nine floors in total without basement. The total building height is 35.3 m. Lobby, coffee house, kitchen, multiple functional hall and logistics rooms are on the first floor, canteens and conference rooms are on the second floor, and the guest rooms are on the third to ninth floors.

The detailed description of the project components, layout plan of project and the elevation of the project building are as follows.

Table 3-5 Outline of the IBIS Styles Hotel

Item	Description
Site Area	2.74 Acres (206,474.4 ft^2)
Building Height	35.3 m
Gross Floor Area	17,721.24 m^2
Floor Area Ratio	1.6
Design Working Life	Category-3 (50 years)
Roof Waterproof Level	II
Guest Rooms	Deluxe room: 7 Total standard room: 245 Total: 252
Parking Area	15,068 ft^2
Fire-resistive Grade of Buildings	two
Main Structure Type	Reinforced concrete frame construction

Table 3-6 Floor Use Plan/ Detail of Each Floor

Floor	**Utilization Area (m^2)**	**Number of Guest Rooms**	**Remarks**
Ground	2,628.67	-	-
1st	1,854.37	-	Lobby, coffee house, kitchen, multiple functional hall and logistics rooms
2nd		Standard Room - 20 Dulex Room - 8	Canteens and conference rooms
3rd	1,864.3095	Standard Room - 30 Dulex Room - 5	-
4th	1,864.3095	Standard Room - 30 Dulex Room - 5	-
5th	1,864.3095	Standard Room - 30 Dulex Room - 5	-
6th	1,864.3095	Standard Room - 30 Dulex Room - 5	-
7th	1,864.3095	Standard Room - 30	-

Floor	Utilization Area (m^2)	Number of Guest Rooms	Remarks
		Dulex Room - 5	
8th	1,864.3095	Standard Room - 30 Dulex Room - 5	-
9th	1,864.3095	Standard Room - 30 Dulex Room - 5	-

3.6.2 Codes and Standards

Design information of the structure is as follows:

- Building Type: Special Moment Resisting Frame (SMRF) with Masonry Infill Wall
- Code of Practice: ACI 318-2008, CQHP Guideline
- Software: ETABS V-16.2.1 for frame analysis and design
- Detailing: SMRF detailing

The project is designed as the following codes and standards.

Table 3-7 Building Codes and Standards

Sr. No.	Code	Description
1.	**Structural Design**	
1.1	GB 50068-2008	Unifies Standard Reliability Design of Building Structures
1.2	GB 50223-2008	Standard for Classification of Seismic Protection of Building Constructions
1.3	GB 50009-2012	Load Code for the Design of Building Structure
1.4	GB 50010-2010	Code for Design of Concrete Structures
1.5	GB 50003-2011	Code for Design of Masonry Structures
1.6	GB 50011-2010	Code for Seismic Design of Buildings
1.7	GB 50007-2011	Code for Design of Building Foundation
1.8	11G329-1 and 97 (11) G329-3	Detailed Drawings for Aseismic Structure of Buildings
1.9	11G101-1~3	Drawing Rules and Construction Details Based on Plane integration Expression Method for Concrete Structure Construction Drawing
1.10	JGJ 94-2008	Technical Code for Building Pile Foundation
2.	**Architecture Design**	
2.1	GB 50352-2005	Code for Design of Civil Building
2.2	GB 50045-95 (2005)	Code for Fire Protection Design of Tall Buildings
2.3	GB 50345-2012	Technical Code for Roof Engineering
2.4	GB 50763-2012	Codes for Accessibility Design
2.5	JGJ 113-2009	Technical Specification for Application of Architectural Glass
2.6	JGJ 62-90	Codes for Design of Hotel Buildings
3.	**Electrical Design**	
3.1	JGJ 16-2008	Code for Electrical Design of Civil Building

Sr. No.	Code	Description
3.2	GB 50045-95	Code for Fire Protection Design of Tall Buildings
3.3	GB 50116-2014	Code for Design of Automatic Fire Alarm System
3.4	GB 50052-2009	Code for Design Electric Power Supply Systems
3.5	GB 50057-2010	Design Code for Protection of Structures Against Lightning
3.6	GB 50034-2004	Standard for Lightning Design of Buildings
3.7	GB 50343-2012	Technical Specification for Lightning Protection of Electronic Information System of Building
4.	**HVAC Design**	
4.1	GB 50736-2012	Code for Heating, Ventilation and Air Conditioning of Civil Buildings
4.2	GB 50189-2005	Design Standard for Energy Efficiency of Public Buildings
4.3	GB 50045-95 (2005 Edition)	Code for Fire Protection Design of Tall Buildings
4.4	GB 50016-2006	Code for Design of Building Fire Protection
4.5	GB 50352-2005	Code for Design of Civil Buildings
4.6	GB 18483-2001	Emission Standard of Cooking Fume
4.7	GB/Ta 8883-2002	Indoor Air Quality Standards
4.8	-	National Technical Measures for Design of Civil Construction-Special Edition of Energy Conservation
4.9	-	National Technical Measures for Design of Civil Construction-HVAC and Power 2000
5.	**Water Supply and Drainage Design**	
5.1	03S402	National Building Standard Design Atlas - interior pipe supports and hangers ✓Backet for pipes
5.2	02SS405-2	Installation of Random Copolymer Polypropylene (PP-R) Water Supply Pipe ✓Installation of PP-R pipe ✓Prepared pipe for water proofing where the pipe cross the wall, roof, floor
5.3	04S707-2	Construction water supply metal pipeline installation - thin-walled stainless steel pipe ✓Thin wall stainless steel pipe ✓Waterproof for pipes (04S707-2-28)
5.4	09S304	Sanitary Equipment Installation (HD) ✓Toilet utilities
5.5	10S406	Building drainage plastic pipe installation - Wikiwand ✓The installation of indoor U-PVC drainage pipe
5.6	04S520	Buried Plastic Drainage Pipeline Construction ✓The construction of outdoor buried PVC-U double wall corrugated pipe plastic drainage pipeline
5.7	03S401	Pipe and equipment insulation, anti-condensation and electric heat tracing

Sr. No.	Code	Description
		✓Insulation for hot water pipes and utilities
5.8	04S206	Installation of automatic sprinkler and water spray fire-extinguishing facilities - National Building Standard Design Network ✓Automatic spraying
5.9	02S404-6	Flexible waterproof casing ✓Measures for pipeline crossing the foundation, wall, shear wall
5.10	11JS4-1	✓Water drainage in the same floor
5.11	04S202	Indoor fire hydrant installation ✓Indoor fire hydrant
5.12	01S201	Outdoor Fire Fighting Atlas ✓Outdoor fire hydrant
6.	**Centralized Wastewater Treatment Plant**	
6.1	GB 18918-2002	Urban Sewage Treatment Plant Pollutant Discharge Standards
6.2	GB 50014-2006	Outdoor Drainage Design Specification
6.3	GBJ 15-2003	Building Water Supply and Drainage Design Specifications
6.4	GBJ 69-84	Water Supply and Drainage Structure Design Specifications
6.5	GB 50204-92	Concrete Structure Construction and Acceptance of Norms
6.6	GB 50268-97	Water Supply and Drainage Construction and Acceptance of Norms
6.7	GBJ 87-85	Noise Control Design Industrial Enterprises
6.8	GB 500054-95	Low Voltage Distribution Equipment and Circuit Design Specification
6.9	GB 50052-95	Supply and Distribution System Design Specifications
6.10	GB 50055-93	General Electric Equipment Distribution Design S
6.11	GB 50275-98	Compressor, Fan, Pump Installation Engineering Construction and Acceptance
6.12	GB 50236-98	Field Equipment, Industrial Pipe Welding Engineering Construction and Acceptance
6.13	GBJ 93-86	Industrial Automation Instrumentation Engineering Construction and Acceptance

3.6.3 Layout Plan

The Layout plan of IBIS Styles Hotel is shown in the following figures.

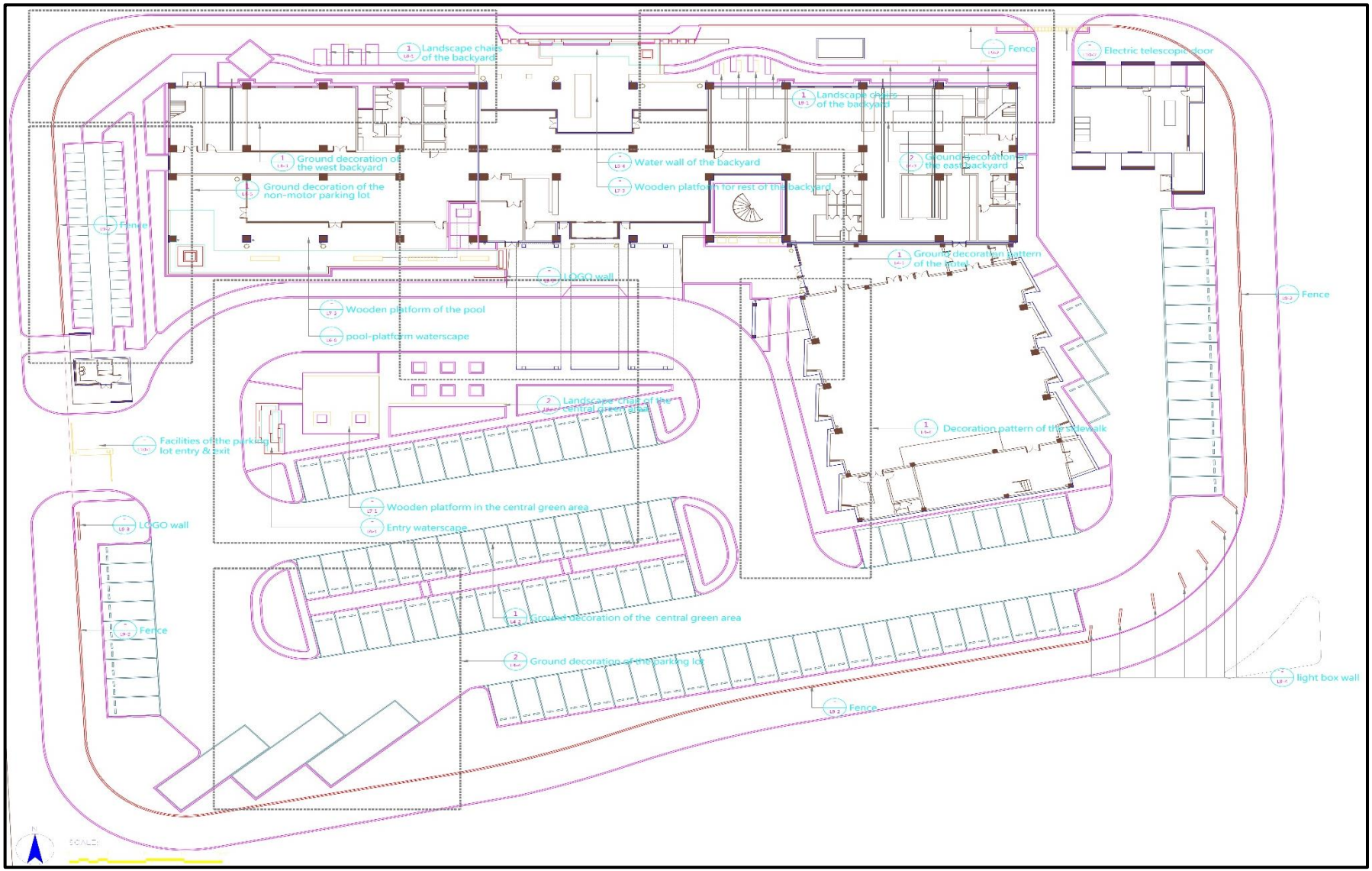


Figure 3-8 Layout Plan of the IBIS Styles Hotel

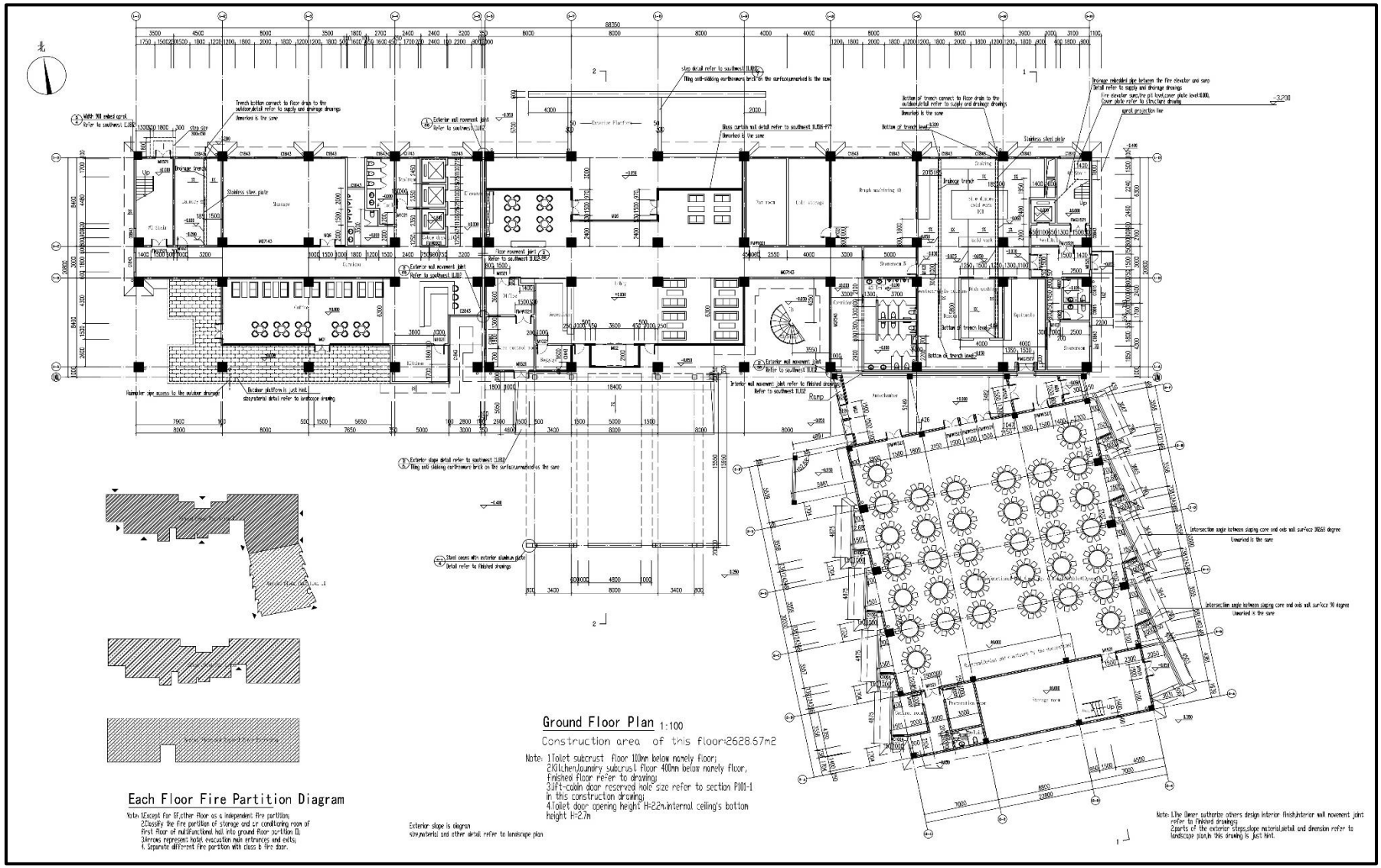


Figure 3-9 Ground Floor Plan

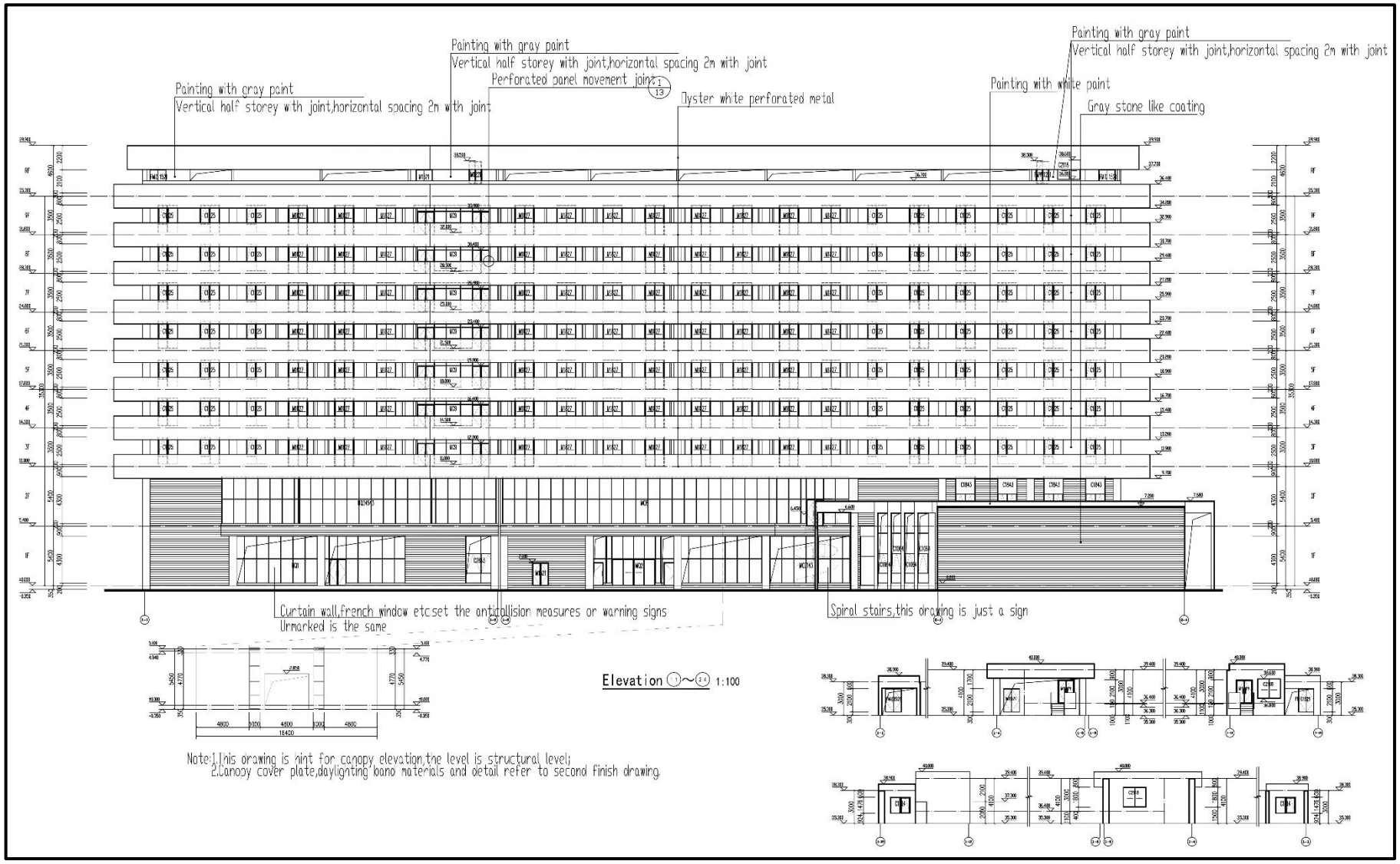


Figure 3-10 Elevation Plan

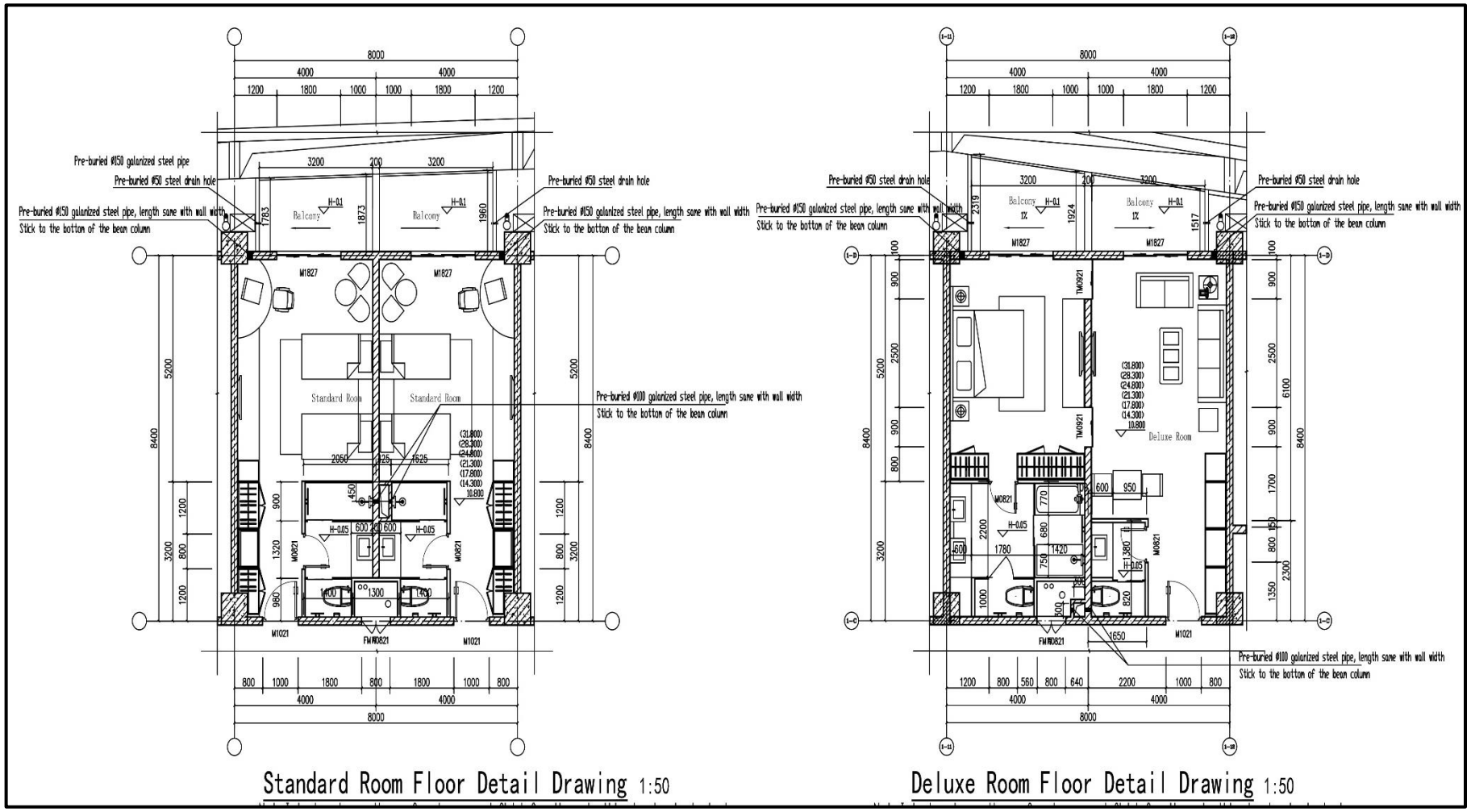


Figure 3-11 Floor Detail Drawing for Standard Room and Deluxe Room

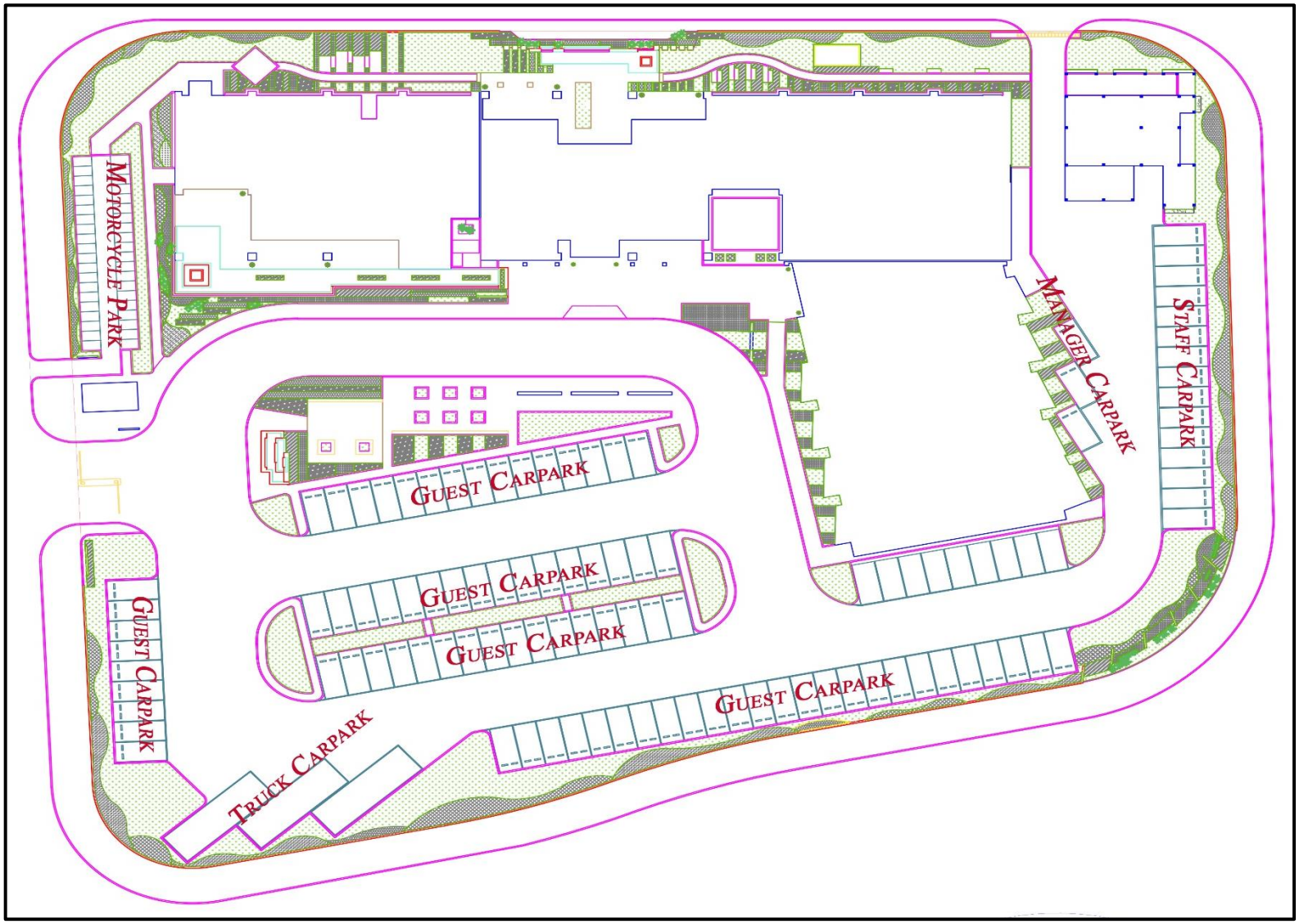


Figure 3-12 Car Parking Layout Plan (15,068 ft^2)

Figure 3-13 Elevation View of the IBIS Styles Hotel

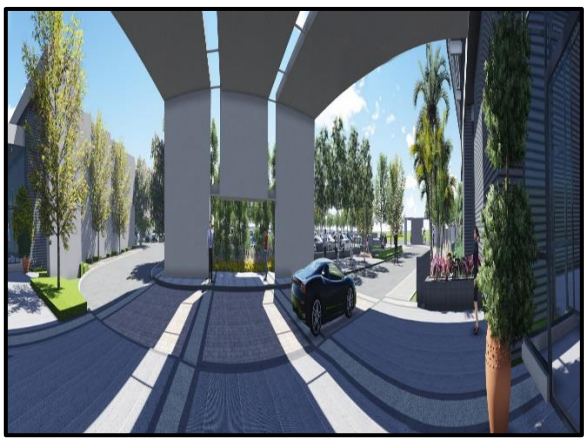


Figure 3-14 3-D View of the IBIS Styles Hotel

3.6.4 Area Allocation

There are four types categorized as guestroom area, public areas, back of house and other facilities. The summary of the area allocation in the IBIS Styles Hotel is tabulated in **Table 3-8.**

Table 3-8 Summary of the Area Allocation in the IBIS Styles Hotel

Sr. No.	Description	Net Area (m^2)	Gross Area (m^2)
1.	Guestrooms	7,561	8,695
2.	Lobby	383	440
3.	Food & Beverage	460	529
4.	Meeting & Social Area	815	937
5.	Leisure Area	60	69
6.	Kitchen Area	230	265
7.	Storage	150	173
8.	Laundry/Housekeeping	320	368
9.	Administration	276	317
10.	Staff Premise	253	291
11.	M & E	300	345
12.	Engineering	50	58
13.	Parking Visitors' Car Parking Lot 100 lots Taxi Parking Lot 5 lots Staffs' Ferry Parking 10 lots (The parking area will be provided as per required)	15,068 ft^2 13,115 ft^2 558 ft^2 1,395 ft^2	-
14.	Outside Area	Not taken into account	
	TOTAL	**10,858**	**12,487**

The detailed area allocation is as follows. The public area includes the lobby, food & beverage, meeting and social area, leisure area; the back of house consists of kitchen areas, storage areas, laundry/ housekeeping, hotel management & administrative offices and staff premises; and other facilities are M&E, engineering department, parking and outside areas.

Table 3-9 Guest Room Floor Area Estimation

Sr. No.	Description	Area (m^2)
1.	Guestrooms: 3.25 x 7.5 x 252 (cells)	6,143
2.	Corridor (Minimum 1.6 m): 252 x 0.8 m x 3.25 m x 1.25	819
3.	Floor Liner Room: 6 m^2 x 7 floors	42
4.	Technical Rooms for AHU's: 8 m^2 x 7 floors	56
5.	Guest Lift: 2	-
6.	Guest Lift Lobby	196
7.	Service Lifts: 1	-
8.	Service Lifts Lobby: 25 m x 3 m x 7 floors	53
9.	Staircases: 2 staircases x 7 floors x 6 m x 3 m	252
	Total Net Area	**7,561**
	Total Gross Area	**8,695**

* Gross area estimated as net +15%

Table 3-10 Floor Area Estimation in Public Areas

Sr. No.	Description	Area (m^2)
I.	**Lobby**	
1	Main Lobby (including entrance)	230
2	Reception Desk (5.6 m x 2 m)	15
3	Public Toilets (male/ female)	50
4	Luggage Room	10
5	Horizontal Circulations	-
6	Business Corner	-
7	Desks (guest relation….)	-
8	Stair Cases (2 x 6 m x 3 m x 1 floor)	36
9	Guest Lift: 3	-
10	Service Lift: 1	-
11	Guest Lift Lobby: 2.8 m x 12 m x 1 floor	34
12	Service Lift Lobby: 2.5 m x 3 m x 1 floor	8
	Total Net Area	**7,561**
	Total Gross Area	**8,695**
II.	**Food & Beverage**	
1	Lobby Lounge ➢ Bar Counter: 2.5 m x 5 m ➢ 40 seats integrate with coffee lounge	120
2	All Day Dinning ➢ Buffet (60 m^2) ➢ Show kitchen (20 m^2) ➢ Restaurant sitting – 180 seats (min) of 3 seating types ➢ Seat and table of 2 for flexibility ➢ Private dining room	300 40
	Total Net Area	**460**
	Total Gross Area	**529**
III	**Meeting and Social Areas**	

Sr. No.	Description	Area (m^2)
1	Meeting Facility (with Folding Doors) ➢ 1 x 600 m^2 function rooms ➢ 1 x 0 m^2 meeting rooms ➢ 1 x 80 m^2 meeting rooms	730
2	Toilets	50
3	Break-out Area	-
4	Storage	35
	Total Net Area	**815**
	Total Gross Area	**937**
IV	**Leisure Area**	
1	Fitness Room	50
2	Storage	10
	Total Net Area	**60**
	Total Gross Area	69

Table 3-11 Floor Area Estimation in Back of House

Sr. No.	Description	Area (m^2)
I.	**Kitchen Area**	
1	Including: ➢ Main kitchen ➢ Cold kitchen and prep areas ➢ Washing area ➢ Room service ➢ Bar (+ Storage) ➢ Cold rooms ➢ Dry groceries ➢ Bottles Storage ➢ Horizontal circulations	230
	Total Net Area	**230**
	Total Gross Area	**265**
II.	**Storage Areas**	
1	Kitchen Storage (as per kitchen area)	-
2	General Storage: ➢ Glassware, chinaware ➢ Cleaning products and stationery ➢ Miscellaneous	80
3	Loading/Unloading Facilities: ➢ Loading/unloading - 10 m^2 ➢ Trash (A/C for wet area)/ dry - 26 m^2 ➢ Empty bottles - 4 m^2	40
4	Offices ➢ Storage officer and receiving ➢ Cost control ➢ Purchasing	30

Sr. No.	Description	Area (m^2)
	Total Net Area	**150**
	Total Gross Area	**173**
III	**Laundry/Housekeeping**	
1	Main Laundry & Dry Cleaning	200
2	Uniforms Rooms	20
3	Soiled Linen Room	20
4	Clean Linen Room	20
5	Housekeeping Department	20
6	Storage	30
7	Laundry Room for Guest Use	10
	Total Net Area	**320**
	Total Gross Area	**368**
IV	**Hotel Management & Administrative Office**	
1	Public Area	
2	Pantry	
3	Storage Area for Receiving etc. should be 20 m^2	
4	Management Offices ➢ F/O ➢ HR training ➢ Reservations ➢ Operators ➢ Open plan ➢ Purchasing ➢ Briefing room ➢ Communications ➢ Hotel manager and secretary ➢ Filing ➢ Pantry ➢ All other areas	 20 25 15 8 100 8 15 13 15 8 8
5	Circulation	36
	Total Net Area	**276**
	Total Gross Area	**317**
V	**Staff Premises**	
1	Staff Dining Room (Accor corner)	70
2	Staff Pantry	20
3	Women Lockers Women Toilets/ Shower	40
4	Men Lockers Men Toilets/ Shower	30
5	HR Department	20
6	Medical Room	10
7	Training in Meeting Rooms	20
8	Timekeeper Office Security Office	10

Sr. No.	Description	Area (m^2)
9	Horizontal Circulation 15%	33
	Total Net Area	**253**
	Total Gross Area	**291**

Table 3-12 Floor Area Estimation for other Facilities

Sr. No.	Description	Area (m^2)
I.	**M & E**	
	Total Net Area	**300**
	Total Gross Area	**345**
II.	**Engineering Department**	
1	Office 15 m^2 Storage 15 m^2	30
2	Electrical/Electronic Workshop Carpentry Workshop	20
	Total Net Area	**50**
	Total Gross Area	**58**
III	**Parking**	
1	Visitors' Car Parking Lots (100 lots)	13,115 ft^2
2	Taxi Parking Lots (5 lots)	558 ft^2
3	Staffs' Ferry Parking (10 lots)	1,395 ft^2
	Total Area	**15,068 ft^2**

*Car parking lots to comply with local regulations.

There are 252 guestrooms in the IBIS Styles Hotel. The hotel provides 15,068 ft^2 that are 100 lots for visitors' cars, 5 lots for taxi and 10 lots for staff parking. During the operation phase, all of the guestrooms may not be visited at the same time. Therefore, the proposed parking area is sufficient for visitors and staff. If not sufficient, the project proponent will provide to extend the parking area.

3.7 Hotel Main Features and Facilities

3.7.1 Main Features

- 252 Guestrooms
- All Day Dining (The breakfast room): 180 Pax
- Lobby Bar
- Conviviality Space
- Meeting & Function Rooms
- Breakout area
- Business Center through Administration (reception counter)
- Fitness Center

3.7.2 Guestrooms

3.7.2.1 Size

- Guest room minimum size 24 sqm
- Minimum height under false ceiling: 2.50 m in the bedroom area
- Bedroom corridors: 2.20 m height under false ceiling (min)
- Guestrooms to comply ACCOR Standard IBIS STYLES

3.7.2.2 Guestroom Break Down

Table 3-13 Room Break Down

Sr. No.	Room	No. of Keys	No. of Cells
1.	Standard Room Double bed 40%	100	100
2.	Standard Room Twin beds-Hollywood type 60%	152	152
3.	Disabled Room Connecting to Double bedroom (1%)	(2) Included	(2) Included
4.	Connecting Rooms (11%) Connecting 1 Doubles bedroom to 1 Twin bedroom	(28)	-
	Total	**252**	**252**

3.7.2.3 Guestroom Description

- Guestrooms design to be in accordance to Design Guideline of IBIS Styles guestroom for Asia Pacific region
- 3 features bathroom, wash basin, WC (water saving type)
- Transparency between bathroom to bedroom

3.7.2.4 Guestroom Facilities

- Bed(s) with IBIS Styles "Suite Bed" concept
- Bed side table(s) with minimum one international socket on each side
- Writing Desk with two international sockets provided
- Luggage Rack
- Wardrobe
- Full Length Mirror
- Chest Drawers in wardrobe
- TV-LED 36" (local network + International channels)
- Evac. Speaker by entrance foyer
- Artworks
- Minibar Absorption type 30 it.
- Coffee & tea making facilities

- In room safe
- Direct IDD telephone line
- Computer connection (Wi-Fi)
- Black out curtain
- Bathroom with WC (water saving type), washbasin, shower
- Air-conditioning FCU

3.7.2.5 Guestroom Finishing's and Fittings

- To be of international 3 stars quality
- Layout: to be innovative
- Although the most adapted finishing will be considered during the design stage, the following is our standard.
- Entrance/Bedroom:
  - Floor = Ceramic tiles or engineer wood floor
  - Walls: texture paint
  - Ceiling: gypsum or cement board in entrance
  - Fabrics of durable & fire-retardant treatment
  - Black out curtains
  - LED TV 36″, with remote control – to be wall-mounted with casing
  - Minibar absorption type in wooden cupboard with display
  - Light fittings ID to propose, functional and energy efficient
  - Telephone: 1outlet beside plus one additional RJ45 socket for e-mail or fax
  - Permanent safe, electronic type
  - Beside light switches control
  - Bed head board to be specifically design with abstract reflecting design theme of hotel
- Bathroom
  - Floor = Ceramic tiles or engineer wood floor
  - Walls: texture paint
  - Vanity counter: to be innovative
  - Sanitary wares and fittings Chrome 15 Micron on brass base
  - ID to propose style
  - Suitable size transparency laminated glass partition
  - Shaving power socker facilities

3.8 Machinery and Equipment Requirement

During the operation phase, the following machinery and equipment are required.

Table 3-14 Machinery and Equipment for the Operation Phase

Sr. No.	Items	Used Place	Imported from
1.	Air-con	2nd Floor to 9th Floor (3 ton, 1 Nos) 3th Floor to 9th Floor (1 HP, 260 Nos)	Local
2.	Generator	500 kVA (Project Area)	
3.	Cooling and Hot Spring Machine	Cooling Fan Coil and Cabinet Fan	
4.	Laundry Machine	10 HP (1) Nos (Penthouse)	

3.9 Manpower Requirement

The manpower requirement of the operation of hotel is as follows.

Table 3-15 Manpower Requirement during the Operation Phase

Sr. No.	Position	Years				
		1~5	5~10	10~20	20~30	30~50
1.	Managing Director	1	1	1	1	1
2.	General Manager	1	1	1	1	1
3.	Assistant Hotel Manager	1	1	1	1	1
4.	Purchasing Manager	1	1	1	1	1
5.	F & B Manager	1	1	1	1	1
6.	Maintenance Engineers	3	4	4	4	4
7.	Accountant and Finance	3	4	4	4	4
8.	HR	1	2	2	2	2
9.	Executive Chef	1	2	2	2	2
10.	Kitchen Staff	20	20	20	20	20
11.	Hospitality Staff	30	30	30	30	30
12.	Bar Staff	5	6	6	6	6
13.	Cleaning Staff	15	15	15	15	15
14.	Security Staff	10	12	12	12	12
15.	IT Staff	2	3	3	3	3
16.	Reception	6	10	10	10	10
17.	Horticulture Staff	5	7	7	7	7
Total		**106**	**120**	**120**	**120**	**120**

3.10 Working Hour

The operation of the hotel is 24 hours per day and the hotel operation days are 365 days per year. The working hours for this project are tabulated in Table 3-6.

Table 3-16 Working Hours of IBIS Styles Hotel

No. of Shifts	2 Shifts
Working Day	6 days (One day per week can be alternately rested)

Working Hour	Shift 1:	07:00 a.m. ~ 07:00 p.m.
	Shift 2:	07:00 p.m. ~ 07:00 a.m.

3.11 Utilities

3.11.1 Power Supply and Energy Requirement

Based on the estimated power consumption phase-wise, the Developer has proposed stringing a 11 KV high tension overhead line from China to Project's Main Supply.

The electrical substation was designed to provide stable and reliable electrical power supply. Generators will be able to cater for adequate electrical backup power for the IBIS Styles Hotel during power disruptions. Muse Central Business District Project Sub-station will adequately supply electricity for all buildings, lighting and other services of IBIS Styles Hotel.

Two main Transformers will be sited at Zone 1 and distribute power with overhead line from Shophouse to IBIS Styles Hotel and the other facilities in Zone 1 and this power supply connection shown in Figure 3-15 and Figure 3-16.

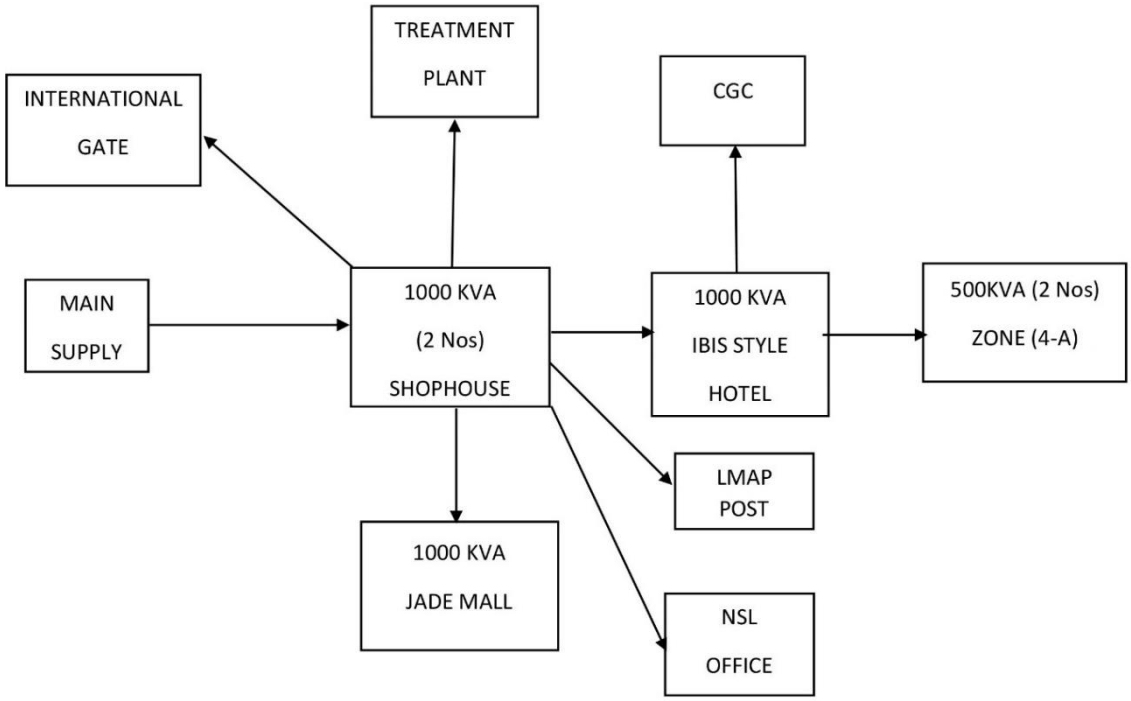


Figure 3-15 Power Supply Connection

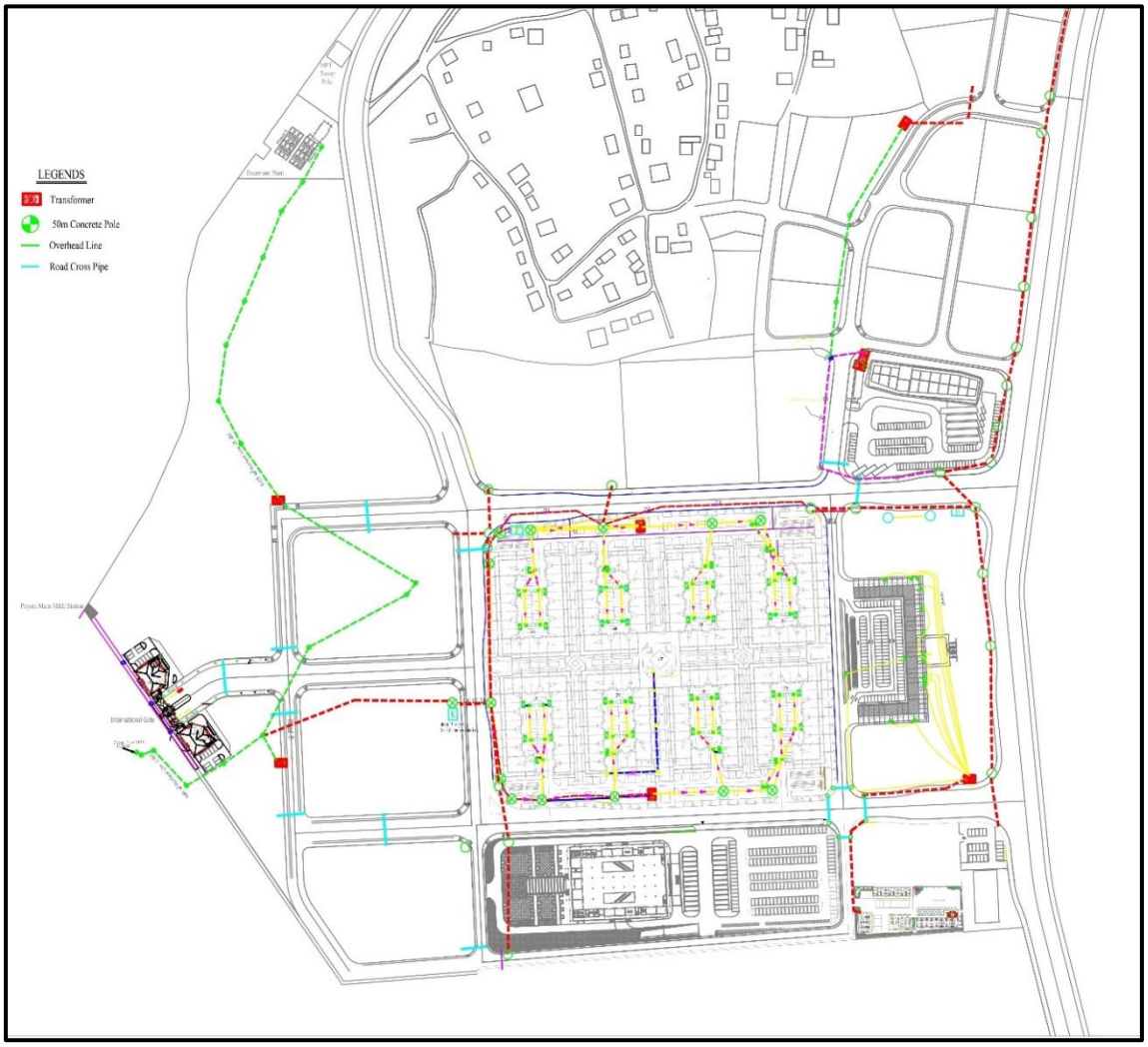


Figure 3-16 Power Supply Distribution Plan

Table 3-17 Electricity

Sr. No.	Items	Qty	Power	Electricity Consumption (Unit per month)	Source
1.	Transformer	2	500 kVA/volt	86,493	CBD Project
2.	Diesel Generator	2	500 kVA/volt	960	Private

3.11.2 Annual Fuel Requirement

Diesel is the main fuel for operation of generators for this project. The average consumption of diesel is approximately 11,880 liters per year.

3.11.3 Water Requirement and Type of Water Treatment

During construction and pre-commission phases, the plant nursery, construction camp and site works will require a supply of water. This implies that the provision of water to the construction area from the tube well will be an initial construction activity.

There are two 4" bore tube wells to fulfill the need of water demand for construction. Quality of the water supply from the tube well had been tested and was

deemed acceptable. For operation phase, water will be received from city of Ruli, China.

Water will be collected to water storage tank. Each tank capacity is 436 m^3.

Table 3-18 Water Consumption

Phase / Operation Phase	Construction Phase	Operation Phase
Water Sources	4″ tube-well (2) units	4″ tube-well (2) units
Capacity of Storage Tank	208 m^3	208 m^3
Estimated Consumption Amount	15,000 gallons per day	26,000 gallons per day
Water Supply System	No	No

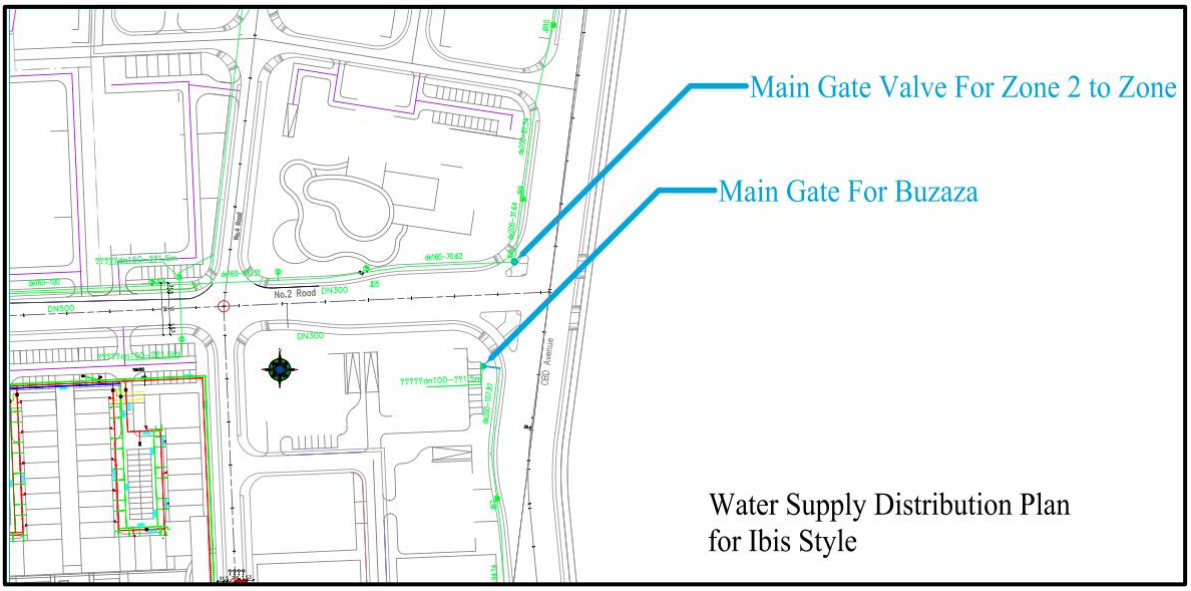


Figure 3-17 Water Supply Distribution Plan

3.12 Wastewater Generation, Treatment System and Drainage System

3.12.1 Hotel Wastewater System

Wastewater system comprises the following:

- Soil system for wastewater from water closets
- Waste system for wastewater from showers and basins
- Kitchen wastewater from kitchens
- Central grease traps from kitchens

Soil and kitchen wastewater will be collected in two septic tanks. The collected wastewater and sewage from the hotel will be discharged into the wastewater treatment plant having 50 m^3/hr capacity in the Muse Central Business District (MCBD) via internal sewer network. Estimated discharge water capacity is 161.5 m^3/ day.

Wastewater from showers and basins will be treated onsite and treated by using sand filter and chlorine injection. Water can be used for irrigation.

The concentration of pollutants such as ammonia and COD (Chemical Oxygen Demand) in residential wastewater can be quite high. This is often the result of

increased use of disinfectants and cleaning products, along with many houses not having grease traps installed. This must be also accounted for in the wastewater treatment system. After treatment from a centralized system, treated effluent is discharged directly to nearby water bodies, the Shweli River. The waste treatment plant operation is managed by the project development team.

The main sewage treatment plant manages and treats the sewage from the whole Muse Central Business District (MCBD) project including sewage of IBIS styles hotel. Quality of the discharged water from the treatment plant is constantly monitored and tested.

Figure 3-18 Hotel's Wastewater Pipeline to the MCBD's Wastewater Treatment Plant

Table 3-19 Discharged Wastewater Amount

Discharged Sources	Amount (Daily)	Storage Capacity/ Size	Disposal System to MCDC	Organization implemented for Treatment
Sewage discharged from the maximum populations that will stay (Estimated)				
Sewage	29 m^3	Septic Tank (1) No. (127 m^3)	Underground Pipeline System	Wastewater treatment plant of MCBD
Wastewater discharged from project (Estimated)				
Domestic wastewater	95 m^3	Septic Tank (1) No. (127 m^3)	Underground Pipeline System	Wastewater treatment plant of MCBD

3.12.2 Operation Steps for Centralized Wastewater Treatment Plant

Wastewater treatment process is 50 m^3/hr wastewater and sewage treatment work.

Design Requirement

1. Water fluid

According to provide sewage water, waste water treatment, facility designed to handle as 1200 m^3/ day, design capacity 50 m^3/ hr.

2. Water quality requirement

According sewage water to determine the design of similar water quality as below the table.

PH	Ammonia (mg/l)	SS (mg/l)	COD (mg/l)	BOD (mg/l)	Fecal coliform
6~9	45	250	250	120	1.6×10^8

3. Water quality requirements of effluent

PH	Ammonia (mg/l)	SS (mg/l)	COD (mg/l)	BOD (mg/l)	Fecal coliform
6~9	30	30	100	30	1000

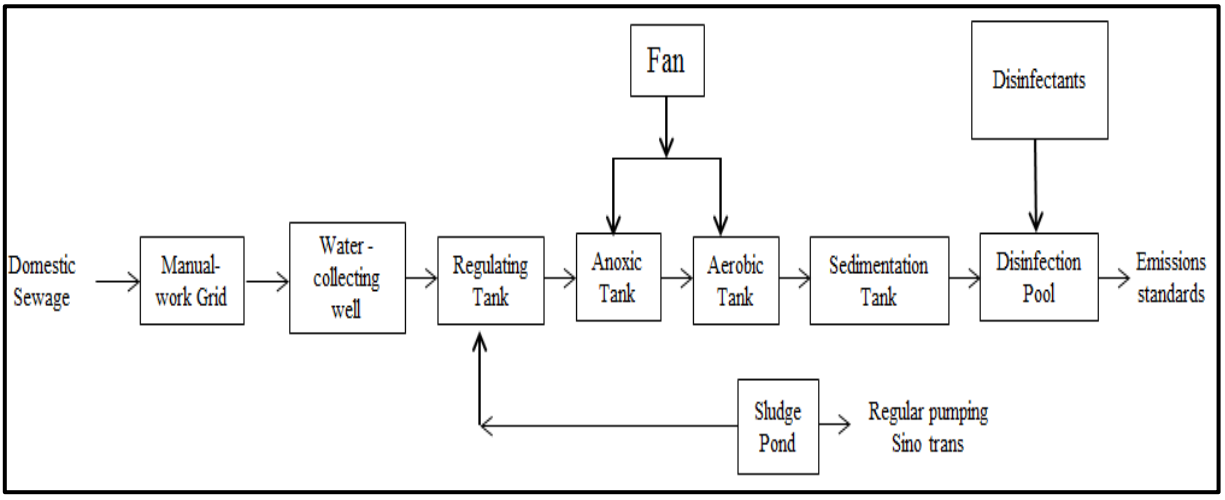


Figure 3-19 MCBD's Wastewater Treatment Process Block Diagram

Wastewater Treatment Process Description

(1) Grille ditch

Grille ditch, sewage treatment facilities into the first structure, installing at artificial grill a table, clean up sewage large particles of solid matter, to ensure the normal operation of subsequent treatment facilities.

(2) Water collecting well

As low elevation runoff, design collection wells will increase to regulate sewage pools.

(3) Regulating Tank

Sewage is into the conditioning tank effluent water quality regulation to ensure that subsequent biological wastewater treatment apparatus continuously running smoothly. Tank equipped with sump, ladder, pump operating and maintenance easy. Equipped with a mechanical stirred regulation pool, stirred regulation, so that sediment can be discharged sewage pumps.

(4) Anoxic Tank

Based on the need to control the air supply amount to processing pool hypoxic environment, flexibility, to ensure treatment effect. Under hypoxic conditions, organic pollutants acidification, will be one of macromolecules, biodegradable pollutants, for the subsequent aerobic reactor to create good conditions, the other hand, in the anoxic denitrifying bacteria use a variety of low molecular weight organic matter in sewage as an electron donor to return the final mixture of nitrate as an electron acceptor, the nitrate reduction to gaseous nitrogen, to achieve nitrogen removal purposes.

(5) Aerobic Tank

Multi-level contact oxidation pond, control its organic load and dissolved oxygen concentration, the organic pollutants in this after packing flora growing a various biological reaction, eventually converted to carbon dioxide and water thoroughly to remove oxidation.

(6) Secondary Sedimentation Tank

Using vertical flow sedimentation tank, mainly for solid-liquid separation, clarification contact oxidation pond effluent (containing more shedding of biofilm and insoluble substances), for sedimentation tanks are designed using rational design parameters, thus ensuring clarifying effect. Part of the settled sludge back to the conditioning tank, increasing the pool of sludge concentration adjustment, increased hydrolytic effect, the remaining portion of the sludge into the sludge into the sludge tank stripping enrichment process, reduce sludge volume, and then fill in regular use suction truck Sinotrans full or sent to a nearby dry field.

(7) Disinfection Pool

By adding disinfectant (chlorine tablets) to kill bacteria and viruses in sewage, etc, to meet the design criteria effluent reuse or discharge.

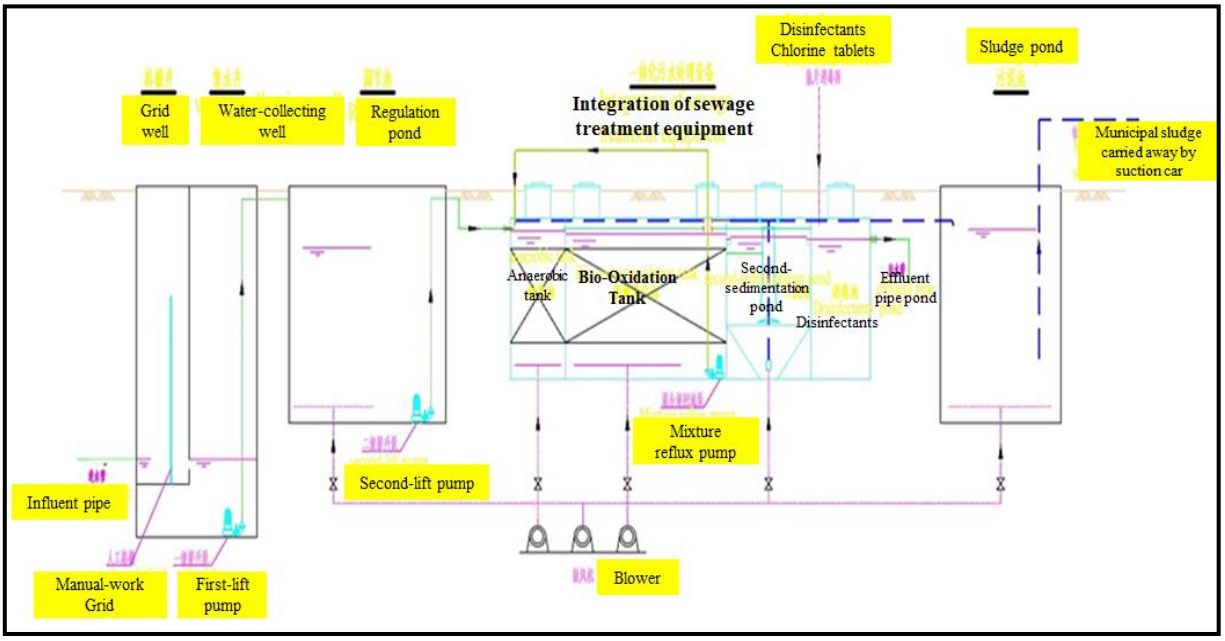


Figure 3-20 Drawing of MCBD's Wastewater Treatment Plant

3.12.3 Wastewater and Sewage Collection and Disposal

Domestic wastewater, industrial wastewater and other disposed water will be collected via road side pipe network and gathered into wastewater treatment plant. The capacity of wastewater treatment will be 50 m^3/hr. Wastewater from commercial plots, residential plots and other infrastructure buildings will be collected through buried pipelines at the road side. The developer will use ejectors, pumps and compressors along pipeline. Treated water will be disposed off at the back drainage which leads to Shweli River.

Table 3-20 Target level of Treated Water Quality discharging to the Water Body

No.	Parameter	Proposed Target Value	Unit
1	BOD (5 days at 20˚C)	30	mg/L
2	Suspended Solid	50	mg/L
3	Total Dissolved solids	2,000	mg/L
4	pH Value	6-9	-
5	COD	125	mg/L

3.12.4 Sewage Treatment Facilities Planning

The plan is to build a new integrated sewage treatment station on the bank of Shweli River, covering an area of 300 square meters.

The Sewer Network Planning

Before entering the municipal sewer network, there need to be water quality testing wells after pre-treatment facility and at the household sewage outlets. The sewage pipe should be laid along the road down the slope to allow the gravity flow, collecting sewage from both ends, and discharge the sewage into the integrated sewage treatment facility within the shortest distance possible.

It is planned to lay ϕ 200 ~ ϕ 400 mm sewage pipes in this plot, collecting wastewater and transferring to the integrated sewage treatment station. The treated wastewater is discharged into Shweli River.

3.12.5 Drainage System

Storm water and sewage go to separate drainage systems. Sewage will go to municipal sewers after being collected and strom water will be collected and flowed into the Shweli River.

3.12.5.1 Strom Water Collecting System

Storm water that falls on roof and road will converge and naturally flow into pipes. Elevation of the highest point in the plot is 761.77 m and the lowest point is 759.97 m; the minimum longitudinal slop of the road inside the area shall be 3% which meets the requirements for road drainage.

3.12.5.2 Drainage System

In this project's two-pipe separated sewer system, storm water is collected through storm drains and travels through a separate pipe from the one that manages household sewage and wastewater. In this type of system, the overall sewer mains are separated, with each of the two sewer programs operating at the same time – and the storm drains carry the storm water runoff separately from the wastewater.

A separate sewer system minimizes the risk of flooded basements during extreme rainfall events for people living in low-lying areas. By using the separated sewer system project pollution can be minimized and the outcomes are;

1. The load on the treatment unit becomes less.
2. The stormwater is not unnecessarily polluted.

The project site is approximately 2.74 acres in size and is currently urban development. The site is bounded on the four sides by the main road, snd drain channel.

The Shweli River is located downstream of a project catchment referred to as a drainage investigation area of about 125 acres. The drainage investigation area is shown in Figure. The project area is currently built up for Urban and commercial use.

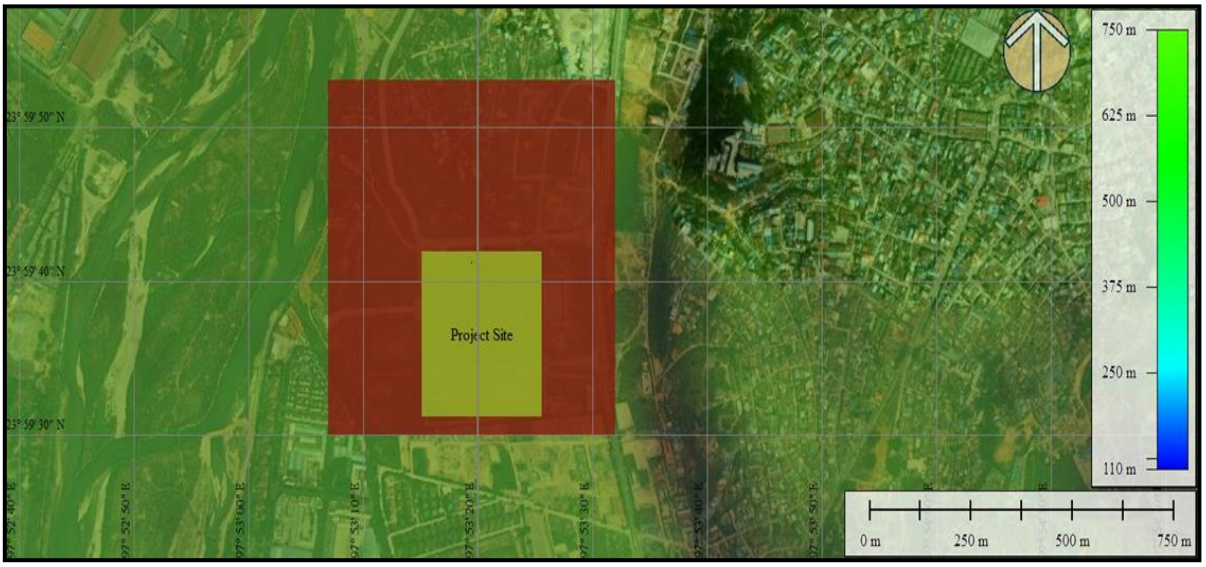


Figure 3-21 Project Area (in Yellow) and Drainage Investigation Area (in red)

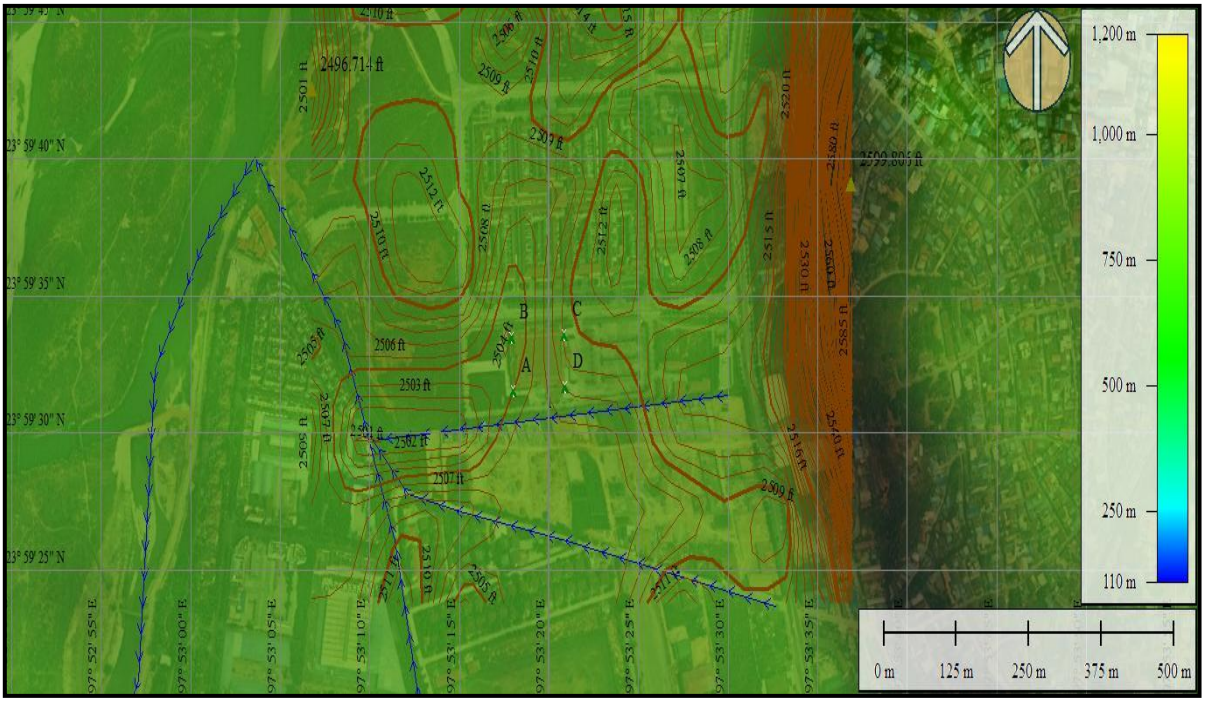


Figure 3-22 Topographic and Drainage Flow Direction of the Project Area

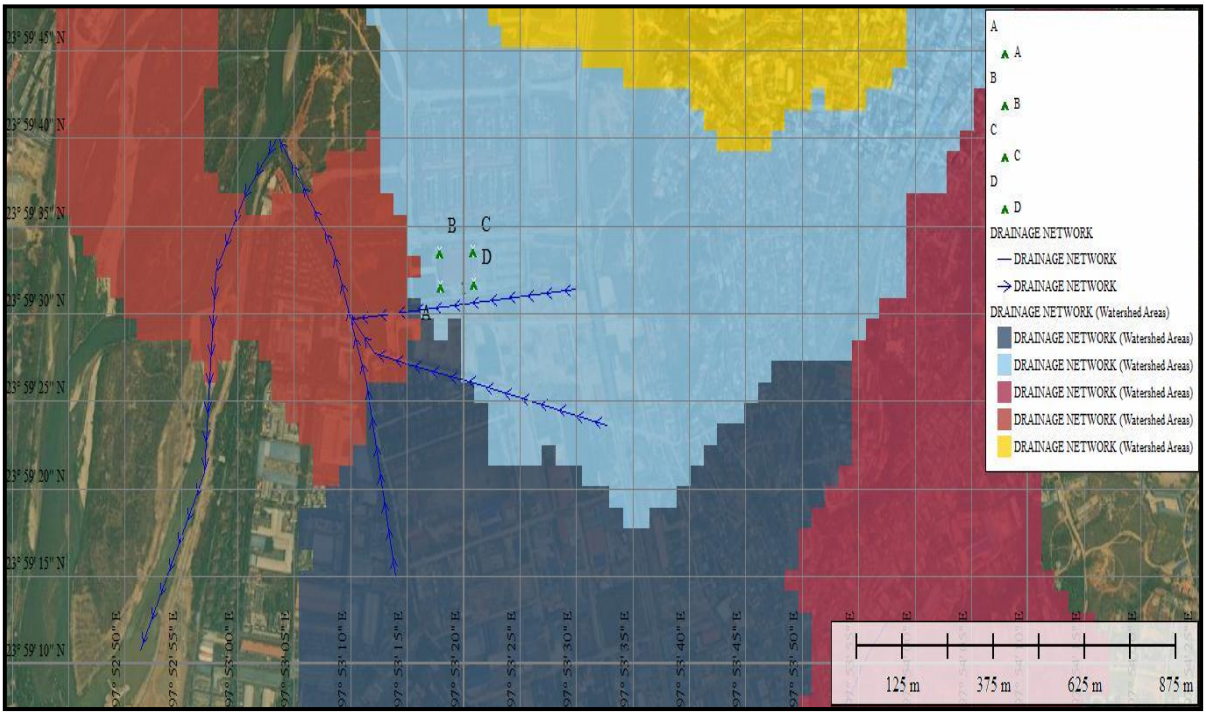


Figure 3-23 Drainage Area and Flow Direction of Project Area Watershed

The drainage network as a link-node system was entered into the runoff study. Additional nodes (junctions) have been inserted where a quick change in links (conduits) characteristic was detected (such as a change in geometry (depth, width), bed slope, roughness coefficient, and shape) or when tributary canals are connected to the main canal. The network geometry (canal profile and cross-sections) has been derived from the topographical map and land survey.

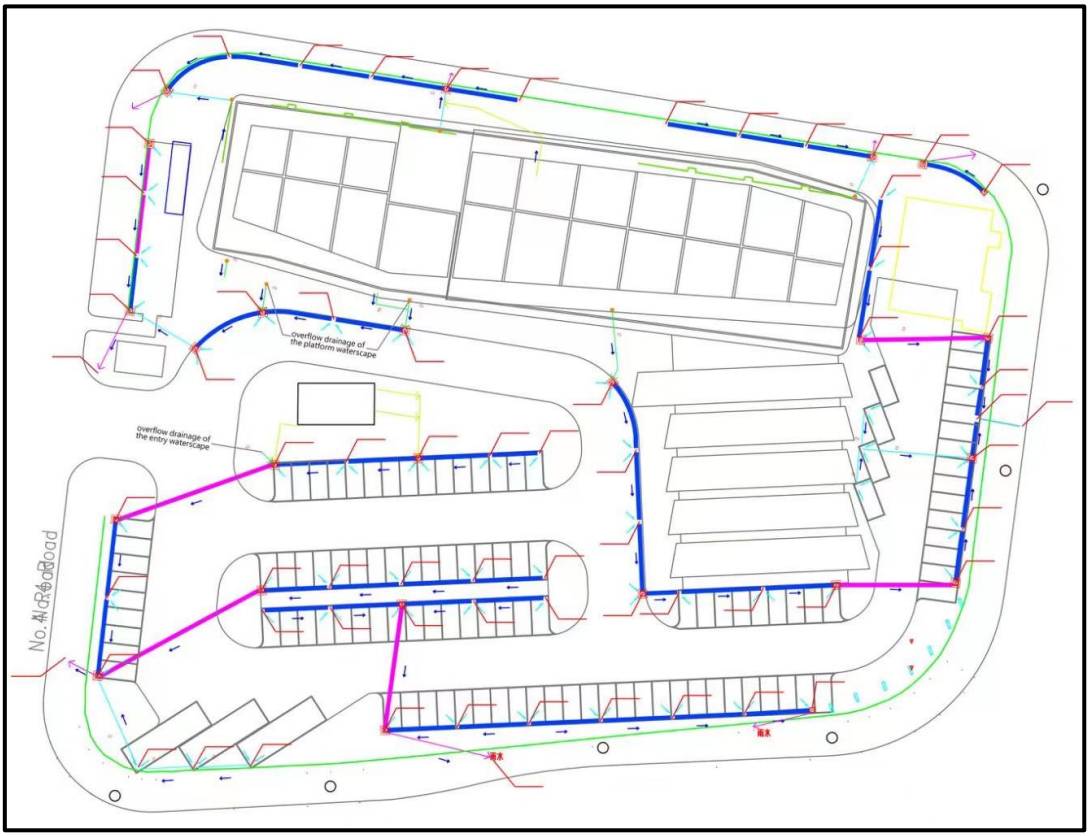
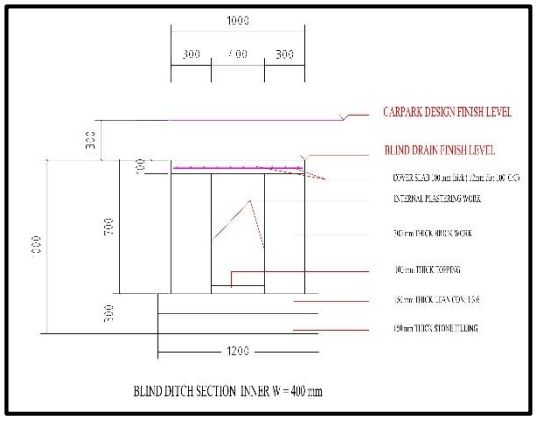
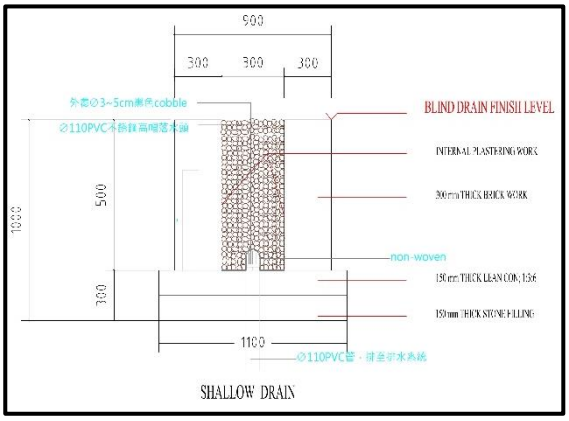
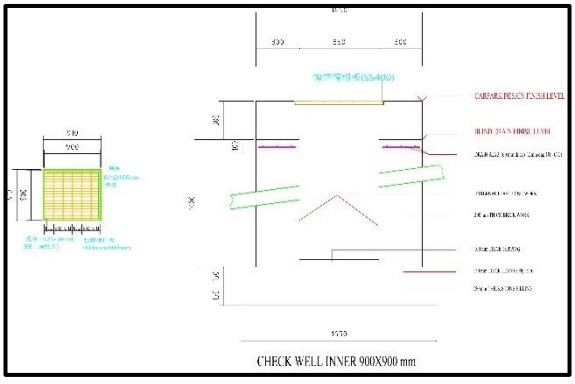
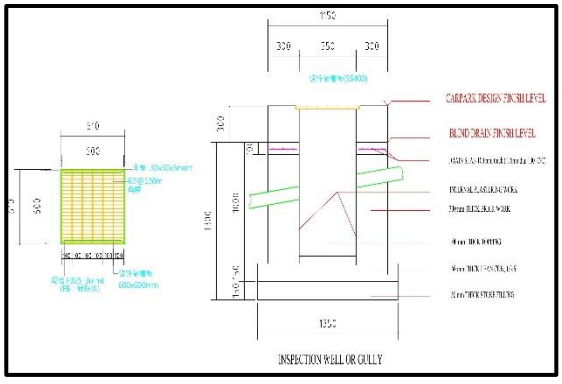


Figure 3-24 Drainage System of IBIS Styles Hotel









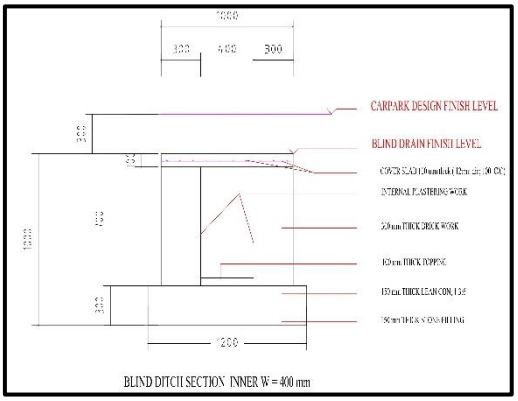


Figure 3-25 Detailed Design for Drainage System

3.13 Solid Waste Management

A considerable amount of organic refuse (vegetation) would be generated during site clearance activities. To the greatest extent possible the soft material (leaves, shoots, etc.) would be separated and composted on site for later reuse during the landscaping phase. Harder and woody material (tree trunks, branches) would be stockpiled and removed from the site by selling as fire wood.

Solid waste generated at the site will primarily be domestic in nature (paper, plastics, packaging, waste food, etc.). This will be collected on a regular basis. The hotel operators are willing to institute waste separation and recycling procedures and the extent to which these can be effectively executed will be examined.

Table 3-21 Generated Solid Waste Amount for Operation Phase

Sr. No.	Items	Estimated Amount (Daily)	Disposal System	Temporary Storage System	Disposed to
1.	Domestic Wastes	500 kg	Separating waste bins	Temporary waste storage tank	Township City Development Committee
2.	Food Wastes	100 kg			

3.14 Comparison and Selection of Project Alternatives

3.14.1 Description of Project Alternatives

Consideration of potential alternatives in EIA is the critical component of the process. Alternative means the various technically and economically feasible ways or the other possible location that the project can be. The role of alternatives is to find the most effective way of meeting the need and purpose of the project, either through enhancing the environmental benefits of the proposed activity, and or through reducing or avoiding potentially significant negative impacts. The alternative options for this project are 'No Go Alternative' option, 'Location Alternatives'.

3.14.1.1 "No Go" Alternative

The "Do Nothing" alternative means that the Project would not proceed. The decision of not proceeded the project is the benchmark against which the consequences of implementing the project can be measured. This

option will, however, involve several losses both to the proponent and the community.

Table 3-22 'No Go Project' Alternatives

	Development project	No development project
Nature and Environment	The nature and environment will be changed somehow by means of positive or negative ways. There will be some impacts on the environment.	It is the most suitable alternative from an extreme environmental perspective as it ensures non-interference with the existing conditions and no impacts will arise.
Utilizing of the land	Get benefits by utilizing waterlogged farmland with poor yield from the economic and socio perspective. (Such as getting jobs, getting experience & exposure, getting knowledge)	By un-utilizing the land, land use will remain unchanged and lost the opportunities such as getting jobs, sharing knowledge of the technology.
Socio-Economy	Boost the economic growth of the country. Employment opportunities will be created.	It is the least preferred from the socio-economic perspective. The economic status of the country and the local people would remain unchanged. Restriction of the economic growth of the country.

From the analysis above, it becomes apparent that the No Project alternative is not an alternative to the local people and the government. This alternative should not be adapted as there is a need to encourage development as long as it is on a sustainable basis. Even though the 'Development project option' may have some negative impacts on the environment, it can still be considered as a better option than the 'No development project option'. But the proponent needs to ensure to control and mitigate the impacts.

3.14.1.2 "Location" Alternative

The advantages and disadvantages of site alternative are summarized in below table.

Table 3-23 Location Alternatives

	Current location, MCBD	Another Location
Resource- Electricity and Telecommunication	In MCBD, for every project can be connected to electricity and telecommunication including internet access from China and National Grid.	There may be national grid line and however, the electricity supply may not be sufficient.
Resource- Water	MCBD has safe and adequate purified fresh water supply from China.	It is necessary to find another location which has adequate fresh water supply source.

	Current location, MCBD	Another Location
Site access	It is located at the Muse City. Moreover, this is at the border of Myanmar and China trade zone and bank of the Shweli River.	It is necessary to find appropriate location for easy access.
Transportation and logistic	It is located next to one of the main national trade zones of the Myanmar and China. The road is connected to the major road transport network across the country so that transportation and distribution of products are convenient.	It is necessary to find the location which is convenient for transportation.
Incentive of Location	There are various kinds of trade because situated on the border of Myanmar and China.	Some of benefits are not applicable in other areas.
Environmental Pollution Control	In MCBD, environmental pollution control has carried out according to National Regulation and specific inspection are being carried each project.	Other locations are slightly weakness on the Environmental pollution control.

3.14.2 Comparison of Project Alternatives

Based on the above comparisons, it can be considered that there is no other feasible appropriate location that has already developed in both hard and soft infrastructure like MCBD. The current site location is a convenient place for the project because it has safe and sufficient electricity and water supply. In addition, it is easy for access, transportation and logistics. Due to the border of Myanmar and China, the economic is most develop at this location.

4.0 DESCRIPTION OF THE SURROUNDING ENVIRONMENT

4.1 Setting of the Study Limit

This section covers the information regarding the existing environmental conditions for the proposed project site. It provides a brief outline of the methodology adopted in data collection, information about the physical and human environment. Factors such as traffic condition and the noise levels are considered to be human affecting environment.

It is important to set the study area for conducting the Environmental Impact Assessment Study which will reflect the impacts due to the proposed project activity. In this project, study area has been identified as 1.5 km radius with the proposed project as its center but the China side of the Myanmar-China Borderline cannot consider the scope.

The scope of study includes detailed baseline data generation and characterization of existing status of environment in the study area. Various environmental components such as air, noise, water, land, biological and socio-economic components and other parameters of interest are to be studied.

Figure 4-1 Project Site with 1.5 km Radius Scope on Google Earth

4.2 Methodology for Data Collection and Analysis

For preparation of this EIA report, there are two methodologies to collect the data to describe the current environmental and social conditions of the proposed project.

(i) Primary Data Collection and Analysis

(ii) Secondary Data Collection and Analysis

4.2.1 Primary Data Collection and Analysis

The objective of the EIA baseline data collection is to present the general description of the environment as primary data collection. The methodology is designed to assess the baseline data of the environmental quality factors for "IBIS Styles Hotel" Project. Baseline environmental parameters are defined according to the guidelines, which apply to projects dedicated to the proposed project.

Environmental baseline data (primary data) such as ambient air quality, ambient noise levels are measured by using instruments. For water quality, wastewater quality and soil quality, samples are collected and analyzed at the GMES laboratory and other laboratories. The results are mentioned in this Chapter. All the results are attached in Appendices. All necessary criteria such as site selections for sampling and analysis of ambient air quality, ambient noise level, water quality and soil quality were identified by GMES.

Some data such as socioeconomic conditions, biological environment and health impact assessment are done by the consultants. The social impact assessment (SIA) report and health impact assessment (HIA) report are attached as Part-II and Part-III of this project.

4.2.2 Secondary Data Collection and Analysis

Some data such as socioeconomic conditions, physical, biological environment and weather data are collected from the respective websites and reviewed by the EIA study team. The regional data of the Muse Township was collected from the Township Data published by General Administration Department (GAD) in 2019.

4.3 Environmental Baseline Situation (Primary Data)

Green Myanmar Environmental Services Company Limited (GMES) had done measuring primary data or baseline environmental parameters such as ambient air quality, ambient noise level, water quality and soil quality from 22.8.2020 to 25.8.2020. The materials and methods of instruments used for surveying the environmental baseline data and the results are mentioned in the following section. The water samples, wastewaters and soil samples were collected and analyzed the results in the respective laboratories.

Note: As the baseline data at that time was mentioned in the previous EIA was not recovered for this project, the environmental quality was measured again in 2020 and these data are inserted in this version.

4.3.1 Ambient Air Quality

The objective of the air-quality monitoring program is to describe the baseline air quality conditions in the project area.

Dispersion of different air pollutants released into the atmosphere has significant impacts on the neighborhood air environment of a project and forms an important part of impact assessment studies.

The air quality status with respect to the project site will form the baseline information over which the predicted impacts due to the proposed project can be superimposed to find out the net (Final) impacts on air environment. Based on the final impacts of the air environment, a viable Environmental Management Plan (EMP) can be prepared.

The baseline status of the air quality can be assessed through scientifically designed air quality measuring network.

(i) Methods of Sampling and Analysis

The rate of air quality was recorded automatically every one minute for gases causing air pollution (Sulfur dioxide, nitrogen dioxide, carbon dioxide, carbon monoxide, sulfur dioxide and particulate matters) to describe ambient air quality.

Sampling pump was adjusted to 2 liter/min.

Different analysis methods are used for different parameters of ambient air quality as shown in the following table.

Table 4-1 Measured Parameters for Ambient Air Quality

No.	Parameters	Analysis Methods
1.	Sulfur Dioxide (SO_2)	Electrochemical sensors
2.	Nitrogen Dioxide (NO_2)	Electrochemical sensors
3.	Carbon Dioxide (CO_2)	NDIR (optional sensor)
4.	Carbon Monoxide (CO)	Electrochemical sensors
5.	Particulate Matter 2.5 ($PM_{2.5}$)	Infrared Light Scattering
6.	Particulate Matter 10 (PM_{10})	Infrared Light Scattering

(ii) Materials Used for Measurement

The ambient air quality parameters such as carbon monoxide (CO), carbon dioxide (CO_2), sulfur dioxide (SO_2), nitrogen dioxide (NO_2), particulate matters ($PM_{2.5}$ & PM_{10}), wind speed, wind direction, temperature are measured by using **Haz-Scanner** which is a true environmental air station providing ambient air quality measurement of critical EPA criteria pollutants and air parameters.

Haz-Scanner

(iii) Selection of Sampling Locations

Air quality measurement was taken around the project site. The sampling points were selected based on their locations relative to key community receptors, as well as their current or potential for impairments. Ambient air quality around the project site was measured continuously for 24 hours at three sampling points.

Table 4-2 Location of Ambient Air Quality Measuring Point

Sr. No.	Measuring Points	Description	Geographic Information	Date
1.	AMP-1	Near the Outside of the Hotel	23˚ 59' 42.49" N 96˚ 53' 25.54" E	22.8.2022 ~ 23.8.2022
2.	AMP-2	Ho-Saung Village Monastery	23˚ 59' 55.28" N 97˚ 53' 22.28" E	24.8.2022 ~ 25.8.2022

AMP = Ambient Air Quality Measuring Point

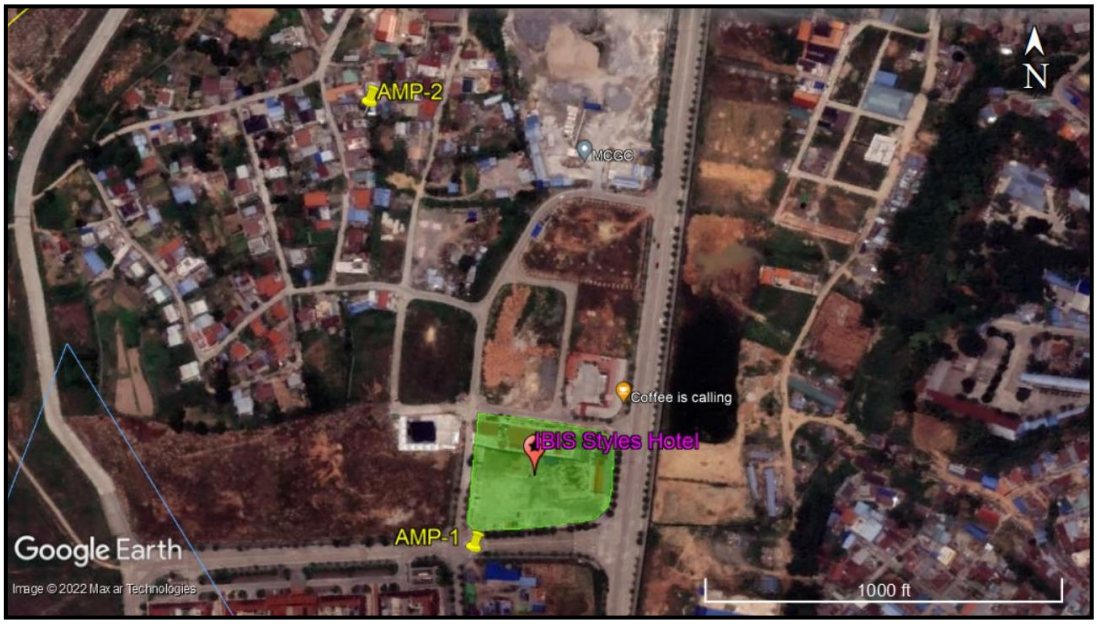


Figure 4-2 Location of Ambient Air Quality Measuring Points

Figure 4-3 Status of Ambient Air Quality Measurement

(iv) Measuring Results

At the initial stage of the project, baseline air quality should be measured on the vicinity of the site to assess background levels of key pollutants and to differentiate between existing ambient conditions and project-related impacts in future. Air quality is defined by the concentration of dust and pollutant gas of the ambient air.

The ambient air measuring was conducted from 22.8.2022 to 25.8.2022. The air quality measuring result for ambient air is described in **Table 4-3**.

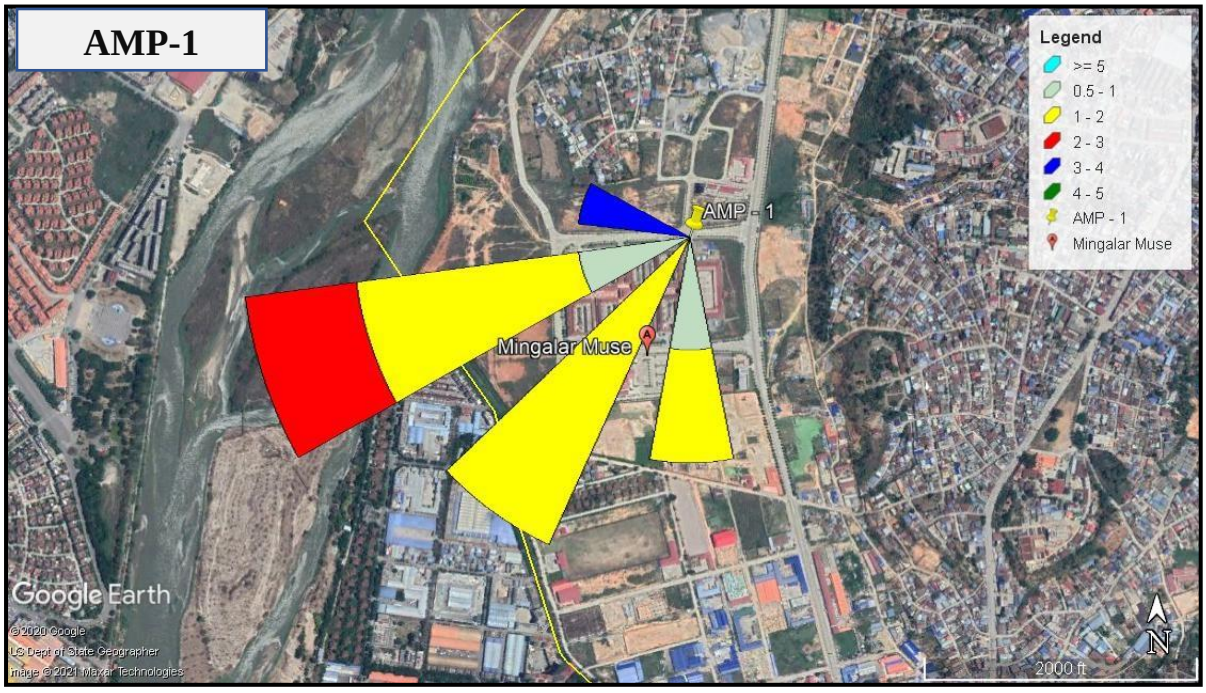
Table 4-3 Measuring Results of Ambient Air Quality Baseline Data

No.	Parameters	Unit	Analysis Values			National Environmental (Emission) Quality Guidelines	
			Result Value		Average Period	Guideline Value	Average Period
			AMP-1	AMP-2			
1.	Nitrogen Dioxide	µg/m^3	4.42	4.09	24 hours	**200**	**1 hour**

No.	Parameters	Unit	Analysis Values			National Environmental (Emission) Quality Guidelines	
			Result Value		Average Period	Guideline Value	Average Period
			AMP-1	AMP-2			
2.	Sulfur Dioxide	µg/m^3	0	0	24 hours	**20**	**24 hours**
3.	Particulate Matter PM_{10}	µg/m^3	25.36	18.73	24 hours	**50**	**24 hours**
4.	Particulate Matter $PM_{2.5}$	µg/m^3	12.78	8.54	24 hours	**25**	**24 hours**
5.	Ammonia	ppm	0.18	0	24 hours	**NG**	-
6.	Carbon Dioxide	ppm	236.14	242.61	24 hours	**NG**	-
7.	Carbon Monoxide	ppm	0.13	0.15	24 hours	**NG**	-
8.	Hydrogen Sulfide	ppb	4.11	3.61	24 hours	**NG**	
9.	Methane	ppm	265.80	229.69	24 hours	**NG**	-
10.	Relative Humidity	%	66.02	79.37	24 hours	**NG**	
11.	Temperature	°C	25.78	24.64	24 hours	**NG**	

Note: NG = No Guideline
Source: EIA Study Team

The Following figures describe the wind speed and direction during the day of environmental measuring was performed.



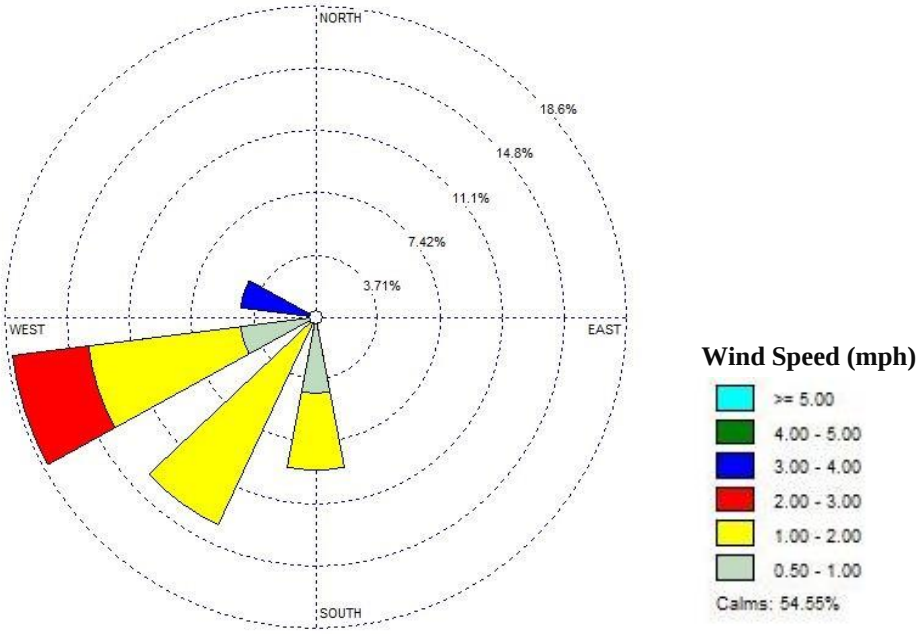


Figure 4-4 Wind Speed & Wind Direction at AMP-1 (22.8.2020 ~ 23.8.2020 blowing from)

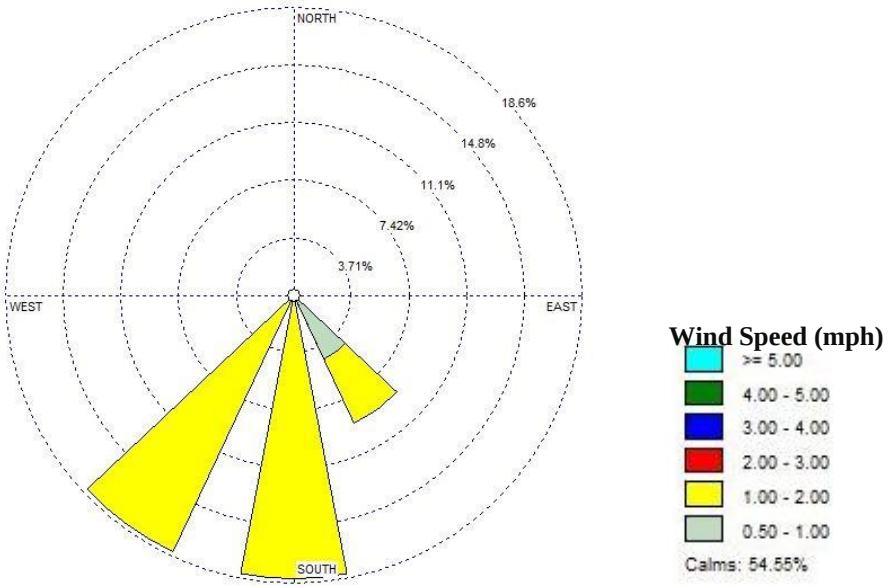


Figure 4-5 Wind Speed & Wind Direction at AMP-2 (24.8.2020 ~ 25.8.2020 blowing from)

According to the above results, all parameters are within the acceptable limit of NEQ(E)Q Guidelines.

4.3.2 Ambient Noise Level

Noise is one of the most undesirable and unwanted by-products of our modern lifestyle. It may not seem as harmful as air and water pollution, but it affects human health and well-being and can contribute to deterioration of human well-being in general and can cause neurological disturbances and physiological damage to the hearing mechanism in particular. It is, therefore, necessary to measure both the quality as well as the quantity of noise in and around the site.

Parameter for noise level survey was determined according to Myanmar National Environmental Quality (Emission) Guidelines.

Noise surveys have been conducted at the project site in order to establish an acoustic baseline onto which potential impacts from the proposed project may be superimposed.

(i) Methods of Sampling and Analysis

The ambient noise level was measured 24 hours and separately divided two periods such as day time and night time to compare the National Environmental Quality (Emission) Guideline.

(ii) Materials Used for Measurement

Noise level measurement was also done by the SOUND LEVEL METER (GM-1356) and country of origin is China. The calibration is done by referencing with standard unit and also done by instrument supplier.

Table 4-4 Measuring Instruments

Name of Measuring Instrument	Measuirng Field	Photo of Measuring Instrument
Sound Level Meter	Sound Level for Workplace and Ambient	

(iii) Selection of Sampling Locations

Air noise levels measurement was also taken around the project site. Ambient air quality around the project site was measured continuously for 24 hours at three sampling points.

Table 4-5 Location of Ambient Noise Levels Measuring Point

Sr. No.	Measuring Points	Description	Geographic Information	Date
1.	NMP-1	Near the Outside of the Hotel	23˚ 59' 42.49" N 96˚ 53' 25.54" E	22.8.2022 ~ 23.8.2022
2.	NMP-2	Ho-Saung Village Monastery	23˚ 59' 55.28" N 97˚ 53' 22.28" E	24.8.2022 ~ 25.8.2022

NMP = Ambient Noise Levels Measuring Point

Figure 4-6 Location of Ambient Noise Levels Measuring Points

Figure 4-7 Status of Ambient Noise Levels Measurement

(iv) Measuring Results

The following table describes the results of ambient noise level.

Table 4-6 Ambient Noise Level Measuring Results

Time	Unit	Measuring Results		Guideline Value
		NMP-1	NMP-2	
Day time (7:00 a.m. ~ 10:00 p.m.)	dBA	55.78	54.34	**55**
Night time (10:00 p.m. ~ 7:00 a.m.)		52.05	50.82	**45**

The project is located in the Muse Central Economic Zone-2. The observed values of the noise level for daytime and night time are slightly higher than the limit of Guideline. Due to the operation phase of shop house area, the noise level for daytime at NMP-1 are slightly higher than limit. Due to the heavy rain at night of the measuring day, the noise level for night time are slightly higher than limit.

The noise level measurement graphs are as follow.

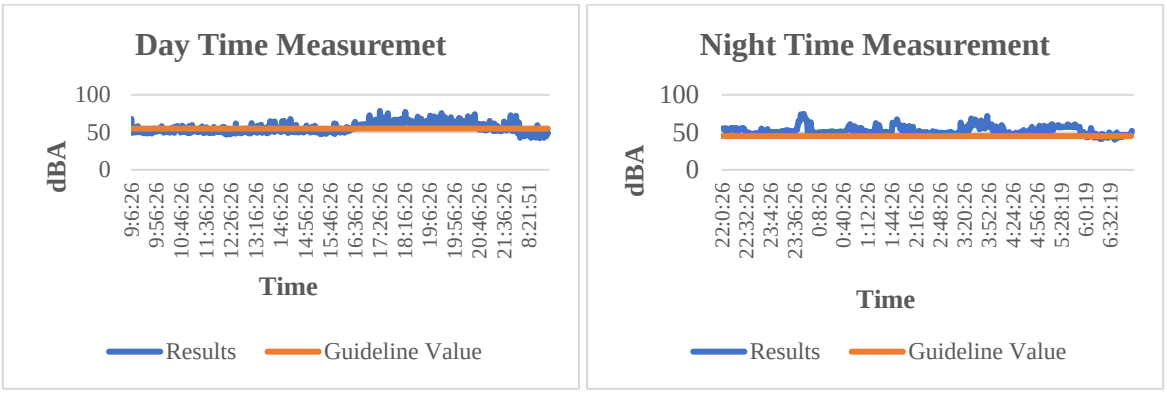


Figure 4-8 Noise Level Measurement Graph of NMP-1 (22.8.2020 ~ 23.8.2020)

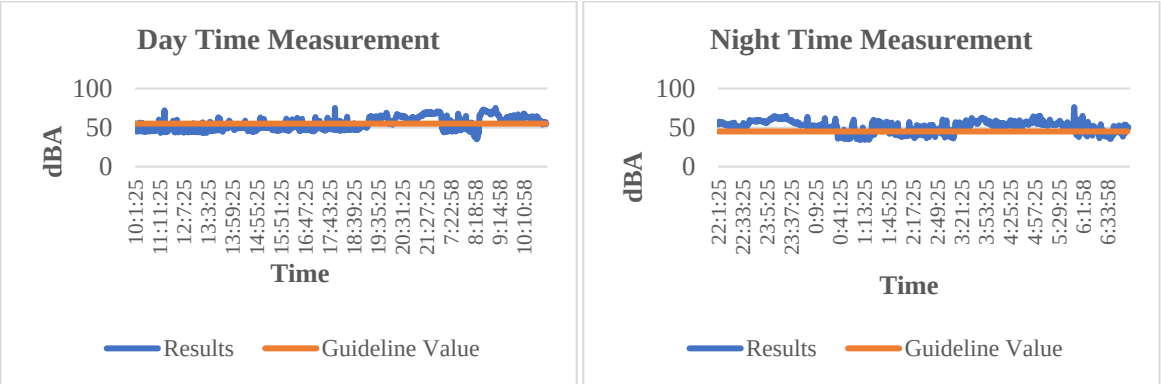


Figure 4-9 Noise Level Measurement Graph of NMP-2 (24.8.2020 ~ 25.8.2020)

4.3.3 Water Quality

Selected water quality parameters of surface water, and wastewater have been studied for assessing the water environment and evaluating the anticipated impact of the proposed project.

The purpose of this study is to:

- Assess the water quality characteristics for critical parameters,
- Predict impact on water quality by this project and related activities, and
- Suggest appropriate mitigation measures.

(i) Selection of Sampling Locations

Water quality was sampled from the surface water and wastewater. Surface water quality was sampled at the Shweli River and the wastewater quality was sampled at the wastewater plant (inlet & outlet). Surface water and wastewater samples were collected five samples around the project site and its surroundings on August 22, 2020 and carried out laboratory analysis at the laboratories. The locations of water sampling points are as shown in **Table 4-7**.

Table 4-7 Locations of Surface Water and Wastewater Sampling Points

Sr. No.	Sampling Points	Description	Type of Water	Geographic Information	Date
1.	WSP-1	Tubewell Water	Ground Water	23˚ 59' 45.02" N 97˚ 53' 26.93" E	31.8.2015
2.	WSP-2	Upstream of the Shweli River	Surface Water	24˚ 00' 00.89" N 97˚ 53' 08.377" E	22.8.2020
3.	WSP-3	Middle Stream of the Shweli River	Surface Water	23˚ 59' 55" N 96˚ 53' 09" E	22.8.2020
4.	WSP-4	Downstream of the Shweli River	Surface Water	23˚ 59' 39" N 97˚ 53' 03" E	22.8.2020
5.	WSP-5	Wastewater (Inlet)	Wastewater	23˚ 59' 52.425" N 97˚ 53' 10.952" E	23.8.2020
6.	WSP-6	Wastewater (Inlet)	Wastewater	23˚ 59' 51.69" N 97˚ 53' 09" E	23.8.2020

WSP = Water Sampling Point

Figure 4-10 Location of Ground Water, Surface Water and Wastewater Sampling Points

Figure 4-11 Status of Ground Water Sampling

Figure 4-12 Status of Surface Water Sampling

Figure 4-13 Status of Wastewater Sampling

(ii) Analysis Results

The laboratory analysis results of ground water, surface water quality and wastewater quality are as follows.

Table 4-8 Laboratory Analysis Result of Ground Water Quality (GMES Laboratory)

Sr. No.	Parameters	Unit	Analysis Value	Minimum Measurement Range of Methods	Drinking Water Standards
			WSP-1		WHO (2011)
1.	Aluminum (Al)	ppm	0.02	**0.01**	**0.2**
2.	Arsenic (As)	ppm	2.75	**0.005**	**10**
3.	Chloride (Cl^-)	ppm	7	**5**	**250**
4.	Copper (Cu)	ppm	ND	**0.5**	**2**
5.	Cyanide (CN)	ppm	0.02	**0.01**	**0.07**
6.	Manganese (Mn)	ppm	ND	**0.2**	**0.4**
7.	pH	-	6.5	**0.1**	**6.5~8.5**
8.	Sulfate (SO_4)	ppm	ND	**2**	**250**
9.	Total Alkalinity as $CaCO_3$	ppm	37	**5**	**-**
10.	Total Dissolved Solids (TDS)	ppm	60	**1**	**600**
11.	Total Hardness as $CaCO_3$	ppm	9	**5**	**500**

Sr. No.	Parameters	Unit	Analysis Value	Minimum Measurement Range of Methods	Drinking Water Standards
			WSP-1		WHO (2011)
12.	Total Iron (Fe)	mg/l	<0.3	**0.1**	**0.3**
13.	Turbidity	NTU	<0.01	**0.01**	**5**

Table 4-9 Laboratory Analysis Result of Surface Water Quality (GMES Laboratory)

Sr. No.	Parameters	Unit	Analysis Value			Minimum Measurement Range of Methods	National Environmental Quality (Emission) Guidelines (2015)		Drinking Water Standard
			WSP-2	WSP-3	WSP-4		General Application	Tourism and Hostility Development	WHO (2011)
1.	5-day Biochemical Oxygen Demand	mg/l	<30	<30	<30	**30**	**50**	**50**	-
2.	Ammonia	mg/l	ND	ND	ND	**0.02**	**10**	-	-
3.	Arsenic	mg/l	0	0	0	**0.005**	**0.1**	-	**10**
4.	Chemical Oxygen Demand	mg/l	<30	<30	<30	**30**	**250**	**250**	-
5.	Chromium (Hexavalent)	mg/l	ND	0.06	ND	**0.02**	**0.1**	-	-
6.	Chromium (Total)	mg/l	0.02	0.08	0.02	**0.2**	**0.5**	-	-
7.	Copper	mg/l	ND	ND	ND	**0.5**	**0.5**	-	**2**
8.	Cyanide (total)	mg/l	ND	ND	ND	**0.01**	**1**	-	**0.07**
9.	Iron	mg/l	1.3	0.1	0.5	**0.1**	**3**	-	**0.3**
10.	Nickel	mg/l	ND	ND	ND	**0.2**	**0.5**	**10**	-
11.	Oil and Grease	mg/l	<5	<5	<5	**5**	**10**	-	-
12.	pH	-	6.49	6.96	6.56	**0.1**	**6~9**	**6~9**	**6.5~8.5**
13.	Phenols	mg/l	ND	ND	ND	**0.1**	**0.5**	-	-
14.	Sulfide	mg/l	ND	ND	ND	**0.04**	**1**	-	-
15.	Temperature	°C	28.8	28.8	28.8	**1**	**<3[b]**	-	-
16.	Total Phosphorous	mg/l	0.4	0.15	0.7	**0.02**	**5**	**2**	-
17.	Total Suspended Solids	mg/l	264	98	132	**1**	**50**	**50**	-
18.	Zinc	mg/l	ND	ND	ND	**0.02**	**2**	-	-

Note: ND - Not Detected

According to the laboratory results of the surface water quality, the total suspended solids are higher than the Guideline Value because it may be the natural conditions of the river

and the final effluent water from the project is not directly discharged to the Shweli River. The other parameters are within the limits.

Table 4-10 Laboratory Analysis Result of Wastewater Quality (GMES Laboratory)

Sr. No.	Parameters	Unit	Analysis Value		Minimum Measurement Range of Method	National Environmental Quality (Emission) Guidelines (2015)	
			WSP-5	WSP-6		General Application	Tourism and Hostility Development
1.	5-day Biochemical Oxygen Demand	mg/l	<30	<30	**30**	**50**	**50**
2.	Chemical Oxygen Demand	mg/l	40	<30	**30**	**250**	**250**
3.	Oil and Grease	mg/l	<5	<5	**5**	**10**	**10**
4.	pH	-	6.8	6.67	**0.1**	**6~9**	**6~9**
5.	Total Nitrogen	mg/l	6	ND	**5**	**-**	**10**
6.	Total Phosphorous	mg/l	3.1	2.6	**0.02**	**5**	**2**
7.	Total Suspended Solids	mg/l	76	18	**1**	**50**	**50**

Note: ND - Not Detected

According to the laboratory results of the wastewater quality, the all parameters are within the acceptable limits.

4.3.4 Soil Quality

To monitor the soil quality, the soil samples around the project site were collected.

(i) Selection of Sampling Locations

The soil samples were collected at two locations on August 22, 2020.

Table 4-11 Locations of Soil Sampling Points

Sr. No.	Sampling Points	Description	Geographic Information	Date
1.	SSP-1	Soil Sampling (Behind the project)	23˚ 59' 39.822" N 97˚ 53' 04.969" E	22.8.2022
2.	SSP-2	Soil Sampling (Front of the project)	23˚ 59' 38.304" N 96˚ 53' 28.645" E	22.8.2022

SSP = Soil Sampling Point

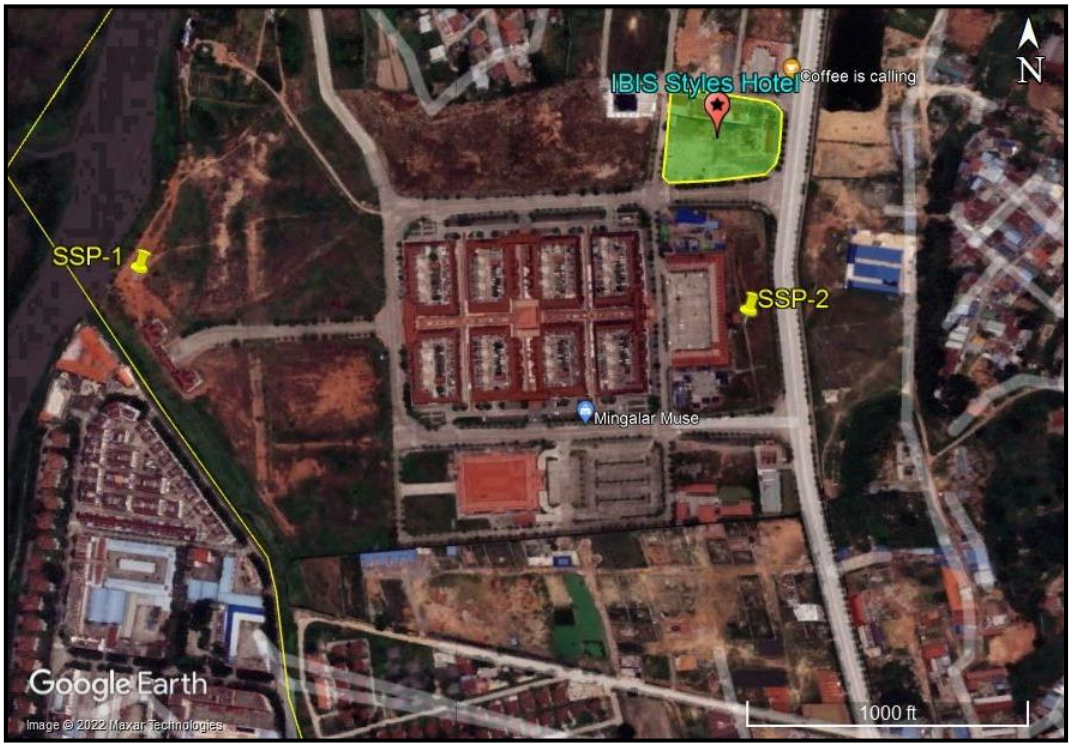


Figure 4-14 Location of Soil Sampling Points

Figure 4-15 Status of Soil Sampling

(ii) Analysis Results

The collected soil samples were tested at GMES laboratory. The analysis results of the physico-chemical parameters are presented in the Table 4-12.

Table 4-12 Laboratory Analysis Results of Soil Quality

Sr. No.	Parameter	Unit	Analysis Value		Minimum Measurement Range of Methods
			SSP-1	SSP-2	
1.	Aluminum	mg/kg soil	2	0.05	**0.05**
2.	Arsenic	mg/kg soil	0	0.05	**0.025**
3.	Chloride	g/kg soil	0.08	0.085	**0.025**
4.	Copper	mg/kg soil	ND	ND	**2.5**
5.	Cyanide	mg/kg soil	ND	ND	**0.05**
6.	Extractable Acidity	cmol/kg soil	5	2	**0.25**

Sr. No.	Parameter	Unit	Analysis Value		Minimum Measurement Range of Methods
			SSP-1	SSP-2	
7.	P-Alkalinity	mmol/l extract	0	0	**0.2**
8.	pH	-	4.12	6.56	**0.1**
9.	Total Alkalinity	mmol/l extract	2	9.5	**0.2**
10.	Total Iron	g/kg soil	0.5	0.5	**0.025**

ND - Not Detected

The above results are noted as baseline data and it will compare with the future results. Comparison will show better or worse.

4.4 Natural Environment/ Physical Component (Secondary Data)

Physical environment essentially illustrates baseline conditions of climate, topography, geology, soils and hydrology of the project area, where necessary, of proposed project regardless of an assessment study. These data are extracted from the regional facts about Muse District, Muse Township prepared by the Administrative Department of Township (2019) and stud area is an area of that township.

4.4.1 Climate

The climate of the Muse Township is a tropical monsoon climate. The highest temperature is 35ºC and lowest temperature is 4ºC during 2016 to 2019. The rainfall and temperatures of years 2016 to 2019 are as follow:

Table 4-13 Climate of Muse Township (2016-2019)

Sr. No.	Year	Rainfall		Temperature	
		Rainy Days	Total Rainfall (inches)	Summer (ºC)	Winter (ºC)
1.	2016	97	57.84	34	4
2.	2017	97	58.45	34	5
3.	2018	96	54.75	33	4
4.	2019	63	56.12	35	6

Source: *www.gad.gov.mm*

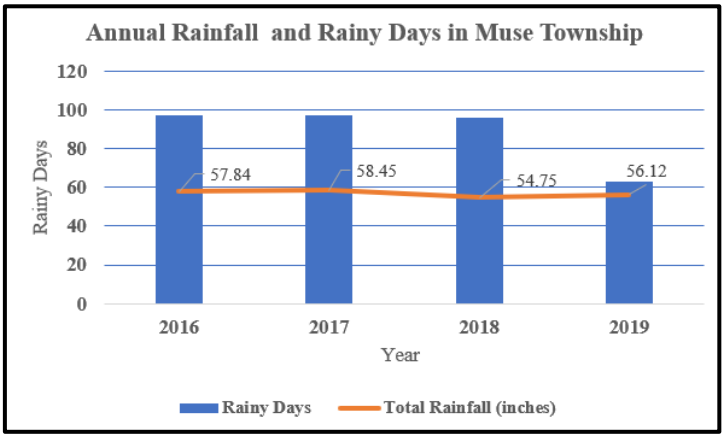


Figure 4-16 Annual Rainfall and Rainy Days in Muse Township

4.4.2 Topography and Geology

Most of the Shan State is a hilly plateau, the Shan Plateau, which together with the higher mountains in the north and south forms the Shan Hills system. The Thanlwin Rivers cuts across the state. Shan State is divided into three parts, Eastern, Northern and Southern Shan States. Muse is the principal town of Muse Township also spelled as Muse Township in northern Shan State, Myanmar. It is situated on the Shweli River, and is connected by a bridge and road to Shweli (Ruili) in Yunnan Province, China. Muse District consists of 4 towns and 1162 villages.

The geomorphologic feature of the area in which the project site is located is described as belonging to tectonic province of the Shan-Taninthayi Block Plateau. It is characterized by the presence of Precambrain orthoneisses and low grade metasedimentry rocks. Paleozoic and Mesozoic carbonates, clastics and igneous rocks (granite and quartz) are to be found. Karst topography occurs in the limestone areas.

The Project area lies at elevations between 755 m to 827 m above mean sea level. The Proposed Project lies within the flat Shweli River plain and terrain elevation difference in the Southern region is relatively slight. Figure 4-17 illustrates the topography in the region.

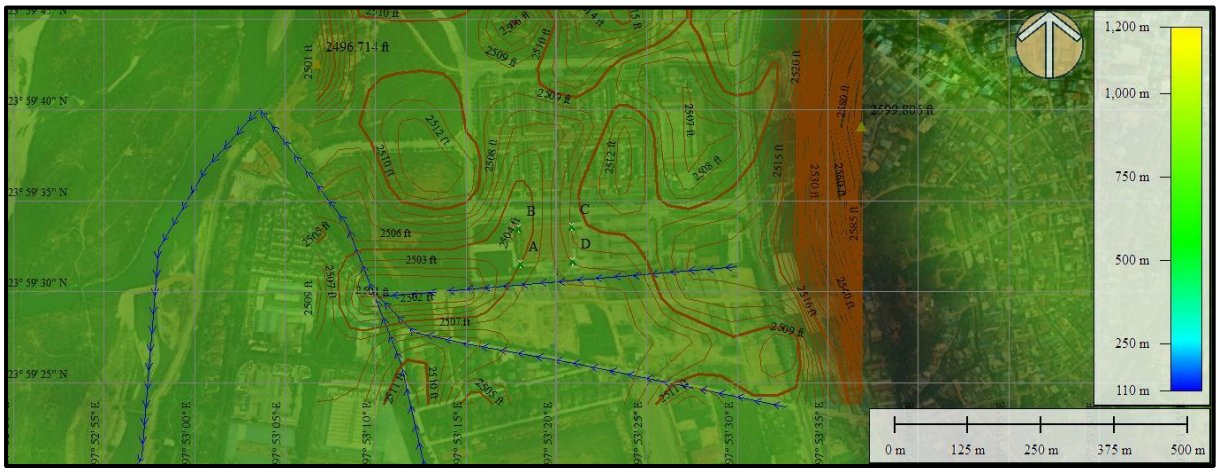


Figure 4-17 Topography of Project

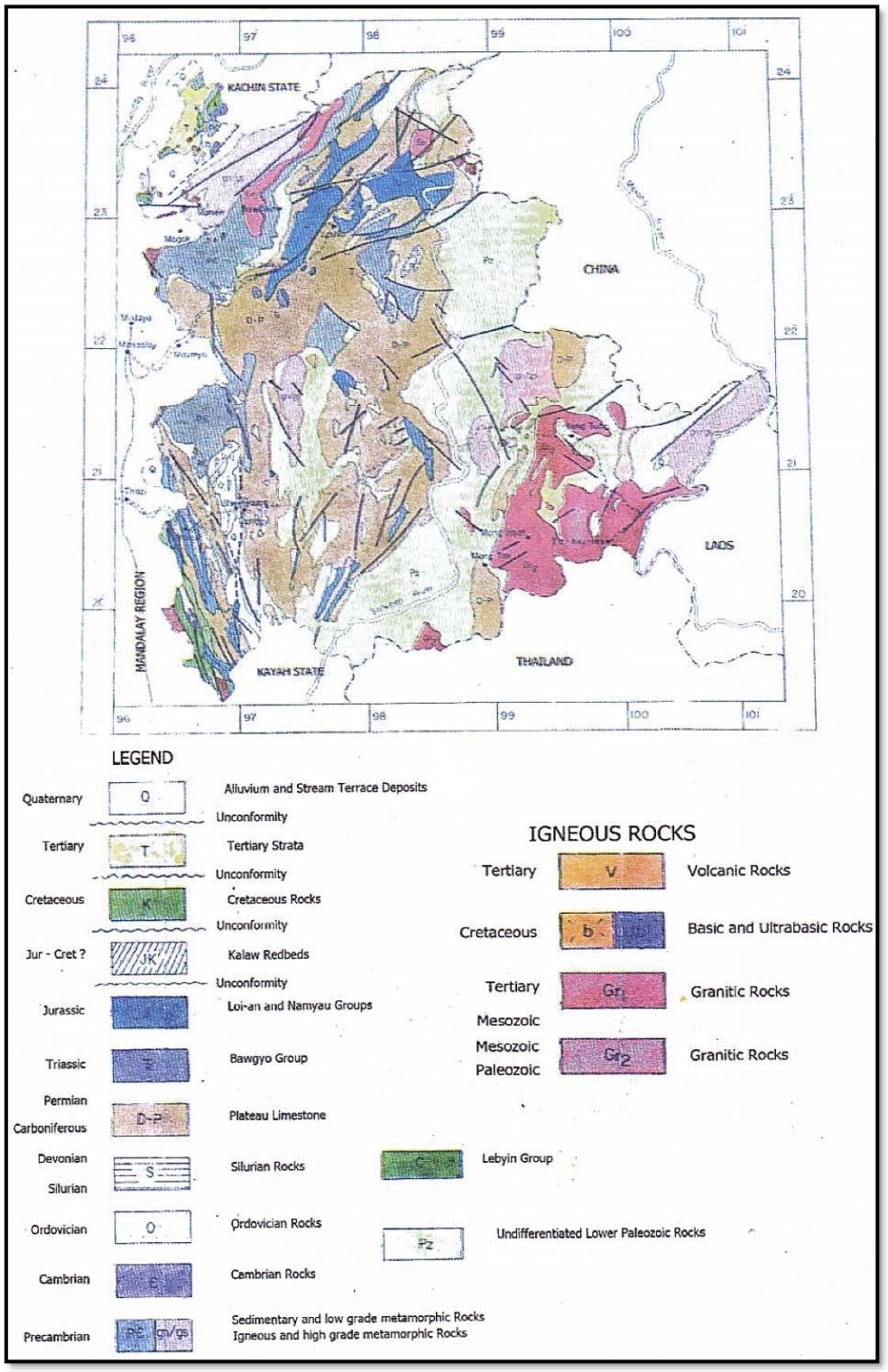


Figure 4-18 Geological Map of Shan State

4.4.3 Soil Characteristics

The proposed project area is flat land covered by Shweli River alluvial soil. Though the project area rock layer is covered predominantly by the Shan Dolomite Group of rock. The hills around the project area are buff-colored with reddish-brown soil cover. The Shweli River transfer accumulated sediments which in turn form the alluvial soil; it is considered to be amongst the most fertile soils. Project area soil is

deposited by water flowing over floodplains and is a fine-grained fertile soil. The dominant soil type of the FAO soil group is Orthic Acrisols.

4.4.4 Hydrology

The Project is sited within the catchment of the Shweli River (also called 'Nam Mao" in Ta'ang or Palaung language and Ruili River in China), which is a tributary of the Ayeyarwady River. The river originates from an elevation of 3,300 m at Baoshan in Yunnan, China. Nearly half of the river flows through China before it reaches the Myanmar border. The Shweli River subsequently traverses Northern Shan State before flowing into the Ayeyarwady River.

The area occupied by the Project lies mostly within the river plain of the Shweli River and is drained by several small unnamed streams or canals all of which arise from hills within and around Muse city. Based on the catchment divide for Muse city, runoff and wastewater from the western half of the city drains into the Shweli River through the small unnamed streams which cut across the Project site.

Downstream of Muse, at the village of Man Tat, is located the Shweli Dam-1 which forms part of a cascade of three hydroelectric power dam projects proposed along the Shweli River prior to its discharge into the Ayeyarwady River. The Shweli Dam-1 was completed in 2008 with an installed capacity of 600 MW.

It has been stated that the average flood level of Shweli River is between 759.5 m to 760.5 m and the last flooding event was recorded in year 2009. Currently, it has not been possible to establish the flood level of the Shweli River as flow in the river is regulated by the release of water from the Longjiang Dam in the People's Republic of China (PRC).

Analysis of rainfall intensity

At the project area, historical rainfall data can't be collected. Therefore, this study compared and assessed the accuracy of "non-traditional" rainfall datasets in the project area River basin to decide which dataset is the best fit, for instance, to predict floods. Two rainfall datasets are derived from satellite observations and one from DMH rainfall recorded at rain gauges. The first space-based product is the gridded multi-satellite precipitation product of the Global Precipitation Measurement (GPM) mission; the second product is the JAXA Global Rainfall Watch (https://sharaku.eorc.jaxa.jp › GSMaP) satellite imagery, an innovative rainfall dataset.

Rainfall intensity influences both the rate and the volume of runoff. An intensity rainfall exceeds the infiltration rate of the soil by a greater margin than does a gentle rain; thus, the total volume of runoff is greater for the intense storm even though the total precipitation for the two types of rain is the same. The intensity of rainfall may decrease the infiltration rate because of its destructive action on the structure of the soil surface.

Intensity-Duration-Frequency (IDF) curves describe the relationship between rainfall intensity, rainfall duration, and return period (or its inverse, probability of

exceedance). IDF curves are commonly used in the design of hydrologic, and hydraulic. IDF curves are obtained through frequency analysis of rainfall observations.

From rainfall measurements, for every year of record, determine the annual maximum rainfall intensity for specific durations (or the annual maximum rainfall depth over the specific durations). Common durations for design applications are: 5-min, 10-min, 15-min, 30-min, 1-hr, 2-hr, 6-hr, 12-hr, and 24-hr (see Table below.)

Table 4-14 Annual Rainfall Data

Sr. No.	Year	1	2	3	4	5	6	7	max
1	2000	29.8	31.6	30.1	32.4	35.2	43.2	22.9	43.2
2	2001	32.9	24.3	55.9	53.9	23.5	29.3	24.2	55.9
3	2002	30.7	27.1	50.3	34.7	28.1	31.4	28	50.3
4	2003	22.6	26	37.6	40.2	32.9	20.7	31.4	40.2
5	2004	29.6	24.8	37.8	31.4	38.2	25.6	31	38.2
6	2005	25.4	21.1	31.6	32.1	46.1	25.8	29.3	46.1
7	2006	23.9	22.6	39.7	32.8	40.8	29.2	24.8	40.8
8	2007	24.4	27.4	34.8	37.1	53.2	43.8	28.9	53.2
9	2008	31.5	36.7	54.8	66.4	32.7	42.9	38.1	66.4
10	2009	39.3	37.9	66.8	65.4	47.2	28.5	32.3	66.8
11	2010	39.5	27.2	29.7	51.5	30.3	34.6	29.3	51.5
12	2011	29.1	33.3	38.4	40.8	47.6	39.7	49.5	49.5
13	2012	37.5	40.6	39.2	42.3	54.6	38.1	24.2	54.6
14	2013	30.2	38.3	35.8	58.3	40	31.5	30.1	58.3
15	2014	39.2	54.8	35.2	50	39.3	27.2	38.7	54.8
16	2015	45.2	50.4	38.3	73.6	42.4	43.5	41.7	73.6
17	2016	37.2	42.8	38.9	50.4	30.6	32.1	25.3	50.4
18	2017	38.1	32.4	36.8	37.2	33.3	29.4	25.7	38.1

Year	24 h	Rank
	mm/h	(m)
2015	73.6	1
2009	66.8	2
2008	66.4	3
2013	58.3	4
2001	55.9	5

2014	54.8	6
2012	54.6	7
2007	53.2	8
2010	51.5	9
2016	50.4	10
2002	50.3	11
2011	49.5	12
2005	46.1	13
2000	43.2	14
2006	40.8	15
2003	40.2	16
2004	38.2	17
2017	38.1	18

Modeling of Short Duration Rainfall IDF Equation for Project Area

Table 4-15 The highest intensity in an hour (mm)

Year	mm/h	5 min	10 min	15 min	30 min	60 min	120 min	720 min	1440 min
2015	73.6	11.15	14.04	16.07	20.25	25.52	32.15	58.42	73.6
2009	66.8	10.12	12.74	14.59	18.38	23.16	29.18	53.02	66.8
2008	66.4	10.05	12.67	14.50	18.27	23.02	29.00	52.70	66.4
2013	58.3	8.83	11.12	12.73	16.04	20.21	25.46	46.27	58.3
2001	55.9	8.46	10.66	12.21	15.38	19.38	24.42	44.37	55.9
2014	54.8	8.30	10.46	11.97	15.08	19.00	23.94	43.49	54.8
2012	54.6	8.27	10.42	11.92	15.02	18.93	23.85	43.34	54.6
2007	53.2	8.06	10.15	11.62	14.64	18.44	23.24	42.22	53.2
2010	51.5	7.80	9.83	11.25	14.17	17.85	22.49	40.88	51.5
2016	50.4	7.63	9.62	11.01	13.87	17.47	22.01	40.00	50.4
2002	50.3	7.62	9.60	10.99	13.84	17.44	21.97	39.92	50.3
2011	49.5	7.50	9.44	10.81	13.62	17.16	21.62	39.29	49.5
2005	46.1	6.98	8.80	10.07	12.68	15.98	20.14	36.59	46.1
2000	43.2	6.54	8.24	9.43	11.89	14.98	18.87	34.29	43.2
2006	40.8	6.18	7.78	8.91	11.23	14.14	17.82	32.38	40.8
2003	40.2	6.09	7.67	8.78	11.06	13.94	17.56	31.91	40.2
2004	38.2	5.78	7.29	8.34	10.51	13.24	16.69	30.32	38.2
2017	38.1	5.77	7.27	8.32	10.48	13.21	16.64	30.24	38.1

Empirical Reduction Formula

$P_t = P24\ (t / 24)1/3$

Where,

P_t = the required precipitation depth in mm for the duration of t-hour

P 24 = annual maximum daily rainfall (mm) and

T = the time duration (in hours) for the required precipitation depth.

Year	15 min	30 min	60 min	120 min	720 min	1440 min
2016	64.30	40.50	25.52	16.07	4.87	3.07
2007	58.36	36.76	23.16	14.59	4.42	2.78

Year	15 min	30 min	60 min	120 min	720 min	1440 min
2015	58.01	36.54	23.02	14.50	4.39	2.77
2018	50.93	32.08	20.21	12.73	3.86	2.43
2019	48.83	30.76	19.38	12.21	3.70	2.33
2002	47.87	30.16	19.00	11.97	3.62	2.28
2017	47.70	30.05	18.93	11.92	3.61	2.28
2001	46.47	29.28	18.44	11.62	3.52	2.22
2012	44.99	28.34	17.85	11.25	3.41	2.15
2008	44.03	27.74	17.47	11.01	3.33	2.10
2014	43.94	27.68	17.44	10.99	3.33	2.10
2003	43.24	27.24	17.16	10.81	3.27	2.06
2000	40.27	25.37	15.98	10.07	3.05	1.92
2006	37.74	23.77	14.98	9.43	2.86	1.80
2004	35.64	22.45	14.14	8.91	2.70	1.70
2010	35.12	22.12	13.94	8.78	2.66	1.68
2011	33.37	21.02	13.24	8.34	2.53	1.59
2013	33.28	20.97	13.21	8.32	2.52	1.59
mean R'	45.23	28.49	17.95	11.31	3.42	2.16
Std Deviation	8.83	5.56	3.50	2.21	0.67	0.42

Frequency Analysis

$$K_T = -\frac{\sqrt{6}}{\pi}\left\{0.5772 + \ln\left[\ln\left(\frac{T}{T-1}\right)\right]\right\}$$

IDF curves are obtained through frequency analysis of rainfall observations. Data. From rainfall measurements, for every year of record, determine the annual maximum rainfall intensity for specific durations (or the annual maximum rainfall depth over the specific durations).

Return period T(Years)	2	5	10	20	50
Frequency Factor (K_t)	-0.16	0.72	1.31	1.87	2.59

Rainfall Intensity, hourly = (R (mean)t hourly +stdt hourly) * Kt(T)

Table 4-16 Return Period Years

mins \ Duration	2 Years	5 Years	10 Years	20 Years	50 Years
15	25.85	65.84	92.32	117.71	150.58
30	16.28	41.48	58.15	74.15	94.86
60	10.26	26.13	36.64	46.71	59.76
120	6.46	16.46	23.08	29.43	37.65
720	1.96	4.98	6.99	8.91	11.40
1440	1.23	3.14	4.40	5.61	7.18

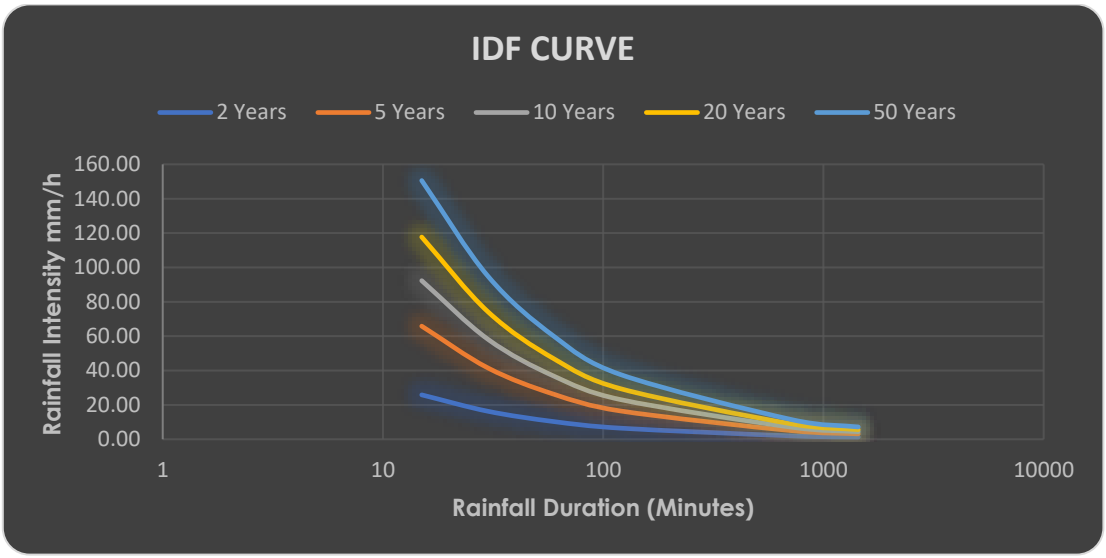


Figure 4-19 IDF Curve for the Project Area

Analysis of surface runoff

Urbanization and climate change trends put strong pressure on urban drainage systems.

Temporal variations in rainfall, runoff, and water availability increase, and need to be considered by stormwater management strategies. The rainfall intensity–duration–frequency (IDF) curve is an important parameter for the stormwater management system of urban areas. This study was to estimate rainfall intensities of the project watershed based on the overall relationship of rainfall IDF curves and the appropriate model of hourly rainfall estimation.

The Rational Method is widely used to estimate the peak surface runoff rate for the design of a variety of drainage structures. The Rational Method is most suitable for small urban watersheds that don't have storage such as ponds or swamps. It is best for areas less than 100 acres.

The Rational Method Equation

The equation that is the centerpiece of the Rational Method is **q = CIA**, where q is the peak surface runoff rate in cfs, from a watershed of area, A acres, and runoff coefficient, C, due to a storm of intensity, I mm/hr. The units on peak runoff rate, q, are actual -mm/hr, but the conversion from acre-in/hr to cfs is very nearly one, so the more common unit, cfs, is typically used for q.

Table 4-17 Peak Discharge from a Drainage Basin using the Rational Equation Method

Return Period Rainfall	Rational Runoff Coefficient (c)	Rainfall Intensity (i)	Drainage Area (A)	Peak Discharge (Q)
2 Year	0.95	1.23	4.74	0.22
5 Year	0.95	3.14	4.74	0.56
10 Year	0.95	4.4	4.74	0.78
20 Year	0.95	5.61	4.74	0.99
50 Year	0.95	7.18	4.74	1.27

Table 4-18 Rational Method Runoff Coefficients

Ground Cover	Runoff Coefficient (c)
Lawns	0.05 - 0.35
Forest	0.05 - 0.25
Cultivated land	0.08-0.41
Meadow	0.1 - 0.5
Parks, cemeteries	0.1 - 0.25
Unimproved areas	0.1 - 0.3
Pasture	0.12 - 0.62
Residential areas	0.3 - 0.75
Business areas	0.5 - 0.95
Industrial areas	0.5 - 0.9
Asphalt streets	0.7 - 0.95
Brick streets	0.7 - 0.85
Roofs	0.75 - 0.95
Concrete streets	0.75 - 0.95

4.4.5 Land Use

The project site is mostly former agricultural or farm land comprising the strip of land between the Shweli River on the western boundary and Muse city to the east. A wide range of crops are planted and these typically include a mixture of rice, maize, vegetables, beans and pulses, sugarcane and fruits. Agricultural land also dominates the areas and hills to the north and east of the site.

The project site is located along a strip of land along the narrow corridor of the Shweli River. The Shweli River is in the west and the project site is located in the southern part of CBD (Muse) which is in-between the Shweli River and Muse City. The site is formerly an agricultural land within the river plain of the Shweli River.

The plains of the Shweli Valley are said to be fertile as a result of extensive alluvial deposits. A wide range of crops, a mixture of rice, maize, beans and pulses, sugarcane, etc are planted. The project site which is located on the banks of the Shweli River share similar cropping patterns.

Land use around the project is mainly composed of shrubs and plants as can be seen from the below fingure. A limited number of single-family buildings exists around the project area.

Figure 4-20 Land Use Map of the Project Area in 2013 and 2014

4.4.6 Disaster and Emergency Risks

The following table shows recent status of the natural disasters occurred in Muse Township during 2018 and 2019.

Table 4-19 Disaster and Emergency Records in Muse Township during 2018 and 2019

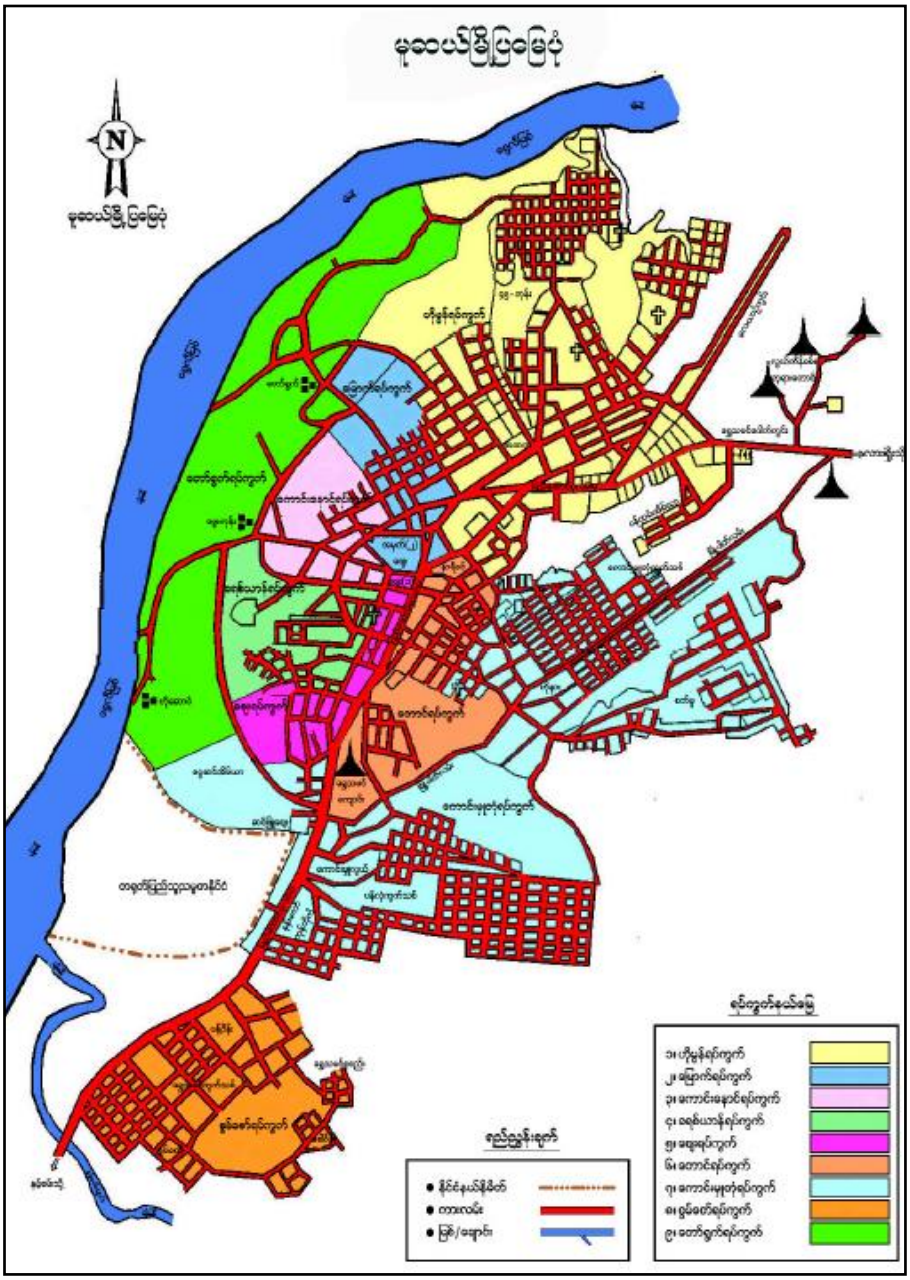
Sr. No.	Items	Frequency	Deaths/ Disappear	Affected Assets	Loss Value (Million Kyats)
1.	Storm	-	-	-	-
2.	Tsunami	-	-	-	-
3.	Earthquake	-	-	-	-
4.	Flood	-	-	-	-
5.	Fire	12	-	(13) Houses and their assets	9.99
Total		**12**	**-**	**13**	**9.99**

According to the above table, although there is no records and history of storms, tsunami, earthquake and flood in Muse Township, it can be seen that fire is one of the common hazards with loss of million kyats and buildings.

4.5 Traffic Study and Transport Condition

4.5.1 Transport Condition in Muse Township

Muse Township is located on the main road of the Northern Shan State and it has good transportation. There have no air way, marine transport and railway in the Muse Township. The Muse Highway Express Gate where have 79 Highway in it. The Muse-Lashio Road is main road of the Muse Township. The roads are shown in the following figure.



Source: www.gad.gov.mm

Figure 4-21 Map of Muse Township

4.5.2 Existing Road Condition

The project is situated on the MCBD (Muse Central Business District) Road and it is connected to the Muse-Lashio Road. The project road design is as shown the following **Figure 4-22.** There are 2 roadways for vehicles to enter and exit the project, one at the west side of the project and one at the east side of the project. In the project, it is a 2-lane road that is made like a roundabout for cars to enter and exit. This is done to prevent traffic congestion.

The access road connects the urban and built-up areas and Access road connection with Lashio-Muse road as shown in Table.

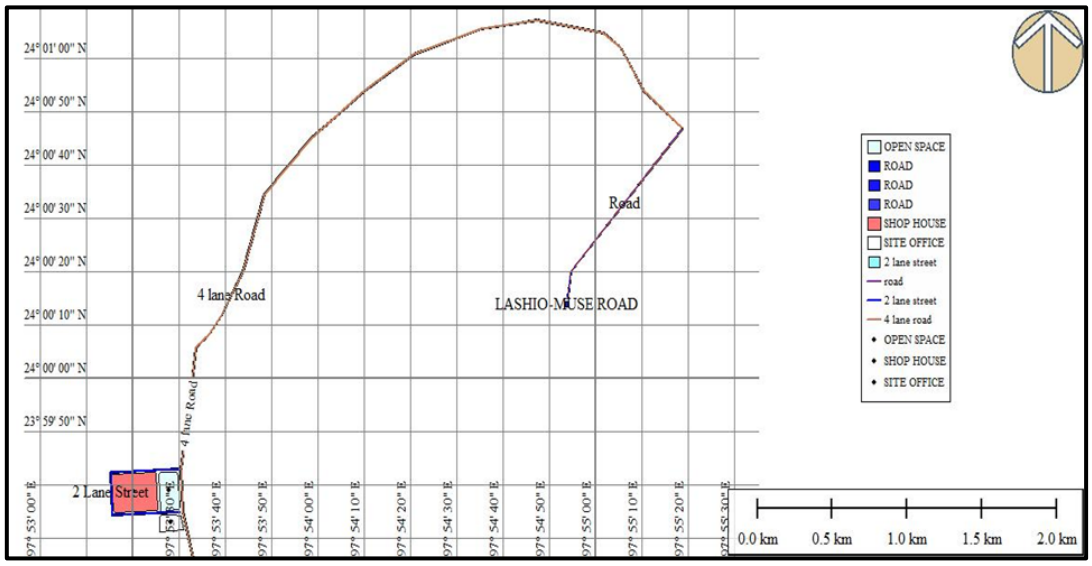
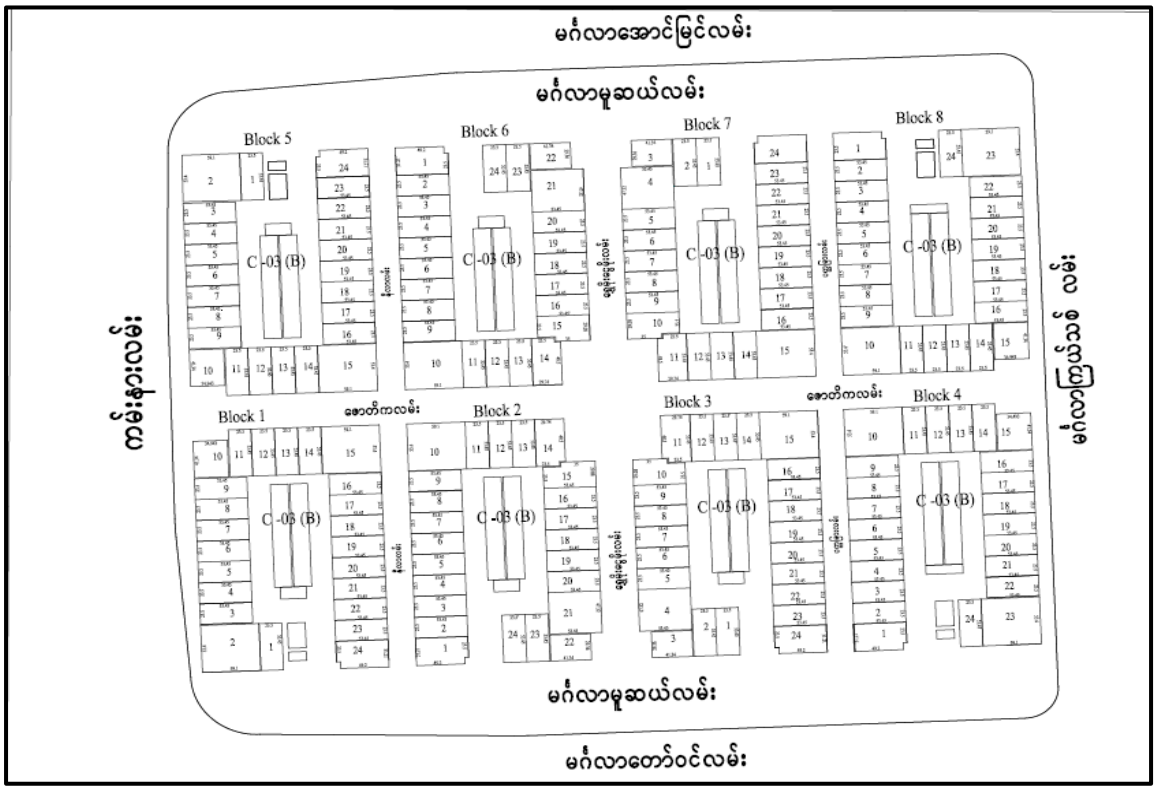


Figure 4-22 Access Road Connection with Lashio-Muse Road



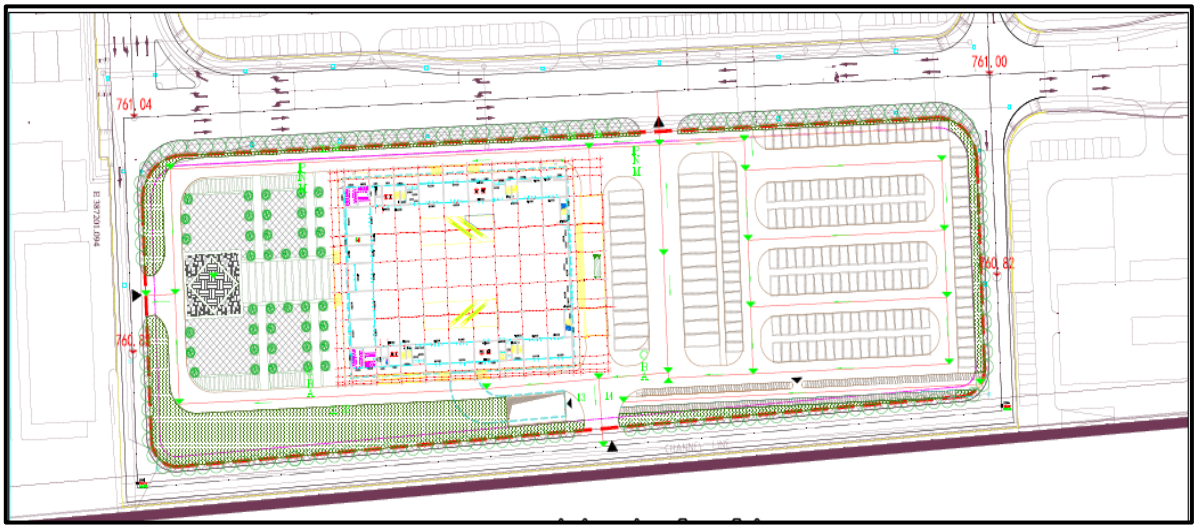


Figure 4-23 Road Design of the Project Site

4.5.3 Survey Team

Performs field surveys and compiles data in connection with the measurement of traffic flow, vehicle speed and signal timing, installs traffic counters to record vehicle volume counts; collects and tabulates data relative to traffic movement.

The role will involve surveying sites highlighted for construction. It will be required to record all relevant information, and determine the best form of traffic management to enable works to take place.

The responsibilities of the team are as follows.

Table 4-20 Survey Team and their Responsibility

Sr. No.	Name	Position	Responsibility
1.	U Kyi Han Bo	Team Leader	➢To determine upcoming works ➢Survey potential work sites ➢Determine appropriate traffic management solutions ➢Highlight potential hazards ➢Inspect sites to ensure quality and safety
2.	U Aung Ko Min	Surveyor	➢Survey potential work sites ➢List parking / bus stop suspension ➢Counting to the vehicle movement
3.	U Thiha Zaw	Surveyor	➢Survey potential work sites ➢List parking / bus stop suspension ➢Counting to the vehicle movement

4.5.4 Vehicles Movement Volume

4.5.4.1 Materials and Method

Manual Counter

- The survey team counted the vehicle movement volume is as shown in **Figure 4-24** and where at the in front of the project site. Survey team was counted 2 session per day and there was counted at the morning (09:00 a.m. ~ 11:00 a.m.) and evening (3:00 p.m. ~ 05:00 p.m.) where the same place for the vehicle movement volume.
- There was designated two route (Muse to Shweli route and Shweli to Muse route) for the vehicle movement.

4.5.4.2 Survey Location and Period

The survey locations are described in the following Error! Reference s ource not found.**.** The survey point is 23˚ 59' 34.41" N and 97˚ 53' 30.26" E and located at the in front of the project site. The survey period is from August 22th, 2020 to August 24th, 2020 for the vehicle movement volume.

Figure 4-24 Vehicle Movement Counting Location

Figure 4-25 Recorded Photos of Vehicle Movement Counting

4.5.4.3 Vehicles Movement Result

There were four types classified for the vehicles. The Class-I is motor cycle, the Class-II is van car, taxi car, mini bus, the Class-III is trailer, express car, truck car and the Class-IV is oil boxer, heavy truck, container car. Summary Data of vehicles movement is shown in **Table 4-21.**

Table 4-21 Summary Data of Vehicles Movement

Sr. No.	Period	Classification of Vehicle	Route	Quantity		
				22.8.2020	23.8.2020	24.8.2020
1.	9:00 a.m.~11:00 a.m.	Class-I (Motor cycle)	Muse to Shweli	327	153	290
			Shweli to Muse	242	118	237
	3:00 p.m.~5:00 p.m.		Muse to Shweli	463	228	452
			Shweli to Muse	496	235	440
2.	9:00 a.m.~11:00 a.m.	Class-II (Van car, taxi car, mini bus, etc.)	Muse to Shweli	203	98	180
			Shweli to Muse	197	97	186
	3:00 p.m.~5:00 p.m.		Muse to Shweli	449	210	430
			Shweli to Muse	386	193	369
3.	9:00 a.m.~11:00 a.m.	Class-III (Trailer, express car, truck car, etc.)	Muse to Shweli	48	27	43
			Shweli to Muse	48	32	45
	3:00 p.m.~5:00 p.m.		Muse to Shweli	40	29	37
			Shweli to Muse	43	31	39

Sr. No.	Period	Classification of Vehicle	Route	Quantity		
				22.8.2020	23.8.2020	24.8.2020
4.	9:00 a.m.~11:00 a.m	Class-IV (Oil boxer, heavy truck, container car, etc.,)	Muse to Shweli	28	18	25
			Shweli to Muse	18	15	16
	3:00 p.m.~5:00 p.m.		Muse to Shweli	42	37	38
			Shweli to Muse	21	30	19

4.5.4.4 Vehicles Movement Findings

(a) Vehicles Movement Finding (August 22th, 2020)

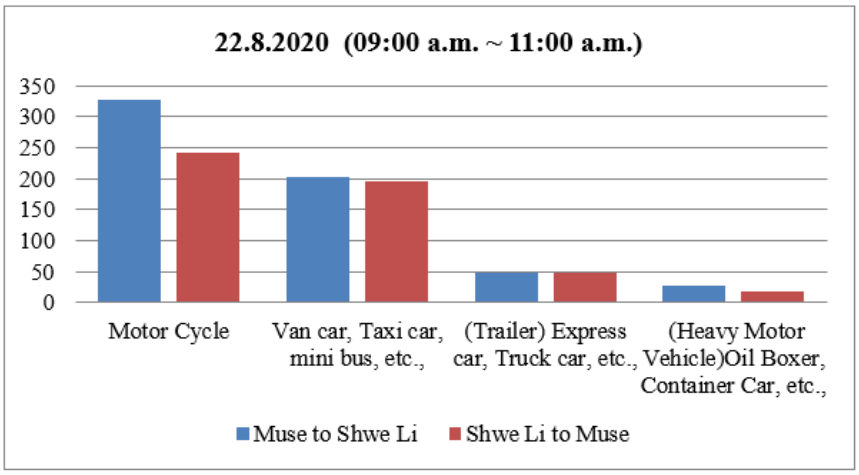


Figure 4-26 Vehicle Movement Volume Chart at the Morning (22.8.2020)

- **Class-I (Motor cycle):** the vehicle movement volume of the route (Muse to Shweli) is more than the route (Shweli to Muse) at the morning.
- **Class-II (Van car, taxi car, mini bus):** the vehicle movement volume of the route (Muse to Shweli) is a little more than to the route (Shweli to Muse) at the morning.
- **Class-III (Trailer, express car, truck car):** the vehicle movement volume of the route (Muse to Shweli) is nearly equal to the route (Shweli to Muse) at the morning.
- **Class-IV (Oil boxer, heavy truck, container car):** the vehicle movement volume of the route (Muse to Shweli) is a little more than the route (Shweli to Muse) at the morning.

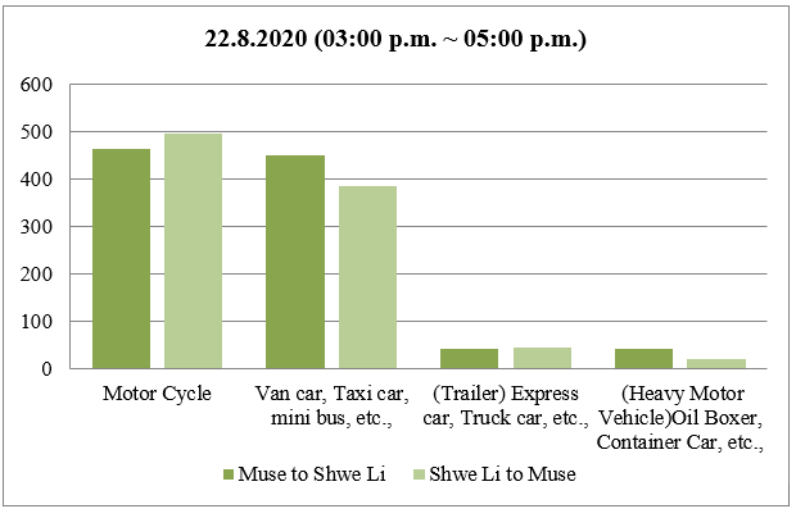


Figure 4-27 Vehicle Movement Volume Chart at the Evening (22.8.2020)

- **Class-I (Motor cycle):** the vehicle movement volume of the route (Muse to Shweli) is lower than the route (Shweli to Muse) at the evening.
- **Class-II (Van car, taxi car, mini bus):** the vehicle movement volume of the route (Muse to Shweli) is a little more than to the route (Shweli to Muse) at the evening.
- **Class-III (Trailer, express car, truck car):** the vehicle movement volume of the route (Muse to Shweli) is nearly equal to the route (Shweli to Muse) at the evening.
- **Class-IV (Motor Cycle):** the vehicle movement volume of the route (Muse to Shweli) is a little more than the route (Shweli to Muse) at the evening.

According to the survey results, there was found to the vehicle movement volume after counting during 2-hour period on August 22th, 2020. The Class-I volume is more than the Class-III and Class-IV but a little more than the Class-II. On the other hand, the Class-IV volume is lower than the other.

The Class-I, Class-II and Class-IV at the evening is more than at the morning for the vehicle movement volume. But the Class-III at the evening is a little lower than at the morning.

(b) Vehicles Movement Finding (August 23th, 2020)

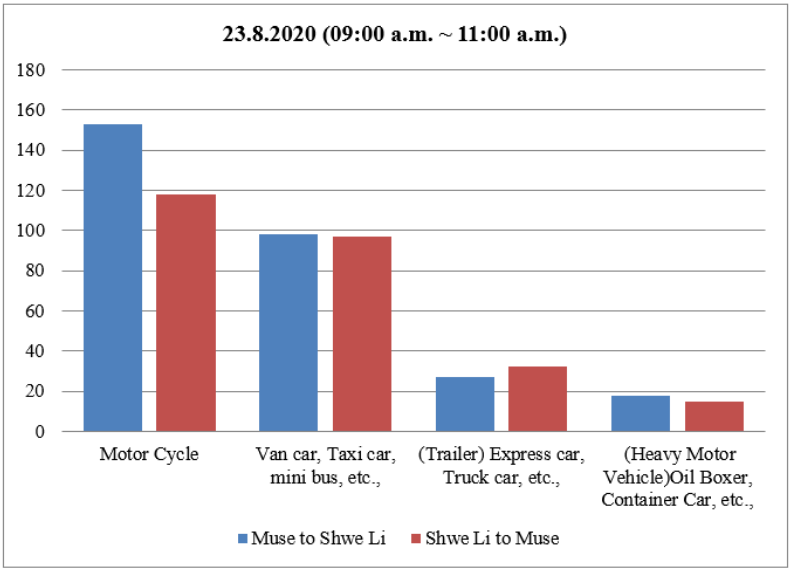


Figure 4-28 Vehicle Movement Volume Chart at the Morning (23.8.2020)

- **Class-I (Motor Cycle): the vehicle movement volume of the route (Muse to Shweli) is more than the route (Shweli to Muse) at the morning.**
- **Class-II (Van car, taxi car, mini bus):** the vehicle movement volume of the route (Muse to Shweli) is nearly equal to the route (Shweli to Muse) at the morning.
- **Class-III (Trailer, express car, truck car):** the vehicle movement volume of the route (Muse to Shweli) is a little lower than the route (Shweli to Muse) at the morning.
- **Class-IV (Oil boxer, heavy truck, container car):** the vehicle movement volume of the route (Muse to Shweli) is a little more than the route (Shweli to Muse) at the morning.

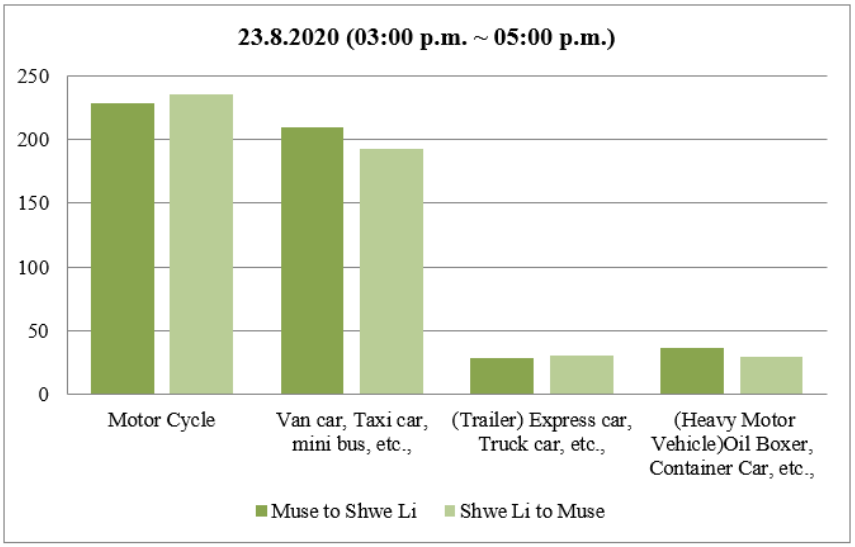


Figure 4-29 Vehicle Movement Volume Chart at the Evening (23.8.2020)

- **Class-I (Motor cycle): the vehicle movement volume of the route (Muse to Shweli) is lower than the route (Shweli to Muse) at the evening.**
- **Class-II (Van car, taxi car, mini bus):** the vehicle movement volume of the route (Muse to Shweli) is a little more than to the route (Shweli to Muse) at the evening.
- **Class-III (Trailer, express car, truck car):** the vehicle movement volume of the route (Muse to Shweli) is nearly equal to the route (Shweli to Muse) at the evening.
- **Class-IV (Oil boxer, heavy truck, container car):** the vehicle movement volume of the route (Muse to Shweli is nearly equal to the route (Shweli to Muse) at the evening.

According to the survey results, there was found to the vehicle movement volume after counting during 2-hour period on August 23th, 2020. The Class-I volume is more than the Class-III and Class-IV but a little more than the Class-II. On the other hand, the Class-III volume is lower than the other.

All the Classes of the vehicle movement volume at the evening are more than at the morning.

(c) Vehicles Movement Finding (August 24th, 2020)

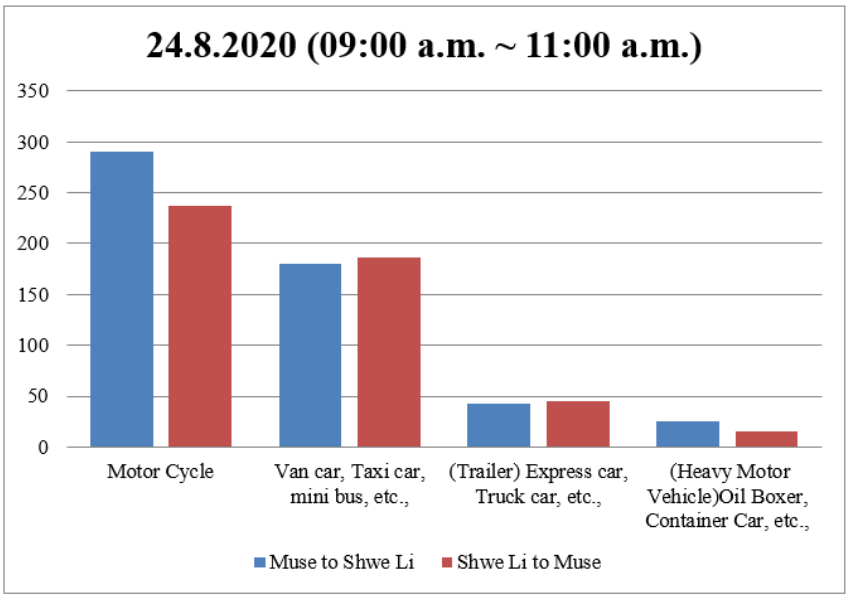


Figure 4-30 Vehicle Movement Volume Chart at the Morning (24.8.2020)

- **Class-I (Motor cycle):** the vehicle movement volume of the route (Muse to Shweli) is more than the route (Shweli to Muse) at the morning.
- **Class-II (Van car, taxi car, mini bus):** the vehicle movement volume of the route (Muse to Shweli) is a little lower than to the route (Shweli to Muse) at the morning.

- **Class-III (Trailer, express car, truck car):** the vehicle movement volume of the route (Muse to Shweli) is nearly equal to the route (Shweli to Muse) at the morning.
- **Class-IV (Oil boxer, heavy truck, container car):** the vehicle movement volume of the route (Muse to Shweli) is a little more than the route (Shweli to Muse) at the morning.

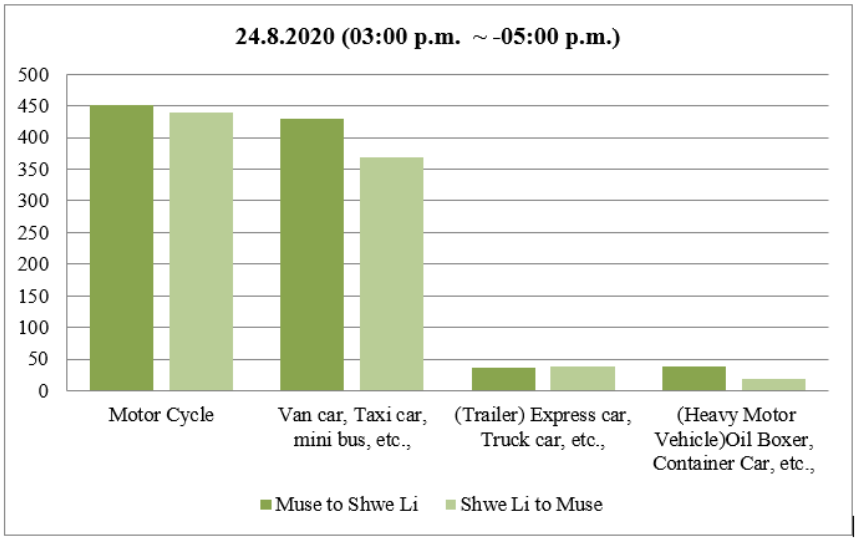


Figure 4-31 Vehicle Movement Volume Chart at the Evening (24.8.2020)

- **Class-I (Motor Cycle):** the vehicle movement volume of the route (Muse to Shweli) is a little than the route (Shweli to Muse) at the evening.
- **Class-II (Van car, taxi car, mini bus):** the vehicle movement volume of the route (Muse to Shweli) is more than to the route (Shweli to Muse) at the morning.
- **Class-III (Trailer, express car, truck car):** the vehicle movement volume of the route (Muse to Shweli) is nearly equal the route (Shweli to Muse) at the morning.
- **Class-IV (Oil boxer, heavy truck, container car):** the vehicle movement volume of the route (Muse to Shweli) is a little more than the route (Shweli to Muse) at the morning.

According to the survey result, there was found to the vehicle movement volume after counting during 2-hour period on August 24th, 2020. The Class-I volume is more than the Class-III and Class-IV but a little more than the Class-II. On the other hand, the Class-IV volume is lower than the other.

The Class-I, Class-II and Class-IV at the evening is more than at the morning for the vehicle movement volume. But the Class-III at the evening is a little lower than at the morning.

4.6 Biological Environment

The upper part of the northern Shan State due to its rainfall and soil characteristics is known for its Tropical Upland Mixed Evergreen and Deciduous Forest which is part of the

most extensive forest type across Myanmar. The forest comprises of a mixed of evergreen and semi-evergreen tree species. The dicotyledon hardwood species are dominant and in certain areas interspersed with conifer forest. These forests are known for its teak trees (Tectone grandis) which are deciduous during the drier seasons. Other important timber species also occur and as a result of their commercial value, these forests have been gradually thinned and partly deforested.

Within the project site and its surrounding area very little forest remain as the fertile plains of the Shweli River have for a long time been converted to cropland. Similarly, the hill slopes along of the upper part of northern Shan State is common for extensive shifting agriculture. The present landscape appears to be severely degraded with only sparse stands of trees and scrubland. A major concern as a result of the degradation of natural vegetation cover is the loss of topsoil due to erosion.

Little information is available on the abundance and distribution of wildlife population in the area. At present there are no protected areas such as forest or wildlife reserves in the region. Without any significant natural habitats, wildlife populations are assumed to be almost completely decimated, with the exception of smaller animal species that can utilize the limited degraded habitats and species that can adapt to the human populations.

4.6.1 Biodiversity Assessment

Biodiversity includes two portions, which are the study of vegetation (flora) and the study of living animals (fauna). Technical experts conducted the field survey for the construction site within sufficient time to get reliable data of impacts on existent biodiversity.

Biodiversity is understood as the variety of life on Earth: the wide variety of ecosystems and living organisms including animals, plants, their habitats and their genes. Ecosystem refers to a community of plants, animals and smaller organisms that live, feed, reproduce and interact in the same area or environment. An 'ecosystem service' refers to a service people obtain from the environment such as food and water, flood and coastline protection, spiritual, recreational, and cultural benefits or nutrient cycling. This study is particularly concerned with biodiversity impacts related to the damage or disturbance to the functioning of critical ecosystems, habitats and species that are endemic, vulnerable or threatened.

a) Sample Ploting

The Global Positioning System was used to navigate and mark the coordinates of the sample plots. In order to obtain essential data for predicting of species composition in the mangrove forest, 30 x 30 meter quadrants were set up and species in the plot were collected and population of each species were also counted. The species identification was carried out by using key to families of flowering plants and appropriate literature and confirmed by matching with herbarium specimens of Department of Botany and Zoology, University of Yangon.

b) Maping

Location maps are set by the method based on the Google map and mark the GPS position of surveying.

c) Materials

Materials used for recording, strings for sample plotting and transecting, digital camera for recording, GPS, maps, heavy duty plastic bags, newspapers, alcohol, spray jug (for fixing specimens), 10x lens, permanent marker, field note books, field press, drying press and dryers.

4.6.2 Results and Finding of Flora and Fauna

4.6.2.1 Flora

The project area is located at Muse Township in Northern Shan State. All most vegetations in the area was cleaned up in the past. There are some trees which were cultivated for shade on road side and fruits trees. No national or state significant flora species or ecological communities were recorded during the current assessment. However, one vegetation community, corn field was recorded within the study area. **Table 4-22** shows the species list in direct impact zone.

At presnts there are 3 tree species, 6 shrubs, 8 Herbs, 4 Climbers, 1 Small Tree and 2 grass within the direct impact zone. *Zannichellia palustris and Aconitum napellus are* endanger and endamic species in the direct impact zone.

The project area had been already cleaned up. For this reason, there is no natural vegetation in the direct impact zone. All living existing organisms inhabiting in the direct zones definite will disappear after this project. The main environmental impacts are the (indirect) land usage for construction, the destruction of natural habitats and ecosystems. However, solid waste from construction is very low. Therefore, the IBIS Styles Hotel construction minimize the whole life cycle impact on the environment when compared with other industrial materials. On-site construction using precast concrete is not only faster, but also safer as secure working platforms are quickly established. There are no adverse fauna and flora impacts predicted in the vicinity of the site as a result of this development.

Table 4-22 Check List in Direct Impact Zone

No.	Common Name	Scientific Name	Family Name	Habitat
1.	Blue Trumpet Vine	*Thunbergia lacei* 	Acanthaceae	Perennial Climber
2.	Adam's Needle	*Yucca filamentosa* 	Agavaceae	Forb/herb. Shrub
3.	Mo-kyai-pwin	*Alangium nobile*	Alangiaceae	Small tree

No.	Common Name	Scientific Name	Family Name	Habitat
				
4.	Blue African lily, Mya-gamon	*Agapanthus umbellatus*	Alliaceae	Herb
5.	-	*Canarium bengalense*	Burseraceae	Tree
6.	Not known	*Carex brunnea* 	Cyperaceae	Grass
7.	Sundew	*Drosera peltate* 	Droseraceae	Climber
8.	Taw-zalatpyu	*Actephila excelsa* 	Euphorbiaceae	Shrub
9.	Rosary pea	*Abrus precatorius* 	Fabaceae	Climber
10.	-	*Canscora decussate* 	Gentianaceae	Herb
11.	-	*Myriophyllum tetrandrum* 	Haloragaceae	Aquatic plants
12.	-	*Natsiatopsis thunbergiaefolia*	Icacinaceae	Climber/Creeper
13.	Egg Magnolia	*Magnolia liliifera =Magnolia candollei*	Magnoliaceae	Tree

No.	Common Name	Scientific Name	Family Name	Habitat
				
14.	-	*Najas bengalensis* 	Najadaceae	Aquatic plant
15.	Indaing-seni	*Ochna fruticulose* 	Ochnaceae	Shrub
16.	-	*Pandanus burmanicus*	Pandanaceae	Shrub
17.	-	*Aconitum napellus* 	Ranunculaceae	Herb
18.	-	*Sabia leptandra*	Sabiaceae	Shrub
19.	Black bat flower	*Tacca chantrieri* 	Taccaceae	Herb
20.	Eastern Nettle Tree	*Celtis tetrandra*	Ulmaceae	Tree
21.	-	*Callicarpa longifolia* 	Verbenaceae	Shrub or small tree
22.	Yellow-eye grass	*Xyris anceps* 	Xyridaceae	Grass
23.	Horned Pondweed	*Zannichellia palustris*	Zannichelliaceae	Weed

No.	Common Name	Scientific Name	Family Name	Habitat
				
24.	-	*Alpinia allughas* 	Zingiberaceae	Herb
25.	-	*Alpinia blepharocalyx* *=Alpinia bracteata*	Zingiberaceae	Herb
26.	Blue ginger or Thai ginger	*Alpinia galanga* *=Languas galangal* 	Zingiberaceae	Herb
27.	Pinstripe	*Alpinia formosana* 	Zingiberaceae	Herb
28.	-	*Alpinia latilabris*	Zingiberaceae	Herb

CL=Climber, H=Herbs, S=Shrubs, ST=Small Tree, T=Tree, G=Grass, Aquatic plant, Weed

According to the investigation in the list of IUCN, *Zannichellia palustris and Aconitum napellus* are endanger and endamic species in the direct impact zone.

4.6.2.2 Fauna

This is assessment of EIA for the fauna survey. Butterfly (13 species), dragonfly (6 species), and damselfly (10 species), frog and toad (8 species), lizard snake and skink (6 species), and bird (18 species), insects (18 species) and mammal (8 species) were recorded. However, there was not included the any endangered and endemic species under IUCN Red List category. Habitat fragmentation is one of the most adversely causes of impact on the species diversity of fauna. All living existing organisms inhabiting in the direct zones definite will disappears after this project.

Table 4-23 Existing Fauna List in Project Area

Sr. No.	Description	Order	Family	Species
1.	Butterfly	1	5	13

Sr. No.	Description	Order	Family	Species
2.	Dragonfly and Damselfly	1	2	16
3.	Frog and Toad		4	8
4.	Insect		9	13
5.	Lizard and skink		4	5
6.	Snake		1	1
7.	Bird	7	11	18
8.	Mammal	5	6	8
Total				**84**

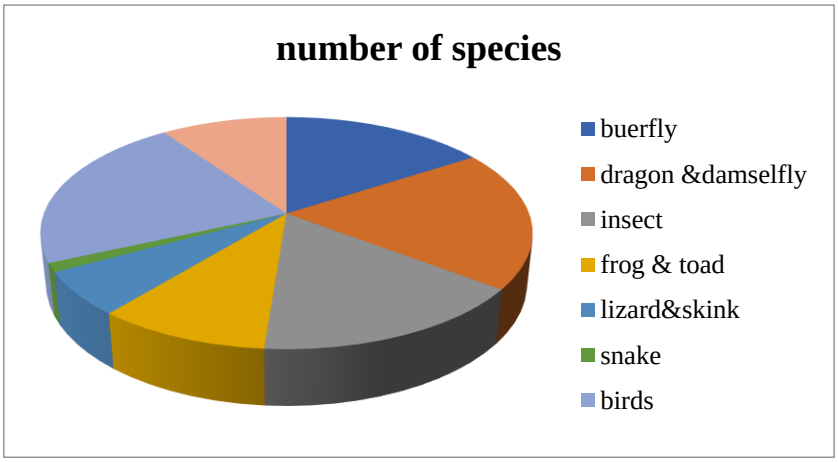


Figure 4-32 Species Richness of Fauna in Study Area of Project Area

(a) Insect Fauna

Twenty-nine insect species under order Odonata (2 families, 16 species) and order Lepidoptera (5 families, 13 species) are recorded. Since the collected numbers of each species are not many, population size is relatively small and all species are rear species, hence they are vulnerable and easy to disappear. No endemic or endangered species is recorded

Table 4-24 Butterfly Species of Order Lepidoptera Collected from Survey Area of CBD Zone at Muse

Sr. No.	Scientific Name	Family
1.	*Danaus genutia genutia*	**Danaidae**
2.	*Danaus limniace limniace*	
3.	*Eurema hecabe contubernalis*	**Pieridae**
4.	*Leptosia nina nina*	
5.	*Appias lalassis lalassis*	
6.	*Eurema lateta pseudolaeta*	
7.	*Atrophaneura latreillei kabrua*	
8.	*Lethe philemon*	**Satyridae**
9.	*Junania atlites*	**Nymphalidae**
10.	*Junonia almanac almanac*	
11.	*Hypolimnas bolina jacintha*	
12.	*Neptis hylas kamarupa*	
13.	*Atrophaneura latreillei kabrua*	**Papilionidae**

Table 4-25 Dragonfly & Damselfly of Order Odonata Collected from survey area of CBD Zone at Muse

Sr. No.	Scientific Name	Order	Suborder	Family
1.	*Ceriagrion coromandelianum*	Odonata	Zygoptera	**Coenagrionidae**
2.	*Ceriagrion praetermissum*			
3.	*Ceriagrion nigroflavum*			
4.	*Iscchnura senegalensis*			
5.	*Agriocnemis d'abreui*			
6.	*Agriocnemis pygmaea*			
7.	*Orthetrum sabina*	-	Anisoptera	**Libellulidae**
8.	*Ischnura senegalensis*			
9.	*Diplacodes trivalis*			
10.	*Bradinopyga geminate*			
11.	*Neraothemis tullia*			
12.	*Brachythemis contaminate*			
13.	*Rhodothemis rufa*			
14.	*Trithemis kirby*			
15.	*Rhydothemis phyllis*			
16.	*Pantala flavescens*			

(b) Herpeto Fauna

A total of 27 species of 17 families of class Amphibia (4 families & 8 species), Insects (9 families & 13 species) and Reptilia (4 families & 6 species) of Herpetofauna were recorded from CBD zone. All species are very few numbers of collected specimens (Table 4.16). It could be assumed that species number and population size is locally disappeared due to human impacts. No endemic or endangered species was recorded.

Table 4-26 Systemic Position of Recorded Herpeto Fauna Collected from Survey Area of CBD Zone at Muse

Sr. No.	Scientific Name	Common Name	Local Name	Family	Habitat
1.	*Bufo melanostictus*	Common toad	Phar-pyok	**Bufonidae**	Near pond
2.	*Bufo macrotis*	Large ear toad	Hpar pyok thay		On the ground
3.	*Kaloula pulchra*	Common bull frog	Phar-kyaung	**Microhylidae**	On the ground
4.	*Microhyla ornate*	Ber narrow mouthed frog	The'phar		Near pond
5.	*Rana limnocharis*	Paddy frog	Sar-phar	**Ranidae**	In the pond
6.	*Rana tigerina*	Kaing land frog	Kaing phar		Mud
7.	*Ocidozyga sp:*	Swamp floating frog	Phar-han-lat		Pond

Sr. No.	Scientific Name	Common Name	Local Name	Family	Habitat
8.	*Polypedates leucomystax*	Common tree frog	Phar-pyan	**Rhacophoridae**	Crevices of roof
9.	*Hemidactylus frenatus*	Common house gecko	Eing-myaung	**Gekkonidae**	Pond
10.	*Calotes versicolor*	Garden fence lizard	Tat-too	**Agamidae**	On the pond
11.	*Calotes mystaceus*	Blue crested lizard	Poat thin nyo		On the trunk
12.	*Mabuya multifasciata*	Common sun skink	Kyal-pyar-kin-pauk-ma	**Scincidae**	Storage house
13.	*Xenochrophis Piscator*	Chequered keel back	Yal-mway-pyauk-ma	**Colubrida**	In the water
14	*Ptyas mucosus*	Banded rat snake	Lin-mway		Pond
15.	*Lycosa sp*	Spider	Wolf spider	**Lycosidae**	Pond
16.	*Dolomedes tenebrosus*	Spider	Fishing spider	**Dolomesidae**	Pond
17.	*Gyrinidae*	Beetle	Whirligig beetle	**Gyrinidae**	In the water
18.	*Halyomorpha spp*	Bug	Shield bug	**Pentatomidae**	On the leaf
19.	*Belalang sembah*	Mantids	-	**Mantidae**	On the leaf and ground
20.	*Tenodera ardifolia*				
21.	*Omocestus viridulus*	Grasshopper	-	**Tettigoniidae**	On the leaf and ground
22.	*Chorthippus brunneus*				
23.	*C. paralleus*				
24.	*Stenobothhr lineatusus*				
25.	*Plum curculio*	Weevil	-	**Curculionidae**	-
26.	*Lycoma delicatula*	-	-	**Fulgoridae**	-
27.	*Notonectidae*	-	Back swimmer	**Notonectidae**	In the water

(c) Bird Fauna

Total of 18 species, 13 families, 7 orders were collected meaning the bird diversity is still high in that area. According to the nature and behavior of birds, the survey area is not their original roosting and nesting sites, they come from another foraging to here. In some places within project site, many tall trees is recognized as a foraging resource for bird nesting and breeding. Moreover, some species of birds visited the project site.

Table 4-27 Systemic Position of Recorded Avifauna Collected from Survey Area of CBD Zone at Muse

Sr. No.	Scientific Name	Common Name	Vernacular Name	Family	Order
1.	*Dendrocygna javanica*	Lesser whistling duck	Sit-sa-li	**Dendrocygridae**	Anseriformes
2.	*Dendrocopos macei*	Fulvous-breasted woodpecker	Thit-tauk-nghet	**Picidae**	Piciformes
3.	*Alcedo atthis*	Common kingfisher	Pain-nyin	**Alcedinidae**	Coraciiformes
4.	*Columba livia*	Rock pigeon	Kho	**Columbidae**	Columbiformes
5.	*Ardeola grayii*	Indian pond heron	Byine-ouk	**Ardeidae**	Ciconiiformes
6.	*Phalacrocorax-niger*	Little cormorant	Din-kyi	**Phalacrocoracidae**	Pelicanniformes
7.	*Corvus splendens*	House crow	Kyi-kan	**Corvidae**	Passeriformes
8.	*Corvus macrorhynchos*	Large –billed crow	Taw-kyi-kan		
9.	*Copsychus saularis*	Oriental magpie robin	Tha-paik-lwe	**Muscicapidae**	
10.	*Acridotheres tristis*	Common myna	Myo-za-yet	**Sturnidae**	
11.	*Acridotheres fuscus*	Jungle myna	Taw-za-yet		
12.	*Hirundo striolata*	Red-rumped swallow	Pyan-hlwar	**Hirundinidae**	
13.	*Orthotomus sutorius*	Common tailor bird	Hnan-pyi-soak	**Sylviidae**	
14.	*Passer domesticus*	House sparrow	Eain-sar	**Passeridae**	
15.	*Passer montanus*	Eurasian tree sparrow	Thit-pin-sar		
16.	*Ploceus philippinus*	Baya weaver	Sar-wa-tee		
17.	*Lonchura striata*	White-rumped-munia	Sar-pa-tee	**Estrildidae**	
18.	*Lonchura punctulata*	Scaly-breasted munia	Sar-pa-tee		

(d) Mammal Fauna

Eight species of rat, deer, squirrel and wild dog under 6 families and 5 orders were collected in the study area.

Table 4-28 Systemic Position of Recorded Class Mammalia Collected from Survey Area of CBD Zone at Muse

Sr. No.	Scientific Name	Common Name	Vernacular Name	Family	Order
1.	*Cuon alpinus*	Wild dog	-	**Carnidae**	Canivores
2.	*Funambulus palmarum*	Squirrel	-	**Sciuridae Muridae**	Rodentia
3.	*Bandicota bengalensis*	Rat	Palm squirrel		
4.	*Mus mucclus*	Rat	Lesser bandicoot rat		
5.	*Rattus rattus*	Rat	-		
6.	*Lepus nigricollins*	Deer	Black neck hare	**Leporidae**	Lagomorpha
7.	*Tragulus napu*	Deer	Mouse deer	**Tragulidae**	Artiodactyla
8.	*Suncus murinus*	Rat	Rat	**Soricidae**	Soricomorpha

4.7 Aquatic Biodiversity Assessment in the Shweli River

4.7.1 Scope of Survey

Study period: Three days (From 20 to 22 July 2020)

Table 4-29 Survey Team Member List

No.	Name	Survey Team
1.	U Ko Myint	Biodiversity and Ecological Consultant
2.	U Kyaw Zay Moe	Biodiversity and Ecological Consultant
3.	U Soe Thant	Team Leader
4.	U Kyi Han Bo	Surveyor
5.	U Myo Thet Naung	Surveyor

Target-study flora and fauna: Aquatic Biodiversity: **Flora** (Riparian vegetation and Phyto plankton) & **Fauna** (Fish, amphibians and reptiles, birds, macro-invertebrate benthos and Zooplankton). Planktons and Benthos will be sampled to investigate the river ecology status as these species are indicators of aquatic ecosystem.

Survey range: Shweli River within 3 km distance along the river nearby the project area. Survey sites included lateral river habitat or riparian vegetation zone and mid-river, up river and down river areas associated with the proposed project area.

Survey approaches: Scientific and systematic study (included Literature survey, interview survey and field survey).

Aim of the survey and report: to record some of the river aquatic components/ community/species diversity (flora and fauna) to investigate river ecosystem and to identify the issues and impacts caused by the project development activities to the river habitat or river ecosystem, and finally to support mitigation measures and recommendation to manage the river biodiversity/ecosystem.

4.7.2 Introduction

According to the survey and information, the proposed project of the construction of the IBIS Styles Hotel Project, will be implemented along the river bank of **Shweli River** at the Myanmar-China border in Muse Township, Northern Shan State. **Shweli River** is a river in Myanmar also known as Nam Mao in Shan and Ruili River or Long Chuan River in Chinese, it forms part of the boundary between Myanmar and China. It is one of the tributaries of the country's chief river, the Ayeyarwady, and arises in Yunnan Province of China. It flows through northern Shan state and Sagaing Division, and enters the Ayeyarwady at Inywa, 60 km north of Tagaung and south of Katha (*consult-myanmar.com*). Regard the project implementation, the construction activities are nearly completed at the present.

The original land of the proposed project area has no forest and trees, and just lies at the river bank of Shweli. Thus, the present survey will focus the issue and impact on aquatic biodiversity rather than terrestrial biodiversity caused by the project activities *(proposed project activities included site clearance or preparation in **pre-construction stage**, building **construction stage**, buying and selling the materials in **operation stage** and **closure of the project**).* According to the literal review, Shweli river was rich biodiversity as there are extensive marshes on both banks of the Shweli River at the confluence with the Ayeyarwady. White-winged wood duck (*Cairina scutulata*), an endangered species of forest duck, and the sarus crane (*Grus antigone*) were native to the Shweli river. The gharial (*Gavialis gangeticus*), a crocodilian, was last spotted in 1927. The Irrawaddy dolphin (*Orcaella brevirostris*) had been known to reach the upper tributaries of the Ayeyarwady including the Shweli. But now the ecosystem, river flora and fauna community has been already changed according to the river pollution. Recently the local Shan news reported that the water of the Shweli River separating China and Shan State has turned red in color, raising concern among locals about the level of pollution in the waterway. Locals in the border town of Muse suspect that the changing color is due to the ter waste from China being dumped in the river. There are many factories located on the upper part of Shweli River in China, including those processing sugar, making paper, canning fish and meat. There are also a number of dams, and substantial deforestation along the river (Shan news, June 2020).

The present study will investigate the current status of aquatic flora and fauna (Biodiversity on Shweli River) existing in the river segment nearby the project area. At the same time, the study will identify the issue and impact on aquatic flora and fauna inhabiting in the river caused by the proposed project.

4.7.3 Aquatic Biodiversity/Flora and Fauna

a) Aquatic Biodiversity

Aquatic biodiversity can be defined as the variety of life and the ecosystems that make up the freshwater, tidal, and marine regions of the world and their interactions. Aquatic biodiversity encompasses freshwater ecosystems, including lakes, ponds, reservoirs, rivers, streams, groundwater, and wetlands. It also consists of marine ecosystems, including oceans, estuaries, salt marshes, seagrass beds, coral reefs,

kelp beds, and mangrove forests. Aquatic biodiversity includes all unique species, their habitats and interaction between them. It consists of phytoplankton, zooplankton, aquatic plants, insects, fish, birds, mammals, and others (www.Aquatic Biodiversity: Threats and Conservation - Aquafindaquafind.com › articles › aquatic biodiversity (Downloaded on 19.12.2020).

The diversity of species in freshwater habitats is very high as compared to other ecosystems. Freshwater habitats cover less than 1% of the world's surface, yet they provide a home for over 25% of all vertebrates.

b) Importance of Aquatic Biodiversity

Aquatic biodiversity has enormous economic and aesthetic value and is largely responsible for maintaining and supporting overall environmental health. Humans have long depended on aquatic resources for food, medicines, and materials as well as for recreational and commercial purposes such as fishing and tourism. Aquatic organisms also rely upon the great diversity of aquatic habitats and resources for food, materials, and breeding grounds. Factors including overexploitation of species, the introduction of exotic species, pollution from urban, industrial, and agricultural areas, as well as habitat loss and alteration through damming and water diversion all contribute to the declining levels of aquatic biodiversity in both freshwater and marine environments. As a result, valuable aquatic resources are becoming increasingly susceptible to both natural and artificial environmental changes. Thus, conservation strategies to protect and conserve aquatic life are necessary to maintain the balance of nature and support the availability of resources for future generations (Hendrik S. and K. Martens (2005).

Freshwater ecosystems also provide many important goods and services including the provision of food, clean water, building materials, and flood and erosion control. The livelihoods of many of the world's poorest communities are dependent on resources from freshwater ecosytems. Threats such as high levels of water extraction, pollution, wetland drainage and river channelization, deforestation leading to sedimentation, introduced invasive species and over-harvesting have all had major impacts upon freshwater biodiversity (https://www.iucn.org/theme/water/our-work/thematic-work/freshwater-biodiversity: IUCN Water and the Freshwater Biodiversity Unit, downloaded on 19.12.2020).

4.7.4 Biological Environment and Project Background

The proposed project, construction of the IBIS Styles Hotel, is located to the east of the Shweli River nearby the Myanmar-China border in Muse Township, Northern Shan State of Myanmar. The total land use of the proposed project sites according to the map of project information in which the development land sizes are 2.74 acres for the IBIS Styles Hotel. The central coordinate point of the project area is 23°59'38.21"N and 97°53'20.81"E. The two development project sites are much close to Shweli River. It is about 0.38 Kilometers (0.23 Miles) far from **Shweli River**. The River is also known as Nam Mao in Shan and Ruili River or Long Chuan River in Chinese, it forms part of the boundary between Myanmar and China. It is one of the tributaries of the country's chief river, the Ayeyarwady, and arises in Yunnan Province of China. It flows through northern Shan state and Sagaing Division, and

enters to the Ayeyarwady River. According to the literal review, the Shweli River was rich biodiversity as there are extensive marshes on both banks of the Shweli River at the confluence with the Ayeyarwady. White-winged wood duck (*Cairina scutulata*), an endangered species of forest duck, and the sarus crane (*Grus antigone*) were native to the Shweli River. The gharial (*Gavialis gangeticus*), a crocodilian, was last spotted in 1927. The Irrawaddy dolphin (*Orcaella brevirostris*) had been known to reach the upper tributaries of the Ayeyarwady including the Shweli. But now, according to the recent observation, there is no found larger animal species in the water. No dolphins and turtles' information are obtained. No large aquatic birds such as Sarus crane are observed. Instead it is observed the small birds, small common fishes and other aquatic organisms. No commercial fishing and endangered animal species are found along the river nearby the project area. Along the river, riparian vegetations mainly grass is observed which is important for river ecology and aquatic organism. There is no protected area and wildlife sanctuary nearby the project area.

Figure 4-33 Current Environmental Condition of the Shweli River

4.7.5 Study Area and Sampling Points

The study area or the proposed project area is located in the east part of the Shweli River. Biodiversity survey was assigned for 3 kilometers along the river to the north from the proposed area (mid and upstream areas). The southern part

(Downstream) is impossible to conduct for biological study because of the region of China. A total of 12 sampling points was carried out for fish and macroinvertebrate benthic species, and aquatic plants and riparian plants and planktons in which sampling point numbers 1, 2 and 3 are representative points of fish, phytoplankton and zooplanktons, sampling point numbers (4), (8) and (11) are representative points of macro-invertebrate benthic species, and sampling point numbers (4) to (12) are representative points of aquatic and riparian plants.

4.7.6 Methodology for Aquatic Biodiversity Survey

Data collection of riparian plants, plankton, amphibians and reptiles, birds, benthos and fishes' Riparian vegetation sample collection:

4.7.6.1 Definition

Firstly, it is important to define what is riparian vegetation and its zone/habitat**. Riparian vegetation** is vegetation or plants which grow the interface between land and a river or stream. This includes the emergent aquatic plants growing at the edge of the waterway channel and the ground cover plants, shrubs and trees within the riparian zone. Those vegetation or plant's habitats and communities along the river margins and banks are called riparian vegetation, characterized by hydrophilic plants. **Riparian zone/habitat** is a land portion nearby streams as well as the interface between land and a river or stream (www.water.wa.gov.au › values-of-our-waterways › aqua. Downloaded on 19.11.2020).

4.7.6.2 Sample Collection

In the aquatic biodiversity survey, walking through survey and boats were used in survey area to get the destination survey points. Data of riparian plants were collected by random sampling method with quadrats (4m x 2m) along the eastern parts of bank of the Shweli River. Quadrates were set up by using measuring tape. Flora species occupied in each quadrate were recorded and listed. Some flora specimens were collected and pressed to identify. Garmin GPS-64 was used to record the right position of study sites.

4.7.6.3 Plankton (Phytoplankton & Zooplankton) Sample Collection and Preservation

In the collection of the water samples, a total of 100 liters of water was being filtered with plankton net (mesh size 35 μm) carried out in each sampling site. The hauling distance was 60 cm long horizontally near the surface water. At each study sites triplicate samples were carefully transferred to a small vial. The inside of the net was washed so as to collect any sticking plankton. A few drops of formalin were added to narcotize the animals and when they became motionless and settled down, the supernatant water was discarded slowly and concentrated samples were collected. All samples were preserved in 5% formaldehyde solution. The taxonomical identification and numbers of population abundance of water sample were done by drop count method under the microscope.

4.7.6.4 Survey on the Amphibians and Reptiles

Survey on amphibians and reptiles was conducted at riparian habitat along the river. Frogs and tadpoles were mainly focused at the survey. Direct observation was conducted at the designated survey sites. Interview survey was also taken with local people to obtain past and present information including turtles and salamanders.

4.7.6.5 Survey on Aquatic Birds

Random point count method was used for the bird survey and took the photograph of birds by use of Tele-Camera (Nikon D 7200 and lens Tamaron 150-600) at the riparian vegetation habitat and in the river. Birds were observed with binocular (Nikon 10X40) and identified aided with field guided book for (Craig Robson 2011). Species identification, observed number and habitat utilization were recorded. Nocturnal birds were observed when it becomes dusk. Interview survey was also taken with local people to obtain past and present information of birds including migratory and threated bird species, e.g. Saur's crane.

4.7.6.6 Survey on Aquatic Mammals

Direct observation and interview survey were both conducted to get information about the presence of Dolphin in the river. Literature review was also conducted to understand the status of aquatic biodiversity (specie richness and abundance) in the past and present in the river.

4.7.6.7 Sample Collection of Macro-Invertebrate Benthos

Rectangular Frame Dip-Net (AKA Modified Kick-Net) - A net with a 0.5 m wide and 0.3 m high frame with 595-600 µm mesh openings and 0.5 m nylon bag attached to the frame will be used to collect benthic macroinvertebrates in riffles and runs. First, the net was placed on the streambed and disturb (with foot, kicking motion) the area just upstream of the net for the time allocated to that habitat types (fast-moving riffles, shallow water, slow water, weeds and tree roots) and move to 3 m distance. This should ensure that the full complement of animals at the site is represented in the sample. The animals will then be carried downstream by the current into the net. For the weeds and tree roots, it was swept the net through the area for the allocated time and swept again an additional one minute around the stone by gently rubbing the stones in the water letting any animals be carried downstream into the net. Then poured the collected specimens into the tray to sort out the sample and identification. Few individual numbers of specimens were preserved in 10% formalin for further identification.

4.7.6.8 Fish Sample Collection

Fish sample was collected by use of rod and hook fishing at the designated survey sites. Some were collected from local people who are fishing for home consuming by use of rod and hook fishing and line and hook fishing.

Interview survey was also taken with local people to get past and present information of fish and other important aquatic animals e.g. dolphins and turtles.

4.7.6.9 Data Analysis of Plant Species

Some flora species were directly identified in field and some species were after trip. After field trip, plant identification of some flora species was conducted based on available literatures such as "key to the families of the flowering plants", issued by Department of Botany, Yangon University (1994), "A checklist of the Trees, Shrubs, Herbs, and Climbers of Myanmar" by Kress et. al. (2003), "Introduction to Pteridophytes and Gymnosperms" by Kramer and Green (1990), "Trends and concepts in fern classification" by Marrten et. al. (2014), etc. Some recorded flora photographs were also verified by some useful internet websites. And also, the preserved phytoplankton samples were observed and identified by using a compound microscope. The threatened levels of each recorded flora species were checked and examined in accordance with "the IUCN Red List of Threatened Species, 2019".

Moreover, plant habits of aquatic plants, shrubs, herbs, grasses, ferns and small trees were identified by using literatures and mentioned in result tables.

4.7.7 Data Analysis for Animals

Encountered rate survey method

For birds and fish population were investigated by use of Encountered Rate Survey Method (ER). ER for each species is equal to the individual recorded by two observers divided by observation time and multiplied by ten to give a result in units individuals recorded per ten hours of survey. This analysis was done according to the method of Bibby, Jones and Marsden (2001).

$$\text{Encountered rate (ER)} = \frac{\text{Total number of individuals}}{\text{Number of hours}} \times 10$$

Encountered rate data was split into ordinal categories of abundance as follows:

Abundance Category	Abundance Score	Ordinal Scale
<0.1	1	Rare ®
0.1-2,0	2	Uncommon (UC)
2.1-10.0	3	Frequent (F)
10.1-40.0	4	Common ©
40.1 +	5	Abundant (A)

For Macro-benthos population was investigated by use of Relative Species Abundance Method (RA). RA is a component of biodiversity and refers to how common or rare a species is relative to other species in a defined location or community. Relative abundance is the percent composition of an organism of a particular kind relative to the total number of organisms in the area. Relative species abundances tend to conform to specific patterns that are among the best-known and most-studied patterns

in macroecology. Different populations in a community exist in relative proportions; this idea is known as relative abundance.

It is calculated Relative Species Abundance by Total Number of Individual species (Isi) divided by Total Number of Species Population (∑ Nsi) multiply by one hundred (100).

Thus, Relative Abundance (RA) (%) = Isi/∑Nsi X 100

Where, Isi = Total Number of individual spp; ∑ Nsi = Total Number of species population.

Map source: Google map © 2020

Legends: Project area (--- acres)
Myanmar-China border line
Sampling points for fish and planktons (phytoplanktons and zooplanktons)
Sampling points for riparian plants, benthos and amphibians

Figure 4-34 Proposed Project Area and Biodiversity Sampling Points nearby the Shweli River, Muse Township

Table 4-30 Representative GPS Points for Biodiversity Survey in and along the Shweli River

Sr. No.	Latitude	Longitude	Survey Remarks
1.	23° 59' 42.53" N	97° 53' 3.72" E	Survey of fish and planktons (Phyto-and zooplanktons)
2.	24° 0' 55.01" N	97° 53' 51.96" E	
3.	24° 1' 8.96" N	97° 54' 33.76" E	
4.	24° 1' 15.01" N	97° 54' 55.07" E	Survey of riparian plants, benthos and amphibians
5.	24° 1' 11.18" N	97° 54' 42.28" E	Survey of riparian plants and amphibian
6.	24° 1' 4.88" N	97° 54' 25.34" E	Survey of riparian plants and amphibian

Sr. No.	Latitude	Longitude	Survey Remarks
7.	24° 0' 58.08" N	97° 54' 13.50" E	Survey of riparian plants and amphibian
8.	24° 0' 51.83" N	97° 54' 2.66" E	Survey of riparian plants, benthos and amphibians
9.	24° 0' 47.62" N	97° 53' 50.67" E	Survey of riparian plants and amphibian
10.	24° 0' 36.87" N	97° 53' 43.95" E	Survey of riparian plants and amphibian
11.	23° 59' 52.29" N	97° 53' 9.08" E	Survey of riparian plants, benthos and amphibians
12.	23° 59' 46.14" N	97° 53' 6.92" E	Survey of riparian plants and amphibian

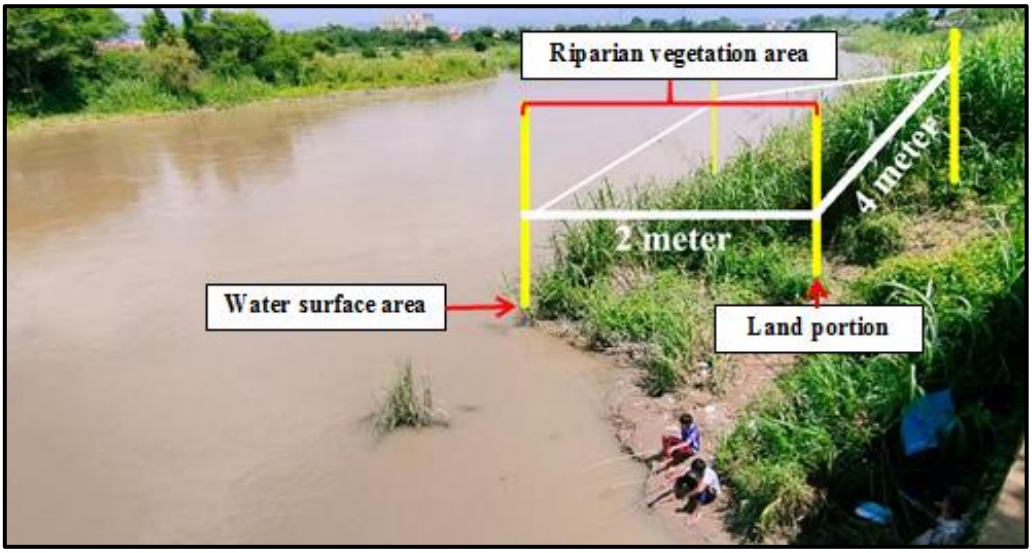


Figure 4-35 Riparian Habitat and Quadrat (4m x 2m) set up for Sampling

Figure 4-36 Plankton Sampling at the Designation Points along the River by the Use of Plankton Net

Benthos sampling at the designation points along the river by use of net

Riparian vegetation sampling at the designation points along the river bank

Figure 4-37 Sampling Activities in the Field

Figure 4-38 Laboratory Examination for the Plankton Species

4.7.8 Survey Results

4.7.8.1 Flora: Riparian Plants

In this flora survey, the riparian vegetation from the areas of riparian vegetation zone were sampled and listed. A total of (47) species from (28) families was observed and listed. In species composition of the riparian vegetation areas, a total of (13) flora species was herbs (27.70%), followed by (13) shrubs (25.50%), (8) grasses (17%), (5) species of aquatic plants (10.60%), (4) climbers (8.50%), (3) ferns (6.40%), and finally (2) small trees (4.30%) was observed and listed. In family composition, the major contributed families were Poaceae (with 8 species), followed by Asteraceae (with 5 species), and Areaceae (3 species). The rest families composed of (2) to (1) species respectively. ***Out of 47 species, one species of Acorus calamus (grass) belongs to Family***

Acoraceae was found as most dominant species covering al least 85% in the study site. In this study, riparian vegetation was recorded such as small trees, shrubs, herbs, ferns, grasses and aquatic plant species. That vegetation will provide the shade, habitats for aquatic organisms and stabilize banks of river. Thus, the riparian vegetation observed along the along the Shweli River is considered as important habitat for aquatic organisms and for bank stabilization.

4.7.8.2 Ecological Importance of Riparian Vegetation along the River (Literature Review)

Riparian vegetation is vegetation or plants which grow the interface between land and a river or stream. Those vegetation or plant's habitats and communities along the river margins and banks are called riparian vegetation, characterized by hydrophilic plants. Riparian zones are important in ecology, environmental resource management, and civil engineering because of their role in soil conservation, their habitat biodiversity, and the influence they have on fauna and aquatic ecosystems, including grasslands, woodlands, wetlands, or even non-vegetative areas. In some regions the terms riparian woodland, riparian forest, riparian buffer zone, riparian corridor and riparian strip are used to characterize a riparian zone (Web 1. Riparian Ecology - USGS.govwww.usgs.gov › centers › fort › science › riparian-ecology).

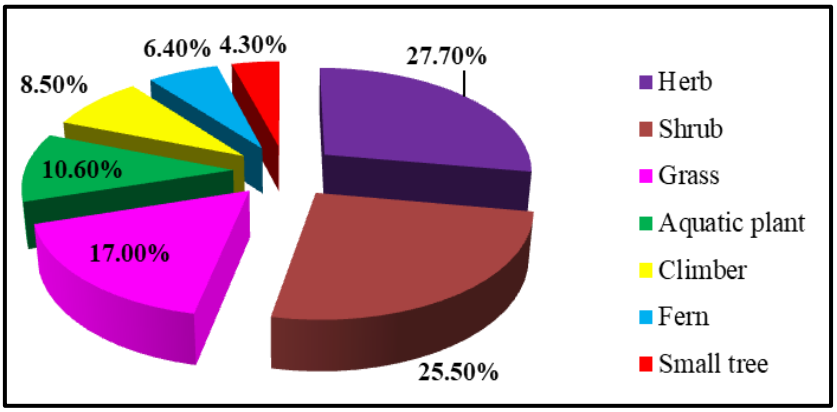


Figure 4-39 Species Composition of Observed Plants

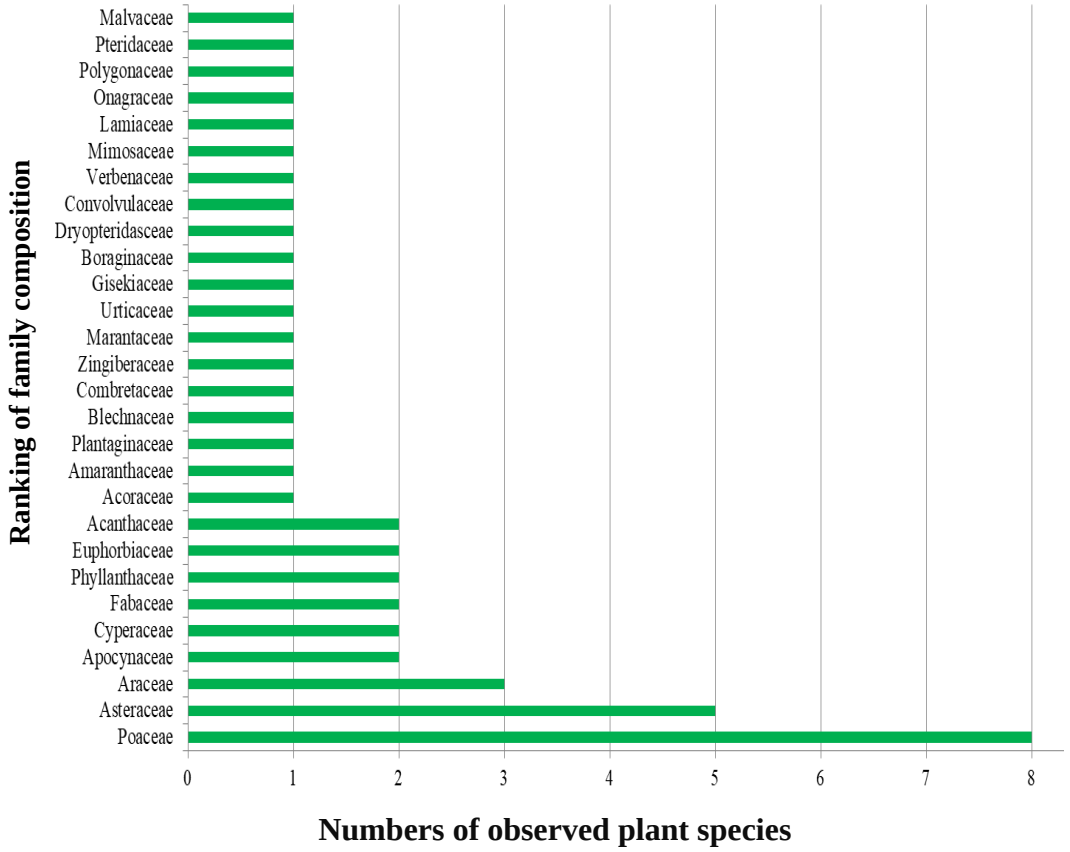


Figure 4-40 Family Composition of Observed Plants

Table 4-31 Observed Plant Species from the Riparian Vegetation Areas together with Family Names, Myanmar Names, Habitats and IUCN Status

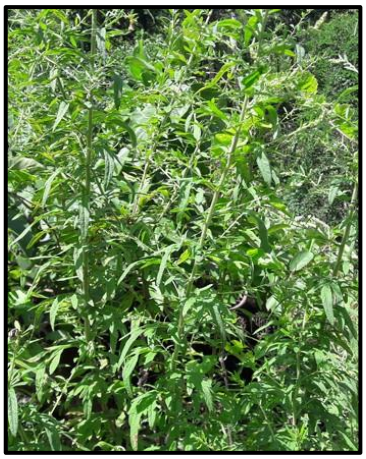
Sr. No.	Scientific Name	Family Name	Myanmar Name	Habitats	IUCN Status
1.	*Acorus calamus L.*	Acoraceae*1	Lin-ne	AP	NL
2.	*Alternanthera sessilis (L.) R. Br.*	Amaranthaceae*1	Pazun-sar	Herb	NL
3.	*Ambrosia acanthicarps Hook.*	Asteraceae	Nil	Herb	NL
4.	*Asclepiasa curassavica L.*	Apocynaceae	Sheedagon pan	Shrub	NL
5.	*Bacopa monnieri (L.) Wettst.*	Plantaginaceae*1	Byone-hmwe	AP*5	NL
6.	*Blechnum serrulatum Rich.*	Blechnaceae*1	Nil	Fern	NL
7.	*Calotropis procera (Ait). R. Br.*	Apocynaceae*2	Mayo	Shrub	NL
8.	*Colocasia esculenta (L.) Schott.*	Araceae	Pein	Herb	NL
9.	*Combretum trifoliatum Vent.*	Combretaceae*1	Ye-nabu-new	Climber	NL
10.	*Costus speciosus (Koeing) Smith.*	Zingiberaceae*1	Phlan-taung-hmwe	Herb*13	NL
11.	*Crotalaria striata Schrank.*	Fabaceae	Taw-pike-san	Shrub	NL
12.	*Cryptocoryne cruddasiana Prain*	Araceae	Nil	AP	NL
13.	*Cynodon dactylon (L.) Pers.*	Poaceae	Mye-sa	Grass	NL

Sr. No.	Scientific Name	Family Name	Myanmar Name	Habitats	IUCN Status
14.	*Cyperus alternifolius L.*	Cyperaceae	Hti-myet	Herb	NL
15.	*Cyperus haspan L.*	Cyperaceae*2	Wet-lar-myet	Herb	NL
16.	*Desmodium triquetrum DC.*	Fabaceae*2	Lauk-thay	Shrub	NL
17.	*Donax grandis (Miq.)Ridl.*	Marantaceae*1	Thin	Herb	NL
18.	*Eclipta alba (L.) Hassk.*	Asteraceae	Kyeik-hman	Herb	NL
19.	*Eleusine indica (L.) Gaertn.*	Poaceae	Myet-thakwa	Grass	NL
20.	*Eupatorium odoratum L.*	Asteraceae	Bizat	Shrub	NL
21.	*Girardinia heterophylla Decne.*	Urticaceae*1	Sin-petya	Shrub	NL
22.	*Gisekia phanaceoides L.*	Gisekiaceae*1	Gangala	Herb	NL
23.	*Heliotropium indicum L.*	Boraginaceae*1	Sin-hnar-maung	Herb	NL
24.	*Heterogonium pinnatumHolttum*	Dryopteridasceae*1	Dayin-kauk-pin	Fern	NL
25.	*Homonoia riparia Lour.*	Euphorbiaceae	Ye-tagyi	Shrub	NL
26.	*Hymenachne amplexicaulis Nees.*	Poaceae	Bawh-myet	Grass	NL
27.	*Ipomoea aquatica Forsk.*	Convolvulaceae*1	Ye-kazun	Climber*4	NL
28.	*Justicia gendarussa Brum.f*	Acanthaceae	Bawanet	Shrub	NL
29.	*Lantana aculeata L.*	Verbenaceae*1	Nadaung-ban	Shrub*12	NL
30.	*Lasia spinosa (L.) Thwaites*	Araceae*3	Zayit	AP	NL
31.	*Leersia hexandra Sw.*	Poaceae	Thaman-myet	Grass	NL
32.	*Leptochloa neesii (Thwaites) Benth.*	Poaceae	Myet-cho	Grass	NL
33.	*Mikania micrantha H. B. K.*	Asteraceae	Bizat-nwe	Climber	NL
34.	*Mimosas pudica L.*	Mimosaceae*1	Tikayon	Herb	NL
35.	*Orthosiphon sp.*	Lamiaceae*1	Nil	Shrub	NL
36.	*Panicum auritum J. Presl ex Nees*	Poaceae	Ye-saba-myet	Grass	NL
37.	*Persicaria attenuate (R.Br.) Sojak*	Onagraceae*1	Mahaga-kyansit	AP	NL
38.	*Phragmites vallatoria (L.) Veldkamp*	Poaceae	Kyu-a	Grass	NL
39.	*Phyllanthus columnaris Mull. Arg.*	Phyllanthaceae Phyllanthaceae*2	Ye-tasha	Small tree*2	NL
40.	*Phyllanthus reticulates Poir.*	-	Ye-chin-yar	Shrub	NL
41.	*Polygonum barbatum L*	Polygonaceae*1	Kywe-lae-chaung	Herb	NL
42.	*Pteris tripartita Sw.*	Pteridaceae*1	Dayin-kauk-pin	Fern*3	NL
43.	*Ricinus communis L.*	Euphorbiaceae*2	Kyetsu	Small tree	NL
44.	*Saccharum spontaneum L.*	Poaceae*8	Kaing	Grass*8	NL
45.	*Synedrella nodiflora (L.) Gaertn.*	Asteraceae*5	Bizat-hpo	Herb	NL

Sr. No.	Scientific Name	Family Name	Myanmar Name	Habitats	IUCN Status
46.	*Thumbergia laurifolia Lindl.*	Acanthaceae*2	Panye-sut	Climber	NL
47.	*Urena lobata L.*	Malvaceae*1	Kat-sine	Shrub	NL
	(47) Plant Spices	**(28) Family**			

Note: AP= Aquatic plant; IUCN= International Union for Conservation of Nature; NL= Not listed in threatened categories of IUCN red list

Acorus calamus



Ambrosia acanthicarps

Asclepias curassavica (Sheedagon-pan)

Bacopa monnieri (Byone-hmwe

Blechnum serrulatum

Calotropis procera (Mayo)

Colocasia esculenta

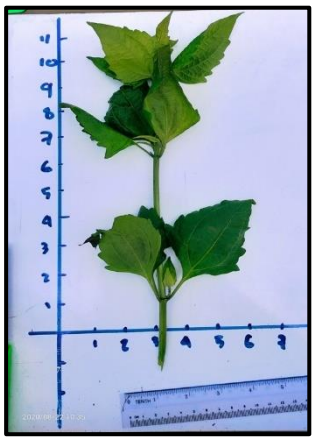
Combretum trifoliatum (Ye-nabu-n we)

Costus speciosus (Hpalan-taung-hmwe)

Cryptocoryne cruddasiana

Cynodon dactylon (Mye-sa)

Cyperus alternifolius (Hti-myet)



Eupatorium odoratum (Bizat)

Donax cgrandis (Thin)

Eclipta alba (Kyeik-hman)

Girardinia heterophylla (Sin-petya)

Homonoia riparia (Ye-tagyi)

Ipomoea aquatic (Ye-kazun)

Justicia gendarussa (Bawanet)

Lasia spinosa (Zayit)

Leptochloa neesii (Myet-cho)

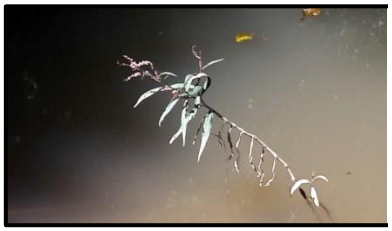
Mikania micrantha (Bizat-nwe)

Lantana aculeate (Nadaung-ban)

Mimosa pudica (Takayon)

Orthosiphon sp.

Panicum auritum (Ye-saba-myet)



Persicaria attenuata (Mahaga-kyansit)

Phragmites vallatoria (Kyu-a)

Phyllanthus columnaris (Ye-tasha)

Urena lobata (Kat-sine)

Pteris tripartita

Ricinus communis (Kyet-su)

Saccharum spontaneum (Kaing)

Figure 4-41 Some Recorded Photos of Observed Flora Species

4.7.9 Results for Animals

A total of (29) species of aquatic organism included (14) species of fish, (3) species of amphibian, (4) species of aquatic birds, (5) species of zooplankton and (3) kinds of macro-benthos were recorded. Among them, Open right-handed snail was found as abundant in the study area. In this survey, insect lavages were not found. No IUCN Red list species and migratory species was found. Species composition and abundance are investigated as low.

Fish: 14- species of fish were recorded in the study areas of the Shweli River (**Table 4-32**). Small fishes were recorded. According to the information and survey, fishes are not abundant in the study area. No commercial fishing was found, instead there is only fishing for home consuming by use of rod and line fishing, and traditional fishing use of bamboo fish trap. The present study has been identified up-to 14 species of fish belong to 8 families in the study sites nearby project area. Two Danio fish *Danio sp,* Bagrid catfish *Mystus pulcher,* and Swamp barb *Puntius chola* were collected as frequently and common species. There is no information about dolphin encountering in the study area around the project site.

Table 4-32 Recorded Fish Species in the Shweli River nearby the Project Area

Sr. No	Family Name	Common Name	Scientific Name	Conservation Status (IUCN 2020)	Abundance Status in Area
1.	Cichidae	Mozambique tilapia	*Oreochromis mossambicus*	LC	R
2.	Cyprinidae	Swamp barb	*Puntius chola*	LC	F
3.	Litidae	Sea bass	*Lates calcarifer*	LC	R
4.	Anabantidae	Climbing perch	*Anabas testudineus*	LC	R
5.	Channidae	Dwarf Snake head	*Channa punctata*	LC	R
6.	Channidae	Snake head	*Channa striata*	LC	R
7.	Cyprinidae	Sorted danio	*Danio sp*	LC	F
8.	Cyprinidae	Sported danio	*Danio sp*	LC	C
9.	Cobitidae	Common spiny loach	*Lepidocephalichthys micropogon*	LC	R
10.	Ambassidae	Indian glassy fish	*Parambasis ranga*	LC	F
11.	Siluridae	Butter catfish	*Ompok bimaculatus*	LC	R
12.	Clariidae	Walking catfish	*Clarias batrachus*	LC	R
13.	Bagridae	Bagrid catfish	*Mystus pulcher*	LC	F
14.	Synbranchidae	Asian swamp eel	*Monopterus albus*	LC	R

Abundance status in the project area (based on encountered frequency in the survey): A= Abundant, C= Common, UM=Uncommon, F= Frequent, R=Rare

Oreochromis mossambicus

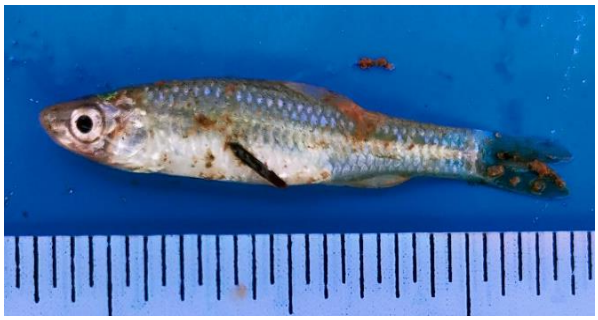
Puntius chola

Lates calcarifer

Anabas testudineus

Channa punctata

Channa striata



Danio sp

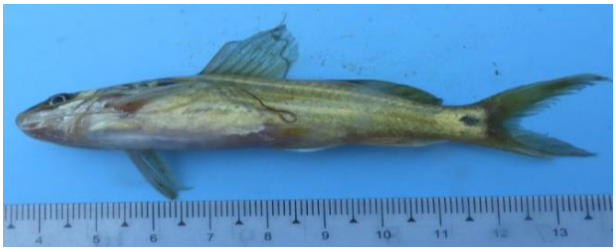
Danio sp

Lepidocephalichthys micropogon

Parambasis ranga

Ompok bimaculatus

Clarias batrachus



Monopterus albus

Mystus pulcher

Figure 4-42 Some Fish Species of the Shweli River

4.7.9.1 Amphibians and Reptile (Results)

During the survey, tadpole, juvenile and adult of frog, toad and salamander were observed among the riparian habitat, shallow water and water edge in the study area. No tadpoles and juveniles were observed. But a few numbers of two frog species were recorded among the riparian habitat. They are *Fejervaryalimnocharis* (Indian cricket frog) and *Polypedates leucomystax* (Common tree frog). Turtle was not observed during the survey. No turtle information was also reported from local people.

4.7.9.2 Aquatic Birds (Results)

According to the information and survey, birds are not abundantly fond in the study area. Only some water birds were recorded such as *Egretta garzetta* (Little egret), *Phalacrocorax niger* (Little cormorant), *Amauromis phoenicurus* (Water-hen) and *Halcyon smymensis* (White throated kingfisher). But few numbers were observed.

4.7.9.3 Ecology of Bird (Literature Review)

Waterbirds can maintain the diversity of other organisms, control pests, be effective bioindicators of ecological conditions, and act as sentinels of potential disease outbreaks.

4.7.9.4 Plankton (Phytoplankton & Zooplankton)

During the survey period, a total of 3 phytoplankton species and 5 zooplankton species were recorded from sampling sites. In phytoplankton, Order Biddulphiales was represented by the species *Thalasiossira* sp and *Skeletonema* sp and *Oscillatoria* sp. In zooplankton, Order Ploima was represented by the species *Asplanchna* sp, *Keratella* sp and *Notholca* sp. Order Copepoda was represented by the species *Calanoid* sp and *Cyclopoid* sp. Density of planktons in one liter of water sample were described in the table. According to the result, the density is very low.

4.7.9.5 Plankton in Freshwater Ecosystem (Literature Review)

Plankton are an important food source for organisms in an aquatic environment. They are found in lakes, rivers, and streams in freshwater body. Animals rely on aquatic food sources such as algae to support the food chain.

Phytoplankton are free-floating, microscopic algae that inhabit the sunlit, upper layer of most freshwater and marine environments. They are usually responsible for the color and clarity of lakes, wetlands, rivers, streams and estuaries. The ability of phytoplankton to photosynthesize (i.e., to use the sun's energy to turn carbon dioxide and water into food and energy) makes them a primary source of energy in most aquatic ecosystems, providing the food source for higher order organisms such as zooplankton and small fishes.

Zooplankton are small animals that live in the water column of almost all water bodies, including oceans, lakes and ponds, *although they mostly cannot survive in rivers and streams*. They range in size from a few millimetres down

to a few microns (one micron is equal to 1/1000 of a millimetre) and may include the larval stages of larger animals such as mussels and fish. The most common groups of zooplankton in freshwater include Cladocera and Copepods, rotifers and protozoans. Zooplankton are commonly included in biomonitoring programs because their densities and species composition can be sensitive to changes in environmental conditions (https://www.iisd.org/ articles/zooplankton-and-fresh-water. Downloaded on 21th, November 2020

Table 4-33 Recorded Phytoplankton Species in the Study Area

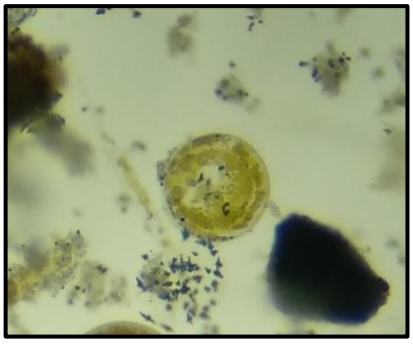
No.	Species	Order	Family
1.	*Thalasiossira sp*	Biddulphiales	Thalasiossiraceae
2.	*Skeletonema sp*		
3.	*Oscillatoria sp*	Nostocales	Oscillatoriaceae

Table 4-34 Recorded Zooplankton Species in the Study Area

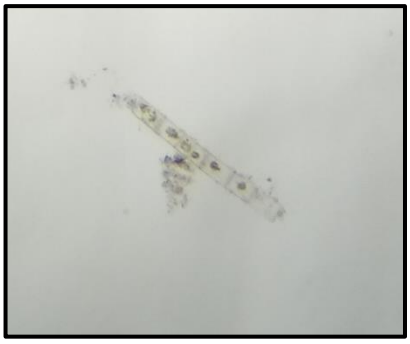
No.	Species	Order	Family	Phylum	Class
1.	*Asplanchna sp*	Ploima	Asplanchnidae	Rotifera	Monogononta
2.	*Keratella sp*		Asplanchnidae		
3.	*Notholca sp*				
4.	*Calanoid sp*	Copepoda	Calanoidae	Arthropoda	Maxillopoda
5.	*Cyclopoid sp*		Cyclopoidae		

Table 4-35 Density of Planktons in One Liter of Water Sample

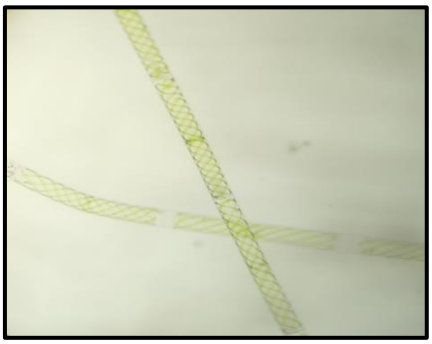
Sr. No.	Species	No. of individuals
1.	*Thalasiossira sp*	6
2.	*Skeletonema sp*	4
3.	*Oscillatoria sp*	6
4.	*Asplanchna sp*	2
5.	*Keratella sp*	5
6.	*Notholca sp*	2
7.	*Calanoid sp*	15
8.	*Cyclopoid sp*	11



Thalasiossira sp

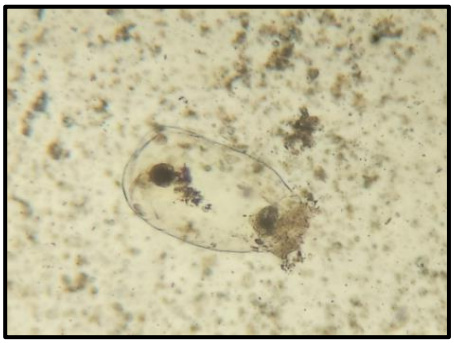


Skeletonema sp

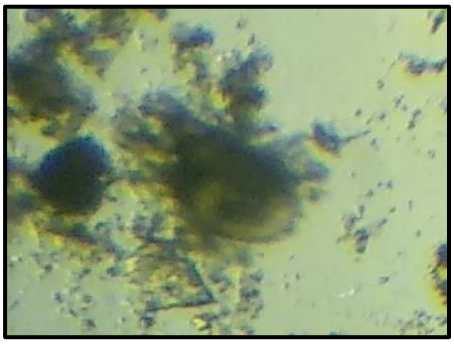


Oscillatoria sp

Figure 4-43 Collected Phytoplankton Species



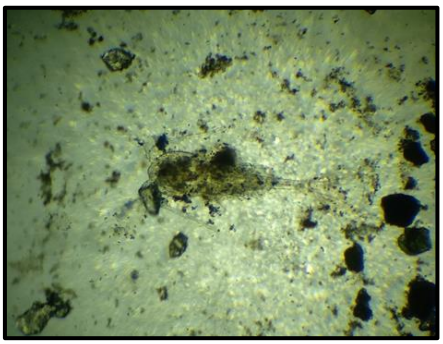
Asplanchna sp.



Keratella sp.

Notholca sp.

Calanoid sp



Cyclopoid sp

Figure 4-44 Collected Zooplankton Species

4.7.9.6 Macroinvertebrate Benthods (Results)

Benthos study focused on three groups such as annelids (worms), mollusks and crustaceans in the water of the study area. Among these groups, mollusk (open right-handed snail) was recoded as relatively abundant represented 75%, then followed by the annelid, earthworm (10%) and found the least as crustaceans (River prawn *Macrobrachium idea*) (5%) in the study area. As a result, species diversity is very low. Open right-handed snail was found as abundant in the study area. In this survey, insect lavages were not found.

4.7.9.7 Macroinvertebrate Ecology (Literature Review)

Macroinvertebrates perform a variety of functions in freshwater ecosystems, including the decomposition of organic matter and nutrient cycling (Wallace & Webster, 1996), the processing of organic matter (Hershey, 1987), the consumption of algal producer biomass (Feminella & Hawkins, 1995), the cellular fluid consumption of individual cells of algae (Swanson, Hrinda, & Keiper, 2007). The number of freshwater invertebrate species has been estimated to be approximately 107,295, with insects representing the dominant group, followed by crustaceans, molluscs, and annelids. Dudgeon (2008) reported that for six tropical regions the average percentage of individual insect order diversity was dominated by caddisflies, followed by true flies, beetles (Coleoptera), mayflies (Ephemeroptera), dragonflies and damselflies (Odonata), true bugs (Heteroptera), stoneflies (Plecoptera).

Worm: Earthworm

Molluscs: Right open snail

Crustainsian: River prawn

Figure 4-45 Recorded Macro Benthos in the Field

4.8 Social Environment

Muse is a border town along the most important land trade route between Myanmar and China. The route accounts for 60 to 80% of Myanmar's border exports to China and between 50 to 60% of its border imports. The city serves as a transit for the large number of transportation vehicles that ply the Myanmar-PRC route. It is also an important crossing for Myanmar nationals who regularly move across the border seeking work opportunities in Ruili and other cities in China.

Muse city is surrounded by a number of traditional villages where agriculture is the main livelihood. In the fertile plains of the Shweli Valley a wide range of crops are planted such as rice, maize, vegetables, beans and pulses, sugarcane and fruits. In the elevated regions away from the river, shifting agriculture becomes more prevalent. Rubber plantations have also been established in the hilly regions around Muse. Myanmar exports mainly raw material and produce such as minerals, rubber, fruit and fisheries and imports construction material, machinery and a host of consumer goods from China.

Many local communities are also found along the Shweli River. These local communities depend on the river as a source of domestic water, irrigation, fisheries and for transportation. They are known to carry out artisanal fishing along the Shweli River. The Shweli River is also important for the movement of goods between China and Myanmar. Goods are usually moved across the river using small flatbed steel vessels operated by local villagers. However, extreme fluctuations in water levels as a result of upstream dam operations are believed to have hampered these activities, particularly during the drier seasons when water levels are low.

Social Report detail are described in SIA report (Part-II of this Project).

4.9 Cultural Components

There is no archaeological cultural and historical site on the proposed project area. If found some cultural heritages during the earth excavation, the developer will report to the local authorities to take action according to the law.

According to the township profile of GAD (2019), the historic buildings and places in Muse Township are as follows. Although these are locally distinct in Muse Township, it is not famous. As these cannot be distinctly seen in google map, the distances between the project site and these pagodas are not measured and described. The map showing some pagodas in Muse Township are seen in **Figure 4-50**.

Table 4-36 Historic Buildings and Places in Muse Township

Sr. No.	Historic Buildings and Places	Location	Historical Zone
1.	Shwe Thamin Pagoda	South Ward	-
2.	Maharwon Pagoda	North Ward	-
3.	Pyi Taw Pyan Pagoda	Homin Ward	-
4.	Lwal Tain Kham Pagoda	Homin Ward	-
5.	Saw Mon HlaPagoda	Sel Lant Village	-

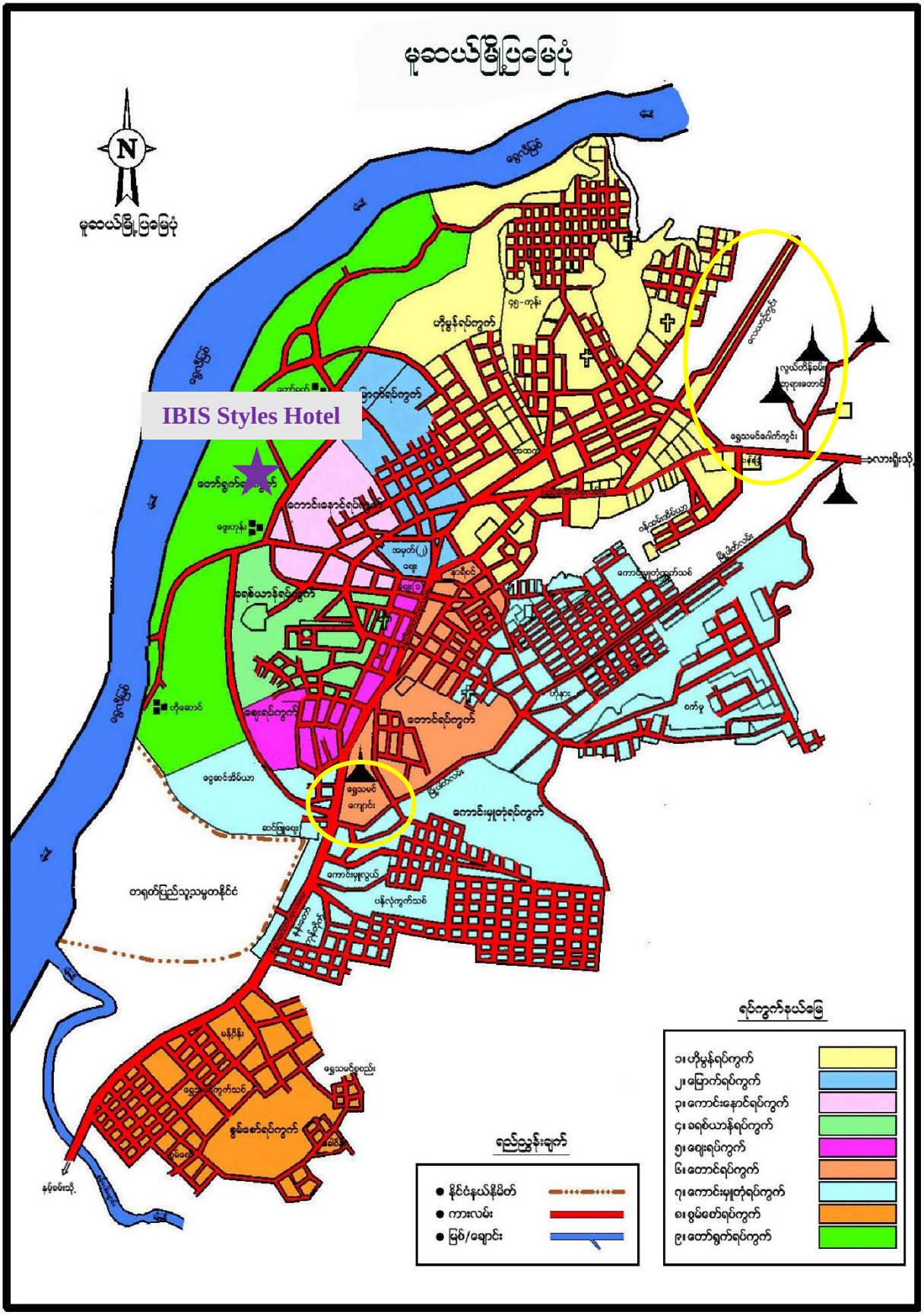


Figure 4-46 Map showing Some Pagodas in Muse Township

4.10 Visual Components

Vegetation clearing and excavations in preparation of the IBIS Styles Hotel, building materials transportation, influx of construction vehicles would alter the normal visual impressions in the project site. The actions would be local and short-lived lasting only during the construction phase.

Night lighting during construction phase at the project sites will conspicuously contrast with the darkness of surrounding areas and might affect night-time habits of wildlife. (e.g., hunting behavior of some animals, feeding habits which do not need light when feeding at night)

On the other hand, after the construction is finished and the hotel open, a well-designed structure fits well within its surrounding area and there will be harmony between the hotel and various related features of the landscape.

In the 1.5 m scope of the hotel, there was no historical and cultural component and the hotel area is located in the zone development area, there will be no serious impact on visual component.

5.0 POTENTIAL ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

This section identifies the potential impacts, and suggested mitigation measures, as related to the proposed IBIS Styles Hotel Project. Findings of the assessment are presented according to construction, operation phases.

5.1 Impact Assessment

Prediction of impacts is the most important component in environmental impact assessment studies. Both, qualitative and quantitative techniques and methodologies are used to identify/analyze the potential impacts likely to arise as a result of the proposed development activities on physical, ecological and socio-economic constituents of the environment within the study area.

The impacts generated are both beneficial as well as adverse. There may be some positive and negative impacts in the surrounding environment of the project site due to the implementation of the project. The possible environmental impacts are identified based on the analysis of environmental baseline information and project activities. Most of the identified impacts have been quantified to the extent possible on the professional judgment. Each of the environmental issues has been examined in terms of their current conditions, likely impacts during the construction and operation phases.

5.2 Methodology in Assessing Impacts

The significance of the aspects/ impacts of the process were rated by using a matrix method. These matrixes use the consequence and the likelihood of the different aspects and associated impacts to determine the significance of the impacts. The significances of the impacts were determined through a synthesis of the criteria and rating scales.

(a) Nature of Impact

This is an appraisal of the type of effect the proposed activity would have on the affected environmental component. Its description should include what is being affected and in what way.

Direct Impact: An impact that appears immediately as a result of an activity of the project. For example, the loss of forest habitat is a direct impact of logging.

Indirect Impact: An impact that is related to the project but that arises from an activity of the project at a secondary level. For example, building a new runway may cause indirect impacts on the local economy of a village by increasing accessibility to other markets.

(b) Positive and Negative Impacts

The influx of workers and change in accessibility to the area may have both positive and negative impacts – positive in terms of the opportunities for small businesses (goods and services) to be developed by the local population, and negative if the influx results in social ills and conflicts with the local population.

For assessing the significance of impacts that are related to the key issues, the following criteria and the rating scales will be used.

5.2.1 Spatial Classification

Spatial classification describes the geographic extend of environmental effects from the project.

Table 5-1 Spatial Classification

Spatial Scale	Criteria	Score
Project site	Impact area is localized or footprint of process.	2
Local	The impact area that covers the whole project site or 1km radius of the project site.	3
Regional	Impact area exceeds 1km^2 and up to100 km^2.	4
National	Impact area extends to nation wise.	5

5.2.2 Temporal Classification

Temporal classification describes the duration or period of time required until the environmental effect can no longer be measured, or the valued ecosystem components return to their baseline conditions.

Table 5-2 Temporal Classification

Scale of Temporal Impact	Criteria	Score
Short Term	Impact will be occurred during short term activities or operation and disappear itself through natural process after the operation.	2
Medium Term	The impact will last for a period of time (such as a season (3 months) or up to 1 year or during maintenance period or construction period.	3
Long Term	The impact will be occurred throughout the operational life of the project. But it can be alleviated by naturally or mitigation measures.	4
Permanent	This is non-reversible impact and cannot be rectified by natural process or human action.	5

5.2.3 Severity Classification

Severity classification describes the magnitude of the impact that shows the magnitude of the damage. In other words, it is the amount of change of the measurable parameters relative to its baseline conditions.

Table 5-3 Severity Classification

Severity	Classification	Score
Very Low	Impact is unlikely to be noticed. That means the environmental values are not altered.	1
Low	Localized impact occurs but only on small patch of affected environment or communities with negligible damage. Though the environmental values are altered, the natural process in the area are not affected.	2
Medium	The environmental values are altered, but functions and processes in the environment proceed in a modified way.	3
High	The environmental values are altered in such a way that the function or process of the environment temporarily ceases.	4
Very High	The environmental values are altered in such a way that the function or process of the environment permanently ceases.	5

5.2.4 Likelihood Classification

Likelihood of the impacts describe the chances of the occurrences of these impacts.

Table 5-4 Likelihood Classification

Likelihood	Classification	Score
Rare	Impact has never been occurred but it should not be taken into account as 0% probability.	2
Unlikely	Impact is unlikely to occur but may occur at sometimes during operation.	4
Likely	Impact is likely to occur at sometimes as there are some incidents experienced before in similar projects.	6
Very Likely	Impact is very likely to occur several times during operational phase in similar projects.	8
Certainly	Impact will occur anytime during operational phase. Incident has happened in similar projects.	10

5.2.5 Significance Evaluation

The scored points of each criteria for individual impact is identified first. Then based on the score points of each criteria, the combining effects of spatial, temporal, severity and likelihood are evaluated. That total score points express the magnitude and how far of each impact can go. These total score points of the impacts indicate that the level of significance of those impacts.

Significance = (Spatial + Temporal + Severity) x Likelihood

Table 5-5 Significance Evaluation

Significance	Scores	Effected
Negligible	8-30	No impact or possible impacts with no noticeable consequences. Does not require any additional mitigation.

Significance	Scores	Effected
Minor	31-60	Possible impacts with low consequences. No significant long-term changes and may be easily rehabilitated naturally. It may or may not require additional mitigation as the activity has low impact with low significance.
Moderate	61-90	Significant changes that may be rehabilitated with mitigation or modification. It may require certain additional mitigation and management action as the activity could have medium significance impact.
Major	91-120	Significant or substantial changes that can cause public concern. Fully rehabilitation may or may not achieved. It may require specific additional mitigation measures and management action as the activity could have high significance impact.
Critical	121-150	Permanent changes to the environment. Serious environmental harm cannot be reduced by implementing mitigation measures. Require alternative technology as the activity has very high significance impact.

5.3 Impacts Evaluation and Rating of Significance

In the following section, construction activities, project-related activities and their impacts will be identified and the significance of these impacts will be evaluated.

***Significance = (Spatial + Temporal + Severity) x Likelihood**

Table 5-6 Evaluation of Impacts during the Construction Phase

Environmental Component	Activities and Source	Nature of Impact	Significance Score					
			Spatial	Temporal	Severity	Livelihood	Significance	Rating
Air Quality	▪ Site clearance and use of heavy vehicles and machinery/ equipment etc. ▪ Operation of construction vehicles, equipment and DG sets ▪ Storage and Handling of construction materials such as sand, cement, etc. to the construction site ▪ Dust generation from earthworks ▪ Dust and odor generation from temporary sanitation system and waste collection system	-	3	3	4	8	80	Moderate
Surface Water	▪ Increase in surface runoff from soil compaction and vegetation removal due to use of vehicles and machinery ▪ Increased sedimentation of water courses, pollution from suspended materials and disturbance of contaminated soil due to earthworks ▪ Pollution from spills or leaks of fuel, oil and construction materials ▪ Disposal of domestic wastewater and leftover food by construction workers	-	4	3	4	6	66	Moderate
Ground Water	▪ Accidental oil spillage	-	3	3	2	4	32	Minor

Environmental Component	Activities and Source	Nature of Impact	Significance Score					
			Spatial	Temporal	Severity	Livelihood	Significance	Rating
	▪ Changes to groundwater flow and distribution from earthworks and construction ▪ Destabilization of surface geology as a result of excavations ▪ Potential erosion, degradation and loss of topsoil due to construction activities as well as storm water runoff ▪ Removal of bedrock by excavation works							
Soil Quality	▪ Accidental oil spillage ▪ Changes to groundwater flow and distribution from earthworks and construction ▪ Destabilization of surface geology as a result of excavations ▪ Potential erosion, degradation and loss of topsoil due to construction activities as well as storm water runoff ▪ Removal of bedrock by excavation works ▪ Disposal of the temporary solid wastes	-	3	3	3	6	54	Minor

Environmental Component	Activities and Source	Nature of Impact	Significance Score					
			Spatial	Temporal	Severity	Livelihood	Significance	Rating
Noise Levels	▪ Operation of concreting and mixing ▪ Excavation for foundations with excavator (if used); ▪ Construction machinery and heavy vehicle movement ▪ Piling and Hammering activities	-	2	3	4	8	72	Moderate
Solid Waste Generation (Non-hazardous)	▪ Topsoil, construction debris, waste concrete due to earthworks and construction ▪ Food wastes and sewage from construction workers ▪ Construction wastes such as nail, wood, cement and plastic bags	-	3	4	3	8	80	Moderate
Solid Waste Generation (Hazardous)	▪ Oil from the machineries and accidental oil spillage due to earthworks and construction ▪ Construction wastes such as lubricant, oil, fuel and batteries	-	2	3	2	4	28	Negligible
Wastewater Generation and Sewage Disposal	▪ Wastewater from workers' temporary toilets ▪ Inadequate provision of toilets for use by workers ▪ Domestic wastewater from washing and cleaning by the construction workers	-	3	3	3	6	54	Moderate

Environmental Component	Activities and Source	Nature of Impact	Significance Score					
			Spatial	Temporal	Severity	Livelihood	Significance	Rating
Flora	▪ Site clearance for construction activities	-	2	3	3	6	48	Minor
Fauna	▪ Site clearance for construction activities ▪ Blasting, laydown areas and increased human activity	-	2	3	3	6	48	Minor
Creation of Employment Opportunities	▪ Local people will have appropriate job opportunities according to their skill and abilities at construction site	+	4	3	3	8	80	Moderate
Occupational Health and Safety	▪ Disruption of services such as electricity, gas, water, or telecommunications ▪ Risk of injury on construction site ▪ Operation of swimming pool ▪ Come and go construction materials transport vehicles	-	3	3	4	8	80	Moderate
Community Health and Safety	▪ Increase in local traffic congestion due to coming and going construction materials transport vehicles	-	3	3	3	8	72	Moderate
Traffic	▪ Increase in roadside air emissions ▪ Increase in traffic-related noise ▪ Potential road safety issues ▪ Risks of spillages / accidents	-	3	3	3	6	54	Minor
Emergencies	▪ Critical situations on site could be caused by earthquake, floods,	-	3	3	3	6	54	Minor

Environmental Component	Activities and Source	Nature of Impact	Significance Score					
			Spatial	Temporal	Severity	Livelihood	Significance	Rating
	accident and/or fire, spill of hazardous materials							

Table 5-7 Evaluation of Impacts during the Operation Phase

Environmental Component	Activities and Source	Nature of Impact	Significance Score					
			Spatial	Temporal	Severity	Livelihood	Significance	Rating
Air Quality	▪ Gaseous emission of SO_2, NO_x, and PM(s) from operation of refrigerators, air condition systems and backup diesel generators during power outage ▪ Dust and exhaust emission from vehicles due to vehicles of hotel and guests	-	3	4	4	6	66	Moderate
Odor and Smell Generation	▪ Odor from kitchen and restaurant ▪ Odor nuisance from toilets, drainage channels, temporary waste disposal site and septic tank	-	2	3	2	6	42	Minor
Surface Water	▪ Increase in surface runoff from vehicles and machinery ▪ Discharge to environment such as detergent, liquid chlorine/tablets, cleaning agents etc., ▪ Pollution from spills or leaks of fuel, oil and construction materials	-	4	4	4	6	72	Moderate

Environmental Component	Activities and Source	Nature of Impact	Significance Score					
			Spatial	Temporal	Severity	Livelihood	Significance	Rating
	▪ Disposal of domestic wastewater from bathing, toilet flushing, housekeeping, kitchen, laundry services, etc.							
Ground Water	▪ Accidental oil spillage	-	3	4	2	4	36	Minor
Soil Quality	▪ Accidental oil spillage ▪ Disposal of the temporary solid wastes	-	3	4	2	4	36	Minor
Noise	▪ Noise from guest activities ▪ Increased noise due to vehicular movement ▪ Operation of DG sets and pumps	-	3	3	4	6	60	Minor
Energy and Resource Utilization	▪ Use of electricity ▪ Use of fossil fuel for running generators and vehicles ▪ Use of water	-	3	4	4	8	88	Moderate
Solid Waste Generation (Non-hazardous)	▪ Organic wastes or food residues from restaurant, bar and kitchen ▪ Different kinds of solid wastes (tissue paper, plastics, tins, bottles, stationeries, damaged/expired devices or appliances, broken utensils and glassware, worn out cloths and towels and other miscellaneous) generated from	-	3	4	4	8	88	Moderate

Environmental Component	Activities and Source	Nature of Impact	Significance Score					
			Spatial	Temporal	Severity	Livelihood	Significance	Rating
	daily room cleaning, kitchen, bar, restaurant, reception and office							
Solid Waste Generation (Hazardous)	▪ Accidental oil spillage due to operation of generators ▪ Generation of hazardous waste such as bulbs (CFLs), batteries and diesel	-	2	3	2	4	28	Negligible
Wastewater Generation and Sewage Disposal	▪ Wastewater (grey water) from bathing, laundry services, toilet, kitchen, bar, etc. ▪ Wastewater (black water) from toilet and septic tanks	-	3	4	5	8	96	High
Creation of Employment Opportunities	▪ Job opportunities for local people according to their skill and abilities at the hotel ▪ Improve their skills in the hotel and tourism business by getting trainings from experienced managers, experts and technicians	+	3	4	5	8	96	High
Government Revenue	▪ Government GDP increased due to acquired revenue	+	4	4	3	6	66	Moderate
Occupational Health and Safety	▪ Accidental injuries due to falling from elevation associated with ladder, electric shocks, thermal	-	2	4	3	6	54	Minor

Environmental Component	Activities and Source	Nature of Impact	Significance Score					
			Spatial	Temporal	Severity	Livelihood	Significance	Rating
	burns, crushing injury from material handling, falling objects ▪ Physical hazards such as slip, trio and fall accidents in hotel rooms, lobbies and stairs or injury or illness due to repetitive exposure to work activities ▪ Come and go construction materials transport vehicles							
Community Health and Safety	▪ Come and go construction materials transport vehicles	-	3	3	3	6	54	Minor
Traffic	▪ Increase in local traffic congestion ▪ Increase in roadside air emissions ▪ Increase in traffic-related noise ▪ Potential road safety issues ▪ Risks of spillages / accidents	-	3	3	3	6	54	Minor
Emergencies	▪ Critical situations on site could be caused by earthquake, floods, accident and/or fire, spill of hazardous material	-	3	2	3	6	48	Minor
Fire Hazards	▪ Ignorance fire hazardous, electric shock due to incorrect use of electrical equipment, wire destroy and over voltage usage	-	3	2	3	8	64	Moderate

Environmental Component	Activities and Source	Nature of Impact	Significance Score					
			Spatial	Temporal	Severity	Livelihood	Significance	Rating
	▪ Temporary solid waste disposal area ▪ Fire hazards due to carless smoking by guests and cooking for kitchen							

In this section, major potential environmental impacts from project related activities will be identified and mitigation measures for minimizing of these impacts will be discussed. Mitigation measures are means to prevent, reduce or control adverse environmental effects of a project, and include restitution for any damage to the environment caused by those effects through replacement, restoration, compensation or any other means.

According to the Significant Rating of the Risk Analysis matrix of various potential environmental impacts, the following potentially significant impacts have been identified in respective project phases.

Construction Phase

- ❖ Impact on Air Quality
- ❖ Impact on Surface Water
- ❖ Impact on Noise Levels
- ❖ Impact on Solid Waste Generation (Non-hazardous)
- ❖ Impact on Wastewater Generation and Sewage Disposal
- ❖ Impact on Occupational Health and Safety
- ❖ Impact on Community Health and Safety

Operation Phase

- ❖ Impact on Air Quality
- ❖ Impact on Surface Water
- ❖ Impact on Energy and Resource Utilization
- ❖ Impact on Solid Waste Generation (Non-hazardous)
- ❖ Impact on Wastewater Generation and Sewage Disposal
- ❖ Fire Hazard

5.4 Impacts and Mitigation Measures during the Construction Phase

5.4.1 Impact on Air Quality

Air pollution is anticipated due to the following activities.

- Site clearance and use of heavy vehicles and machinery/ equipment etc.
- Operation of construction vehicles, equipment and DG sets
- Storage and handling of construction materials such as sand, cement, etc. to the construction site
- Dust generation from earthworks such as excavation and leveling works, etc.
- Dust and odor generation from temporary sanitation system and waste collection system
- Dust and exhaust emission by using trucks to transport various building materials from their sources to the project site that will contribute to increases in emissions of CO_2, NO_2 and fine particulate along the way as a result of diesel combustion

Mitigation Measures

To minimize the impact on air quality and dust emission, the following control strategies are required to follow up:

- ✓ Effective water sprays should be used in working areas that can generate dust
- ✓ Fine particle materials on site should be enclosed and covered
- ✓ Wheel washing facilities shall be installed and used by all vehicles leaving the site
- ✓ Employ transfer processes with small dump heights, low exit velocities and closed receptacles
- ✓ Restrict maximum speed on construction site pathways, e.g. to 30 km/h
- ✓ Proper upkeep and maintenance of vehicles
- ✓ Lush green plantation
- ✓ Employ low-sulfur fuels (sulfur content <50ppm) for machines and equipment powered with diesel engines
- ✓ Use electricity or alternate fuels for on-site mobile equipment instead of diesel equipment to the extent feasible
- ✓ Ensure that adequate water flow in the sanitation system and aeration to reduce the potential of odor formation
- ✓ DG sets will be used only during power failure
- ✓ DG sets will comply with the applicable emission norms
- ✓ Adequate stack height for DG sets will be provided
- ✓ The amount of exposed ground and stockpiles will be minimized so that re-suspension due to wind and subsequent dust fall is prevented.

5.4.2 Impact on Surface Water

Surface water may be polluted due to the following reasons.

- Increase in surface runoff from soil compaction and vegetation removal due to use of vehicles and machinery
- Increased sedimentation of water courses, pollution from suspended materials and disturbance of contaminated soil due to earthworks
- Pollution from spills or leaks of fuel, oil and construction materials
- Disposal of domestic wastewater and leftover food by construction workers

Mitigation Measures

To prevent and control the impact on the surface water quality, the following control strategies are required to follow up:

- ✓ Adequate arrangements for proper drainage
- ✓ Provision of proper sanitary facilities with treatment
- ✓ Regular cleaning and maintenance of the sediment removal facilities to ensure that the facilities are in normal function at all times
- ✓ It is recommended to provide chemical toilets and for collection of toilet wastes

✓ Cleaning of toilet wastes should be carried out regularly

5.4.3 Impact on Noise Levels

Noise pollution is generated from

- Operation of concreting and mixing
- Excavation for foundations with excavator (if used);
- Construction machinery and heavy vehicle movement including bulldozers, generators, tippers and concrete mixers
- Piling and Hammering activities

Mitigation Measures

✓ Noisy construction activities will be carried during the daytime only

✓ Enclosure shall be provided

✓ Undertake proper maintenance of equipment

✓ Use of well-maintained equipment fitted with silencers

✓ Use of proper personal protective equipment

5.4.4 Impact on Solid Waste Generation (Non-hazardous)

Generation of solid wastes will occur during the construction works for the new hotel, these wastes, basically inorganic wastes, may consist of:

- Timber and wood cuttings
- Paper and plastic wrappings
- Solidified concrete spills, block and masonry debris
- Electrical cables, pipes and ducts cuttings
- Floor and wall tiles, glass debris
- Metal or plastic paint tins or containers
- Topsoil, construction debris, waste concrete due to earthworks and construction
- Food wastes and sewage from construction workers

It is also anticipated that the site workers will generate food leftovers of mainly organic origin as site staff mess. Most of these wastes will cause visual impacts and if not managed adequately may find themselves in the natural environment.

Mitigation Measures

The company shall apply a strict policy within its all sections aims to minimize the solid wastes to the minimum by introducing the following measures:

✓ Building wastes on-site will be managed by the main contractor who should provide enclosed areas/bins for the storage of the building wastes. Moreover, the main contractor shall impose on his sub-contractors on-site the removal and safe disposal of their building wastes.

- ✓ With regard to leftovers, these will be stored in appropriate bins fitted with tight lids, which will be carted away to disposal site regularly. The impacts will therefore be satisfactorily mitigated and eliminated.
- ✓ Waste collection, segregation and disposal should be properly managed and contact to Township Municipality for final disposal
- ✓ Reusable inorganic waste (e.g. excavated soil) should be stockpiled away from drainage features and used in filing where necessary

5.4.5 Impact on Wastewater Generation and Sewage Disposal

Wastewater may be discharged from the following.

- Wastewater from workers' temporary toilets
- Inadequate provision of toilets for use by workers
- Domestic wastewater from washing and cleaning by the construction workers

Mitigation Measures

The company shall apply a strict policy within its all sections aims to minimize the wastewater generation and sewage disposal to the minimum by introducing the following measures:

- ✓ Proper installation of drainage structures
- ✓ Install cascades to break the impact of water flowing in the drains
- ✓ Ensure efficiency of drainage structures through proper design and maintenance
- ✓ Provide gratings to the drainage channels

5.4.6 Impact on Occupational Health and Safety

There will be a number of constructions works such as site clearing, earth work, steel work, masonry work, general work, material storage and management work during the construction phase. Poor working conditions could deteriorate workers' safety and health. Occupational hazard such as falling from height, hit by fallen objects, injure by sharp objects, electric shock, and slipping etc., will be associated with the project construction works. The lack of safety and health regulations could impact negatively on construction workers.

Because of the intensive engineering and construction activities including erection and fastening of structural steel sections for the scaffolding, metal grinding and cutting, concrete work, steel erection and welding among others, construction workers will be exposed to risks of accidents and injuries.

Mitigation Measures

To protect and prevent the impact on occupational health and safety, the following control strategies are required to follow up:

- ✓ The Contractor should regularly inspect, test and maintain all safety equipment (including firefighting equipment), scaffolds, guardrails, working platforms, hoists,

ladders and other means of access, lifting, lighting, signing and guarding equipment.

- ✓ Generally good housekeeping - debris cleared away promptly, dust cleared regularly, etc.
- ✓ Staff wears strong safety shoes that have a good grip
- ✓ Good lighting in all areas
- ✓ Remind staff to clear up spillages of oil or paint immediately, even very minor spillages
- ✓ Fork-lift truck maintained and inspected as per lease contract
- ✓ Heavy vehicles operated only by staff who have been trained to use it
- ✓ Pedestrian walkways marked
- ✓ Only authorized people allowed in yard for deliveries/dispatch
- ✓ Ensure drivers get out of their vehicle and stand in a safe area while it is being loaded/unloaded

Air Pollution Affect

- ✓ Providing the PPE
- ✓ Water spraying to reducing the particulates matters
- ✓ Air Quality measuring
- ✓ Regular maintenance of vehicles and machines

Noise and Vibration Affect

- ✓ Providing the PPE
- ✓ Providing the shift working system for worker working near the noisy
- ✓ Noise and Vibration measuring
- ✓ Regular maintenance of vehicles and machines
- ✓ D.G set will be placed with the Sound proof wall
- ✓ Vibrated machines will be placed with solid concrete foundation

Protection the Working Area Accident

- ✓ Providing the first aid, medicines and training
- ✓ Providing the PPE and giving the PPE using training
- ✓ Assigning the Safety Officer who systematically implement OHS plan to protect the OHS for workers
- ✓ Providing the emergency contact phone number
- ✓ Designation the speed limit for vehicles and machines
- ✓ Installing the eyes washer for contacting the hazardous materials.
- ✓ Providing the safety sign and give training for the worker for understanding this sign purposes

Protecting Infectious Diseases

- ✓ Systematically cleaning for Toilets and septic tanks and regular disposing to City Development Committee
- ✓ Systematically disposing the food waste at designated area, designated waste disposal yard, covering the waste bin and regularly disposing City Development Committee
- ✓ Providing the dining area and give instruction to eat the designated area
- ✓ Providing the medical check-up and appropriate medicals for worker to protect infectious diseases Enforcement of Public health and safety regulations

5.4.7 Impact on Community Health and Safety

The movement of workers to and from the place of work and the movement of vehicles carrying equipment and construction materials is expected to increase the stress on the local transport and road network. Traffic hazard will also increase. Dust and particulate emissions, wastes generations, noise and vibrations could occur during the construction of the project. Contaminated runoff could be adverse impact on public health. However, considering the number of people deployed, the impact on road/traffic is marginal and temporary.

Mitigation Measures

To protect and prevent the impact on community health and safety, the following control strategies are required to follow up:

Air Pollution Affect

- ✓ Water spraying the project site
- ✓ Raw material transportation is systematically covering,
- ✓ Water spraying the vehicles wheel before leave from the project site
- ✓ Regular maintenance of vehicles and machines

Noise and Vibration Affect

- ✓ Avoiding the noisy work activities at night time
- ✓ Noise and Vibration measuring
- ✓ Regular maintenance of vehicles and machines
- ✓ D.G set will be placed with the Sound proof wall
- ✓ Vibrated machines will be placed with solid concrete foundation

Protection the Working Area Accident

- ✓ Providing the First Aid, medicines and training at villages
- ✓ Providing the emergency contact phone number at villages
- ✓ Designation the speed limit for vehicles and machines
- ✓ Inspection the driver license has or not and drivers are driving the car types according to their license's types.

- ✓ Avoiding transportation of construction and closing materials at the traffic peak hours and school starting and ending times

Protecting Infectious Diseases

- ✓ Systematically cleaning for Toilets and septic tanks and regular disposing to City Development Committee
- ✓ Avoiding the waste disposal at nearest villages waste disposal yard and regularly disposing City Development Committee
- ✓ Providing the dining area and give instruction to eat the designated area
- ✓ Providing the medical check-up and appropriate medicals for worker to protect infectious diseases

5.5 Impacts and Mitigation Measures during the Operation Phase

During the operation phase, impact generation will be of a permanent nature. Significant potential impacts could be associated with services and activities are tabulated below.

Table 5-8 Potential Impacts during the Operation Phase

Sr. No.	Service/Activity	Description	Main Environmental Impacts
1.	**Administration**	➢Hotel management ➢Reception of clients	Energy, water and materials (mainly paper) Generation of waste and hazardous waste (toner cartridges)
2.	**Technical Services**	➢Equipment for producing hot water and heating ➢Air conditioning ➢Lighting ➢Swimming pools ➢Green areas ➢Mice and insect extermination ➢Repairs and maintenance	Energy and water consumption Consumption and generation of a wide range of hazardous products ▪ Air and soil emissions ▪ Generation of wastewater ▪ Pesticides use
3.	**Restaurant/ Bar**	➢Breakfast, lunch, dinner ➢Beverages and snacks	▪ Energy, water and raw materials consumption ▪ Packaging waste ▪ Organic waste
4.	**Kitchen**	➢Food conservation ➢Food preparation ➢Dish washing	▪ Consumption of energy and water ▪ Packaging waste ▪ Oil waste ▪ Organic waste ▪ Generation of odors
5.	**Room Use**	➢Use by guest ➢Products for guests' use ➢Housekeeping	▪ Energy, water and consumable consumption ▪ Use of hazardous products ▪ Generation of waste packaging

Sr. No.	Service/Activity	Description	Main Environmental Impacts
			▪ Generation of wastewater
6.	**Laundry**	➢Washing and ironing of guest clothes ➢Washing and ironing of hotel linens	▪ Consumption of energy and water ▪ Use of hazardous cleaning products ▪ Generation of wastewater

It can be summarized as:

- ❖ the generation of organic and inorganic solid wastes;
- ❖ the generation of wastewater and its associated pollutant;
- ❖ risks of hydrocarbon spillage during transportation from diesel storage to stand-by generators;
- ❖ atmospheric pollution by stand-by diesel generators;
- ❖ increased demand on public utilities (water, electricity, telecommunications, etc) and
- ❖ intensification of road traffic.

The following main issues have been identified in detail for the operation phase.

5.5.1 Impact on Air Quality

During the operation phase, the proposed project will affect impact on air quality as follow.

- Gaseous emission of SO2, NOx, and PM(s) from operation of refrigerators, air condition systems and backup diesel generators during power outage
- Dust and exhaust emission from vehicles due to vehicles of hotel and guests
- Exhaust emission from kitchen

Mitigation Measures

To minimize the impact on air quality and dust emission, the following control strategies are required to follow up:

- ✓ Spray water to reduce dust generation in outdoor area
- ✓ Do proper housekeeping to reduce the dispersion of the dust
- ✓ Provide good exhaust ventilation system in the process area to reduce heat and fugitive emission
- ✓ Provision of fuel and hazardous chemicals in a separate room with good ventilation system
- ✓ Turn off the machineries /engines while not in use
- ✓ Ensure of no leakage in sewage facility and timely disposal
- ✓ Do regular maintenance of the generators
- ✓ Install the stack for generators exhaust which is oriented away from people
- ✓ Provide dust mask to employee when necessary

5.5.2 Impact on Surface Water

Water pollution may be occurred because of the following reasons.

- Increase in surface runoff from vehicles and machinery
- Discharge to environment such as detergent, liquid chlorine/tablets, cleaning agents etc.,
- Pollution from spills or leaks of fuel, oil and construction materials
- Disposal of domestic wastewater from bathing, toilet flushing, housekeeping, kitchen, laundry services, etc.

Mitigation Measures

To prevent and control the impact of surface water quality, the following control strategies are required to follow up:

- ✓ Adequate arrangements for proper drainage
- ✓ Regular cleaning and maintenance of the sediment removal facilities to ensure that the facilities are in normal function at all times
- ✓ It is recommended to provide chemical toilets and for collection of toilet wastes
- ✓ Cleaning of toilet wastes should be carried out regularly
- ✓ Oil traps should be installed on drainage
- ✓ Drip trays should be used to collect oil leakage

5.5.3 Impact on Energy and Resource Utilization

The impact on energy and resource utilization can be caused from

- Use of electricity
- Use of fossil fuel for running generators and vehicles
- Use of water

Mitigation Measures

To minimize the impact on energy and resource utilization, the following control strategies are required to follow up:

- ✓ Use of electricity from renewable power source when available
- ✓ Consider the use of solar power for partial and small load usage
- ✓ Building design can incorporate day light and natural ventilation to reduce energy requirement
- ✓ Energy efficient lighting can be used.
- ✓ Self-closing water tap can be used
- ✓ Rain water harvesting can be considered for some minor use
- ✓ Educate the workers not to waste electricity and water
- ✓ Vehicle trip schedule can be controlled for efficient use to reduce fuel consumption. (e.g., combining trips of convenient direction)

5.5.4 Impact on Solid Waste Generation (Non-hazardous)

In general, solid waste management is paramount and has been a big problem. This is the result of existing policy, financial problems and lack of peoples' awareness. At the moment, most of the garbage is disposed to the specified dumping site which is not big enough to hold the total amount letting the excess being scattered all around and causing the causal of drain blockage which in turn during the rainy season incite flooding haphazardly in the streets, water drainages and so on.

Solid waste will be generated every day, in amounts depending basically upon the occupancy rates, and they will consist of:

- ❖ Organic wastes, i.e., food leftovers from restaurants, kitchen wastes (grease and oils)
- ❖ Non-organic wastes, i.e., glassware, metal cans, plastic bottles and packages, paper

Food leftovers and kitchen wastes if left under ambient conditions will generate foul smell as well as attract vermin, flies, etc. that are vectors of diseases.

Mitigation Measures

The company shall apply a strict policy within its all sections aims to minimize the solid wastes to the minimum by introducing the following measures:

- ✓ Proper segregation in collection of wastes
- ✓ Practice recycling of wastes
- ✓ Implement composting of wastes especially garden refuse and provide food wastes to nearby villages for animal fodder
- ✓ Contact Muse Township Municipal for proper disposal
- ✓ Clean around and spray insecticides when necessary
- ✓ Arrange awareness training programs for all personnel on how to handle solid wastes

5.5.5 Impact on Wastewater Generation and Sewage Disposal

Wastewater may be discharged from the following.

- The discharge of untreated domestic wastewater from the hotel, kitchen, and staff quarters, etc.
- Wastewater (grey water) from bathing, laundry services, toilet, kitchen, bar, , etc.
- Wastewater (black water) from toilet and septic tanks

The aforesaid raw effluents contain biodegradable matter, nutrients, suspended solids, bacteriological load, etc. and these pollutants cannot be discharged in the natural environment without having undergone pollution abatement. Discharges of these untreated effluents will pollute the water environment and are the threat to the surrounding areas.

Mitigation Measures

The company shall apply a strict policy within its all sections aims to minimize the wastewater generation and sewage disposal to the minimum by introducing the following measures:

- ✓ Undertake regular monitoring and testing of effluent to ensure compliance with national standards and regulations. If the effluent levels will be higher than the guidelines, adequate wastewater treatment plant should be designed and installed
- ✓ Design of sewage system should be sound in terms of adequacy, gradient materials and standards
- ✓ Regular emptying of the septic tanks
- ✓ Contact Muse Township municipal for final disposal of sewages sludge

5.5.6 Fire Hazard

Fire hazard may be caused due to the following reasons.

- Ignorance fire hazardous, electric shock due to incorrect use of electrical equipment, wire destroy and over voltage usage
- Temporary solid waste disposal area
- Fire hazards due to carless smoking by guests and cooking for kitchen

Mitigation Measures

The following measures shall be done for fire hazard:

- ✓ Ensure sufficient emergency firefighting tools (fire alarm, fire extinguishers, fire hoses, standby water tanks, water pumps, and first aid boxes) should be installed in the visible places and regularly checked and maintained
- ✓ Not only fixed but also portable fire equipment should be installed
- ✓ Firefighting training and regular fire drills for all workers should be provided
- ✓ Fire safety policy should be designed and implemented
- ✓ Keep enough spaces for sidewalks, escape routes, emergency exists, assembly area with regular inspection and maintenance
- ✓ Proper maintenance of machines, wires and electrical appliances should be done

5.6 Cumulative Impacts

The required that cumulative effects of development be considered for this EIA on Hotel Project. The 'cumulative' is not defined in the Administrative Instruction of Environmental Impact Assessment Procedure by The Government of the Republic of the Union of Myanmar (2015).

There is a major concern about the influence of the development on the local environment. Development activities and other anthropogenic sources release significant amounts of air pollutants into the atmosphere, effluents to the aquatic bodies, adversely affecting the environment.

The potential cumulative impact on the environment results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions. The combined, incremental effects of human activity, referred to as cumulative impacts, pose a serious threat to the environment. While they may be insignificant by themselves, cumulative impacts accumulate over time, from one or more sources and can result in the degradation of important resources.

Generally speaking, the IBIS Style hotel is located in development zone, where the majority of shop house, jade mall and villa and Ho Saung Village are found.

At the time of undertaking the EIA, only shop house has been operating whereas the others such as jade mall and villa are under construction. Detail locations are as shown in Chapter 3.

Therefore, IBIS Style hotel and Shop House & Jade Mall are the only known 'committed developments' that need to be considered for cumulative impact. Based on the respective potential environmental impacts caused by the projects, the potential cumulative impacts are discussed in subsections.

5.6.1 Economy and Employment

a. Construction phase

Positive impacts on employment are expected from the construction activities. These will be enhanced due to the other projects. The timing of construction will result in different scenarios of impact. The timing is very important: if one facility is constructed after the other, the impact on social parameters will be more beneficial than if they are constructed at the same time.

If facilities are constructed one after the other, the number of workers required, the services and the associated activities would be better absorbed because the increase is lower and the time those resources are needed is extended. Alternatively, if the other projects are constructed at the same time more many workers would be required in a short period of time and after that they would be in the area but possibly unemployed.

b. Operation phase

During the operation phase, there will be positive benefits for the local community in terms of employment and the need for specialist local experience.

5.6.2 Transportation and Traffic

It is clear that during the construction and operation phases of all projects, traffic will significantly increase, resulting in the effects described below:

a. Construction phase

Road construction is not a cumulative activity as it will only occur once and then be used by the other agents. There is no need to double or triple the roads based on the number of facilities.

The greatest impact in terms of increased traffic would occur if the construction of all facilities were conducted simultaneously. If they are

constructed concurrently the impact would be of higher significance ranking, but the recovery will occur over a shorter timescale. Minor cumulative impacts are expected as decrease in air quality caused by an increase in dust and noise.

b. Operation phase

During the operational stages, increased traffic, noise, dust as well as light during night-time operations will be expected. Increased traffic caused by the operation of the Shop House & Jade Mall, other development activities will result in a significant impact to the surrounding close to the project site mainly because of increased noise and dust and possibly causing occasional road delays.

5.6.3 Air Quality

The main activities associated with power generation and kitchen emission from restaurants.

A small increase in cumulative impact is expected from the power generation of the shop house because the shop house is supposed to have an emergency generator for electricity system failure. Emission to air during the operation phase of shop house is mainly due to:

Smell emission from the kitchen of the restaurant form the Shop House. During the field survey noise levels were measured and sound levels ranged between 50 and 60 dB(A). It can be assumed that future activities such as jade mall and other development project such as bank, recreation center will increase noise levels beyond the limits.

5.6.4 Water and Wastewater

Cumulative impacts will arise from the routine operation of the Shop House, Jade Mall and Hotel as a result of the increased effluent that might be increased approximately double. Water is often used for domestic using and for cleaning and sanitary purposes. Wastewater is generated from draining and washing from kitchens. Contamination can also occur due to accidental spillages and leaks of solvents and oils. Cleaning and sanitary wastewater is directly discharged into a centralized WWTP.

Nevertheless, this results in a minor impact due to the fact that every project in MCBD is advised to discharge to the centralized WWTP only after pre-treating those sanitation water. There is an increase in the likelihood of accidental spills due to the increase in facilities which could lead to a moderate impact.

5.6.5 Solid Waste

The operation of the IBIS Styles Hotel and Shop House & Jade Mall may increase twice the potential of leakage and disposal of wastes. However, a significant increase in the effect is not expected by following appropriate disposal method.

5.6.6 Energy Consumption

Since the shop house is only walking market and recreation center, the energy consumption is not very high. When other projects such as jade mall, banks, villa start operation in the near future, there will be definitely rise in energy consumption.

6.0 ENVIRONMENTAL MANAGEMENT PLAN

Environmental management has become an important issue in the tourism and hospitality industry, and numbers of hotels are adopting sound environmental management practices. The increasing adoption of environmental management in hotel firms seems to have been sparked off by growing concerns over the impacts of tourism on the environment.

Hotels are at the hub of the tourism industry and it is one sector of the tourism industry in which activities such as construction of buildings and landscaping, cooking and disposal of waste, use of water and energy tend to affect the environment adversely if not properly managed. The size of hotel facility also influences the environmental impact. For instance the impact of a hundred room limited service hotel will be different from a six-hundred room full service hotel.

Hotels use large amounts of water, energy, chemicals, supplies, and disposable items. They also generate lots of waste such as wastewater and solid waste. Because of this, small efficiency gains can lead to large cost savings and environmental performance improvements. Environmental management is a systematic approach to finding practical ways for saving energy, water, and materials, and reducing negative environmental impacts. A proactive environmental management program can help a property save money, get recognized for environmental leadership, and preserve and protect a unique destination protect a unique destination.

It has been evaluated that the project area will not be affected significantly by the project. Mitigation measures are formulated so as to protect the surrounding environment.

The emphasis on the EMP development is on the following:

- Role and Responsibilities, organization for Environmental Management Plan
- Management plans for those activities causing the environmental impact
- Estimated Budget for Environmental Management Plan
- Monitoring plans for checking activities and environmental parameters and monitoring responsibilities

6.1 Environmental Management Team

All the activities will be monitored to ensure the appropriate implementation of all environmental mitigation activities and environmental management plan. For effective implementation and monitoring of environmental management system, it is necessary to have an organizational set-up. So New Starlight Construction Co., Ltd has assigned responsibility to officers from various disciplines to co-ordinate the activities concerned with management and implementation of environmental control measures. Environmental management team (EMT) is shown in **Figure 6-1**.

The duties of the EMT will include the following.

- Environmental monitoring of the project site and surrounding area
- Commissioning of pollution control equipment

- ❖ Specification and regulation of maintenance schedules for pollution control equipment
- ❖ Ensuring that standards of housekeeping in the plant are maintained
- ❖ Developing the green belt
- ❖ Ensuring water use is minimized
- ❖ Carrying out the Environmental Management Plan
- ❖ Organizing meetings of the Environmental Management Committee and reporting to the committee

Figure 6-1 Organization Chart of Environmental Management Team

Table 6-1 Role and Responsibilities of Environmental Management Team

Sr. No.	Role	Responsibilities
1	Team Director	➢To support the implementation of the environmental management plan and monitoring plan
2	Operations Manager	➢To monitor and assess the implementation of EMP ➢To discuss the results of EMP with the environmental team
3	HSE Manager	➢To notify about the location of fire/gas leakage immediately proceed to the help ➢To prepare the monitoring report
4	Environmental Officer	➢To give suggestions for improving EMP ➢To participate in any environmental and emergency activities
5	Public Health	➢To communicate with residents ➢To response the accident, injuries and complaints from local residents

Sr. No.	Role	Responsibilities
	Coordinator	➢To participate in any health care activities for both employees and communities
6	Safety Officer	➢To monitor the parameters described in EMP ➢To implement the mitigation measures ➢To report the results of EMP ➢To inform the environmental team at once when find out some problems to occur ➢To follow the EMP and aware of environmental impacts ➢To participate in any environmental and emergency activities

6.2 Environmental Management Plan

The Project requires an Environmental Management Plan (EMP) to determine the significant impacts from implementation of the project and a range of mitigation measures. An EMP is also required as per the provision of the Environment Protection Act and Regulations of Government of Myanmar.

The main objectives of EMP are:

- To reduce environmental and social impacts due to the project activities and components
- To minimize risk to the environment during the construction and operation works
- To ensure Environment, Health and Safety measures are implemented throughout project development
- To increase environmental management capacity

Based on the impact assessment done in the Chapter (5) and referring to the Table 5-6 and Table 5-7, the following specific plans were prepared for project proponent to implement, monitor, review and improve along the respective phases of the project.

6.2.1 Sub-Management Plans during the Construction Phase

The project proponent will implement all mitigation measures as soon as practically. Based on the project activities and formulated mitigation measures of adverse environmental impacts, the project proponent will be implemented the following environmental management plans during the construction phase.

1. Air Pollution and Dust Management Plan
2. Wastewater and Drainage Management Plan
3. Noise Management Plan
4. Solid Waste Management Plan
5. Occupational Health and Safety Management Plan
6. Community Health and Safety Management Plan

6.2.1.1 Air Pollution and Dust Management Plan

Objective

- ❖ To control emission pollutants generated from construction activities
- ❖ To comply with NEQEG or other relevant guidelines or standards

Implement Schedule

- ❖ Throughout the construction phase

Responsible Person/Unit

- ❖ Contractor/ Environmental Officer to implement mitigation measures and management
- ❖ EMT to monitor and check the contractor's activities

Management Action

- ➢ Site clearance and use of heavy vehicles and machinery/ equipment etc.
- ➢ Operation of construction vehicles, equipment and DG sets
- ➢ Storage and Handling of construction materials such as sand, cement, etc. to the construction site
- ➢ Dust generation from earthworks
- ➢ Dust and odor generation from temporary sanitation system and waste collection system

6.2.1.2 Wastewater and Drainage Management Plan

Objective

- ❖ To protect water and soil pollution
- ❖ To prevent pollution underlying groundwater sources
- ❖ To comply with NEQEG or other relevant guidelines or standards

Implement Schedule

- ❖ Throughout the construction phase

Responsible Person/Unit

- ❖ Contractor/ Environmental Officer to implement mitigation measures and management
- ❖ EMT to monitor and check the contractor's activities

Management Action

- ➢ Adequate arrangements for proper drainage
- ➢ Provision of proper sanitary facilities with treatment
- ➢ Suitable wastewater treatment systems or facilities should be provided on site to meet the discharge requirements specified from government
- ➢ Regular cleaning and maintenance of the sediment removal facilities to ensure that the facilities are in normal function at all times

- It is recommended to provide chemical toilets and for collection of toilet wastes
- Cleaning of toilet wastes should be carried out regularly
- Proper installation of drainage structures
- Install cascades to break the impact of water flowing in the drains
- Ensure efficiency of drainage structures through proper design and maintenance
- Provide gratings to the drainage channels
- Undertake regular monitoring and testing of effluent to ensure compliance with national standards and regulations. If the effluent levels will be higher than the guidelines, adequate wastewater treatment plant should be designed and installed
- Design of sewage system should be sound in terms of adequacy, gradient materials and standards
- Regular emptying of the septic tanks
- Contact Muse Township municipal for final disposal of sewages sludge

6.2.1.3 Noise Management Plan

Objective

- To ensure to get maximum safe noise exposure level
- To facilitate for compliance with relevant government noise emission standards

Implement Schedule

- Throughout the construction phase

Responsible Person/Unit

- Contractor/ Environmental Officer to implement mitigation measures and management
- EMT to monitor and check the contractor's activities

Management Action

- Noisy construction activities will be carried during the daytime only
- Enclosure shall be provided
- Undertake proper maintenance of equipment
- Use of well-maintained equipment fitted with silencers
- Use of proper personal protective equipment

6.2.1.4 Solid Waste Management Plan

Objective

- To dispose solid waste generated in proper way to prevent from pollution of soil and water body

- ❖ To comply with government waste management policy

Implement Schedule

- ❖ Throughout the construction phase

Responsible Person/Unit

- ❖ Contractor/ Environmental Officer to implement mitigation measures and management
- ❖ EMT to monitor and check the contractor's activities

Management Action

- ➢ Proper segregation in collection of wastes
- ➢ Practice recycling of wastes
- ➢ Implement composting of wastes especially garden refuse and provide food wastes to nearby villages for animal fodder
- ➢ Contact Muse Township Municipal for proper disposal
- ➢ Clean around and spray insecticides when necessary
- ➢ Arrange awareness training programs for all personnel on how to handle solid wastes

6.2.1.5 Occupational Health and Safety Management Plan

Objective

- ❖ To ensure that adequate management plan of construction activities with necessary health and safety measures & procedures has been prepared
- ❖ To prevent impacts of the construction activities on health as well as to improve workplace condition & safe work system

Implement Schedule

- ❖ Throughout the construction phase

Responsible Person/Unit

- ❖ Contractor/ Environmental Officer to implement mitigation measures and management
- ❖ EMT to monitor and check the contractor's activities

Management Action

- ➢ The Contractor should regularly inspect, test and maintain all safety equipment (including firefighting equipment), scaffolds, guardrails, working platforms, hoists, ladders and other means of access, lifting, lighting, signing and guarding equipment.
- ➢ Generally good housekeeping - debris cleared away promptly, dust cleared regularly, etc.
- ➢ Staff wears strong safety shoes that have a good grip
- ➢ Good lighting in all areas

- Remind staff to clear up spillages of oil or paint immediately, even very minor spillages
- Fork-lift truck maintained and inspected as per lease contract
- Heavy vehicles operated only by staff who have been trained to use it
- Pedestrian walkways marked
- Only authorized people allowed in yard for deliveries/dispatch
- Ensure drivers get out of their vehicle and stand in a safe area while it is being loaded/unloaded

Air Pollution Affect

- Providing the PPE
- Water spraying to reducing the particulates matters
- Air Quality measuring
- Regular maintenance of vehicles and machines

Noise and Vibration Affect

- Providing the PPE
- Providing the shift working system for worker working near the noisy
- Noise and Vibration measuring
- Regular maintenance of vehicles and machines
- D.G set will be placed with the Sound proof wall
- Vibrated machines will be placed with solid concrete foundation

Protection the Working Area Accident

- Providing the first aid, medicines and training
- Providing the PPE and giving the PPE using training
- Assigning the Safety Officer who systematically implement OHS plan to protect the OHS for workers
- Providing the emergency contact phone number
- Designation the speed limit for vehicles and machines
- Installing the eyes washer for contacting the hazardous materials.
- Providing the safety sign and give training for the worker for understanding this sign purposes

Protecting Infectious Diseases

- Systematically cleaning for Toilets and septic tanks and regular disposing to City Development Committee
- Systematically disposing the food waste at designated area, designated waste disposal yard, covering the waste bin and regularly disposing City Development Committee
- Providing the dining area and give instruction to eat the designated area

- Providing the medical check-up and appropriate medicals for worker to protect infectious diseases Enforcement of Public health and safety regulations

6.2.1.6 Community Health and Safety Management Plan

Objective

- To ensure that adequate management plan of construction activities with necessary health and safety measures & procedures has been prepared
- To prevent impacts of the construction activities on health safety for local people near surrounding environment

Implement Schedule

- Throughout the construction phase

Responsible Person/Unit

- Contractor/ Environmental Officer to implement mitigation measures and management
- EMT to monitor and check the contractor's activities

Management Action

Air Pollution Affect

- Water spraying the project site
- Raw material transportation is systematically covering,
- Water spraying the vehicles wheel before leave from the project site
- Regular maintenance of vehicles and machines

Noise and Vibration Affect

- Avoiding the noisy work activities at night time
- Noise and Vibration measuring
- Regular maintenance of vehicles and machines
- D.G set will be placed with the Sound proof wall
- Vibrated machines will be placed with solid concrete foundation

Protection the Working Area Accident

- Providing the First Aid, medicines and training at villages
- Providing the emergency contact phone number at villages
- Designation the speed limit for vehicles and machines
- Inspection the driver license has or not and drivers are driving the car types according to their license's types.
- Avoiding transportation of construction and closing materials at the traffic peak hours and school starting and ending times

Protecting Infectious Diseases

- Systematically cleaning for Toilets and septic tanks and regular disposing to City Development Committee
- Avoiding the waste disposal at nearest villages waste disposal yard and regularly disposing City Development Committee
- Providing the dining area and give instruction to eat the designated area
- Providing the medical check-up and appropriate medicals for worker to protect infectious diseases

6.2.2 Sub-Management Plans during the Operation Phase

The project proponent will implement all mitigation measures as soon as practically. Based on the project activities and formulated mitigation measures of adverse environmental impacts, the project proponent will be implemented the following environmental management plans during the operation phase.

1. Air Pollution and Dust Management Plan
2. Wastewater and Drainage Management Plan
3. Solid Waste Management Plan
4. Energy and Resource Management Plan
5. Emergency Response and Disaster Management Plan

6.2.2.1 Air Pollution and Dust Management Plan

Objective

- To control emission pollutants generated from project activities
- To comply with NEQEG or other relevant guidelines or standards

Implement Schedule

- Throughout the operation phase

Responsible Person/Unit

- EMT/Environmental Officer

Management Action

- Spray water to reduce dust generation in outdoor area
- Do proper housekeeping to reduce the dispersion of the dust
- Provide good exhaust ventilation system in the process area to reduce heat and fugitive emission
- Provision of fuel and hazardous chemicals in a separate room with good ventilation system
- Turn off the machineries /engines while not in use
- Ensure of no leakage in sewage facility and timely disposal
- Do regular maintenance of the generators
- Install the stack for generators exhaust which is oriented away from people

- Provide dust mask to employee when necessary

6.2.2.2 Wastewater and Drainage Management Plan

Objective

- To protect water and soil pollution
- To prevent pollution underlying groundwater sources
- To comply with NEQEG or other relevant guidelines or standards

Implement Schedule

- Throughout the operation phase

Responsible Person/Unit

- EMT/Environmental Officer

Management Action

- Adequate arrangements for proper drainage
- Regular cleaning and maintenance of the sediment removal facilities to ensure that the facilities are in normal function at all times
- It is recommended to provide chemical toilets and for collection of toilet wastes
- Cleaning of toilet wastes should be carried out regularly
- Oil traps should be installed on drainage
- Drip trays should be used to collect oil leakage
- Undertake regular monitoring and testing of effluent to ensure compliance with national standards and regulations. If the effluent levels will be higher than the guidelines, adequate wastewater treatment plant should be designed and installed
- Design of sewage system should be sound in terms of adequacy, gradient materials and standards
- Regular emptying of the septic tanks
- Contact Muse Township municipal for final disposal of sewages sludge

6.2.2.3 Solid Waste Management Plan

Objective

- To dispose solid waste generated in proper way to prevent from pollution of soil and water body
- To comply with government waste management policy

Implement Schedule

- Throughout the operation phase

Responsible Person/Unit

- EMT/Environmental Officer

Management Action

- Begin by reviewing the types and quantities of waste produced and current disposal methods and costs
- Proper segregation in collection of wastes
- Develop solid waste management program around the three R's: Reduce, Reuse and Recycle

  REDUCE: Buy products in bulk and with less packaging, to reduce waste generation

  REUSE: Replace disposable items with reusable ones, such as rechargeable batteries, refillable soap and shampoo containers and cloth laundry bags
  Require vendors to take back pallets and crates

  RECYCLE: Separate waste at the source, rather than having to go through all the trash after it is collected. For example, provide containers for recyclables in guest rooms and compost bins in kitchen work areas
- Practice recycling of wastes
- Provide waste bins in key areas
- Implement composting of wastes especially garden refuse and provide food wastes to nearby villages for animal fodder
- Contact Muse Township Municipal for proper disposal
- Clean around and spray insecticides when necessary
- Arrange awareness training programs for all personnel on how to handle solid wastes

6.2.2.4 Energy and Resource Management Plan

Objective

- To minimize the usage of electricity, fuel and water
- Comply with standards of energy use

Implement Schedule

- Throughout the operation phase

Responsible Person/Unit

- EMT/Environmental Officer

Management Action

Energy and Resource Saving Target

- The company shall establish targets for electricity, water and fuel usage reduction rate for quarterly or yearly basis.

Electricity Usage

- Use energy efficient lamp and devices. Those costs more upfront but over the years it saves more money and energy
- Use maximum day light

- Educate employees regarding with the energy saving features of electrical appliances such as air conditioner, microwaves, fans, printers, computers and other devices to let them use these features to cut the energy usage
- Plant shady trees outside of the building to protect from hotness of the building inside
- Use variable speed drive motor where possible
- Turn off and unplug the equipment when not using

Water Usage

- Detect the leak and fix it immediately
- Use self-closing water taps
- Use eco flush toilets
- Use high pressure low volume nozzles on spray or washer
- Consider the rainwater harvesting for outdoor cleaning and some minor use
- Measure the water consumption. Monitor monthly water usage to identify the peak month
- Educate the employees to use water wisely

Fuel Usage

- Carry out regular maintenance of generator and vehicle to keep at optimum fuel consumption
- Vehicle trip schedule can be controlled for efficient use to reduce fuel consumption (e.g., combining trips of convenient direction)

Energy Management

Monitor regularly energy consumption

- Check the electricity meters at least once a month
- Install meters in each department to monitor energy consumption
- Monitor hot water consumption as much as possible
- Calculate the energy consumption costs for the hotel and departments
- Determine which areas consume the most energy

Improve the lighting system

- Investigate the use of hotel lighting and observe how long the various lights are switched on each day
- Use energy-saving bulbs, especially in high consumption areas (a traditional bulb consumes 60 W, an equivalent energy-saving one 11 W)
- Install timers and movement detectors to reduce lighting time in selected locations (bathrooms, hallways, parking lots, etc.)

Reduce energy consumption

- Code the light switches (using labels or a color code) so that you can switch on only those lights that you need
- Reduce general lighting during daytime and make sure that exterior lighting is switched on only at night (you can use photoelectric cells for example)
- Operate machines according to the manufacturers' recommendations for better energy efficiency
- Choose high performance insulation systems to minimize heat losses and gains
- Reduce the number of lifts that are operated during off-peak hours
- Train the staff to do the right things, and invite guests to get involved
- Repair or replace faulty equipment with more efficient and economic alternatives
- Use solar panels to heat water for the guest rooms (saving 40% on the energy costs of the hotel)

Minimize energy losses

- Organize preventive maintenance of the electric network and equipment, including heating and air conditioning equipment
- Check the insulation on hot water pipes to reduce heat losses
- Install double glazed windows
- Shade windows from the sun to limit air conditioning needs (by means of awnings, curtains, blinds, screens, heat reflecting sheets, etc.)
- When renovating, install revolving doors to limit drafts

Recover energy

- Recover the heat generated by the refrigeration units in order to heat the water for guest rooms or the laundry
- Install closed loops to recover and reuse steam

Kitchen

- Avoid turning on kitchen equipment without thinking when arriving in the morning (break the habit)
- Think about the temperature of kitchen rooms when installing or relocating refrigerators and freezers (an extra 5°C increase in room temperature results in a 30% increase in energy consumption for a refrigerator)
- Switch off equipment when it is not required (especially after busy periods)
- Do not exceed preheating times
- Use cooking pots whose diameters are compatible with the cookers or burners

- Cover pots as they are cooking (to boil 1 liter of water in a covered pot requires about 25% of the energy needed if the pot is uncovered)
- Invest in high-performance cooking units when replacing equipment
- Open refrigerators and freezers only when necessary
- Defrost refrigerators and clean the door seals monthly

Laundry

- Fill washing machines to their maximum capacity
- Use low temperature washing program
- Choose washing machines that offer high spinning speeds in order to limit drying time
- Avoid overloading the dryer and thereby increasing drying time
- Plan the washing so that the dryers are continuously in use, thereby preventing heat loss
- Plan to use the equipment during periods of low consumption (off-peak hours)
- Allow food to cool down before placing it into a refrigerator or freezer
- Install plastic curtains outside refrigerators or freezers to retain cold air
- Regulate water temperature according to kitchen and cleaning needs
- Do not wash dishes under running water (fill the sink instead). Operate dishwashers only when full

Room service, accommodation

- Turn off air conditioning and set heating at minimum in unoccupied rooms
- Choose thermostats that allow you to program maximum and minimum temperatures (and so prevent guests excessively heating or cooling their rooms)
- Make sure the lights are switched off in unoccupied rooms (magnetic cards automatically turn off the room's power when the guest leaves the room)
- Do not leave television sets on standby (a single television set on standby can consume 193 kWh in one year)
- Make sure that the refrigerators (mini-bars) consume less than 1 kWh/day and that they are switched off in rooms that are unoccupied for three or more consecutive days
- While cleaning, do not air rooms for more than 15-20 minutes in order to avoid wasting energy on heating or cooling
- Install an air conditioning system that automatically switches off when the windows are open
- Clean and change the air conditioner filters regularly

Administration

- Avoid leaving computers switched on when taking breaks longer than 30 minutes (on standby, a computer consumes 95 W)
- Switch off equipment when not in use (a copying machine on standby can consume up to 80% of the energy it uses in working mode)
- Use natural light rather than artificial lighting as much as possible
- Rearrange the workplace to make optimal use of natural light
- Avoid leaving doors and windows open to minimize energy consumption for heating or air conditioning
- Switch off the coffee machine after each use (a coffee machine that is left switched on the whole day consumes as much energy as it uses to make 12 cups of coffee)

Pool

- Retain the pool's heat by covering it with a thermal cover at night
- Keep the water temperature at 24°C (increasing the temperature by two degrees can consume up to 25% more energy)
- Limit the pool lighting that is not necessary for the users' safety
- Make sure that the pool's thermostat is in working order

Water Management

Monitor the hotel's water consumption

- Install water meters in each department
- Determine the monthly water consumption and its cost
- Identify activities and areas that cause high consumption

Minimize wastage of water

- Install water-saving devices in the appropriate places (flow regulators, water flow sensors, self-closing taps, low-flush toilets, etc.)
- Avoid leaving taps open unnecessarily
- Avoid cleaning with high pressure hoses

Eliminate leaks

- Regularly maintain plumbing fixtures and piping in order to avoid losses
- Replace defective seals and repair damage to water pipes

Kitchen

- Adjust the water flow according to the type of cleaning to be done
- Do not let water flow while cleaning or rinsing
- Soak the dirty dishes before placing them in the dishwasher in order to shorten the prewash

- Fill dishwashers to their maximum capacity in order to minimize the number of cycles
- Do not defrost food in water, but leave it to defrost in the air

Laundry

- Sort the laundry according to the degree of soiling, so that only the dirtiest items are washed intensively
- Use the washing machines in "full load" mode in order to limit the number of wash cycles
- Eliminate the prewash (allowing a 25% reduction in water consumption) and use water-saving wash cycles
- If possible, wash towels and linen at the request of guests rather than every day
- Reduce water pollution by using less polluting detergents (phosphate free, whitener-free, etc.)
- Check the laundry room's equipment regularly to avoid leaks
- If possible, recover the rinse water from relatively unsoiled loads for the next cycle's prewash and wash

Room service, accommodation

- Install flow regulators on the showerheads in order to decrease consumption from 20 to 12 liters/minute (40% saving)
- Install timed (self-closing) faucets so that they do not keep running for a long time if left open inadvertently
- Choose water saving toilets that use 6 litres for each flush (more than 30% of a hotel's total water consumption can be saved this way) or with a dual flush mechanism (offering a choice of half- or full-cistern flushes)
- Invite – as far as possible – the guests to reuse the towels and bed-linen (70% of guests readily agree to this)
- Train the staff to respect the instructions concerning the reuse of towels and bed-linen

Pool

- Cover the pool outside of the opening hours so that the water does not evaporate or get dirty
- Reduce the use of chlorine in the water and /or choose other treatment systems (ozone, electrolysis, salt, etc.)
- Reuse the pool's water to wash the floor

Gardens

- Choose plants that are suited to the climate and rainfall
- Avoid flower beds that quickly dry up

- Water lawns early in the morning and late at night to limit evaporation
- Install automatic sprinkler systems and localized devices (micro-sprinklers, drip irrigation systems for roots, etc.)
- Lay out slopes so that water infiltrates the ground without causing erosion
- Reuse the water that was used in the kitchen to wash fruits and vegetables for watering the garden
- Collect rainwater for watering the lawns

6.2.2.5 Emergency Response and Disaster Management Plan

Objective

- To reduce the risk of accidents at the hotel area

Implement Schedule

- Throughout the operation phase

Responsible Person/Unit

- EMT/Environmental Officer

Management Action

- The hotel management has taken proper measures to handle any emergency like fire, earthquake, flood, etc.
- Provision and inspection of firefighting equipment and fire hydrant system in all the sections
- A detail evacuation plan (fire exit, emergency exit door etc.) is established and communicated with workers
- Periodic inspection of generator and equipment preventive maintenance; aware the workers about electric shock by necessary training
- Regular fire drill operation is conducted
- Workers are informed about what to do in earthquake like stay in a safe palace such as under table, desk during earthquake, workers who will be outside during earthquake shall remain stay out of the building, trees, lamp post etc. Other relevant safety instruction of emergency situation is informed to workers by training
- A medical team has been prepared for primary treatment
- Prepare and emergency contact directory consisting contact numbers of nearest fire service, local police station, hospitals, etc., & display it in a place that everybody can see it
- Declaring the hotel as a "no smoking zone"
- When plant runs at abnormal situation e.g., if emission level increases than its normal level then immediately inform to hotel manager / EHS officer as well as production supervisor

- If any emergency situation arises then assigned person will turn on the emergency alarm to make the workers alert
- Build a safety committee which from firefighting team, rescue team. The committee arrangement a meeting every month to discuss about safety management.
- Ensure proper training of the employees about the disaster management, fire safety as well as occupational health & safety.

6.2.3 Estimated Budget for Environmental Management Plan

The estimated overall budget for implementation of the EMP includes mitigation measures, training, monitoring plan and subject management plans. The estimated budget for each of subject management plans will be allocated as the following

tables.

Table 6-2 Budget Allocations for Sub-plans during the Construction Phase

Sub-plans	Estimated Budget/year (kyats)
Air Pollution and Dust Management Plan	9,000,000
Wastewater and Drainage Management Plan	2,400,000
Noise Management Plan	10,000,000
Solid Waste Management Plan	2,500,000
Occupational Health and Safety Management Plan	10,000,000
Community Health and Safety Management Plan	5,000,000

Table 6-3 Budget Allocations for Sub-plans during the Operation Phase

Sub-plans	Estimated Budget/year (kyats)
Air Pollution and Dust Management Plan	9,000,000
Wastewater and Drainage Management Plan	2,400,000
Solid Waste Management Plan	2,500,000
Energy and Resource Management Plan	10,000,000
Emergency Response and Disaster Management Plan	2,000,000

6.3 Best Environmental Management Scheme

Table 6-4 Environmental Management Scheme

Sr. No.	Issues	Tasks	Target Completion Date
1.	Renewable Energy	➢ Investigate the use of a central solar power system for the supply of electricity for outdoors /indoors lighting	Final project appraisal by promoters
2.	Energy Management	➢ Incorporate energy saving equipment in the project. Install heat recovery on the chillers and heat pumps for hot water supply	Incorporate energy saving equipment in the project. Install heat recovery on the chillers and heat

Sr. No.	Issues	Tasks	Target Completion Date
			pumps for hot water supply
3.	Solid Waste Management	➢ Implementation of a solid waste separation will entail the sorting out of different waste fractions for recycling purposes. Contract agreements should be formalized with different waste recyclers similar to composting.	Before start of operation
4.	Wastewater Management	➢ Wastewater treatment plant is installed already to ensure that project effluent conforms to effluent quality as identified in the EIA report and in conformity to environmental standards.	During hotel operation
5.	Standby Generator Flue Gas Emissions	➢ Install chimney for disposal of gaseous emissions ➢ Install gas filters to remove any Particulate Matter from gaseous emissions before release to atmosphere ➢ Install noise attenuation canopy on the generator set ➢ Verify that the room for the standby generators is sound proof ➢ Adopt anti-vibration mounts, sound deadening casings and silencer for noisy machinery such as standby generator	Before start of hotel operation
6.	Noise	➢ Adopt anti-vibration mounts, sound deadening casings and silencer for noisy machinery such as standby generator	Before start of hotel operation
7.	Diesel Storage	➢ Construct diesel storage tanks with high quality welds, high tensile bolts, impervious fire screens and bunded area equivalent to 110 % capacity of storage tanks ➢ Provide sprinklers, fire hose, emergency isolating valve and automatic shut-off valves ➢ Provide automatic pressure monitoring alarms and control, leakage detection and alarm	Before first diesel loading
8.	Chemical Management	➢ Develop a chemical management program incorporating a hazardous risk management plan in conformity with local regulations and international guidelines	Before first delivery of chemicals

Sr. No.	Issues	Tasks	Target Completion Date
9.	Safety	➢ Develop emergency response plan, incorporating guidance for communication with local authorities	Before start of hotel operation
10.	Visual impact	➢ A tree preservation plan to be developed before construction work begins.	Before start of hotel construction works
11.	Environmental Management	➢ Establish environmental management unit	Before start of hotel operation
12.	Environmental Monitoring	➢ Commission on site laboratory unit equipped with all testing equipment for chemical physical and bacteriological quality for the potable water storage and distribution network and wastewater treatment plant	Before start hotel operation

6.4 Purchasing Management

Issue
Hotels purchase vast quantities of products, including cleaning and laundry supplies, food and beverages, equipment, vehicles, office supplies, furniture, bedding and toiletries for guest bathrooms. These products can have negative environmental impacts through their manufacture, distribution, use and disposal. Products can also have negative social impacts if they are produced using unfair labor practices. By working with suppliers and service contractors, hotels and hotel associations are in a position to promote environmental and social improvements in manufacturing and production. Product purchasing decisions also impact the levels of waste produced by a hotel, as well as the potential for local air, water or soil pollution generated through the use or disposal of these products.
Need to control
• Purchasing materials with a minimal environmental impact from manufacturing, use and disposal can maintain the quality of tourism resources by reducing the potential for air, water and soil pollution. • Buying products made with less packaging or materials can lower waste disposal costs. • Purchasing environmentally and socially benign products can enhance reputation among guests and others who are concerned about wasteful or harmful product use. • Buying local, sustainable products can reduce waste and improve relationships with local communities by increasing tourism-generated income in the wider community.
Management Plan
• When possible, purchase products that are certified for their environmental quality • When possible, buy fair trade products • Take an active role in influencing and working with suppliers. Environmentally friendly products cannot always be identified with eco-labels. Working with suppliers will also help to identify environmental issues and the best available products

- Where possible, require suppliers to have and adhere to an environmental policy and fair labor practices
- Ensure that on-site vendors use environmentally and socially sound practices
- Provide guests with information on locally produced alternatives to imported goods, such as bottled water, as well as a list of local products to avoid souvenirs made from endangered species
- Buy paper products that have a high post-consumer recycled content and are not chlorine bleached
- When feasible, buy products for which a recycling market already exists
- Buy products in bulk and with less packaging, to reduce packaging, storage, transport and disposal costs
- Buy local products and materials that require less transport, packaging and storage and may enhance community relationships and goodwill

Good Practices

- Prefer, whenever possible, products that are recycled, reusable, repairable, biodegradable, recyclable, fair trade and/or eco-labelled (such products should not be imported or transported over long distances, otherwise their ecological advantages will be lessened)
- Use the hotel's products and equipment in a rational way
- When purchasing new equipment, take their water and energy consumption into consideration
- Prefer products with little packaging and that use single-material packaging (homogenous and polystyrene-free)

6.5 Occupational Health and Safety Issues

6.5.1 Introduction

Hotels employ a variety of staff including room attendants, bellmen, front desk personnel, chefs, waiters, laundry operators, banquet servers, engineering/ maintenance crew and so on. They can be exposed to variety of hazards at work depending on the nature of their job.

They may be exposed to the risk of musculoskeletal disorders and injuries and to health hazards such as chemicals, noise and thermal stress. There is also the risk of accidents from slips, trips, knocks and falls, cuts, burns and scalds, electrocution, and fire and explosion.

Occupational accidents and diseases can result in suffering, sickness, productivity loss, disability or even death. All these undesirable results can be prevented by implementing the OSH Management System.

The common workplace hazards and their preventive measures, the principles and elements of safety and health management programs in OSH System can help greatly to establish a safe and healthy working environment in the hotel.

The good safety record will give the better image for the hotel.

6.5.2 OSH Management System

Hotel should establish OSH Management Organization and program.

6.5.2.1 Outline of the System

(1) OSH Policy: State overall safety & health goals and commitment.

(2) Planning: Identify potential hazards, perform hazard analyzing, determine safety requirements, establish operational controls & safe work practices.

(3) Implementation: Implement the planning objectives and practices in the organization.

(4) Checking & Corrective Action: Monitoring system on the outcome of the system.

(5) Management Review: Organize the OSH meeting regularly for the continuous improvement.

6.5.2.2 OSH Safety Policy and Organization

The management's commitment is important to ensure the success of the safety and health program. The policy should be written and endorsed by the top management and communicated to all levels of staff, including contractors.

6.5.2.3 Responsibilities

The employer has a duty to ensure the safety and health of their staff and should take the lead in promoting safety and health in the hotel.

The employees should understand that safety and health is not just the responsibility of the employer, but they also have to cooperate.

6.5.2.4 Hazard Analysis

A hazard is a potential source of harm or adverse health effect on a person. Risk is the likelihood that a person may be harm if exposed to a hazard.

It is a good practice to establish systematic procedures for the identification, evaluation and control of both existing and potential hazards in the workplace. The steps in hazard analysis exercise should summaries as below:

(1) Select activities and equipment for analysis

(2) Identify the hazards involved

(3) Evaluate the hazards and risk involved

(4) Implement measures to control the hazards

(5) Evaluate effectiveness of control measures and record findings

6.5.2.5 Safe Work Procedures

Employers are encouraged to establish safe work procedures for the various types of work. Safe work procedure should be effectively communicated to all staff to follow.

6.5.2.6 Group Meetings

Group meeting should be conducted regularly to discuss safety and health issues and disseminate safety and health information to staff. Daily briefs and de-briefs (toolbox meeting) can serve as effective channels for conveying the messages.

6.5.2.7 Accident, Incident and Disease Investigation, and Analysis

Every work related to accident, incident or disease should be report in systematic way. Every accident, incident or disease occurring at work place should be investigated in order to identify the root causes and prevent similar occurrences in the future.

6.5.2.8 Safety Inspection

It is important to establish an effective program to carry out periodic inspection to identify potential hazards, unsafe acts and conditions. The finding should be recorded and analyzed.

6.5.2.9 Maintenance Program

An effective maintenance program should be established for all equipment, machinery and tools used. Inspection and maintenance should be scheduled and recorded. There should be a system for staff to report of any defective or damaged tool or equipment.

6.5.2.10 Emergency Preparedness

An emergency response plan and emergency response team should be established with the duties and responsibilities of each member clearly defined. Management should ensure that all staffs are familiar with the plan and procedures. Regular drills and exercises should be conducted. The plan can be improved by the lessons learnt from the drills.

6.5.2.11 Documentation and Review

There should be a system for the documentation and regular review of the program. That will help the program is remain relevant and effective. Recommendations that result from such reviews should be considered and implemented.

6.6 Social Environmental Aspect

The following facts will be beneficial for the social environmental aspect.

- The proposed project on implementation will generate direct employment opportunities.
- The project proponent is a Private Hotel, which is owned by New Starlight Construction Company Limited, hence the tax revenue for proposed project will be directly paid to the Government.
- Activities such as funding primary school, health care and religious affairs, etc. will be implemented.

- Project proponent is already engaged with many activities under various sectors such as public health educational, cultural as well as welfare activities.

6.7 Social Acceptability

6.7.1 Code of Labor Practices

For social acceptability, it is essential to comply with the following Code of Labor Practices:

I. Employment is freely chosen

a) There must be no use of forced labor.

II. There is no discrimination in employment

a) The employer must treat all employees equally, regardless of their race, color, gender, religion, political affiliation, party membership, nationality, social origin, deficiencies or disabilities.

III. No exploitation of child labor

a) There must be no use of child labor.

b) Prospective employees may not be employed before they have reached the age of completion of compulsory schooling and on no account may they be employed under the age of 15.

c) Young people between the age of 15 and 18 must not perform work which can harm their health or safety. For example, they are not permitted to perform work at night or work excessive hours.

IV. Freedom of association and the right to collective bargaining

a) The employees have the right to negotiate with their employer as a group (collective bargaining).

b) The employer must not punish employees who express their opinion and wishes.

c) Workers' representatives shall not be discriminated against and shall have access to all workplaces necessary to carry out their representation functions.

V. Payment of a living wage

a) The wages must at least meet the legal minimum (if this has been defined).

b) The wages for a normal working week should always be sufficient to meet the basic needs of workers and their families and provide some discretionary income.

c) Deductions from wages shall not be permitted, which are not provided for by national law.

d) Employees shall be adequately and clearly informed about the specifications of their wages, including wage rates, payment periods and wage deductions. They shall receive a pay slip that contains this information.

VI. No excessive working hours

a) Hours of work shall comply with applicable laws.

b) In any event, workers shall not be required on a regular basis to work in excess of 48 hours per week and shall be provided with at least one day off for every seven-day period.

c) Overtime shall be voluntary and the total working hours per week, including overtime, shall not exceed 60 hours.

d) Overtime shall not be required on a regular basis and must always be compensated at a premium rate, in accordance with the legal requirements.

VII. Safe and healthy working conditions

a) The employer must provide a safe and hygienic working environment.

b) The employer shall provide protective equipment, where necessary, and train the employees in how they are used.

c) The employer shall furthermore take measures to prevent accidents and health risks.

d) Physical abuse, threats of physical abuse, unusual punishments or discipline, sexual and other harassment, and intimidation by the employer is strictly prohibited.

VIII. Legally binding employment relationship

a) Each employee shall receive a written employment contract and all labor law and social security obligations to employees shall be assumed.

6.8 IBIS Styles Hotel Project's Commitment

New Starlight Construction Company Limited has committed as follow.

1. Comply with all mitigation/enhancement measures identified in this ESIA
2. Designate a Pollution Control Officer (PCO) to handle the environmental management programs;
3. Submit regular environmental monitoring reports;
4. Construct, maintain and properly operate adequate and appropriate septic tank and/or wastewater treatment facility for liquid wastes;
5. Maintain the cleanliness of the general surroundings;
6. Participate or contribute towards a communal cleaning effort;
7. Strictly implement a contingency management plan and safety program;
8. Organize and conduct information, education and communication (IEC) activities on environmental, health and other civic issues.

6.9 Grievance Redress Mechanism (GRM)

People who lived near the project affected area or stakeholders can complain about the problems and impacts that they suffer: they can complain though Grievance Committee, which include the responsible persons of New Starlight Construction Co., Ltd., representative from MCBD, and representative from General Administration Department (Muse Township). Small

issues will be solved at the Grievance Committee stage and other unsolved problems will be submitted to higher responsible authorities and finally the responsible person decided by the court in legal terms. The following diagram show steps of Grievance Redress Mechanism of **IBIS Styles Hotel Project**. That grievance mechanism shall be provided at IBIS Styles Hotel, MCBD's office and GAD office at Muse Township.

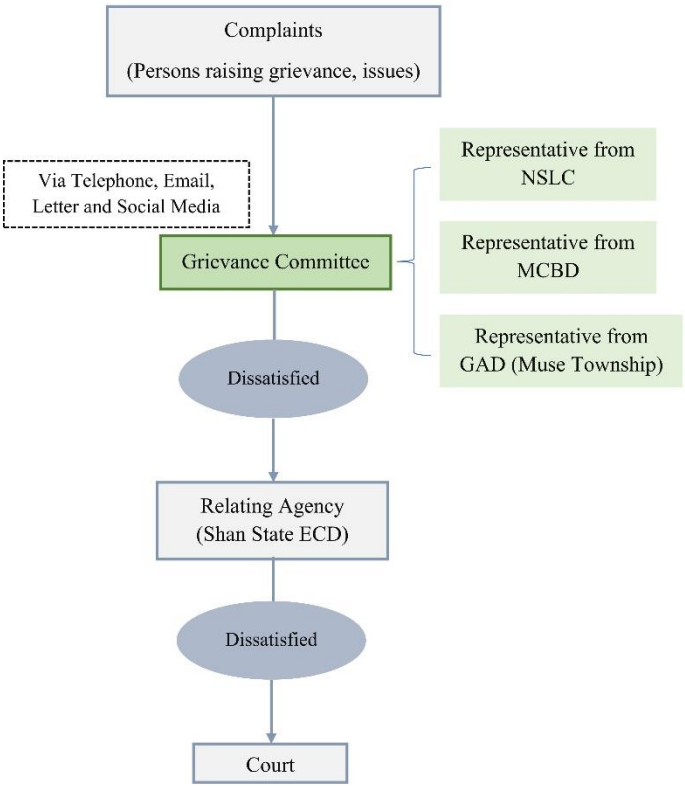


Figure 6-2 Grievance Redress Mechanism (GRM) of the Proposed Project

6.10 Corporate Social Responsibility (CSR) Program

New Starlight Construction Company Limited will have a CSR budget. The following are designed to be used for local development activities in terms of local development activities depending on the demands of the locals.

Table 6-5 CSR Budget

Sr. No.	Activities	Proposed allocated per cent of CSR budget	Public Needs according to Primary Data Collection
1.	Private health clinics for nearest villages	30%	Yes
2.	Donation to waste collection system	15%	Yes
3.	Construction of roads and drainage	20%	Yes
4.	Donation to schools	20%	Yes
5.	Donation to monasteries	15%	Yes
	Total	**100%**	

According to the public needs of the primary data collection, New Starlight Construction Company Limited will donate 15% of the CSR budget for community waste collection system. They will provide the waste bins in the appropriate places, transportation and waste disposal charges as necessary. The aim is to raise to awareness on the importance of proper waste management for a better environment and sustainable development, and to motivate all concerned to take collective actions on proper waste management, and to transport the waste to the designated waste pin in Muse.

6.11 Social Welfare Program

New Starlight Construction plans to provide the following facilities.

1. Library to improve the knowledge of the workers
2. Health care facilities and a clinic
3. Green belt development for better aesthetic environment
4. Children Day-care Center and Education foundation

6.12 Training and Education Program

Due to the nature of the business, Best Management Practices (BMP) structures are in constant need of repair, replacement, inspection and clean up. Employees must be aware of the purpose of BMP procedures or structures and how they should be implemented or maintained. To have educated and trained employees who are familiar with BMPs for the facility and understand the purpose of BMPs and prevention of pollution.

- Management should provide all employees with regularly scheduled Best
- Management Practices seminars and discussions relating to pollutants and pollution prevention.
- The training should emphasize procedures, BMP techniques and supervisory responsibility and accountability.
- Subcontracting firms should be strongly encouraged to participate in the BMP training program.
- New employees should be made aware of BMPs on the first day of work and be regularly reminded of them.

Table 6-6 Operation Phase Training Plan

Sr. No.	Training	Frequency	Remark
1.	First Aid Training	Once a year	Outside trainer
2.	Safety Awareness and General Safety Rules Training ❖ Safe handling of solid waste ❖ Electrical safety ❖ Fire safety	Once a year	Outside trainer
3.	Emergency Response Training	Once a year	Outside trainer
4.	Fire Drill	3 times a year	Internal

5.	Fire Fighting Training	Twice a year	Outside trainer

7.0 ENVIRONMENTAL MONITORING PLAN

To check the effectiveness of mitigation measures as proposed, a detail environmental monitoring plan shall be implemented both during the construction and operation stages of the project. There shall be a Project Implementation Unit (PIU) and it will be the responsibility of PIU to implement such monitoring program. Such monitoring activities will help the PIU to maintain the quality of environment through adequate checking and control of mitigation measures and environmental infrastructures.

7.1 Management System

A management system needs to be put in place to monitor potential impacts during construction, operation, and if applicable, after decommissioning.

There shall be monitoring program both for the construction and operation stages of the project.

7.2 Purpose of a Monitoring System

The purpose of monitoring is to ensure the condition and operation of the facilities against the set management objectives for each facility and the goals should therefore be quantifiable.

The objectives for IBIS Styles Hotel monitoring system could be as follows:

- To provide meaningful and accurate information on the ecological changes and visual impact that may occur around the hotel
- To identify casual factors where measurements do not comply with the management goals
- To obtain information which would enable technical decisions on needed actions, such as where the wastewater treatment plant function properly, or to make strategic decisions such as to limit visitor numbers

Therefore, a dual-monitoring system is recommended because managers and users rate the facilities differently. Top-down monitoring is the periodical monitoring by an official group or person. Bottom-up monitoring is the informal monitoring of lodge and is usually complaint based.

7.3 Environmental Monitoring Plan

Monitoring is an essential and an integral part of the implementation of the proposed environmental mitigation measures. Environmental monitoring generates useful information and improves the quality of implementation of mitigation measures.

Monitoring involves the observation, review and assessment of onsite activities to ensure adherence to regulatory standards and the recommendations made to reduce negative impacts. The plan must be comprehensive and address relevant issues, with a reporting component that will be made available to the regulatory agencies based on a mutually agreed frequency. It is recommended that a minimum yearly monitoring report be submitted to the authorities. The monitoring report will include at a minimum:

- Raw data collected

- Tables/graphs (where appropriate)
- Discussion of results with respect to the development in progress, highlighting parameters which exceed standards
- Recommendations

According to the section 108 of EIA Procedure, the project proponent will submit the Monitoring Report prescribed in the schedule of the EIA report to the Ministry every (6) month or as may be prescribed by the Ministry.

Table 7-1 Details of Environmental Quality Monitoring Plan for the Operation Phase

Environmental Issues	Parameters	Monitoring Frequency	Responsibilities	Location	Estimated Cost
Air Quality	Ambient air quality (Including NO_2, SO_2, PM_{10}, $PM_{2.5}$ and O_3)	Twice a year	EMC	Within the hotel compound and the same baseline location	5,400,000
	Indoor air quality (PM_{10}, $PM_{2.5}$ and VOC)	Twice a year	EMC	Workplace	1,120,000
	Stack emission of generator (CO_2, O_2, CO, NO_2, SO_2, ΔT and PI)	Twice a year	EMC	Generator room	400,000
Noise Level	Ambient noise level of day-time and night-time	Twice a year	EMC	Within the hotel compound and the same baseline location	900,000
	Indoor noise level (Noise level in decibel)	Twice a year	EMC	Workplace	1,120,000
Water Quality	Ground water quality (Including copper, cyanide, manganese, pH, sulfate, total alkalinity as $CaCO_3$, TDS, total hardness as	Twice a year	EMC	Tube well water	300,000

Environmental Issues	Parameters	Monitoring Frequency	Responsibilities	Location	Estimated Cost
	$CaCO_3$, total iron, turbidity)				
	Surface Water Quality (Including BOD_5, COD, nickel, pH, temperature and TSS)	Twice a year	EMC	Same baseline location	1,200,000
	Wastewater quality (Including copper, cyanide, oil & grease, pH, total nitrogen, total phosphorus and TSS)	Twice a year	EMC	Drain inside the hotel and hotel final discharged point and the same baseline location	2,000,000
Soil Quality	Soil quality (Including aluminum, arsenic, chloride, copper, cyanide, extractable acidity, P-alkalinity, pH, total alkalinity and total iron)	Once a year	EMC	Same baseline location	400,000

The annual total estimated cost of the environmental monitoring for the operational phase is 12,840,000 MMK.

Table 7-2 Compliance Monitoring Plan

Environmental Issues	Implementation	Monitoring Frequency	Responsibilities	Location
Waste Management	Separate bins for different kinds of waste	Daily	Environmental officer	Hotel compound
	Set quantified waste reduction and disposal targets (in volume, weight or costs)	As necessary	Environmental officer	Hotel compound
Energy Consumption	Record diesel consumption	Monthly	Environmental officer and EMT	Generator
	Record electricity usage	Monthly	Environmental officer and EMT	Electric meter

Environmental Issues	Implementation	Monitoring Frequency	Responsibilities	Location
Emergency Response Equipment	Firefighting equipment such as extinguisher, fire hydrants, fire hose, etc.	Weekly	Fire brigade	Hotel compound
	Fire-drill testing	Monthly	Fire brigade	Hotel compound
	Servicing firefighting equipment	Quarterly	Fire brigade	All equipment
	Reviewing records of accidents which is recorded on & around the entire facility	Quarterly	Fire brigade	-
Resources Usage	Power off the unused equipment	Daily	In-charge in each section	Power distribution panel
	All water taps shut when not in used	Daily	For all workers	All water taps
Public Health and Occupational Safety	Special attention should be paid to the sanitary facilities that should be kept clean and well lit.	Weekly	EMT	Hotel compound
	Ensure proper solid waste disposal and collection facilities	Daily	EMT	Hotel compound
	Provide first aid kits on the site. Educate stakeholders/workers on environmental management.	Daily	EMT	Hotel compound
	Workers should be trained on occupational health & safety and first-aid administration	As necessary	EMT	Hotel compound
Security	Security men should always be available to alleviate cases of harassments and other related incidences on site.	Daily	Security (In-charge)	Hotel compound
	Installation of security lighting especially at the site	Daily	Security (On-duty)	Hotel compound

7.4 Fire Safety and Emergency Plan

7.4.1 An Overview of Hotel Fire Safety

The amount and type of fire safety equipment in a hotel varies by the size of the building, its height and age. Many high-rise hotels are protected with fire sprinklers, regardless of height.

New hotels are more likely to have what we consider high-quality fire protection, that is, fire sprinklers in every guest room as well as detection and alarm systems. Some fire safety equipment is obvious, even to people who are not trained in fire safety. Examples are fire sprinklers and smoke alarms. Other items may not be obvious because laymen do not associate them with fire safety. In fact, most people drastically underestimate how quickly they can become deadly.

Another factor that increases the consequences of hotel fires is that hotels contain large numbers of people who are unfamiliar with the building and may be sleeping when a fire occurs. The history of hotel fires bears out the consequences of these factors.

TIM

It is an acronym for three important items: Testing, Inspection and Maintenance. Fire safety equipment that is present may be of no use if it is not regularly tested, inspected and maintained by qualified technicians. There are nationally recognized standards that dictate how often TIM should occur for sprinklers and other fire safety equipment. Hotels with high-quality fire protection will have records of TIM.

Fire investigations abound with reports of equipment that did not operate or was improperly adjusted, and that is why we refer to TIM throughout. Travelers may be fortunate enough to stay in a brand-new hotel from time to time, but this is the exception to the rule. We are more likely to stay in buildings that are several generations old, with fire safety equipment that is as old as the building. The importance of TIM cannot be understated, and any hotel that does not adequately document TIM is neglecting its fire safety responsibilities.

7.4.2 Components of a Hotel Fire Safety System

The components of a hotel fire safety system include the following items:

- Fire sprinklers
- Smoke and fire detectors
- Duct Smoke Detectors
- Automatic alarm systems
- Connection between Air handling units and alarm systems
- Manual alarm systems (the pull-boxes near stairway doors and elevators)
- Fire department standpipes (the things that you see in stairways)
- Emergency lights
- The emergency egress system

- Fire Resistivity of Construction
- Exits & Exit signs
- Pressurized stairways
- Smoke control systems
- Portable fire extinguishers
- Staff emergency response plans
- Staff training
- Gas Supply Shut-off Devices
- Fire Alarm System Required Hotels/Motels
- High Rise Buildings

A hotel's fire safety system is a complex set of critical items that are all interrelated. Testing, inspection and maintenance by qualified technicians is also important because the failure of one part of the system can affect the ability of the other parts to work effectively. When a fire occurs, it is too late to find the problems.

Fire sprinklers are the most reliable part of a building's fire safety system for saving lives and property. It is for these reasons that sprinklers are the fundamental criterion for a quality hotel fire safety system.

7.4.2.1 Fire Sprinklers

Fire sprinklers are fundamental to hotel fire safety. A basic criterion for hotel fire safety is a fire sprinkler system with sprinklers in every room, installed in compliance with nationally recognized standards and then maintained by qualified technicians. Sprinklers are designed to stop a fire when it is small, and they have a superior track record in saving lives and property.

Value of Fire Sprinklers

If a fire can be stopped before it grows, it cannot develop a lot of smoke, which is the biggest killer in fires. Smoke alarms are great and we look for them as well as sprinklers. But smoke alarms can only alert people to a fire, and fires can grow so quickly that they can kill before people can escape. A sprinkler will not only alert people to the fire (when a sprinkler opens, the water flowing through the system triggers an alarm), but it also opens very quickly and stops the fire. A fire that is quickly stopped cannot produce smoke and the carbon monoxide it carries.

Fire sprinklers are designed to operate when a fire is small and stop it before it grows to a stage known as flashover. At the flashover stage, the fire travels from the room of origin with a large burst of energy, pushing great amounts of heat and smoke to the rest of the building. Sprinklers are spaced so that they can stop a fire with a relatively small amount of water. In nearly all cases only one sprinkler opens.

Travelers need to be aware that some hotels have installed sprinklers in "common areas", such as corridors, restaurants, lobbies, etc., but not in the guest

rooms. If a hotel does not have sprinklers in every room then it does not meet our criteria for hotel fire safety. The reason for this is simple. If sprinklers are not installed in every room, a fire can grow to deadly proportions before the sprinklers outside the room stop its progress. A sprinkler located outside a burning room cannot stop the smoke that is being produced in the room, and this is a bigger threat to people than the flames.

7.4.2.2 Smoke Detection and Alarms

A system of interconnected smoke detectors should be installed, with units in every room including common areas and all non-guest rooms. The alarm system will alert guests who are at risk. It is also important that the alarm system be monitored off-site by a qualified organization. Some alarm systems are connected directly to the fire department.

Equally important is documentation on TIM. Modern fire alarm systems can be very complex, especially in high-rise buildings. They need regular attention by qualified technicians.

7.4.2.3 Duct Smoke Detectors

All air handling duct system must be equipped with duct type some alarms.

7.4.2.4 Connection between Air Handling Units and Alarm Systems

All the air handling units must be programmed due to fire alarm. They must be stopped whenever a fire alarm actuates. All the duct systems must include fire stopping dampers.

7.4.2.5 Standpipes

A fire department standpipe is a large pipe with a hose connection on it at a hotel stairway on each floor. They are installed in hotels, at least those higher than three stories, so that the firefighters can hook up their hose near the fire. This reduces the amount of hose that they need to carry up the stairs, which reduces the time it takes to set up and attack the fire.

7.4.2.6 Emergency Lighting

A fire may cause the building's electrical system to fail. Sometimes the fire originates in the electrical system. For this reason, the building should have emergency lights installed in all corridors and public rooms. Emergency lighting that complies with nationally recognized standards will be connected to a separate power supply that is backed up by an emergency generator. The lights will automatically go on when the system detects an electrical failure.

7.4.2.7 Emergency Egress System

Every building should be built in compliance with a nationally recognized building code. These codes contain minimum standards for the emergency egress system, i.e., the pathways that provide evacuation routes from every part of the building to the outdoors at ground level. The building codes

are based on the principle that the corridors and stairways are a vital part of the egress system, so they are required to have added protection that will theoretically last long enough to allow everyone to evacuate.

7.4.2.8 Exits & Exit Signs

Exit signs that comply with nationally recognized standards will be visible from any place in the corridor. Those that are not near an exit door will have an arrow showing the direction to the nearest exit. Again, TIM is important. It is very easy for exit lights to burn out overtime, and just as easy to neglect replacing them.

A hotel employee may be tempted to replace a broken sign with one that has no direction arrow - or just as bad, with an arrow going the wrong way. They might make this mistake because they don't know what the installation standard requires. That is why only qualified technicians should work on any fire safety system.

7.4.2.9 Meeting Rooms

A general rule to keep in mind is that street-level meeting rooms are the easiest to evacuate. Rooms above the seventh floor are more hazardous because fire ladders may not reach that high. Hotel basement meeting rooms may not be a wise choice, because meeting participants must climb upstairs in the same direction smoke and flames will travel.

- The meeting room should have adequate exits. A rule of thumb is that

50 to 300 persons require	**two** exits.
Three hundred to 1,000 persons need	**three** exits and
More than 1,000 persons should have	**four or more** exits.

- The exits should be brightly lit, not blocked, by furniture or curtains and be easily opened.
- They should never be locked or chained.
- Seating or exhibit arrangements should allow enough aisle space for quick evacuation.
- Familiarize with exits and escape routes.
- Not only make sure that the hotel floor plan is visibly posted, but also walk the entire escape route.
- Hallways, exits and stairwells should be clear of obstructions.
- Stairs should have emergency lighting; and
- Elevators should be clearly marked to prevent use in a fire.

7.4.2.10 Stairway Pressurization

High-rise hotels should have pressurized stairways. An exception is a hotel where the stairways are open to the outside. In pressurized stairways, a fan operates when the fire alarm panel receives a signal from a fire detector or

sprinkler. The air is blown in from the exterior, and this creates a positive pressure in the stairway, keeping smoke from creeping into the stairway and blocking the egress path.

7.4.2.11 Smoke Control Systems

Very large buildings will have systems that automatically pressurize certain areas and depressurize others to contain smoke or exhaust it outside. This should definitely be present in buildings with atriums (where the rooms surround an open courtyard).

7.4.2.12 Portable Fire Extinguishers

Portable extinguishers are designed to control or extinguish small fires. They are placed throughout a hotel to be readily available when someone finds a fire. Installers follow a nationally recognized standard that dictates what type (based on the type of fire expected at that location), their location, and size. Different locations will require different types, depending upon the type of fire expected. For example, the corridors will have units for extinguishing paper and other similar combustibles. A kitchen area will have units designed to put out grease fires.

Notice that the extinguishers are placed in wall cabinets or are hung on the wall at a height that makes it easy for an average-sized person to remove. If they are found on the floor, then they are not in the proper location. One reason for hanging them is to prevent items from being placed on top of them.

It is easy to use portable extinguishers. The instructions use icons to make them clear to someone who has not used one before. However, hotel employees should receive periodic hands-on training on how to use them. Extinguishers are more effective in the hands of experienced users, and periodic training increases expertise. But there is another reason why employees should be trained. The experience also teaches employees the limits of the extinguisher. Knowing when to use it and when to call the fire department without delay is a valuable lesson that all hotels should be teaching to every employee.

Have you ever noticed the paper tags hanging on each extinguisher? They indicate when the unit had its last TIM. The hotel should have a record of the periodic visits by an extinguisher technician, while the individual tags document when the last TIM was conducted. If it was over a year ago, then the hotel is not keeping up on its TIM responsibilities.

7.4.2.13 Fire Response Plan

A hotel with quality fire safety will have a written plan that describes every employee's responsibility in a fire or other emergency. The lack of a written plan or a refusal to show it is a cause for concern. Also be concerned if the instructions call for delaying the notification of guests or the fire department. Examples are orders to notify the manager before taking action, or orders to first investigate a fire alarm before calling the fire department or notifying guests.

Premature notification of guests due to false or nuisance alarms always concerns hotel management. There are two things to consider here. First, if the hotel has replaced outmoded technology and the fire alarm system was installed in compliance with nationally recognized standards. False or nuisance alarms are rare. Modern smoke detectors are smart enough to quietly notify the monitoring company if they need servicing or are becoming too sensitive. That is why we stress the importance of TIM. There is no valid reason for a hotel to tolerate false or nuisance alarms.

Second, modern alarm systems have voice notification features that allow hotel employees to alert only those guests who are in immediate danger. For example, if a smoke detector on the 15th floor operates, the employee might be instructed to alert guests on higher floors to prepare for evacuation.

The specific evacuation message will vary by the type, size and layout of the building.

7.4.2.14 Staff Training

Every employee should receive periodic formal training and practice on what to do in a fire emergency. A hotel with quality fire protection will have copies of their training plans and records of who attended each session. A verbal statement that "we give everyone regular training" should be suspect. The items covered in the plans should include such things as:

- Each employee's responsibilities in a fire emergency.
- Details about the building's fire equipment.
- What the various fire alarm signals mean.
- Who is responsible for notifying the fire department (this should always be done as a backup measure, even when the system is monitored).
- The records should document the orientation and continued training of every employee, including hands-on instruction on how to operate portable extinguishers.

7.5 Fire Safety Plan

7.5.1 Fire Safety for IBIS Styles Hotel Project

IBIS Styles Hotel Project has must follow the directions, given by Fire Department, the Ministry of Home Affairs to get "Fire Safety Certificate".

a) The access way around the building is 18 feet wide and the load-bearing capacity of road is 140 tons at the place of fire engine

b) Width of the stair is 3' 6"

c) Dimension of the stairs is: Riser $\leqslant$ 7 ", Thread $\geqslant$ 10 "

d) Install mechanical ventilation system or leave 15% of the wall for windows on the stairway area.

e) Access door to the staircase: Minimum width = 3' 6", Height = 6' 6"

Self-closing system

Minimum 1 hr fire rated door

f) Provision of space having area of 3 m^2 at the entrance and exit of the stairs as a smoke stop lobby

g) Provision of space having area of 9 m^2 at the entrance and exit of the main stairway as a fire-fighting lobby for fire engine to prepare necessary arrangements

h) Two out of six numbers of lifts should be reserved for fireman

i) Provision of emergency back-up power system for lifts in case of electricity failure

j) Install lifts with emergency rescue device (ERD) so that the lift will stop at the nearest floor when electricity cut off

k) Achieve fire safety certificate from the Fire Department, Ministry of Home Affairs

l) The whole building must be equipped with:

i. Audio/Visual Advisory System
ii. Exit and Indication sign
iii. Emergency lighting system with UPS back-up
iv. Emergency Generator

m) Fire Safety

The following facilities must be provided or equipped on every floor:

i. Fire alarm system
ii. Selective choice of fire detection system namely smoke detection, heat detection or flame detection
iii. Portable hand-operated approved appliances must be provided
iv. Fire hose reel with minimum water pressure of 2.5 bar
v. Automatic sprinkler system

Others:

vi. Riser: Dry riser…….. ground floor to 7th floor

Wet riser……..ground floor to the uppermost floor

(with water available at any time & minimum water pressure 3.5 ~ 5.5 bar)

Material of pipe….GI or Black Steel

Installation……Separate

vii. Fire hydrant……. Two numbers on the access way with minimum water pressure of 3.5 ~ 5.5 bar

viii. Automatic fixed installation other than water system at control room and M & E department.

ix. Establish Fire Control Center

x. Water supply for firefighting:

Water storage tank of 30,000 gallons (Capable to supply two fire hydrants having 250 gpm capacities for1hr)

(250 gpm x 2 x 60 min = 30,000 gallons)

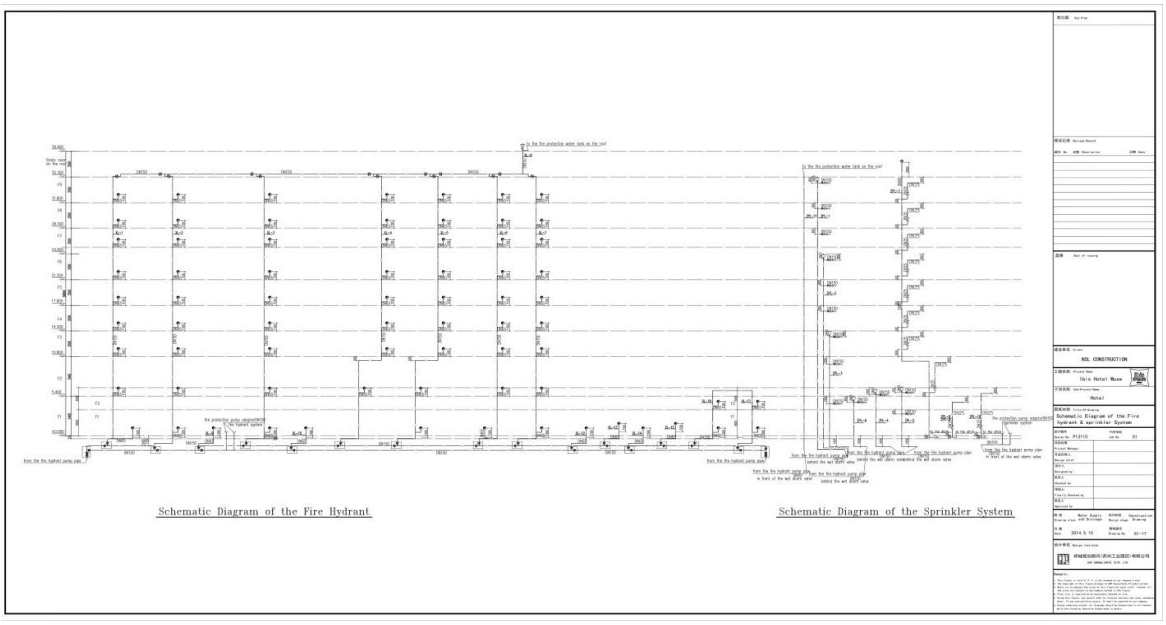


Figure 7-1 Schematic diagram of the fire hydrant and sprinkler system

7.5.2 Best Practices by IBIS Styles Hotel Project

IBIS Styles Hotel Project has considered fire safety plan and implemented the followings:

- ✓ Gas installations, storage tanks, pipe lines, gas burning appliances, flues and equipment are correctly installed and fitted with appropriate safety devices and signage with "Flammable fluids", "No Smoking"
- ✓ Fire Precautions Notices are to be put up at various points
- ✓ Install state-of-the-art, well-maintained fire extinguishers and fire hydrants at public places
- ✓ Provision of water storage tank with pumps, hoses and other essential accessories in always ready condition
- ✓ Sufficient numbers of fire extinguishers
- ✓ Periodic formal training and practice on what to do in a fire emergency for every employee
- ✓ Assign duties and responsibilities
- ✓ Inspect the electrical wirings and electrical equipment regularly and if necessary, do repair and keep the maintenance records. Automatic main breakers should also be used for safety
- ✓ Make sure the emergency exits and stairways are accessible 24 hours, 7 days a week

In case a fire breaks out, in spite of preventive measures, the following should be done to minimize losses due to the fire.

a) Inform the nearest fire station and police for help as soon as possible
b) Try to fight the fire with own trained personnel and firefighting equipment to minimize the losses
c) Evacuate the guests and goods to a safe place
d) Prevent the fire spreading to other places
e) Prevent the outsiders from entering and looting
f) Help the guests for safe exit

In order to implement the fire prevention measures, management team will be formed.

a) Team Leader
b) 2nd Team Leader
c) Secretary
d) Member
e) Member

For the fire safety purposes, communication should be done as follows:

a) To communicate by telephone through specific telephone numbers as per instructions
b) Liaison Person

If there are difficulties for telephone connections, liaison person should be sent for quick and efficient communication.

To implement the above-mentioned fire prevention measures, it is a duty for all persons concerned to cooperate fully and to do their assigned duties efficiently.

7.6 Emergency Preparedness Plan

7.6.1 Fire Emergency Plan

- ❖ Contact the fire department
- ❖ Locate the source of the fire/alarm
- ❖ Direct guests to appropriate exits
- ❖ Assist guests with disabilities
- ❖ Direct emergency response to the location of the fire
- ❖ Pre-emergency Planning
  - ✓ Monthly inspection / testing of fire alarms / sprinkler systems / extinguishers
  - ✓ Posting of evacuation plans in all areas
  - ✓ Plan review with all employees
  - ✓ Annual review of the Fire Emergency Plan

7.6.2 Weather Emergency Plan

- ❖ Identify "safe" locations within the facility
- ❖ Monitor emergency warnings during potentially dangerous weather conditions
- ❖ Notify guests of emergency and direct to "safe" location
- ❖ Assist guests with disabilities
- ❖ Maintain communications capability with emergency services, not dependent on phone lines
- ❖ Pre-emergency Planning
  - ✓ Verify integrity of "safe" locations
  - ✓ Post weather emergency information in all areas
  - ✓ Plan review with all employees
  - ✓ Annual review of Weather Emergency Plan

7.6.3 Guest Illness/Injury Emergency Plan

- ❖ Respond to guest location to offer assistance and determine nature of emergency
- ❖ Contact emergency services
- ❖ Direct emergency services to guest location
- ❖ Complete an incident investigation report
- ❖ Pre-emergency planning
  - ✓ Post emergency numbers or pre-set numbers at hotel switchboard
  - ✓ Arrange for cleanup in the event of blood borne pathogens (biohazard)
  - ✓ Plan review with all employees
  - ✓ Review Guest Illness/Injury Plan annually

7.6.4 Employee Illness/Injury Emergency Plan

- ❖ Respond to employee location to provide assistance and determine nature of emergency
- ❖ Provide first aid, if applicable
- ❖ Contact emergency services or transport employee to medical treatment
- ❖ Direct emergency services to employee location
- ❖ Complete incident investigation report
- ❖ Pre-emergency planning
  - ✓ Arrange for employee medical treatment at a local clinic
  - ✓ Provide for at least one first aid trained employee on site at all times
  - ✓ Plan review with all employees, emphasizing the requirement for reporting all injuries
  - ✓ Review Employee Injury/Illness Plan annually

8.0 PUBLIC CONSULTATION AND INFORMATION DISCLOSURE

The public consultation is a pre-requisite to all the projects to provide different stakeholders with an opportunity to raise their concerns from the project scoping stage to the approval of EIA License. Provision of intense public participation and consultation has been made mandatory for EIA through public consulting during scoping and public hearing after draft report preparation. Such participation of the related stakeholders takes place through entire period of preparation and reviewing of both the Project Report and EIA Study Report.

Hence, a number of consultation and public information campaigns have been scheduled to increase the residents' awareness and knowledge of the project. Public disclosure/consultation meetings were held at Phway Hone Damayone, Phway Hone Village in September 2015, at Muse Township.

Figure 8-1 Project Presentation on 18 September 2015

The purpose of these meetings were to inform the stakeholders and residents on the nature goals and scope of the project, the improvements expected as a consequence of the installations of IBIS Styles Hotel in Muse Township, and the potential positive and negative impacts related to the project.

Copies of the Draft ESIA report were sent before the meetings to the representatives of stakeholder or residents, in order to enhance the knowledge about the project characteristics and facilitate informed discussion on the different aspects.

Invitation letters were sent to the local residents and personal invitations were given to the local government officials. Informational fliers were distributed and Public Service Announcements were also done in the communities.

9.0 CONCLUSION AND RECOMMENDATIONS

9.1 Recommendations

From EIA studies, it is evident that the proposed project is associated with both positive and negative impacts during construction and operation phases of the project. The proponent and contractor are advised to implement Environmental Management Plan so as to reduce adverse impacts and boost good environmental practices. Environmental safety must also be followed in order to reduce incidences of accidents and compromise to environmental wellbeing.

Recommendations for the prevention and mitigation of adverse impacts are as follows: -

- The development must be approved by the relevant Government Departments and the proponent should therefore follow the guidelines as set by the departments to safeguard environmental management principles during construction and operation phases of the proposed development.
- It is important that warning/informative signs (bill boards) be erected at the site. These should indicate the operation hours, when works are likely to be started and completed, and potential hazards.
- All solid waste materials and debris resulting from construction activities must be disposed of at approved dumpsites. The wastes should be properly segregated and separated to encourage recycling of some useful waste materials; i.e., some excavated stone materials can be used as backfills.
- Once earthworks have been done, restoration of the worked areas should be carried out immediately by backfilling, professional landscaping/levelling and planting of low grass (in open areas), flowers and suitable tree species.
- Proper and regular maintenance of construction machinery and equipment will reduce emission of hazardous fumes and noise resulting from friction of rubbing metal bodies.
- Heavy construction activities should be limited (or avoided) during the rainy season to minimize the chances of soil degradation (soil erosion).
- Maintenance activities must be carried out in service bay to reduce chances of oils or grease or other maintenance materials, from coming into contact with environment (water or soil). Wastewater from such areas must be refrained from coming into contact with solid mass or water bodies as it contains oil/grease spills.
- Used and new oils must be handled and stored appropriately to avoid oil leaks and spills on the site.
- Sewerage system must be properly designed within the site/office and standard cleanliness and waste disposal facilities at construction site and during occupation must be maintained.
- Workers should be provided with complete personal protective equipment (PPE) and safety gear. They should have working boots, complete overalls, helmets,

gloves, earmuffs, nose masks, goggles, etc. A fully equipped first aid kit must be provided within the site.

- It will be necessary to provide the construction workers with proper sanitation in the form of a clean water supply for their domestic consumption and a proper sewerage disposal system.
- The contractor must provide adequate security during the construction period and especially during the night when there are no construction activities.
- A complete firefighting system must be provided after completion of the project.
- All construction materials and especially sand, gravel, hardcore and wood must be sourced/procured from legalized dealers.
- Construction activities must be undertaken only during the day i.e., between 0700 hours to 1900 hours. This will minimize disturbance to the general public within the proximity of the site/project especially the residential estates.
- Traffic on the access road to the site should be controlled and informed during construction and especially when heavy trucks are turning in and out of the site. This will ensure that no accidents are caused by the site's activities.

9.2 Conclusion

It can be concluded that the proposed project is unlikely to generate any irreversible or permanent negative impacts. The report has provided adequate mitigation measures for the identified impacts. It is therefore recommended that the proposed project be approved provided that the proposed recommendations given above are strictly adhered to. This proposed project does not have any activities that can be classified as detrimental.

The rising availability of hotel development will allow for more robust pipelines; assets in secondary markets will attract further interest from hotel developer. The climate for hospitality market activity should remain favorable.

It can be concluded that the benefits of the project are greater than the costs and that the development should be allowed to proceed. The project has not received any objection from the neighbors. The objectives of the project, especially improving of tourism and hotel standards makes the project highly viable for the area. The project will also contribute in easing the demand for accommodation for the tourists hence a boost to the tourism industry.

APPENDICES

Appendix 1 Comments from ECD

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စာအမှတ်၊DMD/326-Muse/2021 (၎၁)
ရက် စွဲ ၊ ၂၀၂၁ ခု နှစ်၊ မေ လ ၁၇ ရက်

သို့

မန်နေဂျင်းဒါရိုက်တာ
Green Myanmar Environmental Services Co., Ltd.

အကြောင်းအရာ။ **New Starlight Construction Co., Ltd. ၏ IBIS Styles Hotel ဝန်ဆောင်မှု လုပ်ငန်းအတွက် တင်ပြထားသည့် ပတ်ဝန်းကျင်ထိခိုက်မှု ဆန်းစစ်ခြင်း (EIA) အစီရင်ခံစားအား ဖြည့်စွက်ပြင်ဆင်တင်ပြရန် အကြောင်းကြားလာခြင်းအား အသိ ပေးခြင်း။**

ရည် ညွှန်း ချက် ။ (၁) သယံဇာတနှင့် သဘာဝပတ်ဝန်းကျင် ထိန်းသိမ်းရေးဝန်ကြီးဌာန၊ ပြည် ထောင်စု ဝန်ကြီးရုံး၏ ၁၂-၇-၂၀၁၆ ရက်စွဲပါ စာအမှတ်၊ (သစ်တော) ၃/၁၆ (ဃ) (၉၄၂/၂၀၁၆)

(၂) ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဦးစီးဌာန (ရုံးချုပ်) နေပြည်တော်၏ ၂၅-၂-၂၀၂၁ ရက်စွဲပါ စာအမှတ်၊ အီးအိုင်အေ ၁/၇ (၂၈၈/၂၀၂၁)

(၃) ပတ်ဝန်ကျင်ထိန်သိမ်းရေးဦးစီးဌာန၊ ညွှန်ကြားရေးမှူးရုံး တောင်ကြီးမြို့ စာအမှတ်၊ ပတ်ဝန်းကျင်/မြို့ပြ-၂ (၅၄၅/၂၀၂၁) ရက်စွဲ၊ ၂၀၂၁ခုနှစ်၊ မတ်လ (၂၂)ရက်

၁။ အထက်အကြောင်းအရာပါ ကိစ္စနှင့်ပတ်သက်၍ ရှမ်းပြည်နယ်(မြောက်ပိုင်း) မူဆယ်ခရိုင် မူဆယ်ဗဟိုစီးပွားရေး (ဇုန်-၁) အတွင်းရှိ မြေဧရိယာ(၂.၇၄၂၇)ဧကပေါ်တွင် IBIS Style အဆင့်မှီ ကြယ် (3.5) Star အဆင့်ရှိ IBIS Style Hotel ဝန်ဆောင်မှုလုပ်ငန်းအတွက် ပတ်ဝန်းကျင်ထိခိုက်မှု ဆန်းစစ်ခြင်း (Environmental Impact Assessment EIA) အစီရင်ခံစာ (Social Impact Assessment SIA) လူမှုပတ်ဝန်းကျင်ထိခိုက်မှု အနည်းဆုံးဖြစ်စေရန် စီမံခန့်ခွဲမှုအစီအစဉ် (E.M.P) ကို မြန်မာနိုင်ငံ ရင်းနှီးမြှုပ် နှံမှုကော်မရှင် (MIC)သို့ တင်ပြရန်အတွက် အစီရင်ခံစာ ရေးသားပြုစုပေးရန် လူကြီးမင်းကုမ္ပဏီဖြစ်သော Green Myanmar Environmental Services Co., Ltd. အား လုပ်ငန်းအပ်နှံပြီး ဆောင် ရွက်စေခဲ့ပါသည်။

J

၂။ ယခုအခါ လူကြီးမင်းကုမ္ပဏီမှ ပြုစုတင်ပြခဲ့သော ပတ်ဝန်းကျင်ထိခိုက်မှု ဆန်းစစ်ခြင်း (E.I.A) အစီရင်ခံစာအား ဖြည့်စွက်တင်ပေးရန် သက်ဆိုင်ရာဝန်ကြီးဌာနများမှ အကြောင်းကြားလာပါသဖြင့် လိုအပ်သည်များ ပြင်ဆင်တင်ပြပေးနိုင်ရေးအတွက် အသိပေးအကြောင်းကြား အပ်ပါသည်။

ပူးတွဲပါ။ အကြောင်းကြားစာ(၁)စုံ။

Tin Ngwe
Deputy Managing Director
New Starlight Construction Co., Ltd.
ဦးတင်ငွေ
Deputy Managing Director

မိတ္တူကို

ရုံးလက်ခံ/မျှောစာတွဲ

ပတ် ဝန်း ကျင် ထိန်း သိမ်း ရေး ဦး စီး ဌာ န
ညွှန် ကြား ရေး မှူး ရုံး
ရှမ်း ပြည် နယ်၊ တောင် ကြီး မြို့
စာအမှတ်၊ ပတ်ဝန်းကျင်/မြို့ပြ-၂ (၅၄၅ /၂၀၂၁)
ရက်စွဲ၊ ၂၀၂၁ ခုနှစ်၊ မတ်လ ၂၂ ရက်

သို့

New Star Light Construction Co., Ltd
မန္တလေးမြို့

အကြောင်းအရာ။ **New Star Light Construction Co., Ltd ၏ IBIS Styles Hotel ဝန်ဆောင်မှုလုပ်ငန်းအတွက် တင်ပြလာသည့် ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်း (Environmental Impact Assessment- EIA) အစီရင်ခံစာအား ဖြည့်စွက်ပြင်ဆင်တင်ပြရန် အကြောင်းကြားခြင်း**

ရည်ညွှန်းချက်။ (၁) သယံဇာတနှင့်သဘာဝပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဝန်ကြီးဌာနပြည်ထောင်စု ဝန်ကြီးရုံး၏ ၁၂-၇-၂၀၁၆ ရက်စွဲပါစာအမှတ်၊ (သစ်တော) ၃/၁၆ (ဃ) (၉၄၂ /၂၀၁၆)

(၂) ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဦးစီးဌာန (ရုံးချုပ်)၊ နေပြည်တော်၏ ၂၅.၂.၂၀၂၁ ရက်စွဲပါစာအမှတ်၊ အီးအိုင်အေ- ၁/၇ (၂၈၈/၂၀၂၁)

၁။ အထက်အကြောင်းအရာပါကိစ္စနှင့်ပတ်သက်၍ ရှမ်းပြည်နယ် (မြောက်ပိုင်း)၊ မူဆယ်ခရိုင်၊ မူဆယ်မြို့၊ မူဆယ်ဗဟိုစီးပွားရေးဇုန်၊ ဇုန် (၁) အတွင်းရှိ မြေရိယာ (၂.၇၄၂၇) ဧကပေါ်တွင် နိုင်ငံတကာအဆင့်မီကြယ် (3.5 Star) အဆင့်ရှိ IBIS Styles Hotel ဝန်ဆောင်မှုလုပ်ငန်းအတွက် တင်ပြလာသော ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်း (Environmental Impact Assessment- EIA) အစီရင်ခံစာကို စိစစ်သုံးသပ်ပေးနိုင်ပါရန် ပြည်ထောင်စုဝန်ကြီးရုံးမှ ရည်ညွှန်း (၁) ပါစာဖြင့် ပေးပို့တင်ပြလာပါသည်။

၂။ တင်ပြလာသော ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်းအစီရင်ခံစာကို တတိယအဖွဲ့အစည်းဖြစ်သည့် Green Myanmar Environmental Services Co., Ltd. (GMES) မှ ရေးဆွဲထားကြောင်း၊ အစီရင်ခံစာတွင် အစီရင်ခံစာအကျဉ်းချုပ်၊ နိဒါန်း၊ မူဝါဒ၊ ဥပဒေနှင့် အဖွဲ့အစည်းဆိုင်ရာမူဘောင်၊ စီမံကိန်းအကြောင်းအရာဖော်ပြချက်၊ အနီးပတ်ဝန်းကျင် အကြောင်းအရာများ ဖော်ပြချက်၊ ပတ်ဝန်းကျင်အပေါ် သက်ရောက်မှုနှင့် ဘေးအန္တရာယ်ရှိမှု ဆန်းစစ်ခြင်းနှင့် လျော့နည်းစေရေးလုပ်ငန်းများ၊ ဆက်စပ်သက်ရောက်မှုဆန်းစစ်ခြင်း၊ ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုအစီအစဉ်နှင့် စောင့်ကြပ်ကြည့်ရှုမည့်အစီအစဉ်၊ အများပြည်သူနှင့် တိုင်ပင်ဆွေးနွေးခြင်းနှင့် သတင်းအချက်အလက်များ ထုတ်ဖော်တင်ပြခြင်းတို့ကို ဖော်ပြထားသော်လည်း ပူးတွဲပါအချက်များကို ထပ်မံဖြည့်စွက်ရန်လိုအပ်ကြောင်း ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဦးစီးဌာန (ရုံးချုပ်)၊ နေပြည်တော်မှ ရည်ညွှန်း (၂) ပါစာဖြင့် အကြောင်းကြားလာပါသည်။

၃။ သို့ဖြစ်ပါ၍ New Star Light Construction Co., Ltd မှ IBIS Styles Hotel ဝန်ဆောင်မှုလုပ်ငန်းအတွက် တင်ပြလာသော ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်း (Environmental Impact Asses-

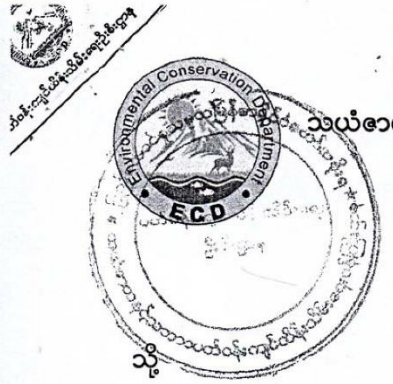
sment- EIA) အစီရင်ခံစာတွင် လိုအပ်သောအချက်အလက်များကို ပြန်လည်ပြင်ဆင်ဖြည့်စွက်၍ ရှမ်းပြည်နယ်ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဦးစီးဌာန၊ တောင်ကြီးမြို့သို့ မူရင်း (၁) အုပ်၊ မိတ္တူ (၁) အုပ်၊ CD (၂) ချပ်တို့နှင့်အတူ ပြန်လည်တင်ပြသွားရန် ပူးတွဲပါစာနှင့်တကွ အကြောင်းကြားပါသည်။

(သိန်းဌေး)
ညွှန်ကြားရေးမှူး

မိတ္တူကို-

- ပတ်ဝန်းကျင်အရည်အသွေးစံချိန်စံညွှန်းနှင့်ပတ်ဝန်းကျင်ညစ်ညမ်းမှုထိန်းချုပ်ရေးဌာနခွဲ(မြို့ပြ)၊ ရှမ်းပြည်နယ်ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဦးစီးဌာန၊ တောင်ကြီးမြို့။
- ရုံးလက်ခံ/မျှောစာတွဲ။

အမှတ် 53	
ရက် 12.5.21	
	✓
ရုံးအုပ်	



ပြည်ထောင်စုသမ္မတမြန်မာနိုင်ငံတော်အစိုးရ
သယံဇာတနှင့်သဘာဝပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဝန်ကြီးဌာန
ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဦးစီးဌာန
ညွှန်ကြားရေးမှူးချုပ်ရုံး

စာအမှတ်၊ အီးအိုင်အေ - ၁ / ဂ (၂၈၈ / ၂၀၂၁)
ရက်စွဲ ၂၀၂၁ ခုနှစ် ဖေဖော်ဝါရီလ ၂၅ ရက်

သို့

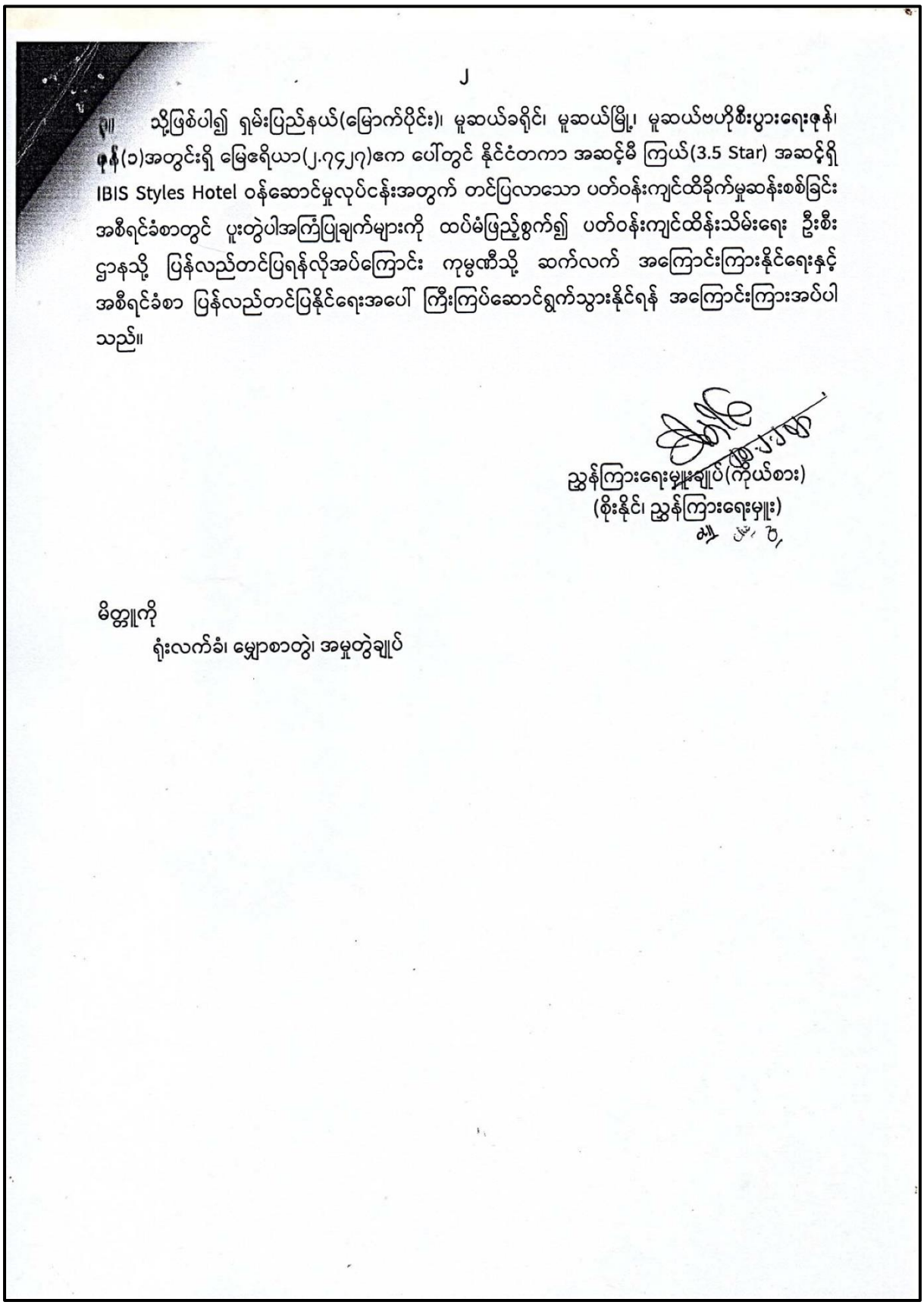
ညွှန်ကြားရေးမှူး
ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဦးစီးဌာန
ရှမ်းပြည်နယ်

အကြောင်းအရာ။ **New Star Light Construction Co., Ltd. ၏ IBIS Styles Hotel ဝန်ဆောင်မှုလုပ်ငန်းအတွက် တင်ပြလာသည့် ပတ်ဝန်းကျင်ထိခိုက်မှု ဆန်းစစ်ခြင်း (Environmental Impact Assessment – EIA) အစီရင်ခံစာအပေါ် စိစစ်ပြန်ကြားခြင်း**

ရည်ညွှန်းချက်။ သယံဇာတနှင့်သဘာဝပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဝန်ကြီးဌာန၊ ပြည်ထောင်စုဝန်ကြီးရုံး၏ ၁၂-၇-၂၀၁၆ ရက်စွဲပါ စာအမှတ်၊ (သစ်တော) ၃/၁၆ (ဃ) (၉၄၂ / ၂၀၁၆)

၁။ အကြောင်းအရာပါကိစ္စနှင့်ပတ်သက်၍ ရှမ်းပြည်နယ်(မြောက်ပိုင်း)၊ မူဆယ်ခရိုင်၊ မူဆယ်မြို့၊ မူဆယ်ဗဟိုစီးပွားရေးဇုန်၊ ဇုန်(၁)အတွင်းရှိ မြေရီယာ(၂.၇၄၂၇)ဧကော ပေါ်တွင် နိုင်ငံတကာ အဆင့်မီကြယ်(3.5 Star) အဆင့်ရှိ IBIS Styles Hotel ဝန်ဆောင်မှုလုပ်ငန်းအတွက် တင်ပြလာသော ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်း (Environmental Impact Assessment – EIA) အစီရင်ခံစာကို စိစစ်သုံးသပ်ပေးနိုင်ပါရန် ပြည်ထောင်စုဝန်ကြီးရုံးမှ ရည်ညွှန်းပါစာဖြင့် ပေးပို့တင်ပြလာပါသည်။

၂။ တင်ပြလာသော ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်း အစီရင်ခံစာကို တတိယအဖွဲ့အစည်းဖြစ်သည့် Green Myanmar Environmental Services Co. Ltd. (GMES)မှ ရေးဆွဲထားကြောင်း၊ အစီရင်ခံစာတွင် အစီရင်ခံစာအကျဉ်းချုပ်၊ နိဒါန်း၊ မူဝါဒဥပဒေနှင့်အဖွဲ့အစည်းဆိုင်ရာမူဘောင်၊ စီမံကိန်းအကြောင်းအရာဖော်ပြချက်၊ အနီးပတ်ဝန်းကျင် အကြောင်းအရာများ ဖော်ပြချက်၊ ပတ်ဝန်းကျင်အပေါ်သက်ရောက်မှုနှင့် ဘေးအန္တရာယ်ရှိမှု ဆန်းစစ်ခြင်းနှင့် လျော့နည်းစေရေးလုပ်ငန်းများ၊ ဆက်စပ်သက်ရောက်မှု ဆန်းစစ်ခြင်း၊ ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှု အစီအစဉ်နှင့် စောင့်ကြပ်ကြည့်ရှုမည့် အစီအစဉ်၊ အများပြည်သူနှင့် တိုင်ပင်ဆွေးနွေးခြင်းနှင့် သတင်းအချက်အလက်များ ထုတ်ဖော်တင်ပြခြင်းတို့ကို ဖော်ပြထားသော်လည်း ပူးတွဲပါအချက်များကို ထပ်မံဖြည့်စွက်ရန် လိုအပ်ကြောင်း စိစစ်တွေ့ရှိရပါသည်။



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၃။ သို့ဖြစ်ပါ၍ ရှမ်းပြည်နယ်(မြောက်ပိုင်း)၊ မူဆယ်ခရိုင်၊ မူဆယ်မြို့၊ မူဆယ်ဗဟိုစီးပွားရေးဇုန်၊ ဇုန်(၁)အတွင်းရှိ မြေရီယာ(၂.၇၄၂၇)ကော ပေါ်တွင် နိုင်ငံတကာ အဆင့်မီ ကြယ်(3.5 Star) အဆင့်ရှိ IBIS Styles Hotel ဝန်ဆောင်မှုလုပ်ငန်းအတွက် တင်ပြလာသော ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်း အစီရင်ခံစာတွင် ပူးတွဲပါအကြံပြုချက်များကို ထပ်မံဖြည့်စွက်၍ ပတ်ဝန်းကျင်ထိန်းသိမ်းရေး ဦးစီးဌာနသို့ ပြန်လည်တင်ပြရန်လိုအပ်ကြောင်း ကုမ္ပဏီသို့ ဆက်လက် အကြောင်းကြားနိုင်ရေးနှင့် အစီရင်ခံစာ ပြန်လည်တင်ပြနိုင်ရေးအပေါ် ကြီးကြပ်ဆောင်ရွက်သွားနိုင်ရန် အကြောင်းကြားအပ်ပါသည်။

ညွှန်ကြားရေးမှူးချုပ်(ကိုယ်စား)
(စိုးနိုင်၊ ညွှန်ကြားရေးမှူး)

မိတ္တူကို
ရုံးလက်ခံ၊ မျှောစာတွဲ၊ အမှုတွဲချုပ်

Appendix 2 Certificate of Incorporation

ကုမ္ပဏီမှတ်ပုံတင်လက်မှတ်

Certificate of Incorporation

အလင်းရောင်ကြယ်သစ်ဆောက်လုပ်ရေးကုမ္ပဏီလီမိတက်

NEW STARLIGHT CONSTRUCTION COMPANY LIMITED

Company Registration No. 112539743

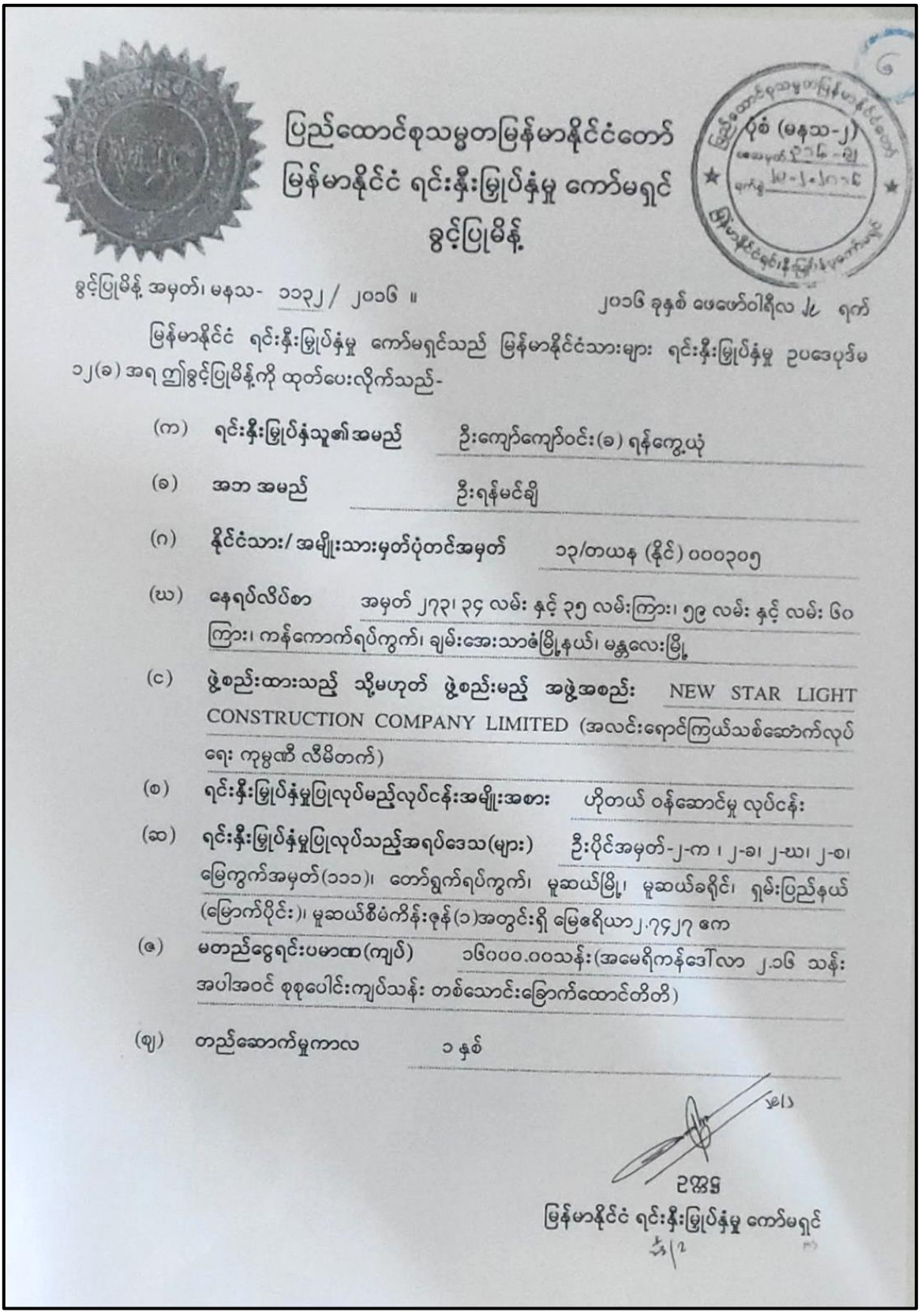
မြန်မာနိုင်ငံကုမ္ပဏီများအက်ဥပဒေ ၁၉၁၄ ခုနှစ် အရ
အလင်းရောင်ကြယ်သစ်ဆောက်လုပ်ရေးကုမ္ပဏီလီမိတက်
အား ၂၀၁၀ ခုနှစ် အောက်တိုဘာလ ၇ ရက်နေ့တွင်
အစုရှယ်ယာအားဖြင့် တာဝန်ကန့်သတ်ထား သည့် အများနှင့်မသက်ဆိုင်သောကုမ္ပဏီ
အဖြစ် ဖွဲ့စည်းမှတ်ပုံတင်ခွင့် ပြုလိုက်သည်။

This is to certify that
NEW STARLIGHT CONSTRUCTION COMPANY LIMITED
was incorporated under the Myanmar Companies Act 1914 on 7 October 2010 as a Private Company Limited by Shares.

ကုမ္ပဏီမှတ်ပုံတင်အရာရှိ
Registrar of Companies
ရင်းနှီးမြှုပ်နှံမှုနှင့်ကုမ္ပဏီများညွှန်ကြားမှုဦးစီးဌာန
Directorate of Investment and Company Administration

Former Registration No. 1263/2010-2011

Appendix 3 MIC Permit



ပြည်ထောင်စုသမ္မတမြန်မာနိုင်ငံတော်
မြန်မာနိုင်ငံ ရင်းနှီးမြှုပ်နှံမှု ကော်မရှင်
ခွင့်ပြုမိန့်

ပုံစံ (မနသ-၂)

ခွင့်ပြုမိန့် အမှတ်၊ မနသ- ၁၁၃၂ / ၂၀၁၆ ။ ၂၀၁၆ ခုနှစ် ဖေဖော်ဝါရီလ ၂၉ ရက်

မြန်မာနိုင်ငံ ရင်းနှီးမြှုပ်နှံမှု ကော်မရှင်သည် မြန်မာနိုင်ငံသား၊များ ရင်းနှီးမြှုပ်နှံမှု ဥပဒေပုဒ်မ ၁၂(ခ) အရ ဤခွင့်ပြုမိန့်ကို ထုတ်ပေးလိုက်သည်-

(က) ရင်းနှီးမြှုပ်နှံသူ၏အမည် ဦးကျော်ကျော်ဝင်း(ခ) ရန်ကွေ့ယုံ

(ခ) အဘ အမည် ဦးရန်မင်းချို

(ဂ) နိုင်ငံသား/ အမျိုးသားမှတ်ပုံတင်အမှတ် ၁၃/တယန (နိုင်) ၀၀၀၃၀၅

(ဃ) နေရပ်လိပ်စာ အမှတ် ၂၇၃၊ ၃၄ လမ်း နှင့် ၃၅ လမ်းကြား၊ ၅၉ လမ်း နှင့် လမ်း ၆၀ ကြား၊ ကန်ကောက်ရပ်ကွက်၊ ချမ်းအေးသာဇံမြို့နယ်၊ မန္တလေးမြို့

(င) ဖွဲ့စည်းထားသည့် သို့မဟုတ် ဖွဲ့စည်းမည့် အဖွဲ့အစည်း NEW STAR LIGHT CONSTRUCTION COMPANY LIMITED (အလင်းရောင်ကြယ်သစ်ဆောက်လုပ်ရေး ကုမ္ပဏီ လီမိတက်)

(စ) ရင်းနှီးမြှုပ်နှံမှုပြုလုပ်မည့်လုပ်ငန်းအမျိုးအစား ဟိုတယ် ဝန်ဆောင်မှု လုပ်ငန်း

(ဆ) ရင်းနှီးမြှုပ်နှံမှုပြုလုပ်သည့်အရပ်ဒေသ(များ) ဦးပိုင်အမှတ်-၂-က ၊ ၂-ခ၊ ၂-ဃ၊ ၂-စ၊ မြေကွက်အမှတ်(၁၁၁)၊ တော်ရွက်ရပ်ကွက်၊ မူဆယ်မြို့၊ မူဆယ်ခရိုင်၊ ရှမ်းပြည်နယ် (မြောက်ပိုင်း)၊ မူဆယ်စီမံကိန်းဇုန်(၁)အတွင်းရှိ မြေဧရိယာ ၂.၇၄၂ ဧက

(ဇ) မတည်ငွေရင်းပမာဏ(ကျပ်) ၁၆၀၀၀.၀၀သန်း(အမေရိကန်ဒေါ်လာ ၂၁၆ သန်း အပါအဝင် စုစုပေါင်းကျပ်သန်း တစ်သောင်းခြောက်ထောင်တိတိ)

(ဈ) တည်ဆောက်မှုကာလ ၁ နှစ်

ဒဏ္ဍဋ္ဌ

မြန်မာနိုင်ငံ ရင်းနှီးမြှုပ်နှံမှု ကော်မရှင်

Appendix 4 Construction Permit

ဖစ/ဂြအ-၂၀၁၈

မြို့နယ်စည်ပင်သာယာရေးဌာန
မူဆယ်မြို့

စာအမှတ်၊ ၇၉၆/ ဆ-၁ / မဆ-၁ (၀၀၂)
ရက်စွဲ ၊ ၂၀၁၇ ခု ဇွန် လ ၂၇ ရက်

အကြောင်းအရာ။ **အဆောက်အအုံဆောက်လုပ်ခွင့်ပြုခြင်း**

၁။ မူဆယ်မြို့၊ တော်ဝင်ရပ်ကွက်၊ MCBD လမ်း၊ နယူးစတားလိုက်စီမံကိန်းဧရိယာနေ၊ ဦးကျော်ကျော်ဝင်း၊ **Ibis Style Hotel** အား တင်ပြပါအဆောက်အအုံပုံစံအရ အောက်ပါစည်းကမ်းများနှင့်အညီအသစ်/ပြင်ဆင်/တိုးချဲ့ ဆောက်လုပ်ခွင့်ပြုသည်-

(က) မူဆယ်မြို့နယ်စည်ပင်သာယာရေးဌာနမှ အတည်ပြုပေးသော အဆောက်အအုံပုံစံအတိုင်း(၁) နှစ်အတွင်း ပြီးအောင် ဆောက်လုပ်ရမည်။(၁)နှစ်အတွင်း မပြီးနိုင်ပါက သက်တမ်းမကုန်မီ(၁)လကြိုတင်၍ သက်တမ်းတိုးမြှင့်ပေးရန်လျှောက်ထားရမည်။

(ခ) အဆောက်အအုံဆောက်လုပ်ရန်အတွက် ပန္နက်ရိုက်သည့်အခါ ဌာနအင်ဂျင်နီယာအား အကြောင်းကြားရမည်။ ဌာနအင်ဂျင်နီယာ၏ စာဖြင့် ခွင့်ပြုချက်ရရှိသည့်အခါမှသာ စတင်ဆောက်လုပ်ရမည်။

(ဂ) အဆောက်အအုံဆောက်လုပ်ရာတွင် အဆောက်အအုံ၏ အမိုးစွန်းတစ်ဖက်တစ်ချက်တွင်အောက်ဖော်ပြပါအတိုင်း မြေနေရာချန်လှပ်ထားရမည်-

(၁) တစ်ထပ်အဆောက်အအုံအတွက် ၃ ပေစီ၊
(၂) နှစ်ထပ်အဆောက်အအုံအတွက် ၅ ပေစီ၊
(၃) သုံးထပ်အဆောက်အအုံအတွက် ၇ ပေစီ။

(ဃ) မိမိခြံဝန်းအတွင်းနှင့်ပတ်ဝန်းကျင်တွင် ဌာနမှသတ်မှတ်သော စည်းကမ်းချက်များနှင့်အညီ သန့်ရှင်းအောင် ထားရှိရမည်။

(င) ရေလောင်းအိမ်သာ (သို့မဟုတ်) ကျန်းမာရေးနှင့်ညီသော အနှံ့ကင်းယင်လုံအိမ်သာကို ဌာနမှသတ်မှတ်သည့် အကျယ်အဝန်းအရ ဆောက်လုပ်ရမည်။

(စ) ကျူးကျော်မြေ၊ အစိုးရမြေ၊ သာသနာ့မြေပေါ်တွင် မဖြစ်စေရ။

(ဆ) စည်ပင်သာယာရေးဌာနမြေပေါ်သို့ ကျူးကျော်ဆောက်လုပ်ခြင်းမရှိစေရ (တံစက်မြိတ်နှင့်ခြံစည်းရိုးအပါအဝင်)။

(ဇ) အဆောက်အအုံဆောက်လုပ်ပြီးသောအခါ ဌာနသို့အကြောင်းကြားရမည်။

(ဈ) မူဆယ်မြို့နယ်စည်ပင်သာယာရေးကော်မတီကသော်လည်းကောင်း၊ အမှုဆောင်အရာရှိကသော် လည်းကောင်း၊ ဥပဒေနှင့်မညီသော အဆောက်အအုံများကို ဖျက်သိမ်းခြင်း၊ ပြင်ဆင်ခြင်းနှင့်ရွှေ့ပြောင်းပေးရန်အမိန့်ချမှတ်ခဲ့သော် (၁၅)ရက်အတွင်း အပြီးအစီးဆောင်ရွက်ပေးရမည်။ ယင်းသို့ဆောင်ရွက်ခြင်းအတွက် လျော်ကြေးငွေ၊ ဖျက်သိမ်းခစသည်များရရှိလိမ့်မည်မဟုတ်။

(ည) မူဆယ်မြို့နယ်စည်ပင်သာယာရေးဌာနက ထုတ်ပေးသော အဆောက်အအုံဆောက်လုပ်ခွင့်အမိန့်သည် အဆောက်အအုံဆောက်လုပ်သည့်မြေပိုင်ဆိုင်မှုကိုအသိအမှတ်ပြုခြင်းမဟုတ်၊၎င်းအပြင် ၄င်းမြေကွက် အတွက် လိုင်စင်သက်တမ်း၊ ဂရန်သက်တမ်းတိုးမြှင့်ပေးခြင်းမဟုတ်။

(ဋ) အဆောက်အအုံဆောက်လုပ်ထားသော မြေနှင့်ပတ်သက်၍အရှုပ်အရှင်းဖြစ်ပါက စည်ပင်သာယာရေးဌာနမှ လုံးဝတာဝန်ယူမည်မဟုတ်သည့် အပြင် အဆောက်အအုံကို သော်လည်းကောင်း၊ မြေကွက်ကို သော်လည်းကောင်း၊ ပိုင်ဆိုင်ခွင့်နှင့်စပ်လျဉ်း၍ တရားရုံးတွင်သက်သေခံအဖြစ်အသိအမှတ်ပြုလိမ့်မည် မဟုတ်ပါ။

(ဌ) အဆောက်အအုံပိုင်ရှင်အား မဆောက်သင့်မဆောက်အပ်သောမြေပေါ်တွင် အဆောက်အအုံဆောက်လုပ်ထားကြောင်း သက်ဆိုင်ရာအာဏာပိုင်အဖွဲ့အစည်းက တွေ့ရှိ၍ ပြောင်းရွှေ့ဖယ်ရှားပေးရန် ညွှန်ကြားလျှင် တိကျစွာလိုက်နာဆောင်ရွက်ရန်။

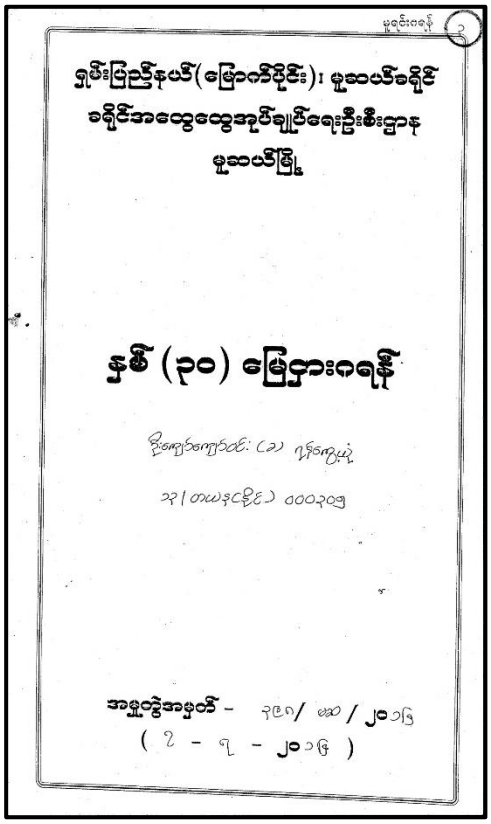
(ဍ) ရေစီးရေလာကောင်းမွန်ရေးအတွက် မိမိမြေကွက်နှင့်ဆက်စပ်သောနေရာများတွင် ဌာနအင်ဂျင်နီယာ၏ ကွင်းဆင်းကြီးကြပ်မှုနှင့်အတူ အုတ်ရေမြောင်းဆောင်ရွက်ပေးရန်။

၂။ အထက်ပါစည်းကမ်းချက်များကို လိုက်နာခြင်းမပြုဘဲ ပျက်ကွက်ခဲ့ပါက ရှမ်းပြည်နယ်စည်ပင်သာယာရေးဥပဒေ ပုဒ်မ ၈၃၊ ပုဒ်မ ၈၄ ပုဒ်မခွဲ(က)၊ ပုဒ်မခွဲ(ခ)အရ တရားစွဲဆိုအရေးယူခြင်းခံရမည်။

အမှုဆောင်အရာရှိ
မြို့နယ်စည်ပင်သာယာရေးဌာန
မူဆယ်မြို့

မိတ္တူကို
- ရပ်ကွက်အုပ်ချုပ်ရေးမှူး၊ ------ဇော်ဦးရပ်ကွက်--------ရပ်ကွက်၊ မူဆယ်မြို့
- ဒုဦးစီးမှူး(အခွန်)၊ မြို့နယ်စည်ပင်သာယာရေးဌာန၊ မူဆယ်မြို့
- ရုံးလက်ခံစာတွဲ/ မျှောစာတွဲ

Appendix 5 Land Lease Grant (398/MaSa/2016)



ရုံးသုံးစက္ကူ

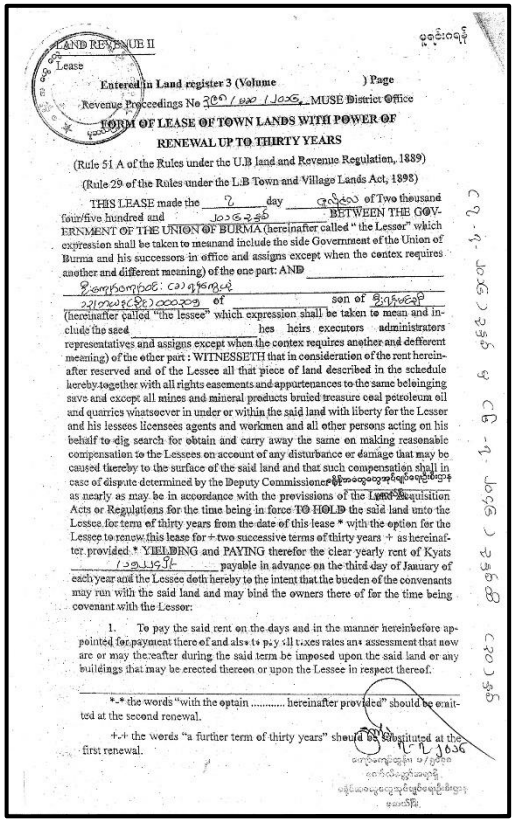
ရုံးပြည်နယ်(ဖြောက်ပိုင်း)၊ မူဆယ်ခရိုင်
ခရိုင်အထွေထွေအုပ်ချုပ်ရေးဦးစီးဌာန
မူဆယ်မြို့

နှစ် (၃၀) ပြေငှားစာချုပ်

ဒုတိယဒေါက်တာ (ခ) ကုန်ကျော်

၃၃၀၀၀၃၅

အမှတ်စဉ်အမှတ် - ၃၉၈/ စသ / ၂၀၁၆
(၇ - ၇ - ၂၀၁၆)



LAND REVENUE II

Lease

Entered in Land register 3 (Volume) Page

Revenue Proceedings No ၃၉၈/ စသ /၂၀၁၆, MUSE District Office

FORM OF LEASE OF TOWN LANDS WITH POWER OF RENEWAL UP TO THIRTY YEARS

(Rule 51 A of the Rules under the U.B land and Revenue Regulation, 1889)

(Rule 29 of the Rules under the L.B Town and Village Lands Act, 1898)

THIS LEASE made the ၇ day ဇူလိုင် of Two thousand four five hundred and ၂၀၁၆ BETWEEN THE GOVERNMENT OF THE UNION OF BURMA (hereinafter called " the Lessor" which expression shall be taken to mean and include the side Government of the Union of Burma and his successors in office and assigns except when the contex requires another and different meaning) of the one part: AND

မိုးကောင်းကုန်တိုး: (ခ) ကုန်ကျော်

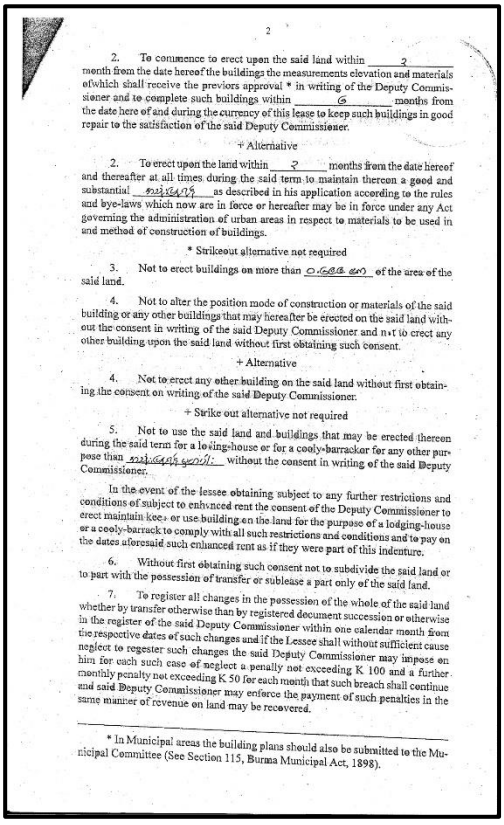
၁၂၀၇၀၄၃၉၀၀၀၃၀၅ of son of မိုးကြမ်းမြို့

(hereinafter called "the lessee" which expression shall be taken to mean and include the seed hes heirs executors administrators representatives and assigns except when the contex requires another and defferent meaning) of the other part : WITNESSETH that in consideration of the rent hereinafter reserved and of the Lessee all that piece of land described in the schedule hereby together with all rights easements and appurtenances to the same beloinging save and except all mines and mineral products buried treasure coal petroleum oil and quarries whatsoever in under or within the said land with liberty for the Lesser and his lessees licensees agents and workmen and all other persons acting on his behalf to dig search for obtain and carry away the same on making reasonable compensation to the Lessees on account of any disturbance or damage that may be caused thereby to the surface of the said land and that such compensation shall in case of dispute determined by the Deputy Commissioner မြို့နယ်စစ်ဆေးရေးမှူးရုံးမှ as nearly as may be in accordance with the provisions of the Land Acquisition Acts or Regulations for the time being in force TO HOLD the said land unto the Lessee for term of thirty years from the date of this lease * with the option for the Lessee to renew this lease for + two successive terms of thirty years + as hereinafter provided. * YIELDING and PAYING therefor the clear yearly rent of Kyats ၁၃၂၂၅၄/- payable in advance on the third day of January of each year and the Lessee doth hereby to the intent that the bueden of the convenants may run with the said land and may bind the owners there of for the time being covenant with the Lessor:

1. To pay the said rent on the days and in the manner hereinbefore appointed for payment there of and also to pay all taxes rates and assessment that now are or may thereafter during the said term be imposed upon the said land or any buildings that may be erected thereon or upon the Lessee in respect thereof.

- the words "with the optain ..... hereinafter provided" should be omitted at the second renewal.

+-+ the words "a further term of thirty years" should be substituted at the first renewal.



2

2. To commence to erect upon the said land within 2 month from the date hereof the buildings the measurements elevation and materials ofwhich shall receive the previors approval * in writing of the Deputy Commissioner and to complete such buildings within 6 months from the date here of and during the currency of this lease to keep such buildings in good repair to the satisfaction of the said Deputy Commissioner.

+ Alternative

2. To erect upon the land within 2 months from the date hereof and thereafter at all times during the said term to maintain thereon a good and substantial ဘုံးသုံးထပ် as described in his application according to the rules and bye-laws which now are in force or hereafter may be in force under any Act governing the administration of urban areas in respect to materials to be used in and method of construction of buildings.

* Strikeout alternative not required

3. Not to erect buildings on more than ၀.၄၉၈၈ ဧက် of the area of the said land.

4. Not to alter the position mode of construction or materials of the said building or any other buildings that may hereafter be erected on the said land without the consent in writing of the said Deputy Commissioner and not to erect any other building upon the said land without first obtaining such consent.

+ Alternative

4. Not to erect any other building on the said land without first obtaining the consent on writing of the said Deputy Commissioner.

+ Strike out alternative not required

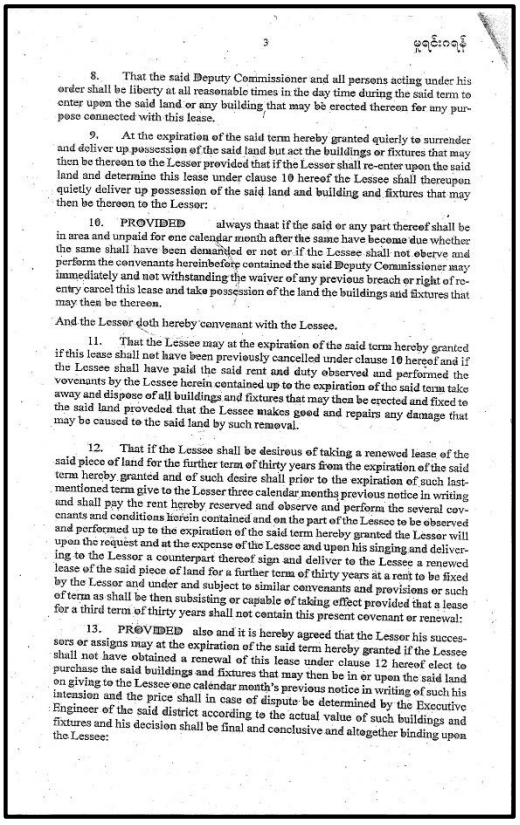
5. Not to use the said land and buildings that may be erected thereon during the said term for a lodging-house or for a cooly-barracker for any other purpose than ဘဏ်းကြမ်းနှစ်ထပ်: without the consent in writing of the said Deputy Commissioner.

In the event of the lessee obtaining subject to any further restrictions and conditions of subject to enhanced rent the consent of the Deputy Commissioner to erect maintain keep or use building on the land for the purpose of a lodging-house or a cooly-barrack to comply with all such restrictions and conditions and to pay on the dates aforesaid such enhanced rent as if they were part of this indenture.

6. Without first obtaining such consent not to subdivide the said land or to part with the possession of transfer or sublease a part only of the said land.

7. To register all changes in the possession of the whole of the said land whether by transfer otherwise than by registered document succession or otherwise in the register of the said Deputy Commissioner within one calendar month from the respective dates of such changes and if the Lessee shall without sufficient cause neglect to register such changes the said Deputy Commissioner may impose on him for each such case of neglect a penalty not exceeding K 100 and a further monthly penalty not exceeding K 50 for each month that such breach shall continue and said Deputy Commissioner may enforce the payment of such penalties in the same manner of revenue on land may be recovered.

* In Municipal areas the building plans should also be submitted to the Municipal Committee (See Section 115, Burma Municipal Act, 1898).



3 ရုံးသုံးစက္ကူ

8. That the said Deputy Commissioner and all persons acting under his order shall be liberty at all reasonable times in the day time during the said term to enter upon the said land or any building that may be erected thereon for any purpose connected with this lease.

9. At the expiration of the said term hereby granted quierly to surrender and deliver up possession of the said land but act the buildings or fixtures that may then be thereon to the Lesser provided that if the Lesser shall re-enter upon the said land and determine this lease under clause 10 hereof the Lessee shall thereupon quietly deliver up possession of the said land and building and fixtures that may then be thereon to the Lessor:

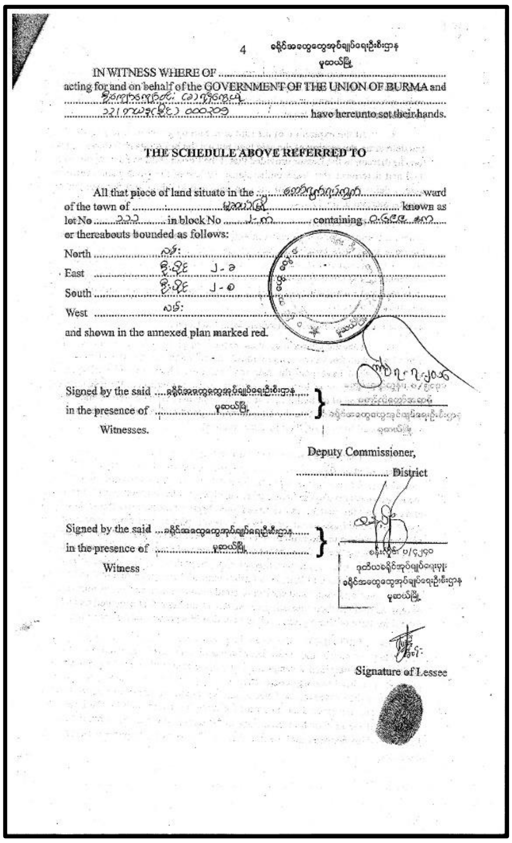
10. PROVIDED always thaat if the said or any part thereof shall be in area and unpaid for one calendar month after the same have become due whether the same shall have been demanded or not or if the Lessee shall not observe and perform the convenants hereinbefore contained the said Deputy Commissioner may immediately and not withstanding the waiver of any previous breach or right of reentry cancel this lease and take possession of the land the buildings and fixtures that may then be thereon.

And the Lessor doth hereby convenant with the Lessee.

11. That the Lessee may at the expiration of the said term hereby granted if this lease shall not have been previously cancelled under clause 10 hereof and if the Lessee shall have paid the said rent and duty observed and performed the vovenants by the Lessee herein contained up to the expiration of the said term take away and dispose of all buildings and fixtures that may then be erected and fixed to the said land provided that the Lessee makes good and repairs any damage that may be caused to the said land by such removal.

12. That if the Lessee shall be desireus of taking a renewed lease of the said piece of land for the further term of thirty years from the expiration of the said term hereby granted and of such desire shall prior to the expiration of such last-mentioned term give to the Lesser three calendar months previous notice in writing and shall pay the rent hereby reserved and observe and perform the several covenants and conditions herein contained and on the part of the Lessee to be observed and performed up to the expiration of the said term hereby granted the Lessor will upon the request and at the expense of the Lessee and upon his singing and delivering to the Lessor a counterpart thereof sign and deliver to the Lessee a renewed lease of the said piece of land for a further term of thirty years at a rent to be fixed by the Lessor and under and subject to similar convenants and provisions or such of term as shall be then subsisting or capable of taking effect provided that a lease for a third term of thirty years shall not contain this present covenant or renewal:

13. PROVIDED also and it is hereby agreed that the Lessor his successors or assigns may at the expiration of the said term hereby granted if the Lessee shall not have obtained a renewal of this lease under clause 12 hereof elect to purchase the said buildings and fixtures that may then be in or upon the said land on giving to the Lessee one calendar month's previous notice in writing of such his intension and the price shall in case of dispute be determined by the Executive Engineer of the said district according to the actual value of such buildings and fixtures and his decision shall be final and conclusive and altogether binding upon the Lessee:



4 ခရိုင်အထွေထွေအုပ်ချုပ်ရေးဦးစီးဌာန
မူဆယ်မြို့

IN WITNESS WHERE OF ....
acting for and on behalf of the GOVERNMENT OF THE UNION OF BURMA and
ဦးကျော်ကျော်ဝင်း (ခ)ရန်ကွေ့ယုံ
၁၃/တယန(နိုင်) ၀၀၀၃၀၅ .... have hereunto set their hands.

THE SCHEDULE ABOVE REFERRED TO

All that piece of land situate in the .... ward of the town of ......မူဆယ်မြို့...... known as lot No ...၁၁၁... in block No ...၂-က... containing ...၀.၆၉၉၁ ဧက... or thereabouts bounded as follows:

North ......လမ်း......
East ......ဦးပိုင် ၂-ခ......
South ......ဦးပိုင် ၂-ဂ......
West ......လမ်း......

and shown in the annexed plan marked red.

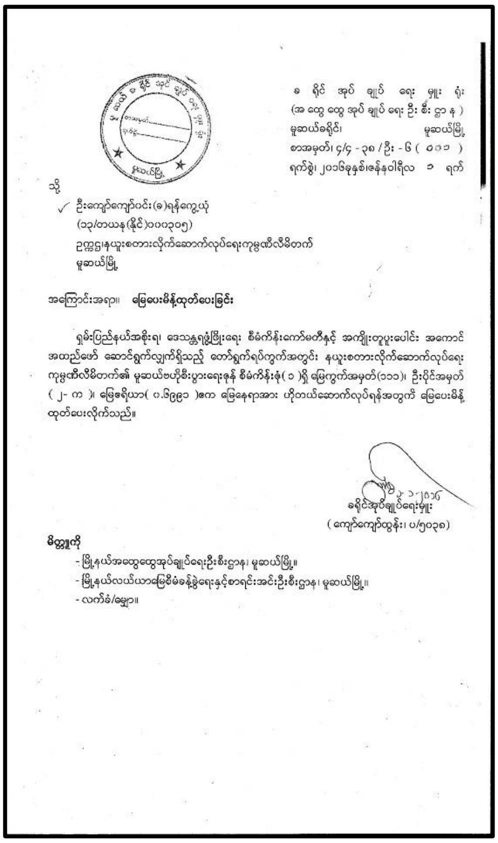
Signed by the said ...ခရိုင်အထွေထွေအုပ်ချုပ်ရေးဦးစီးဌာန...
in the presence of ......မူဆယ်မြို့......
Witnesses.

Deputy Commissioner,
.... District

Signed by the said ...ခရိုင်အထွေထွေအုပ်ချုပ်ရေးဦးစီးဌာန...
in the presence of ......မူဆယ်မြို့......
Witness

ဒုတိယခရိုင်အုပ်ချုပ်ရေးမှူး
ခရိုင်အထွေထွေအုပ်ချုပ်ရေးဦးစီးဌာန
မူဆယ်မြို့

Signature of Lessee



ခရိုင် အုပ် ချုပ် ရေး မှူး ရုံး
(အ ထွေ ထွေ အုပ် ချုပ် ရေး ဦး စီး ဌာ န)
မူဆယ်ခရိုင်၊ မူဆယ်မြို့
စာအမှတ်၊ ၄/၄ - ၃၈ / ဦး - ၆ (၈၁၁)
ရက်စွဲ၊ ၂၀၁၆ခုနှစ်၊ဇန်နဝါရီလ ၁ ရက်

သို့
✓ ဦးကျော်ကျော်ဝင်း(ခ)ရန်ကွေ့ယုံ
(၁၃/တယန(နိုင်)၀၀၀၃၀၅)
ဥက္ကဌ၊နယူးစတားလိုက်ဆောက်လုပ်ရေးကုမ္ပဏီလီမိတက်
မူဆယ်မြို့

အကြောင်းအရာ။ **မြေပေးမိန့်ထုတ်ပေးခြင်း**

ရှမ်းပြည်နယ်အစိုးရ၊ ဒေသန္တရဖွံ့ဖြိုးရေး စီမံကိန်းကော်မတီနှင့် အကျိုးတူပူးပေါင်း အကောင်အထည်ဖော် ဆောင်ရွက်လျက်ရှိသည့် တော်ရွက်ရပ်ကွက်အတွင်း နယူးစတားလိုက်ဆောက်လုပ်ရေး ကုမ္ပဏီလီမိတက်၏ မူဆယ်ဗဟိုစီးပွားရေးဇုန် စီမံကိန်းနံ(၁)ရှိ မြေကွက်အမှတ်(၁၁၁)၊ ဦးပိုင်အမှတ် (၂-က)၊ မြေဧရိယာ(၀.၆၉၉၁)ဧက မြေနေရာအား ဟိုတယ်ဆောက်လုပ်ရန်အတွက် မြေပေးမိန့် ထုတ်ပေးလိုက်သည်။

ခရိုင်အုပ်ချုပ်ရေးမှူး
(ကျော်ကျော်ထွန်း၊ ပ/၅၀၃၈)

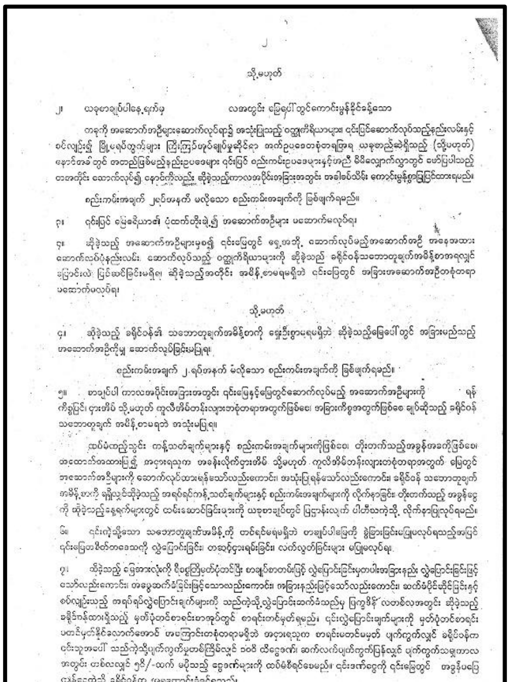
မိတ္တူကို
- မြို့နယ်အထွေထွေအုပ်ချုပ်ရေးဦးစီးဌာန၊ မူဆယ်မြို့။
- မြို့နယ်လယ်ယာမြေစီမံခန့်ခွဲရေးနှင့်စာရင်းအင်းဦးစီးဌာန၊ မူဆယ်မြို့။
- လက်ခံ/မျှော။

TRANSLATION OF LEASE
(TO be attached to original)

နှစ်ပေါင်း ၉၀ ထိ အသစ်လဲလှယ်ချုပ်ဆိုခွင့်ရသည့် မြို့မြေငှားစာချုပ်ပုံစံ

၁၈၈၉ခုနှစ် မြန်မာနိုင်ငံအထက်ပိုင်းဆိုင်ရာ မြေမှုနှစ်၍ အခွန်ရက်ဂယူလေရန် ဥပဒေအရ နည်းဥပဒေများ အနက် နည်းဥပဒေ ၅၁က။

၁၈၉၈ခုနှစ် မြန်မာနိုင်ငံအောက်ပိုင်း မြို့ရွာရှိမြေရာဥပဒေအရ နည်းဥပဒေများအနက် နည်းဥပဒေ ၂၉။



၂

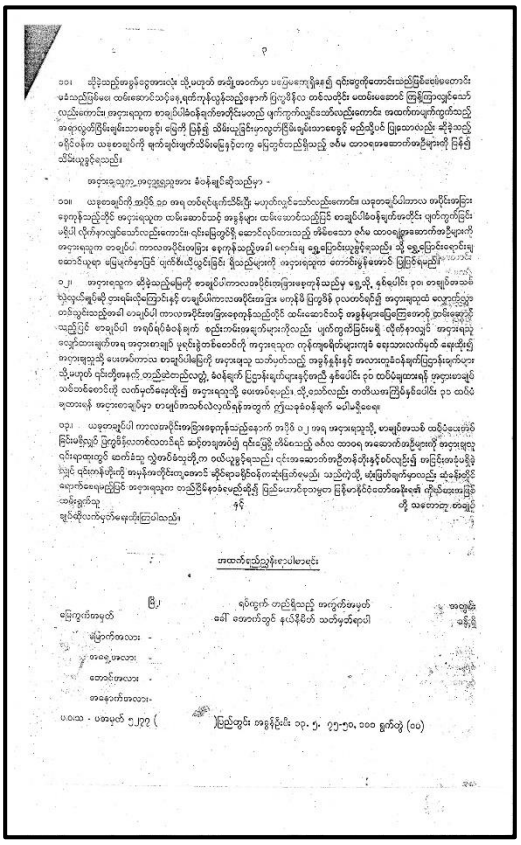
သို့မဟုတ်

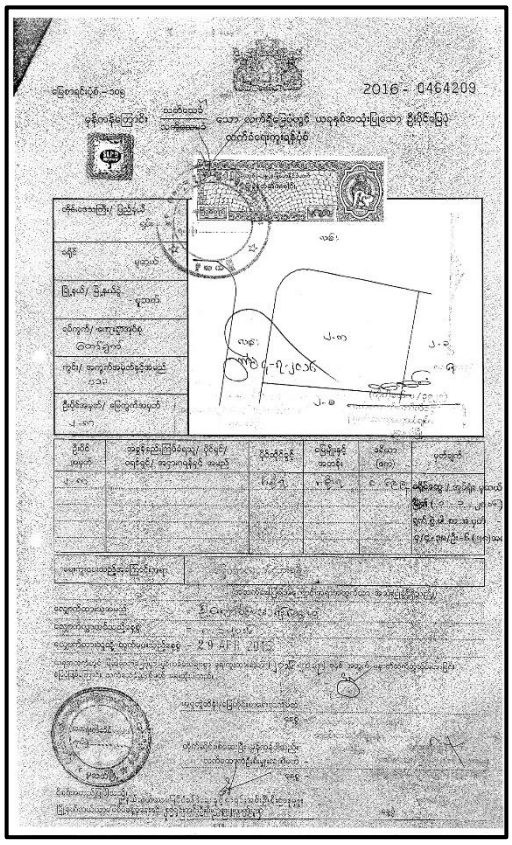
၂။ ယခုစာချုပ်ပါနေ့ရက်မှ လအတွင်း မြေပေါ်တွင်ကောင်းမွန်ခိုင်ခန့်သော

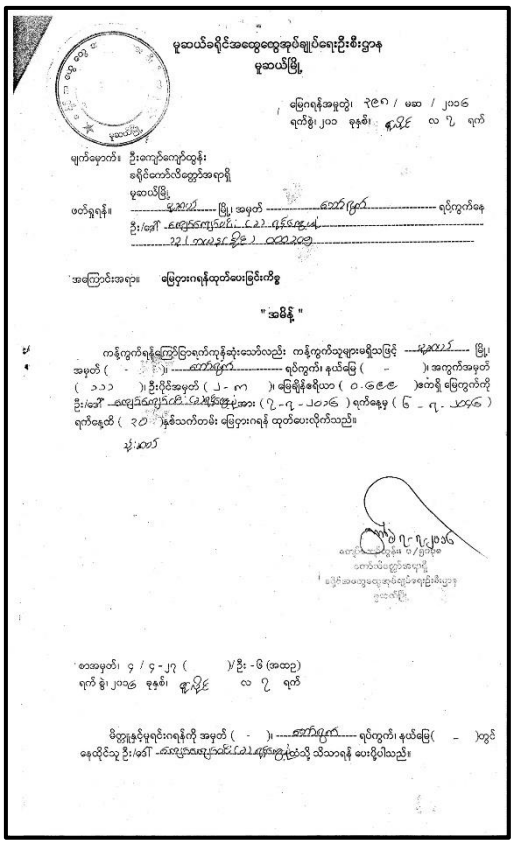
စည်းကမ်းအချက် ၂၉ပ်အနက် မလိုသော စည်းကမ်းအချက်ကို ခြစ်ဖျက်ရမည်။

၃။ ၎င်းမြေ၏ မြေဧရိယာ၏ ပုံထက်တိုးချဲ့၍ အဆောက်အဦများ မဆောက်မလုပ်ရ။

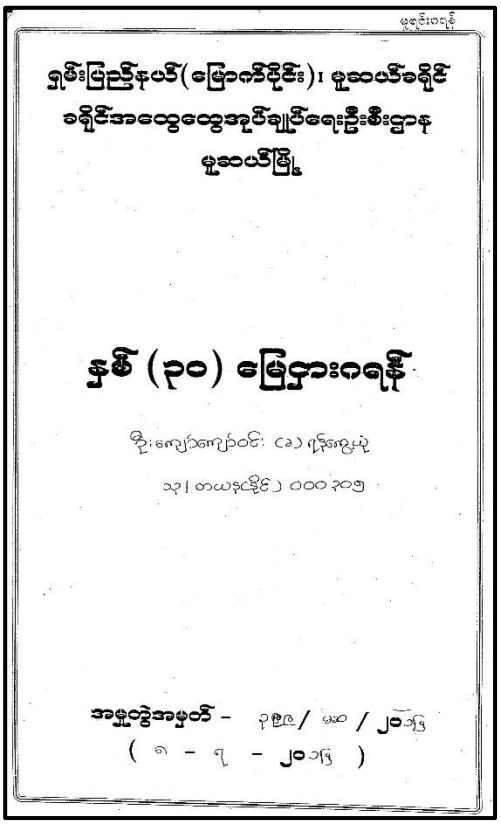
သို့မဟုတ်







Appendix 6 Land Lease Grant (399/MaSa/2016)



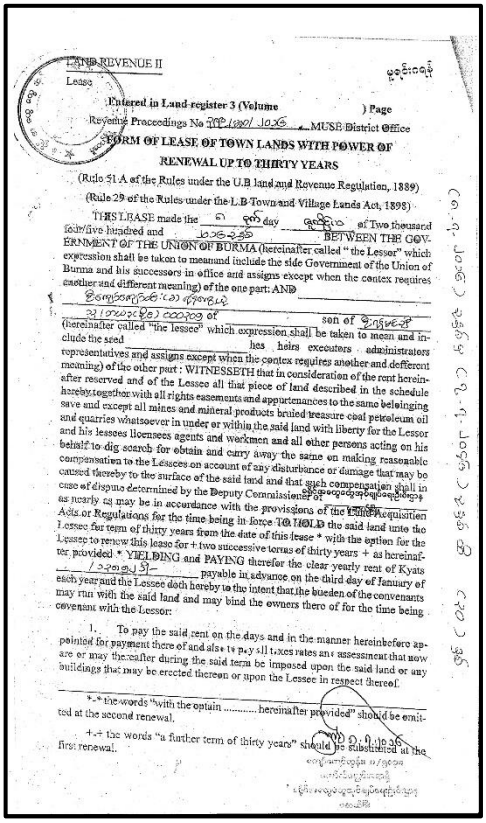
ရွှေဖြည့်ညီနယ်(မြောက်ပိုင်း)၊ မူဆယ်ခရိုင်
ခရိုင်အထွေထွေအုပ်ချုပ်ရေးဦးစီးဌာန
မူဆယ်မြို့

နှစ် (၃၀) မြေငှားဇရပ်

ဒို့ဃျော်ကျော်ဝင်း (ခ) ကိုကြီးမှဲ့

သို့ တယနွဲ့ပိုင်) ဝ၀၀ ၃၀၅

အမှုတွဲအမှတ် - ၃၆၉ / ၈၀ / ၂၀၁၆
(၈ - ၇ - ၂၀၁၆)



LAND REVENUE II

Lease

Entered in Land-register 3 (Volume) Page

Revenue Proceedings No ... MUSE District Office

FORM OF LEASE OF TOWN LANDS WITH POWER OF RENEWAL UP TO THIRTY YEARS

(Rule 51 A of the Rules under the U.B land and Revenue Regulation, 1889)

(Rule 29 of the Rules under the L.B Town and Village Lands Act, 1898)

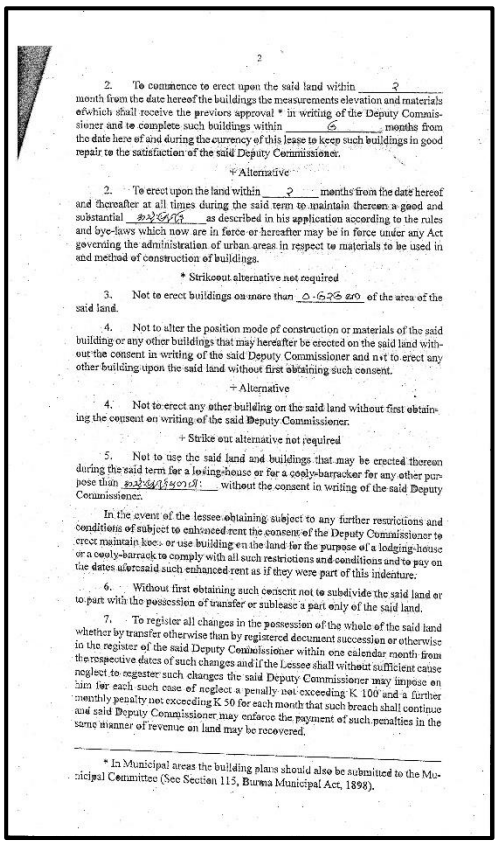
THIS LEASE made the ... day ... of Two thousand four five hundred and ... BETWEEN THE GOVERNMENT OF THE UNION OF BURMA (hereinafter called " the Lesser" which expression shall be taken to meanand include the side Government of the Union of Burma and his successors in office and assigns except when the contex requires another and different meaning) of the one part: AND ...

... son of ... (hereinafter called "the lessee" which expression shall be taken to mean and include the said ... his heirs executors administrators representatives and assigns except when the contex requires another and defferent meaning) of the other part : WITNESSETH that in consideration of the rent hereinafter reserved and of the Lessee all that piece of land described in the schedule hereby together with all rights easements and appurtenances to the same belonging save and except all mines and mineral products hruied treasure coal petroleum oil and quarries whatsoever in under or within the said land with liberty for the Lessor and his lessees licensees agents and workmen and all other persons acting on his behalf to dig search for obtain and carry away the same on making reasonable compensation to the Lessees on account of any disturbance or damage that may be caused thereby to the surface of the said land and that such compensation shall in case of dispute determined by the Deputy Commissioner of ... as nearly as may be in accordance with the provisions of the ... Acts or Regulations for the time being in force TO HOLD the said land unto the Lessee for term of thirty years from the date of this lease * with the option for the Lessee to renew this lease for + two successive terms of thirty years + as hereinafter provided * YIELDING and PAYING therefor the clear yearly rent of Kyats ... payable in advance on the third day of January of each year and the Lessee doth hereby to the intent that the bueden of the convenants may run with the said land and may bind the owners thero of for the time being covenant with the Lessor:

1. To pay the said rent on the days and in the manner hereinbefore appointed for payment there of and also to pay all taxes rates and assessment that now are or may thereafter during the said term be imposed upon the said land or any buildings that may be erected thereon or upon the Lessee in respect thereof.

- the words "with the optain ..... hereinafter provided" should be omitted at the second renewal.

+-+ the words "a further term of thirty years" should be substituted at the first renewal.



2

2. To commence to erect upon the said land within ... month from the date hereof the buildings the measurements elevation and materials ofwhich shall receive the previors approval * in writing of the Deputy Commissioner and to complete such buildings within ... months from the date here of and during the currency of this lease to keep such buildings in good repair to the satisfaction of the said Deputy Commissioner.

+ Alternative

2. To erect upon the land within ... months from the date hereof and thereafter at all times during the said term to maintain thereon a good and substantial ... as described in his application according to the rules and bye-laws which now are in force or hereafter may be in force under any Act governing the administration of urban areas in respect to materials to be used in and method of construction of buildings.

* Strikeout alternative not required

3. Not to erect buildings on more than ... of the area of the said land.

4. Not to alter the position mode of construction or materials of the said building or any other buildings that may hereafter be erected on the said land without the consent in writing of the said Deputy Commissioner and not to erect any other building upon the said land without first obtaining such consent.

+ Alternative

4. Not to erect any other building on the said land without first obtaining the consent on writing of the said Deputy Commissioner.

+ Strike out alternative not required

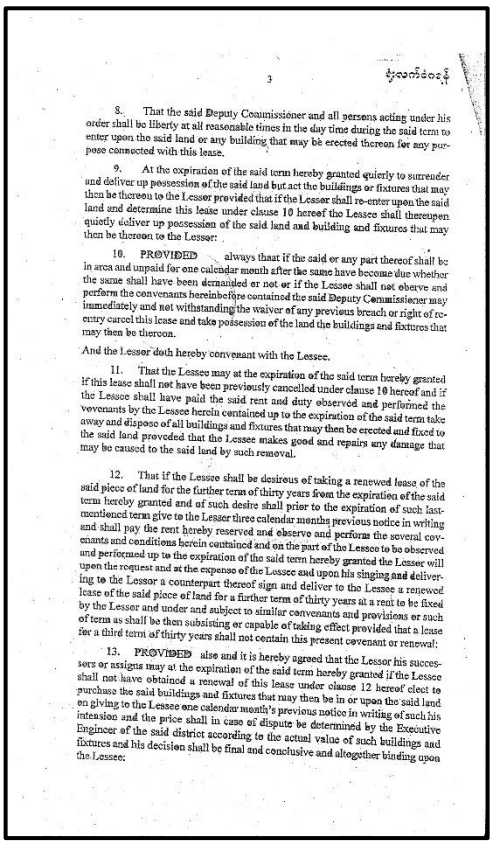
5. Not to use the said land and buildings that may be erected thereon during the said term for a lodging-house or for a cooly-barracker for any other purpose than ... without the consent in writing of the said Deputy Commissioner.

In the event of the lessee obtaining subject to any further restrictions and conditions of subject to enhanced rent the consent of the Deputy Commissioner to erect maintain keep or use building on the land for the purpose of a lodging-house or a cooly-barrack to comply with all such restrictions and conditions and to pay on the dates aforesaid such enhanced rent as if they were part of this indenture.

6. Without first obtaining such consent not to subdivide the said land or to part with the possession of transfer or sublease a part only of the said land.

7. To register all changes in the possession of the whole of the said land whether by transfer otherwise than by registered document succession or otherwise in the register of the said Deputy Commissioner within one calendar month from the respective dates of such changes and if the Lessee shall without sufficient cause neglect to register such changes the said Deputy Commissioner may impose on him for each such case of neglect a penalty not exceeding K 100 and a further monthly penalty not exceeding K 50 for each month that such breach shall continue and said Deputy Commissioner may enforce the payment of such penalties in the same manner of revenue on land may be recovered.

* In Municipal areas the building plans should also be submitted to the Municipal Committee (See Section 115, Burma Municipal Act, 1898).



3

8. That the said Deputy Commissioner and all persons acting under his order shall be liberty at all reasonable times in the day time during the said term to enter upon the said land or any building that may be erected thereon for any purpose connected with this lease.

9. At the expiration of the said term hereby granted quierly to surrender and deliver up possession of the said land but act the buildings or fixtures that may then be thereon to the Lesser provided that if the Lesser shall re-enter upon the said land and determine this lease under clause 10 hereof the Lessee shall thereupen quietly deliver up possession of the said land and building and fixtures that may then be thereon to the Lessor:

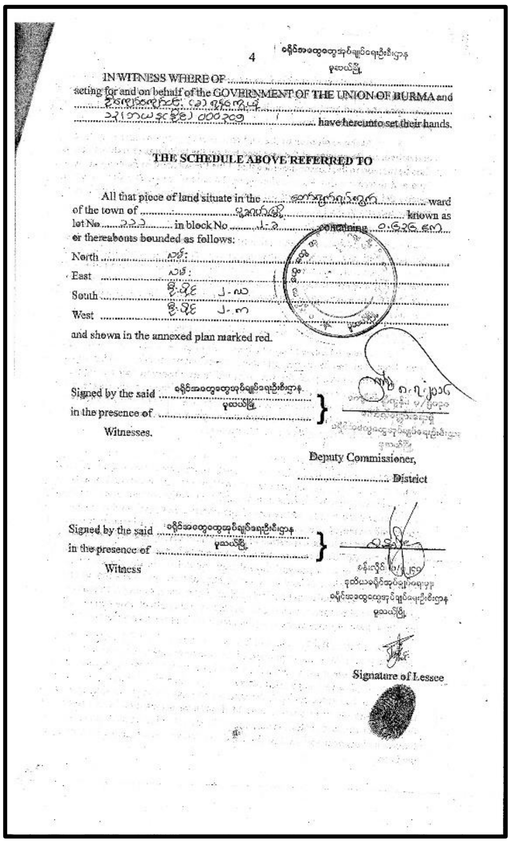
10. PROVIDED always that if the said or any part thereof shall be in area and unpaid for one calendar month after the same have become due whether the same shall have been demanded or not or if the Lessee shall not observe and perform the convenants hereinbefore contained the said Deputy Commissioner may immediately and not withstanding the waiver of any previous breach or right of re-entry cancel this lease and take possession of the land the buildings and fixtures that may then be thereon.

And the Lessor doth hereby convenant with the Lessee.

11. That the Lessee may at the expiration of the said term hereby granted if this lease shall not have been previously cancelled under clause 10 hereof and if the Lessee shall have paid the said rent and duty observed and performed the covenants by the Lessee herein contained up to the expiration of the said term take away and dispose of all buildings and fixtures that may then be erected and fixed to the said land provided that the Lessee makes good and repairs any damage that may be caused to the said land by such removal.

12. That if the Lessee shall be desireus of taking a renewed lease of the said piece of land for the further term of thirty years from the expiration of the said term hereby granted and of such desire shall prior to the expiration of such last-mentioned term give to the Lesser three calendar months previous notice in writing and shall pay the rent hereby reserved and observe and perform the several covenants and conditions herein contained and on the part of the Lessee to be observed and performed up to the expiration of the said term hereby granted the Lesser will upon the request and at the expense of the Lessee and upon his singing and delivering to the Lessor a counterpart thereof sign and deliver to the Lessee a renewed lease of the said piece of land for a further term of thirty years at a rent to be fixed by the Lesser and under and subject to similar convenants and provisions or such of term as shall be then subsisting or capable of taking effect provided that a lease for a third term of thirty years shall not contain this present covenant or renewal:

13. PROVIDED also and it is hereby agreed that the Lessor his successors or assigns may at the expiration of the said term hereby granted if the Lessee shall not have obtained a renewal of this lease under clause 12 hereof elect to purchase the said buildings and fixtures that may then be in or upon the said land on giving to the Lessee one calendar month's previous notice in writing of such his intension and the price shall in case of dispute be determined by the Executive Engineer of the said district according to the actual value of such buildings and fixtures and his decision shall be final and conclusive and altogether binding upon the Lessee:



4

ခရိုင်အထွေထွေအုပ်ချုပ်ရေးဦးစီးဌာန
မူဆယ်မြို့

IN WITNESS WHERE OF ....
acting for and on behalf of the GOVERNMENT OF THE UNION OF BURMA and
ဦးကျော်ကျော်ဝင်း (ခ) ရန်ကွေ့ယုံ
၁၃/တယန(နိုင်)၀၀၀၃၀၅ .... have hereunto set their hands.

THE SCHEDULE ABOVE REFERRED TO

All that piece of land situate in the ....တော်ရွက်ရပ်ကွက်....... ward of the town of ....မူဆယ်မြို့....... known as lot No ....၁၁၁.... in block No ....၂-ခ.... containing ....၀.၆၃၆၂ ဧက.... or thereabouts bounded as follows:

North .... လမ်း
East .... လမ်း
South .... ဦးပိုင် ၂-ဃ
West .... ဦးပိုင် ၂-က

and shown in the annexed plan marked red.

Signed by the said ....ခရိုင်အထွေထွေအုပ်ချုပ်ရေးဦးစီးဌာန မူဆယ်မြို့....
in the presence of ....
Witnesses.

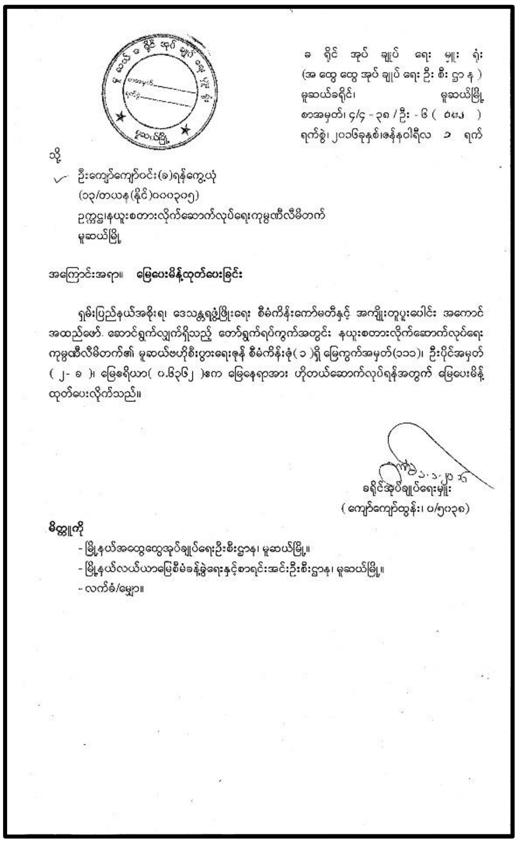
၈.၇.၂၀၁၆
ခရိုင်အထွေထွေအုပ်ချုပ်ရေးဦးစီးဌာန
မူဆယ်မြို့

Deputy Commissioner,
.... District

Signed by the said ....ခရိုင်အထွေထွေအုပ်ချုပ်ရေးဦးစီးဌာန မူဆယ်မြို့....
in the presence of ....
Witness

ဒုတိယခရိုင်အုပ်ချုပ်ရေးမှူး
ခရိုင်အထွေထွေအုပ်ချုပ်ရေးဦးစီးဌာန
မူဆယ်မြို့

Signature of Lessee



ခရိုင်အုပ်ချုပ်ရေးမှူးရုံး
(အထွေထွေအုပ်ချုပ်ရေးဦးစီးဌာန)
မူဆယ်ခရိုင်၊ မူဆယ်မြို့
စာအမှတ်၊ ၄/၄ - ၃၈ / ဦး - ၆ (၀၈၂)
ရက်စွဲ၊ ၂၀၁၆ခုနှစ်၊ဇန်နဝါရီလ ၁ ရက်

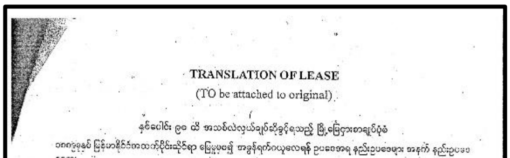
သို့
ဦးကျော်ကျော်ဝင်း(ခ)ရန်ကွေ့ယုံ
(၁၃/တယန(နိုင်)၀၀၀၃၀၅)
ဥက္ကဋ္ဌ၊နယူးစတားလိုက်ဆောက်လုပ်ရေးကုမ္ပဏီလီမိတက်
မူဆယ်မြို့

အကြောင်းအရာ။ **မြေပေးမိန့်ထုတ်ပေးခြင်း**

ရှမ်းပြည်နယ်အစိုးရ၊ ဒေသန္တရဖွံ့ဖြိုးရေး စီမံကိန်းကော်မတီနှင့် အကျိုးတူပူးပေါင်း အကောင်အထည်ဖော်ဆောင်ရွက်လျှက်ရှိသည့် တော်ရွက်ရပ်ကွက်အတွင်း နယူးစတားလိုက်ဆောက်လုပ်ရေးကုမ္ပဏီလီမိတက်၏ မူဆယ်ဗဟိုစီးပွားရေးဇုန် စီမံကိန်းဖုံ(၁)ရှိ မြေကွက်အမှတ်(၁၁၁)၊ ဦးပိုင်အမှတ်(၂-ခ)၊ မြေဧရိယာ(၀.၆၃၆၂)ဧက မြေနေရာအား ဟိုတယ်ဆောက်လုပ်ရန်အတွက် မြေပေးမိန့်ထုတ်ပေးလိုက်သည်။

၁.၁.၂၀၁၆
ခရိုင်အုပ်ချုပ်ရေးမှူး
(ကျော်ကျော်ထွန်း၊ ပ/၅၀၃၈)

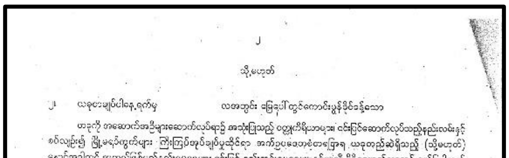
မိတ္တူကို
- မြို့နယ်အထွေထွေအုပ်ချုပ်ရေးဦးစီးဌာန၊ မူဆယ်မြို့။
- မြို့နယ်လယ်ယာမြေစီမံခန့်ခွဲရေးနှင့်စာရင်းအင်းဦးစီးဌာန၊ မူဆယ်မြို့။
- လက်ခံ/မျှော။



TRANSLATION OF LEASE
(TO be attached to original)

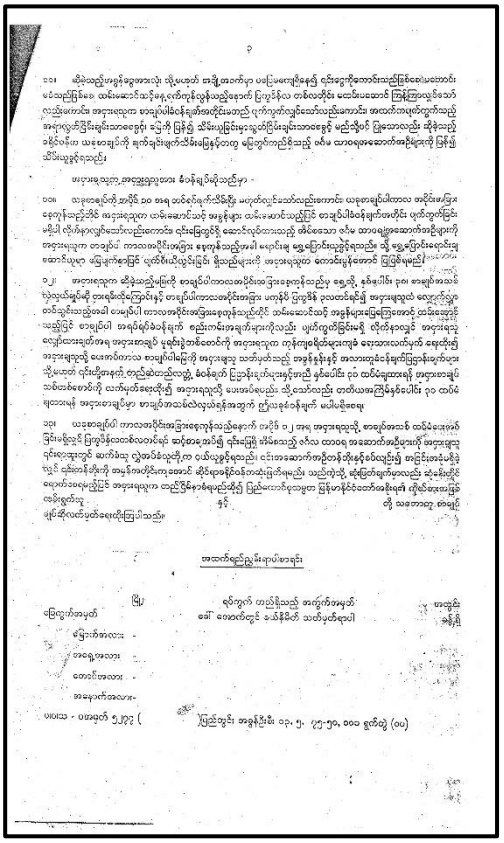
နှစ်ပေါင်း ၉၀ ထိ အသစ်လဲလှယ်ချုပ်ဆိုခွင့်ရသည့် မြို့မြေငှားစာချုပ်ပုံစံ

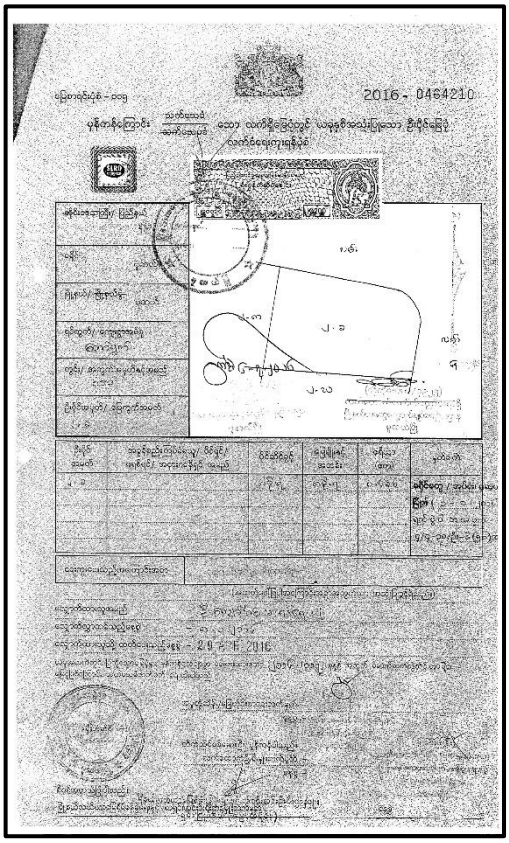
(Lease I)

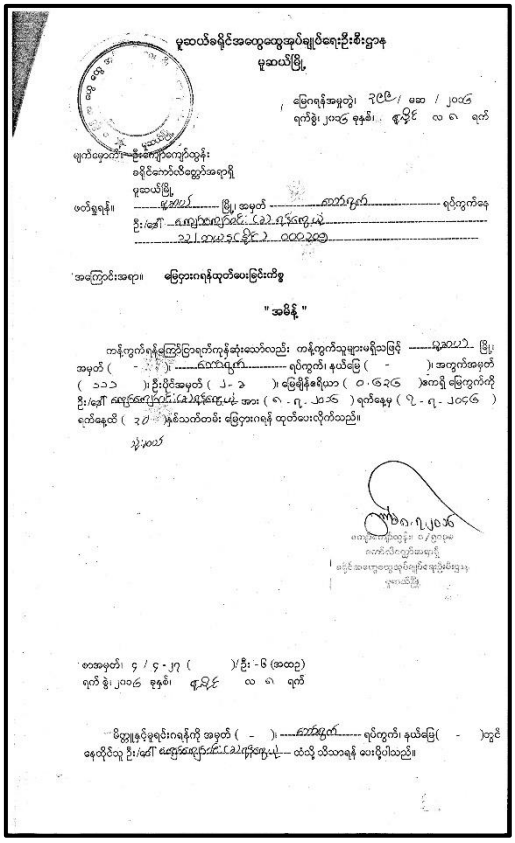


၂

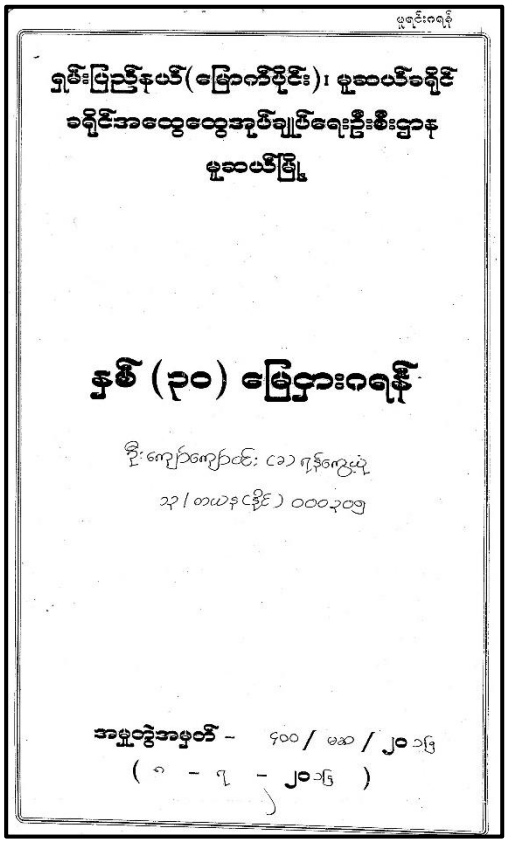
သို့မဟုတ်







Appendix 7 Land Lease Grant (400/MaSa/2016)



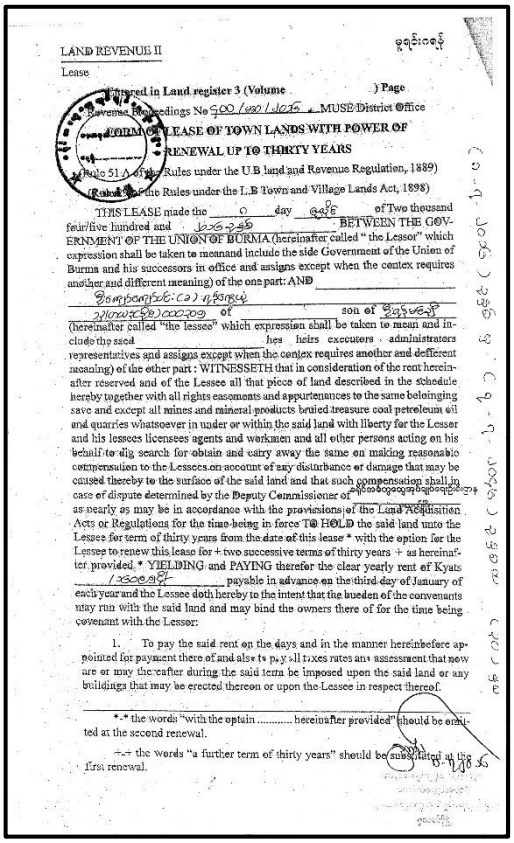
ပုဒ်နှိုင်းစဉ်

ရှမ်းပြည်နယ်(မြောက်ပိုင်း)၊ မူဆယ်မြို့နယ်
ခရိုင်အတွေ့အကြုံဖွင့်ချုပ်ရေးဦးစီးဌာန
မူဆယ်မြို့

နှစ် (၃၀) မြေငှားစာချုပ်

မိုးကျော်ကျော်ထင်း ခေါ ဂူနိုးကွယ့်
၃၃/တယခ(နိုင်) ၀၀၀၃၀၅

အမှုတွဲအမှတ် - ၄၀၀ / ၈၆ / ၂၀ ဘဂြ
(၁ - ၇ - ၂၀ ဘဂြ)



LAND REVENUE II

ပုဒ်နှိုင်းစဉ်

Lease

Registered in Land register 3 (Volume) Page

Revenue Proceedings No 400/MaSa/2016 MUSE District Office

FORM OF LEASE OF TOWN LANDS WITH POWER OF RENEWAL UP TO THIRTY YEARS

(Rule 51 A of the Rules under the U.B land and Revenue Regulation, 1889)

(Rule 3 of the Rules under the L.B Town and Village Lands Act, 1898)

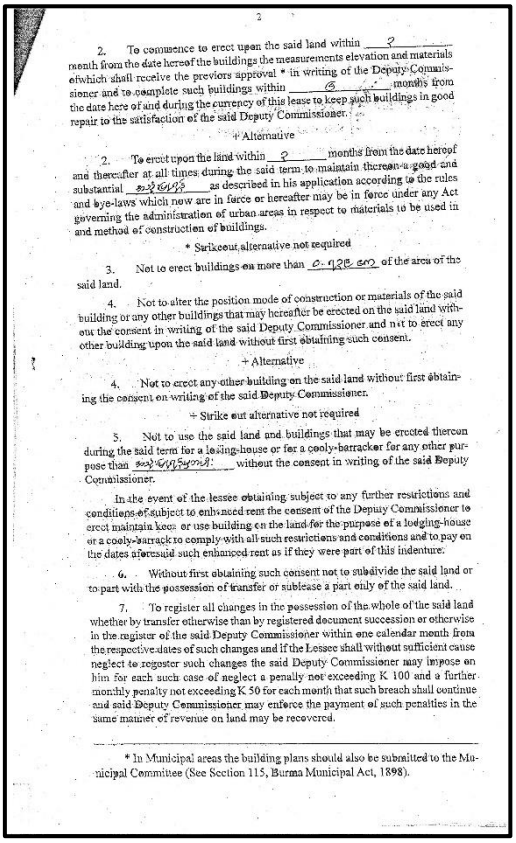
THIS LEASE made the ၀ day ဧပြီ of Two thousand four five hundred and ၂၀၁၆-၂၀၂၁ BETWEEN THE GOVERNMENT OF THE UNION OF BURMA (hereinafter called "the Lessor" which expression shall be taken to meanand include the side Government of the Union of Burma and his successors in office and assigns except when the contex requires another and different meaning) of the one part: AND

ဦးကျော်ကျော်ထင်း (ခေါ) ဂူနိုးကွယ့်
၁၂/တယခ(နိုင်)၀၀၀၃၀၅ of son of ဦးသုမဂလာ
(hereinafter called "the lessee" which expression shall be taken to mean and include the sseed hes heirs executors administrators representatives and assigns except when the contex requires another and defferent meaning) of the other part : WITNESSETH that in consideration of the rent hereinafter reserved and of the Lessee all that piece of land described in the schedule hereby together with all rights easements and appurtenances to the same belonging save and except all mines and mineral products buried treasure coal petroleum oil and quarries whatsoever in under or within the said land with liberty for the Lesser and his lessees licensees agents and workmen and all other persons acting on his behalf to dig search for obtain and catry away the same on making reasonable compensation to the Lessees on accotnt of any disturbance or damage that may be caused thereby to the surface of the said land and that such compensation shall in case of dispute determined by the Deputy Commissioner of ကျိုင်းတုံခရိုင်အုပ်ချုပ်ရေးမှူးရုံး as nearly as may be in accordance with the provisions of the Land Acquisition Acts or Regulations for the time being in force TO HOLD the said land unto the Lessee for term of thirty years from the date of this lease * with the option for the Lessee to renew this lease for + two successive terms of thirty years + as hereinafter provided. * YIELDING and PAYING therefor the clear yearly rent of Kyats ၁၀၀၀၀၀၀/- payable in advance on the third day of January of each year and the Lessee doth hereby to the intent that the bueden of the convenants may run with the said land and may bind the owners there of for the time being covenant with the Lesser:

1. To pay the said rent on the days and in the manner hereinbefore appointed for payment there of and also to pay all taxes rates and assessment that now are or may thereafter during the said term be imposed upon the said land or any buildings that may be erected thereon or upon the Lessee in respect thereof.

- the words "with the optain ..... hereinafter provided" should be omitted at the second renewal.

+-+ the words "a further term of thirty years" should be substituted at the first renewal.



2

2. To commence to erect upon the said land within ၃ month from the date hereof the buildings the measurements elevation and materials ofwhich shall receive the previors approval * in writing of the Deputy Comanissioner and to complete such buildings within ၆ months from the date here of and during the currency of this lease to keep such buildings in good repair to the satisfaction of the said Deputy Commissioner.

+ Alternative

2. To erect upon the land within ၃ months from the date heroof and thereafter at all times during the said term to maintain thereon a good and substantial အုတ်ဗဟိုဠိ as described in his application according to the rules and bye-laws which now are in force or hereafter may be in force under any Act governing the administration of urban areas in respect to materials to be used in and method of construction of buildings.

* Strikeout alternative not required

3. Not to erect buildings on more than ၀-၇၅ ဧက of the area of the said land.

4. Not to alter the position mode of construction or materials of the said building or any other buildings that may hereafter be erected on the said land without the consent in writing of the said Deputy Commissioner and not to erect any other building upon the said land without first obtaining such consent.

+ Alternative

4. Not to erect any other building on the said land without first obtaining the consent on writing of the said Deputy Commissioner.

+ Strike out alternative not required

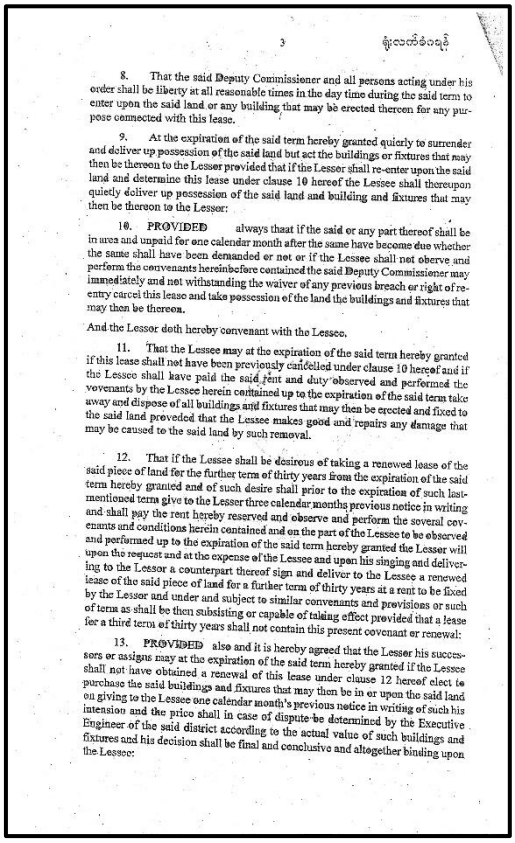
5. Not to use the said land and buildings that may be erected thereon during the said term for a lodging-house or for a cooly-barracker for any other purpose than အသုံးပြုခွင့်ရှိ without the consent in writing of the said Deputy Commissioner.

In the event of the lessee obtaining subject to any further resirictions and conditions of subject to enhanced rent the consent of the Depuiy Commissioner to erect maintain keep or use building on the land for the purpose of a lodging-house or a cooly-barrack to comply with all such resirictions and conditions and to pay on the dates aforesaid such enhanced rent as if they were part of this indenture.

6. Without first obtaining such consent not to subdivide the said land or to part with the possession of transfer or sublease a part only of the said land.

7. To register all changes in the possession of the whole of the said land whether by transfer otherwise than by registered document succession or otherwise in the register of the said Deputy Commissioner within one calendar month from the respective dates of such changes and if the Lessee shall without sufficient cause neglect to regoster such changes the said Deputy Commissioner may impose on him for each such case of neglect a penalty not exceeding K 100 and a further monthly penalty not exceeding K 50 for each month that such breach shall continue and said Deputy Commissioner may enforce the payment of such penalties in the same manner of revenue on land may be recovered.

* In Municipal areas the building plans should also be submitted to the Municipal Committee (See Section 115, Burma Municipal Act, 1898).



3 ရုံးလက်စဉ်ရုပ်

8. That the said Deputy Commissioner and all persons acting under his order shall be liberty at all reasonable times in the day time during the said term to enter upon the said land or any building that may be erected thereon for any purpose connected with this lease.

9. At the expiration of the said term hereby granted quietly to surrender and deliver up possession of the said land but act the buildings or fixtures that may then be thereon to the Lesser provided that if the Lessor shall re-enter upon the said land and determine this lease under clause 10 hereof the Lessee shall thereupon quietly deliver up possession of the said land and building and fixtures that may then be thereon to the Lesser:

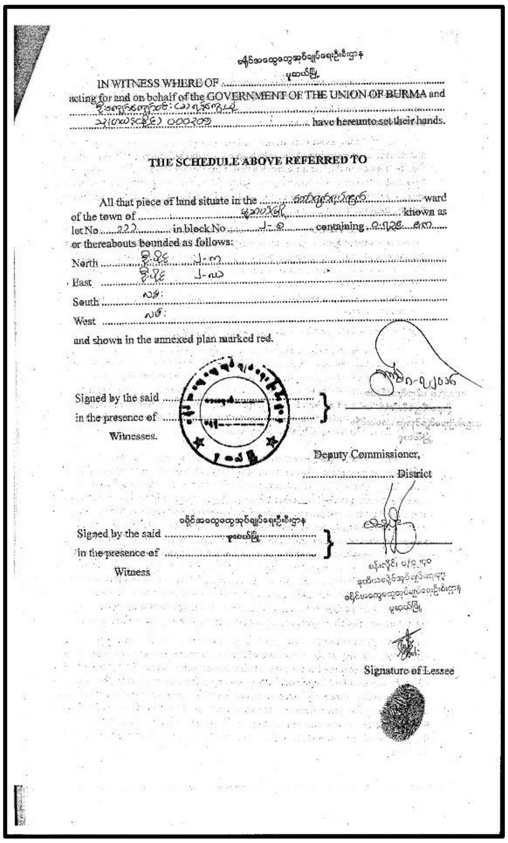
10. PROVIDED always thaat if the said or any part thereof shall be in area and unpaid for one calendar month after the same have become due whether the same shall have been demanded or not or if the Lessee shall not observe and perform the convenants hereinbefore contained the said Deputy Commissioner may immediately and not withstanding the waiver of any previous breach or right of re-entry carcel this lease and take possession of the land the buildings and fixtures that may then be thereon.

And the Lessor doth hereby convenant with the Lessee.

11. That the Lessee may at the expiration of the said term hereby granted if this lease shall not have been previously cancelled under clause 10 hereof and if the Lessee shall have paid the said rent and duty observed and performed the vevenants by the Lessee herein contained up to the expiration of the said term take away and dispose of all buildings and fixtures that may then be erected and fixed to the said land proveded that the Lessee makes good and repairs any damage that may be caused to the said land by such removal.

12. That if the Lessee shall be desirous of taking a renewed lease of the said piece of land for the further term of thirty years from the expiration of the said term hereby granted and of such desire shall prior to the expiration of such last-mentioned term give to the Lesser three calendar months previous notice in writing and shall pay the rent hereby reserved and observe and perform the soveral covenants and conditions herein contained and on the part of the Lessee to be observed and performed up to the expiration of the said term hereby granted the Lesser will upon the request and at the expense of the Lessee and upon his singing and delivering to the Lessor a counterpart thereof sign and deliver to the Lessee a renewed lease of the said piece of land for a further term of thirty years at a rent to be fixed by the Lessor and under and subject to similar convenants and provisions or such of term as shall be then subsisting or capable of taking effect provided that a lease for a third term of thirty years shall not contain this present covenant or renewal:

13. PROVIDED also and it is hereby agreed that the Lesser his successors or assigns may at the expiration of the said term hereby granted if the Lessee shall not have obtained a renewal of this lease under clause 12 hereof elect to purchase the said buildings and fixtures that may then be in or upon the said land on giving to the Lessee one calendar month's previous notice in writing of such his intension and the price shall in case of dispute be determined by the Executive Engineer of the said district according to the actual value of such buildings and fixtures and his decision shall be final and conclusive and altogether binding upon the Lessee:



ခရိုင်အထွေထွေအုပ်ချုပ်ရေးဦးစီးဌာန
မူဆယ်မြို့

IN WITNESS WHERE OF ....
acting for and on behalf of the GOVERNMENT OF THE UNION OF BURMA and
ဦးကျော်ကျော်ဝင်း(ခ)ရန်ကွေ့ယုံ
၁၃/တယန(နိုင်)၀၀၀၃၀၅ .... have hereunto set their hands.

THE SCHEDULE ABOVE REFERRED TO

All that piece of land situate in the ......ဇော်ဂျီရပ်ကွက်...... ward of the town of ......မူဆယ်မြို့...... known as lot No ...222... in block No ...၂-စ... containing ...၀.၇၃၉၈ ဧက...
or thereabouts bounded as follows:

North ......ဦးပိုင် ၂-က......
East ......ဦးပိုင် ၂-ဃ......
South ......လမ်း......
West ......လမ်း......

and shown in the annexed plan marked red.

Signed by the said .... }
in the presence of .... }
Witnesses.

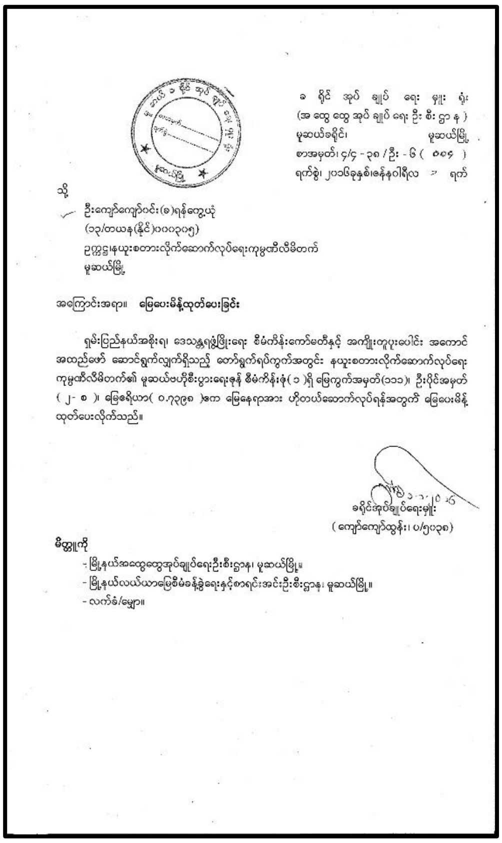
၁-၇-၂၀၁၆

Deputy Commissioner,
.... District

ခရိုင်အထွေထွေအုပ်ချုပ်ရေးဦးစီးဌာန
Signed by the said ....မူဆယ်မြို့.......... }
in the presence of .... }
Witness

ခရိုင်အထွေထွေအုပ်ချုပ်ရေးဦးစီးဌာန
မူဆယ်မြို့

Signature of Lessee



ခရိုင် အုပ် ချုပ် ရေး မှူး ရုံး
(အ ထွေ ထွေ အုပ် ချုပ် ရေး ဦး စီး ဌာ န)
မူဆယ်ခရိုင်၊ မူဆယ်မြို့
စာအမှတ်၊ ၄/၄ - ၃၈ / ဦး - ၆ (၈၈၄)
ရက်စွဲ၊ ၂၀၁၆ခုနှစ်၊ဇန်နဝါရီလ ၁ ရက်

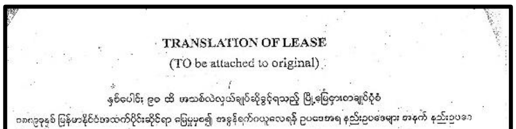
သို့
ဦးကျော်ကျော်ဝင်း(ခ)ရန်ကွေ့ယုံ
(၁၃/တယန(နိုင်)၀၀၀၃၀၅)
ဥက္ကဋ္ဌ၊နယူးစတားလိုက်ဆောက်လုပ်ရေးကုမ္ပဏီလီမိတက်
မူဆယ်မြို့

အကြောင်းအရာ။ **မြေပေးမိန့်ထုတ်ပေးခြင်း**

ရှမ်းပြည်နယ်အစိုးရ၊ ဒေသန္တရဖွံ့ဖြိုးရေး စီမံကိန်းကော်မတီနှင့် အကျိုးတူပူးပေါင်း အကောင်အထည်ဖော် ဆောင်ရွက်လျက်ရှိသည့် ဇော်ဂျီရပ်ကွက်အတွင်း နယူးစတားလိုက်ဆောက်လုပ်ရေးကုမ္ပဏီလီမိတက်၏ မူဆယ်ဗဟိုစီးပွားရေးဇုန် စီမံကိန်းဖုံ(၁)ရှိ မြေကွက်အမှတ်(၁၁၁)၊ ဦးပိုင်အမှတ်(၂-စ)၊ မြေဧရိယာ(၀.၇၃၉၈)ဧက မြေနေရာအား ဟိုတယ်ဆောက်လုပ်ရန်အတွက် မြေပေးမိန့် ထုတ်ပေးလိုက်သည်။

၁-၁-၂၀၁၆
ခရိုင်အုပ်ချုပ်ရေးမှူး
(ကျော်ကျော်ထွန်း၊ ပ/၅၀၃၈)

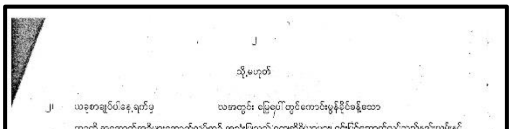
မိတ္တူကို
- မြို့နယ်အထွေထွေအုပ်ချုပ်ရေးဦးစီးဌာန၊ မူဆယ်မြို့။
- မြို့နယ်လယ်ယာမြေစီမံခန့်ခွဲရေးနှင့်စာရင်းအင်းဦးစီးဌာန၊ မူဆယ်မြို့။
- လက်ခံ/မျှော။



TRANSLATION OF LEASE
(TO be attached to original)

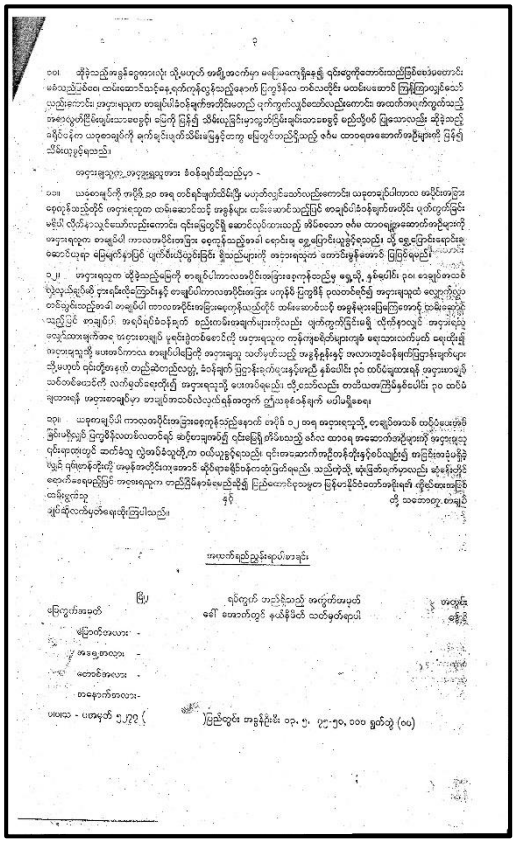
နှစ်ပေါင်း ၃၀ ထိ ဖာသစ်လဲလှယ်ချုပ်ဆိုခွင့်ရသည့် မြို့မြေငှားစာချုပ်ပုံစံ

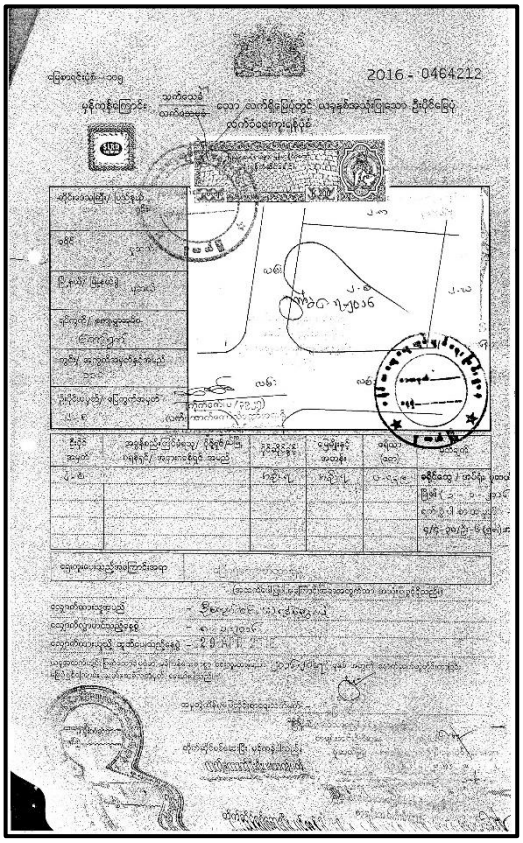
(Lease 1)

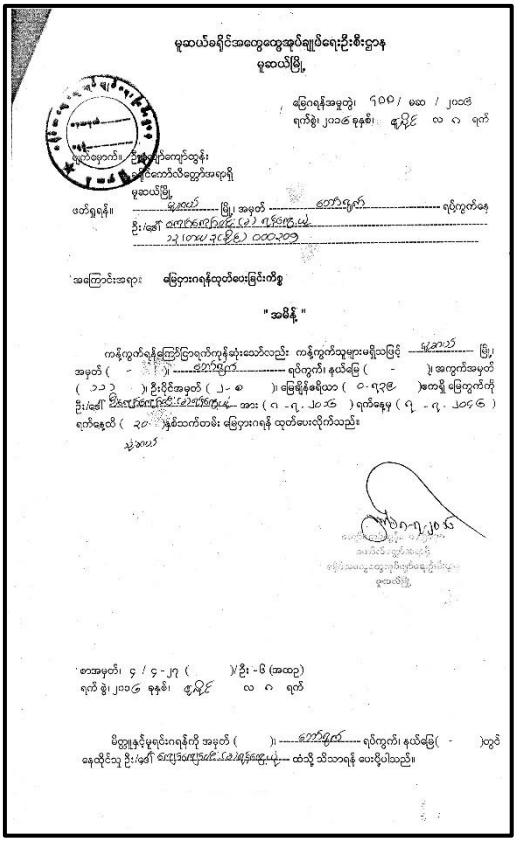


၂

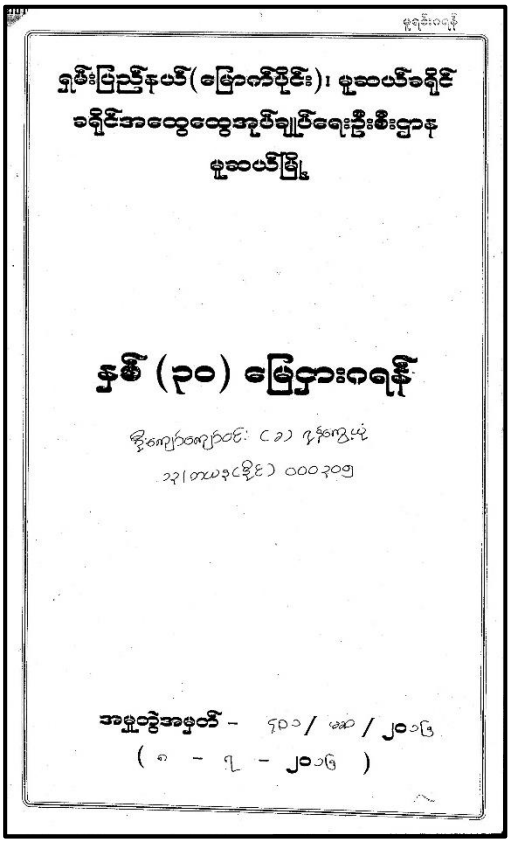
သို့မဟုတ်







Appendix 8 Land Lease Grant (401/MaSa/2016)



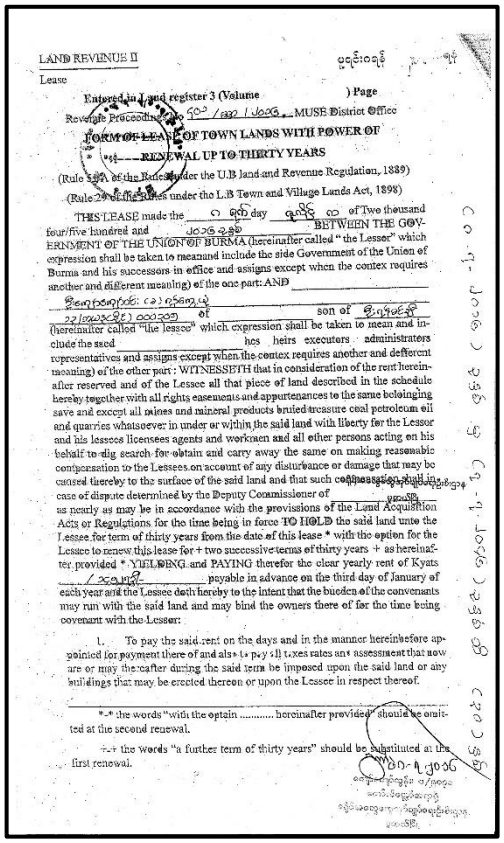
ဂျုံခွင်းဝန်ကြီး

ဂြိုဟ်ပြည်ဦးနယ်(ဧရိယာကိုယ်စား)၊ မူဆယ်ခရိုင်
ခရိုင်အထွေထွေအုပ်ချုပ်ရေးဦးစီးဌာန
မူဆယ်မြို့

နှစ် (၃၀) ဖြေလွှာဂရန့်

ဖို့ကျော်ဝေကျော်ဝင်း (ခ) ဖုန်ကွယ်
၁၃၀၈၁၄၇(နိုင်ငံ) ၀၀၀၃၀၅

အမှုတွဲအမှတ် - ၄၀၁ / ဧရာ / ၂၀၁၆
(၈ - ၇ - ၂၀၁၆)



LAND REVENUE II

Lease

Entered in Land register 3 (Volume) Page

Revenue Proceedings No. ၄၀၁ / ဧရာ / ၂၀၁၆, MUSE District Office

FORM OF LEASE OF TOWN LANDS WITH POWER OF
* ၃၀ RENEWAL UP TO THIRTY YEARS

(Rule 19A of the Rules under the U.B Land and Revenue Regulation, 1889)

(Rule 29 of the Rules under the L.B Town and Village Lands Act, 1898)

THIS LEASE made the ၈ day ဧပြီလ ၈ of Two thousand four five hundred and ၂၀၁၆ ခုနှစ် BETWEEN THE GOVERNMENT OF THE UNION OF BURMA (hereinafter called "the Lessor" which expression shall be taken to meanand include the side Government of the Union of Burma and his successors in office and assigns except when the contex requires another and different meaning) of the one part: AND

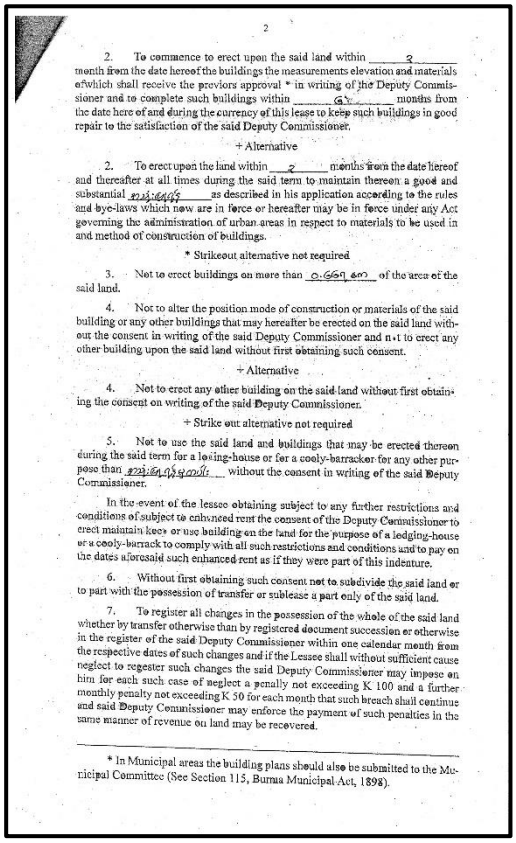
ဖို့ကျော်ဝေကျော်ဝင်း (ခ) ဖုန်ကွယ်
၁၃၀၈၁၄၇(နိုင်ငံ) ၀၀၀၃၀၅ of ဖို့ကျော်ဝင်း son of

(hereinafter called "the lessee" which expression shall be taken to mean and include the said hes heirs executors administrators representatives and assigns except when the contex requires another and different meaning) of the other part: WITNESSETH that in consideration of the rent hereinafter reserved and of the Lessee all that piece of land described in the schedule hereby together with all rights easements and appurtenances to the same belonging save and except all mines and mineral products buried treasure coal petroleum oil and quarries whatsoever in under or within the said land with liberty for the Lessor and his lessees licensees agents and workmen and all other persons acting on his behalf to dig search for obtain and carry away the same on making reasonable compensation to the Lessees on account of any disturbance or damage that may be caused thereby to the surface of the said land and that such compensation shall in case of dispute determined by the Deputy Commissioner of as nearly as may be in accordance with the provisions of the Land Acquisition Acts or Regulations for the time being in force TO HOLD the said land unto the Lessee for term of thirty years from the date of this lease * with the option for the Lessee to renew this lease for + two successive terms of thirty years + as hereinafter provided * YIELDING and PAYING therefor the clear yearly rent of Kyats ၁၄၀၀၀/- payable in advance on the third day of January of each year and the Lessee doth hereby to the intent that the burden of the convenants may run with the said land and may bind the owners there of for the time being covenant with the Lessor:

1. To pay the said rent on the days and in the manner hereinbefore appointed for payment there of and also to pay all taxes rates and assessment that now are or may hereafter during the said term be imposed upon the said land or any buildings that may be erected thereon or upon the Lessee in respect thereof.

* the words "with the optain ..... hereinafter provided" should be omitted at the second renewal.

+ the words "a further term of thirty years" should be substituted at the first renewal.



2

2. To commence to erect upon the said land within 2 month from the date hereof the buildings the measurements elevation and materials ofwhich shall receive the previors approval * in writing of the Deputy Commissioner and to complete such buildings within ၆ months from the date here of and during the currency of this lease to keep such buildings in good repair to the satisfaction of the said Deputy Commissioner.

+ Alternative

2. To erect upon the land within 2 months from the date hereof and thereafter at all times during the said term to maintain thereon a good and substantial အုတ်ဂူ as described in his application according to the rules and bye-laws which now are in force or hereafter may be in force under any Act governing the administration of urban areas in respect to materials to be used in and method of construction of buildings.

* Strikeout alternative not required

3. Not to erect buildings on more than ၀.၄၀၅၅ ဧက of the area of the said land.

4. Not to alter the position mode of construction or materials of the said building or any other buildings that may hereafter be erected on the said land without the consent in writing of the said Deputy Commissioner and not to erect any other building upon the said land without first obtaining such consent.

+ Alternative

4. Not to erect any other building on the said land without first obtaining the consent on writing of the said Deputy Commissioner.

+ Strike out alternative not required

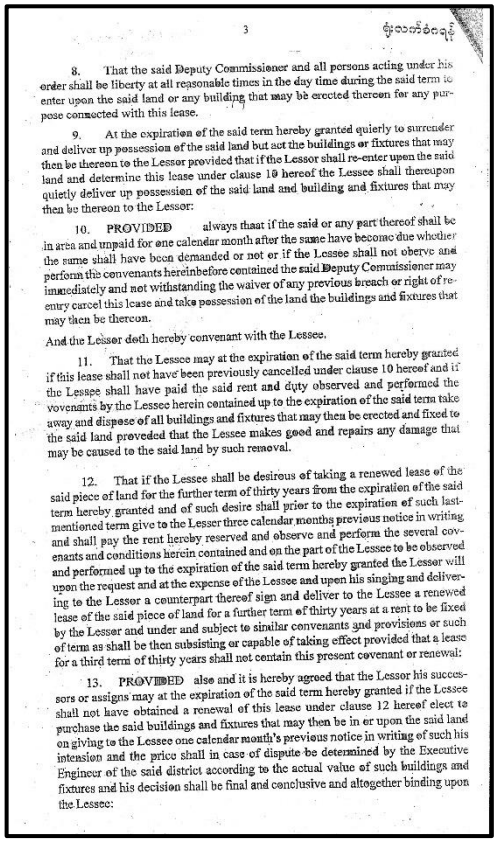
5. Not to use the said land and buildings that may be erected thereon during the said term for a lodging-house or for a cooly-barracker for any other purpose than အသုံးပြုပိုင်ခွင့်သာ without the consent in writing of the said Deputy Commissioner.

In the event of the lessee obtaining subject to any further restrictions and conditions of subject to enhanced rent the consent of the Deputy Commissioner to erect maintain keep or use building on the land for the purpose of a lodging-house or a cooly-barrack to comply with all such restrictions and conditions and to pay on the dates aforesaid such enhanced rent as if they were part of this indenture.

6. Without first obtaining such consent not to subdivide the said land or to part with the possession of transfer or sublease a part only of the said land.

7. To register all changes in the possession of the whole of the said land whether by transfer otherwise than by registered document succession or otherwise in the register of the said Deputy Commissioner within one calendar month from the respective dates of such changes and if the Lessee shall without sufficient cause neglect to regester such changes the said Deputy Commissioner may impose on him for each such case of neglect a penally not exceeding K 100 and a further monthly penalty not exceeding K 50 for each month that such breach shall continue and said Deputy Commissioner may enforce the payment of such penalties in the same manner of revenue on land may be recovered.

* In Municipal areas the building plans should also be submitted to the Municipal Committee (See Section 115, Burma Municipal Act, 1898).



3

8. That the said Deputy Commissioner and all persons acting under his order shall be liberty at all reasonable times in the day time during the said term to enter upon the said land or any building that may be erected thereon for any purpose connected with this lease.

9. At the expiration of the said term hereby granted quierly to surrender and deliver up possession of the said land but not the buildings or fixtures that may then be thereon to the Lessor provided that if the Lessor shall re-enter upon the said land and determine this lease under clause 10 hereof the Lessee shall thereupon quietly deliver up possession of the said land and building and fixtures that may then be thereon to the Lessor:

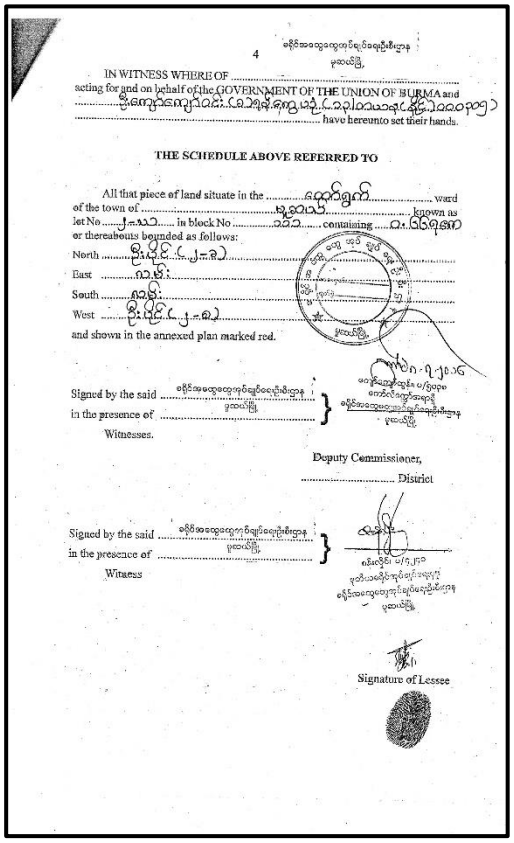
10. PROVIDED always thaat if the said or any part thereof shall be in area and unpaid for one calendar month after the same have become due whether the same shall have been demanded or not or if the Lessee shall not oberve and perform the convenants hereinbefore contained the said Deputy Commissioner may immediately and not withstanding the waiver of any previous breach or right of reentry cancel this lease and take possession of the land the buildings and fixtures that may then be thereon.

And the Lesser doth hereby convenant with the Lessee.

11. That the Lessee may at the expiration of the said term hereby granted if this lease shall not have been previously cancelled under clause 10 hereof and if the Lessee shall have paid the said rent and duty observed and performed the covenants by the Lessee herein contained up to the expiration of the said term take away and dispose of all buildings and fixtures that may then be erected and fixed to the said land provedded that the Lessee makes good and repairs any damage that may be caused to the said land by such removal.

12. That if the Lessee shall be desireus of taking a renewed lease of the said piece of land for the further term of thirty years from the expiration of the said term hereby granted and of such desire shall prior to the expiration of such last-mentioned term give to the Lesser three calendar months previous notice in writing and shall pay the rent hereby reserved and observe and perform the several covenants and conditions herein contained and on the part of the Lessee to be observed and performed up to the expiration of the said term hereby granted the Lesser will upon the request and at the expense of the Lessee and upon his singing and delivering to the Lessor a counterpart thereof sign and deliver to the Lessee a renewed lease of the said piece of land for a further term of thirty years at a rent to be fixed by the Lesser and under and subject to similar convenants and provisions or such of term as shall be then subsisting or capable of taking effect provided that a lease for a third term of thirty years shall not contain this present covenant or renewal:

13. PROVIDED also and it is hereby agreed that the Lessor his successors or assigns may at the expiration of the said term hereby granted if the Lessee shall not have obtained a renewal of this lease under clause 12 hereof elect to purchase the said buildings and fixtures that may then be in er upon the said land on giving to the Lessee one calendar month's previous notice in writing of such his intension and the price shall in case of dispute be determined by the Executive Engineer of the said district according to the actual value of such buildings and fixtures and his decision shall be final and conclusive and altogether binding upon the Lessee:



IN WITNESS WHEREOF ..... have hereunto set their hands.

acting for and on behalf of the GOVERNMENT OF THE UNION OF BURMA and

THE SCHEDULE ABOVE REFERRED TO

All that piece of land situate in the ..... ward of the town of ..... known as let No ..... in block No ..... containing ..... or thereabouts bounded as follows:

North .....

East .....

South .....

West .....

and shown in the annexed plan marked red.

Signed by the said ..... in the presence of .....

Witnesses.

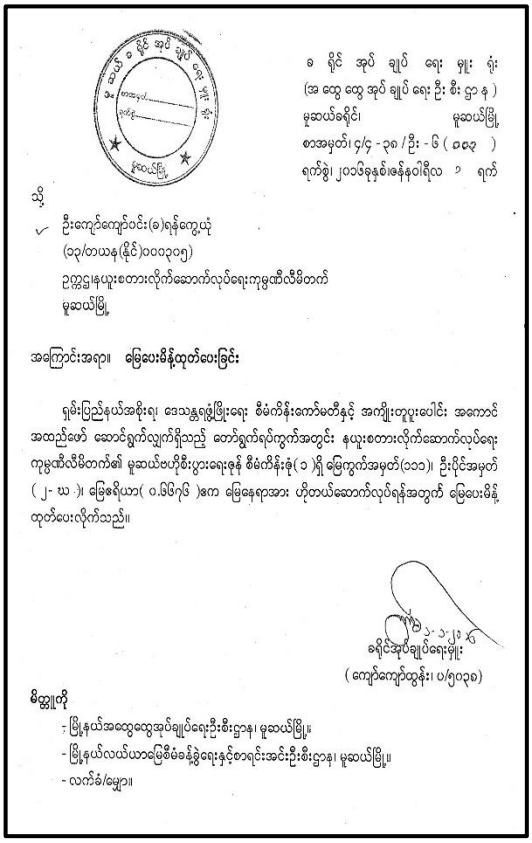
Deputy Commissioner,

..... District

Signed by the said ..... in the presence of .....

Witness

Signature of Lessee

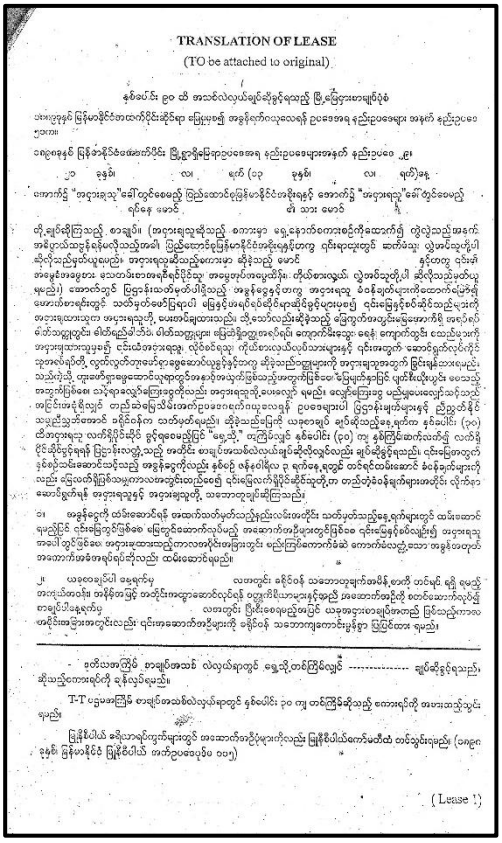


ဒုတိယအကြိမ် ဈေးဝယ်အသစ် လဲလှယ်ရာတွင် ဧရိယိုတစ်ကြိမ်လျှင် ---------- ချဲဆိုဒွဲရုံသာဟု, ဆိုသည်ကားရင်းကို ခွင့်လွှဲမရပေ။

T-T ပဥ့မအကြိမ် ဈေးဝယ်အသစ်လဲလှယ်ရာတွင် ဓနဓိပါး ၃၀ ကျ တစ်ကြိမ်ဆိုသည့် ကားရင်းကို အမားသည့်သူငှား ရမည်။

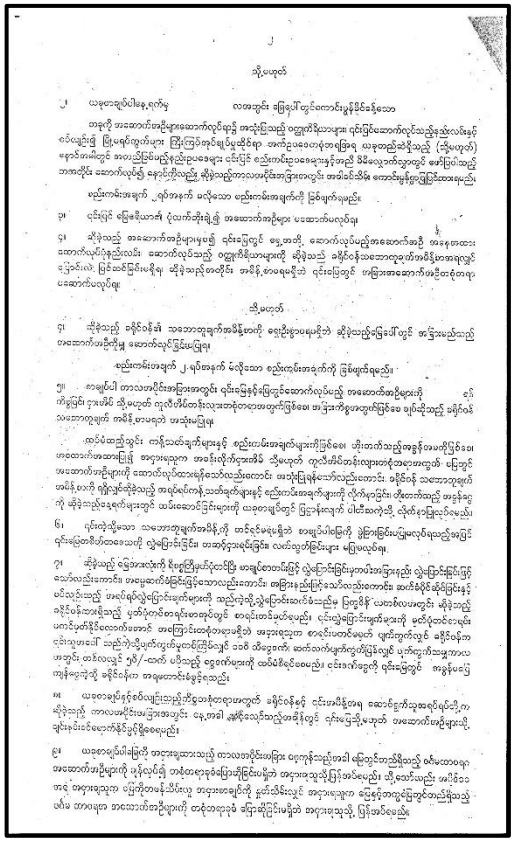
ပြုနိန်ဝိပါသ် ခရိုဟာရင်းကျော်များတွင် အဆောက်အဦပိုများကိုလည်း ပြုနိန်ဝိပါသ်ကောမတီဟ် တပ်သွင်းရမည်၊ (ဝဓဉ္ဇဂ ဥဖန်၊ ဖြန်မာနိုင်ငံ ပြုနိုင်ဝိပါသ် အတ်ဥဓဝေဥဝ်မ ၁၁၅)

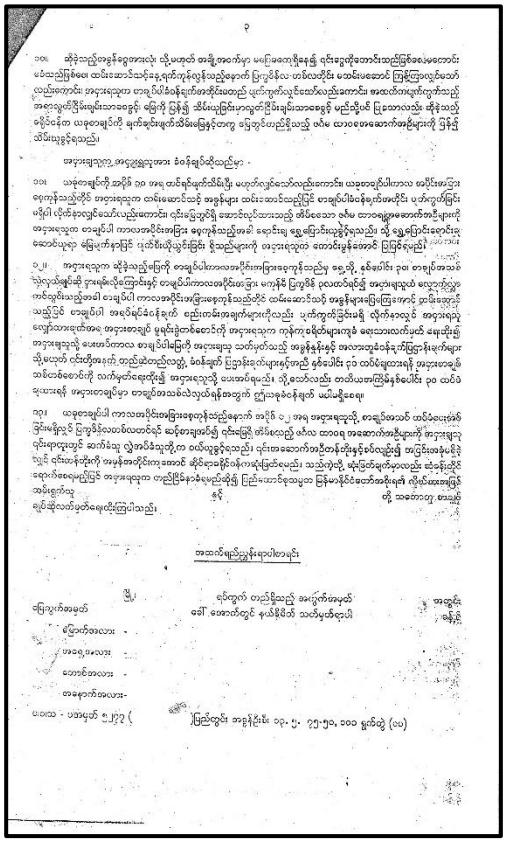
(Lease ')

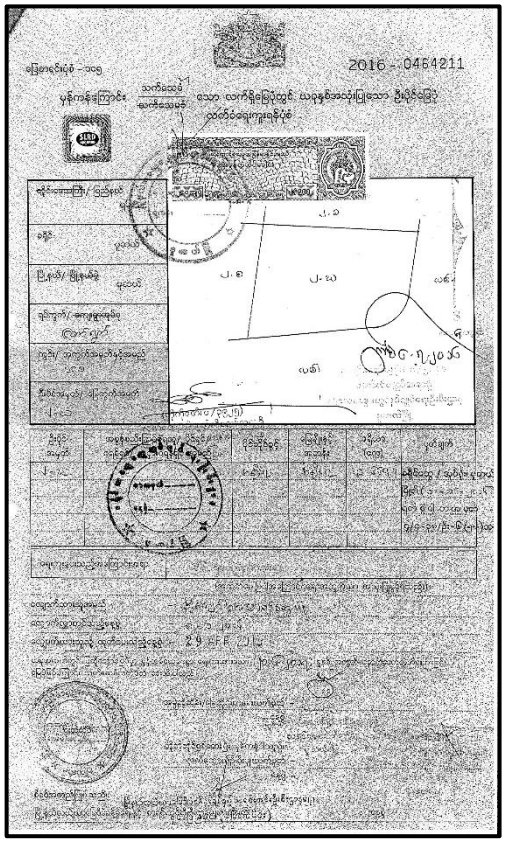


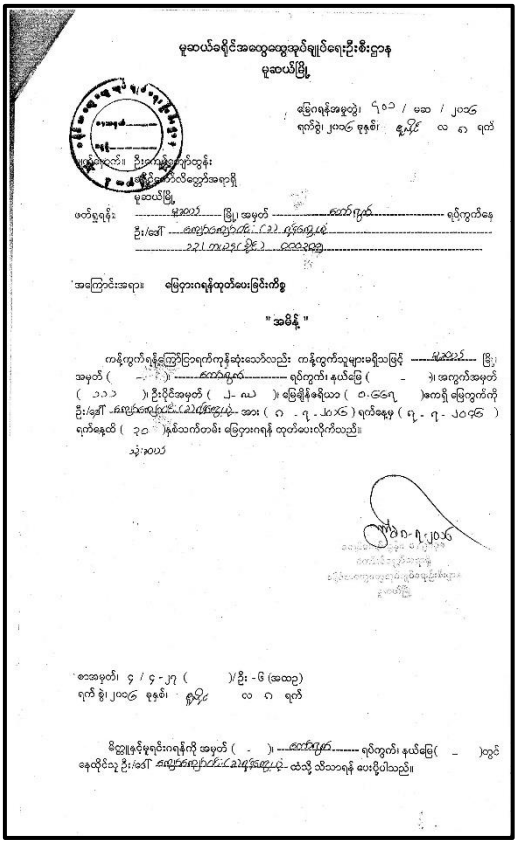
TRANSLATION OF LEASE

(TO be attached to original)









Appendix 9 Certificate for Transitional Consultant Registration of Organization

REPUBLIC OF THE UNION OF MYANMAR
Ministry of Natural Resources and Environmental Conservation
CERTIFICATE FOR TRANSITIONAL CONSULTANT REGISTRATION
(ကြားကာလအကြံပေးလုပ်ကိုင်သူမှတ်ပုံတင်ခြင်းအထောက်အထားလက်မှတ်)

No. 0006 Date 01 JUL 2017

The Ministry of Natural Resources and Environmental Conservation, hereby, issues this certificate to the organization under Environmental Impact Assessment Procedure, Notification No. 616/2015.
(ပတ်ဝန်းကျင် ထိခိုက်မှုဆန်းစစ်ခြင်းဆိုင်ရာ လုပ်ထုံးလုပ်နည်း၊ အမိန့်ကြော်ငြာစာအမှတ်၊ ၅၁၆/၂၀၁၅ အရ သယံဇာတနှင့် သဘာဝပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဝန်ကြီးဌာနသည် ဤအထောက်အထားလက်မှတ်ကို အဖွဲ့အစည်းအား ထုတ်ပေးလိုက်သည်။)

(a)	Name of Organization (အဖွဲ့အစည်းအမည်)	Green Myanmar Environmental Services Co., Ltd.
(b)	Name of the representative in the organization (အဖွဲ့အစည်းကိုယ်စားလှယ်၏ အမည်)	Engr. U Sein Thaung Oo
(c)	Citizenship of the representative in the organization (အဖွဲ့အစည်းကိုယ်စားလှယ်၏ နိုင်ငံသား)	Myanmar
(d)	Identity Card /Passport Numberof the representative person in the organization (အဖွဲ့အစည်းကိုယ်စားလှယ်၏ မှတ်ပုံတင်/နိုင်ငံကူးလက်မှတ် အမှတ်)	12/ Ma Ya Ka (N) 082871
(e)	Address of organization (ဆက်သွယ်ရန်လိပ်စာ)	115, Kanaung Min Thargyi Road, Hlaing Thar Yar Industrial City, Zone (1), Hlaing Thar Yar Township, Yangon. gmescompany@gmail.com , 09 5122448
(f)	Type of Consultancy (အကြံပေးလုပ်ကိုင်မှုအမျိုးအစား)	Organization
(g)	Duration of validity (သက်တမ်းကုန်ဆုံးရက်)	31 March 2018

EXTENSION
သက်တမ်းတိုးမြှင့်ခြင်း
The VALIDITY of this certificate is extended for one year from (1.4.2018) to (31.3.2019)
ဤလက်မှတ်အား (၀-၄-၂၀၁၈) ရက်နေ့မှ (၃၀.၃.၂၀၁၉) ရက်နေ့အထိ တစ်နှစ်သက်တမ်း တိုးမြှင့်သည်။
14.9.2018
For Director General
(Soe Naing, Director)
Environmental Conservation Department

Director General
Environmental Conservation Department
Ministry of Natural Resources and Environmental Conservation

Areas of Expertise Permitted
(ခွင့်ပြုသည့် ကျွမ်းကျင်မှုနယ်ပယ်များ)

1. Air Pollution Control
2. Facilitation of meeting
3. Meteorology, Modeling for Air Quality
4. Risk Assessment and Hazard Management
5. Socio-Economy
6. Water Pollution Control
7. Waste Management
8. Chemical Engineering Plant Design
9. Chemical Engineering Process Design
10. Chemical Engineering, Laboratory Analysis for water and waste water
11. Environmental Management
12. Industrial Management

EXTENSION (သက်တမ်းတိုးမြှင့်ခြင်း)
The VALIDITY of this certificate is extended for one year from (1.1.2022) to (31.12.2022)
ဤလက်မှတ်အား(၁-၁-၂၀၂၂)ရက်နေ့မှ (၃၁-၁၂-၂၀၂၂) ရက်နေ့အထိ တစ်နှစ်သက်တမ်းကိုးပြင့်သည်။
For Director General
(Soe Naing, Director)
Environmental Conservation Department

EXTENSION
သက်တမ်းတိုးမြှင့်ခြင်း
The VALIDITY of this certificate is extended for six month from (1.1.2021) to (30.6.2021)
ဤလက်မှတ်အား(၁-၁-၂၀၂၁)ရက်နေ့မှ (၃၀-၆-၂၀၂၁) ရက်နေ့အထိ (၆)လသက်တမ်းတိုးမြှင့်သည်။
For Director General
(Soe Naing, Director)
Environmental Conservation Department

EXTENSION
သက်တမ်းတိုးမြှင့်ခြင်း
The VALIDITY of this certificate is extended for nine months from (1.4.2019) to (31.12.2019)
ဤလက်မှတ်အား(၁-၄-၂၀၁၉) ရက်နေ့မှ (၃၁-၁၂-၂၀၁၉) ရက်နေ့အထိ (၉)လသက်တမ်း တိုးမြှင့်သည်။
12.6.2019
For Director General
(Soe Naing, Director)
Environmental Conservation Department

EXTENSION
သက်တမ်းတိုးမြှင့်ခြင်း
The VALIDITY of this certificate is extended for six months from (1.7.2021) to (31.12.2021)
ဤလက်မှတ်အား(၁-၇-၂၀၂၁)ရက်နေ့မှ (၃၁-၁၂-၂၀၂၁) ရက်နေ့အထိ (၆)လ သက်တမ်းတိုးမြှင့်သည်။
For Director General
(Soe Naing, Director)
Environmental Conservation Department

EXTENSION
သက်တမ်းတိုးမြှင့်ခြင်း
The VALIDITY of this certificate is extended for one year from (1.1.2020) to (31.12.2020)
ဤလက်မှတ်အား(၁-၁-၂၀၂၀) ရက်နေ့မှ (၃၁-၁၂-၂၀၂၀) ရက်နေ့အထိ တစ်နှစ်သက်တမ်းတိုးမြှင့်သည်။
For Director General
(Soe Naing, Director)
Environmental Conservation Department

Appendix 10 Certificate for Transitional Consultant Registration of Personal

REPUBLIC OF THE UNION OF MYANMAR
Ministry of Natural Resources and Environmental Conservation
CERTIFICATE FOR TRANSITIONAL CONSULTANT REGISTRATION
(ကြားကာလအကြံပေးလုပ်ကိုင်သူမှတ်ပုံတင်ခြင်းအထောက်အထားလက်မှတ်)

No. 0023 Date [illegible]

The Ministry of Natural Resources and Environmental Conservation, hereby, issues this certificate to the person under Environmental Impact Assessment Procedure, Notification No. 616/2015.
(ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်းဆိုင်ရာ လုပ်ထုံးလုပ်နည်း၊ အမိန့်ကြော်ငြာစာအမှတ်၊ ၅၁၆/၂၀၁၅ အရ သယံဇာတနှင့် သဘာဝပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဝန်ကြီးဌာနသည် ဤအထောက်အထားလက်မှတ်ကို လူပုဂ္ဂိုလ်အားထုတ်ပေးလိုက်သည်။)

(a)	Name of Consultant (အကြံပေးပုဂ္ဂိုလ်အမည်)	Engr. U Sein Thaung Oo
(b)	Citizenship (နိုင်ငံသား)	Myanmar
(c)	Identity Card / Passport Number (မှတ်ပုံတင်/နိုင်ငံကူးလက်မှတ်အမှတ်)	12/ Ma Ya Ka (N) 082871
(d)	Address (ဆက်သွယ်ရန်လိပ်စာ)	No. 17/D, Aung Theikdi Yeik Thar, Mayangone Township, Yangon. gmescompany@gmail.com , seinthaungoo@gmail.com 09 5122448
(e)	Organization (အဖွဲ့အစည်း)	Green Myanmar Environmental Services Co.,Ltd.
(f)	Type of Consultancy (အကြံပေးလုပ်ကိုင်မှုအမျိုးအစား)	Person
(g)	Duration of validity (သက်တမ်းကုန်ဆုံးရက်)	31 March 2018

EXTENSION
သက်တမ်းတိုးမြှင့်ခြင်း
The VALIDITY of this certificate is extended for one year from (1.4.2018) to (31.3.2019)
ဤလက်မှတ်အား (၁-၄-၂၀၁၈) ရက်နေ့မှ (၃၁.၃.၂၀၁၉) ရက်နေ့အထိ တစ်နှစ်သက်တမ်း တိုးမြှင့်သည်။
14.9.2018
For Director General
(Soe Naing, Director)
Environmental Conservation Department

Director General
Environmental Conservation Department
Ministry of Natural Resources and Environmental Conservation

Areas of Expertise Permitted
(ခွင့်ပြုသည့် ကျွမ်းကျင်မှုနယ်ပယ်များ)

1. Air Pollution Control

2. Chemical Engineering Process Design, Industrial Management

EXTENSION
သက်တမ်းတိုးမြှင့်ခြင်း
The VALIDITY of this certificate is extended for six month from (1.1.2021) to (30.6.2021)
ဤလက်မှတ်အား(၁-၁-၂၀၂၁) ရက်နေ့မှ (၃၀-၆-၂၀၂၁) ရက်နေ့အထိ (၆)လသက်တမ်းတိုးမြှင့်သည်။
For Director General
(Soe Naing, Director)
Environmental Conservation Department

EXTENSION
သက်တမ်းတိုးမြှင့်ခြင်း
The VALIDITY of this certificate is extended for nine months from (1.4.2019) to (31.12.2019)
ဤလက်မှတ်အား(၁-၄-၂၀၁၉) ရက်နေ့မှ (၃၁-၁၂-၂၀၁၉) ရက်နေ့အထိ (၉)လသက်တမ်း တိုးမြှင့်သည်။
12.6.2019
For Director General
(Soe Naing, Director)
Environmental Conservation Department

EXTENSION
သက်တမ်းတိုးမြှင့်ခြင်း
The VALIDITY of this certificate is extended for six months from (1.7.2021) to (31.12.2021)
ဤလက်မှတ်အား(၁-၇-၂၀၂၁) ရက်နေ့မှ (၃၁-၁၂-၂၀၂၁) ရက်နေ့အထိ (၆)လ သက်တမ်းတိုးမြှင့်သည်။
For Director General
(Soe Naing, Director)
Environmental Conservation Department

EXTENSION
သက်တမ်းတိုးမြှင့်ခြင်း
The VALIDITY of this certificate is extended for one year from (1.1.2020) to (31.12.2020)
ဤလက်မှတ်အား(၁-၁-၂၀၂၀) ရက်နေ့မှ (၃၁-၁၂-၂၀၂၀) ရက်နေ့အထိ တစ်နှစ်သက်တမ်း တိုးမြှင့်သည်။
15.1.2020
For Director General
(Soe Naing, Director)
Environmental Conservation Department

EXTENSION (သက်တမ်းတိုးမြှင့်ခြင်း)
The VALIDITY of this certificate is extended for one year from (1.1.2022) to (31.12.2022)
ဤလက်မှတ်အား(၁-၁-၂၀၂၂) ရက်နေ့မှ (၃၁-၁၂-၂၀၂၂) ရက်နေ့အထိ တစ်နှစ် သက်တမ်းတိုးမြှင့်သည်။
25-3-2022
For Director General
(Soe Naing, Director)
Environmental Conservation Department

REPUBLIC OF THE UNION OF MYANMAR
Ministry of Natural Resources and Environmental Conservation
CERTIFICATE FOR TRANSITIONAL CONSULTANT REGISTRATION
(ကြားကာလအကြေပေးလုပ်ကိုင်သူမှတ်ပုံတင်ခြင်းအထောက်အထားလက်မှတ်)

No. 0019 Date 17 JUL 2017

The Ministry of Natural Resources and Environmental Conservation, hereby, issues this certificate to the person under Environmental Impact Assessment Procedure, Notification No. 616/2015.
(ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်းဆိုင်ရာ လုပ်ထုံးလုပ်နည်း၊ အမိန့်ကြော်ငြာစာအမှတ်၊ ၅၁၆/၂၀၁၅ အရ သယ်ဇာတနှင့် သဘာဝပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဝန်ကြီးဌာနသည် ဤအထောက်အထားလက်မှတ်ကို လူပုဂ္ဂိုလ်အားထုတ်ပေးလိုက်သည်။)

(a)	Name of Consultant (အကြံပေးပုဂ္ဂိုလ်အမည်)	Engr. U Kyaw Soe Win
(b)	Citizenship (နိုင်ငံသား)	Myanmar
(c)	Identity Card / Passport Number (မှတ်ပုံတင်/နိုင်ငံကူးလက်မှတ် အမှတ်)	12/ Ou Ka Ta (Naing) 038453
(d)	Address (ဆက်သွယ်ရန်လိပ်စာ)	No. 135, Kanaung Min Thargyi Road, Hlaing Thar Yar Industrial City, Zone(1), Hlaing Thar Yar Township, Yangon gmescompany@gmail.com ksw1963@gmail.com , 09 5081451
(e)	Organization (အဖွဲ့အစည်း)	Green Myanmar Environmental Services Company Limited
(f)	Type of Consultancy (အကြံပေးလုပ်ကိုင်မှုအမျိုးအစား)	Person
(g)	Duration of validity (သက်တမ်းကုန်ဆုံးရက်)	31 March 2018

EXTENSION
သက်တမ်းတိုးမြှင့်ခြင်း
The VALIDITY of this certificate is extended for one year from (1.4.2018) to (31.3.2019)
ဤလက်မှတ်အား (၁-၄-၂၀၁၈) ရက်နေ့မှ (၃၁.၃.၂၀၁၉) ရက်နေ့အထိ တစ်နှစ်ကြာတိုး တိုးမြှင့်သည်။
Soe Naing 14.9.2018
For Director General
(Soe Naing, Director)
Environmental Conservation Department

Director General
Environmental Conservation Department
Ministry of Natural Resources and Environmental Conservation

Areas of Expertise Permitted
(ခွင့်ပြုသည့် ကျွမ်းကျင်မှုနယ်ပယ်များ)

1. Facilitation of meeting

2. Industrial Management

EXTENSION
သက်တမ်းတိုးမြှင့်ခြင်း
The VALIDITY of this certificate is extended for six month from (1.1.2021) to (30.6.2021)
ဤလက်မှတ်အား(၁-၁-၂၀၂၁)ရက်နေ့မှ (၃၀-၆-၂၀၂၁) ရက်နေ့အထိ (၆)လသက်တမ်းတိုးမြှင့်သည်။
For Director General
(Soe Naing, Director)
Environmental Conservation Department

EXTENSION
သက်တမ်းတိုးမြှင့်ခြင်း
The VALIDITY of this certificate is extended for nine months from (1.4.2019) to (31.12.2019)
ဤလက်မှတ်အား(၁-၄-၂၀၁၉) ရက်နေ့မှ (၃၁-၁၂-၂၀၁၉) ရက်နေ့အထိ (၉)လသက်တမ်း တိုးမြှင့်သည်။
12.6.2019
For Director General
(Soe Naing, Director)
Environmental Conservation Department

EXTENSION
သက်တမ်းတိုးမြှင့်ခြင်း
The VALIDITY of this certificate is extended for six months from (1.7.2021) to (31.12.2021)
ဤလက်မှတ်အား(၁-၇-၂၀၂၁)ရက်နေ့မှ (၃၁-၁၂-၂၀၂၁) ရက်နေ့အထိ (၆)လ သက်တမ်းတိုးမြှင့်သည်။
For Director General
(Soe Naing, Director)
Environmental Conservation Department

EXTENSION
သက်တမ်းတိုးမြှင့်ခြင်း
The VALIDITY of this certificate is extended for one year from (1.1.2020) to (31.12.2020)
ဤလက်မှတ်အား(၁-၁-၂၀၂၀)ရက်နေ့မှ (၃၁-၁၂-၂၀၂၀) ရက်နေ့အထိ တစ်နှစ်သက်တမ်းတိုးမြှင့်သည်။
For Director General
(Soe Naing, Director)
Environmental Conservation Department

EXTENSION (သက်တမ်းတိုးမြှင့်ခြင်း)
The VALIDITY of this certificate is extended for one year from (1.1.2022) to (31.12.2022)
ဤလက်မှတ်အား(၁-၁-၂၀၂၂)ရက်နေ့မှ (၃၁-၁၂-၂၀၂၂) ရက်နေ့အထိ တစ်နှစ်သက်တမ်းတိုးမြှင့်သည်။
25-3-2022
For Director General
(Soe Naing, Director)
Environmental Conservation Department

REPUBLIC OF THE UNION OF MYANMAR
Ministry of Natural Resources and Environmental Conservation
CERTIFICATE FOR TRANSITIONAL CONSULTANT REGISTRATION
(ကြားကာလအကြံပေးလုပ်ကိုင်သူမှတ်ပုံတင်ခြင်းအထောက်အထားလက်မှတ်)

No. 0021 Date 31 JAN 2017

The Ministry of Natural Resources and Environmental Conservation, hereby, issues this certificate to the person under Environmental Impact Assessment Procedure, Notification No. 616/2015.
(ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်းဆိုင်ရာ လုပ်ထုံးလုပ်နည်း၊ အမိန့်ကြော်ငြာစာအမှတ်၊ ၅၁၆/၂၀၁၅ အရ သယံဇာတနှင့် သဘာဝပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဝန်ကြီးဌာနသည် ဤအထောက်အထားလက်မှတ်ကို လူပုဂ္ဂိုလ်အားထုတ်ပေးလိုက်သည်။)

(a)	Name of Consultant (အကြံပေးပုဂ္ဂိုလ်အမည်)	Engr. Daw Khin Swe Aye
(b)	Citizenship (နိုင်ငံသား)	Myanmar
(c)	Identity Card / Passport Number (မှတ်ပုံတင်/နိုင်ငံကူးလက်မှတ် အမှတ်)	12/Sa Kha Na (N) 017708
(d)	Address (ဆက်သွယ်ရန်လိပ်စာ)	14 B, Wai Lu Wun Main Street, Sanchaung, Yangon. khinsweaye.daw@gmail.com , 09 5015475
(e)	Organization (အဖွဲ့အစည်း)	Green Myanmar Environmental Services Co.,Ltd.
(f)	Type of Consultancy (အကြံပေးလုပ်ကိုင်မှုအမျိုးအစား)	Person
(g)	Duration of validity (သက်တမ်းကုန်ဆုံးရက်)	31 March 2018

EXTENSION
သက်တမ်းတိုးမြှင့်ခြင်း
The VALIDITY of this certificate is extended for one year from (1.4.2018) to (31.3.2019)
ဤလက်မှတ်အား (၁-၄-၂၀၁၈) ရက်စွဲမှ (၃၁-၃-၂၀၁၉) ရက်နေ့အထိ တစ်နှစ်ထပ်တိုး တိုးမြှင့်သည်။
Soe Naing 14.9.2018
For Director General
(Soe Naing, Director)
Environmental Conservation Department

Director General
Environmental Conservation Department
Ministry of Natural Resources and Environmental Conservation

Areas of Expertise Permitted
(ခွင့်ပြုသည့် ကျွမ်းကျင်မှုနယ်ပယ်များ)

1. Air Pollution Control

2. Waste Management

EXTENSION
သက်တမ်းတိုးမြှင့်ခြင်း
The VALIDITY of this certificate is extended for six month from (1.1.2021) to (30.6.2021)
ဤလက်မှတ်အား(၁-၁-၂၀၂၁)ရက်နေ့မှ(၃၀-၆-၂၀၂၁)
ရက်နေ့အထိ (၆)လ သက်တမ်းတိုးမြှင့်သည်။
For Director General
(Soe Naing, Director)
Environmental Conservation Department

EXTENSION
သက်တမ်းတိုးမြှင့်ခြင်း
The VALIDITY of this certificate is extended for nine months from (1.4.2019) to (31.12.2019)
ဤလက်မှတ်အား(၁-၄-၂၀၁၉) ရက်နေ့မှ (၃၁.၁၂.၂၀၁၉)
ရက်နေ့အထိ (၉)လသက်တမ်း တိုးမြှင့်သည်။
For Director General
(Soe Naing, Director)
Environmental Conservation Department

EXTENSION
သက်တမ်းတိုးမြှင့်ခြင်း
The VALIDITY of this certificate is extended for six months from (1.7.2021) to (31.12.2021)
ဤလက်မှတ်အား(၁-၇-၂၀၂၁) ရက်နေ့မှ (၃၁-၁၂-၂၀၂၁)
ရက်နေ့အထိ (၆)လ သက်တမ်းတိုးမြှင့်သည်။
For Director General
(Soe Naing, Director)
Environmental Conservation Department

EXTENSION
သက်တမ်းတိုးမြှင့်ခြင်း
The VALIDITY of this certificate is extended for one year from (1.1.2020) to (31.12.2020)
ဤလက်မှတ်အား(၁-၁-၂၀၂၀) ရက်နေ့မှ (၃၁-၁၂-၂၀၂၀)
ရက်နေ့အထိ တစ်နှစ်သက်တမ်းတိုးမြှင့်သည်။
For Director General
(Soe Naing, Director)
Environmental Conservation Department

EXTENSION (သက်တမ်းတိုးမြှင့်ခြင်း)
The VALIDITY of this certificate is extended for one year from (1.1.2022) to (31.12.2022)
ဤလက်မှတ်အား(၁-၁-၂၀၂၂) ရက်နေ့မှ (၃၁-၁၂-၂၀၂၂)
ရက်နေ့အထိ တစ်နှစ်သက်တမ်းတိုးမြှင့်သည်။
For Director General
(Soe Naing, Director)
Environmental Conservation Department

REPUBLIC OF THE UNION OF MYANMAR
Ministry of Natural Resources and Environmental Conservation
CERTIFICATE FOR TRANSITIONAL CONSULTANT REGISTRATION
(ကြားကာလအကြံပေးလုပ်ကိုင်သူမှတ်ပုံတင်ခြင်းအထောက်အထားလက်မှတ်)

No. 0025 Date

The Ministry of Natural Resources and Environmental Conservation, hereby, issues this certificate to the person under Environmental Impact Assessment Procedure, Notification No. 616/2015.
(ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်းဆိုင်ရာ လုပ်ထုံးလုပ်နည်း၊ အမိန့်ကြော်ငြာစာအမှတ်၊ ၅၁၆/၂၀၁၅ အရ သယံဇာတနှင့် သဘာဝပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဝန်ကြီးဌာနသည် ဤအထောက်အထားလက်မှတ်ကို လူပုဂ္ဂိုလ်အားထုတ်ပေးလိုက်သည်။)

(a)	Name of Consultant (အကြံပေးပုဂ္ဂိုလ်အမည်)	U Khin Aung
(b)	Citizenship (နိုင်ငံသား)	Myanmar
(c)	Identity Card / Passport Number (မှတ်ပုံတင်/နိုင်ငံကူးလက်မှတ်အမှတ်)	12/ Ma Ya Ka (N) 047032
(d)	Address (ဆက်သွယ်ရန်လိပ်စာ)	115, Kanaung Min Thargyi Road, Hlaing Thar Yar Industrial City, Zone (1), Hlaing Thar Yar Township, Yangon. khinaung1@gmail.com , 09 43066741
(e)	Organization (အဖွဲ့အစည်း)	Green Myanmar Environmental Services Co.,Ltd.
(f)	Type of Consultancy (အကြံပေးလုပ်ကိုင်မှုအမျိုးအစား)	Person
(g)	Duration of validity (သက်တမ်းကုန်ဆုံးရက်)	31 March 2018

EXTENSION
သက်တမ်းတိုးမြှင့်ခြင်း
The VALIDITY of this certificate is extended for one year from (1.4.2018) to (31.3.2019)
ဤလက်မှတ်အား (၁-၄-၂၀၁၈) ရက်နေ့မှ (၃၁-၃-၂၀၁၉) ရက်နေ့အထိ တစ်နှစ်သက်တမ်း တိုးမြှင့်ပေးထည်း
Soe Naing 14.9.2018
For Director General
(Soe Naing, Director)
Environmental Conservation Department

Director General
Environmental Conservation Department
Ministry of Natural Resources and Environmental Conservation

Areas of Expertise Permitted
(ခွင့်ပြုသည့် ကျွမ်းကျင်မှုနယ်ပယ်များ)

1. Socio-Economy

EXTENSION
သက်တမ်းတိုးမြှင့်ခြင်း
The VALIDITY of this certificate is extended for six month from (1.1.2021) to (30.6.2021)
ဤလက်မှတ်အား(၁-၁-၂၀၂၁)ရက်နေ့မှ(၃၀-၆-၂၀၂၁)
ရက်နေ့အထိ (၆)လ သက်တမ်းတိုးမြှင့်သည်။
For Director General
(Soe Naing, Director)
Environmental Conservation Department

EXTENSION
သက်တမ်းတိုးမြှင့်ခြင်း
The VALIDITY of this certificate is extended for nine months from (1.4.2019) to (31.12.2019)
ဤလက်မှတ်အား(၁-၄-၂၀၁၉) ရက်နေ့မှ (၃၁.၁၂.၂၀၁၉)
ရက်နေ့အထိ (၉)လသက်တမ်း တိုးမြှင့်သည်။
12.6.2019
For Director General
(Soe Naing, Director)
Environmental Conservation Department

EXTENSION
သက်တမ်းတိုးမြှင့်ခြင်း
The VALIDITY of this certificate is extended for six months from (1.7.2021) to (31.12.2021)
ဤလက်မှတ်အား(၁-၇-၂၀၂၁) ရက်နေ့မှ (၃၁-၁၂-၂၀၂၁)
ရက်နေ့အထိ (၆)လ သက်တမ်းတိုးမြှင့်သည်။
For Director General
(Soe Naing, Director)
Environmental Conservation Department

EXTENSION
သက်တမ်းတိုးမြှင့်ခြင်း
The VALIDITY of this certificate is extended for one year from (1.1.2020) to (31.12.2020)
ဤလက်မှတ်အား(၁-၁-၂၀၂၀) ရက်နေ့မှ (၃၁-၁၂-၂၀၂၀)
ရက်နေ့အထိ တစ်နှစ်သက်တမ်းတိုးမြှင့်သည်။
For Director General
(Soe Naing, Director)
Environmental Conservation Department

EXTENSION (သက်တမ်းတိုးမြှင့်ခြင်း)
The VALIDITY of this certificate is extended for one year from (1.1.2022) to (31.12.2022)
ဤလက်မှတ်အား(၁-၁-၂၀၂၂) ရက်နေ့မှ (၃၁-၁၂-၂၀၂၂)
ရက်နေ့အထိ တစ်နှစ်သက်တမ်းတိုးမြှင့်သည်။
25-3-2022
For Director General
(Soe Naing, Director)
Environmental Conservation Department

REPUBLIC OF THE UNION OF MYANMAR

Ministry of Natural Resources and Environmental Conservation

CERTIFICATE FOR TRANSITIONAL CONSULTANT REGISTRATION

(ကြားကာလအကြံပေးလုပ်ကိုင်သူမှတ်ပုံတင်ခြင်းအထောက်အထားလက်မှတ်)

No. 10022 Date 01 III 2017

The Ministry of Natural Resources and Environmental Conservation, hereby, issues this certificate to the person under Environmental Impact Assessment Procedure, Notification No. 616/2015.

(ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်းဆိုင်ရာ လုပ်ထုံးလုပ်နည်း၊ အမိန့်ကြော်ငြာစာအမှတ်၊ ၅၁၆/၂၀၁၅ အရ သယံဇာတနှင့် သဘာဝပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဝန်ကြီးဌာနသည် ဤအထောက်အထားလက်မှတ်ကို လူပုဂ္ဂိုလ်အားထုတ်ပေးလိုက်သည်။)

(a)	Name of Consultant (အကြံပေးပုဂ္ဂိုလ်အမည်)	Daw Khin Shwe Htay
(b)	Citizenship (နိုင်ငံသား)	Myanmar
(c)	Identity Card / Passport Number (မှတ်ပုံတင်/နိုင်ငံကူးလက်မှတ် အမှတ်)	12/ Tha Ga Ka (N) 008808
(d)	Address (ဆက်သွယ်ရန်လိပ်စာ)	No. 115, Kanaung Min Thargyi Road, Hlaing Thar Yar Industrial City, Zone (1), Hlaing Thar Yar Township, Yangon shwehtay.khin@gmail.com , 09 5032910
(e)	Organization (အဖွဲ့အစည်း)	Green Myanmar Environmental Services Co.,Ltd.
(f)	Type of Consultancy (အကြံပေးလုပ်ကိုင်မှုအမျိုးအစား)	Person
(g)	Duration of validity (သက်တမ်းကုန်ဆုံးရက်)	31 March 2018

EXTENSION
သက်တမ်းတိုးမြှင့်ခြင်း
The VALIDITY of this certificate is extended for one year from (1.4.2018) to (31.3.2019)
ဤလက်မှတ်အား (၁-၄-၂၀၁၈) ရက်နေ့မှ (၃၁.၃.၂၀၁၉) ရက်နေ့အထိ တစ်နှစ်ထက်တစ်ခု တိုးမြှင့်သည်။
Soe Naing 14.9.2018
For Director General
(Soe Naing, Director)
Environmental Conservation Department

Director General
Environmental Conservation Department
Ministry of Natural Resources and Environmental Conservation

Areas of Expertise Permitted
(ခွင့်ပြုသည့် ကျွမ်းကျင်မှုနယ်ပယ်များ)

1. Water Pollution Control

2. Waste Management

EXTENSION
သက်တမ်းတိုးမြှင့်ခြင်း
The VALIDITY of this certificate is extended for six month from (1.1.2021) to (30.6.2021)
ဤလက်မှတ်အား(၁-၁-၂၀၂၁)ရက်နေ့မှ(၃၀-၆-၂၀၂၁)
ရက်နေ့အထိ (၆)လသက်တမ်းတိုးမြှင့်သည်။
For Director General
(Soe Naing, Director)
Environmental Conservation Department

EXTENSION
သက်တမ်းတိုးမြှင့်ခြင်း
The VALIDITY of this certificate is extended for nine months from (1.4.2019) to (31.12.2019)
ဤလက်မှတ်အား(၁-၄-၂၀၁၉) ရက်နေ့မှ (၃၁-၁၂-၂၀၁၉)
ရက်နေ့အထိ (၉)လသက်တမ်း တိုးမြှင့်သည်။
For Director General
(Soe Naing, Director)
Environmental Conservation Department

EXTENSION
သက်တမ်းတိုးမြှင့်ခြင်း
The VALIDITY of this certificate is extended for six months from (1.7.2021) to (31.12.2021)
ဤလက်မှတ်အား(၁-၇-၂၀၂၁)ရက်နေ့မှ(၃၁-၁၂-၂၀၂၁)
ရက်နေ့အထိ (၆)လ သက်တမ်းတိုးမြှင့်သည်။
For Director General
(Soe Naing, Director)
Environmental Conservation Department

EXTENSION
သက်တမ်းတိုးမြှင့်ခြင်း
The VALIDITY of this certificate is extended for one year from (1.1.2020) to (31.12.2020)
ဤလက်မှတ်အား(၁-၁-၂၀၂၀) ရက်နေ့မှ (၃၁-၁၂-၂၀၂၀)
ရက်နေ့အထိ တစ်နှစ်သက်တမ်းတိုးမြှင့်သည်။
For Director General
(Soe Naing, Director)
Environmental Conservation Department

EXTENSION (သက်တမ်းတိုးမြှင့်ခြင်း)
The VALIDITY of this certificate is extended for one year from (1.1.2022) to (31.12.2022)
ဤလက်မှတ်အား(၁-၁-၂၀၂၂) ရက်နေ့မှ (၃၁-၁၂-၂၀၂၂)
ရက်နေ့အထိ တစ်နှစ်သက်တမ်းတိုးမြှင့်သည်။
For Director General
(Soe Naing, Director)
Environmental Conservation Department

REPUBLIC OF THE UNION OF MYANMAR
Ministry of Natural Resources and Environmental Conservation
CERTIFICATE FOR TRANSITIONAL CONSULTANT REGISTRATION
(ကြားကာလအကြံပေးလုပ်ကိုင်သူမှတ်ပုံတင်ခြင်းအထောက်အထားလက်မှတ်)

No. 0028 Date 1 JUL 2017

The Ministry of Natural Resources and Environmental Conservation, hereby, issues this certificate to the person under Environmental Impact Assessment Procedure, Notification No. 616/2015.
(ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်းဆိုင်ရာ လုပ်ထုံးလုပ်နည်း၊ အမိန့်ကြော်ငြာစာအမှတ်၊ ၅၁၆/၂၀၁၅ အရ သယ်ဇာတနှင့် သဘာဝပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဝန်ကြီးဌာနသည် ဤအထောက်အထားလက်မှတ်ကို လူပုဂ္ဂိုလ်အားထုတ်ပေးလိုက်သည်။)

(a)	Name of Consultant (အကြံပေးပုဂ္ဂိုလ်အမည်)	Prof. Engr. Daw Tin May Soe
(b)	Citizenship (နိုင်ငံသား)	Myanmar
(c)	Identity Card / Passport Number (မှတ်ပုံတင်/နိုင်ငံကူးလက်မှတ် အမှတ်)	12/ Ka Ma Ya (N) 016072
(d)	Address (ဆက်သွယ်ရန်လိပ်စာ)	115, Kanaung Min Thargyi Road, Hlaing Thar Yar Industrial City, Zone (1), Hlaing Thar Yar Township, Yangon. tinmaysoe949@gmail.com , 09 5077081
(e)	Organization (အဖွဲ့အစည်း)	Green Myanmar Environmental Services Co., Ltd.
(f)	Type of Consultancy (အကြံပေးလုပ်ကိုင်မှုအမျိုးအစား)	Person
(g)	Duration of validity (သက်တမ်းကုန်ဆုံးရက်)	31 March 2018

EXTENSION
သက်တမ်းတိုးမြှင့်ခြင်း
The VALIDITY of this certificate is extended for one year from (1.4.2018) to (31.3.2019)
ဤလက်မှတ်သက်တမ်း (၁-၄-၂၀၁၈) ရက်နေ့မှ (၃၁.၃.၂၀၁၉) ရက်နေ့အထိ တစ်နှစ်သက်တမ်း တိုးမြှင့်သည်။
14.9.2018
For Director General
(Soe Naing, Director)
Environmental Conservation Department

Director General
Environmental Conservation Department
Ministry of Natural Resources and Environmental Conservation

Areas of Expertise Permitted
(ခွင့်ပြုသည့် ကျွမ်းကျင်မှုနယ်ပယ်များ)

1. Water Pollution Control

2. Chemical Engineering Process Design

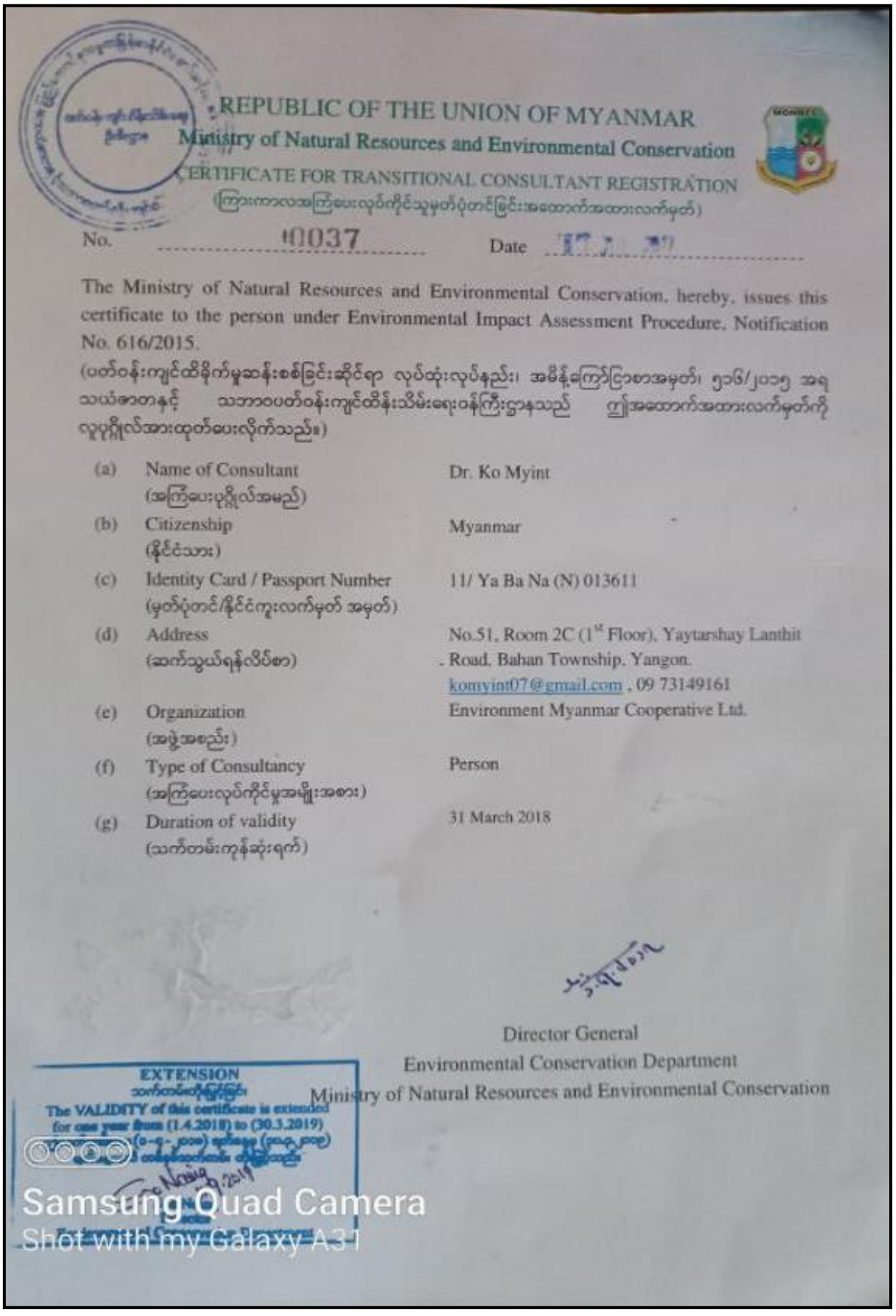
EXTENSION
သက်တမ်းတိုးပြင်ခြင်း
The VALIDITY of this certificate is extended for six month from (1.1.2021) to (30.6.2021)
ဤလက်မှတ်အား(၁-၁-၂၀၂၁)ရက်နေ့မှ (၃၀-၆-၂၀၂၁) ရက်နေ့အထိ (၆)လ သက်တမ်းတိုးပြင်သည်။
Soe Naing
For Director General
(Soe Naing, Director)
Environmental Conservation Department

EXTENSION
သက်တမ်းတိုးမြှင့်ခြင်း
The VALIDITY of this certificate is extended for nine months from (1.4.2019) to (31.12.2019)
ဤလက်မှတ်အား(၁-၄-၂၀၁၉) ရက်နေ့မှ (၃၁-၁၂-၂၀၁၉) ရက်နေ့အထိ (၉)လသက်တမ်းတိုးမြှင့်သည်။
Soe Naing 12.6.2019
For Director General
(Soe Naing, Director)
Environmental Conservation Department

EXTENSION
သက်တမ်းတိုးမြှင့်ခြင်း
The VALIDITY of this certificate is extended for six months from (1.7.2021) to (31.12.2021)
ဤလက်မှတ်အား(၁-၇-၂၀၂၁) ရက်နေ့မှ (၃၁-၁၂-၂၀၂၁) ရက်နေ့အထိ (၆)လ သက်တမ်းတိုးမြှင့်သည်။
Soe Naing
For Director General
(Soe Naing, Director)
Environmental Conservation Department

EXTENSION
သက်တမ်းတိုးမြှင့်ခြင်း
The VALIDITY of this certificate is extended for one year from (1.1.2020) to (31.12.2020)
ဤလက်မှတ်အား(၁-၁-၂၀၂၀) ရက်နေ့မှ (၃၁-၁၂-၂၀၂၀) ရက်နေ့အထိ တစ်နှစ်သက်တမ်းတိုးမြှင့်သည်။
Soe Naing 6.1.2020
For Director General
(Soe Naing, Director)
Environmental Conservation Department

EXTENSION (သက်တမ်းတိုးမြှင့်ခြင်း)
The VALIDITY of this certificate is extended for one year from (1.1.2022) to (31.12.2022)
ဤလက်မှတ်အား(၁-၁-၂၀၂၂) ရက်နေ့မှ (၃၁-၁၂-၂၀၂၂) ရက်နေ့အထိ တစ်နှစ်သက်တမ်းတိုးမြှင့်သည်။
Soe Naing 25-3-2022
For Director General
(Soe Naing, Director)
Environmental Conservation Department



REPUBLIC OF THE UNION OF MYANMAR
Ministry of Natural Resources and Environmental Conservation
CERTIFICATE FOR TRANSITIONAL CONSULTANT REGISTRATION
(ကြားကာလအကြံပေးလုပ်ကိုင်သူမှတ်ပုံတင်ခြင်းအထောက်အထားလက်မှတ်)

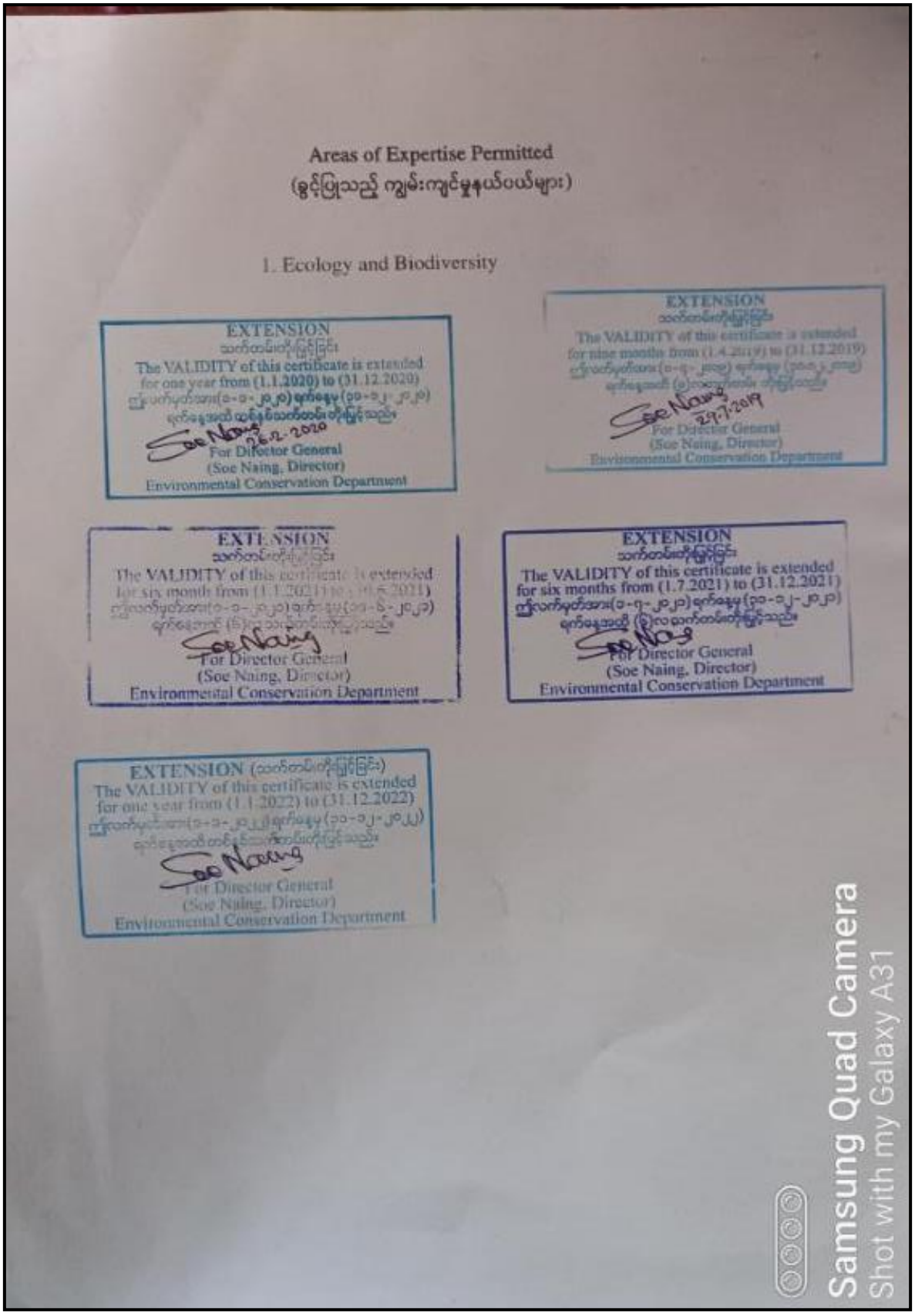
No. 0037 Date [illegible]

The Ministry of Natural Resources and Environmental Conservation, hereby, issues this certificate to the person under Environmental Impact Assessment Procedure, Notification No. 616/2015.
(ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်းဆိုင်ရာ လုပ်ထုံးလုပ်နည်း၊ အမိန့်ကြော်ငြာစာအမှတ်၊ ၅၁၆/၂၀၁၅ အရ သယ်ဆောင်နှင့် သဘာဝပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဝန်ကြီးဌာနသည် ဤအထောက်အထားလက်မှတ်ကို လွှဲပြင်လိုအားထုတ်ပေးလိုက်သည်။)

(a)	Name of Consultant (အကြံပေးပုဂ္ဂိုလ်အမည်)	Dr. Ko Myint
(b)	Citizenship (နိုင်ငံသား)	Myanmar
(c)	Identity Card / Passport Number (မှတ်ပုံတင်/နိုင်ငံကူးလက်မှတ် အမှတ်)	11/ Ya Ba Na (N) 013611
(d)	Address (ဆက်သွယ်ရန်လိပ်စာ)	No.51, Room 2C (1st Floor), Yaytarshay Lanthit Road, Bahan Township, Yangon. komyint07@gmail.com , 09 73149161
(e)	Organization (အဖွဲ့အစည်း)	Environment Myanmar Cooperative Ltd.
(f)	Type of Consultancy (အကြံပေးလုပ်ကိုင်မှုအမျိုးအစား)	Person
(g)	Duration of validity (သက်တမ်းကုန်ဆုံးရက်)	31 March 2018

Director General
Environmental Conservation Department
Ministry of Natural Resources and Environmental Conservation

EXTENSION
သက်တမ်းတိုးချဲ့ခြင်း
The VALIDITY of this certificate is extended for one year from (1.4.2018) to (30.3.2019)
(၁-၄-၂၀၁၈) ရက်နေ့မှ (၃၀-၃-၂၀၁၉) ရက်နေ့အထိ တစ်နှစ်တိုးချဲ့ပေးထားသည်



Areas of Expertise Permitted
(ခွင့်ပြုသည့် ကျွမ်းကျင်မှုနယ်ပယ်များ)

1. Ecology and Biodiversity

EXTENSION
The VALIDITY of this certificate is extended for one year from (1.1.2020) to (31.12.2020)
For Director General
(Soe Naing, Director)
Environmental Conservation Department

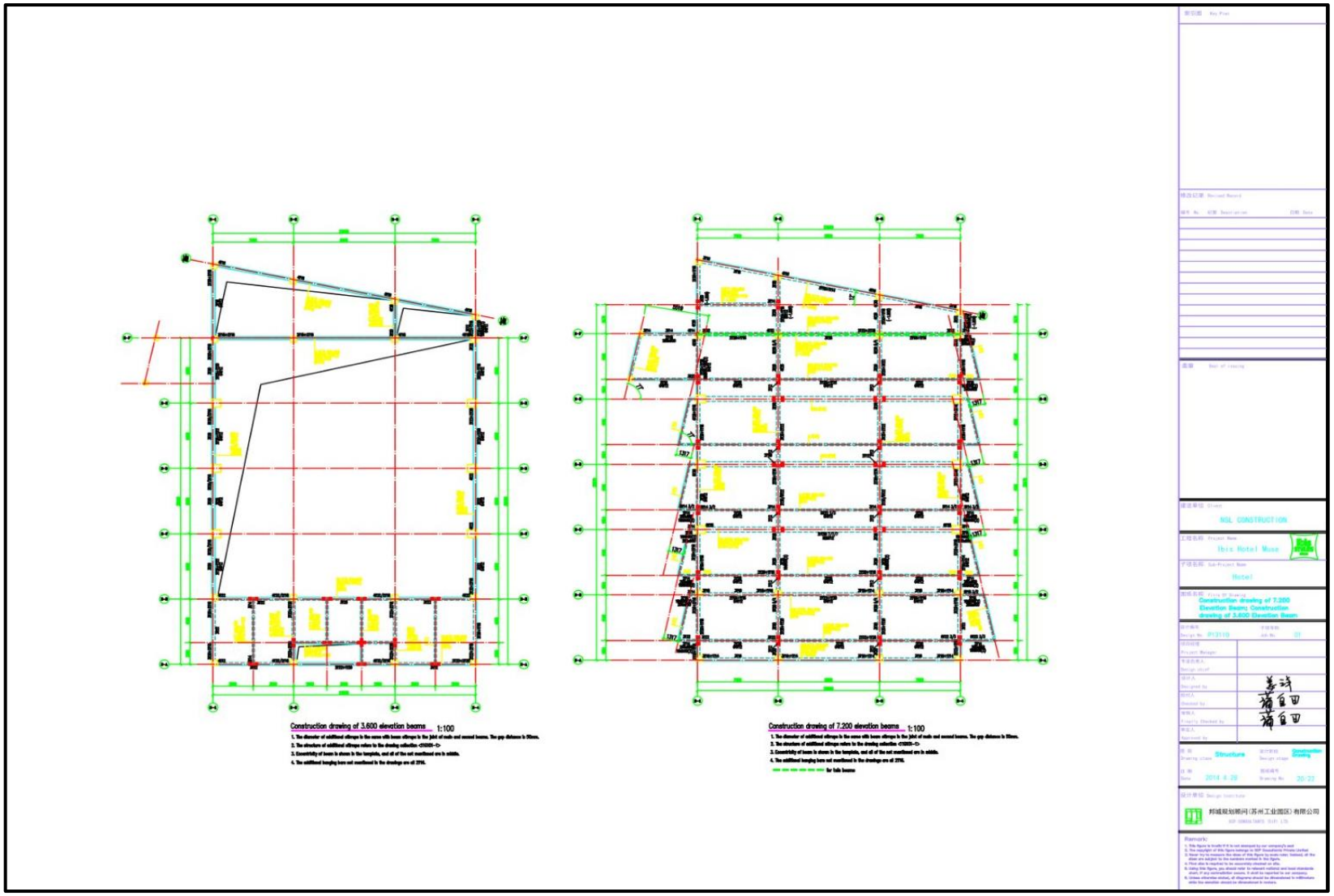
EXTENSION
The VALIDITY of this certificate is extended for nine months from (1.4.2019) to (31.12.2019)
For Director General
(Soe Naing, Director)
Environmental Conservation Department

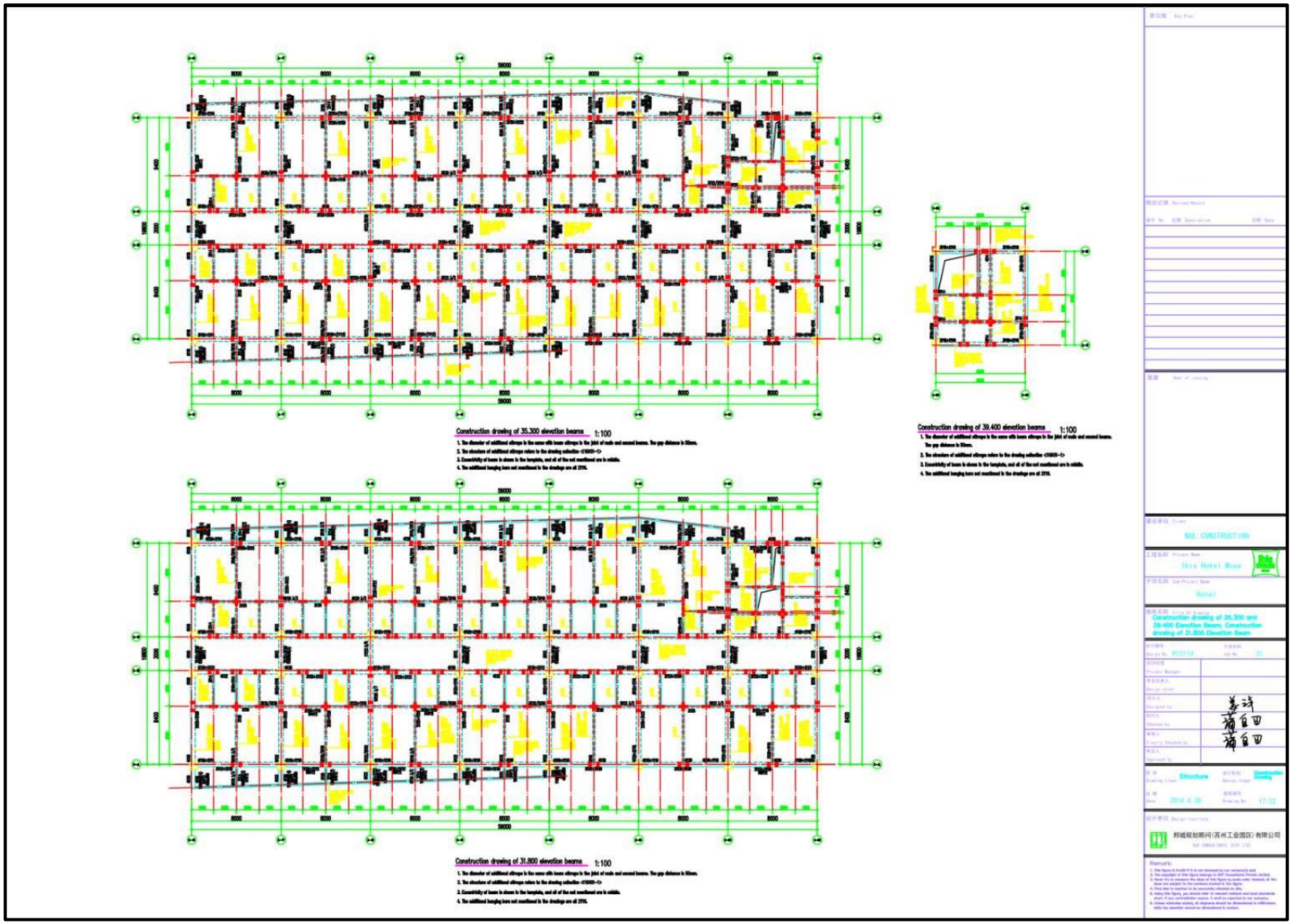
EXTENSION
The VALIDITY of this certificate is extended for six month from (1.1.2021) to (30.6.2021)
For Director General
(Soe Naing, Director)
Environmental Conservation Department

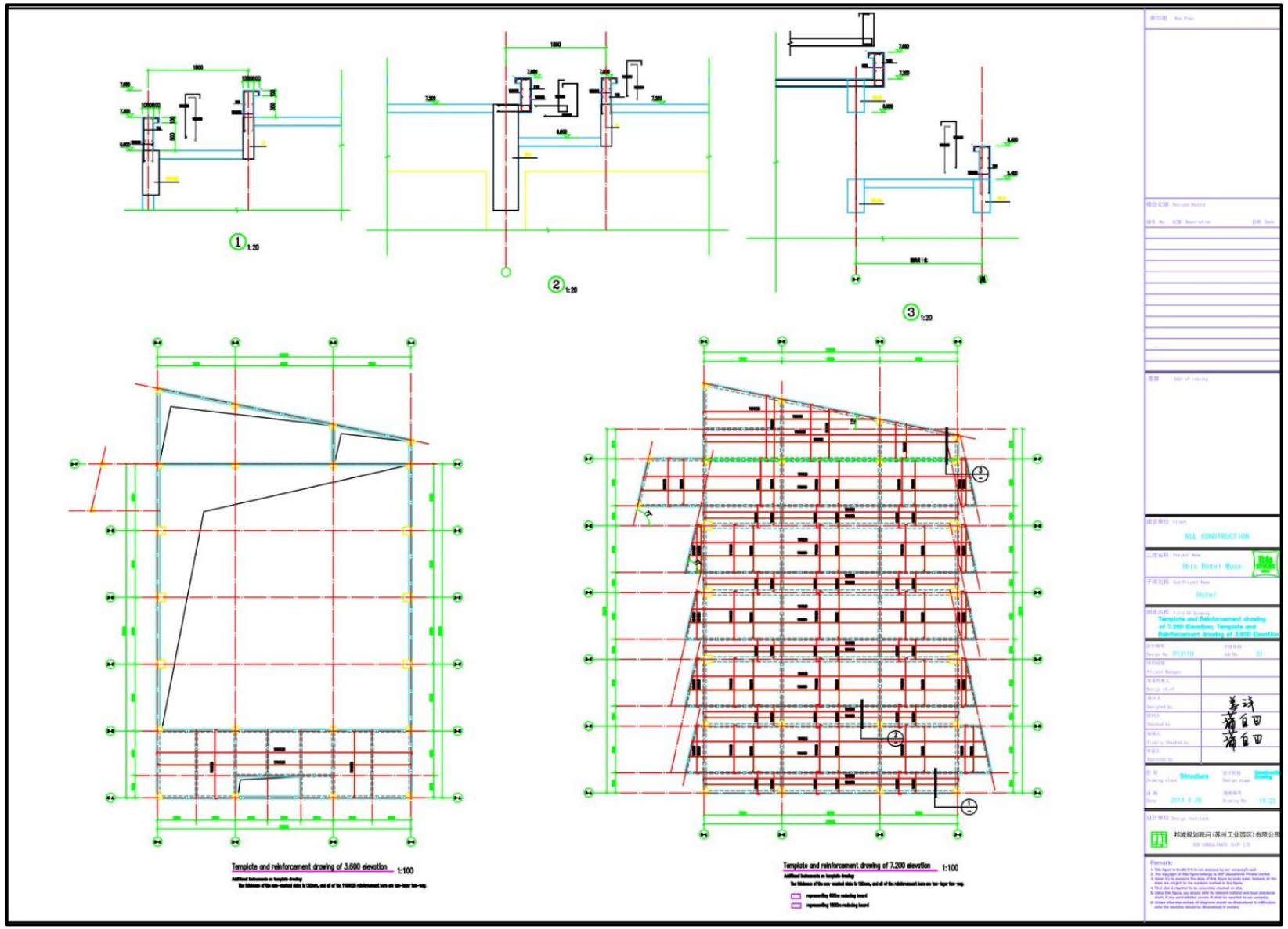
EXTENSION
The VALIDITY of this certificate is extended for six months from (1.7.2021) to (31.12.2021)
For Director General
(Soe Naing, Director)
Environmental Conservation Department

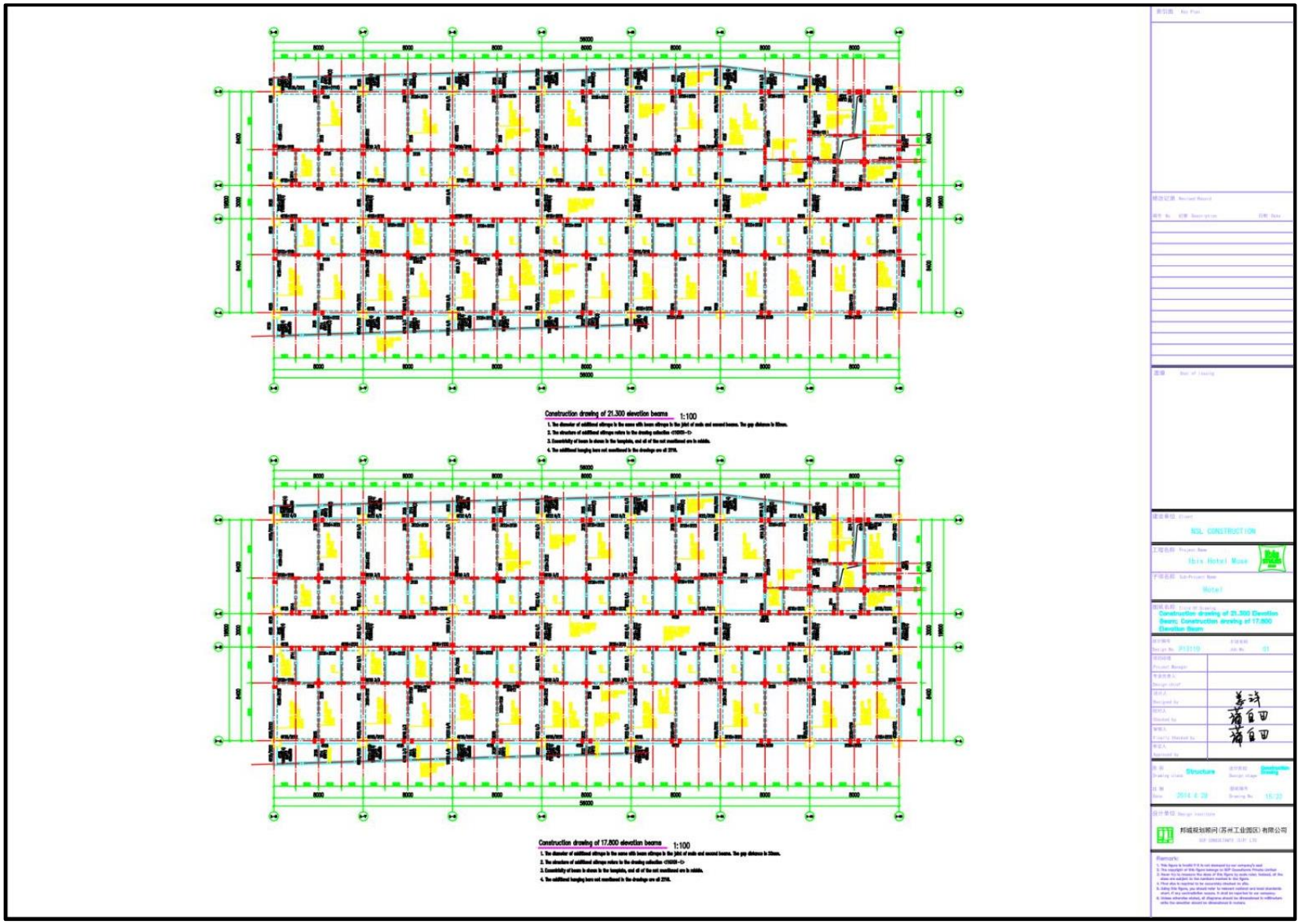
EXTENSION
The VALIDITY of this certificate is extended for one year from (1.1.2022) to (31.12.2022)
For Director General
(Soe Naing, Director)
Environmental Conservation Department

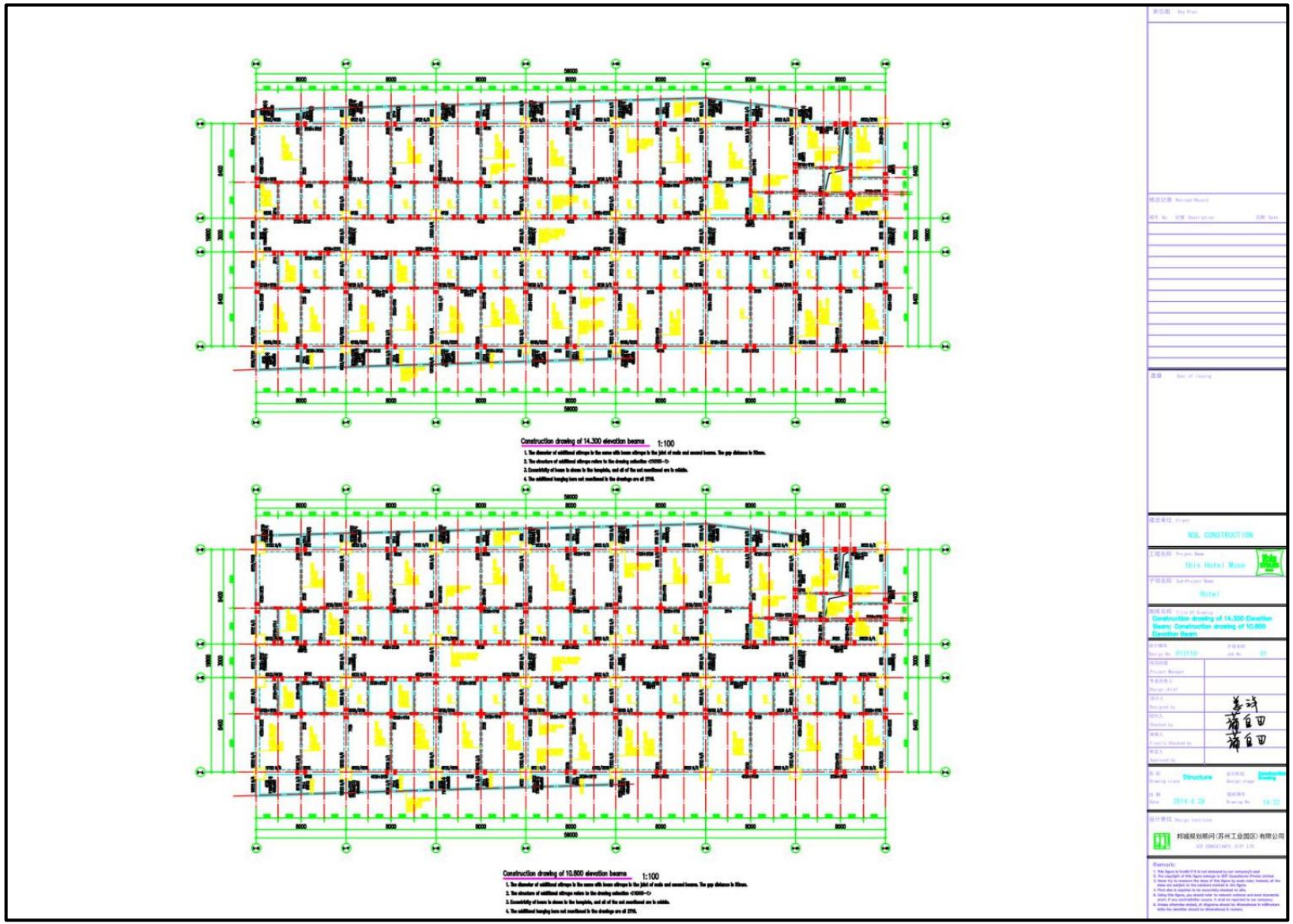
Appendix 11 Hotel's Structure Design and Layout Plan

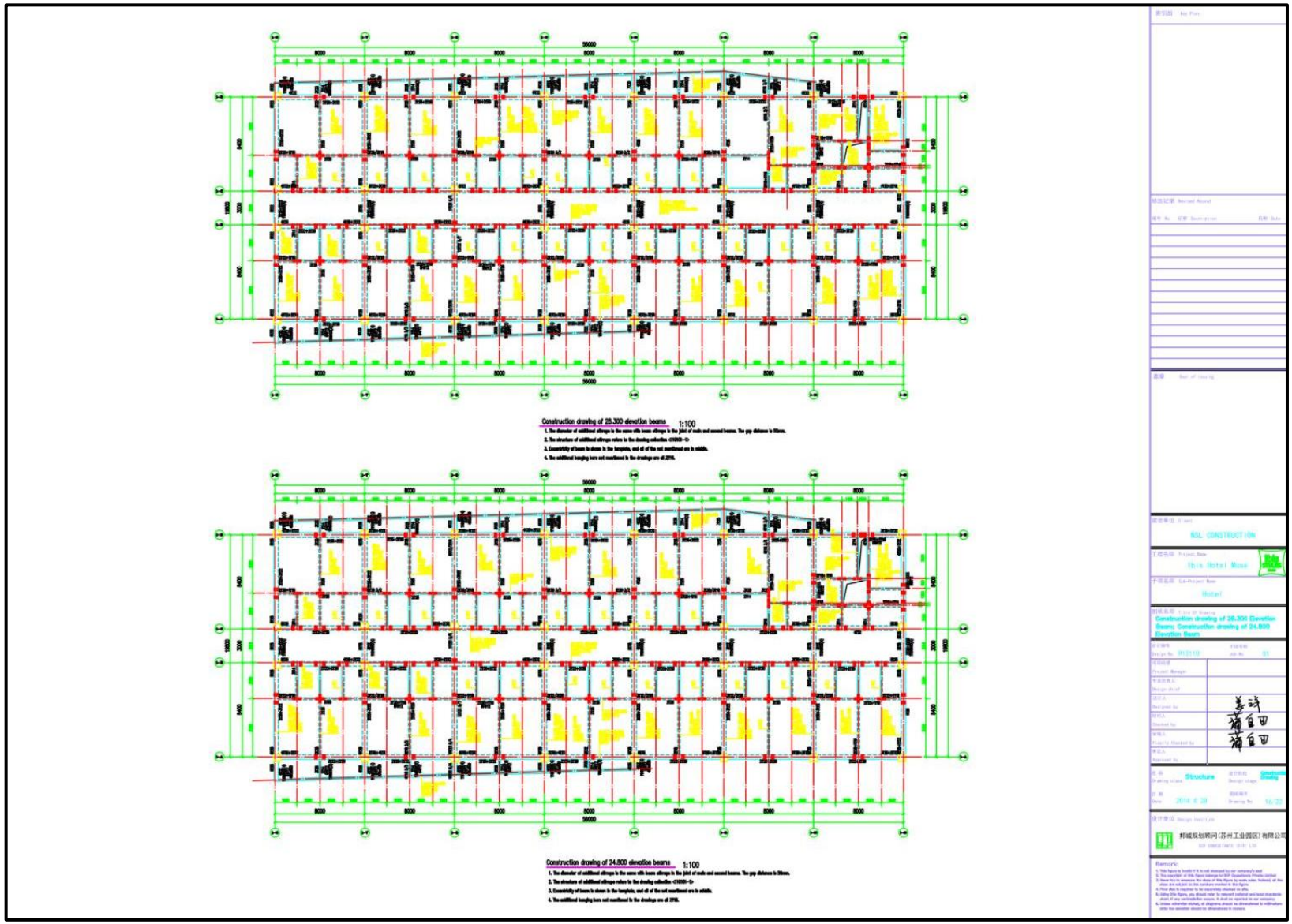


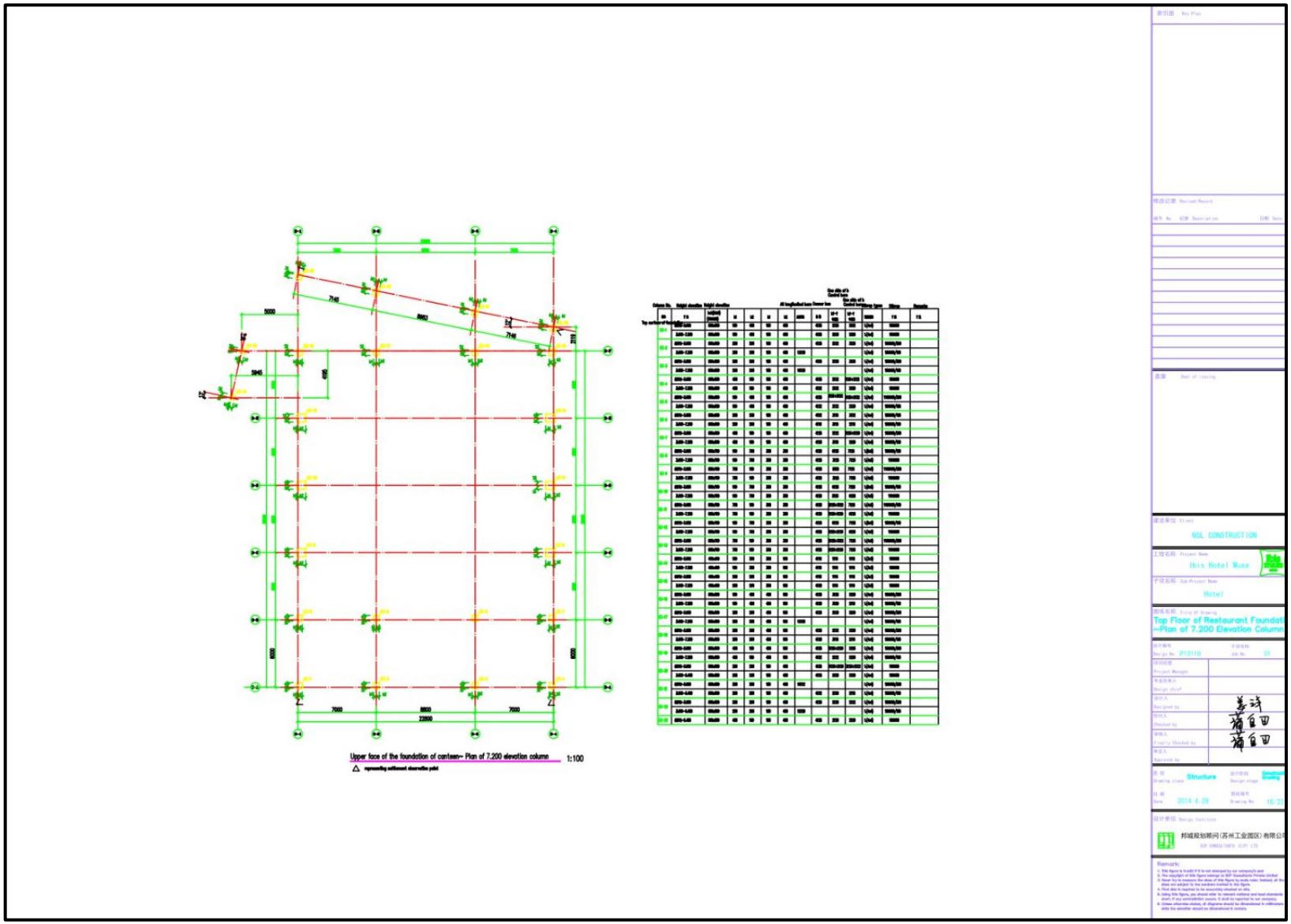

Construction drawing of 35.300 elevation beams 1:100
Construction drawing of 39.400 elevation beams 1:100
Construction drawing of 31.800 elevation beams 1:100
Construction drawing of 35.300 and 39.400 Elevation Beam, Construction drawing of 31.800 Elevation Beam
Structure

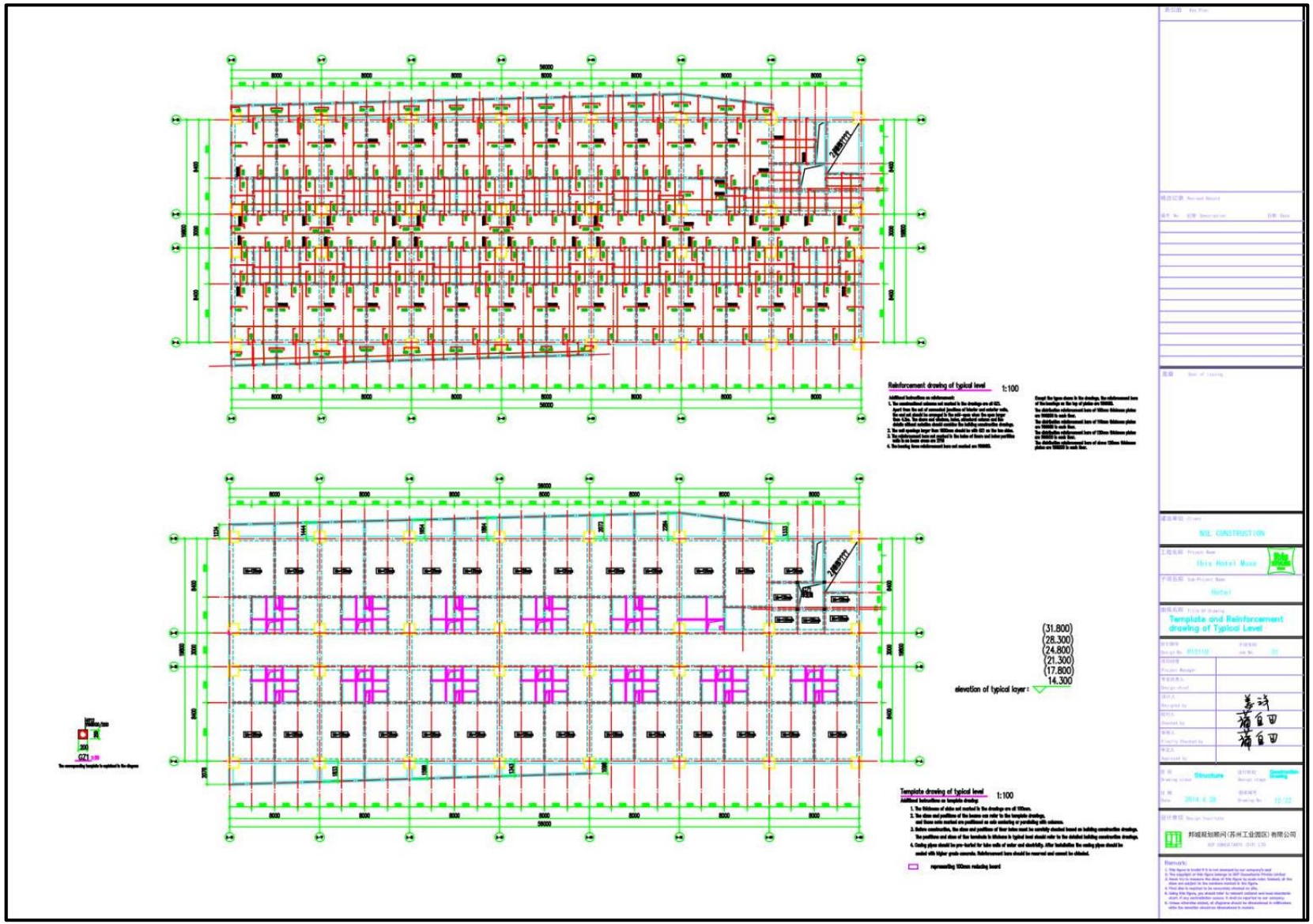

1 1:20
2 1:20
3 1:20
Template and reinforcement drawing of 3.600 elevation 1:100
Template and reinforcement drawing of 7.200 elevation 1:100
NSL CONSTRUCTION
Ibis Hotel Muse
Hotel
Structure

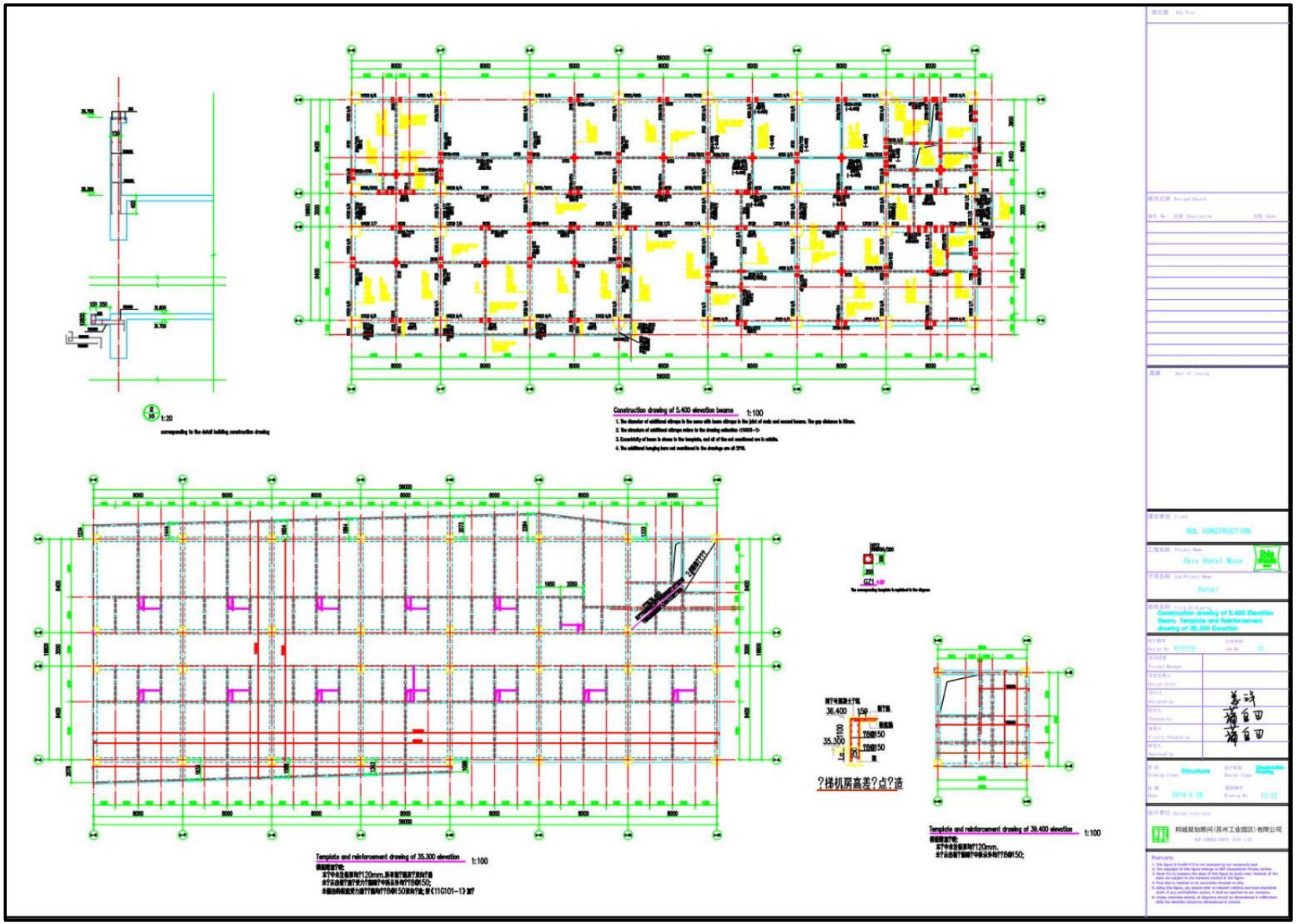

Construction drawing of 21.300 elevation beams 1:100
Construction drawing of 17.800 elevation beams 1:100
NSL CONSTRUCTION
Ibis Hotel Muse
Hotel
Structure


Construction drawing of 14.300 elevation beams 1:100
Construction drawing of 10.800 elevation beams 1:100
NGL CONSTRUCTION
Ibis Hotel Muse
Hotel
Structure

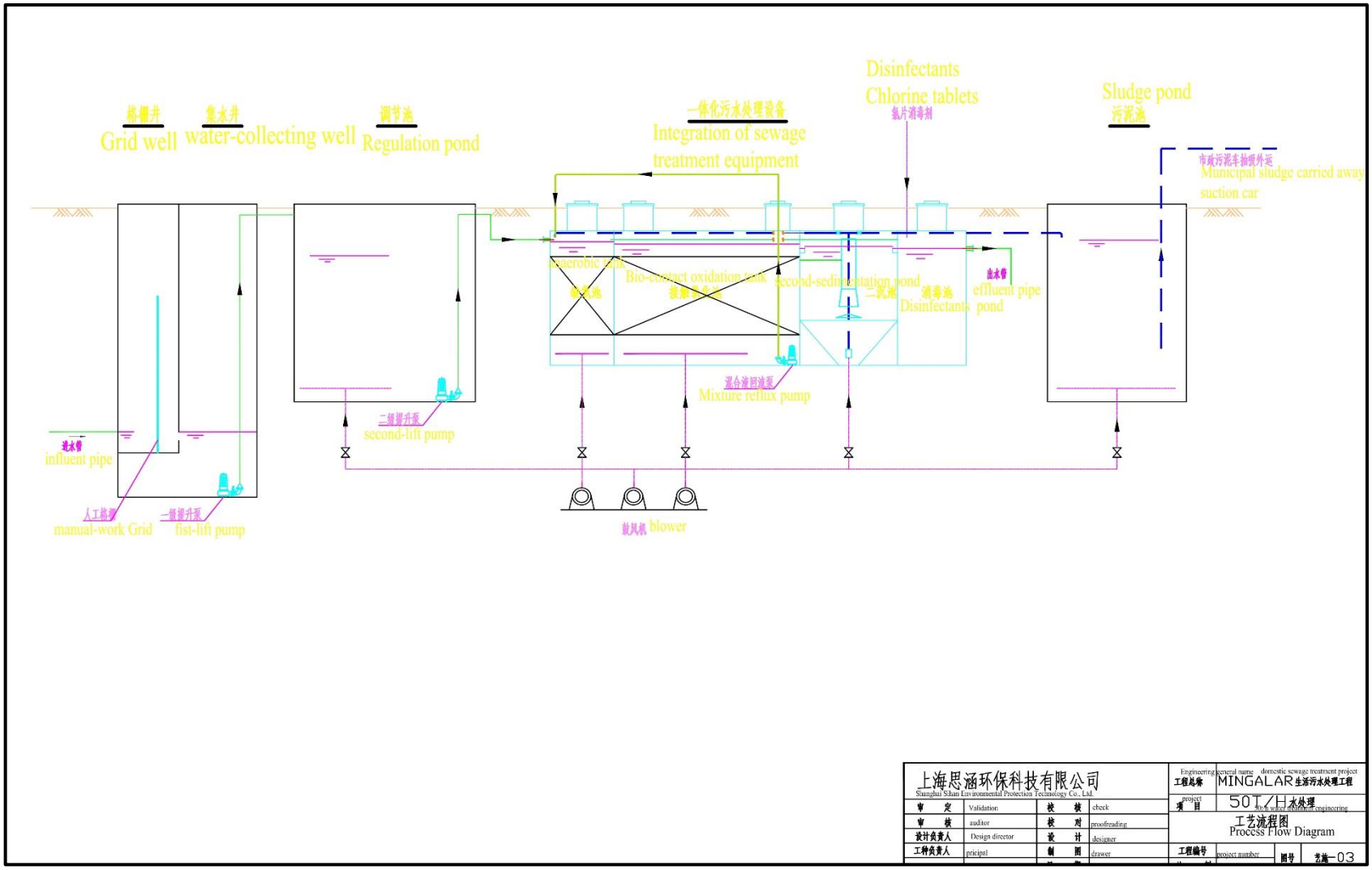

Construction drawing of 28.300 elevation beams 1:100
Construction drawing of 24.800 elevation beams 1:100
NGL CONSTRUCTION
Ibis Hotel Muse
Hotel
Structure

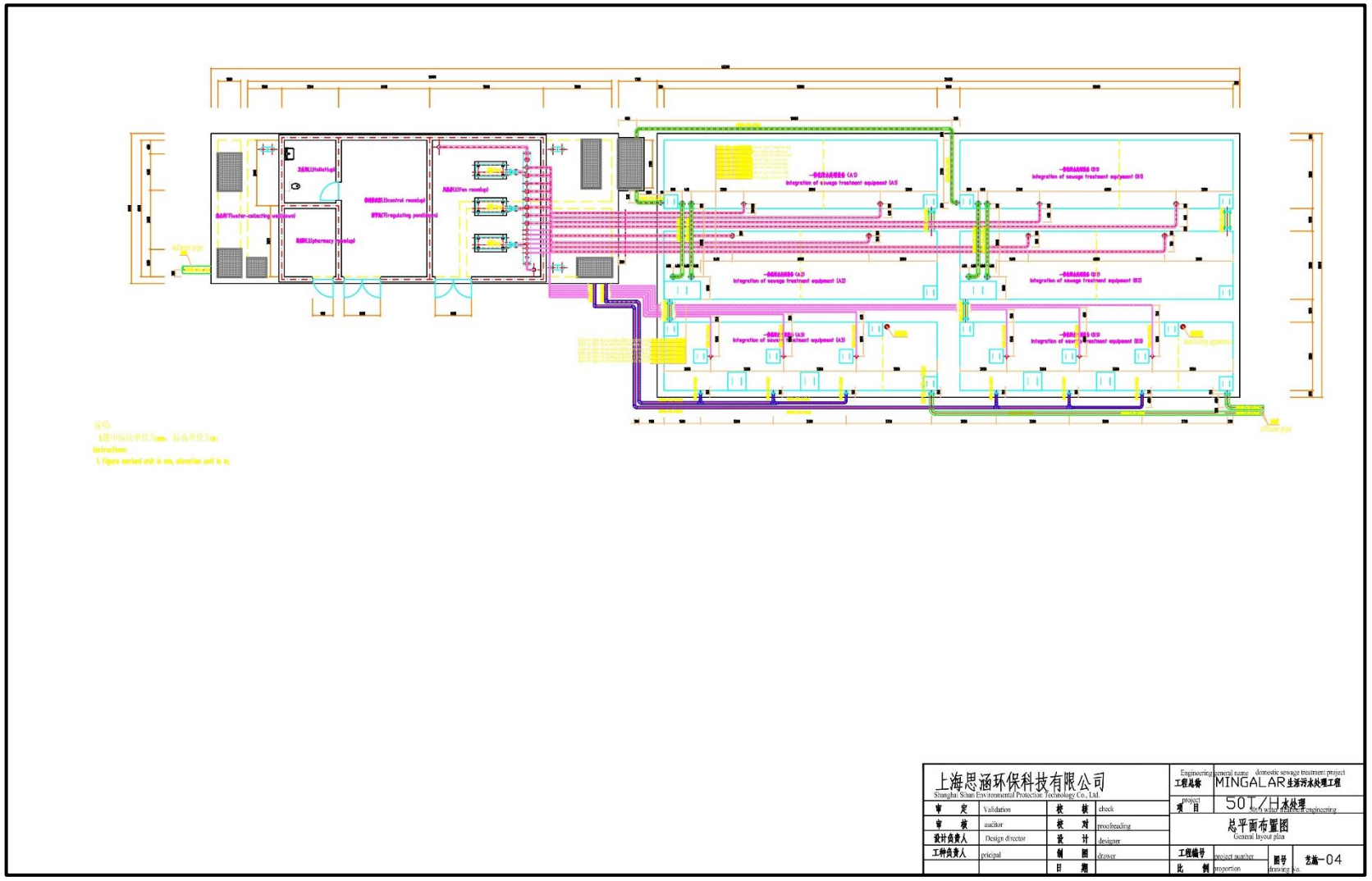

Upper face of the foundation of canteen- Plan of 7.200 elevation column
1:100
NSL CONSTRUCTION
Ibis Hotel Muse
Hotel
Top Floor of Restaurant Foundati
~Plan of 7.200 Elevation Column
Structure

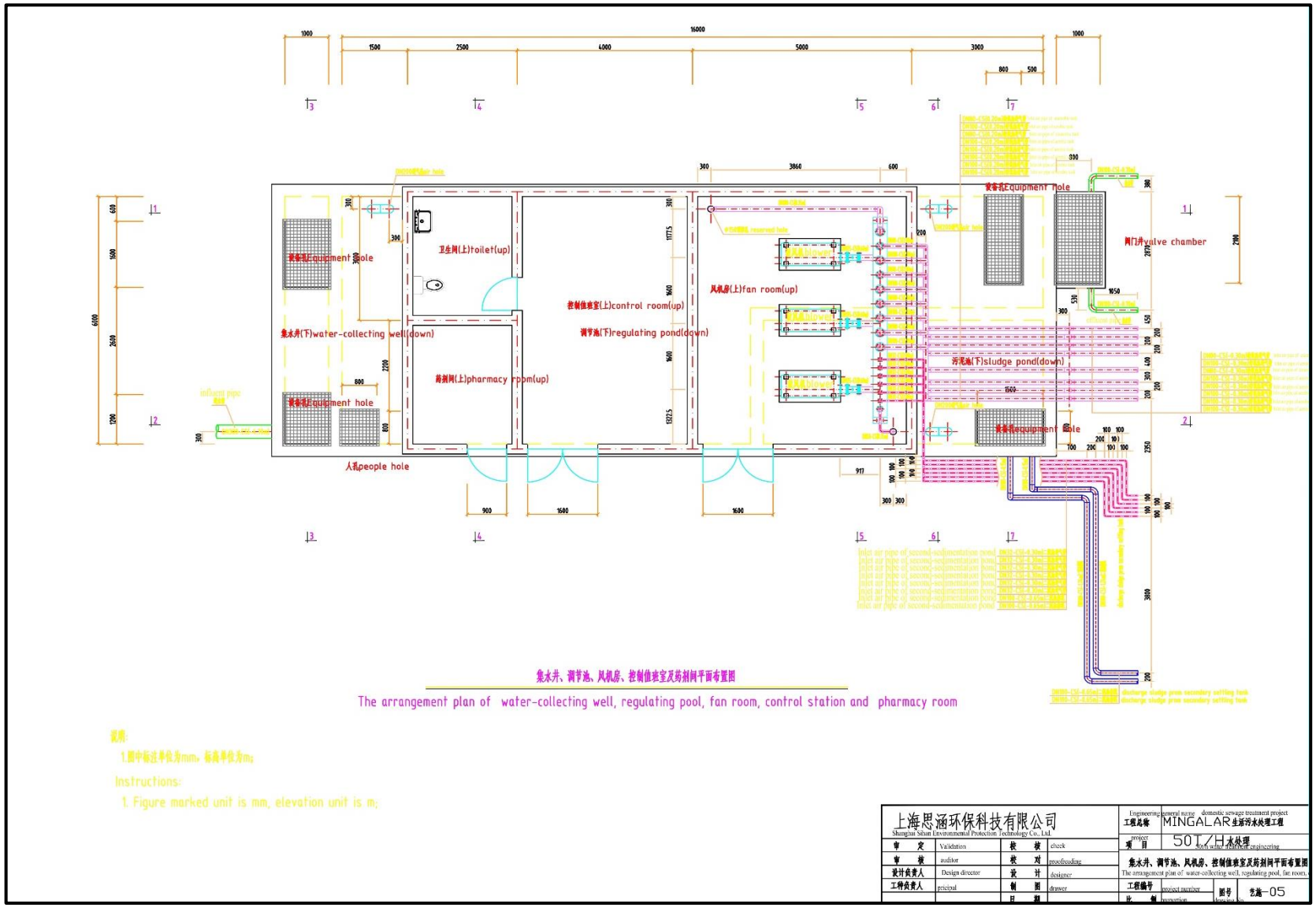

Reinforcement drawing of typical level 1:100
Template drawing of typical level 1:100
(31.800)
(28.300)
(24.800)
(21.300)
(17.800)
14.300
elevation of typical layer :
Template and Reinforcement drawing of Typical Level
Structure

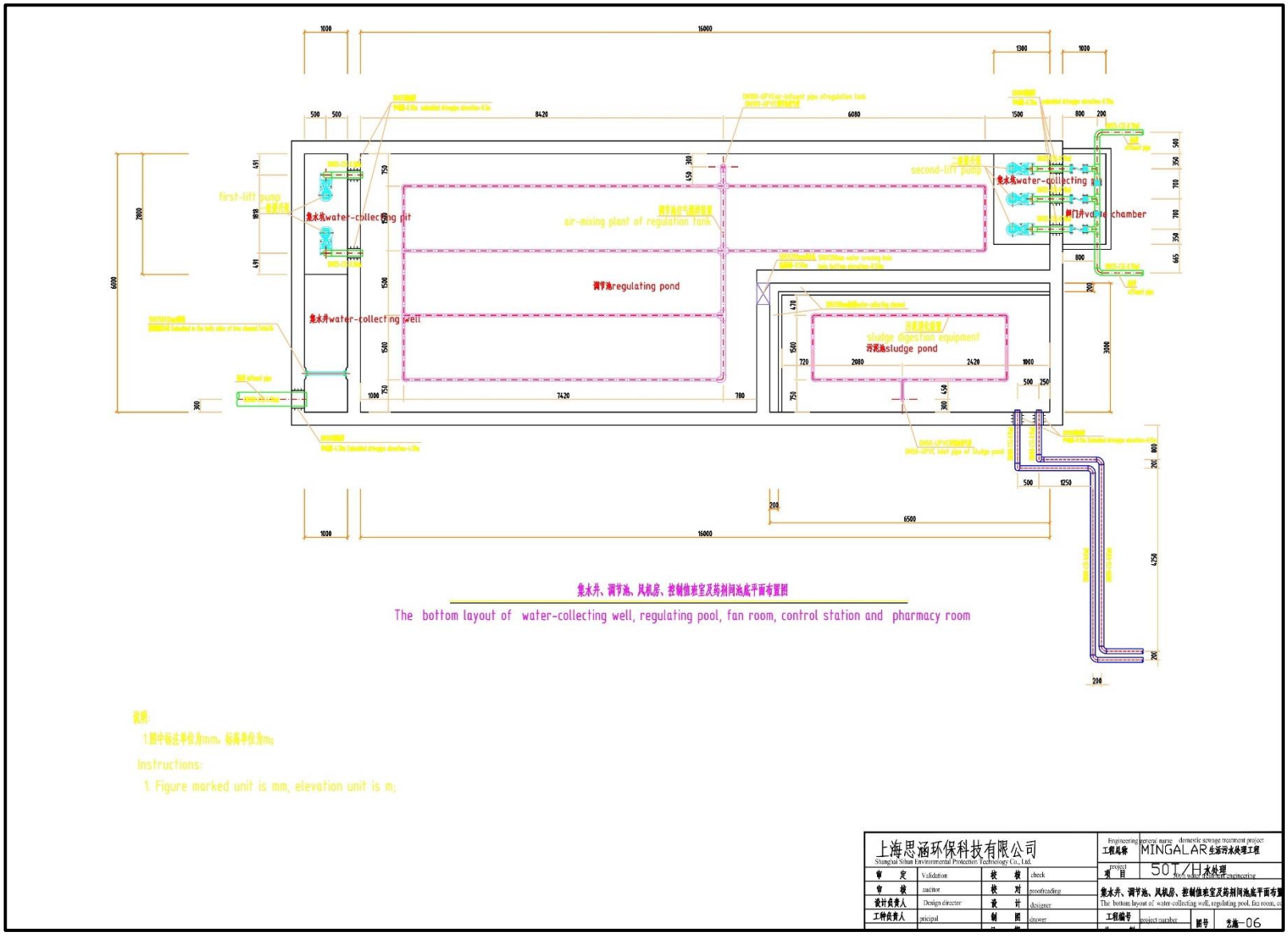

Construction drawing of 5.400 elevation beams 1:100
Template and reinforcement drawing of 35.300 elevation 1:100
Template and reinforcement drawing of 39.400 elevation 1:100
NIL CONSTRUCTION
Ibis Hotel Muse
Hotel
Structure

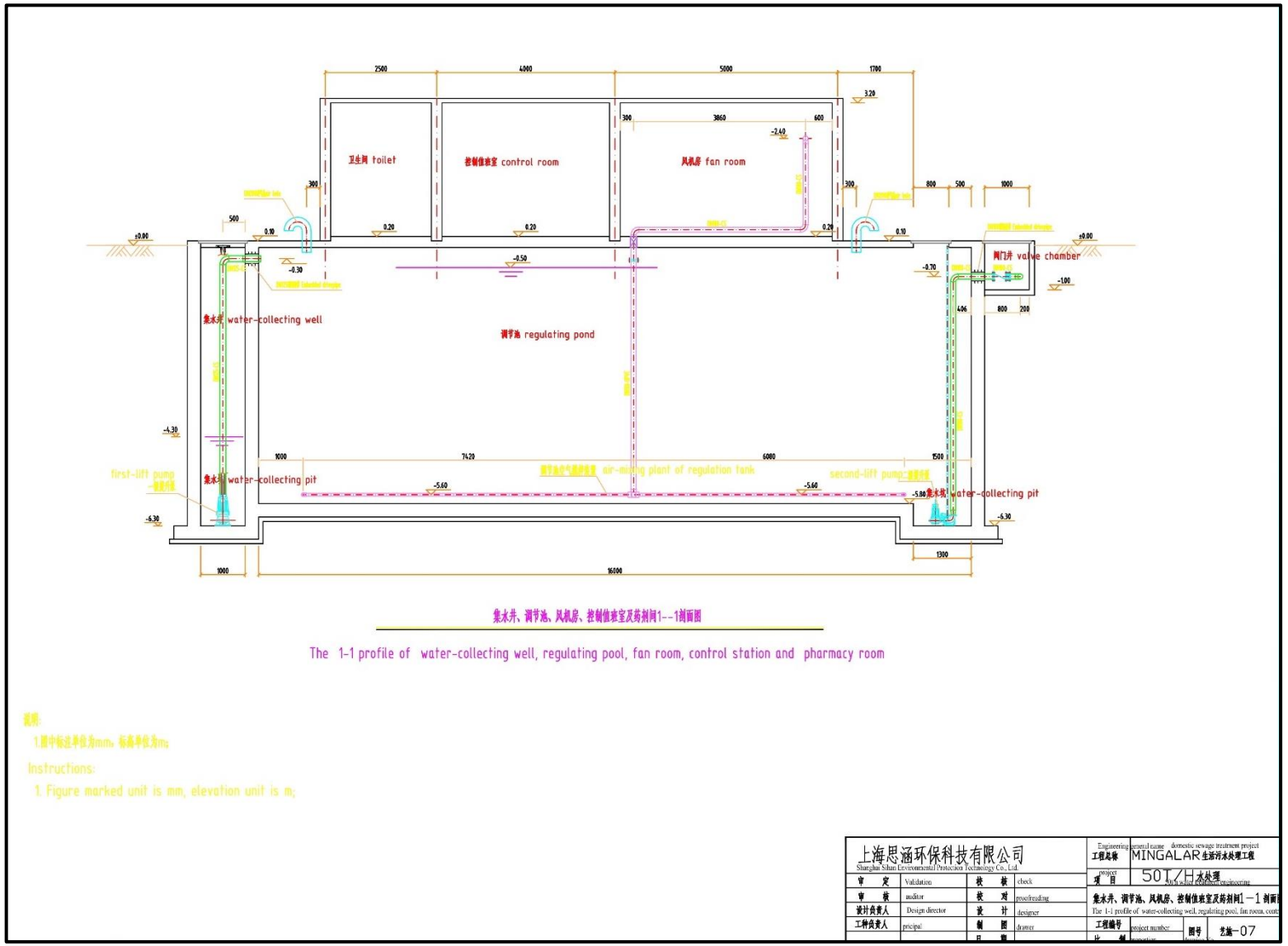
Appendix 12 Layout Plan for Centralized Wastewater Treatment Plant

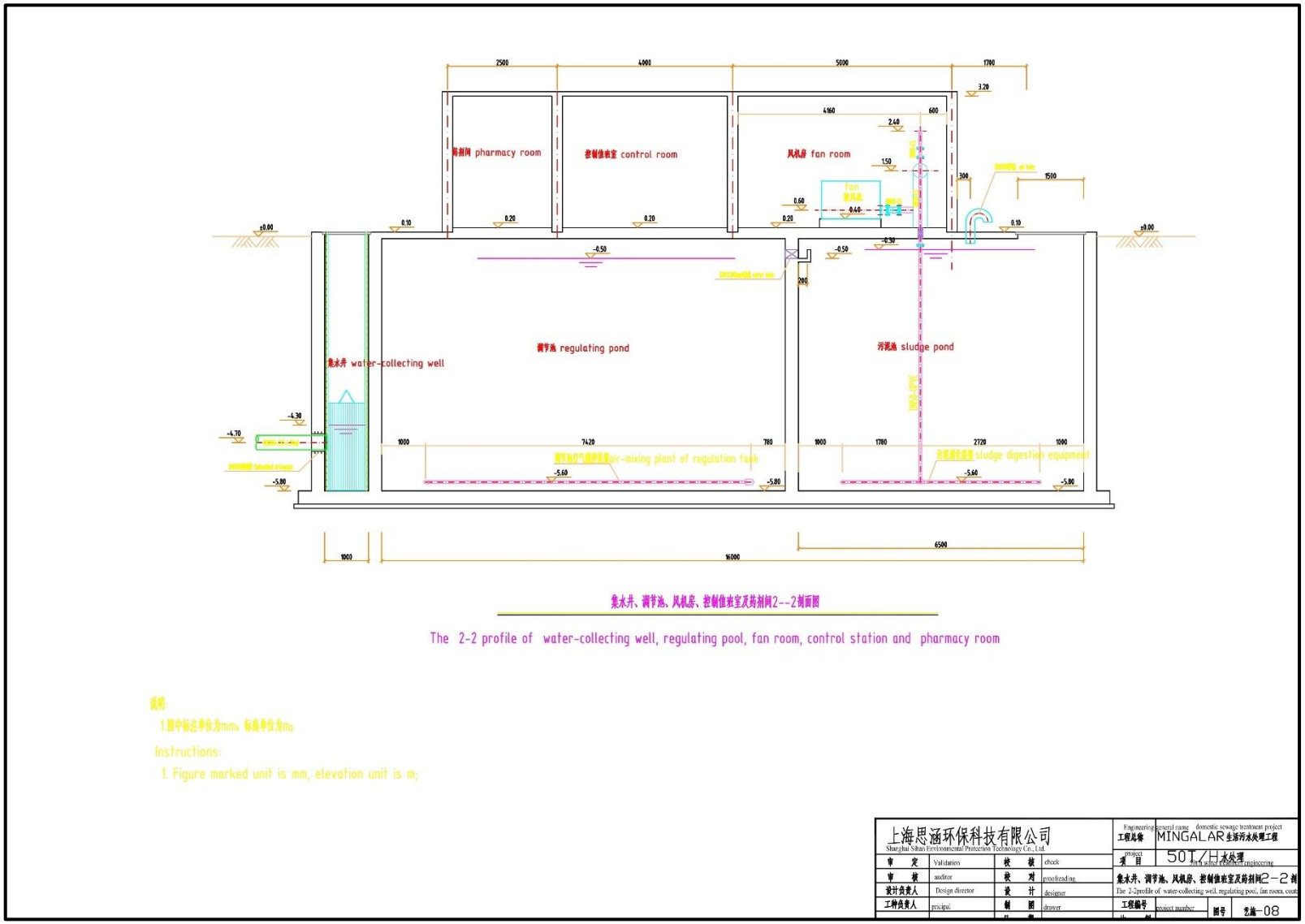


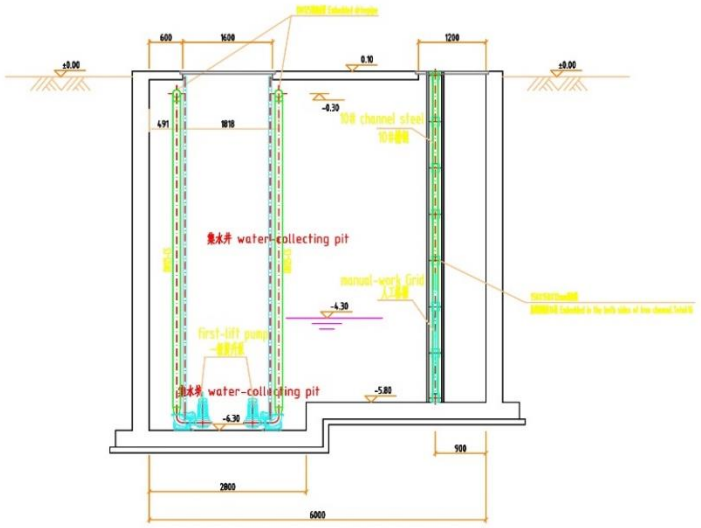

上海思涵环保科技有限公司
Shanghai Sihan Environmental Protection Technology Co., Ltd.
MINGALAR 生活污水处理工程
50T/H 水处理
总平面布置图
General layout plan
审 定 Validation
审 核 auditor
设计负责人 Design director
工种负责人 pricipal
校 核 check
校 对 proofreading
设 计 designer
制 图 drawer
日 期
工程编号 project number
比 例 proportion
图号 drawing No.
总施-04


卫生间(上)toilet(up)
风机房(上)fan room(up)
控制值班室(上)control room(up)
集水井(下)water-collecting well(down)
调节池(下)regulating pond(down)
药剂间(上)pharmacy room(up)
污泥池(下)sludge pond(down)
阀门井valve chamber
人孔people hole
集水井、调节池、风机房、控制值班室及药剂间平面布置图
The arrangement plan of water-collecting well, regulating pool, fan room, control station and pharmacy room
Instructions:
1. Figure marked unit is mm, elevation unit is m;
上海思涵环保科技有限公司
Shanghai Sihan Environmental Protection Technology Co. Ltd.
MINGALAR 生活污水处理工程
50T/H 水处理
集水井、调节池、风机房、控制值班室及药剂间平面布置图
工程编号
图号 生施-05


first-lift pump
集水坑water-collecting pit
air-mixing plant of regulation tank
second-lift pump
集水坑water-collecting pit
阀门井valve chamber
调节池regulating pond
集水井water-collecting well
sludge digestion equipment
污泥池sludge pond
集水井、调节池、风机房、控制值班室及药剂间池底平面布置图
The bottom layout of water-collecting well, regulating pool, fan room, control station and pharmacy room
说明:
1.图中标注单位为mm，标高单位为m;
Instructions:
1. Figure marked unit is mm, elevation unit is m;
上海思涵环保科技有限公司
Shanghai Sihan Environmental Protection Technology Co., Ltd.
MINGALAR生活污水处理工程
50T/H水处理
集水井、调节池、风机房、控制值班室及药剂间池底平面布置
The bottom layout of water-collecting well, regulating pool, fan room, c
艺施-06


卫生间 toilet
控制值班室 control room
风机房 fan room
阀门井 valve chamber
集水井 water-collecting well
调节池 regulating pond
first-lift pump
集水坑 water-collecting pit
air-mixing plant of regulation tank
second-lift pump
集水坑 water-collecting pit
集水井、调节池、风机房、控制值班室及药剂间1--1剖面图
The 1-1 profile of water-collecting well, regulating pool, fan room, control station and pharmacy room
说明:
1.图中标注单位为mm，标高单位为m;
Instructions:
1. Figure marked unit is mm, elevation unit is m;
上海思涵环保科技有限公司
Shanghai Sihan Environmental Protection Technology Co., Ltd
MINGALAR生活污水处理工程
50T/H水处理
集水井、调节池、风机房、控制值班室及药剂间1－1剖面图
The 1-1 profile of water-collecting well, regulating pool, fan room, cont
艺施-07


pharmacy room
control room
fan room
water-collecting well
regulating pond
sludge pond
air-mixing plant of regulation tank
sludge digestion equipment
集水井、调节池、风机房、控制值班室及药剂间2--2剖面图
The 2-2 profile of water-collecting well, regulating pool, fan room, control station and pharmacy room
说明:
1.图中标注单位为mm，标高单位为m;
Instructions:
1. Figure marked unit is mm, elevation unit is m;
上海思涵环保科技有限公司
Shanghai Sihan Environmental Protection Technology Co., Ltd.
MINGALAR生活污水处理工程
50T/H
集水井、调节池、风机房、控制值班室及药剂间2-2剖
The 2-2profile of water-collecting well, regulating pool, fan room, cont
施-08



集水井、调节池、风机房、控制值班室及药剂间3--3剖面图

The 3-3 profile of water-collecting well, regulating pool, fan room, control station and pharmacy room

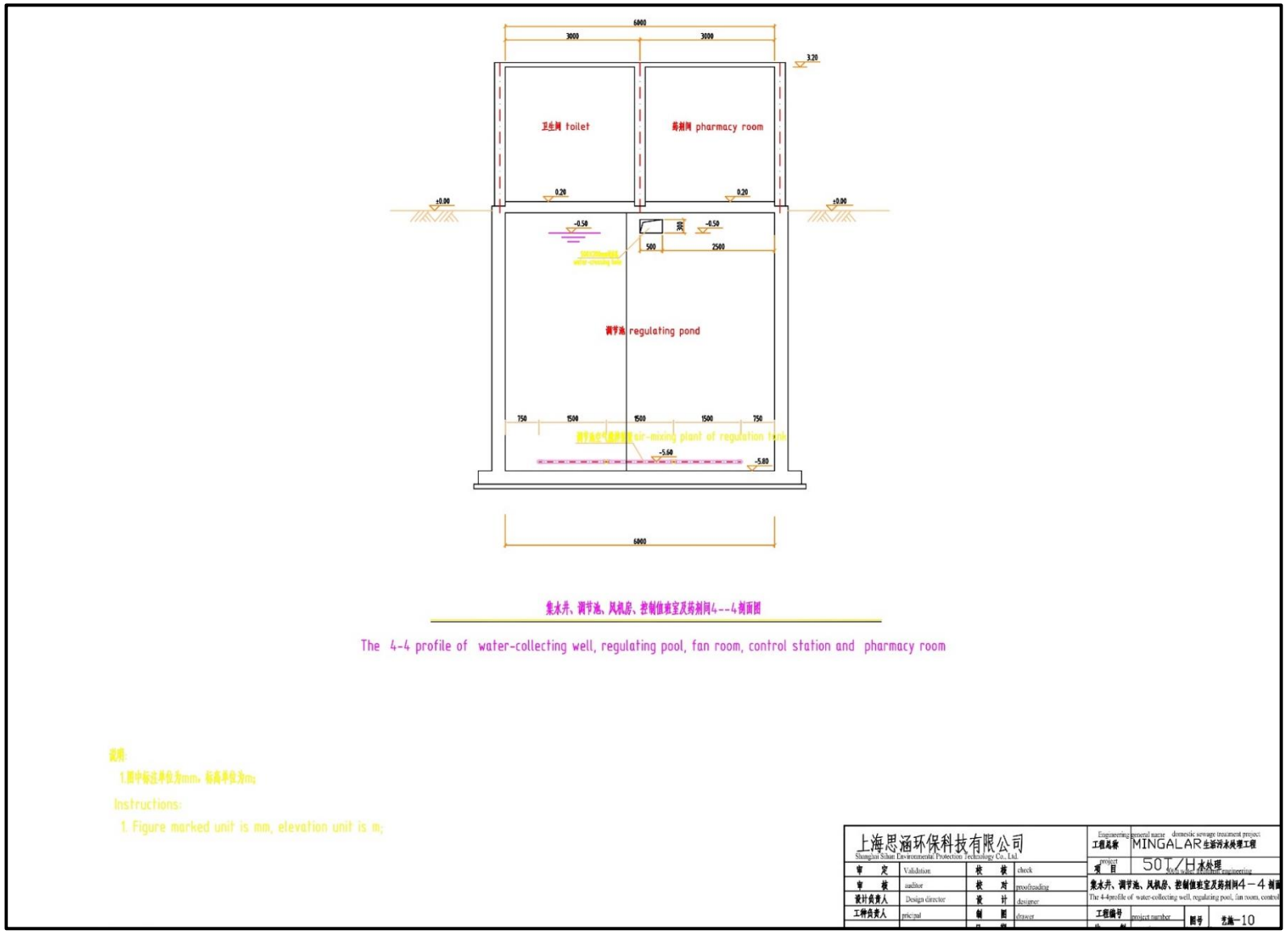
说明:

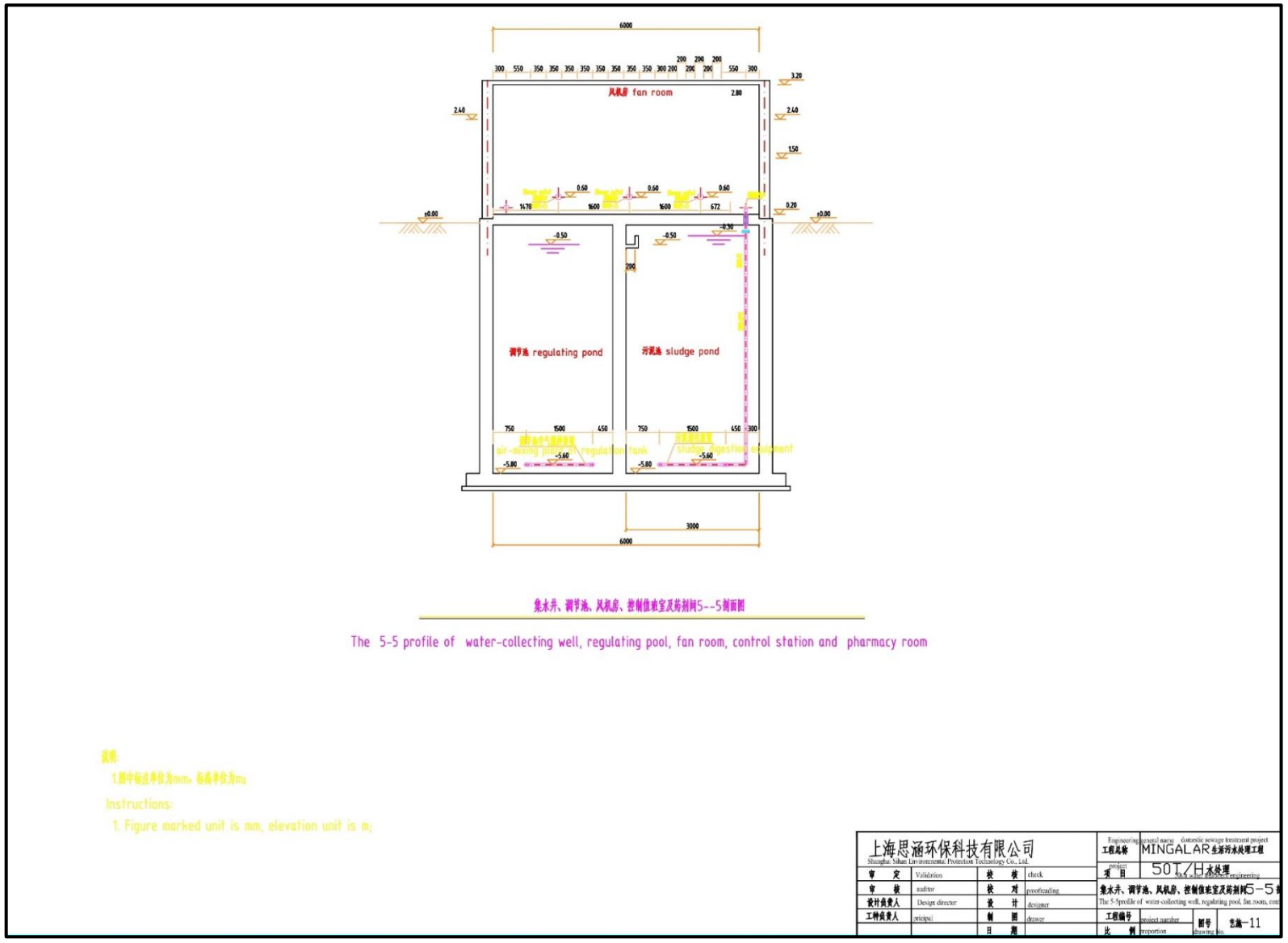
1.图中标注单位为mm, 标高单位为m;

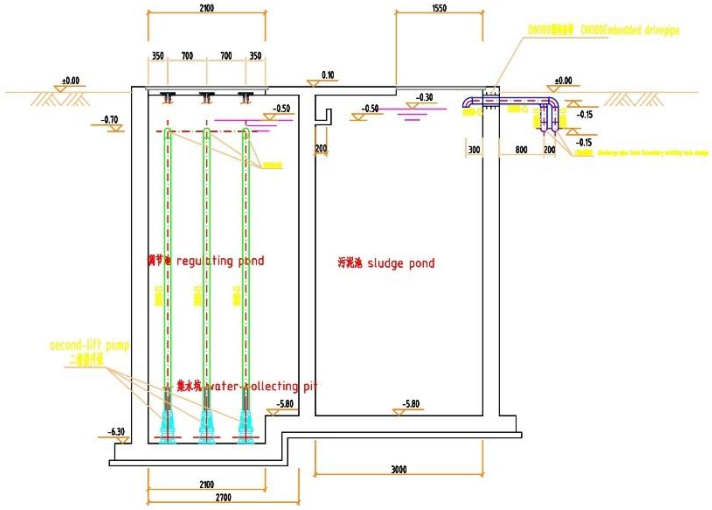
Instructions:

1. Figure marked unit is mm, elevation unit is m;

上海思涵环保科技有限公司 Shanghai Sihan Environmental Protection Technology Co., Ltd.				Engineering general name 工程总称	domestic sewage treatment project MINGALAR 生活污水处理工程
审 定	Validation	校 核	check	project 项 目	50T/H 水处理 sewage water treatment engineering
审 核	auditor	校 对	proofreading	集水井、调节池、风机房、控制值班室及药剂间3-3剖面 The 3-3profile of water-collecting well, regulating pool, fan room, control	
设计负责人	Design director	设 计	designer		
工种负责人	principal	制 图	drawer	工程编号 project number	图号 艺施-09


6000
3000
3000
3.20
卫生间 toilet
药剂间 pharmacy room
±0.00
0.20
0.20
±0.00
-0.50
300
-0.50
500
2500
调节池 regulating pond
750
1500
1500
1500
750
-5.60
-5.80
6000
集水井、调节池、风机房、控制值班室及药剂间4--4剖面图
The 4-4 profile of water-collecting well, regulating pool, fan room, control station and pharmacy room
说明:
1.图中标注单位为mm，标高单位为m;
Instructions:
1. Figure marked unit is mm, elevation unit is m;
上海思涵环保科技有限公司
Shanghai Sihan Environmental Protection Technology Co., Ltd.
MINGALAR生活污水处理工程
50T/H水处理
集水井、调节池、风机房、控制值班室及药剂间4－4剖面
The 4-4profile of water-collecting well, regulating pool, fan room, control
艺施-10


6000
风机房 fan room
2.80
3.20
2.40
1.50
0.20
±0.00
-0.50
-0.30
调节池 regulating pond
污泥池 sludge pond
750
1500
450
300
-5.60
-5.80
3000
集水井、调节池、风机房、控制值班室及药剂间5--5剖面图
The 5-5 profile of water-collecting well, regulating pool, fan room, control station and pharmacy room
Instructions:
1. Figure marked unit is mm, elevation unit is m;
上海思涵环保科技有限公司
Shanghai Sihan Environmental Protection Technology Co., Ltd.
MINGALAR 生活污水处理工程
50T/H水处理
审 定 Validation
审 核 auditor
设计负责人 Design director
工种负责人 principal
校 核 check
校 对 proofreading
设 计 designer
制 图 drawer
日 期
工程编号 project number
比 例 proportion
图号 drawing No. 生施-11



集水井、调节池、风机房、控制值班室及药剂间6--6剖面图

The 7-7 profile of water-collecting well, regulating pool, fan room, control station and pharmacy room

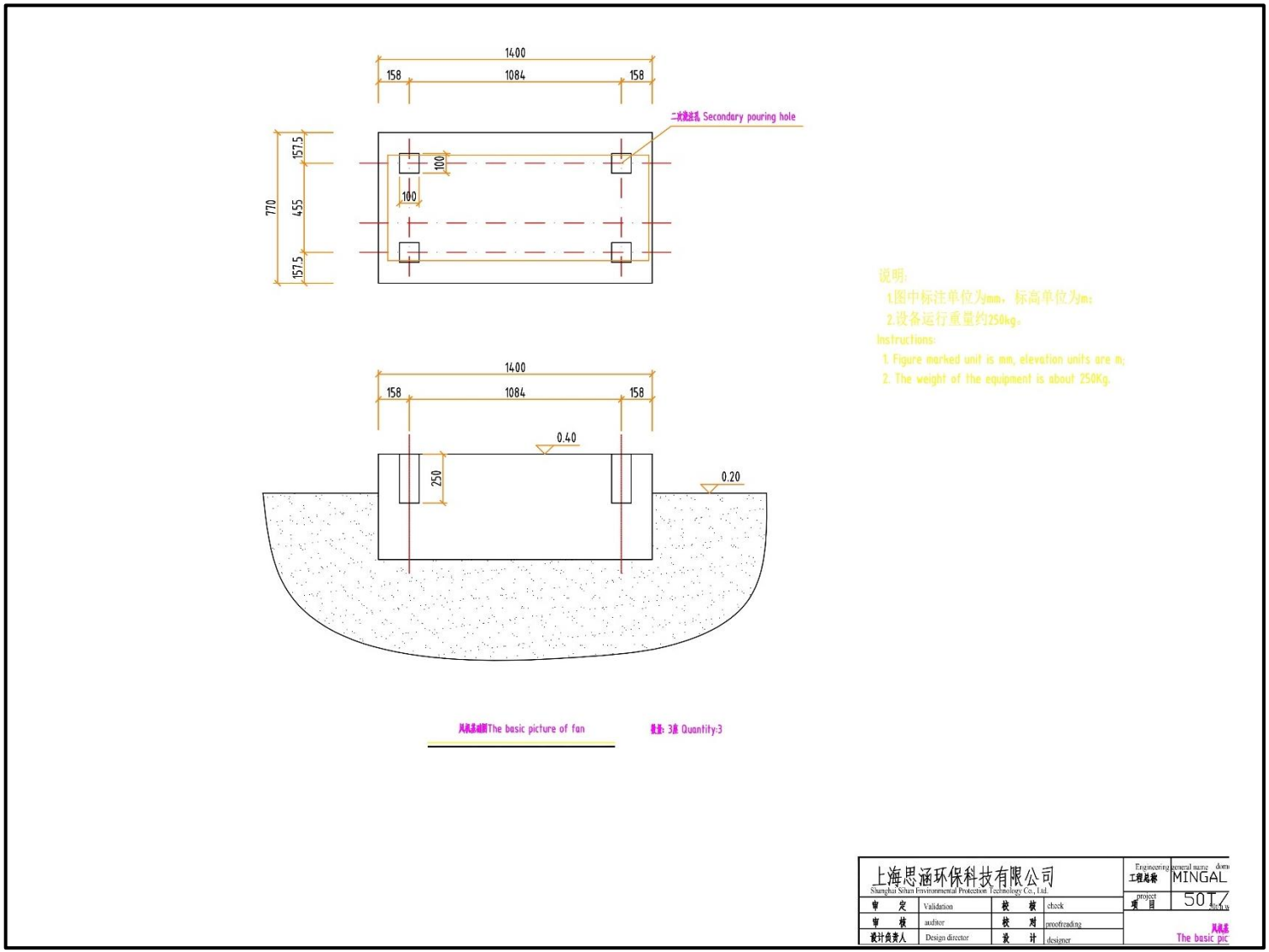
说明:

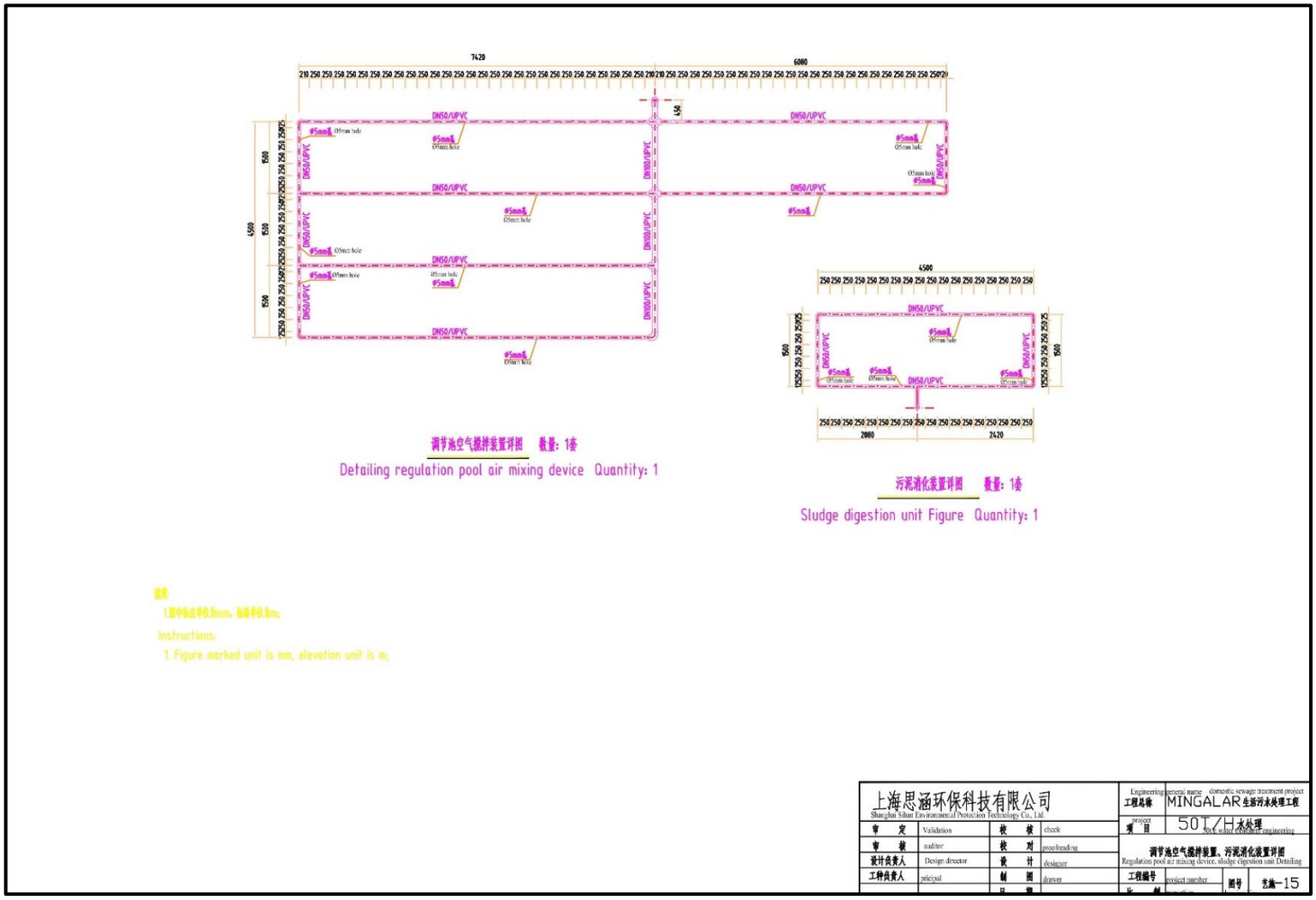
1.图中标注单位为mm，标高单位为m;

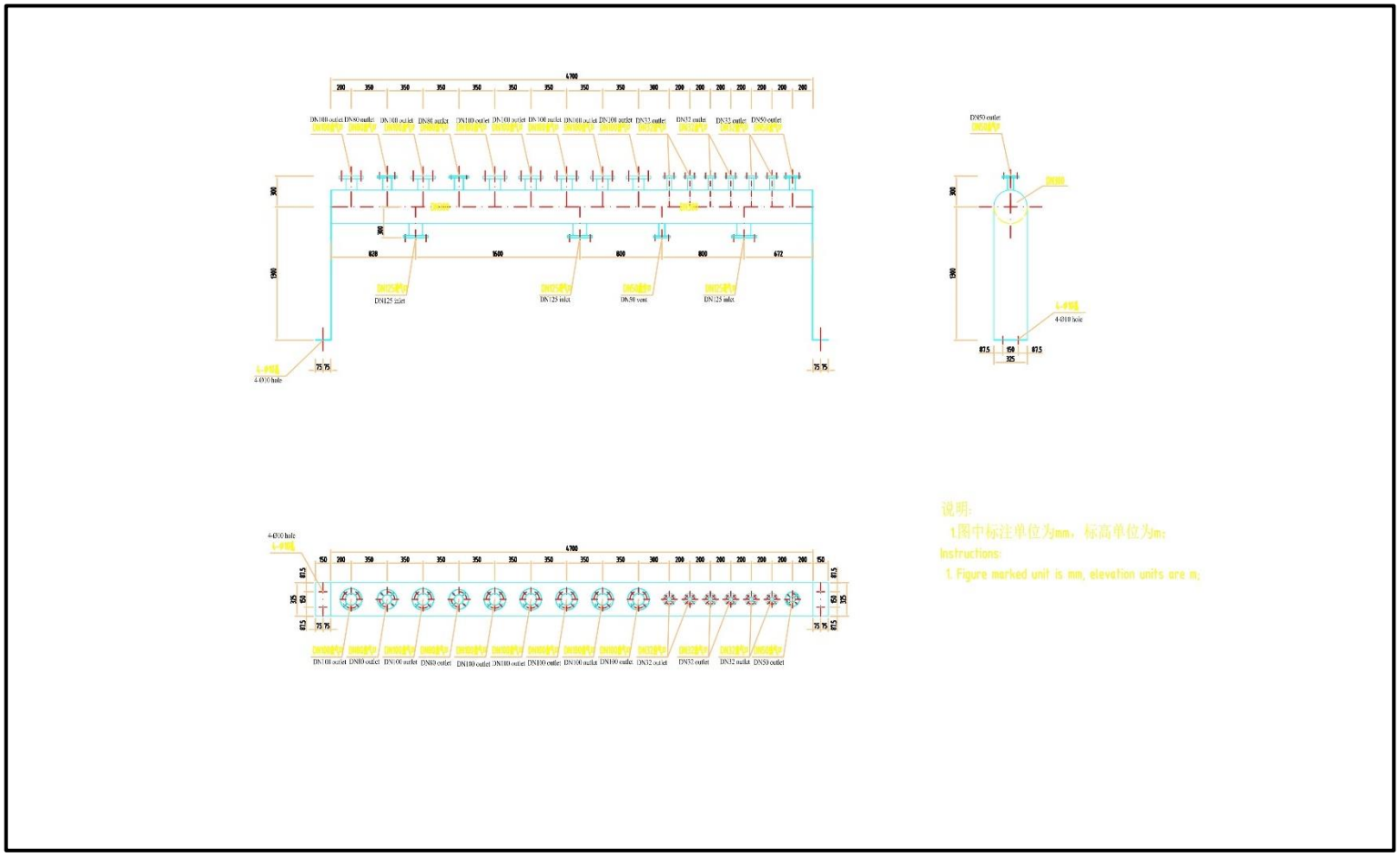
Instructions:

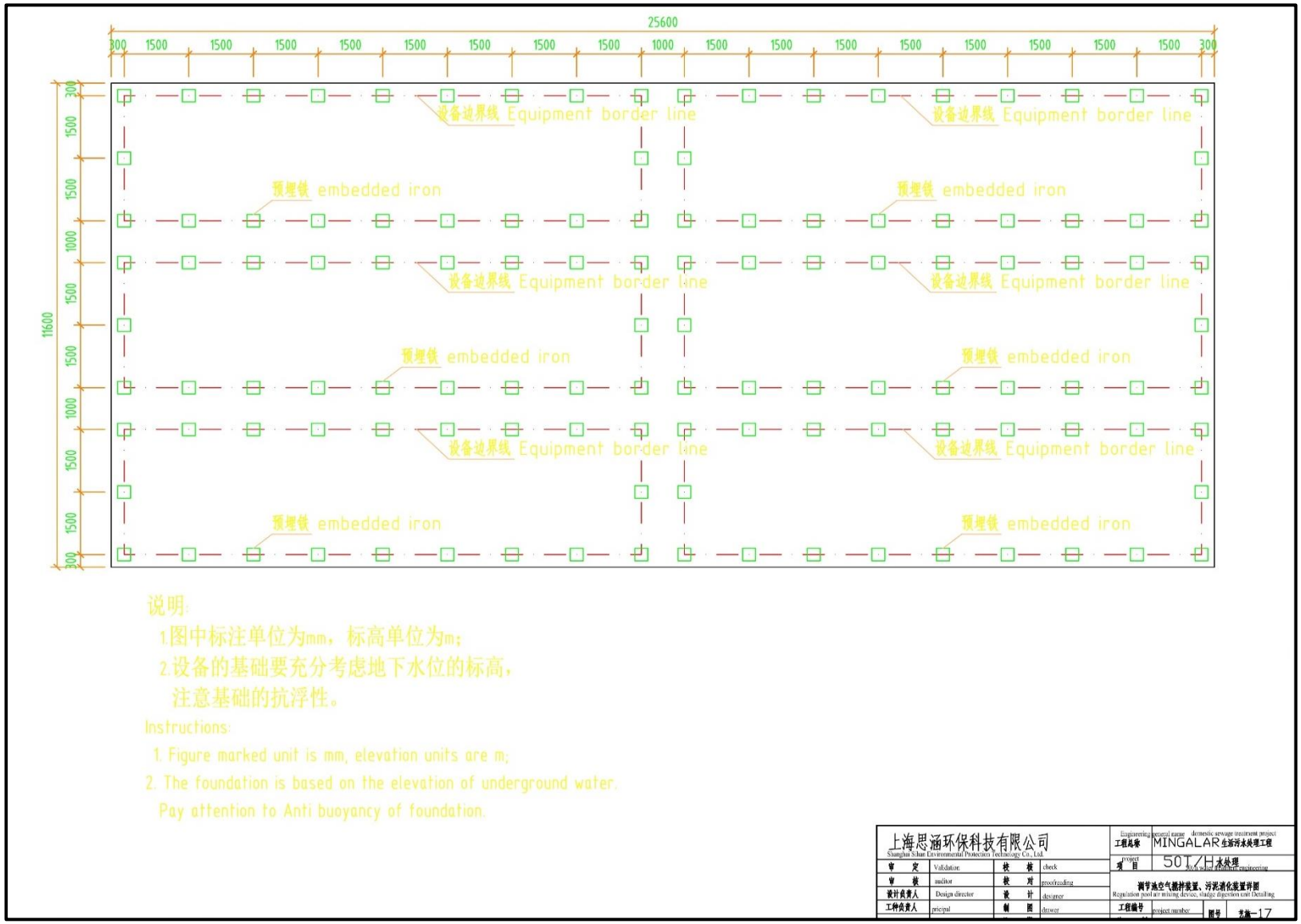
1. Figure marked unit is mm, elevation unit is m;

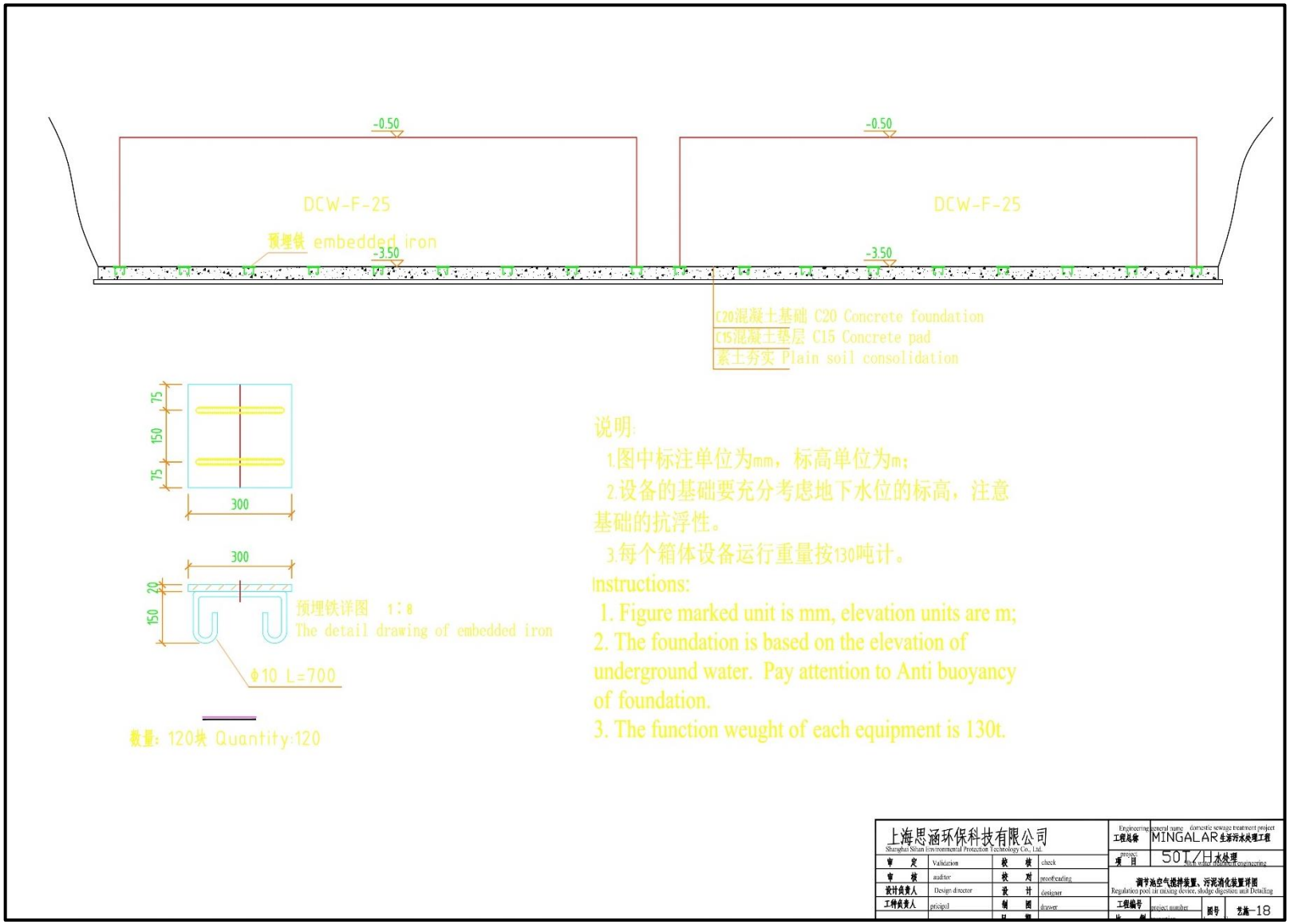
上海思涵环保科技有限公司 Shanghai Sihan Environmental Protection Technology Co., Ltd.				Engineering general name 工程总称	domestic sewage treatment project MINGALAR生活污水处理工程
				project 项目	50T/H 水处理
审定	Validation	校核	check	集水井、调节池、风机房、控制值班室及药剂间6－6剖面	
审核	auditor	校对	proofreading	The 6-6profile of water-collecting well, regulating pool, fan room, control	
设计负责人	Design director	设计	designer		


1400
158
1084
158
二次浇注孔 Secondary pouring hole
157.5
770
455
157.5
100
100
1400
158
1084
158
0.40
250
0.20
The basic picture of fan
Quantity:3
说明:
1.图中标注单位为mm，标高单位为m;
2.设备运行重量约250kg。
Instructions:
1. Figure marked unit is mm, elevation units are m;
2. The weight of the equipment is about 250Kg.
上海思涵环保科技有限公司
Shanghai Sihan Environmental Protection Technology Co., Ltd.
Validation
check
auditor
proofreading
Design director
designer
MINGAL
50T


7420
6080
DN50/UPVC
DN100/UPVC
Ø5mm孔 Ø5mm hole
4500
1500
调节池空气搅拌装置详图 数量：1套
Detailing regulation pool air mixing device Quantity: 1
污泥消化装置详图 数量：1套
Sludge digestion unit Figure Quantity: 1
Instructions:
1. Figure marked unit is mm, elevation unit is m;
上海思涵环保科技有限公司
Shanghai Sihan Environmental Protection Technology Co., Ltd.
MINGALAR生活污水处理工程
50T/H水处理
调节池空气搅拌装置、污泥消化装置详图
Regulation pool air mixing device, sludge digestion unit Detailing
总施—15


4700
DN125 inlet
DN125 inlet
DN50 vent
DN125 inlet
DN50 outlet
4-Ø10 hole
说明:
1.图中标注单位为mm，标高单位为m;
Instructions:
1. Figure marked unit is mm, elevation units are m;


25600
300 1500 1500 1500 1500 1500 1500 1500 1500 1000 1500 1500 1500 1500 1500 1500 1500 1500 300
11600
300 1500 1500 1000 1500 1500 1000 1500 1500 300
设备边界线 Equipment border line
预埋铁 embedded iron
说明:
1.图中标注单位为mm，标高单位为m;
2.设备的基础要充分考虑地下水位的标高，
注意基础的抗浮性。
Instructions:
1. Figure marked unit is mm, elevation units are m;
2. The foundation is based on the elevation of underground water.
Pay attention to Anti buoyancy of foundation.
上海思涵环保科技有限公司
Shanghai Sihan Environmental Protection Technology Co., Ltd.
MINGALAR 生活污水处理工程
50T/H 水处理
调节池空气搅拌装置、污泥消化装置详图
Regulation pool air mixing device, sludge digestion unit Detailing
-17


-0.50
-0.50
DCW-F-25
DCW-F-25
预埋铁 embedded iron
-3.50
-3.50
C20混凝土基础 C20 Concrete foundation
C15混凝土垫层 C15 Concrete pad
素土夯实 Plain soil consolidation
75
150
75
300
300
20
150
预埋铁详图 1:8
The detail drawing of embedded iron
Φ10 L=700
数量：120块 Quantity:120
说明:
1.图中标注单位为mm，标高单位为m；
2.设备的基础要充分考虑地下水位的标高，注意基础的抗浮性。
3.每个箱体设备运行重量按130吨计。
Instructions:
1. Figure marked unit is mm, elevation units are m;
2. The foundation is based on the elevation of underground water. Pay attention to Anti buoyancy of foundation.
3. The function weught of each equipment is 130t.
上海思涵环保科技有限公司
Shanghai Sihan Environmental Protection Technology Co., Ltd.
审 定 Validation
审 核 auditor
设计负责人 Design director
工种负责人 principl
校 核 check
校 对 proofreading
设 计 designer
制 图 drawer
工程总称 MINGALAR生活污水处理工程
项 目 50T/H水处理
调节池空气搅拌装置、污泥消化装置详图
工程编号
图号 艺施-18

Appendix 13 Haz-Scanner Measurement Records

(1) Ambient Air Quality Monitoring Results (22.8.2020 ~ 23.8.2020)

Date	Time	NH_3	CO_2	CO	H_2S	CH_4	NO_2	PM_{10}	$PM_{2.5}$	SO_2
		ppm	ppm	ppm	ppb	ppm	ppb	ug/m^3	ug/m^3	ppb
8/22/2020	7:30-8:30	0.00	237.92	0.30	0.00	556.60	3.37	55.02	30.05	0.00
8/22/2020	8:30-9:30	4.09	229.13	0.15	0.00	210.37	2.00	28.25	13.02	0.00
8/22/2020	9:30-10:30	0.00	221.18	0.05	0.03	123.20	2.00	35.07	18.63	0.00
8/22/2020	10:30-11:30	0.00	215.82	0.02	0.00	94.85	2.00	8.00	4.70	0.00
8/22/2020	11:30-12:30	0.00	215.85	0.04	0.00	63.95	2.00	31.58	15.65	0.00
8/22/2020	12:30-13:30	0.00	215.63	0.05	72.08	78.03	2.00	32.12	16.60	0.00
8/22/2020	13:30-14:30	0.00	212.10	0.05	22.33	139.93	2.00	47.83	28.97	0.00
8/22/2020	14:30-15:30	0.00	212.38	0.05	0.05	106.63	2.00	25.47	11.03	0.00
8/22/2020	15:30-16:30	0.00	211.68	0.05	0.00	108.05	2.00	29.00	10.25	0.00
8/22/2020	16:30-17:30	0.00	214.73	0.05	0.00	160.42	2.00	26.63	10.98	0.00
8/22/2020	17:30-18:30	0.00	222.55	0.05	0.03	235.48	2.00	39.43	20.57	0.00
8/22/2020	17:30-18:30	0.00	225.12	0.05	0.00	273.38	2.00	28.28	10.25	0.00
8/22/2020	18:30-19:30	0.00	224.38	0.06	0.00	306.57	2.00	37.15	23.95	0.00
8/22/2020	19:30-20:30	0.00	235.85	0.05	0.00	333.48	2.08	27.40	14.27	0.00
8/22/2020	20:30-21:30	0.00	243.07	0.05	0.00	358.73	2.93	14.70	7.95	0.00
8/22/2020	21:30-22:30	0.00	251.63	0.07	0.00	371.10	4.42	12.83	5.65	0.00
8/22/2020	22:30-23:30	0.00	252.03	0.13	0.00	400.27	4.25	10.63	4.43	0.00
8/22/2020	23:30-00:30	0.00	258.48	0.24	0.00	383.18	2.77	8.30	3.03	0.00
8/23/2020	00:30-1:30	0.00	268.48	0.27	0.00	354.80	2.23	12.47	5.42	0.00
8/23/2020	1:30-2:30	0.00	270.75	0.24	0.00	357.55	2.00	25.02	13.10	0.00
8/23/2020	2:30-3:30	0.00	262.18	0.21	0.00	371.57	2.00	19.40	10.87	0.00
8/23/2020	3:30-4:30	0.00	265.82	0.49	0.00	356.58	2.00	18.67	8.98	0.00
8/23/2020	4:30-5:30	0.00	264.53	0.38	0.00	368.62	2.00	10.03	5.70	0.00
AVG		**0.18**	**236.14**	**0.13**	**4.11**	**265.80**	**2.35**	**25.36**	**12.78**	**0.00**
MAX		**4.09**	**270.75**	**0.49**	**72.08**	**556.60**	**4.42**	**55.02**	**30.05**	**0.00**
MIN		**0.00**	**211.68**	**0.02**	**0.00**	**63.95**	**2.00**	**8.00**	**3.03**	**0.00**

(2) Ambient Air Quality Monitoring Results (24.8.2020 ~ 25.8.2020)

Date	Time	NH_3	CO_2	CO	H_2S	CH_4	NO_2	PM_{10}	$PM_{2.5}$	SO_2
		ppm	ppm	ppm	ppb	ppm	ppb	ug/m^3	ug/m^3	ppb
8/24/2020	7:33-8:33	0.00	243.87	0.01	0.18	283.07	2.00	36.32	16.32	0.00
8/24/2020	8:33-9:33	0.00	242.50	0.06	0.00	265.57	2.00	40.65	21.13	0.00
8/24/2020	9:33-10:33	0.00	236.55	0.05	5.53	210.10	2.00	17.40	7.13	0.00
8/24/2020	10:33-11:33	0.00	233.60	0.05	10.63	81.02	2.00	13.67	3.27	0.00
8/24/2020	11:33-12:33	0.00	222.80	0.05	0.00	45.93	2.00	20.17	10.53	0.00
8/24/2020	12:33-13:33	0.00	219.28	0.05	35.37	37.68	2.00	6.17	2.45	0.00
8/24/2020	13:33-14:33	0.00	221.48	0.05	34.70	30.05	2.00	4.48	1.90	0.00
8/24/2020	14:33-15:33	0.00	222.02	0.05	0.00	92.85	2.00	7.93	2.82	0.00
8/24/2020	15:33-16:33	0.00	227.47	0.05	0.00	204.07	2.00	5.02	1.10	0.00
8/24/2020	16:33-17:33	0.00	235.48	0.05	0.00	212.75	2.00	21.42	11.02	0.00

Date	Time	NH_3	CO_2	CO	H_2S	CH_4	NO_2	PM_{10}	$PM_{2.5}$	SO_2
		ppm	ppm	ppm	ppb	ppm	ppb	ug/m^3	ug/m^3	ppb
8/24/2020	17:33-18:33	0.00	233.08	0.05	0.00	237.33	2.17	21.63	12.35	0.00
8/24/2020	17:33-18:33	0.00	232.83	0.05	0.00	273.08	3.15	11.52	5.20	0.00
8/24/2020	18:33-19:33	0.00	236.17	0.05	0.00	283.13	4.85	2.02	1.02	0.00
8/24/2020	19:33-20:33	0.00	244.73	0.05	0.00	260.48	2.00	2.20	1.03	0.00
8/24/2020	20:33-21:33	0.00	243.32	0.13	0.12	269.22	2.00	2.68	1.02	0.00
8/24/2020	21:33-22:33	0.00	253.08	0.33	0.00	260.30	2.04	2.15	1.00	0.00
8/24/2020	22:33-23:33	0.00	255.73	0.38	0.00	274.52	2.00	31.57	18.32	0.00
8/24/2020	23:33-00:33	0.00	255.45	0.30	0.00	307.28	2.00	48.48	25.57	0.00
8/25/2020	00:33-1:33	0.00	258.02	0.35	0.00	306.77	2.00	2.73	1.13	0.00
8/25/2020	1:33-2:33	0.00	258.80	0.22	0.00	316.38	2.05	3.00	1.53	0.00
8/25/2020	2:33-3:33	0.00	258.92	0.32	0.00	311.85	2.00	40.02	20.45	0.00
8/25/2020	3:33-4:33	0.00	260.83	0.32	0.00	313.75	2.00	42.03	16.83	0.00
8/25/2020	4:33-5:33	0.00	264.00	0.36	0.00	321.35	2.00	34.82	11.23	0.00
8/25/2020	5:33-6:33	0.00	262.58	0.34	0.00	314.05	2.00	31.37	10.50	0.00
Avg		**0.00**	**242.61**	**0.15**	**3.61**	**229.69**	**2.18**	**18.73**	**8.54**	**0.00**
Max		**0.00**	**264.00**	**0.38**	**35.37**	**321.35**	**4.85**	**48.48**	**25.57**	**0.00**
Min		**0.00**	**219.28**	**0.01**	**0.00**	**30.05**	**2.00**	**2.02**	**1.00**	**0.00**

Appendix 14 Ground Water Quality Results (GMES Laboratory)

Green Myanmar
Environmental Services Co., Ltd
No.115, Kanaung Min Thar Gyi Road Industrial Zone (1), Hlaing Thar Yar Industrial City, Yangon, Myanmar
Tel: 01-685572, 01-685571, 09-5081451, 09-5122448 E-mail: gmescompany@gmail.com

WATER QUALITY TEST RESULTS

Name of Client : New Star Light Construction Co., Ltd.
Person to whom results should be sent
Name: New Star Light Construction Co., Ltd.
Address: Chan Aye Thar Zan Township, Mandalay.
Collected By: GMES Survey Team

Date of Collection: 31-8-2015
Date of Arrival at Lab: 1-9-2015
Condition of Sample: In 1 lit PP Bottle
Date of commending examination 1 ~ 4 - 9 - 2015
Date of Issue of result: 4-9-2015

RESULTS OF WATER ANALYSIS

Sr. No.	Parameter	Unit	Analysis value	Drinking Water Standard	
			Tube Well Water	WHO (2011)	Indian Specifications (IS: 10500, 2012)
1	pH		6.5	6.5-8.5	6.5 - 8.5
2	Chloride (Cl^-)	ppm	7	250	250
3	Total Hardness as $CaCO_3$	ppm	9	500	200
4	Total Iron (Fe)	ppm	< 0.3	0.3	0.3
5	Sulphate (SO_4)	ppm	ND	250	200
6	Total Alkalinity as $CaCO_3$	ppm	37	-	200
7	Turbidity (NTU)		< 0.01	5	1
8	Manganese (Mn)	ppm	ND	0.4	0.1
9	Copper (Cu)	ppm	ND	2	0.05
10	Arsenic (As)	mg/L	2.75	10	10
11	Aluminum (Al)	ppm	0.02	0.2	0.03
12	Cyanide (CN)	ppm	0.02	0.07	0.05
13	Total Dissolved Solids (TDS)	ppm	60	600	500

Analyzed By	Checked By	Approved By
(Daw Win Phyu Htway)	(Daw Cherry Thwin)	(U Myo Myint)
Technician (Laboratory)	Manager (Laboratory)	Director (Laboratory)

Appendix 15 Surface Water Quality Results (GMES Laboratory)

Green Myanmar
Environmental Services Co., Ltd
No.115,Kanaung Min Thar Gyi Road, Industrial Zone (1),Hlaing Thar Yar Industrial City,
Yangon, Myanmar
Tel: **09 897 978 296, 09-5081451** E-mail: info@gmes-mm.com

Project Name: IBIS Styles Hotel | **Sample ID: Up Stream** | **Date of Collection: 22.8.2020**

Sampling Location: Muse Township, Northern Shan State | **Latitude: N 24˚ 00' 00.89"** | **Date of Arrival at Lab: 29.8.2020**

Longitude: E 97˚ 53' 08.377" | **Date of Issue of Results: 12.9.2020**

Laboratory Analysis Results of Ambient Water

Sr. No.	Parameters	Unit	Analysis Value	Minimum Measurement Range of Methods	National Environmental Quality (Emission) Guidelines (2015) General Application	National Environmental Quality (Emission) Guidelines (2015) Tourism and Hospitality Development
1.	5-day Biochemical Oxygen Demand	mg/l	<30	30	50	50
2.	Ammonia	mg/l	ND	0.02	10	-
3.	Arsenic	mg/l	0	0.005	0.1	-
4.	Chemical Oxygen Demand	mg/l	<30	30	250	250
5.	Chromium (Hexavalent)	mg/l	ND	0.02	0.1	-
6.	Chromium (Total)	mg/l	0.02	0.2	0.5	-
7.	Copper	mg/l	ND	0.5	0.5	-
8.	Cyanide (total)	mg/l	ND	0.01	1	-
9.	Iron	mg/l	1.3	0.1	3	-
10.	Nickel	mg/l	ND	0.2	0.5	10
11.	Oil and Grease	mg/l	<5	5	10	-
12.	pH	-	6.49	0.1	6~9	6~9
13.	Phenols	mg/l	ND	0.1	0.5	-
14.	Sulfide	mg/l	ND	0.04	1	-
15.	Temperature	˚C	28.8	1	<3[b]	-
16.	Total Phosphorous	mg/l	0.4	0.02	5	2
17.	Total Suspended Solids	mg/l	264	1	50	50
18.	Zinc	mg/l	ND	0.02	2	-

**ND – Not Detected*

Analyzed By | **Approved By**

Daw Tun Eaindra Soe
Technician (Laboratory)

U Thet Min Paing
In- Charge(Laboratory)

Green Myanmar
Environmental Services Co., Ltd
No.115,Kanaung Min Thar Gyi Road, Industrial Zone (1),Hlaing Thar Yar Industrial City, Yangon, Myanmar
Tel: **09 897 978 296, 09-5081451** E-mail: info@gmes-mm.com

Project Name:IBIS Styles Hotel **Sample ID: Middle Stream** **Date of Collection: 22.8.2020**

Sampling Location: Muse Township, Northern Shan State **Latitude: N 23˚ 59' 55"** **Date of Arrival at Lab: 29.8.2020**

Longitude: E 97˚ 53' 09" **Date of Issue of Results: 12.9.2020**

Laboratory Analysis Results of Ambient Water

Sr. No.	Parameters	Unit	Analysis Value	Minimum Measurement Range of Methods	National Environmental Quality (Emission) Guidelines (2015) General Application	National Environmental Quality (Emission) Guidelines (2015) Tourism and Hospitality Development
1.	5-day Biochemical Oxygen Demand	mg/l	<30	30	50	50
2.	Ammonia	mg/l	ND	0.02	10	-
3.	Arsenic	mg/l	0	0.005	0.1	-
4.	Chemical Oxygen Demand	mg/l	<30	30	250	250
5.	Chromium (Hexavalent)	mg/l	0.06	0.02	0.1	-
6.	Chromium (Total)	mg/l	0.08	0.2	0.5	-
7.	Copper	mg/l	ND	0.5	0.5	-
8.	Cyanide (total)	mg/l	ND	0.01	1	-
9.	Iron	mg/l	0.1	0.1	3	-
10.	Nickel	mg/l	ND	0.2	0.5	10
11.	Oil and Grease	mg/l	<5	5	10	-
12.	pH	-	6.96	0.1	6~9	6~9
13.	Phenols	mg/l	ND	0.1	0.5	-
14.	Sulfide	mg/l	ND	0.04	1	-
15.	Temperature	˚C	28.8	1	<3[b]	-
16.	Total Phosphorous	mg/l	0.15	0.02	5	2
17.	Total Suspended Solids	mg/l	98	1	50	50
18.	Zinc	mg/l	ND	0.02	2	-

**ND – Not Detected*

Analyzed By **Approved By**

Daw Tun Eaindra Soe **U Thet Min Paing**
Technician (Laboratory) **In- Charge(Laboratory)**

Green Myanmar
Environmental Services Co., Ltd
No.115,Kanaung Min Thar Gyi Road, Industrial Zone (1),Hlaing Thar Yar Industrial City, Yangon, Myanmar
Tel: **09 897 978 296, 09-5081451** E-mail: info@gmes-mm.com

Project Name: IBIS Styles Hotel **Sample ID: Down Stream** **Date of Collection: 22.8.2020**

Sampling Location: Muse Township, Northern Shan State **Latitude: N 23˚ 59' 39"** **Date of Arrival at Lab: 29.8.2020**

Longitude: E 97˚ 53' 03" **Date of Issue of Results: 12.9.2020**

Laboratory Analysis Results of Ambient Water

Sr. No.	Parameters	Unit	Analysis Value	Minimum Measurement Range of Methods	National Environmental Quality (Emission) Guidelines (2015) General Application	National Environmental Quality (Emission) Guidelines (2015) Tourism and Hospitality Development
1.	5-day Biochemical Oxygen Demand	mg/l	<30	30	50	50
2.	Ammonia	mg/l	ND	0.02	10	-
3.	Arsenic	mg/l	0	0.005	0.1	-
4.	Chemical Oxygen Demand	mg/l	<30	30	250	250
5.	Chromium (Hexavalent)	mg/l	ND	0.02	0.1	-
6.	Chromium (Total)	mg/l	0.02	0.2	0.5	-
7.	Copper	mg/l	ND	0.5	0.5	-
8.	Cyanide (total)	mg/l	ND	0.01	1	-
9.	Iron	mg/l	0.5	0.1	3	-
10.	Nickel	mg/l	ND	0.2	0.5	10
11.	Oil and Grease	mg/l	<5	5	10	-
12.	pH	-	6.56	0.1	6~9	6~9
13.	Phenols	mg/l	ND	0.1	0.5	-
14.	Sulfide	mg/l	ND	0.04	1	-
15.	Temperature	˚C	28.8	1	<3[b]	-
16.	Total Phosphorous	mg/l	0.7	0.02	5	2
17.	Total Suspended Solids	mg/l	132	1	50	50
18.	Zinc	mg/l	ND	0.02	2	-

**ND – Not Detected*

Analyzed By **Approved By**

Daw Tun Eaindra Soe **U Thet Min Paing**
Technician (Laboratory) **In- Charge(Laboratory)**

Appendix 16 Wastewater Quality Results (GMES Laboratory)

Green Myanmar
Environmental Services Co., Ltd
No.115,Kanaung Min Thar Gyi Road, Industrial Zone (1),Hlaing Thar Yar Industrial City, Yangon, Myanmar
Tel: **09 897 978 296, 09-5081451** E-mail: info@gmes-mm.com

Project Name: IBIS Styles Hotel | **Sample ID: Wastewater Inlet** | **Date of Collection: 23.8.2020**

Sampling Location: Muse Township, Northern Shan State | **Latitude: N 23˚ 59' 52.425"** | **Date of Arrival at Lab: 29.8.2020**

Longitude: E 97˚ 53' 10.952" | **Date of Issue of Results: 12.9.2020**

Laboratory Analysis Results of Ambient Water

Sr. No.	Parameters	Unit	Analysis Value	Minimum Measurement Range of Methods	National Environmental Quality (Emission) Guidelines (2015) General Application	National Environmental Quality (Emission) Guidelines (2015) Tourism and Hospitality Development
1.	5-day Biochemical Oxygen Demand	mg/l	<30	30	50	50
2.	Chemical Oxygen Demand	mg/l	40	30	250	250
3.	Oil and Grease	mg/l	<5	5	10	10
4.	pH	-	6.8	0.1	6~9	6~9
5.	Total Nitrogen	mg/l	6	5	-	10
6.	Total Phosphorous	mg/l	3.1	0.02	5	2
7.	Total Suspended Solids	mg/l	76	1	50	50

**ND – Not Detected*

Analyzed By

Daw Tun Eaindra Soe
Technician (Laboratory)

Approved By

U Thet Min Paing
In- Charge(Laboratory)

Green Myanmar
Environmental Services Co., Ltd
No.115,Kanaung Min Thar Gyi Road, Industrial Zone (1),Hlaing Thar Yar Industrial City,
Yangon, Myanmar
Tel: **09 897 978 296, 09-5081451** E-mail: info@gmes-mm.com

Project Name: IBIS Styles Hotel **Sample ID: Wastewater Outlet** **Date of Collection: 23.8.2020**

Sampling Location: Muse Township, Northern Shan State **Latitude: N 23˚ 59' 59.690"** **Date of Arrival at Lab: 29.8.2020**

Longitude: E 97˚ 53' 10.162" **Date of Issue of Results: 12.9.2020**

Laboratory Analysis Results of Wastewater

Sr. No.	Parameters	Unit	Analysis Value	Minimum Measurement Range of Methods	National Environmental Quality (Emission) Guidelines (2015) General Application	National Environmental Quality (Emission) Guidelines (2015) Tourism and Hospitality Development
1.	5-day Biochemical Oxygen Demand	mg/l	<30	**30**	**50**	**50**
2.	Chemical Oxygen Demand	mg/l	<30	**30**	**250**	**250**
3.	Oil and Grease	mg/l	<5	**5**	**10**	**10**
4.	pH	-	6.68	**0.1**	**6~9**	**6~9**
5.	Total Nitrogen	mg/l	ND	**5**	-	**10**
6.	Total Phosphorous	mg/l	2.6	**0.02**	**5**	**2**
7.	Total Suspended Solids	mg/l	18	**1**	**50**	**50**

**ND – Not Detected*

Analyzed By **Approved By**

Daw Tun Eaindra Soe
Technician (Laboratory)

U Thet Min Paing
In- Charge(Laboratory)

Appendix 17 Soil Quality Results (GMES Laboratory)

Green Myanmar
Environmental Services Co., Ltd
No.115,Kanaung Min Thar Gyi Road, Industrial Zone (1),Hlaing Thar Yar Industrial City,
Yangon, Myanmar
Tel: **09 897 978 296, 09-5081451** E-mail: info@gmes-mm.com

Project Name: IBIS Styles Hotel

Sample ID: SS-1 စိမ်ကိန်းနောက်မြေကြီး

Date of Collection: 22.8.2020

Sampling Location: Muse Township, Northern Shan State

Latitude: N 23° 59' 39.822"

Longitude: E 97° 53' 04.969"

Date of Arrival at Lab: 29.8.2020

Date of Issue of Results: 12.9.2020

Laboratory Analysis Results of Soil

Sr. No.	Parameters	Unit	Analysis Value	Minimum Measurement Range of Methods
1.	Aluminum	mg/kg soil	2	**0.05mg/kg soil**
2.	Arsenic	mg/kg soil	0	**0.025 mg/kg soil**
3.	Chloride	g/kg soil	0.08	**0.025 g/kg soil**
4.	Copper	mg/kg soil	ND	**2.5mg/kg soil**
5.	Cyanide	mg/kg soil	ND	**0.05mg/kg soil**
6.	Extractable Acidity	cmol/kg soil	5	**0.25 cmol/kg soil**
7.	P - Alkalinity	mmol/l extract	0	**0.2 mmol/l extract**
8.	pH	-	4.12	**0.1**
9.	Total Alkalinity	mmol/l extract	2	**0.2 mmol/l extract**
10.	Total Iron	mg/kg soil	0.5	**0.05 mg/kg soil**

ND – Not Detected

Analyzed By

Daw Tun Eaindra Soe
Technician (Laboratory)

Approved By

U Thet Min Paing
In- Charge(Laboratory)

Green Myanmar
Environmental Services Co., Ltd
No.115,Kanaung Min Thar Gyi Road, Industrial Zone (1),Hlaing Thar Yar Industrial City,
Yangon, Myanmar
Tel: **09 897 978 296, 09-5081451** E-mail: info@gmes-mm.com

Project Name: IBIS Styles Hotel
Sample ID: SS-2 စိမ်ကိန်းရွာ ဓမ္မတီး
Date of Collection: 23.8.2020
Sampling Location: Muse Township, Northern Shan State
Latitude: N 23˚ 59' 38.304"
Date of Arrival at Lab: 29.8.2020
Longitude: E 97˚ 53' 28.645"
Date of Issue of Results: 12.9.2020

Laboratory Analysis Results of Soil

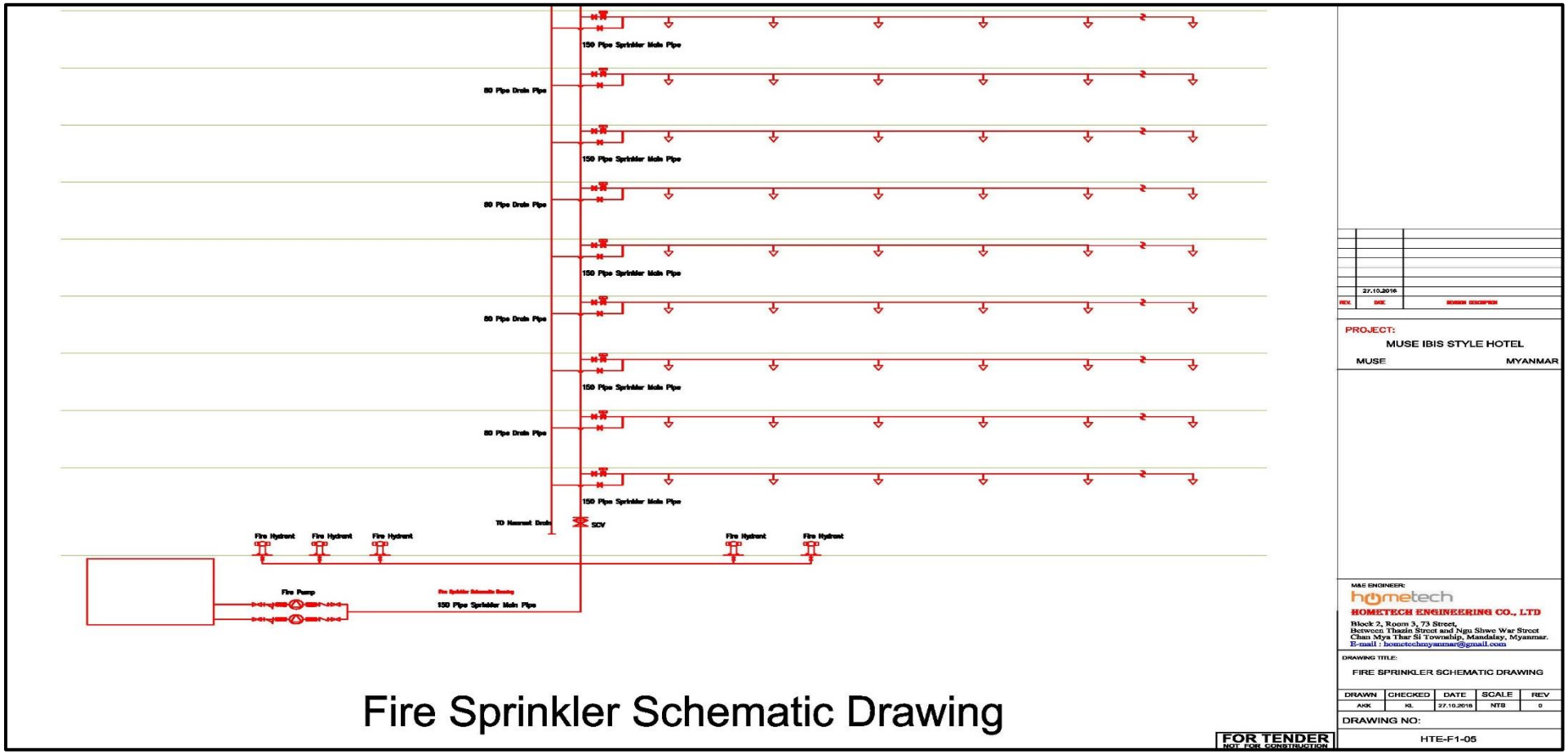
Sr. No.	Parameters	Unit	Analysis Value	Minimum Measurement Range of Methods
1.	Aluminum	mg/kg soil	0.05	**0.05 mg/kg soil**
2.	Arsenic	mg/kg soil	0.05	**0.025 mg/kg soil**
3.	Chloride	g/kg soil	0.085	**0.025 g/kg soil**
4.	Copper	mg/kg soil	ND	**2.5 mg/kg soil**
5.	Cyanide	mg/kg soil	ND	**0.05 mg/kg soil**
6.	Extractable Acidity	cmol/kg soil	2	**0.25 cmol/kg soil**
7.	P - Alkalinity	mmol/l extract	0	**0.2 mmol/l extract**
8.	pH	-	6.56	**0.1**
9.	Total Alkalinity	mmol/l extract	9.5	**0.2 mmol/l extract**
10.	Total Iron	mg/kg soil	0.5	**0.05 mg/kg soil**

ND – Not Detected

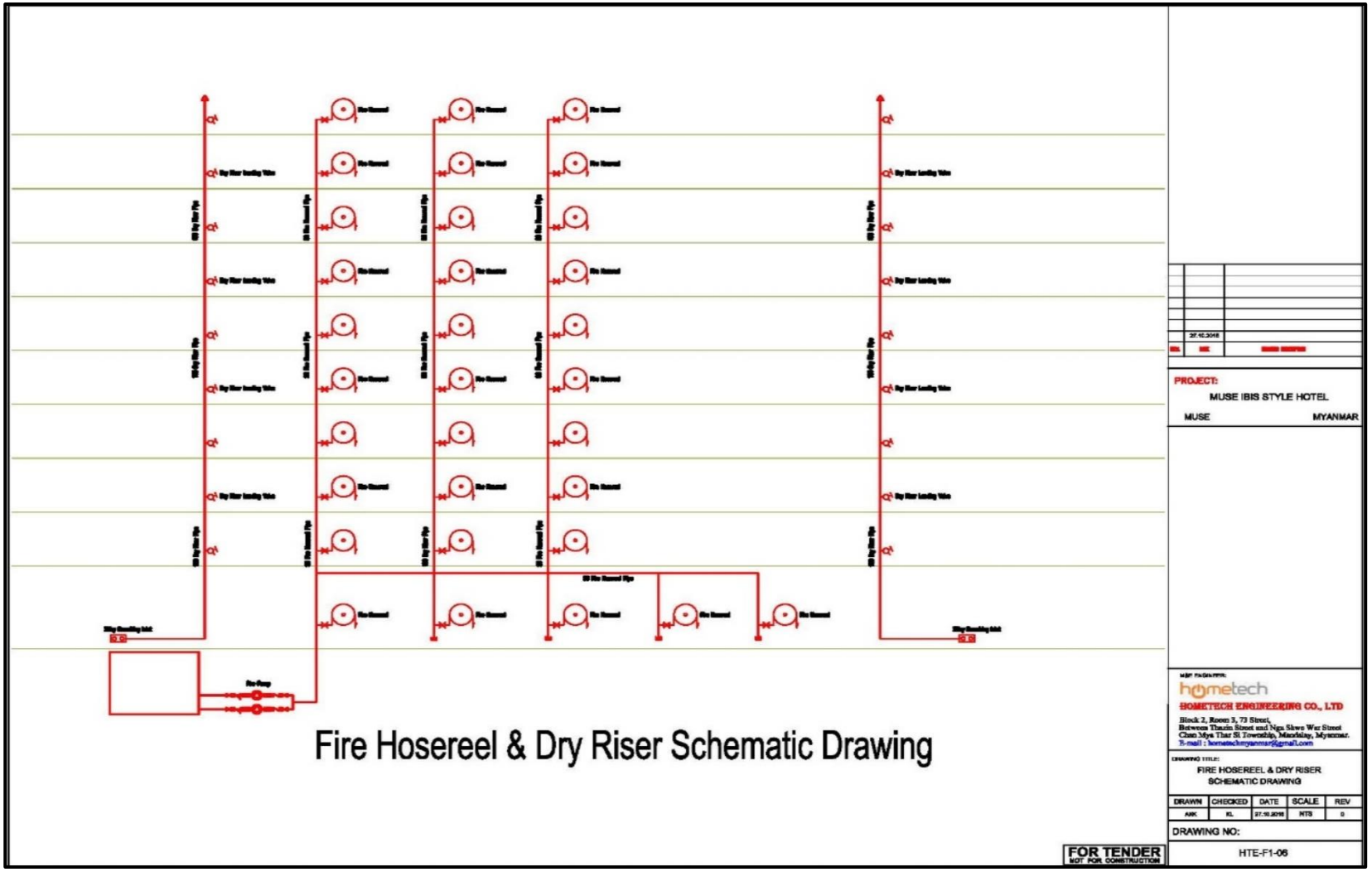
Analyzed By
Daw Tun Eaindra Soe
Technician (Laboratory)

Approved By
U Thet Min Paing
In- Charge(Laboratory)

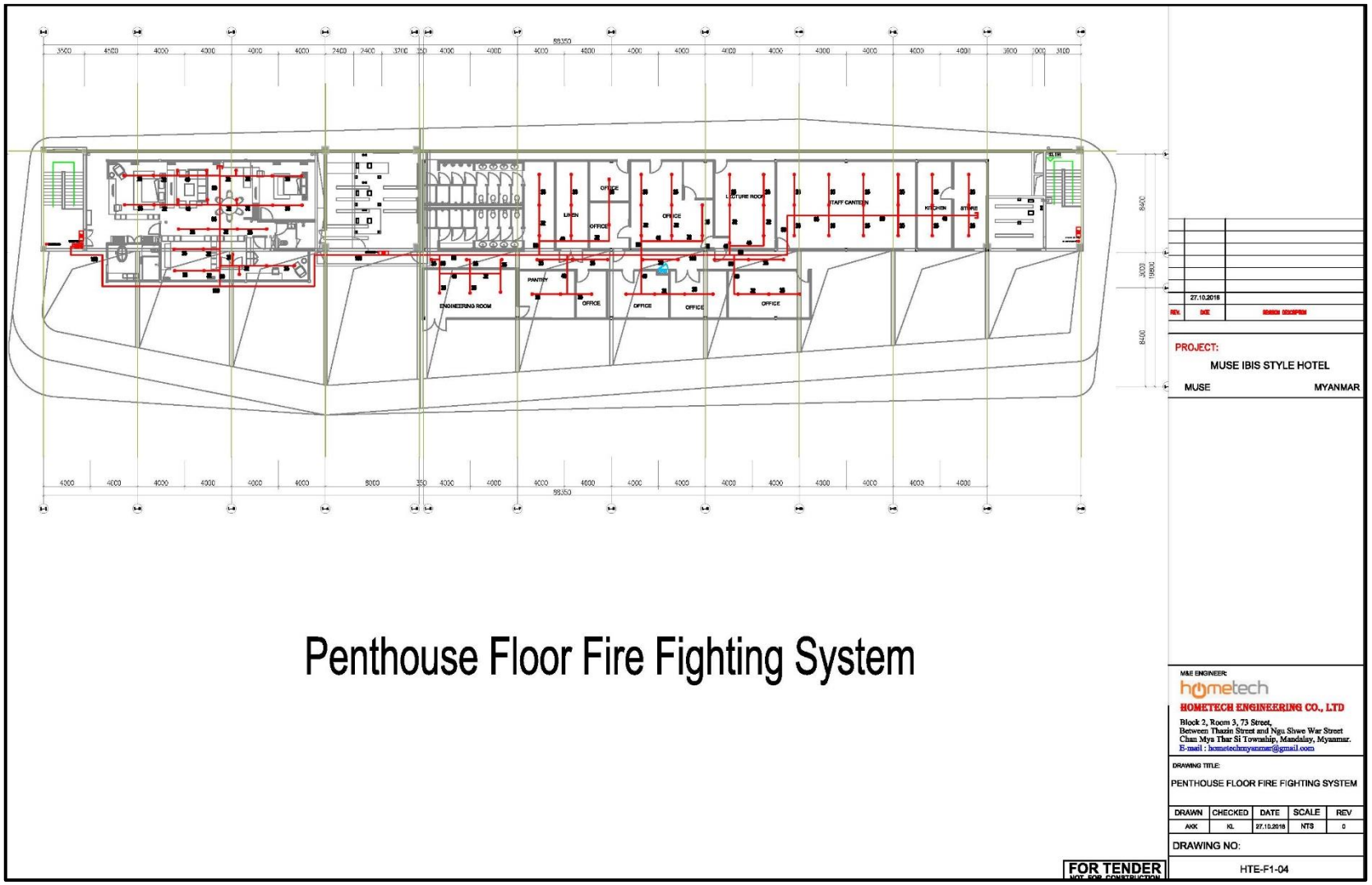
Appendix 18 Fire Sprinkler Schematic Drawing

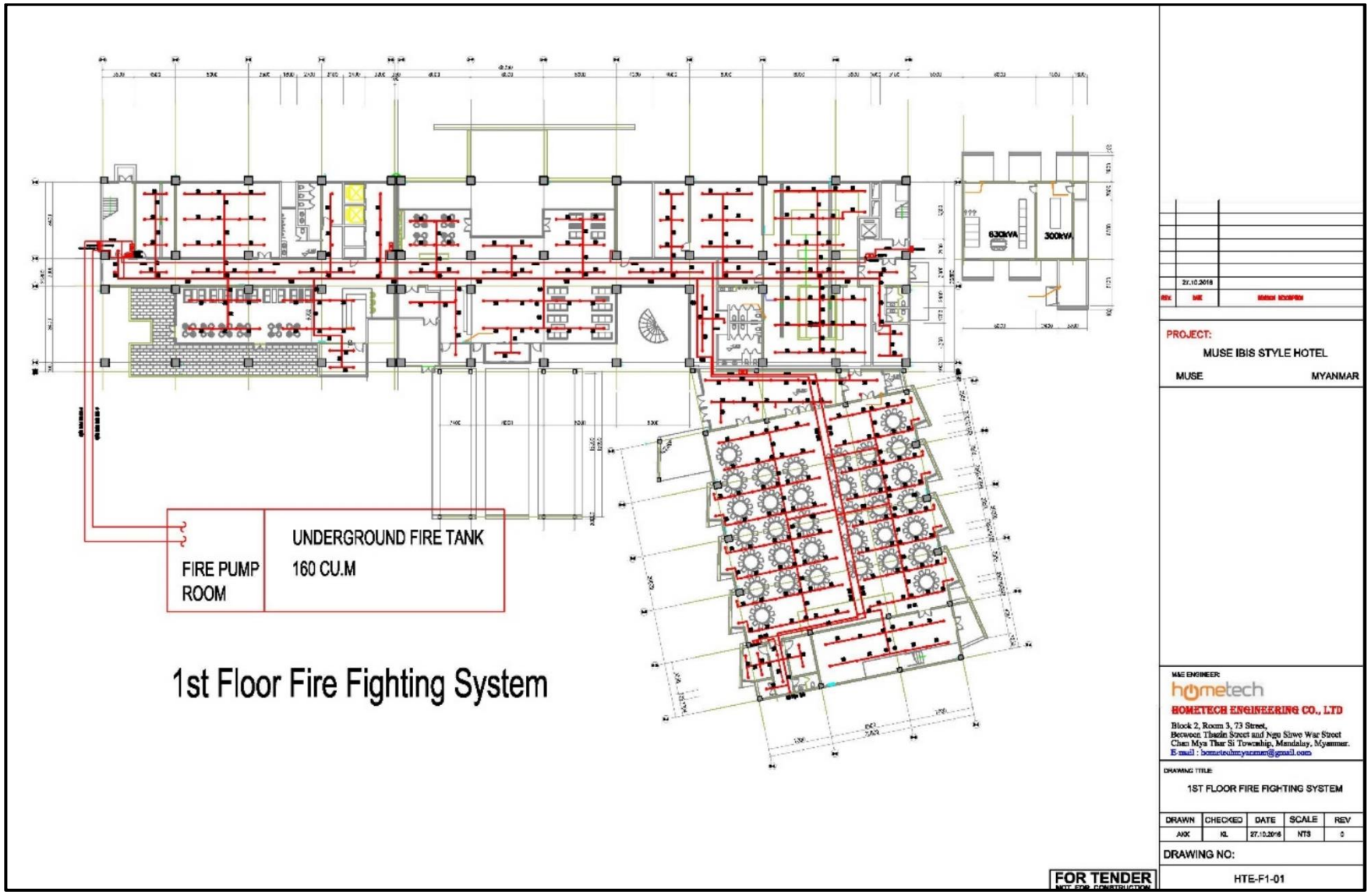


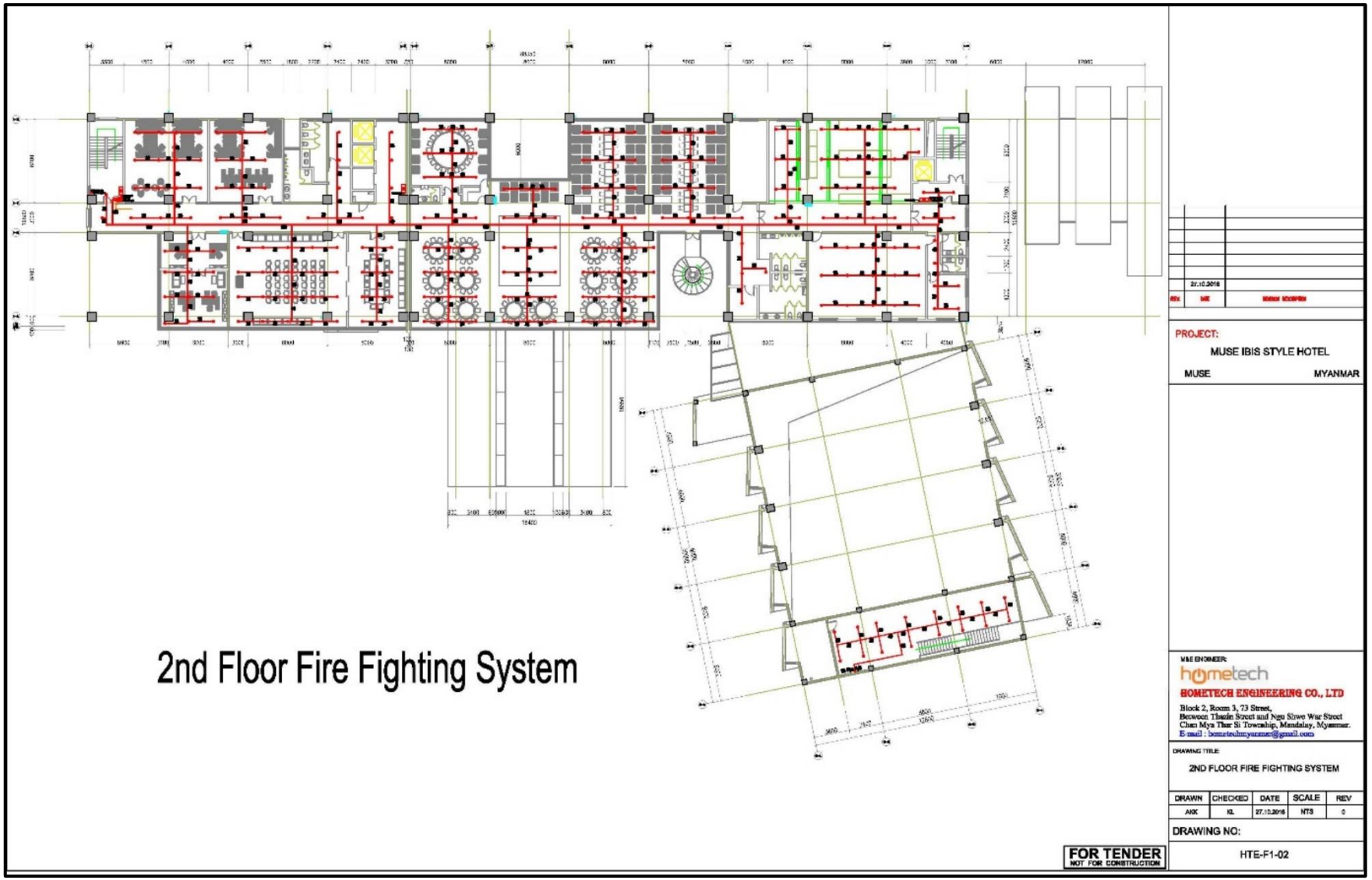
Appendix 19 Fire Hose Reel & Dry Riser Schematic Drawing

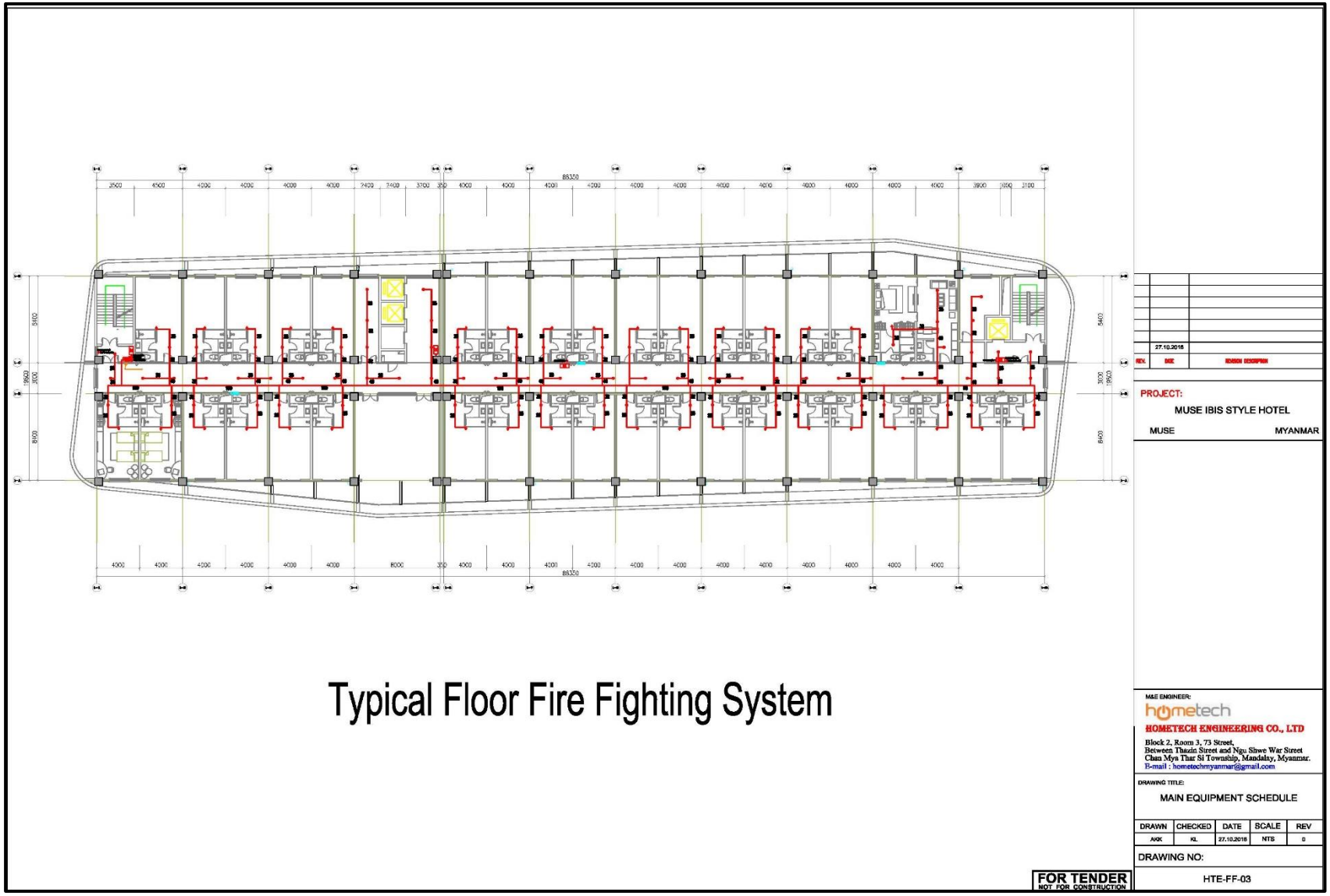


Appendix 20 Fire Fighting System




630KVA
300KVA
FIRE PUMP ROOM
UNDERGROUND FIRE TANK
160 CU.M
1st Floor Fire Fighting System
PROJECT:
MUSE IBIS STYLE HOTEL
MUSE
MYANMAR
M&E ENGINEER:
hometech
HOMETECH ENGINEERING CO., LTD
Block 2, Room 3, 73 Street,
Between Theatre Street and Ngu Shwe War Street
Chan Mya Thar Si Township, Mandalay, Myanmar.
E-mail : hometechmyanmar@gmail.com
DRAWING TITLE
1ST FLOOR FIRE FIGHTING SYSTEM
DRAWN
CHECKED
DATE
SCALE
REV
AKK
KL
27.10.2018
NTS
0
DRAWING NO:
HTE-F1-01
FOR TENDER


2nd Floor Fire Fighting System
PROJECT:
MUSE IBIS STYLE HOTEL
MUSE
MYANMAR
M&E ENGINEER:
hometech
HOMETECH ENGINEERING CO., LTD
Block 2, Room 3, 73 Street,
Between Thazin Street and Ngu Shwe War Street
Chan Mya Thar Si Township, Mandalay, Myanmar.
E-mail : hometechmyanmar@gmail.com
DRAWING TITLE:
2ND FLOOR FIRE FIGHTING SYSTEM
DRAWN
CHECKED
DATE
SCALE
REV
AKK
KL
27.10.2016
NTS
0
DRAWING NO:
HTE-F1-02
FOR TENDER
NOT FOR CONSTRUCTION


Typical Floor Fire Fighting System
PROJECT:
MUSE IBIS STYLE HOTEL
MUSE
MYANMAR
M&E ENGINEER:
hometech
HOMETECH ENGINEERING CO., LTD
Block 2, Room 3, 73 Street,
Between Thazin Street and Ngu Shwe War Street
Chan Mya Thar Si Township, Mandalay, Myanmar.
E-mail : hometechmyanmar@gmail.com
DRAWING TITLE:
MAIN EQUIPMENT SCHEDULE
DRAWN
CHECKED
DATE
SCALE
REV
AKK
KL
27.10.2016
NTS
0
DRAWING NO:
HTE-FF-03
FOR TENDER
NOT FOR CONSTRUCTION

Appendix 21 Emergency Exist Layout Plan

ENVIRONMENTAL IMPACT ASSESSMENT (EIA) REPORT

FOR

IBIS STYLES HOTEL PROJECT

(Part-II)

SOCIAL IMPACT ASSESSMENT (SIA) REPORT FOR

IBIS STYLE HOTEL (MUSE)

Reported by

Socially Responsible Partner (SRP)

Social and Health Impact Assessment Group

CONTEXT

LIST OF TABLES

LIST OF FIGURES

LIST OF ABBREVIATION

CBOs	Community Based Organizations
CSR	Cooperate Social Responsibility
MCBD	Muse Central Business District
INGOs	International Non-government Organization
MCDC	Mandalay City Development Committee
MEPE	Myanmar Electric Power Enterprise
MOECAF	Ministry of Environmental Conservation and Forestry
NGO	Non-government Organization
RP	Representative Persons
WHO	World Health Organization

1. EXECUTIVE SUMMARY

1.1. Introduction

Green Myanmar Environmental Services Co, Ltd. (GMES) proposes Socially Responsible Partner (SRP) Social Impact Assessment (SIA) Group to conduct SIA and Social Management Plan (SMP) for IBIS Style Hotel. It is located in Muse Township, Shan State and invested by New Starlight Construction Co., Ltd.

1.2. Developer's Policies for Socio-economic Development of Local People

The company's policies for local socio-economic development are shown in Table 1.1.

Table 1.1 Company's Policies for Local Socio-economic Development

No.	Description	Company's Policy
1.	Local Community Development Policy	Appoint local people with revelent skills as much as possible
2.	Corporate Social Responsibility (CSR) Policy	Contribute at least one percent of the annual net profit after tax as CSR fund

1.3. Project Benefits

The following will be the direct and the indirectly benefits of the development of proposed project.

(a) Employment Generation

The project will create direct and indirect employment for about 100 people for short-term during construction of hotel and about 50 people for long term during operation phase. As New Star Light's policy is to appoint local people with relevant skill as much as possible, it may be benefit for local people.

(b) Revenue for the Government

The National or Regional Government revenue will increase by the way of direct and indirect taxes, duties, etc.

(c) Potential to Regional Development

The proposed project will have a potential to increase regional socio-economic development and introduce a high capital investment in Muse region.

1.4. Brief Descriptions of the SIA Study

The following are the brief descriptions of the SIA study.

1.4.1. Objectives of SIA

The main goals of this social impact assessment study include:

(a) To provide baseline socio-economic conditions of the project area proposed hotel;

(b) To identify the potential socio-economic impacts, impacts on public services and fiscal positive and negative impacts that will result from construction, operation, and decommissioning phases of the proposed hotel; and

(c) To propose mitigation and enhancement measures to minimize or avoid negative social impacts and to maximize positive ones.

1.4.2. Scope of the Study

SIA will report cover the following:

(a) The primary data collection of socio-economic conditions of the villages around the 2 km radius of the proposed hotel,

(b) The secondary data collection for the whole Muse Township,

(c) Identification and evaluation of socio-economic impacts for construction, operation and decommissioning phases of proposed hotel,

(d) Mitigation and enhancement measures for anticipated social impacts in all phases,

(e) Social management plan (SMP) to manage the necessary mitigation and enhancement measures, and

(f) Social monitoring program to measure the improvement of the community around the area.

2. SOCIO-ECONOMIC SETTING AROUND THE PROJECT

According to the literature review, site investigation and interviews with local people, some important socio-economic setting around the proposed project are as follow:

2.1. Archeological Sites

No archaeological sites were identified during field investigations and in relation to site clearing of proposed. Addational land uses such as road and recreational facilities for hotel project will have no impact on any cultural materials.

2.2. Land Use

The lands used for proposed hotel project(about 3 acres) were legally bought from land owners who lived in the project area and there was no land acquisition for proposed hotel project.

2.3. Cattle Grazing

The project area and its surrounding cannot be classified as castle grazing area according to the field survey.

2.4. Vicinity around the Project

There are 6 villages around the proposed project and surrounding areas are shown in Figure 2.1.

Figure 2.1 Vicinity around the Proposed Hotel

3. METHODOLOGY FOR SIA STUDY

Socioeconomic impact assessment for proposed project was conducted by the following procedures.

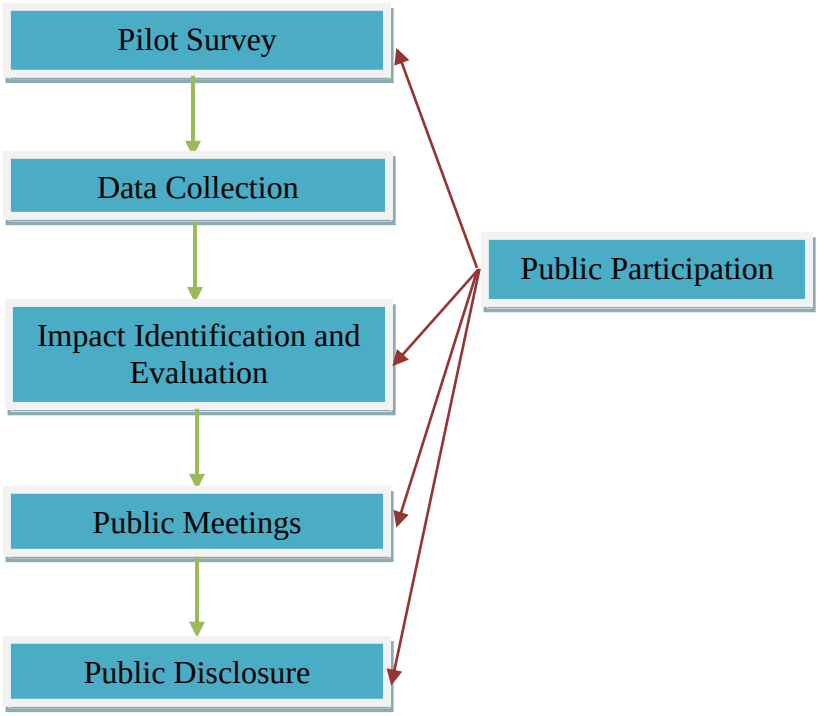


Figure 3.1 Main Steps in SIA Study

3.1. Step I: Pilot Social Survey for Determinations of SIA Study Area and Project Affected Persons

Pilot survey was done for dermination of SIA study area as follow:

3.1.1. Determination of SIA Study Area

Study area was considered after the discussions with key informers project managers from New Star Light Construction Co., Ltd. and the heads of Village General Administrative Offices of nearest villages as follow:

Figure 3.2 Determination of SIA Study Area and Potential Socio-economic Impacts

Based on the discussion results and location of nearest villages, the SIA team decided to conduct household survey within 2 km radius around the proposed project. Google Map and census are also used for the determination of SIA study area during pilot survey.

3.1.2. Determination of Project Affected Persons (PAPs) in the Study Area

Key PAPs are also considered during pilot survey by group discussions with heads of village administrative offices. According to the discussion, the key PAPs were considered as follow:

(i) Local residents in Ho Saung Village;

(ii) Local residents in Taw Ywat Village;

(iii) Local residents in Phwe Hone Village;

(iv) Local residents in Market (Zay) Quarter; and

(v) Local residents in Christian Quarter.

3.2. Step II: Data Collection for Baseline Conditions and Potential Socio-economic Impacts

To assess the baseline socio-economic conditions and potential socio-economic impacts that may result from the development of the proposed project, the SIA team employed both quantitative and qualitative approaches as follow:

3.2.1. Primary Data Collection by Household Survey

The collection of primary data consisted of focus group discussions and household surveys in the target study areas. Household sample survey was conducted to evaluate primary socio-economic conditions of the project area and to understand the mood, perceptions and extent of preparedness of the people towards the proposed project. The household survey was carried out to tap the baseline socio-economic conditions of project area and to assess project perceptions and attitudes of the local people over a period of five days. The accuracy of primary data collection was based on the accuracy, number of surveyed household and experiences of surveyors. To get the accurate data, primary data collection was conducted by social specialist, social consultants, local authorities and local people.

(a) Survey Team

The team was formed with researchers from social, medical, and engineering sciences having research experiences in the field of social impact assessment and social management planning. The team organized 10 people. These are three socio-economic consultants from the Yangon Technological University (YTU), one from Dagon University and the last one is Medical Doctor. The rests are two people from quarter administrative office and 3 people from nearest villages. Key socio-economic consultants are as follow:

Table 3.1 Household Survey Team for Proposed Hotel

No.	Consultants	Role	Responsibility
1.	Dr. KyawSwar Tint	Social Specialist	Impacts Evaluation and Management
2.	Dr. Than Aung Htwe	Social Consultant	Alternatives and Mitigation Measures
3.	Dr. TheinTun	Social Consultant	Primary Data Collection
4.	Dr. Myo Min Htun	Social Consultant	Secondary Data Collection
5.	Dr. Khon Aung	Health Consultant	Health Impact Identification

(b) Development of Survey Questionnaire

Socioeconomic aspects to be included in questionnaire were based on site visits and issues identified by interviews with local people and village heads during pilot survey. Items were formulated by the consultants and reviewed by social assessment team members as to

clarity of item wordings and relevance to the socioeconomic domains measured. The survey questionnaire was designed to collect information as to the following household characteristics:

- household composition (age, gender, educational status, religion, ethnicity, language used and marital status);
- occupations;
- ownership of agricultural fields and livestock;
- energy sources and facilities;
- agricultural and other economic activities;
- daily movement patterns;
- income and expenditure patterns;
- access to and use of community services/facilities and natural resources;
- health and nutrition; and
- views/concerns/suggestions on the proposed project.

(c) Recruitment and Training

The enumerators were received a training program prior to commencing with the fieldwork. The training program included a briefing on the objectives of the survey, socioeconomic aspects to be measured, interview techniques as well as a detailed explanation of each question and its relevance to the survey objectives, how to pose the question and how to code the answer. Discussions were also held among participants about the socioeconomic conditions and initial questionnaire items were revised based on the discussion results. A set of guidelines were given to each enumerator for administration of survey questionnaire. In the field data collection activities, the enumerators were supervised by experienced supervisors with household survey.

(d) Field Records for Primary Data Collection

The following are the field records for meetings with administrative member of nearest villages during household survey.

No.	Date	Time	Village	Meeting Person	Rank / Contact Ph. No.
1.	29.8.2015	3:00 pm	Ho Saung Village	- U Aight San	(Head of Administrative Office) 09-459135150
				- U Khan Hlan Kyaw	(Member of Village Administrative Office) 15894434493 (China Telecom)
2.	29.8.2015	4:00 pm	Taw Ywat Village	- U Sight Nyunt	(Head of Village Administrative Office)

No.	Date	Time	Village	Meeting Person	Rank / Contact Ph. No.
3.	29.8.2015	5:00 pm	Phwe Hone Village	-U Sai Tun Myint	(Head of Village Administrative Office) 15394806927 (China Telecom)
4.	29.8.2015	6:00 pm	Christian Quarter	- U Sai Than Lwin	(Head of Quarter Administrative Office) 09- 401622798
5.	30.8.2015	9:00 am	Zay Quarter	- U Sai Eight Wan	(Head of Quarter Administrative Office)
6.	30.8.2015	10:00 am	Kaung Mu Tone Village	- U Sai Kyaw Oo	(Head of Quarter Administrative Office) 09-6008672

Figure 3.3 Primary Data Collection

(e) Meeting Results with Administrative Members for Household Survey

According to the meetings with local administrative members from nearest villages, all of the convene people are suggested to make primary data collection for all nearest villages in one place due to Shan Language difficulty and difficult to assemble local people in working time. Moreover, all of the administrative members are agreed to make key

stakeholder discussion together with household survey at Ho Saung Monastery. All together 90 people from Ho Saung, Taw Ywat, Phwe Hone, and Kaung Mu Tone villages are attended in this public consultation and primary data collection.

Figure 3.4 Public Consultation and Primary Data Collection

(f) Data Analysis

In household survey data collection period, field supervisors checked and ensured the control of data quality. During field surveys, information obtained through household survey and interviews was corroborated through direct observation by the study team aiming at assessing social and cultural infrastructure existed in the project area, physical assets of people, and living conditions. Observations were backed up by photographic records. Quantitative data were coded and processed using SPSS statistical package. Qualitative data were coded using standard methods.

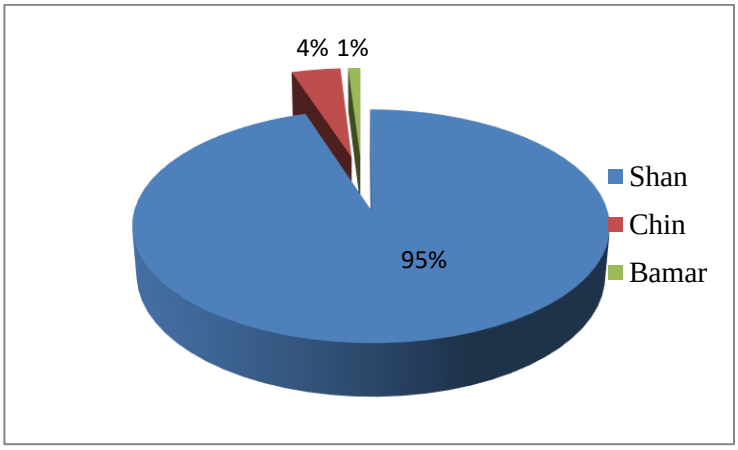
3.2.2. Socio-Economic Profile Resulting from Primary Data Collection

According to the data analysis, the following are the main socio-economic data resulting from primary data collection (household survey).

(a) Major Ethnic Groups and Religious

The project area comprises of three major ethnic groups, that is, Shan, Bamar, and Chin. Within the project affected villages, the dominant ethnic group is Shan (95%), followed

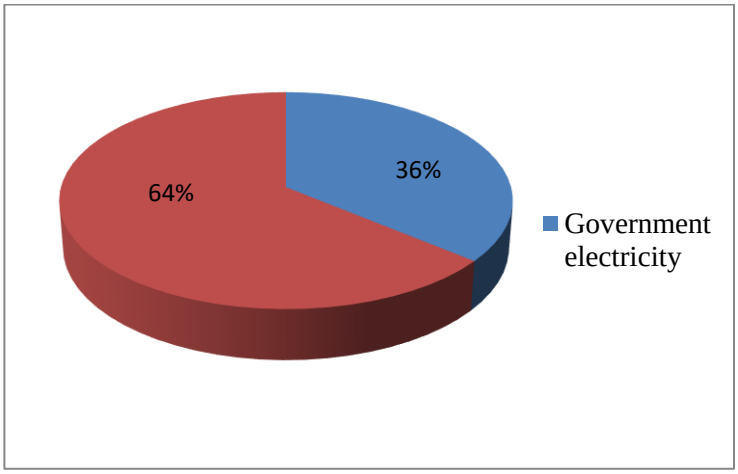
by Chin (4%), and Bamar (1%). The only one dominant religion of the people in the project area is Buddhism nearly 100%.



According to the survey result, most of the people are Shan and Buddhism, so the developer should have to aware not to impact on custom of Shan due to the hotel project.

(b) Energy Sources for Lighting

Primary data from household survey revealed that the two main sources of energy for lighting in the project area are government electricity (36%) and electricity provided by China (64%). Few households used generator and candle for lighting.

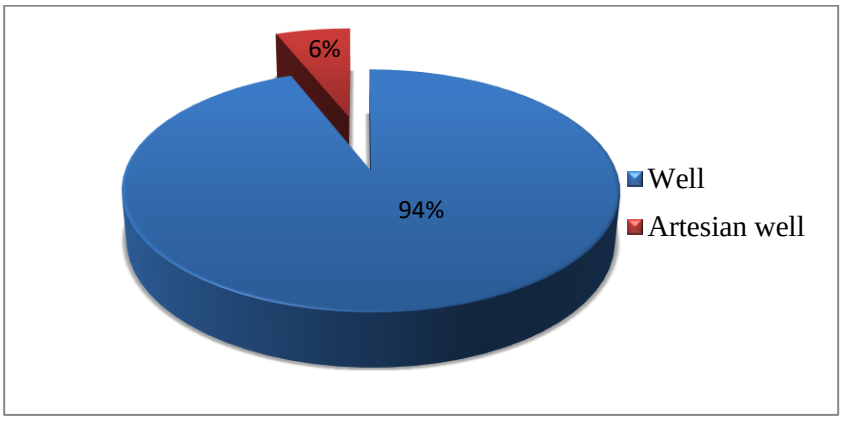


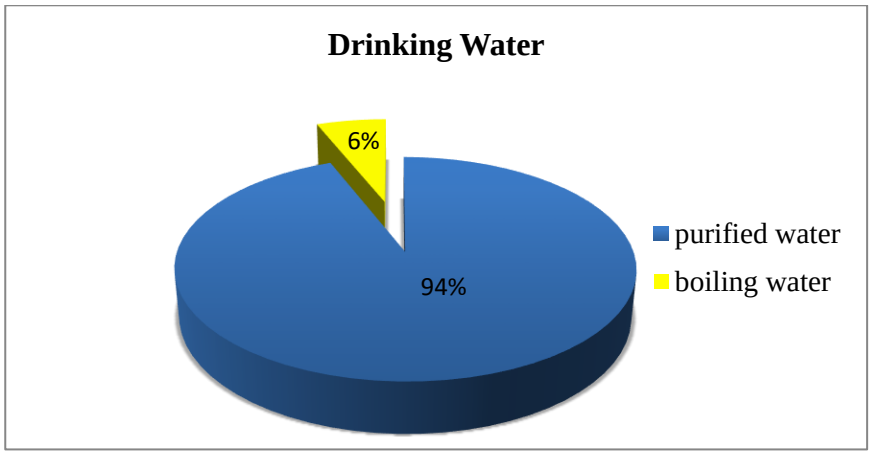
According to the primary data collection, most of the household in the nearest villages are used electrical power from China rather than electrical power from Government. Moreover, the proposed hotel project will also use China's electricity and so there will be no impact on local electrical power consumption due to the proposed hotel project.

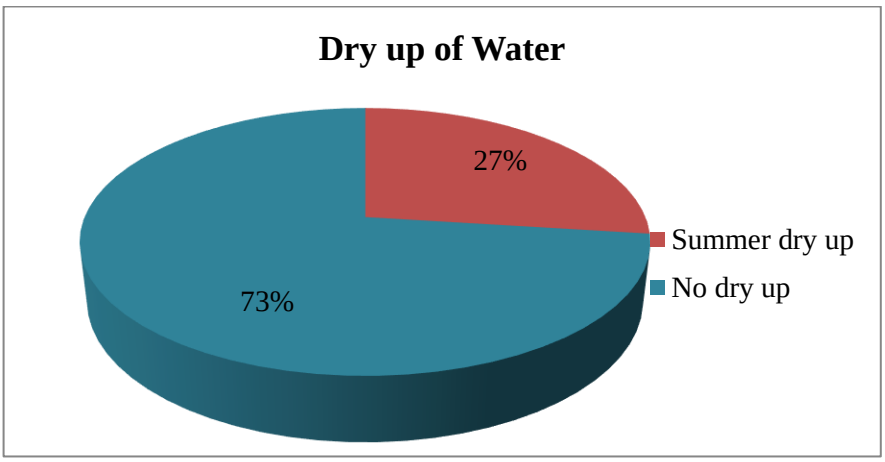
(c) Domestic Use of Water

Access to clean and safe water is crucial to the health population and thus have a direct impact on the quality of life of local community. The survey results on domestic water sources used by communities in the project area are provided in the following figure. Majority

of households in the project area obtained their domestic water from protected well (94%). Artesian well (6%) was found to be another source of domestic use of water in the area.



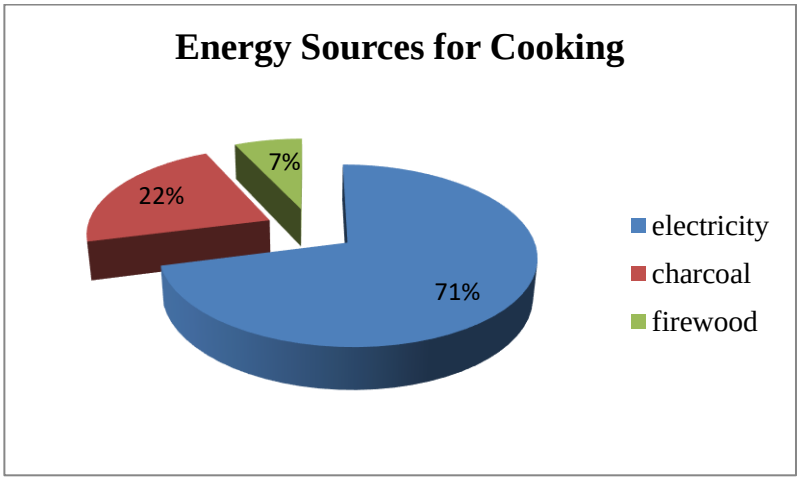




According to the survey, there have potential to dry up of domestic water used during summer and so New Star Light should have a plan for safe drinking water supply system during summer in nearest villages as CSR program.

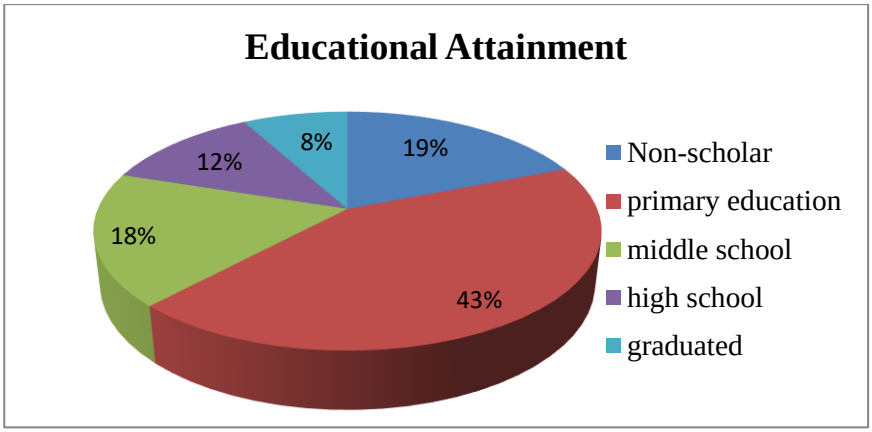
(d) Energy Sources for Cooking

Primary data from field survey show that electricity was the main source of cooking in the entire project area standing at (71%), followed by use of charcoal (22%) and firewood (7%).



(e) Educational Attainment

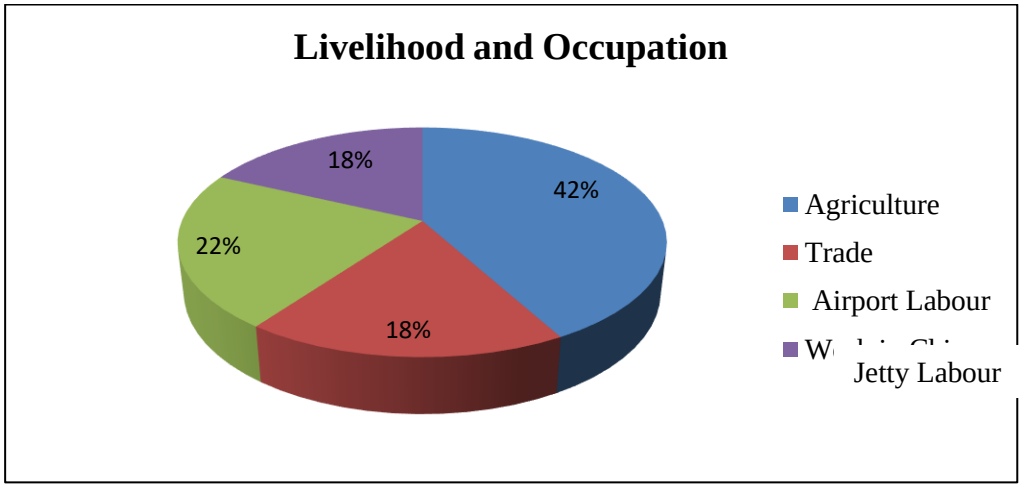
The educational attainment of respondents enumerated in the household socioeconomic survey in the project area is reported in the following figure. More than 43% of the total sample had some form of primary education, Non-scholar 19 % and 18 % proceeded to middle school education. Of the sample, only (12%) completed high school while (8%) graduated a bachelor degree.



Overall, educational attainment of local residents in the project area was found to be relatively low. According to the social survey on educational attainment, most of the people are just fnished primary school due to difficult to go to school and household economy. As education is the fundamental requirement for rural area development, New Star Light should have a plan to upgrade existing education system in nearest villages as CSR program.

(f) Livelihood and Occupation

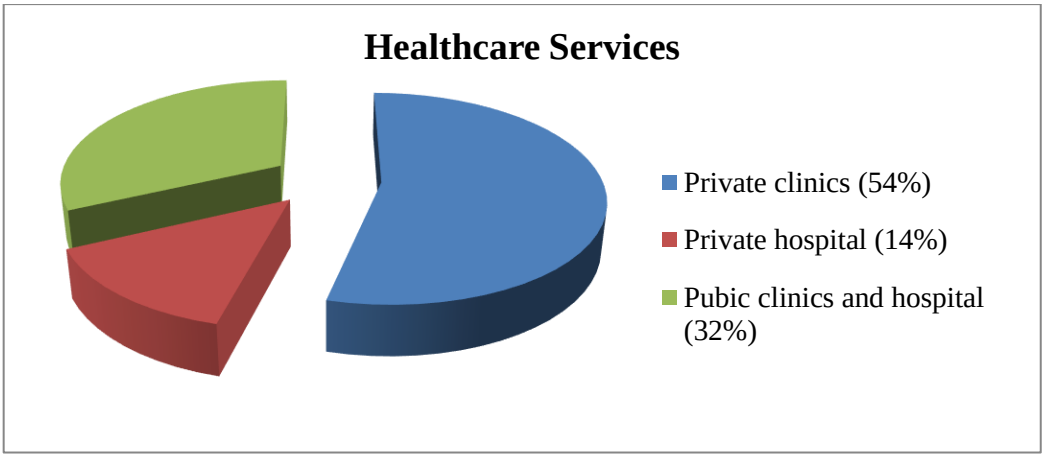
Agriculture employed the majority of population in the area to be affected by proposed factory. In the project area (42%) of the household population enumerated in the household survey reported that their main occupation was farming. The largest proportion of households in the area is rural based, and farming is the major source of household income.



According to the above figure resulted from household survey, the land used for the hotel project will have potential to impact on livelihood and occupation pattern of local people in nearest villages due to the used of agriculture lands. But the impact will not significant because the land used for hotel project is about 3 acres.

(g) Healthcare Services

In the survey, healthcare services available in the project area were also investigated. There were three types of healthcare centers people in the project area usually go for their illness and disease. As shown in the following figure, private clinics in Muse Township were the most common centers people attended (54%), followed by private hospitals (14%), and government hospitals (32%).



According to the household questionnaires, some local people answered that it is a little difficult to go to clinic and hospital in Muse and some private hospitals are not affordable for them. So, they want to have health care facilities near the village. So, New Star Light should have a plan to extend the health care facilities of hotel to nearest villages.

(h) Most Public Needs and Concerns during Household Survey

During social survey, immediate community needs and concerns about the project were assessed. The most important positive outcomes from the project expected by the local people and their concerns about proposed project are as follow:

Village Name	Most Public Needs	Most Pubic Concerns
Taw Ywat	❖ Upgrade earth-based road to bituminous road (hill no.45) ❖ Upgrade health care facilities and religious	➢ Blockage of roads to jetty, agricultural lands, well
Phwe Hone	Support or upgrade to waste garbage collection system	-
Ho Saung	Provide the healthcare facilities and religious	- Blockage of internal drainage systems and potential to flood inside the village due to upgrade of village road - Loss of farm lands and will loss jobs - Limited access to jetty and loss of jobs - Limit boarder of village and will impact on increased population

All of these data are local people hopes on the proposed project according to their wishes and concerns that were got from household survey in their surroundings on surveying within the limited borders (2 km radius).

3.2.3. Secondary Data Collection for the Whole Muse Township

For qualitative approach, data on demographic distribution of Muse Township are sourced from local government offices. The project data are provided by the developer. The accuracy of secondary data of this report are mainly based on these regional data and data from developer.

3.2.3.1.Regional Socio-economic Profile Resulting from Secondary Data Collection

The following are the regional socio-economic profile resulting from secondary data collection.

(a) Location of Muse Township

Muse Township is located in the northern Shan State in the East of Myanmar. Muse has a total township area of 580.57 sq. miles. Muse is situated between 23º35′ to 24˚08′ North

Latitude and 97˚45′ to 98˚37′ East Longitude. Its length from South to North is 26 miles and East-West direction is 52 miles. Muse Township has borders withKyegaung and Ruili city of Yunan Province, the People's Republic of China in the north, Wanding city and Manghai town of Yunan Province and Kong GyanTownhsip in the east. It shares a border of 62.11 miles with China. The township is bounded by Kutkhai in the South, and Nam Kham in the west.

(b) Geographical Condition

Muse is situated in a mountainous area with few flat plain and is located at 2700 feet above sea level. The region has few rivers and streams which flow from the north to south.

(c) Climate

Muse gets monsoon climate with minimum temperature of 9˚C and maximum of 33˚C. There is usually heavy rain in the township during the rainy season. Official records of the township indicate that there were 78 rainy days and a total rainfall of 48.92 inches was received in 2014.

(d) Population and Gender

Muse is composed of 9 quarters and 16 village tracts and 101 villages. Muse has an area of 246.73 square miles. The total population of Muse (up to the month of February 2014) is .072 million (72, 111 persons) of which .035 million (34,671 persons) are males and .037 million (37440 persons) females. Average population density of Muse is 292.27 people per sq. mile. In 2014, this region has population increase rate of 1.08%. The male-female ratio is 1:1.08. Table 1.5 outlines population and gender in Muse. The ratio of less than 18 year and above 18 year is 1:2.36. There are 12877 dwellings and 14188 households in the town with the average household size of 5.08. The ratio of rural and urban household is 1:1.05.

Table 3.2 Population and Gender in Muse

Residence	Older than 18			Younger than 18			Total		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
Urban	13062	14073	27135	4743	5086	9829	17805	19159	36964
Rural	11183	12212	23395	37060	36385	11752	16866	18281	35147
Total	24245	26285	50530	41803	41471	21581	34671	37440	72111

(e) Ethnicity, Language and Religion in Muse

Data show (Table 3.3) that there are three major ethnic groups in Muse: Shan (60.71%), Bamar (17.44%), and Kachin (9.41%). Other ethnic minority groups include Chin (.16%), Kayin (.11%), Rakhine (.04%), Mon (.004%), and others (3.94%). The percentage of Chinese lived in Muse is estimated as 7.90%.

Table 3.3 Ethnicity

Kachin	Kayah	Kayin	Chin	Bamar	Mon	Rakhine	Shan	others	Foreign nationality	Total
6787	-	80	118	12574	3	29	43780	2839	5901	72111

(f) Language

Myanmar language is the common language used in Muse. Other languages including Shan, Kachin, Kayin, and Chinese are also used in the region.

(g) Religious Groups

Table 3.4 reveals that the majority of local people are Buddhists (85.39%), followed by Christians (9.95%), animist (3.92%), Moslems (.45%), and Hindus (.29%). Thus, only one religious group is dominating there. There are many religious places in the region including three historic and well-known pagodas and 98 monasteries for Buddhists. There are also 33 churches, 1 Hindu temple, and 5 Chinese Buddhist Temples as shown in Table 3.5.

Table 3.4 Religious Groups in Muse

Buddhism	Christian	Hindu	Islam	Traditional spirit	Total
61575 (85.39%)	7177 (9.95%)	209 (.29%)	321 (.45%)	2829 (3.92%)	72111

Table 3.5 Religious Edifice

Pagoda	Monastery	Sangha Society			Church	Hindu Temple	Chinese Temple
		Monk	Novice	Total			
15	98	341	584	925	33	1	1

(h) Education

In Muse, school enrollment rate of 5-year-olds was 62.86% in the overall Muse Township. Percentage of students passing the matriculation is 36.18%. The teacher-student ratios are 1:33 in BEPS, 1:38 in BEMS, and 1:17 in BEHS. Literacy rate of Muse Township was 90.05%.

Table 3.6 Educational Infrastructure

School	No. of Schools	No. of Teachers	No. of Students	Teacher/ Student Ratio
BEHS	9	70	1206	1:17
BEMS	5	167	6391	1:38
BEPS	97	97	11441	1:33

Monastic school	3	19	719	1:38
Preschool	11	24	228	1:10

Table 3.7 School Enrollment

No. of 5 Yrs.-old children			Enrollment			Enrollment Rate
Male	Female	Total	Male	Female	Total	
1990	1730	3630	1984	1737	3721	97.60%

Table 3.8 Matriculation Pass Rate

2011-12		
Sit	Pass	Pass Rate
608	220	36.18

(i) Public Health

In public health sector, the ratios of medical service personnel and local population indicate the existing conditions of the inadequate health care access in the region. In Muse, the most common diseases include Diarrhea, Malaria, stomach ailment, Tuberculosis, and Hepatitis. It was also found out that there were substantial amount of incidence of Diarrhea, Malaria, Tuberculosis and stomach ailment in the township. HIV/AIDS prevalence is significantly increased in 2013 than in 2012.There are one 100-bed hospital and four 16-bed hospitals in the township. There are also 18 rural healthcare centers and one malaria campaign clinic. Private hospital and clinics are also found in the township. Infrastructures for health care services are not seemed to be sufficient for rural people from 280 villages in the Muse area.

Table 3.9 Healthcare Facility

No. of Doctors	**Ratio**	**No. of Nurses**	**Ratio**	**No. of Healthcare Assistant**	**Ratio**
22	1:6745	82	1:1810	4	1:37097

Table 3.10 Healthcare Infrastructure

Government					**Private**		**NGO**
100-Beded Hospital	16-beded Hospital	RHC	RHS	Malaria Campaign clinic	Hospital	Clinic	MMCWA Childbirth center

1	4	4	14	1	1	19	1

Table 3.11 Prevalent Diseases

Sr. No.	Disease	Incidence
1.	Malaria	424
2.	Diarrhea	1380
3.	TB	281
4.	Stomach Ailment	420
5.	Hepatitis	88

Table 3.12 HIV/AIDS

2012		2013	
Infected	Dead	Infected	Dead
79	-	278	15

Table 3.13 Health Indices

Fertility Rate	Per 1000			
	Birth Rate	Maternal Mortality Rate	Infant Mortality Rate	Abortion Rate
80.5	19.8	0.3	5.9	69.1

(j) Occupational Patterns

Table 3.14 shows that agriculture and services are the common livelihood means of households in Muse Township. The main agricultural product of the township is maize. The volume of maize production in 2013-14 is estimated at 4, 01,922 baskets. Paddy is also a major crop cultivated in the region. The township paddy production is estimated at 28, 07,733 baskets in 2013-14. Beans and pulses, sugarcane, rubber, coffee, and tea plant are the main agricultural products in the township. Livestock husbandry and fishery are also found to be a component of local economic activities.

The other main economic activities in the area are services, trade, arbitrary, industry, and public services. According to official statistics, unemployment rate in Muse Township is estimated as 3.6%. Domestic net production and value of services of the township in 2012-13 fiscal year is estimated to be 98,433.9 million kyats and Per capita income is estimated to be 11, 14,901 Kyats in 2011-12 and 11, 19,496 Kyats in 2012-13.

Table 3.14 Occupational patterns

Government Employee	Services	Agriculture	Livestock	Trade	Industry	Self-employed	Others

1574	16000	47458	1800	24935	8186	2922	23069

(k) Economic Infrastructure

Eleven cooperative organizations have already been established in Muse. Banking services are also abundant in the region. There are 9 private banks in the township and one Myanma Economic Bank in Kaung Mu Tong Quarter. There are also three principal markets in the overall township.

Table 3.15 Banks

No.	Name	Location	Owned
1.	Myanma Economic Bank	Kaung Mu Tong	Government
2.	Yoma Bank	South Quarter	Private
3.	Kanbawza Bank	Ho Mon	Private
4.	United Amara Bank	Bazar Quarter	Private
5.	Ayeyarwaddy Bank	Bazar Quarter	Private
6.	Asia Green Development Bank	North Quarter	Private
7.	Myanma Apex Bank	Kaung Mu Tong	Private
8.	Industrial Development Bank	Ho Mon	Private
9.	Global Treasure Bank	Ho Mon	Private
10.	Myawaddy Bank	Bazaar Quarter	Private

Table 3.16 Markets

No.	Name	Location	No. of Shops
1	No. (1) Market	Bazaar Quarter	544
2	No. (2) Market	North Quarter	1028
3	SinPhu Market	Kaung Mu Tong	311

Table 3.17 Per Capita Income

Year	Income
2011-12	11, 14,901 Ks.
2012-13	11, 19,496 Ks.

(l) Industries

Data (Table 3.18) reveal that there is one small-scale industrial zone in Muse. There are 69 small-scale industries in the zone. Seven private-owned factories are also found in the township. A total number of 230 employees work in these industries and factories.

Table 3.18 Factories

Township	Small-Scale Industrial Zone	No. of Small-Scale Industries	No. of Factories	Employees
Muse	1	69	7	230

(m) Hotel Industry

As Muse is the central border trading point with China in the region, Muse is one of the centers of regional hotel business. There are seven private owned hotels with 214 rooms. There are also two motels and ten guesthouses in the overall township (Table 3.19).

Table 3.19 Hotel Industry

Hotel	Bed	No. of Motel	No. of Inn	No. of Guesthouse
She Yarsu	34	2	-	58
SeinYatanar	65	No data	No data	No data
ShweThiri	34	No data	No data	No data
Luckey	31	No data	No data	No data
Twin Star	21	No data	No data	No data
97 Hotel	20	No data	No data	No data
NgweSakawar	34	No data	No data	No data

(n) Electricity

Muse Township has one (66/11 kV) power substation and one (10/0.4 kV) substation. The township has 18.8-mile (66 kV) transmission line, 49.713-mile (11 kV) transmission line, and 83. 796- mile (0.4 kV) line.

Table 3.20 Power Substations and Transmission Lines in Muse Township

Township	66/11 kV Substation		10/0.4 kV Substation		Transmission Line (Miles)		
	No.	Capacity (MVA)	No.	Capacity (MVA)	66 kV	11 kV	0.4 kV
Muse	1	20	203	43.64	18.8	49.713	83.796

(o) Transportation and Communication

Road transport is the common form of public transportation mode in the area by means of buses, automobiles, and motor cycles. There are 64 public transportation services for transporting to regional areas and Mandalay and Yangon. There are two bridges with length over 80 feet in the township. In Muse, 22.18% of township population has access to use auto and mobile phones. There are four post offices and four telegraph stations in the township.

Table 3.21 Communication

Post Office	Telegraph Station	Auto Telephone	Mobile Phone

4	4	3729	26504

(p) Safety and Security

There are 11 police stations in Muse Township which host 161 crime fighting personnel. The ratio of police to population is 1:434. Cases in major crimes, other crimes, and preventive crimes are listed in Table 3.22.

Table 3.22 Incidence of Crime

2012			2013		
10 major crime	7 other crime	10 preventive crime	10 major crime	7 other crime	10 preventive crime
14 cases	243 cases	326 cases	25 cases	253 cases	275 cases

There are 9 permanent fire-fighting personnel and 339 people in the auxiliary fire fighting force in the township. Table (3.23) shows fire service personnel and fire machine in Muse.

Table 3.23 Fire Service and Fire Machine

Permanent force	Auxiliary force	Total	Fire machine	Water carrier	Supporting vehicle	Light fire machine
10	339	349	21	2	2	10

(q) NGOs

Several NGOs and work in Muse Township. Table (1.25) lists local NGOs and their force.

Table 3.24 NGOs

Myanmar Women Affair Federation	Maternal and Child Care	Veteran	Red Cross	Auxiliary Fire Bridge
33934	130092	139	360	638

Table (3.25) describes INGOs and CBOs in the township, their location, and their services.

Table 3.25 INGOs and CBOs

Name	Location	Service/Activities
CARE	Ho Mon	Education/Healthcare
AZG	Ho Mon	Healthcare
Save the Children	South Quarter	Education/Healthcare
Karuna Social Welfare Aid	Ho Mon	Social welfare
PinyaParami Foundation	Ho Mon	Education

Nay Chi Life Improvement	Christian Quarter	Social Welfare

4. PUBLIC PARTICIPATION PROCESS

Public participation empowers local people so that they regard the development projects as their own. Public participation (community involvement) also reduces the impact of uncertainties and stress caused by the proposed project. In this study, effective public consultation and participation approaches in the form of stakeholder identification, focus group discussions, public meetings and public disclosure were conducted.

4.1. Stakeholders Identification

The following communities, authorities and NGOs can be considered as key stakeholders who are directly or indirectly related to the proposed project.

(a) New Star Light Construction Co., Ltd.;

(b) Local People (Ho Saung Village, Phwe Hone Village, Taw Ywat Village, Kaung Mu Tone Village, Zay Quarter, Christian Quarter)

(c) Village Administrative Offices (Ho Saung Village, Phwe Hone Village, Taw Ywat Village, Kaung Mu Tone Village, Zay Quarter, Christian Quarter)

(d) Head of Local Administration Office (Muse);

(e) City Development Committee (Muse);

(f) Department of Public Health (Muse);

(g) Department of Forestry (Muse);

(h) Planning and Statistics Department (Muse);

(i) Department of Settlement and Land Record (Muse);

(j) Department of Water Resources Utilization Department (Muse);

(k) Department of Hotel and Tourism (Muse);

(l) Department of Labour (Muse); and

(m) Fire Service Department (Muse); etc.

4.2. Focus Group Discussions

Focus group discussions were carried out with heads of village administration office and elders from almost all of the nearest villages. Through these discussions, information was collected for consideration of PAPs (Project Affected Persons) and potential socio-economic impacts.

4.3. Public Meetings

Public meetings are accomplished two times as follow:

4.3.1 First Public Meeting

First public meeting was made in (19.9.2015). There were about 150 people from local authorities, communities, NGOs and INGOs, and those who are directly or indirectly affected by the proposed project are attended in this meeting. The aim of first public meeting is -

(i) To announce the process and procedure of SIA;

(ii) To discuss about the possible socio-economic impacts; and

(iii) To discuss about the alternative ways to avoid the possible socio-economic impacts.

Attendance list are shown in Appendix I and key discussion during the meeting are shown in Appendix II.

Figure 4.1 Recorded Photos during the First Public Meeting

4.3.2 Second Public Meeting

Second public meeting was hold in (22.10.2015) and about (176) people are attended in this meeting. The aim of second public meeting is -

(i) To make known the alternative ways to avoid socio-economic impacts;

(ii) To announce-the anticipated socio-economic impacts of proposed projects;

(iii) To discuss about mitigation measures for these impacts; and

(iv) To discuss about the social management and monitoring plan.

Attendance list are shown in Appendix III and key discussion during the meeting are shown in Appendix IV.


Second Public Meeting for New Star Light Co., Ltd.'s IBIS Styles Hotel Project
Environmental and Social Impact Assessment
IBIS Styles Hotel စီမံကိန်း
ဒုတိယအကြိမ် လူထုတွေ့ဆုံပွဲ


ဒုတိယအကြိမ် လူထုတွေ့ဆုံပွဲ


Incorporation of local culture elements

Figure 4.2 Recorded Photos during the Second Public Meeting

4.4. Public Disclosure Process

Summary of SIA report (See in Appendix V) and meeting minutes from first public meeting (See in Appendix VI) as Myanmar Language are distributed to all key stakeholders as public disclosure process. Softcopies for meeting minutes and summary are also distributed to all participants during second public meeting.

Figure 4.3 Summary of SIA Report and Meeting Minutes of First Public Meeting

5. ANTICIPATED SOCIO-ECONOMIC IMPACTS AND MITIGATION MEASURES

Anticipated environmental impacts for the proposed project will be conducted into the entire life of the proposed project. To cover the entire life of the project, it is necessary to conduct impact assessment for three major phases as follow:

(a) Phase I: Construction Phase (during the construction period),

(b) Phase II: Operation Phase (during the operation period), and

(c) Phase III: Decommissioning Phase (after the operation period).

To identify and analyze the anticipated socio-economic impacts, the following methods were adopted:

- Determination of concerns and expectations of the affected and interested stakeholders and community feedback during household surveys;
- Feedback from government and nongovernment stakeholders; and
- Review of Company's policies.

5.1 Phase I: Anticipated Socio-economic Impacts and Mitigation Measures during Construction Phase

The following major socio-economic impacts that are expected to occur during the construction period.

(a) Positive Socio-economic Impacts during Construction Phase

The anticipated positive social impacts during construction phase are as follow:

5.1.1. Job Creation

The construction phase of the proposed project will last about 2 years and create job opportunities. According to the information from the developer, the proposed hotel project will provid temporary employment opportunities for local people. Thus, the construction phase of the project will have temporary positive impact on local household income and livelihood.

5.1.1.1.Impact Significance of Job Creation without Enhancement Measure

According to the secondary data collection, the construction contractor (Great Hor Khan Construction Co., Ltd.) is local construction company and almost all of construction workers are local people. As a result, it would benefit the community to a point because unemployment rate in Muse Township is about 3.6%. However, the impact significance of job creation during construction phase cannot be considered as moderate or high because the proposed project is located in Muse Township (border city to China) and most of the young people are going to the foreign country (Kyay Gaung, China) for jobs. So, job creation during construction phase can be considered as low to moderate without enhancement measures as follow:

Components	Anticipated Impact	Sources	Impact Type	Scale	Duration	Severity	Frequency	Probability	Impact Rating
Job creation	Potential to Increase in household income	Jobs in construction site	Positive (+)	Local (+3)	Short term (+2)	Low to Moderate (+3)	Regular (+3)	Highly Probable (+4)	Low to Moderate (+56)

5.1.1.2.Enhancement Measures for Job Creation

Unskilled and semi-skilled job opportunities should be offered to the local communities as much as possible. As the population of females is slightly higher than that of males in the township (1.08:1), employment opportunities for construction works should also be created to ensure that the local female population also has equal chance for these opportunities (Gender Equality). The ratio of less than 18 year and above 18 year is 1:2.36. This can be explained higher number of working age per household in the area.

According to primary data collection, most of the young male (aged between 18 and 30) are worked at Kyay Gaung and so the developer should have a plan to get job

opportunities for young female people in office works with relevant skills during construction phase.

New Starlight Construction Co., Ltd. should encourage construction sub-contractor (Great Hor Khan Construction Co., Ltd.) to use local labor force as part of tender requirement and should arrange the local people who seek alternative livelihood other than farming and agriculture activities (about 27% of total occupational patterns) to obtain employment opportunities. This will be stress-free step because Great Hor Khan Construction Co., Ltd. is local construction contractor and already appointed local labour force as much as possible. The establishment of local labor desk prior to and during construction might also be effective strategy to identify local labor pool. If necessary, training program for heavy construction machineries (like trucks, bulldozer, back hoe, crane etc.) should be prepared to ensure job opportunities for local people.

5.1.1.3.Impact Significance of Job Creation after Enhancement Measure

If the developer will arrange the enhancement measures for job opportunities (job opportunities for female and elder people agreements with sub-contractors to appoint local people as much as possible and training program for heavy machineries before construction period), the impact will become moderate after enhancement actions as follow:

Components	Anticipated Impact	Sources	Impact Type	Scale	Duration	Severity	Frequency	Probability	Impact Rating
Job creation	Potential to Increase in household income	Jobs in construction site	Positive (+)	Local (+3)	Short term (+2)	Low to Moderate (+3)	Continuous (+5)	Certain (+5)	Moderate (+80)

5.1.1.4.Comments for Job Opportunities during Construction Phase

According to the above impact rating for job opportunities during construction phase, the positive impact for job opportunities can be boosted to moderate after enhancement measures. Moreover, job opportunities are one of the most public needs according to the primary data collection because some people sell their farm lands and loss jobs. So, it has to raise job opportunity for local people during construction phase.

5.1.2. Local Skill Development

Local construction contractors will also acquire modern construction techniques for star rated hotel. Moreover, local people hired by the proposed plant would remain in communities with skills acquired during project construction including construction, woodwork, concrete work, steel/metal work and masonry. Communication skills for local people will also improve in office works during construction period. This is a positive and long-term socio-economic benefit.

5.1.2.1.Impact Significance of Local Skill Development without Enhancement Measure

Although the construction sub-contractors (Great Hor Khan Construction Co., Ltd.) already have high techniques for site preparation and hotel construction, most of the sub-contractors for minor construction works and people in nearest villages are not too familiar with modern construction technique. So, there will have some benefit for local people if New Star Light and Great Hor Khan use local construction sub contractors and local people at nearest villages as much as possible. The impact significance of local skill development during construction phase can be considered as follow:

Components	Anticipated Impact	Sources	Impact Type	Scale	Duration	Severity	Frequency	Probability	Impact Rating
Local skill development	Increase in human resource development	Construction works	Positive (+)	Local (+3)	Long term (+4)	Low to Moderate (+3)	Intermittent (+2)	Very Seldom (+1)	Low (+30)

5.1.2.2.Enhancement measures for Local Skill Development

Although large potential labor pool exists in the study area (about umployment 3.6%), majority of them may not be adequately skilled to qualify for positions requiring skilled labor. Thus, training programs (e.g. driving tractors and maintaining of vehicles, welding, wiring, masonry building etc.) should be implemented prior to and during the construction phase to ensure benefits for local communities. Local construction sub-contractors should be chosen as first priority during tender process. New Star Light should encourage construction contractors and sub-contractors to stimulate local skill development as part of tender requirement.

5.1.2.3.Impact Significance of Local Skill Development after Enhancement Measure

The impact significance of local skill development during construction phase can be considered as low to moderate after enhancement measures as follow:

Components	Anticipated Impact	Sources	Impact Type	Scale	Duration	Severity	Frequency	Probability	Impact Rating
Local skill development	Increase in human resource development	Construction works	Positive (+)	Local (+3)	Long term (+4)	Low to Moderate (+3)	Regular (+3)	Probable (+3)	Low to Moderate (+60)

5.1.2.4.Comments for Local Skill Development during Construction Phase

Local skill development will be great benefit for local engineers at Muse Township because construction contractors is local based company and almost all of the employees are local people from Muse Township. However, it will be a little hard to ensure local skill development for nearest villages during construction phase because local skill development is not the most public needs according to the public consultation and most of the young people.

5.1.3. Growth of Local Business and Enterprises

The construction camps will require food and other consumer goods. There will be benefit for local economy if the construction camp supplies some of the required food and consumer goods from nearest villages.

5.1.3.1. Impact Significance of Growth of Local Business and Enterprises without Enhancement Measures

Required food and consumer goods can be supplied from Market Quarter (Zay Quarter) which is one of the nearest quarters from the project site. However, most of the construction materials and consumer will be imported from China and so the impact significance will be low without enhancement measures as follow:

Components	Anticipated Impact	Sources	Impact Type	Scale	Duration	Severity	Frequency	Probability	Impact Rating
Growth of local business and enterprises	Potential to increase in local economy	Construction related services and goods	Positive (+)	Limited (+2)	Short term (+2)	Low to Medium (+3)	Intermittent (+2)	Seldom (+2)	Low (+28)

5.1.3.2. Enhancement Measures for Growth of Local Business and Enterprises

New Starlight should establish a policy to collaborate local businesses and enterprises for procurement of goods and services in relation to project activities to encourage local economy. Any food and consumer good that can be available in nearest villages should be preferred as first priority. According to the primary data collection, Christian and Zay Quarters can provide required foods and goods for construction site. Any construction materials that can be available in nearest quarters and Muse Township can also be chosen as first priority if feasible. New Star Light should encourage construction contractors and sub-contractors to stimulate the emergence of local small business as part of tender requirement.

5.1.3.3. Impact Significance of Growth of Local Business and Enterprises after Enhancement Measures

Impact significance can be considered as low to moderate after enhancement measures as follow:

Components	Anticipated Impact	Sources	Impact Type	Scale	Duration	Severity	Frequency	Probability	Impact Rating
Growth of local business and enterprises	Potential to increase in local economy	Construction related services and goods	Positive (+)	Limited (+2)	Short term (+2)	Low to Medium (+3)	Regular (+3)	Highly probable (+4)	Low to Moderate (+49)

5.1.3.4. Comments for Growth of Local Business and Enterprises

As Muse Township is just developing and boost in local business for construction related goods and services will be great benefit for local business during construction period.

New Star Light already worked with local construction company (Great Hor Khan) and so the most important thing is to support local businesses and enterprises for procurement of goods and services, especially in nearest quarters (Christian and Zay Quarters).

(b) Negative Socio-economic Impacts during Construction Phase

The anticipated negative socio-economic impacts during construction phase are as follow:

5.1.4. Impacts Associated with Population Influx

A possible population influx due to the presence of construction workforce will increase temporary pressure on existing infrastructure and services including health, food, shelter, water, transport and recreational facilities. Infrastructure and facilities to be impacted due to the increase of construction will be healthcare services, schools, and sanitation facilities among others.

5.1.4.1. Significant of Impacts Associated with Population Influx without Mitigation Measures

As proposed project is situated in the Muse Central Business District (MCBD) and the requirements for housing, recreational facilities and water will be provided by the existing facilities. Moreover, Great Hor Khan is local construction company and there is no pressure on housing. However, there will be a little impact existing public health care facilities in Muse Township because there was no public health care facilities in nearest villages and most of the construction workers cannot afford for private health care facilities in nearest villages. As Muse Township is very close to China and impact associated with pressure on local food consumption will be very low. All of the impact significance related to population influx during construction period are as follow:

Components	Anticipated Impact	Sources	Impact Type	Scale	Duration	Severity	Frequency	Probability	Impact Rating
Increase pressure on housing, recreational facilities, and water	Public anxiety	Influx of construction workers	Negative (-)	Site (-1)	Short term (-2)	Very low (-1)	Continuous (-5)	Very seldom (-1)	Very low (-24)
Increase pressure on health care facility	Anxiety of existing workers	Influx of construction workers	Negative (-)	Site (-1)	Short term (-2)	Low to Moderate (-3)	Regular (-3)	Highly Probable (-4)	Low (-42)
Increase pressure on adequate amount of local food	Public and existing workers' anxiety	Influx of construction workers	Negative (-)	Limited (-2)	Short term (-2)	Very Low (-2)	Continuous (-5)	Very seldom (-1)	Very low (-54)

5.1.4.2. Mitigation Measures for Impacts Associated with Population Influx

No mitigation measures is required for pressure on housing, recreational facilities and water for additional workers because the impact rating is very low. Similarly, pressure on local food consumption is very low and no mitigation measure is required. All of the impacts associated with population influx can be minimized by the use of local labor force. Own health care facilities should be supported to additional workers during construction period.

5.1.4.3. Significant of Impacts Associated with Population Influx after Mitigation Measures

Impact on health care facility due to population influx will be very low after mitigation measures as follow:

Components	Anticipated Impact	Sources	Impact Type	Scale	Duration	Severity	Frequency	Probability	Impact Rating
Increase pressure on health care facility	Anxiety of existing workers	Influx of construction workers	Negative (-)	Site (-1)	Short term (-2)	Low to Moderate (-3)	Intermittent (-2)	Seldom (-2)	Very Low (-24)

5.1.4.4. Comments for Impacts Associated with Population Influx

All of the impacts due to increase in population can be mitigated by appointing local construction workers and it will also reduce pressure on health care facilities for construction workers. Nevertheless, impact associated with population influx had already minimized because the construction contractor (Great Hor Khan) used local work force.

5.1.5. Disruption of Access Routes and Daily Movement Patterns

According to the survey, there will be 3 minor access roads are blocked due to the development of main access road to hotel and other buildings inside the CBD (Muse).

5.1.5.1. Impact Significance of Disruption of Access Routes before Mitigation Measures

According to the survey, all of the blocked access roads are roads to farm lands, jetty, cemetery and well. So, it will be a little impact on daily movement pattern. The impact will be considered as moderate without mitigation measures as follow:

Components	Anticipated Impact	Sources	Impact Type	Scale	Duration	Severity	Frequency	Probability	Impact Rating
Blockage of access routes	Public anxiety	Development of access road to hotel	Negative (-)	Limited (-2)	Permanent (-5)	Low to Moderate (-3)	Very often (-4)	Certain (-5)	Moderate (-90)

5.1.5.2. Mitigation Measures for Disruption of Access Routes and Daily Movement Pattern

In order to minimize disruption of access routes and daily movement patterns, alternative ways for access roads should be considered for blocked roads during construction

phase. If it is impossible make alternative roads, access road with security gates at all crossing points should be arranged.

5.1.5.3. Impact Significance of Disruption of Access Routes after Mitigation Measures

After consideration of alternative access roads, the impact will be considered as low as follow:

Components	Anticipated Impact	Sources	Impact Type	Scale	Duration	Severity	Frequency	Probability	Impact Rating
Blockage of access routes	Public anxiety	Development of access road to hotel	Negative (-)	Limited (-2)	Permanent (-5)	Low to Moderate (-3)	Rare (-1)	Seldom (-2)	Low (-30)

5.1.5.4. Comments for Disruption of Access Routes and Daily Movement Pattern

Although all of the access roads are minor access roads, it is a little impact on local economy due to the blockage of farm lands and jetty. Moreover, it is one of the most public concerns during social survey and the local people in Taw Ywat Village want to make the alternative roads to that place. So, it is necessary to make alternative roads or accesses with security gates at the crossing points.

5.1.6. Loss of Farm Lands

The development of hotel project will use some farm lands and it will impact occupation pattern of local people.

5.1.6.1. Impact Significance of Loss of Farm Lands

According to the data collection, the land used for hotel project is about 3 acres and so the impact will not significant for local food production and occupation pattern. This type of impact can be rated as follow:

Components	Anticipated Impact	Sources	Impact Type	Scale	Duration	Severity	Frequency	Probability	Impact Rating
Loss of farm lands	Reduce food production and occupation pattern	Loss of land and job for farming and loss of job	Negative (-)	Site (-1)	Permanent (-5)	Very low (-1)	Intermittent (-2)	Very seldom (-1)	Very low (-21)

5.1.6.2. Mitigation Measures for Loss of Farm Lands

No mitigation measure is required for loss of farm lands because the impact rating is very low or negligible.

5.1.7. Impact of Limitation to Villages Area

The land used for hotel will also limit the area of nearest villages and it will impact for as much as necessary space for increased population in nearest village, especially for Ho Saung Village.

5.1.7.1.Impact Significance of Limitation to Villages Area

According to the data collection, the increased population in Muse is 1.08% in 2014 and rural and urban household is 1:1.05. So, there will be increased population is about 1% in nearest villages around the project area. However, the impact will be considered as very low because the hotel will use about 3 acres of farm land and it is very little compared with total township area of 580.57 sq. miles while as the impact will be considered as medium to High for the whole CBD (Muse).

Components	Anticipated Impact	Sources	Impact Type	Scale	Duration	Severity	Frequency	Probability	Impact Rating
Land used	Limit to village area	Land used for hotel	Negative (-)	Site (-1)	Permanent (-5)	Very low (-1)	Rare (-1)	Very seldom (-1)	Very low (-14)

5.1.7.2.Mitigation Measures for Impact of Limitation to Village Area

No mitigation measure is required because land used area of proposed hotel is very small.

5.2 Anticipated Socio-Economic Impacts and Mitigation Measures during Operation Phase

The following are the anticipated socio-economic impacts that will result from project operation.

(a) Positive Socio-economic Impacts during Operation Phase

There will be three positive impacts during operation phase as follow:

5.2.1. Employment Opportunities

The hotel project will create about 50 permanent jobs. The hotel project will require managers, supervisors, housekeeping, technicians and general workers. With sufficient training, a large portion of these personnel can be sourced from local communities. Increased employment will improve household income levels and livelihood of local people. The proposed project will provide an alternative livelihood to people in the project area who are seeking better employment other than helping their family farming activities.

5.2.1.1.Impact Significance of Employment Opportunities before Enhancement Measures

Employment opportunities will continue from construction phase to operation phase. According to the primary data collection there is jobless people in nearest villages due to the loss of farm lands. Moreover, according to the secondary data collections, there is unemployment percentage in Muse Region. So long term job opportunities will be great benefit to local people who lived not only in nearest villages but also for the whole Muse Region. Impact rating will be moderate before enhancement measures as follow:

Components	Anticipated Impact	Sources	Impact Type	Scale	Duration	Severity	Frequency	Probability	Impact Rating
Employment opportunities	Potential to increase in household income	Operation of hotel	Positive (+)	Local (+3)	Long term (+4)	Moderate (+4)	Continuous (+5)	Probable (+3)	Moderate (+88)

5.2.1.2.Enhancement Measures for Employment Opportunities

Most of the elder people in the project area rely on farming and carrying of goods from jetty with charge as their main livelihood means. Elder household members do farming works together and most households have no members who contribute to household income by other jobs. Carrying of goods from jetty is no-win situation at this time and some people sold their farms for the CBD (Muse). Younger people are going to China for jobs. So, secured long term job opportunities for nearest villages are very important. Local people who have potential for hotel works should be afforded training opportunities and apprenticeship in project operational activities to ensure to support local community in obtaining employment opportunities. New Starlight should carry out advertising and disseminating information about employment opportunities that will be offered for local community in project operation in advance since the time of project construction period. By doing so, local people will acquire necessary skills and make preparation for the alternative livelihood that will contribute their substantial household income.

5.2.1.3.Impact Significance of Employment Opportunities after Enhancement Measures

As long term job opportunities is important to sustain local economic development for nearest villages and the impact will be moderate to high after enhancement measures as follow:

Components	Anticipated Impact	Sources	Impact Type	Scale	Duration	Severity	Frequency	Probability	Impact Rating
Employment opportunities	Increase in household income	Jobs in hotel	Positive (+)	Local (+3)	Long term (+4)	Moderate (+4)	Continuous (+5)	Certain (+5)	Moderate to High (+110)

5.2.2. Local Community Development Potential and Increased Living Standard

Many local and foreigners will come to hotel during operation phase. Local will be developed by mean of services for tourists, transportation and providing other necessary supplies. High capital investment in Muse Region and CSR activities will have potential to community development potential. The project may provide opportunities for continued improvements in basic infrastructure and community development, provision of health care services and education and in providing skill development. All of these can also potential for local community development and increased living standard for local people for long run.

5.2.2.1. Impact Significance of Local Community Development Potential and Increased Living Standard without Enhancement Measures

Hotel may provide all necessary things for their guests and local people a little chance for that and so the impact significance will be considered as low without enhancement measures as follow:

Components	Anticipated Impact	Sources	Impact Type	Scale	Duration	Severity	Frequency	Probability	Impact Rating
Local community development potential	Development in Muse and nearest villages	Operation of hotel	Positive (+)	Local (+3)	Long term (+4)	Low (+2)	Intermittent (+2)	Seldom (+2)	Low (+36)

5.2.2.2. Enhancement Measures for Local Community Development Potential and Increased Living Standard

This positive impact of the project can be enhanced by creating jobs for providing necessary services (transportation, tour trips to religious places, local tourist guide) to foreigners by local people. This positive impact of the project can be enhanced by adjusting allocation of CSR budget and giving priority for CSR activities relevant to community immediate needs each year after discussion with representatives from local authorities, CBOs, and NGOs. According to the social survey, it would be better to support the internal road within the villages, health care facilities and educational supports for local people are the most of the public needs and it will also support community development.

5.2.2.3. Impact Significance of Local Community Development Potential and increased Living Standard after Enhancement Measures

The significant of impact will be considered as low to moderate after enhancement measures as follow:

Components	Anticipated Impact	Sources	Impact Type	Scale	Duration	Severity	Frequency	Probability	Impact Rating
Local community development potential	Development in Muse and nearest villages	Operation of hotel	Positive (+)	Local (+3)	Long term (+4)	Low (+2)	Regular (+3)	Highly Probable (+4)	Low to Moderate (+63)

5.2.2.4. Comments for Community Development Potential

The developer already had CSR policy and budget allocation for community development purposes. Corporate social responsibility (CSR) is the continuing commitment by business to behave ethically and contribute to economic development while improving the quality of life of the workforce and their families as well as of the local community and society. The developer is intending to use one percent of annual net benefit after tax for every year in CSR activities. The developer also has well-established policies and plans for skill-building, providing healthcare services, assisting education, and social-welfare activities. So,

with enhancement measures, community development potential will be great benefits for local people.

5.2.3. Benefits to National Economy

The project operation will contribute to government revenues in terms of taxes paid to the government and multiplier effect arising from its linkages to other sectors. It will also increase the foreign currency and stable of trade balance between Myanmar and China.

5.2.3.1. Impact Significance of Benefits to National Economy before Enhancement Measures

Impact significance of benefits to national economy before enhancement measures will be as low to moderate as follow:

Components	Anticipated Impact	Sources	Impact Type	Scale	Duration	Severity	Frequency	Probability	Impact Rating
Income in government revenue	Benefit to national economy	Taxes	Positive (+)	Regional (+5)	Long term (+4)	Moderate (+4)	Rare (+1)	Highly Probable (+4)	Low to Moderate (+65)

5.2.3.2. Enhancement Measures for Benefits to National Economy

Efficient and transparent tax collection mechanisms should be introduced and strengthened. By creating responsible taxes paying system to local or national government will be great benefit to national economy.

5.2.3.3. Impact Significance of Benefits to National Economy after Enhancement Measures

This positive impact will be moderate after enhancement measures as follow:

Components	Anticipated Impact	Sources	Impact Type	Scale	Duration	Severity	Frequency	Probability	Impact Rating
Income in government revenue	Benefit to national economy	Taxes	Positive (+)	Regional (+5)	Long term (+4)	Moderate (+4)	Intermittent (+2)	Certain (+5)	Moderate (+91)

5.2.3.4. Comments for Benefits to National Economy

In order to ensure that the benefits are sustained, the developer should work in hand with local taxes office and external audits regularly.

5.2.4. Benefits to Local Economy

The project will also contribute to the local economy by creation of opportunities for local businesses in the supply of goods and services.

5.2.4.1. Impact Significance of Benefits to Local Economy before Enhancement Measures

Buying the required supplies for the project at local would less affect for less potentiality that will progress the region with the sector of business without any confirmation. The impact rating will be considered as follow:

Components	Anticipated Impact	Sources	Impact Type	Scale	Duration	Severity	Frequency	Probability	Impact Rating
Income in local revenue	Benefit to local economy	Operation of hotel	Positive (+)	Local (+4)	Long term (+4)	Moderate (+4)	Intermittent (+2)	Probable (+3)	Low to Moderate (+60)

5.2.4.2.Enhancement Measures for Benefits to Local Economy

The developer should consider formulation of specific strategies to link project development with local community.

5.2.4.3.Impact Significance of Benefit to Local Economy after Enhancement Measures

Trading and services in the Muse Township play a part of local GDP, impact rating will be moderate after enhancement measures.

Components	Anticipated Impact	Sources	Impact Type	Scale	Duration	Severity	Frequency	Probability	Impact Rating
Income in local revenue	Benefit to local economy	Operation of hotel	Positive (+)	Local (+4)	Long term (+4)	Moderate (+4)	Intermittent (+2)	Highly Probable (+4)	Moderate (+72)

5.2.4.4.Comments for Benefit to Local Economy

Local procurement of goods and services should be encouraged and given priority.

(b) Negative Socio-Economic Impacts during Operation Phase

The following are the anticipated negative socio-economic impacts during operation phase.

5.2.5. Increase in Crime and Conflict with Local People

An inflow of local and foreign visitors to hotel during operation phase will increase in social pathologies and crime including drug and alcohol abuse, assault, theft and violence. There will also have potential to conflict with visitors and local people. There may be increased demand on emergency and police services due to population influx in this phase.

5.2.5.1.Impact Significance of Increased in Crime and Conflict with Local People before Mitigation Measures

The impact will be considered as low without mitigation measures because the proposed hotel has a plan to use its trained security services and the project is situated not too far from Muse Police Station.

Components	Anticipated Impact	Sources	Impact Type	Scale	Duration	Severity	Frequency	Probability	Impact Rating
Increase crime and conflict	Public security	Increased in population	Negative (-)	Limited (-2)	Long term (-4)	Low (-2)	Intermittent (-2)	Probable (-3)	Low (-40)

5.2.5.2. Mitigation Measures for Increased in Crime and Conflict with Local People

The developer should encourage the visitors to know about the custom and behaviours of local people (Culture of Shan). The developer also needs to continue to work with the local and regional police personnel and local administrative members in the resolution of potential increase in crime and violence. Guests should be clearly identifiable and identification cards should be used in workers' check in and check out. Hotel area should be fenced and access road should be controlled.

5.2.5.3. Impact Significance of Crime and Conflict after Mitigation Measures

After systematically control of foreign and migrant workers and continuous cooperation with local administrative office and police force, the impact will be very low as follow.

Components	Anticipated Impact	Sources	Impact Type	Scale	Duration	Severity	Frequency	Probability	Impact Rating
Increase crime and conflict	Public security	Increased in population	Negative (-)	Limited (-2)	Long term (-4)	Low (-2)	Rare (-1)	Very Seldom (-1)	Very Low (-18)

5.2.5.4. Comments for Increase in Crime and Conflict with Local People

Most of the people in nearest villages are Shan and the developer should try to become community with local people. Conflict with local people can also be mitigated through the use of local labor force. Unskilled job opportunities like security and housekeeping should be offered to the local communities as much as possible.

5.2.6. Impact to Traditional and Custom of Shan

According to the primary and secondary data collection, most of the people in Muse Region are Shan/Buddish and the influx of people due to the operation of hotel will have impact on traditional of Shan. Sudden improvement of infrastructures and influx of different people with different life style from another place can have impact on traditional and custom of local people in general.

5.2.6.1. Impact Significance of Impact to Traditional and Custom of Shan before Mitigation Measures

The impact will be considered as low to moderate because it is the most public concerns during social survey and public meetings.

Components	Anticipated Impact	Sources	Impact Type	Scale	Duration	Severity	Frequency	Probability	Impact Rating
Impacts to Traditional and Custom of Shan	Traditional and religious	Increased in population	Negative (-)	Local (-3)	Long term (-4)	Moderate (-4)	Regular (-3)	Probable (-3)	Low to Moderate (-66)

5.2.6.2.Mitigation Measures for Impacts to Traditional and Custom of Shan

The developer should encourage the visitors to know about the custom and behaviours of local people (Customs of Shan). Gallery of custom of Shan should be constructed during the construction of hotel. Tradational foods should be put as special dish of hotel regularly. Local dancers for Shan Culture should be taken every celebration patty in hotel.

5.2.6.3.Impact Significance of Impact to Traditional and Custom of Shan after Mitigation Measures

The impact will be considered as low after mitigation measures as follow:

Components	Anticipated Impact	Sources	Impact Type	Scale	Duration	Severity	Frequency	Probability	Impact Rating
Impacts to Traditional and Custom of Shan	Traditional and religious	Increased in population	Negative (-)	Local (-3)	Long term (-4)	Moderate (-4)	Very Often (-4)	Highly Probable (-4)	Moderate (-88)

5.2.6.4.Comments for Impact to Traditional and Custom of Shan

Although the developer can have difficulties about to change the minimum requirements of star rated hotel (IBIS Style requirements), it is necessary to put culture and custom of Shan Gallery inside the hotel or near the hotel recreation centre. It is one of the most public concerns during social survey and first public meeting.

5.2.7. Fire Outbreak Risk

Although fire outbreak risk in Muse Region is Category C (ARI 100) according to the secondary data collection and disaster risk assessment, there will have potential to fire outbreak

5.2.7.1 Impact Significance of Fire Outbreak Risk without Mitigation Measures

As possibility of fire outbreak risk is Category C and so the impact will be rated as low without mitigation measure as follow:

Components	Anticipated Impact	Sources	Impact Type	Scale	Duration	Severity	Frequency	Probability	Impact Rating
Fire outbreak risk	Hotel and public property	Increase in population and buildings	Negative (-)	Local (-3)	Long term (-4)	High (-5)	Rare (-1)	Probable (-3)	Low (-44)

5.2.7.2 Mitigation Measures for Fire Outbreak Risk

As there had limited capacity of local fire fighting capacity, the project should be installed with modern fire hydrant system effectively fighting fires of various proportions and of all classes of fire risks. Moreover, New Star Light should have its own fire machine and fire-fighting force for providing fire service not only for the hotel but also for the nearest villages. Moreover, fire service personnel should be assigned and well trained on how to prevent fire, how to use fire-fighting equipment, and emergency response actions. The developer should also adhere to the fire-fighting regulations of the Ministry of Home Affairs and should collaborate with regional fire brigade in the prevention of fire outbreak and training local fire fighting force. Fire fighting force for the hotel is proposed as shown in Figure 5.1.

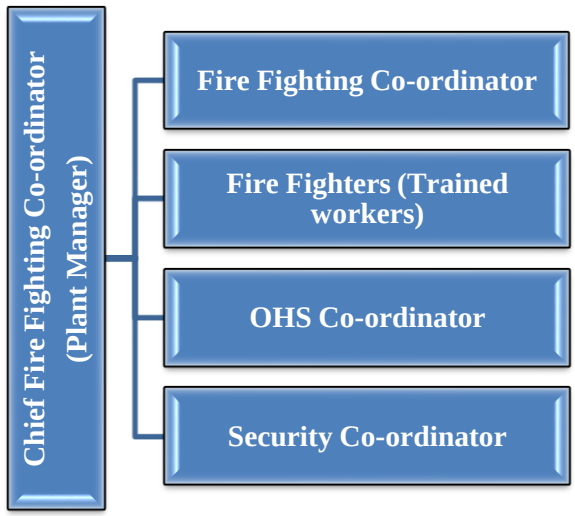


Figure 5.1 Proposed Fire Fighting Team for Hotel

The following are the role and responsibilities of each member of fire fighting team.

Team Members	Role	Responsibilities
Plant Manager	Chief co-ordinator	• Make Emergency shut-down of activities. Put everything in Safe condition. • Commence initial emergency case, till fire fighting department (Muse) comes to take up.
Fire fighting leader	Fire fighting co-ordinator	• Be Overall in-charge for Fire and Safety. • Coordinate with Local fire fighting station.
Trained workers and securities	Fire fighters	• Put off fire by using available equipments.
Safety officer	OHS co-ordinator	• Establish Emergency Center, Treat affected persons, Transfer/Remove Patients. • Workers Tally

Team Members	Role	Responsibilities
		• Map showing hazardous storages, Fire horns, Safety equipments, Gates and side gates, Assembly points, List of persons.
Security leader	Security co-ordinator	• Remove Crowd • Arrange Gate security • Contact Police if necessary • Handle news media • Mobilise vehicles

5.2.7.3 Impact Significance of Fire Outbreak Risk after Mitigation Measures

After consideration of all of the mitigation measures for fire outbreak risk and systematically composed of fire fighting team, impact rating can be reduced as low as follow:

Components	Anticipated Impact	Sources	Impact Type	Scale	Duration	Severity	Frequency	Probability	Impact Rating
Fire outbreak risk	Hotel and public property	Increase in population and buildings	Negative (-)	Local (-3)	Long term (-4)	High (-5)	Rare (-1)	Very Seldom (-1)	Very Low (-24)

5.3 Anticipated Impacts and Mitigation Measures for Decommissioning Phase

Generally, it tends to reverse the benefits that are got from the operation of the proposed project on closing the project. As an example, it would have to face the cases like giving up job opportunity and losing the State currency.

5.3.1 Loss of Jobs for Local People and Revenues for the Government

In the event of the project closure, there will be potential negative impacts resulting in loss of jobs and indirect employment depending on the operation of hotel and of associated services for tourism as well as loss of revenues for the government.

5.3.1.1 Impact Significant of Loss of Jobs and Revenues for the Government

As Muse Township is developing boarder city, loss of job opportunities and revenues for regional government will be greatly effect on GDP. So, impact significant will be considered as low to moderate for loss of jobs due to insignificant number of workers and moderate for loss of revenues due to important of income from services in Muse Region.

Components	Anticipated Impact	Sources	Impact Type	Scale	Duration	Severity	Frequency	Probability	Impact Rating
Loss of jobs	Decline in local economy	Decommis-sioning of hotel	Negative (-)	Local (-3)	Permanent (-5)	Low (-2)	Regular (-3)	Highly probable (-4)	Low to Moderate (-70)
Loss of	Decline in	Decommis-	Negative	Regional	Permanent	Moderate	Rare	Certain	Moderate

Components	Anticipated Impact	Sources	Impact Type	Scale	Duration	Severity	Frequency	Probability	Impact Rating
revenues	regional economy	sioning of hotel	(-)	(-5)	(-5)	(-4)	(-1)	(-5)	(-84)

5.3.1.2 Mitigation Measures for Loss of Jobs and Revenues for the Government

Extensive and comprehensive warning to employees to allow them to source alternative livelihood should be taken early. New Star Light should prepare their employees for forced retirement by providing applicable jobs at other factories under the same developer, if feasible.

5.3.1.3 Impact Significant of Loss of Jobs and Revenues for the Government after Mitigation Measures

After mitigation measures for loss of jobs and revenues for the government, the impacts can be rated as follow:

Components	Anticipated Impact	Sources	Impact Type	Scale	Duration	Severity	Frequency	Probability	Impact Rating
Loss of jobs	Decline in local economy	Decommis-sioning of hotel	Negativ e (-)	Local (-3)	Permanent (-5)	Low (-2)	Regular (-4)	Very seldom (-1)	Low (-50)
Loss of revenues	Decline in regional economy	Decommis-sioning of hotel	Negativ e (-)	Regio nal (-5)	Permanent (-5)	Moderate (-4)	Rare (-1)	Probable (-3)	Low to Moderat e (-56)

5.3.1.4 Comments for Loss of Jobs for Local People and Revenues for the Government

The developer should have a plan to reuse the hotel for other business purpose under the same company or other partner company to retain the revenue for the government.

5.4 Summary of Impacts for Construction, Operation and Decommissioning Phases

Table 5.1 shows summary of anticipated impacts before and after mitigation measures.

Table 5.1 Summary of Impacts Rating Before and After Mitigation Measures

No.	Anticipated Impacts	Impact Ratings before Enhancement/Mitigation Measures	Impact Ratings after Mitigation Measures	Enhancement or Mitigation Requirements	Proposed Enhancement/ Mitigation Measures
Construction Phase (Positive Impacts)					
1.	Job Creation	Low to Moderate (+56)	Moderate (+80)	Yes	Section 3.1.1.2
2.	Local Skill Development	Low (+30)	Low to Moderate (+60)	Yes	Section 3.1.2.2
3.	Growth of Local Business	Low (+28)	Low to Moderate (+60)	Yes	Section 3.1.3.2
Construction Phase (Negative Impacts)					
1.	Population Influx				
	- pressure on housing	Very Low (-24) or Negligible	-	No	-
	- pressure on health care	Low (-42)	Very Low (-24) or Negligible	Yes	Section 3.1.4.2
	- pressure on food	Very Low (-36) or Negligible	-	-	-
2.	Disruption of Access Routes	Moderate (-81)	Low (-27)	Yes	Section 3.1.5.2
3.	Loss of farm lands	Very Low (-36) or Negligible	-	No	-
4.	Limitation to villages area	Very Low (-36) or Negligible	-	No	-
Operation Phase (Positive Impacts)					
1.	Employment opportunities	Moderate (+88)	Moderate to High (+110)	Yes	Section 3.2.1.2
2.	Community development and increased living standard	Low (+36)	Low to Moderate (+63)	Yes	Section 3.2.2.2
3.	Benefits to National economy	Low to Moderate (+65)	Moderate (+91)	Yes	Section 3.2.3.2
4.	Benefits to local economy	Low to Moderate (+60)	Moderate (+72)	Yes	Section 3.2.4.2
Operation Phase (Negative Impacts)					
1.	Crime and conflict with local people	Low (-40)	Very Low (-18)	Yes	Section 3.2.5.2
2.	Impact to Traditional and	Low to Moderate (+66)	Low (-33)	Yes	Section 3.2.6.2

No.	Anticipated Impacts	Impact Ratings before Enhancement/Mitigation Measures	Impact Ratings after Mitigation Measures	Enhancement or Mitigation Requirements	Proposed Enhancement/ Mitigation Measures
	Custom of Shan				
3.	Fire Outbreak Risk	Low (-44)	Very Low (-24)	Yes	Section 3.2.7.2
Decommissioning Phase (Negative Impacts)					
1.	Loss of jobs for local people	Low to Moderate (-70)	Low (-50)	Yes	Section 3.3.1.2
2.	Loss of revenues to Government	Moderate (-84)	Low to Moderate (-56)	Yes	Section 3.3.1.2

5.5 Residual Socio-economic Impacts after Enhancement/Mitigation Measures

According to the summary of impact rating table (Table 1.27), the residual socio-economic impacts after mitigation measures will be as shown in Table 5.2.

Table 5.2 Residual Socio-economic Impacts After Mitigation/Enhancement Measures

No.	Residual Impacts	Compensation and CSR for Residual Impacts	
		Compensation	CSR
1.	Disruption of access roads	Alternative roads instead of blocked roads	Improvement of roads inside the Taw Ywat Villages
2.	Impacts to tradition of Shan	Gallery for Custom of Shan, Putting of Shan culture dance in every ceremony in hotel, Putting Shan traditional foods in hotel food menu	Donation to religious buildings and monasteries
3.	Loss of job for local people in decommissioning phase	Support at least three times of recent salary to every workers	Training program for other applicable jobs
4.	Loss of revenues for Government in decommissioning phase	Use the building of hotel in other business purpose	Donate some apartments to local government for business or human resources development

6. SOCIAL MANAGEMENT PLAN (SMP) FOR PROPOSED PROJECT

In this section will describe potential impacts that may result from the project construction, operation, and decommission were assessed by considering the various aspects of social receptors and mitigation measures were proposed to ensure negative impacts on the social environment are reduced and positive impacts are enhanced.

The Social Management Plan (SMP) identifies the relevant responsible institutions, authorities and stakeholders to manage the negative social impacts and enhance potential benefits and to monitor these impacts to adjust mitigation strategies.

6.1 Social Management Team

To enable smooth implementation of social management plan, a social management team should be formed to oversee the overall management of the plan. The SMP team should be composed as follow:

(i) Corporate Social Responsibility (CSR) officer (and/or) Head of Human Resources (HR) Department or Community Liaison Officer (CLO) of New Star Light Construction Co., Ltd.,

(ii) Health and Safety Officer, as well as other relevant employees of New Star Light Construction Co., Ltd.,

(iii) Representatives from local residents in project affected area, and

(iv) Representatives from local CBOs and NGOs.

The SMP team should be held meeting regularly to view progress made and the problems encountered that need to be addressed. The SMP team will also serve as New Star Light grievance committee that will address grievances from the community.

6.2 Responsibilities

The SMP has various components with the respective stakeholders involved towards the implementation of the corrective actions. Various persons and organizations have to be involved in the project. The following should be involved in the implementation of the SMP:

- New Starlight Construction Co. Ltd.,
- Construction contractors,
- Regional government authorities,
- Regional health office,
- Local NGOs/CBOs,
- Local entrepreneurs,

- Police force,
- Department of labor,
- Department of national planning, and
- Local residents near the project area, etc.

6.3 Social Monitoring Plan

There will be continuous monitoring and follow-up on the plant activities to ensure that the social management plan is implemented and that its objectives are achieved. The key objectives of the monitoring program will be able to:

(i) Demonstrate compliance with currently-practiced social performance standards;

(ii) Track the identified impacts and the delivery of their mitigation strategies;

(iii) Identify new impacts arising from changing conditions and develop responses; and

(iv) Enable regular stakeholder contact and feedback.

The SMP monitoring plan consists of:

(i) A list of identified impacts and issues;

(ii) A monitoring strategy- how management of the impact will be monitored;

(iii) Responsibility for monitoring- documenting of the party responsible for the implementation of each monitoring strategy, for example, monitoring team or third party agent; and

(iv) Performance indicators- informative, relevant, measure, useful, widely recognized, simple to report and easily understood.

6.3.1 Scope of Social Monitoring Plan

Social monitoring is proposed for the following areas:

(i) Improvement and sustainable of job opportunities for local people;

(ii) Improvement of State economy;

(iii) Improvement of local economy; and

(iv) Changes in overall community development.

6.3.2 Monitoring Schedule for Social Monitoring Plan

The monitoring schedule for social monitoring plan is shown in Table 5.3.

Table 6.1 Monitoring Schedule for Social Monitoring Plan

No.	Potential Impact	Performance Indicators	Method	Frequency of Measurement	Respons-ibility	Supporting or Cooperation Organizations
(a) Monitoring Parameters during Construction Phase						
1.	Job Creation during Construction Phase	➢ Local labor employed as a % of total construction workforce ➢ % of local women employed as % of total construction workforce	Review of company's records	Monthly during construction phase	▪Construction contractors	❖ New Star Light Construction Co., Ltd. ❖ Department of Labour Force ❖ Local Administrative Office
2.	Increase in Business Opportunities for Local Services	➢ Estimates of local products sold to the project ➢ Number of local business emerged in the project area ➢ Entrepreneurial activities associated with the construction of proposed project	Routine inspection near the project site and review of company's records	Monthly during construction phase	▪Construction contractors	❖ New Star Light Construction Co., Ltd. ❖ Heads of Village Administrative Office in nearest villages
3.	Blockage of access roads	➢ Records of complaints from nearest villages	Routine inspection along the main road to hotel and nearest villages	Before any development of main road to hotel	▪Construction contractors	❖ New Star Light Construction Co., Ltd. ❖ Heads of Village Administrative Office in nearest

No.	Potential Impact	Performance Indicators	Method	Frequency of Measurement	Respons-ibility	Supporting or Cooperation Organizations
						villages ❖ ❖
4.	Blockage of drainage system within the villages	➢ Records of complaints from nearest villages during rainy seasons	Routine inspection along the cross points of road and drainage system within the nearest villages	Before any development of internal roads within the nearest villages	▪Construction contractors	❖ New Star Light Construction Co., Ltd. ❖ Heads of Village Administrative Office in nearest villages
5.	Increase Pressure on Social Services and Utilities	➢ Records of healthcare assistance including site clinic, service center, personnel, and medicine provided for construction labor force ➢ Records of food supply for construction workers	Routine inspection and review of company's records	Monthly during construction phase	▪Construction contractors	❖ New Star Light Construction Co., Ltd. ❖ Administrative Offices in nearest villages
6.	Construction-related Health and Safety Risks	➢ Number of accidents and incidents	Accidents and incidents reporting	Monthly during construction phase	▪Construction contractors	❖ New Star Light Construction Co., Ltd. ❖ Department of Labour
7.	Crime and Security	➢ Increased cases of alcohol and drug abuse, theft, and crime in general	Review of reported cases	Monthly during construction phase	▪Construction Contractors	❖ New Star Light Construction Co., Ltd. ❖ Local Police Force

No.	Potential Impact	Performance Indicators	Method	Frequency of Measurement	Respons-ibility	Supporting or Cooperation Organizations
(b) Monitoring Parameters during Operation Phase						
1.	Employment Opportunities	➢ % of local employees as % of total operation workforce ➢ % of local women employed as % of total construction workforce	Review of company's records	Annually	▪New Star Light Construction Co., Ltd.	❖ Department of labour force
2.	Benefits to National Economy	➢ Efficient and transparent tax collection mechanisms in place ➢ Tax collected	Routine inspection and review of company's records and meeting minutes	Annually	▪New Star Light Construction Co., Ltd.	❖ Local authorities ❖ Department of internal revenue
3.	Benefit to Local Economy	➢ Estimates of local products sold to the project ➢ Entrepreneurial activities associated with the project	• Review of company's records • Interviews with local authorities and entrepreneurs	Annually	▪New Star Light Construction Co., Ltd.	❖ Department of internal revenue
4.	Improved Services and Community Development Potential	➢ CSR programs in place ➢ Changes in overall development	• Reviews of effectiveness of CSR programs • Consultations	Annually	▪New Star Light Construction Co., Ltd.	❖ Villages heads in nearest villages ❖ External audit team
5.	Fire Outbreak Risk	➢ Training programs of Fire service personnel of the company implemented	• Reviews of training programs	Quarterly	New Starlight Construction Co., Ltd.	❖ Local fire fighting force

No.	Potential Impact	Performance Indicators	Method	Frequency of Measurement	Respons-ibility	Supporting or Cooperation Organizations
		➢ Records of collaborated activities with regional fire brigade	• Review of company's records			

Remark:1. Construction contractor mean partners for site clearing, ground leveling, cement plant construction.

2. If New Star Light conducts construction works, construction contractors will be the same as the developer.

6.4 Records Keeping

Records should be maintained for regulatory, monitoring and operational issues. Records should also be used as performance indicators for monitoring purposes. According to the above monitoring measures during construction and operation phases of the project, typical record keeping requirements for the proposed project are summarized in Table 6.2.

Table 6.2 Record Keeping Requirements

No.	Parameter	Record Books	Frequency	Responsibilities
During Construction Phase				
1.	Job opportunities for local people	Percentage of local labour used in construction phase	Monthly during construction phase	Great Hor Khan Construction Co., Ltd.
2.	Blockage of access roads	Complaints from nearest villages	Monthly during construction phase	Great Hor Khan Construction Co., Ltd.
3.	Blockage of drainage system inside the villages	Complaints from nearest villages	Weekly during rainy seasons	Great Hor Khan Construction Co., Ltd.
During Operation Phase				
1.	Job opportunities for local people	Percentage of local labour used in operation phase	Quarterly during Operation phase	New Starlight Construction Co., Ltd.
2.	Donation of CSR fund	CSR fund donation record book	Yearly	New Starlight Construction Co., Ltd.
3.	Taxes for Government	External and internal audits records	Yearly	New Starlight Construction Co., Ltd.
4.	Donation of CSR Fund	CSR Contributions record book	Yearly	New Starlight Construction Co., Ltd.

6.5 Auditing on Socio-economic Monitoring Results

An annual reporting mechanism will be through a social audit as part of the environmental audit as follow:

No.	Type of Audit	Proposed Audit Team	Frequency	Remark
1.	Internal Audit Team	Financial department of proposed hotel	Annually before external audit team	Can be done as part of the environmental monitoring audit
2.	External Audit Team	Third party audit team	Annually	Can be done as part of the environmental monitoring audit

7. CORPORATE SOCIAL RESPONSIBILITY (CSR) PROGRAM

As only a monetary contribution at random places will have a potential to some social problem within the nearest villages. So, New Star Light Group of Companies should have CSR program to contribute and manage CSR fund effectively.

7.1 CSR Officer (or) Coordinator

New Starlight Construction Co., Ltd. should assign CSR officer (or) CSR Coordinator to closely relate with local people in order to manage the contributions of CSR fund effectively. HR manager can also be assigned as CSR officer. CSR officer should donate CSR fund after the discussion with all of the villages' head of nearest villages.

7.2 CSR Fund

New Starlight Co., Ltd. should set up fixed CSR fund for local community development. Annual environmental conservation and monitoring costs should not include in this CSR fund. It is important that CSR activities should be accomplished not only by financial assistance but also by technical assistance and manpower in some donations to retain good relation with local communities. Proposed allocated per cent of CSR budget are as follow:

No.	Activities	Proposed allocated per cent of CSR budget	Public Needs according to Primary Data Collection
1.	Private health clinics for nearest villages	30%	Yes
2.	Donation to waste collection system	15%	Yes
3.	Construction of roads	20%	Yes
4.	Donation to schools	20%	Yes
5.	Donation to monasteries	15%	Yes
	Total	**100%**	

7.3 Proposed CSR Activities

The following are the proposed CSR activities for New Star Light Construction Co., Ltd. Most of the CSR activities are according to the public needs during social survey and determination of SIA Team for local community development. Most of the proposed activities will improve the socio-economic conditions of nearest villages significantly.

(a) Health Care Facilities;

(b) Education;

(c) Religious Buildings;

(d) Village Roads;

(e) Participating in Government Schemes;

(f) Cooperation with NGOs and INGOs

7.3.1 Health Care Facilities

According to social survey, there is no public health care facility for nearest residents. So, health care facilities of proposed hotel project should be assessed to nearest local people with no or little charge as part of CSR program. Ambulance for emergency case should be provided for local people in nearest villages.

7.3.2 Education

According to social survey, most of the older people are passed just primary school because of difficult to going to school and according to economy. But young generations today are higher educational standards due to the improvements of schools, teaching staffs, lower learning cost. It will help to improve local development in nearest villages and so New Star Light should contribute CSR fund in this section regularly.

Figure 7.1 Donation of 2 Storey High School by New Starlight

7.3.3 Religious Buildings

Since the majority of local people in the project area are Shan citizens who are devout Buddhists, New Star Light should engage in such social responsibility activities as supporting Buddhist religious ceremonies traditionally held in hotel in timely manner, donating financial or material properties to build Buddhist ordination hall at nearby monasteries as the whole community merit whenever necessary. New Star Light should also support holding seasonal ceremonies for listening to religious sermons in the hotel.

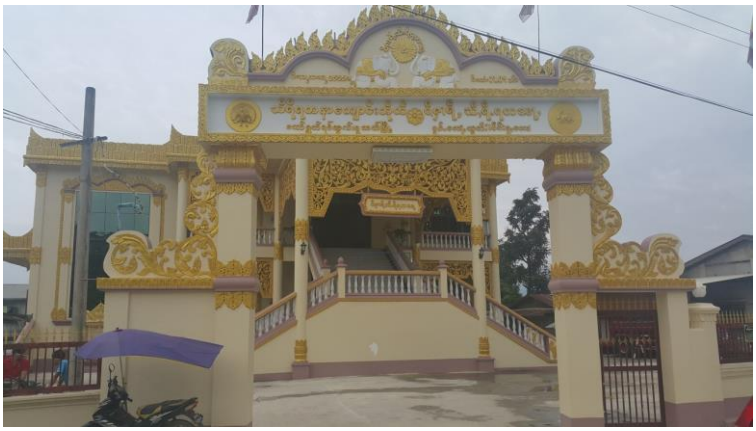


Figure 7.2 Partially Donation of Religious Building by New Star Light

7.3.4 Supporting to Waste Collection System

According to the primary data collection, most of the villagers are disposed their domestic wastes near the Shwe Li River and all of the nearest villages are wanted to improve waste collecting system. So, New Star Light should have a plan to improve waste collection systems in nearest villages as part of CSR program. It will also support to become clear environment near the hotel campus.

Figure 7.3 Disposal of Domestic Wastes near Ho Saung Village

7.3.5 Participating Government Schemes for Social Welfare

New Starlight should actively participate in implementation of government schemes for welfare of the society of the Muse region.

7.3.6 Cooperation with Local NGOs

New Starlight should cooperate with Union of Youths in nearest villages in the activities to improve regional, religious, and all round developments in Muse Region. Some percentage of CSR fund should provide regularly to Union of Youths in nearest villages.

7.4 Declare the Contribution of CSR Fund

All of the CSR activities and contribution programs should be declared to public by means of local media, company annual report or company's website on a regular basis. Audit on contribution of CSR fund should be carried out together with environmental and social audits through independent external audit team for transparency.

8. KEY RESULTS FROM THE SIA STUDY

The followings are the key findings from primary data collection, secondary data collection, identification and evaluation of social impacts from SIA Team and public meetings. By observing the mentioned facts, it is intended to shape the proposed project according to the communities' desire.

No.	Description	Assessment Methods			
		Primary data collection	Secondary data collection	Public Meetings (Notes from discussions and suggestion letters)	Professional Judgment by SIA Team
Public Concerns					
1.	Impacts on custom of Shan	Most of the villager	-	Yes	Yes
2.	Limits to village boarder	Laut Phan Village	-	-	Yes
3.	Blocking of drainage inside the village	Laut Phan Village	-	-	Yes
4.	Blocking of access roads	Laut Phan Village	-	-	Yes
5.	Blocking of access to jetty	Laut Phan Village	-	-	Yes
Public Needs					
1.	Improvement in waste collection system	All nearest villages	-	Yes	Yes
2.	Support to education	All nearest villages	Yes	Yes	Yes
3.	Donate to religious	All nearest villages	-	Yes	Yes
4.	Support to road construction	All nearest villages	-	Yes	Yes

According to the above tables, it can be concluded that the most public concerns that are agreeable with professional judgments are blocking of access roads, impacts on custom of Shan and limit to village boarder. The most public needs are improvement in waste collection system, support to education, and donation to road construction and religious building to nearest villages.

9. KEY FINDINGS FROM THE SIA STUDY

All of the socio-economic impacts due to the development and operation of proposed hotel can be mitigated to acceptable level with proper mitigation measures. Residual socio-economic impacts after mitigation measures can also be compensated by proposed compensation and CSR programmes. Employment opportunities will be enhanced in the nearby quarters and the developer also intends to contribute CSR fund regularly for the surrounding areas.

10. KEY PUBLIC ATTITUDE ABOUT THE PROPOSED PROJECT

According to the primary data collection and public meetings, most of the local people did not want to put a stop to the proposed project and they just want to minimize adverse impacts due to project development and want to inform and negotiate them before any development of the project.

11. RECOMMENDATIONS

To better run the proposed project in the long term, it is needed to decrease the social impacts while shaping the proposed project to succeed. On the other hand, it is also needed to boost the possible benefits that can have in construction and operation of the project.

12. CONCLUSIONS

Most of the anticipated social impact can be solved by creating job opportunity for local people. Owing to the proposed project, having responsible CSR fund and creating job opportunities for local people will match with the community and it will be a socially responsible project. So, it can be concluded that the development of proposed hotel will have more positive socio-economic impacts rather than negative ones.

APPENDIX I

ATTENDED LISTS FOR FIRST PUBLIC MEETING

အိုင်းဘစ်စတိုင်လ်ဟိုတယ် တည်ဆောက်ခြင်းနှင့်ပတ်သက်၍ ပထမအကြိမ် လူထုတွေ့ဆုံပွဲတက်ရောက်သူများစာရင်း

နေ့စွဲ - ၁၉-၉-၂၀၁၅

စဉ်	အမည်	ရာထူး/ကိုယ်စားပြုအဖွဲ့အစည်း	ဆက်သွယ်ရန်လိပ်စာ/ဖုန်းနံပါတ်	လက်မှတ်
1	ကိုထင်ဆင်	Land ဟိုအောင်ဌာ.		
2	ကို နေတွန်း	ဟိုအောင်ဌာ.		
3	ကိုငြိမ်းကျော်.	ဟိုအောင်ဌာ.		
4	မြိုနယ်ဖွံ့ဖြိုးရေးအဖွဲ့	ကောင်းမွန်ရေး		
5	စုန့်ခြိမ်း ဝဖွန်း	〃		
6	မျိုးဝေ၊ လှိုင်	ဆရာဘမဖ		
7	အေးသောက်ပိုင်	ဆရာတယင်		
8	စိုးမောင်းမောင်းကို	ကောင်းမွန်ရေး		
9	နိုးစင်းတို	〃		
10	ဦးဖိုးဟူအောင်	〃		

အိုင်းဘစ်စတိုင်လ်ဟိုတယ် တည်ဆောက်ခြင်းနှင့်ပတ်သက်၍ ပထမအကြိမ် လူထုတွေ့ဆုံပွဲတက်ရောက်သူများစာရင်း

နေ့စွဲ - ၁၉-၉-၂၀၁၅

စဉ်	အမည်	ရာထူး/ကိုယ်စားပြုအဖွဲ့အစည်း	ဆက်သွယ်ရန်လိပ်စာ/ဖုန်းနံပါတ်	လက်မှတ်
1	ဃ ၆ ဒေး	ကောင်းမွန်ရေး		ဃ ၆ ဒေး
2	မိုးသူရာ	〃		
3	ဦးဆန္ဒမြေ	〃		
4	ဦးသောင်းမျိုးဇို	〃		
5	ကိုဖေဦးဦး	〃		
6	ဝေဝေ	〃		ဝေဝေ
7	ချမ်း	〃		ချမ်း
8	ဦးဝဏ်းဖေ	〃		
9	ဦးပုံးထက်	〃		
10	ဦးနိုင်ဝင်းအောင်	〃		

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နေ့စွဲ - ၁၉-၉-၂၀၁၅

စဉ်	အမည်	ရာထူး/ကိုယ်စားပြုအဖွဲ့အစည်း	ဆက်သွယ်ရန်လိပ်စာ/ဖုန်းနံပါတ်	လက်မှတ်
1	မသွေးသန္ဓာကျော်	ဟိုဆောင်	၀၉-၂၅၇၆၆၁၁၆	သန္ဓာ
2	မဖြူတုပ်	〃		ဖြူ
3	မေမာ	〃		မာ
4	မြို့မြင့်သန်း	〃		မြို့
5	မလှလှဒွေး	〃		လှ
6	မိုးသောင်းဖြိုး	〃	၀၉.၂၅၆၀၄၄၀၆၇	
7	ဦးခိုင်းခေါင်	ဟိုဆောင်ရှေ့	၀၉၂၅၀၉၆၈၄၄၃	
8	ဦးဝင်းဒေါင်	ကောင်းမွတ်	/	ဦးဝင်းဒေါင်
9	ရွှေအိမ်ဝင်း	〃	၀၉၅၄၅၀၄၂၃	ဝင်း
10	ကောင်ခံဝ	— 〃	၀၉၂၅၇၆၂၆၁၈၀	ကောင်ခံဝ

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နေ့စွဲ - ၁၉-၉-၂၀၁၅

စဉ်	အမည်	ရာထူး/ကိုယ်စားပြုအဖွဲ့အစည်း	ဆက်သွယ်ရန်လိပ်စာ/ဖုန်းနံပါတ်	လက်မှတ်
1	ခိုင်းဘက်ဒ်	ကောင်းခွဲးဝဲ့		ဘက်ဒ်
2	နုနုဟန်စဉ့်	ဝေယာဂျာ		ဟန်စဉ့်
3	နုနုမေမည့်	〃		မေမည့်
4	နုနုမေဆဝင်	〃		မေဆဝင်
5	နုနုတ္တလေး	〃		တ္တလေး
6	ခိုင်းဘိုးခိုင်း	〃 〃		
7	ဦးဇင်ဝိုဘော်	ဟိုဘော်	၀၄.40622136	
8	ဦးဝင်းဖိုး	ဆေးဘွဲ့	၂၄၀၇၁၅၀၀၀	
9	ခိုင်းသန်းမွန်	ဘုန်းကြီးကျောင်	40162279B	
10	နုနုဖေပေါ်	ငွေးဟိုး		

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နေ့စွဲ - ၁၉-၉-၂၀၁၅

စဉ်	အမည်	ရာထူး/ကိုယ်စားပြုအဖွဲ့အစည်း	ဆက်သွယ်ရန်လိပ်စာ/ဖုန်းနံပါတ်	လက်မှတ်
၁.	ဦး:ဇေယျသိန်း	ဒေသခံ	၀၇၃၆၀၃၄၄၁၀	ဇေယျသိန်း
၂.	ကြိုင်း:မုန်း:ဖေပြီ	ပရိုဂရမ်	၀၉၄၂၃၁၂၅၄	
၃.	ဦး:သူ ယဉ်ဘဒိုက်	ဒါရိုက်တာ	၀၉-၄၅၅၅၈၉၁၁	
၄.	သွမ်း:	ဖွဲ့:ဟူ့		
၅.	ရိုင်း:အိုင်ဇွန်း	ဟိုဆောင်		အိုင်ဇွန်း
၆.	ဦး:ဇေယျမြတ်	〃 〃		ဦးဇေယျမြတ်
၇.	ဒွိုင်:ဟွတ်ဘို	〃 〃		ဒွိုင်:ဟွတ်ဘို

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နေ့စွဲ - ၁၉-၉-၂၀၁၅

စဉ်	အမည်	ရာထူး/ကိုယ်စားပြုအဖွဲ့အစည်း	ဆက်သွယ်ရန်လိပ်စာ/ဖုန်းနံပါတ်	လက်မှတ်
၁	ဒေါ်စောဝေ	ဖွဲ့:ဟူ့:		စောဝေ
၂	ကြိုဟိုက်ဂါ	〃		
၃	ရိုင်း:အိုက်ဇွန်း	ဟိုဆောင်		
၄	ဒွိုင်:ဒါဒါ:လင်းကျော့	ရှုပ်ဘဒွင်		
၅	ရိုင်း: ဆမ်	ဟိုဆောင်		
၆	ဦး:ဂွက်ဆု	ဖွဲ့:ဟူ့:		

အိုင်းဘစ်စတိုင်လ်ဟိုတယ် တည်ဆောက်ခြင်းနှင့်ပတ်သက်၍ ပထမအကြိမ် လူထုတွေ့ဆုံပွဲတက်ရောက်သူများစာရင်း

နေ့စွဲ - ၁၉-၉-၂၀၁၅

စဉ်	အမည်	ရာထူး/ကိုယ်စားပြုအဖွဲ့အစည်း	ဆက်သွယ်ရန်လိပ်စာ/ဖုန်းနံပါတ်	လက်မှတ်
၁	ဦး:ဇေယျမြတ်	ဖွဲ့:ဟူ့:		
၂	ဦး:အိုက်ဇော်ကျော်	〃		
၃	[illegible]	ဖွဲ့:ဟူ့:	၀၇,၃၆၀၀၈၈၈၂	
၄	[illegible]	[illegible]	၀၉၂၅၆၅၀၀၉၁၂	
၅	[illegible]	[illegible]	၀၅-၂၅၆၅၅၀၃၃၁	
၆	ဦး ဝင်း ဦင်	[illegible]	၀၉-၂၆၁၃၆၇၄၇	
၇	ဦး:စာရဲ့မွန်	[illegible]	၀၅-၂၅၅၁၀၅၀၃၅	
၈	[illegible]	[illegible]	၀၅-၄၄၅၁၀၄၇၀၀	
၉	[illegible]	ဖွဲ့:ဟူ့:		
၁၀	[illegible]	〃		

အိုင်းဘစ်စတိုင်လ်ဟိုတယ် တည်ဆောက်ခြင်းနှင့်ပက်သက်၍ ပထမအကြိမ် လူထုတွေ့ဆုံပွဲတက်ရောက်သူများစာရင်း

နေ့စွဲ - ၁၉-၉-၂၀၁၅

စဉ်	အမည်	ရာထူး/ကိုယ်စားပြုအဖွဲ့အစည်း	ဆက်သွယ်ရန်လိပ်စာ/ဖုန်းနံပါတ်	လက်မှတ်
၁.	ဒေါ်ဆင်လှလှ	ကောင်စီဝင်	09 501212 3	
၂.	မြ	မြေးဘုန်း		
3.	ဒေါ်၀၀	မြေးဘုန်း		
4.	ဦးကောင်းမောင်	လက်ဖက်ရည်ဆိုင်ရှင်၊ ကြိုးကိုင်သမား	09. 260 621 ငါး 7	
5.	မိုင်းဆွန်ခေ.	MCRC	09-421716017	
6.	မိုင်းခွန်ကျော်	Great Hor Kham Co,Ltd	09.5233397	
7.	ဒေါ်ဝါဝါချို	ဆရာဖြစ်၊ပန်းကိုင်	09 - 40873 62759	
8.	ခုဉီးစုလွှမ်း	ငပျဉ်ဟိုဒီး	153686993!!	
9.	ကိုးဖြူ	—	13368828284	
10	ခြင်း ၀၃ဒန်း ကိုင်			ဒဋ၀၃ဒန်းကိုင်

အိုင်းဘစ်စတိုင်လ်ဟိုတယ် တည်ဆောက်ခြင်းနှင့်ပက်သက်၍ ပထမအကြိမ် လူထုတွေ့ဆုံပွဲတက်ရောက်သူများစာရင်း

နေ့စွဲ - ၁၉-၉-၂၀၁၅

စဉ်	အမည်	ရာထူး/ကိုယ်စားပြုအဖွဲ့အစည်း	ဆက်သွယ်ရန်လိပ်စာ/ဖုန်းနံပါတ်	လက်မှတ်
၁.	ချောစုဝင်း	ကောင်စီဝင်	09 125340 6706	
၂.	ဦးမြင့်ဝေ	ရပ်ကွက်ခေါင်းဆောင်		
3.	ဦးသိန်းဖိုး	〃	09-30131189	
4.	ဒေါ်ခင်ဦး	လုပ်ငန်းတွေး ကောင်စီဝင်	09- 7970697597	
5.	ကျော်မော်နိုးထက်	ကောင်စီဝင်	09-ဧ၉၆၉၇၃၀၇	
6.	ဒေါ်ဖြူဖြူဖေး	A/c (NSL)	09- 428152810	
7.	ဒေါ်ဟေမာနုပိုးဝ	NSL		
8.	ဦးမောင်ခန့်ကျော်	ကောင်စီဝင်	09 - 444036980	
9.	ဦးစောမဲ၀င်းလတ်	ကောင်စီဝင်	09-790602731	
10.	ဦးနေလင်းထွန်း	ကောင်စီဝင်	09. 252322814	

အိုင်းဘစ်စတိုင်လ်ဟိုတယ် တည်ဆောက်ခြင်းနှင့်ပတ်သက်၍ ပထမအကြိမ် လူထုတွေ့ဆုံပွဲတက်ရောက်သူများစာရင်း

နေ့စွဲ - ၁၉-၉-၂၀၁၅

စဉ်	အမည်	ရာထူး/ကိုယ်စားပြုအဖွဲ့အစည်း	ဆက်သွယ်ရန်လိပ်စာ/ဖုန်းနံပါတ်	လက်မှတ်
1.	မြင့်အောင်ထွဋ်	Sr. Supervisor / NSL	၀၉၄၃၁၄၀ ၄၂၆	
2.	ကိုလှဝင်းလွင်	ဟိုဆောင်	၀၉၂၆ ၃၄၂၀၀	
3.	မေတ္တလ:	ဟိုဝေဆာင်		တ၀လ:
4.	ဦး ဖြုန့်	ဟိုဝေဆာင်	စစ ၂၅ ၈၅၃၅ ၀၂၄	ဖြုန့်
5.	ဒေဝသီတ၀င်:	ဟိုဝေဆောင်		၀င်:
6.	စိုးမိုးမိုင်:	ဟိုဝေဆောင်	၀၉.၇၁၃၃၆၃၄၃	ခင်
7.	ထွန်းနိုင်ဝင်း	ကောင်းမှုတံ့	၀၉.၂၅၃၆၀၁၁၆	
8.	ဒီလတ်	ကောင်းမှုတံ့	၀၉၇၈၆၆၅၀၂၆	
9.	ကွလာ:	11		ကွလာ:
	ဒေါ်ဒေါ်:	11	၀၉-၄၀၀၅၄၀၃၀	ဒေါ်

အိုင်းဘစ်စတိုင်လ်ဟိုတယ် တည်ဆောက်ခြင်းနှင့်ပတ်သက်၍ ပထမအကြိမ် လူထုတွေ့ဆုံပွဲတက်ရောက်သူများစာရင်း

နေ့စွဲ - ၁၉-၉-၂၀၁၅

စဉ်	အမည်	ရာထူး/ကိုယ်စားပြုအဖွဲ့အစည်း	ဆက်သွယ်ရန်လိပ်စာ/ဖုန်းနံပါတ်	လက်မှတ်
1	ဦး ဇွဲဇို	ဗြဟ္မစိုရ်: နိုင်ငံတကာ NSL	09.5182075	
2	ဦးကျော်ဇိုးဝင်း	မော်ရှာမွန်း-ဒီဇိုင်းတကာ၊ GMES ကော်,လ်တ်	၀၉-၅၀၈၁၄၅၁	
3	ဦးကြော်ကို	NSL	09.250135371	
4	ဦးဒင်ဇော်ဝင်း	GMES	09-430667411	
5	ဒေါ်.ကြိုးသူအောင်	GMES	09-401595030	
6	Dr. ခိုင်ဖွာ	ဦးဘိအောန္ဒ - Y T U.	၀၉-၄၀၂၆၇၅၈၂၅	
7	ဦးတင်အောင်ကျော်	Environmental Consultant	09 5197 3868	
8	ကဘင်ထွန်	ဦးမှာ NSL (မန်းလေး)	၀၉၁ ၅၂၁၃၀၇၉	
9	ဦးဖျိုးပျို့ဆန်း	Hr&Adm Mgr (MCBB)	09-259124373	19/9/15
10	ဦးတင်ဦး	NSL	09.253233618	19.9.15

အိုင်းဘစ်စတိုင်လ်ဟိုတယ် တည်ဆောက်ခြင်းနှင့်ပတ်သက်၍ ပထမအကြိမ် လူထုတွေ့ဆုံပွဲတက်ရောက်သူများစာရင်း

နေ့စွဲ - ၁၉-၉-၂၀၁၅

စဉ်	အမည်	ရာထူး/ကိုယ်စားပြုအဖွဲ့အစည်း	ဆက်သွယ်ရန်လိပ်စာ/ဖုန်းနံပါတ်	လက်မှတ်
၂၁.	ခမဲအော(ကသဆောဂြိ	ဒေသ.ပဋိ	15687563171.	
၂၂.	ဦးစိုးထွန်းအော	"	62224488	
၂၃.	နုနုမြင့်အော	"		
၂၄.	နုနုစံမိုး	"		
၂၅.	နုနုဒေလောဟ	"		
၂၆.	နုနုမြင့်ဆက်	"		
၂၇.	ဦးလှိုင်ဇော်	ဟိုဖွန်	09450116174	
၂၈.	ဒေါ်အေးခေါင်	မွန်းဟဉ်း	094922631	
၂၉.	စိုင်းကျော်မင်း	ဒေသ ပဋိ	09-251239625	
၃၀.	စိုင်းစိုင်ဆောက်	ဒေသ-မဉ်း	133988230 12	

အိုင်းဘစ်စတိုင်လ်ဟိုတယ် တည်ဆောက်ခြင်းနှင့်ပတ်သက်၍ ပထမအကြိမ် လူထုတွေ့ဆုံပွဲတက်ရောက်သူများစာရင်း

နေ့စွဲ - ၁၉-၉-၂၀၁၅

စဉ်	အမည်	ရာထူး/ကိုယ်စားပြုအဖွဲ့အစည်း	ဆက်သွယ်ရန်လိပ်စာ/ဖုန်းနံပါတ်	လက်မှတ်
၁၁.	ဆန်းမင်းထွဋ်	ရပ်စီ/ရပ်ဖ	ကောင်းစုတဲ့	
၁၂.	မြိုးအောင်ဟန်	ရဟိန်/ရပ်ဖ	ဆောင်းပွဲတဲ့	
၁၃.	ဖိုလ်သင်	ကပ်မိ/ကပ်ဖ	ဒကောင်မွဲတဲ့	
၁၄.	ကံလင်းခိုး	"	"	
၁၅.	ကောင်စိုးဝင်း	ကပ်မိ/ကပ်ဖ	ဒကောင်မွဲတဲ့	
၁၆.	ဦးထက်ခေတော်	ရန်မီ/ရပ်ဖ	ကောင်းမှုတဲ့	
၁၇.	ဝေဝိန်း	"	"	
၁၈.	စွမ်	"	"	
၁၉.	ရဲဝကျော်သူ	"	"	
၂၀.	အောင်ဦးဝေလင်း	"	"	

အိုင်းဘစ်စတိုင်လ်ဟိုတယ် တည်ဆောက်ခြင်းနှင့်ပက်သက်၍ ပထမအကြိမ် လူထုတွေ့ဆုံပွဲတက်ရောက်သူများစာရင်း

နေ့စွဲ - ၁၉-၉-၂၀၁၅

စဉ်	အမည်	ရာထူး/ကိုယ်စားပြုအဖွဲ့အစည်း	ဆက်သွယ်ရန်လိပ်စာ/ဖုန်းနံပါတ်	လက်မှတ်
21.	ဦးမောဘဲဝဏ္ဏ	ရပ်မြို့ပြ ၁	ဆောက်ရွာက်	
22.	ဒေါ်ခုနှစ်-ကြွယ်ဟန်	"	စတော်ရွာက်	
23.	ဦးဝင်းလိုလို	"	တောင်ရွာက်	
24.	ဦး ဆာဒွေး		ငပွဲ ဟုန်	
25.	ဒေါ်နုနု ဒွေထွေ	ဟိုတယ်ဘေးအိမ်ထောင်စုများ	မူကား	
26.	ဦးအိုက်ကွမ်		ဖွေးဟုန်	
27.	ဦးဟန်ကာလင်း	ဟို တယ် / အကြီ	09 25607 1354	
28.	နုနုသန်းဌေး	"	ငွေ ဟန်	သန်းဌေး
29.	ကသင်ဇွမ်		"	ဇွာ
30.	အိုက်ခမိန်		"	

အိုင်းဘစ်စတိုင်လ်ဟိုတယ် တည်ဆောက်ခြင်းနှင့်ပက်သက်၍ ပထမအကြိမ် လူထုတွေ့ဆုံပွဲတက်ရောက်သူများစာရင်း

နေ့စွဲ - ၁၉-၉-၂၀၁၅

စဉ်	အမည်	ရာထူး/ကိုယ်စားပြုအဖွဲ့အစည်း	ဆက်သွယ်ရန်လိပ်စာ/ဖုန်းနံပါတ်	လက်မှတ်
31	ကေအိုင်	ဖွေး ဟုန်	15887532638	
32	ဖြိုးအေး ကော	ဖွေးဖြိုး		
33	ဦးလှိုင်ဦးကြီး	လယ်ယာစိုက်ပျိုးရေးဦးစီးဌာန	09449227303	
34	ဂျုံ ဆောင်ဝင်း	တောင်ကြီးကြီး မီးသတ်ဦးစီးဌာန		
35	နုနုသောဝေ	ဟိုဆောင်	09 - 403712997	
36	မိုင်းကွမ်းမိုင်း	မဟိဆောင်	15755970150	
37	မိုင်းကွမ်းခမ်	မဟိဆောင်	09-256647370	
38	ငဒွာ ခမ်းလင်း	ဖွေး ဟုန်	14787337504	ခမ်းလင်း
39	ခမ်းမိုင်		15368826894	
40				

အိုင်းဘစ်စတိုင်လ်ဟိုတယ် တည်ဆောက်ခြင်းနှင့်ပက်သက်၍ ပထမအကြိမ် လူထုတွေ့ဆုံပွဲတက်ရောက်သူများစာရင်း

နေ့စွဲ - ၁၉-၉-၂၀၁၅

စဉ်	အမည်	ရာထူး/ကိုယ်စားပြုအဖွဲ့အစည်း	ဆက်သွယ်ရန်လိပ်စာ/ဖုန်းနံပါတ်	လက်မှတ်
1.	ဦးလှငုံဦး	ရပ်မိ ရပ်စ	ဟိုခေတာင်	
2.	ကိုစောဘုံး	〃	〃	
3.	ကိုကျော်ဝိုးနိုင်	〃	〃	
4.	တို ဒွေမင်ဦး	〃	〃	
5.	ဦးသန်းစိုး	〃	〃	
6.	ကိုဝိုင်ကိုဝင်း	〃	〃	
7.	ကိုဝဏ်းထွဋ်	〃	ကောင်းကွတဲ့	
8.	ဘဒ္ဒန္တ တာပုံ	〃	〃	
9.	ကိုကျော်ဝိုင်ဝတ္ထွဋ်	〃	〃	
10.	ကိုမြင့်ခိုက်	〃	〃	

အိုင်းဘစ်စတိုင်လ်ဟိုတယ် တည်ဆောက်ခြင်းနှင့်ပက်သက်၍ ပထမအကြိမ် လူထုတွေ့ဆုံပွဲတက်ရောက်သူများစာရင်း

နေ့စွဲ - ၁၉-၉-၂၀၁၅

စဉ်	အမည်	ရာထူး/ကိုယ်စားပြုအဖွဲ့အစည်း	ဆက်သွယ်ရန်လိပ်စာ/ဖုန်းနံပါတ်	လက်မှတ်
11	ဦးဇော်တွေ့	ရပ်မိ	၀၅.၄၈၀၆၊၄၄	
12	မေငြန်းမို့	ကောင်းကွတဲ့		မေငြန်းမို့
13	ဦးအောင်ကိုဦး ဝင်း	〃 〃		Aye
14	ဦးသန်းဆောက်အောင်	〃 〃		
15	ဦးကျော်ထွဋ်ဦးဇင်		၀၅-၂၅၄၀၂၄၂၃၀	
16	ဒုတိယဥက္ကဋ္ဌ	ကောင်းကွတဲ့		
17	လေမြင့်	ဖွေးတူန်း		
18	ဦးခိုင်းဦးအောင်	ရပ်ရွာ.ကျောင်းကျန်းမာရေးအဖွဲ့		
19	ဦးဝင်းမောင်ဝင်း	ဦးဒဲ: မန္တလေး ၊ ကျပ်ဒဂုံ	၀၅-၄၃၀၀၅၆၃၁	
20	ဒေါ်ခေး မြဖြိုး	ကောင်းကွတဲ့	၀၅-၄၀၂၆၆၅၀၈၃	

အိုင်းဘစ်စတိုင်လ်ဟိုတယ် တည်ဆောက်ခြင်းနှင့်ပက်သက်၍ ပထမအကြိမ် လူထုတွေ့ဆုံပွဲတက်ရောက်သူများစာရင်း

နေ့စွဲ - ၁၉-၉-၂၀၁၅

စဉ်	အမည်	ရာထူး/တိုင်းစားပြုအဖွဲ့အစည်း	ဆက်သွယ်ရန်လိပ်စာ/ဖုန်းနံပါတ်	လက်မှတ်
31.	ဦးစိုင်းလျှံ	ဖွေးတုန်း		
32.	ဒေါ်ကော်သင်းဝေ	ဒေသခံ အသက်ကြီးရွယ်အို	ရပ်ခေါ်ရွာ	
33.	ဦးကျော်ထွန်း	ဒေသခံ အသက်ကြီးသူ	ကြီးကြာတွေ	
34.	ဦးတင်ကိုကို	အမှုဆောင်အရာရှိ	ဖြူနွယ်စည်ပင်	
35.	ဆိုင်းဆိုင်ဝမ်း	တာဝန်ခံဒေသခံခေါင်းဆောင်	ပင်းတော်	
36.	ဇွန်းမဲငင်	ပရိသတ်	ပရိသတ်	
37.	နှင်းဇော်ဝင်းခိုင်	ပရိသတ်	ပရိသတ်	
38.	ဦးကျော်ဆင်း	ပရိသတ်		ဦးကျော်ဆင်း
39.	ခိုင်းအုံးလော	ပရိသတ်		
40.	ဆိုင်းဝိုက်ဝင်း	ပရိသတ်		

APPENDIX II

KEY DISCUSSIONS FROM FIRST PUBLIC MEETING

စဉ်	တင်ပြဆွေးနွေးသူ / အဓိကဆွေးနွေးချက်များ
၁။	**ဦးတင်ငွေ (IBIS Style Hotel)** ❖ IBIS Style Hotel တည်ဆောက်မည့် မြေနေရာအနေအထား၊ အကျယ်အဝန်းနှင့် အဆင့်သတ်မှတ်ချက်၊ ပါဝင်တည်ဆောက်မည့် အခန်းအရေအတွက်၊ အထပ်အလိုက်ထည့်သွင်း တည်ဆောက်သွားမည့် fitness center, spa, coffee shop များနှင့် ကားပါကင်ပါဝင်မှုများအား အကျယ်တဝင့် ရှင်းလင်းတင်ပြသွားပါသည်။ ❖ ထပ်မံ၍ ရေဆိုးသန့်စင်စနစ်တည်ဆောက်မည့်အခြေအနေနှင့် ဓာတ်လှေကားတပ်ဆင်မည့် အစင်းရေ၊ ဝန်ထမ်းများနေထိုင်ရန်အဆောင် စီစဉ်ထားရှိမှုများအား ရှင်းလင်းတင်ပြသွားပါ သည်။
၂။	**ဦးကျော်စိုးဝင်း Managing Director (GMES)** ❖ သဘာဝပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်း ပြုလုပ်ရခြင်းရည်ရွယ်ချက်၊ နိုင်ငံတော်မှပတ်ဝန်းကျင်ထိန်းသိမ်းရေး ဆောင်ရွက်နေမှုများ၊ သဘာဝ ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်းလုပ်ငန်းစဉ်၊ တတိယအဖွဲ့အစည်း၏ဆောင်ရွက်မည့်လုပ်ငန်းစဉ်၊ ဟိုတယ်စီမံကိန်းမှ ဆောင်ရွက်လျက်ရှိသော လုပ်ငန်းစဉ်များအား ရှင်းလင်းတင်ပြသွားပါသည်။ ❖ စီမံကိန်းများတည်ဆောက်ရာတွင်ဒေသခံများနှင့်လုပ်ငန်းရှင်များကြားတွင် ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်မှုများအား တတိယအဖွဲ့အစည်းအနေဖြင့် သုံးသပ်ချက်အစီရင်ခံစာပြုစုပြီး နိုင်ငံတော်အားတင်ပြသွားမည်ဖြစ်ကြောင်း၊ ပတ်ဝန်းကျင်ဂေဟစနစ်များ ပျက်စီးမှုမရှိစေရန် ဆောင်ရွက်ရမည့် နည်းလမ်းများအားဖော်ထုတ်နိုင်ရန် ဆန်းစစ်ခြင်းပြုလုပ်ရခြင်းဖြစ်ကြောင်း၊ နိုင်ငံတော်မှ ထုတ်ပြန်ထားသော ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဆိုင်ရာ ဥပဒေများပြဋ္ဌာန်းထားမှုများ ရှေးဦးစွာရှင်းလင်းတင်ပြပြီး၊ ဆက်လက်၍ပတ်ဝန်းကျင်ဆိုင်ရာဆန်းစစ်ရမည့် အဓိကအကြောင်းအချက်များ၊ တတိယအဖွဲ့အစည်း လုပ်ငန်းတာဝန်များနှင့် ပညာရှင်များပါဝင်မှု၊ ဆန်းစစ်မည့်လုပ်ငန်းစဉ်များဖြစ်သော ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်းလုပ်ငန်းများ၊ လူမှုရေးထိခိုက်မှု ဆန်းစစ်ခြင်းလုပ်ငန်းများ၊ ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုအစီအစဉ်ရေးဆွဲသောလုပ်ငန်းစဉ်များ ဆောင်ရွက်မှု၊ စွန့်ပစ်ရေစီမံခန့်ခွဲရေးဆိုင်ရာ ဆောင်ရွက်ချက်များအား

စဉ်	တင်ပြဆွေးနွေးသူ / အဓိကဆွေးနွေးချက်များ
	ရှင်းလင်းတင်ပြသွားပါသည်။ ❖ ထပ်မံ၍ စီမံကိန်းဆိုင်ရာအချက်အလက်များအားဆန်းစစ်ခြင်း၊ တည်ဆောက်ရေးကာလနှင့်လည်ပတ်ချိန်တွင် ထိခိုက်လာနိုင်သည့်အချက်အလက်များအားဖော်ထုတ်ခြင်းလုပ်ငန်းစဉ်များနှင့် ပတ်ဝန်းကျင်ထိခိုက်နိုင်မှုလျော့နည်းစေရန် လုပ်ဆောင်မှုများအား စောင့်ကြည့်ရမည့် အစီအမံများ ရေးဆွဲရမည့် အချက်အလက်များအား အသေးစိတ်ဆွေးနွေးတင်ပြသွားပါသည်။
၃။	**ဒေါက်တာကျော်စွာတင့် (Team Leader, SIA Group)** ❖ လူမှုဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်းဆိုင်ရာ လုပ်ငန်းစဉ်များအကြောင်း၊ တတိယအဖွဲ့၏ လုပ်ငန်းတာဝန်များ၊ ဒေသခံလူထု၏ စီမံကိန်းအပေါ်ထားရှိသောသဘောထား စစ်တမ်း ကောက်ယူခြင်း လုပ်ငန်း၊ ❖ ဟိုတယ်တည်ဆောက်မှုကြောင့် ပတ်ဝန်းကျင်ရှိဒေသခံ လူထုအပေါ်ထိခိုက်လာနိုင်မှုများ၊ ❖ လူမှုပတ်ဝန်းကျင်ထိခိုက်မှုများလျော့နည်းသက်သာစေရန်ဆောင်ရွက်ရမည့်နည်းလမ်းများနှင့်ဆောင်ရွက်ချက်များအပေါ်စောင့်ကြည့်ရမည့်အစီအစဉ်များ ❖ လူမှုဝန်းကျင်ထိခိုက်နိုင်မှုအား လေ့လာရာတွင် ဒေသခံလူထုပါဝင်မှု၏အရေးပါပုံများအား အသေးစိတ်ဆွေးနွေးတင်ပြသွားပါသည်။

တွေ့ဆုံပွဲအတွင်းတက်ရောက်လာသူများမှဆွေးနွေးချက်များနှင့်သက်ဆိုင်သူများမှပြန်လည်ဖြေကြားချက်များ

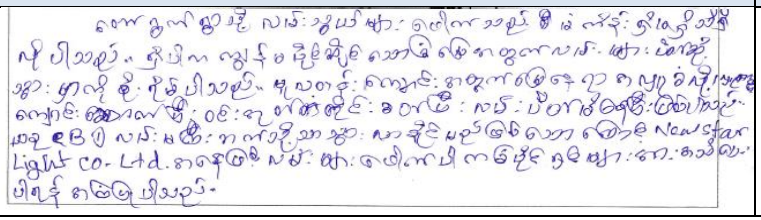
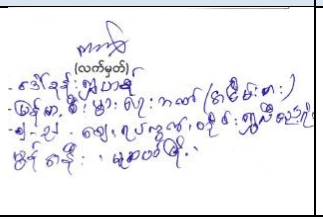
စဉ်	ဆွေးနွေးသူ / အဓိကဆွေးနွေးချက်များ	ပြန်လည်ဖြေကြားသူ/ဖြေကြားချက်
၁။	**ဦးစိုင်းထွန်းအောင် (ပြည်သူ့လွှတ်တော်ကိုယ်စားလှယ်)** ▪ ဟိုတယ်၏အခန်းပါဝင်မှုသည် ၂၀၀ကျော်ဖြစ်သဖြင့် ရွာတစ်ရွာစာမျှရှိပါကြောင်း၊ ရေဆိုးစွန့်ပစ်ထုတ်မှုစနစ်အား တည်ဆောက်ရေးကာလတွင် ဆွေးနွေးကောင်းရုံမျှမဟုတ်ဘဲ အမှန်တကယ် တည်ဆောက်အသုံးပြု သွားရန်လိုအပ်ပါကြောင်း၊	**ဦးကျော်စိုးဝင်း Managing Director (GMES)** ➢ စီမံကိန်းလုပ်ငန်းများအား ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ရာတွင် လည်ပတ်စဉ်ကာလ စောင့်ကြည့်ရေးအဖွဲ့နှင့် စောင့်ကြပ်ကြည့်ရှုရေးအစီအစဉ်များ ထည့်သွင်းရေးဆွဲရပါကြောင်းနှင့် တည်ဆောက်ရေးကာလတွင် တင်ပြသကဲ့သို့ မဟုတ်ပါက အရေးယူနိုင်ပါကြောင်း ဆွေးနွေးသွားပါသည်။

စဉ်	ဆွေးနွေးသူ / အဓိကဆွေးနွေးချက်များ	ပြန်လည်ဖြေကြားသူ/ဖြေကြားချက်
	▪ ဟိုတယ်အနီးအနားရှိ ဒေသခံများ၏လေ့ထုံးတမ်းများသည် ယခုအချိန်အထိ ပျက်ပြယ်ခြင်းမရှိသေးသောအလေ့အထများရှိပါကြောင်း၊ သို့ပါ၍ ယဉ်ကျေးမှုအမွေအနှစ်ဆိုင်ရာ ထိန်းသိမ်းရန် လိုအပ်ပါကြောင်း၊ ဟိုတယ်တည်ဆောက်မှုဒီဇိုင်းအား လေ့လာရာတွင် ယဉ်ကျေးမှုအမွေအနှစ်ဆိုင်ရာနှင့်ပက်သတ်၍ ထည့်သွင်းထားမှု နည်းပါးသည်ကို တွေ့ရှိပါကြောင်း၊ နိုင်ငံတကာဟိုတယ်များအား လေ့လာကြည့်ပါက ထိုသို့ဒေသဆိုင်ရာအထိမ်းအမှတ်များအား အလေးထားထည့်သွင်း တည်ဆောက်လေ့ရှိပါကြောင်းနှင့် ယခုဟိုတယ်တွင်လည်း ယဉ်ကျေးမှုအမွေအနှစ်ဆိုင်ရာ ပြယုတ်များ ထည့်သွင်းတည်ဆောက်ရန် အရေးကြီးပါကြောင်း ဆွေးနွေးသွားပါသည်။	**Dr. ကျော်စွာတင့်** ➢ ယဉ်ကျေးမှုအမွေအနှစ်များထိန်းသိမ်းရေးနှင့် ဒေသယဉ်ကျေးမှုများ ဖော်ထုတ်ရန် ဟိုတယ်အတွင်း ယဉ်ကျေးမှုပြကွက်များ ထည့်သွင်းတည်ဆောက်သွားရန် စီမံကိန်း အကောင်အထည်ဖော်ဆောင်ရွက်မည့်သူများအား အကြံပြုသွားမည်ဖြစ်ကြောင်း ဆွေးနွေးသွားပါသည်။
၂။	**ဦးခိုင်ဇော်လင်း (ဟိုတယ်/ခရီး)** ▪ Sustainable Development ဖြစ်ရေးသည် ဌာန၏ရည်မှန်းချက် ဖြစ်ပါကြောင်း၊ သို့ဖြစ်ပါ၍ ဟိုတယ်၏ရေရှည်ထိန်းသိမ်းမှုနှင့် ပတ်ဝန်းကျင်ထိခိုက်မှု စောင့်ကြည့်ရေးအစီအစဉ်နှင့်ပတ်သက်၍ အသေး စိတ်ပိုမိုသိရှိလိုပါကြောင်း ဆွေးနွေးမေးမြန်းသွားပါသည်။	**ဦးကျော်စိုးဝင်း Managing Director (GMES)** ➢ ပတ်ဝန်းကျင်ထိခိုက်မှုလေ့လာရာတွင် ပထမဦးစွာ Baseline Data ဖြစ်သော ပတ်ဝန်းကျင်၏မူလအနေအထားအရည်အသွေးအား လေ့လာရပါကြောင်းနှင့် ဆက်လက်၍ မူလအနေအထားပျက်ယွင်းမှုမရှိစေရေး အစီအမံများ ထည့်သွင်းရေးဆွဲရပါကြောင်း၊ ➢ စောင့်ကြပ်ကြည့်ရှုရေးအဖွဲ့အား လည်း ဒေသဆိုင်ရာအာဏာပိုင်များ၊ ဒေသခံကိုယ်စားလှယ်များ ပါဝင်သောအဖွဲ့အဖြစ် ဖွဲ့စည်းပြီး လုပ်ငန်းအား စောင့်ကြပ်ကြည့်ရှုပြီး လိုအပ်ပါက အရေးယူဆောင်ရွက်နိုင်ပါကြောင်း ရှင်းလင်းတင်

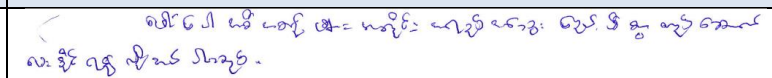
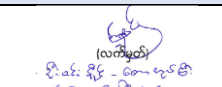
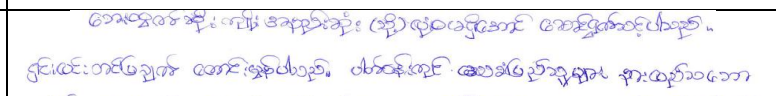
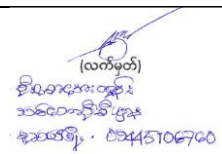
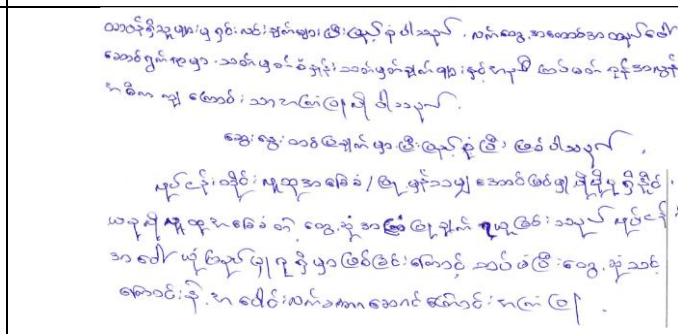
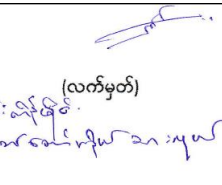
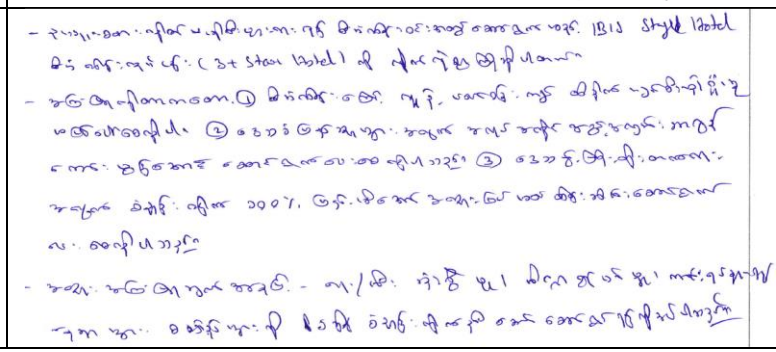
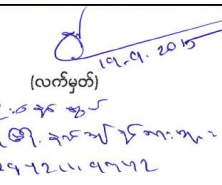
စဉ်	ဆွေးနွေးသူ / အဓိကဆွေးနွေးချက်များ	ပြန်လည်ဖြေကြားသူ/ဖြေကြားချက်
		ပြသွားပါသည်။
၃။	**ဦးတင်ငွေ (IBIS Style Hotel)** ▪ New Starlight Construction Co. Ltd မှ တာဝန်ယူတည်ဆောက်မည့် ဟိုတယ်စီမံကိန်းနှင့်ပတ်သက်၍ ဆွေးနွေးပေးသွားပါသော ကိုယ်စားလှယ်ကြီးနှင့် ဌာနဆိုင်ရာတာဝန်ရှိသူများ ရပ်မိရပ်ဖများအား ကျေးဇူးတင်ရှိပါကြောင်း၊ ဆက်လက်ဆောင်ရွက်ရမည် စီမံကိန်းနှင့်ပတ်သတ်သော လုပ်ငန်းစဉ်များအား လည်း ယခုအကြံပြုချက်များအား အလေးထားထည့်သွင်း ဆောင်ရွက်သွားမည်ဖြစ်ကြောင်း ပြောကြားခဲ့ပါသည်။	

စာဖြင့်အကြံပြုဆွေးနွေးမှုများနှင့်ပြန်လည်ဖြေကြားချက်များ

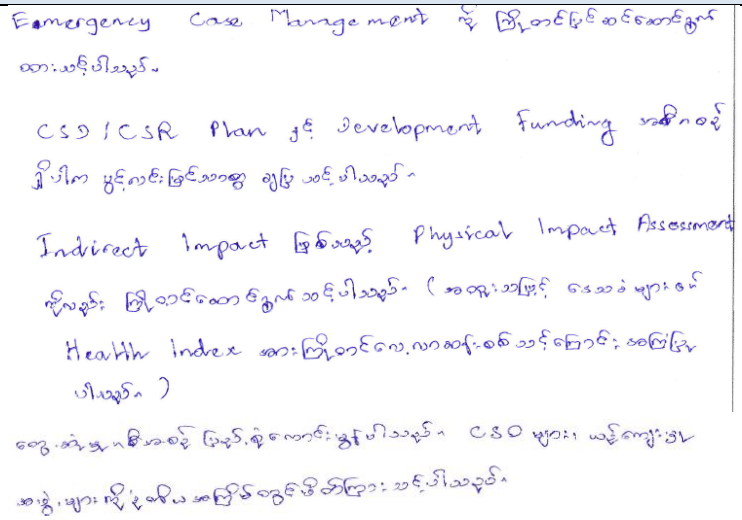
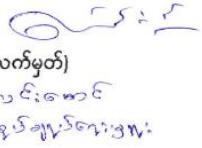
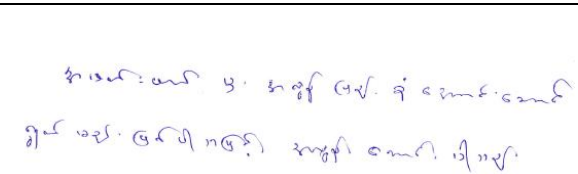
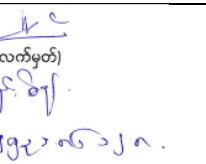
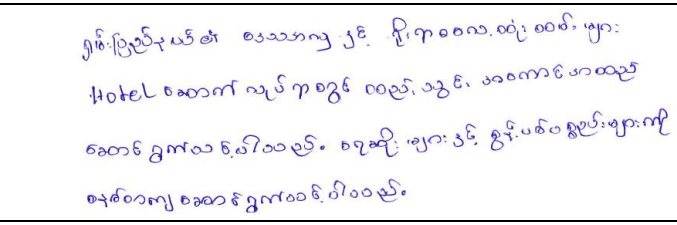
ပထမအကြိမ်လူထုတွေ့ဆုံပွဲတွင် စာဖြင့်အကြံပြုဆွေးနွေးချက်များနှင့် သက်ဆိုင်ရာပုဂ္ဂိုလ်အသီးသီးမှ ပြန်လည်ဖြေကြားချက်များမှာ အောက်ပါအတိုင်းဖြစ်ပါသည်။

စဉ်	အကြံပြုချက်	အကြံပြုဆွေးနွေးသူ	ပြန်လည်ဖြေကြားသူ/ဖြေကြားချက်
၁။			**ဦးမောင်စိန်** **Director, New Starlight Construciton Co., Ltd.** ➢ လမ်းများဖောက်လုပ်ရန်အစီအစဉ်မရှိသေးပါ။

စဉ်	အကြံပြုချက်	အကြံပြုဆွေးနွေးသူ	ပြန်လည်ဖြေကြားသူ/ဖြေကြားချက်
၂။	ဟိုတယ်တည်ဆောက်ရာတွင် • ဒေသ ဝန်းကျင်၊ ဆိုက်ရှာ ယခင်ကလူမှုစီးပွားရေး အခြေအနေများ ပါဝင်ဆောင်ရွက်သည့်အပြင် ဒီဇိုင်းပြုလုပ်သည့်။ ဟိုတယ်လုပ်ငန်းလည်ပတ်ရာတွင် • ရွှန်းပစ်ပစ္စည်းများနှင့် ရေဆိုးများသည့် ကျွန်းမာရေးနှင့် လူမှုရေး ဆိုင်ရာ ပြဿနာများ ဖြစ်ပွားစေသည့် ဂတွက် ထိုင်းဘို စနစ်တကျ စီမံခန့်ခွဲနိုင်ရန် လိုအပ်သည်။ • အလုပ်ဂကိုင်အခွင့်အလမ်းများကို ဦးစားပေးသင့်သည်။ • ဒေသခံများသည် ဟိုတယ်လုပ်ငန်းနှင့် စပ်လျဉ်းဖြီး လုံခြုံဆိုတွေ့များ သူများမပေးသည့်အတွက် ပစ္စည်း/ခရီးသွားဆိုင်ရာ ဂိုက်ဒ်များ အဆောက်အဦးများတွင် ဘေးအန္တရာယ်များ ကာကွယ်ရေးစီမံခန့်ခွဲမှုစနစ်များ အများအသုံးပြုနိုင်ရန် အခွင့်အရေးများ၊ အတွက် သက်ဆိုင်ရာ လုပ်ငန်းခွင်အာဘာဂျပ်အဆိုက် သင်တန်းများ ပို့ချ ပေးရန်၊ ပေးခြင်းစားဖြင့် ဖိုးဆောင်/ဆွဲဆောင်/တွဲဆက်ပြုလုပ် ဒေသခံများကား အခွင့် အလမ်း ဖန်တီး ပေးသင့် ပါသည်။	(လက်မှတ်) ဖိုးဒင်းဘွဲ့ကျော် ကျွမ်းကျင် စက်ပြင်း ၀၅-5233397	**ဦးမောင်စိန်** **Director, New Starlight Construciton Co., Ltd.** ➢ ဒေသယဉ်ကျေးမှုအငွေ့အသက်များဟိုတယ်တည်ဆောက် ပြီးစီးပါက ထည့်သွင်းသွားရန်စီမံထားရှိပါသည်။ ➢ စွန့်ပစ်ပစ္စည်းများနှင့်ရေဆိုးများအားစနစ်တကျ စွန့်ပစ်နိုင်ရန် စီမံထားရှိပါသည်။ ➢ သတ်မှတ်အရည်အချင်းနှင့်ကိုက်ညီသောဒေသခံများအား ဦးစားပေးခန့်ထားပေးပါမည်။ ➢ အလုပ်အကိုင်အခွင့်အလမ်းများဖန်တီးပေးသွားပါမည်။
၃။	* ICC ၏ Green Building Code နှင့် မိုးကြိုးဖြစ်ပေါ်ပေး ဆောက်ပါသည်။ Green Construction Code	(လက်မှတ် ဖိုးဒင်းဘွဲ့ဦး MCRC Manager 09-421716017	**ဦးမောင်စိန်** **Director, New Starlight Construciton Co., Ltd.** ➢ ဟိုတယ်အားနိုင်ငံတကာစံသတ်မှတ်ချက်များနှင့်အညီ ဆောက်လုပ်သွားပါမည်။
၄။	ဟောတယ်ဆောက်လုပ်ခြင်းကြောင့် ပါဂ၊ ဝေယျာဝစ္စကံသည့် ပုဂ္ဂိုလ်များ ဂလုပ်ငန်းကြောင့် ဆေးလိပ်သောက်သုံးခြင်းကြောင့် ဖြစ်ပေါ်လာသော ပြဿနာများ၊ ဥပဒေများ၊ ဂတွက် ဂရပ်ပေးသွားမည်။ ဂဆွေးနွေးပွဲများ ပြုလုပ်ခြင်း၊ ဂလုပ်ငန်းခွင်ရှိ ဝန်ထမ်းများ သွယ်ဂရယ်လည်းကောင်း ဂရှင်းပြခဲ့ပါသည်။ အဖွဲ့အစည်းများအတွက် ဂရပ်ပေးသွားမည်။ ဖိုးမှ ဂရပ်ပေးခြင်းဖြစ်ပါသည်။	(လက်မှတ်) ဖိုးဒင်းဘွဲ့ဦး ဒုတိယဥက္ကဋ္ဌ၊ ကြီးကြပ်ရေးမှူး၊ ကြေးမုံသတင်းဂျာနယ်အဖွဲ့ ၀၅-၂၃၀၀၅၄၆၃၂	**ဦးမောင်စိန်** **Director, New Star Light Construciton Co., Ltd.** ➢ ဆက်သွယ်ဆောင်ရွက်လျက်ရှိပါသည်။
၅။	ဒိုင်ငံတကာစံသတ်မှတ်ချက်ဖြင့် ဖြစ်သည့် ဘတွက်ဂကောက်၊ ဂရှုပ်ပါသည်။ ဒေသခံများ၊ ဘလုပ်အကိုင်အခွင့်အလမ်း များ ဒွဲတိုသည့် ဘတွက်ဂကောင်း၊ ဂရှုပ်ထွေးသည်၊ ဂဒေသခံဖြည်းဖြည်းများများ ကား၊ လစဉ်အဂကေးဝါလာ ဂရှင်း ပေး ဂကာင်းများ ဖြစ်ပွားစေသည်။ ဟိုတယ်လုပ်ငန်းဆောင်ရွက်ခြင်းများ အား ဒေသခံများ တလေးစားဖြစ် သင့်ပါသည်။	(လက်မှတ်) ဦးတင့်လွင် (ဦးစီးအရာရှိ) သစ်တောဦးစီးဌာန ၀၄-25410403၄	**ဦးမောင်စိန်** **Director, New Starlight Construciton Co., Ltd.** ➢ လိုအပ်သလိုပြုလုပ်သွားပါမည်။

စဉ်	အကြံပြုချက်	အကြံပြုဆွေးနွေးသူ	ပြန်လည်ဖြေကြားသူ/ဖြေကြားချက်
၆။		 (လက်မှတ်)	**ဦးမောင်စိန်** **Director, New Starlight Construciton Co., Ltd.** ➢ ကတိကဝတ်များအတိုင်းဆောင်ရွက်သွားပါမည်။
၇။		 (လက်မှတ်)	**ဦးမောင်စိန်** **Director, New Starlight Construciton Co., Ltd.** ➢ ဘေးထွက်ဆိုးကျိုးအနည်းဆုံးဖြစ်အောင်ဆောင်ရွက်သွားပါမည်။
၈။		 (လက်မှတ်)	**ဦးမောင်စိန်** **Director, New Starlight Construciton Co., Ltd.** ➢ အကြံပြုချက်များအတိုင်းလိုက်နာဆောင်ရွက်သွားပါမည်။
၉။		 (လက်မှတ်)	**ဦးမောင်စိန်** **Director, New Starlight Construciton Co., Ltd.** ➢ အကြံပြုချက်များအတိုင်းလိုက်နာဆောင်ရွက်လျက်ရှိပါသည်။

စဉ်	အကြံပြုချက်	အကြံပြုဆွေးနွေးသူ	ပြန်လည်ဖြေကြားသူ/ဖြေကြားချက်
	[illegible]		
၁၀။	[illegible]	(လက်မှတ်) [illegible]	**ဦးမောင်စိန်** **Director, New Starlight Construciton Co., Ltd.** ➢ အကြံပြုချက်များအတိုင်းလိုက်နာဆောင်ရွက်လျက်ရှိပါသည်။
၁၁။	①. Local Indigenous Peoples' Identity အခိုင်းအခြင်းဆောင်ရွက်ခြင်းရှိ/မရှိ အသိခံအားဖြင့်/မှတ်တမ်းပြုစုပြထားခြင်းရှိ/မရှိ။	(လက်မှတ်) [illegible]	**ဦးမောင်စိန်** **Director, New Starlight Construciton Co., Ltd.** ➢ အကြံပြုချက်များအတိုင်းလိုက်နာဆောင်ရွက်လျက်ရှိပါသည်။
၁၂။	[illegible]	(လက်မှတ်) - [illegible] - [illegible] - [illegible] , 09256500912	**ဦးမောင်စိန်** **Director, New Starlight Construciton Co., Ltd.** ➢ အကြံပြုချက်များအတိုင်းလိုက်နာဆောင်ရွက်သွားပါမည်။

စဉ်	အကြံပြုချက်	အကြံပြုဆွေးနွေးသူ	ပြန်လည်ဖြေကြားသူ/ဖြေကြားချက်
၁၃။		 (လက်မှတ်)	**ဦးမောင်စိန်** **Director, New Starlight Construciton Co., Ltd.** ➢ အကြံပြုချက်များအတိုင်းလိုက်နာဆောင်ရွက်သွားပါမည်။
၁၄။		 (လက်မှတ်)	**ဦးမောင်စိန်** **Director, New Starlight Construciton Co., Ltd.** ➢ ကျေးဇူးတင်ရှိပါသည်။
၁၅။		-	**ဦးမောင်စိန်** **Director, New Starlight Construciton Co., Ltd.** ➢ အကြံပြုချက်များအတိုင်းလိုက်နာဆောင်ရွက်သွားပါမည်။

စဉ်	အကြံပြုချက်	အကြံပြုဆွေးနွေးသူ	ပြန်လည်ဖြေကြားသူ/ဖြေကြားချက်
၁၆။	IBIS Style ဟိုတယ် စီစဉ်ခြင်း၊ ကျန်းမာရေးလည်ပတ်ခြင်း၊ အိပ်ရန်နှင့် ရုံးဧရိယာ အတွက်ပြုလုပ်ခြင်း ကြိုဆိုပါ။	ဝါလေး (လက်မှတ်) ဖုန်းနံပါတ် ၀၅-၂၄၀၃၅၅၄၃၁	**ဦးမောင်စိန်** **Director, New Starlight Construciton Co., Ltd.** ➢ ကျေးဇူးတင်ရှိပါသည်။
၁၇။	ကျွန်တော်တို့ မြန်မာနိုင်ငံ ခေတ်စီ ဖွံ့ဖြိုးတိုးတက်ရန် နေထွန်းသောအခိုက် စီးပွားရေးကုန်းမြောက်ခြင်း၊ အာဏာဘက်ပွဲ ရှင်းနှီးမြန်ဆန်ခြင်း စသည်တို့ကို လုပ်ဆောင်ဖြင်းသည်၊ အင်းစိန် ဒုတိယ ပယောဂ ဖြစ်၊ အခြားနိုင်ငံ များနှင့် ဂုဏ်သောင်တန်း နိုင်ငံ ဖြစ်သည်။ စီးပွားရေး အရှင်၊ ဖွင့်ပွဲများ များလာသည်၊ ကိုယ်ပိုင်ကျိုး ဖော်ရသည့် ဘဲ ဒို့စံပြ၊ ဒို့မြေ၊ ဒို့နိုင်ငံ၊ ဒို့ကုမ္ပဏီတွေ ဂူတွင်းစေ့ နေနိုင်အောင် ဒို့အောင်၊ ဒို့[redacted] ဖွင့်ပွဲ ပြုဖြင်းကဲ့ ကျွန်တော်အနေနဲ့ လျှိုက်လျှိုက်လှဲလှဲ ဝမ်းပျံတာသာ ကြီးစိုပါတယ်ခင်ဗျား ။။	(လက်မှတ်) ဘဝ်းတင်ဝိုင် ကုတ်စက် ၀၅-79.6104811	**ဦးမောင်စိန်** **Director, New Starlight Construciton Co., Ltd.** ➢ ကျေးဇူးတင်ရှိပါသည်။
၁၈။	ကျွန်တော်တို့ မြန်မာနိုင်ငံ ကော်လိ၊ ပြည်သူများ ဆင်းရဲနွမ်းပါး မှုလေးသာ ရှိပြီး ယူမှု စီးပွါးရေး ဖွံ့ဖြိုးရေး တိုးတက်စေရေး ဦးစားပေး ကမ္ဘာ အဆင့် မီတာသာ စီမံကိန်း တရပ်ပဲ [redacted] ကျွန်တော် အနေ ကတော်ပယူ ဝမ်းသာ မိပါကြောင်း ကျွန်စီမံ ကိန်း တရပ်အနေ ဒို့လဲ အမှီ နိုင်ငံတော် [redacted] ကျေးဇူး တင်ကြောင်း ပြောကြားအပ်ပါသည်။	(လက်မှတ်) ကိုဂါ နိုင်ထွန်း အုပ်စက်	**ဦးမောင်စိန်** **Director, New Starlight Construciton Co., Ltd.** ➢ ကျေးဇူးတင်ရှိပါသည်။

APPENDIX III

ATTENDANCE LIST FOR SECOND PUBLIC MEETING

အိုင်းဘစ်စတိုင်လ်ဟိုတယ်တည်ဆောက်ခြင်းနှင့်ပတ်သက်၍ ဒုတိယအကြိမ်လူထုတွေ့ဆုံပွဲတက်ရောက်သူများစာရင်း ။ ရက်စွဲ။ ၂၂. ၁၀. ၂၀၁၅

စဉ်	အမည်	ရာထူး/ကိုယ်စားပြုအဖွဲ့အစည်း	ဆက်သွယ်ရန်လိပ်စာ/ဖုန်းနံပါတ်	လက်မှတ်
၁	ဦးမိန်းဆောင်းဦး	Chairman, GMES Co., Ltd.	09 5122448	
၂	ဦးကျော်ဇင်ဝင်း	MD., GMES Co., Ltd	09-5081451	
၃.	ဦးတင်ထွေးကျော်	Environmental Consultant NSL	09519 8868	
၄	ဒေါက်တာကျော်ကျော်ဇင်	SIA Group	09 43106929	
၅	ဒေါက်တာ ဘိုးဘိုးထွန်း	SIA. Group.	09. 797597345	
၆	ဒေါက်တာထက်ဝေ	EIA Group, GMES Co.,Ltd	09- 401509030	
၇	ဦးကျော်ဟန်ဆို	Tech, GMES Co., Ltd	09. 431979960	
၈	ဦးသန်းဝင်း	ဦးသန်း MCBA	09. 521 40475	
	ဖိုးကျမ်းဖိုး	ဟိုဇောင်	15758970150	
	ကြာဝင်းကြာ	ဟိုဝဆော်ဝ		
	ကိုစောကိုမိုးမှုန်	"		

အိုင်းဘစ်စတိုင်လ်ဟိုတယ် တည်ဆောက်ခြင်းနှင့်ပတ်သက်၍ ဒုတိယအကြိမ် လူထုတွေ့ဆုံပွဲတက်ရောက်သူများစာရင်း

နေ့စွဲ - ၂၂-၁၀-၂၀၁၅

စဉ်	အမည်	ရာထူး/ကိုယ်စားပြုအဖွဲ့အစည်း	ဆက်သွယ်ရန်လိပ်စာ/ဖုန်းနံပါတ်	လက်မှတ်
11.	ဦးတင်ကြည်	NRL.	09. 500 61 88	
12.	ဒေါ်နန်းဆာဆာ	ဆောင်ပွင့်		
13.	ဦးကိုကိုဝင်းဆောင်	ဆက်သွယ်ရန်လိပ်စာ/ဖုန်းနံပါတ်	09523 0257	
14.	နန်းကိန်ခမ်း	Graduate Hor Kham	09256132389	
15.	မရီရီသိဂ်း ဆောင်ထော်ဂ်	Graduate Hor Kham	09 44510827E	
16.	မျိုးသူရာဆောင်	"	09. 2540736427	
17.	တင်အောင်ဝင်္ဂ	"	09-403732599	
18.	နန်းစဝမြည်ဝင်း	ဝတ်ဂွံကာ		
19.	ဦးဇော်ဝင်းမိုး	ဖေဖေးဟုန်း		
20.	ဦးတင်ကျော်	Great Hor Kham	09-260838845	

အိုင်းဘစ်စတိုင်လ်ဟိုတယ် တည်ဆောက်ခြင်းနှင့်ပက်သက်၍ ဒုတိယအကြိမ် လူထုတွေ့ဆုံပွဲတက်ရောက်သူများစာရင်း

နေ့စွဲ - ၂၂-၁၀-၂၀၁၅

စဉ်	အမည်	ရာထူး/တိုယ်စားပြုအဖွဲ့အစည်း	ဆက်သွယ်ရန်လိပ်စာ/ဖုန်းနံပါတ်	လက်မှတ်
၁။	ဦးထင်ကို	မြကောင်းမှုတံတား	၀၉-25991338	
၂။	မိုးမြင့်မောင်	-	၀၉-26582782562	
၃။	ဦးဝေဝေဝေ		၀၉-261526371	
၄။	ဦးခိုင်းဆမ်	ဟိုဆောင်	09-259135150	
၅။	ခိုင်းဘုန်းမြင့်	ဝေဖွဲ့ဟုန်း		
၆။	G 3775 ပ	ရပ်ကွက်		
၇။	ခိုင်းဝင်း	ဟိုဆောင်		
၈။	ကိုဝေလင်းထြိုး	မဂ္ဂိုလ်သာစံ		
၉။	ဇော်မိုင်း	ဟိုဇဝန်ဆောင်		
၁၀။	ကျော်မြင့်ဆွေ	ဟိုဝဝဆောင်		ကျော်မြင့်ဆွေ

အိုင်းဘစ်စတိုင်လ်ဟိုတယ် တည်ဆောက်ခြင်းနှင့်ပက်သက်၍ ဒုတိယအကြိမ် လူထုတွေ့ဆုံပွဲတက်ရောက်သူများစာရင်း

နေ့စွဲ - ၂၂-၁၀-၂၀၁၅

စဉ်	အမည်	ရာထူး/တိုယ်စားပြုအဖွဲ့အစည်း	ဆက်သွယ်ရန်လိပ်စာ/ဖုန်းနံပါတ်	လက်မှတ်
၂၁	ဦးသောင်းကျော်	ကရိုကရဟက်ခဲ့	09-256550321	
၂၂	မမုန်ဆုံးကျော်	ဝေကွေ	15208852431	
၂၃	ခိုင်းဆောင်ကျော်	ပန်းဆွဲကြီး	၀၉-5555510	
၂၄	ဦးခိုင်းဆောင်ကိုင်း	-	09407702743	
၂၅	ဦးခိုင်းသောင်းကိုင်	-		
၂၆	ဦးမိုင်းစိုးကာ	"		
၂၇	ခိုင်းဝေဝင်္ဂ	"		
၂၈	ဟုန်းဆေးမိ	ဆော်ဂွတ်	15969261642	
၂၉	ခိုက်ဖျ်းထောလဝ်	ဒုတိုးရုယမျ်း	09.5411577	
၃၀.	ကယ်ကြီးဇိုင်	Guest Hon Kham	09-403760158	

အိုင်းဘစ်စတိုင်လ်ဟိုတယ် တည်ဆောက်ခြင်းနှင့်ပက်သက်၍ ဒုတိယအကြိမ် လူထုတွေ့ဆုံပွဲတက်ရောက်သူများစာရင်း

နေ့စွဲ - ၂၂-၁၀-၂၀၁၅

စဉ်	အမည်	ရာထူး/ကိုယ်စားပြုအဖွဲ့အစည်း	ဆက်သွယ်ရန်လိပ်စာ/ဖုန်းနံပါတ်	လက်မှတ်
	ဦး ခြံ့ ဘဝ	ကဝါ ခြံ့ ဖြိုး	၂၀၀၁၂	
	ဦး ခိုင် ရဲ ဝင်း	ပြည်ခိုင်ဖြိုး	09-2001146	
	ဦး ဆိုမ် ဝေဟင်ဝက	ပြည်ရှိုင်ဖြိုး	09-421440178	
	မအိမ်ဖူဖြတ်	Great Hor Kham	09-445107726	
	မခိုင်ခိုင်ထိုး	Great Hor Kham		
	ဒေါ်သန်းဘင်ဝေ	ဖြိုးပြားမြဲအစိုး	09-256490248	
	မဇေဆင်းကြိုဆာဇိုင်	Great Hor Kham	09-403945216	
	ဝေဒေ။ ပေးခိုး	Great Hor Kham	09-259757454	
	ဟန်ဦးဇော်	Great Hor kham	09-403736944	

အိုင်းဘစ်စတိုင်လ်ဟိုတယ် တည်ဆောက်ခြင်းနှင့်ပက်သက်၍ ဒုတိယအကြိမ် လူထုတွေ့ဆုံပွဲတက်ရောက်သူများစာရင်း

နေ့စွဲ - ၂၂-၁၀-၂၀၁၅

စဉ်	အမည်	ရာထူး/ကိုယ်စားပြုအဖွဲ့အစည်း	ဆက်သွယ်ရန်လိပ်စာ/ဖုန်းနံပါတ်	လက်မှတ်
11.	ဦး အိုမင်းဦးဇင်	အကျင်းရေးမှူး	09-256071260	
12.	ဦး အောင်ကျော်ဇော	ရဲဘော်		
13.	ဦး မောင်ဝါဇင်	〃		
14.	ဦး ကျော်ဇေယျ	〃		
15.	ဦး ဇေယျတင်	〃		
16.	ဦး အိုမင်းခိုင်	〃		
17.	ဦး ဘုန်းအောင်ဆန်	ဝ.ခ.ရ		
18.	ဦး ဇော်ဂျာ	〃		
19.	ဦး မောင်ဘ			

အိုင်းဘစ်စတိုင်လ်ဟိုတယ်တည်ဆောက်ခြင်းနှင့်ပတ်သက်၍ ဒုတိယအကြိမ်လူထုတွေ့ဆုံပွဲတက်ရောက်သူများစာရင်း ။ ရက်စွဲ။ ၂၂. ၁၀. ၂၀၁၅

စဉ်	အမည်	ရာထူး/ကိုယ်စားပြုအဖွဲ့အစည်း	ဆက်သွယ်ရန်လိပ်စာ/ဖုန်းနံပါတ်	လက်မှတ်
	ဖြိုးသစ်စုစု	Great Hor Kham		
	မောင်ကောကော	"		
	ဦးဟန်ကောလင်း	ဦး အကဲ ဟိုတယ်/အရာရှိ	09-256071354	
	ဦးသောဇေယျ	ပမ္မ:ဟူး		
	ဦးဝင်းထွန်းဖေ	GHK	09 523 1174	
	ဦးဖြတ်ရေအောင်	ပမ္မ:ဟူး		
	ကိုဦးသိန်းကျော်	" "		
	မကြီးဇော်စော	Great Hor Kham		
	ဦးအိုက်ဟွမ်	ပမ္မ:ဟူး		
၁၀	ဦးဆောင်ရီးဟွန်	AD အမှုဆောင်	09444002240	
	အီး သို့ သင်္ဘ ကြွေး ဖင်း			
	အီး မိုင်အင်း ခေါ်ဝေ			

အိုင်းဘစ်စတိုင်လ်ဟိုတယ်တည်ဆောက်ခြင်းနှင့်ပတ်သက်၍ ဒုတိယအကြိမ်လူထုတွေ့ဆုံပွဲတက်ရောက်သူများစာရင်း ။ ရက်စွဲ။ ၂၂. ၁၀. ၂၀၁၅

စဉ်	အမည်	ရာထူး/ကိုယ်စားပြုအဖွဲ့အစည်း	ဆက်သွယ်ရန်လိပ်စာ/ဖုန်းနံပါတ်	လက်မှတ်
၁	ဒေါ်ကျော်ခင်	ပမ္မ:ဟူး		✓
၂	ဒေါ်သွယ်ခေး	ပမ္မ:ဟူး		✓
၃	ဦးခိုင်းကျိုးဆေး	ဖွင့်ပွဲ သွားလာရေးကုမ္ပဏီ :မှူး		
၄	ဒေါ်ဒေါအေးမန်	ပမ္မ:ဟူန် (ရှာ)		
	ဒေါ်ဘဘီး ဝင်း	"		
	ဒေါ်ဆွဲ ဟိန်	"		
	ဒေါ်သွဲ ရွာ	"		
	နန်းမွန်ကိုင်	ကော်ကွက်		
	ဦးဆောဘန်	ဟူး		
	ဦးခမ်းလျိန်	ပမ္မ ဟူး		
	ဦး မျိုးဦး	ဦးဦးဖြိုး ၊ ဖြိုးသားတွေ့ဆုံ		
	မစ်ဇင်ထော်သူဆောင်	Great Hor Kham		

အိုင်းဘစ်စတိုင်လ်ဟိုတယ် တည်ဆောက်ခြင်းနှင့်ပက်သက်၍ ဒုတိယအကြိမ် လူထုတွေ့ဆုံပွဲတက်ရောက်သူများစာရင်း

နေ့စွဲ - ၂၂-၁၀-၂၀၁၅

စဉ်	အမည်	ရာထူး/တိုင်းစားပြုအဖွဲ့အစည်း	ဆက်သွယ်ရန်လိပ်စာ/ဖုန်းနံပါတ်	လက်မှတ်
၁	ဖြိုးမြင့်သန်း	ဟိုဝေဆောင်		
၂	မကွဲသဇင်ကျော်	ပဉ္စဝေဆောင်		
၃	ဒေါ်ဇင်မြင့်	လယ်သမား (ခါးသာ)	09449227503	
၄	ဦးဆိုင်းဝေါင်	ဟိုဆောင်	09250858543	
၅	ထုန်ဝအောင်နိုင်	NSL		
၆	ဦးဘဝမောင်ဝင်း	[illegible]	09-43009531	
၇	နန်းမွန်သန်	တော်ဂွက်		
၈	Sui Khun Khey	MCGC ယုဒအမ်	09-421716017	
၉	Kyaw Khaing Soe	MCGC, Muse	09-252295148	
၁၀	ဖုန်းဖြတ်ထောက်	ပြည်နှိုင်ငံ	09-5230857.	

အိုင်းဘစ်စတိုင်လ်ဟိုတယ် တည်ဆောက်ခြင်းနှင့်ပက်သက်၍ ဒုတိယအကြိမ် လူထုတွေ့ဆုံပွဲတက်ရောက်သူများစာရင်း

နေ့စွဲ - ၂၂-၁၀-၂၀၁၅

စဉ်	အမည်	ရာထူး/တိုင်းစားပြုအဖွဲ့အစည်း	ဆက်သွယ်ရန်လိပ်စာ/ဖုန်းနံပါတ်	လက်မှတ်
၁။	ဦးထင်ကို	[illegible]	09-25991333124	
၂။	ဦးကျိုင်းမောင်		09-265278262	
၃။	ဦးဝေဆောင်ဝေဆောင်		09-261526371	
၄။	ဦးခိုင်းဆော်	ဟိုဆောင်	09-259135150	
၅။	ခိုင်းဆွန်းမြင့်	ဝေဂူးပဉ္စိ		
၆။	၆ ဘာသာပါ	[illegible]		
၇။	ခိုင်းထင်	ဟိုဆောင်		
၈။	ဦးကောင်းကြီး	ဟိုဝေဆောင်		
၉။	ဇင်ဝိုင်း	ဟိုဆောင်		
၁၀။	ကျင်ဒီခိုင်းခိုင်	ဟိုဆောင်		

အိုင်းဘစ်စတိုင်လ်ဟိုတယ် တည်ဆောက်ခြင်းနှင့်ပတ်သက်၍ ဒုတိယအကြိမ် လူထုတွေ့ဆုံပွဲတက်ရောက်သူများစာရင်း

နေ့စွဲ - ၂၂-၁၀-၂၀၁၅

စဉ်	အမည်	ရာထူး/ကိုယ်စားပြုအဖွဲ့အစည်း	ဆက်သွယ်ရန်လိပ်စာ/ဖုန်းနံပါတ်	လက်မှတ်
၁။	မြို့ဆောင်ရွာ	ကောင်စီဥက္ကဋ္ဌ	၀၉/4037362 75	
၂။	ဦးတင်ကျိုး	NGO	၀၉/791187855	
၃။	ဦး ကျော်ဇေ ဘွဲ့	ကောင်စီဥက္ကဋ္ဌ	၀၉ ၇၅၉၀၆၅ ၁၄၀	
၄။	ဦး ဝေယာဒိ	အနုပညာရှင်	၀၉ ၂၅၉၃၆၀၃၅၀	
၅။	ဦးကျော်ကိုးတက်	ကောင်စီဝင်	၀၉ ၂၆၆၀၇၃၂၇	
၆။	ဦးခေါ်ဝေါင်းထက်	ကောင်စီဝင်	၀၉ ၂၆၅ ၁၃၇၆ ၁၇	
၇။	ဦးဆော်ဇင်ဝေဒိ	ကောင်စီဝင်		
၈။	ဦးနိုင်ဝင်းထွန်		၀၉-7939 81526	
၉။	စိုင်းဒိုက်ဖောင်	ပဒိုဆောင်		
၁၀။	ခိုင်းဘိုးဝေယာ	ပဒိုဝဆောင်	၀၉ ၂၅၉ ၀၁၄၄ ၇၆	

အိုင်းဘစ်စတိုင်လ်ဟိုတယ် တည်ဆောက်ခြင်းနှင့်ပတ်သက်၍ ဒုတိယအကြိမ် လူထုတွေ့ဆုံပွဲတက်ရောက်သူများစာရင်း

နေ့စွဲ - ၂၂-၁၀-၂၀၁၅

စဉ်	အမည်	ရာထူး/ကိုယ်စားပြုအဖွဲ့အစည်း	ဆက်သွယ်ရန်လိပ်စာ/ဖုန်းနံပါတ်	လက်မှတ်
၁။	ဦးဆိုးမောင်းမောင်းကို	Security (ကောင်းမွန်ရေးဝန်ဆောင်)	၀၉-40168 94827	
၂။	ဦးအောင်ထူးဆောင်	"	၀၉-256039185	
၃။	ဦးဝေမြို့ဆောင်	"	၀၉. 7939826 41	
၄။	ဦးကြော်ဦးထက်	"	၀၉-25 10 20 6 59	
၅	ဦးနန်းဦး	"	၀၉ 26 339691	
၆	ဦးခင်ကြီးဦး	"	၀၉-797187110	
၇	ဦးသက်ဝိုင်ဝင်း	"	၀၉-252858031	
၈	ဦးသိန်းမင်းခိုး	"	၀၉. 25870 60 48	
	ဦးဆိုလ်ဝင်း	"	၀၉. 797 444 177	
	ဦးမျိုးလင်း	"		

အိုင်းဘစ်စတိုင်လ်ဟိုတယ် တည်ဆောက်ခြင်းနှင့်ပက်သက်၍ ဒုတိယအကြိမ် လူထုတွေ့ဆုံပွဲတက်ရောက်သူများစာရင်း

နေ့စွဲ - ၂၂-၁၀-၂၀၁၅

စဉ်	အမည်	ရာထူး/ကိုယ်စားပြုအဖွဲ့အစည်း	ဆက်သွယ်ရန်လိပ်စာ/ဖုန်းနံပါတ်	လက်မှတ်
၁။	ကဲ့ ကြည် သူဌေး	ရှုမြင် သူဌေး		ကဲ့ ကြည်
၂။	မာလာ	ပေါ့ဆောင်		မာ
၃။	ခေါ်ဖြန့်	"		ဖြန့်
၄။	ခိုင်းခိုက်လိုင်	ပေါ့ဆောင်		ခိုင်းခိုက်လိုင်
၅။	ဦးဝင်းဦး	ကောင်းဆုကျော်		
၆။	သိန်းယုတ်သိန်း	ရွှေးဟုန်း		
၇။	တင်ကြူးဂါ	ရွှေးဟုန်း		
၈။	ဦးထင်ခိုင်	အောင်ကောင်းမွန်		
၉။	ဦးဝင်းရိုင်းထြက်	ဦးဖြိုးမာန်ကြီး (ဟောင်းကာမော: ဥယျာဉ် ခရစ်ဆော: ရေး:)		
၁၀။	အောင်နိုင်ထောမန်ကုံ	ဝေဟင်ရွှေ		ပန်

အိုင်းဘစ်စတိုင်လ်ဟိုတယ် တည်ဆောက်ခြင်းနှင့်ပက်သက်၍ ဒုတိယအကြိမ် လူထုတွေ့ဆုံပွဲတက်ရောက်သူများစာရင်း

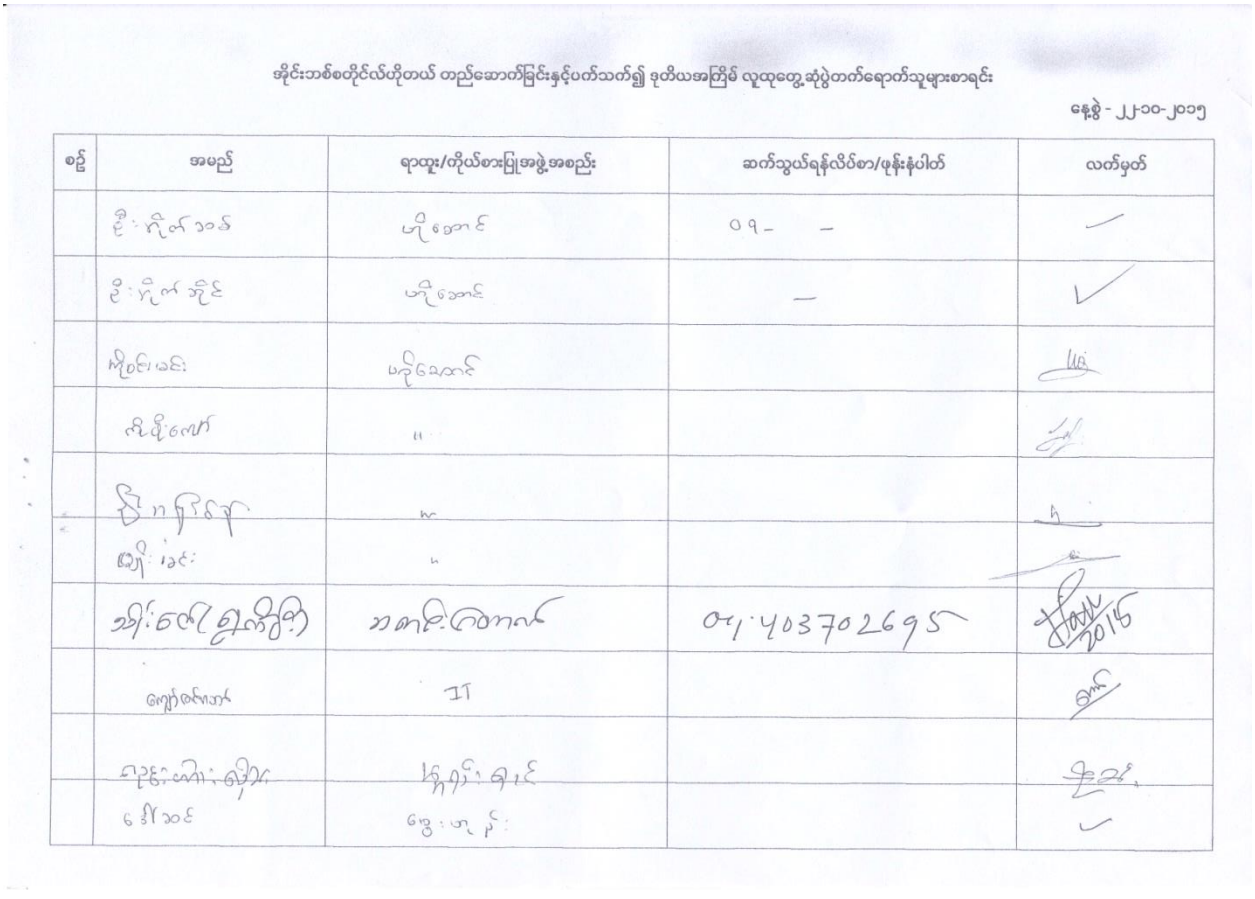
နေ့စွဲ - ၂၂-၁၀-၂၀၁၅

စဉ်	အမည်	ရာထူး/ကိုယ်စားပြုအဖွဲ့အစည်း	ဆက်သွယ်ရန်လိပ်စာ/ဖုန်းနံပါတ်	လက်မှတ်
	ဦးသိန်းကျော်	ဦးကြည်.ဟ.ခ.ဇ.	09. 5232403	
	ဦးဖြိုး	〃		
	ဦးခေါင်းမို	ဦးဖေကြည်ဖြိုး အုပ်.	09-42772577	
	ကျော်ကျော်	ကိုမြို့ ၁၇၂၆၆		
	ဦးမြင့်ဦး			
	ဦးဖြင့်မိုး	ဒကန္ဒ ဆောသ	09-5232991	
	ဦးမျိုးဦး	ဆောက်သောက	၀၉၊ ၄၅၁၁၆၅၂၂	

အိုင်းဘစ်စတိုင်လ်ဟိုတယ် တည်ဆောက်ခြင်းနှင့်ပက်သက်၍ ဒုတိယအကြိမ် လူထုတွေ့ဆုံပွဲတက်ရောက်သူများစာရင်း

နေ့စွဲ - ၂၂-၁၀-၂၀၁၅

စဉ်	အမည်	ရာထူး/ကိုယ်စားပြုအဖွဲ့အစည်း	ဆက်သွယ်ရန်လိပ်စာ/ဖုန်းနံပါတ်	လက်မှတ်
၁	ဖေဖေသွင်တင့်	ရဲတပ်ဖွဲ့ ၊ ရဲဘက်ကော	၂၅၈၅၄၀၇၂၂၅	



အိုင်းဘစ်စတိုင်လ်ဟိုတယ် တည်ဆောက်ခြင်းနှင့်ပတ်သက်၍ ဒုတိယအကြိမ် လူထုတွေ့ဆုံပွဲတက်ရောက်သူများစာရင်း

နေ့စွဲ - ၂၂-၁၀-၂၀၁၅

စဉ်	အမည်	ရာထူး/တိုယ်စားပြုအဖွဲ့အစည်း	ဆက်သွယ်ရန်လိပ်စာ/ဖုန်းနံပါတ်	လက်မှတ်
	ဦး ကိုကိုသန်း	ဟိုတယ်	၀၉- -	
	ဦး ကိုကိုဦး	ဟိုတယ်	-	
	ကိုဝင်းမင်း	ဟိုတယ်		
	ကိုထိုက်လော်	"		
	ဦး ကျော်နိုင်	"		
	ဒေါ်ခင်ဦး	"		
	အိုးဝေါ်(ဗွဲ့ကြီးကြီး)	ဘတ်ဒ်ကောလာ	၀၄၊ ၄၀၃၇၀၂၆၉၅	
	ကျော်စင်ကာ	IT		
	ချဉ်းမောင်းရှိသော	ပန်းကုန်းရပ်ကွက်		
	ဝါဒီသင်	ဒေါ်ဟုတ်		

အိုင်းဘစ်စတိုင်လ်ဟိုတယ် တည်ဆောက်ခြင်းနှင့်ပတ်သက်၍ ဒုတိယအကြိမ် လူထုတွေ့ဆုံပွဲတက်ရောက်သူများစာရင်း

နေ့စွဲ - ၂၂-၁၀-၂၀၁၅

စဉ်	အမည်	ရာထူး/တိုယ်စားပြုအဖွဲ့အစည်း	ဆက်သွယ်ရန်လိပ်စာ/ဖုန်းနံပါတ်	လက်မှတ်
၂၁	သန်းသူဇော်	Great Hor khaw	၀၄- ၂၅၆၄၂၄၇၈၆	
၂၂	ဇွန်ဝေဟန်ကော်	ဒေါ်ဟုတ်		
၂၃	ကျော်ဇော်ဝင်း	ဒေါ်ဟုတ်		
၂၄	ဦး နွဲ့ဖြစ်မော်	ကားသော်	၆၄-၂၅၆၁၃၃၇၅	
၂၅	ကင်းကျော်စိုး	ဝိုက်ဖိုင်း		
၂၆	ဆာဇာ			
၂၇				

အိုင်းဘစ်စတိုင်လ်ဟိုတယ် တည်ဆောက်ခြင်းနှင့်ပက်သက်၍ ဒုတိယအကြိမ် လူထုတွေ့ဆုံပွဲတက်ရောက်သူများစာရင်း

နေ့စွဲ - ၂၂-၁၀-၂၀၁၅

စဉ်	အမည်	ရာထူး/ကိုယ်စားပြုအဖွဲ့အစည်း	ဆက်သွယ်ရန်လိပ်စာ/ဖုန်းနံပါတ်	လက်မှတ်
၃၁	မေခိုဘယ်ဇင်ထွန်း	Great Hor Kham	09-403714171	
၃၂	ဒေါ်ငိုက်ကောင်းစိုး	"	09-258160082	
၃၃	ဒေါ်ဆား	"	09-421501648	
၃၄	မဂျူး	"	09-407745946	

APPENDIX IV

KEY DISCUSSIONS FROM SECOND PUBLIC MEETING

စဉ်	တင်ပြဆွေးနွေးသူ / အဓိကဆွေးနွေးချက်များ
၁။	**ဦးတင်ငွေ (Executive Director ၊ New Starlight Construction Co., Ltd.)** ပထမအကြိမ်တွေ့ဆုံပွဲမှဆွေးနွေးရာတွင် ရှမ်းရိုးရာအထိမ်းအမှတ်များအား ဟိုတယ်အတွင်း ထည့်သွင်းတည်ဆောက်ပေးရန် ဆွေးနွေးထားပါကြောင်း၊ ထို့အတွက် ဟိုတယ်အတွင်းဒီဇိုင်းနှင့် ပရဝုဏ်အတွင်းတို့တွင် ရိုးရာအထိမ်းအမှတ်များ ထည့်သွင်းသွားမည်ဖြစ်ကြောင်းနှင့် စွန့်ပစ်ရေအား ရွှေလီမြစ်အတွင်းသို့ စွန့်ပစ်ရန်ရှိ/မရှိမေးခွန်းနှင့်ပတ်သတ်၍ ရေဆိုးသန့်စင်စက်ရုံတည်ဆောက်သန့်စင်သွားပြီး အပင်ရေလောင်းရန်အသုံးပြုသွားမည်ဖြစ်ကြောင်း၊ ထို့ပြင် စောင့်ကြည့်ရေးအဖွဲ့များ ဖွဲ့စည်းပြီး စောင့်ကြည့်စစ်ဆေးသွားမည် ဖြစ်ကြောင်းတို့အား ရှင်းလင်းတင်ပြသွားပါသည်။
၂။	**ဦးစိန်သောင်းဦး (Chairman, GMES Co., Ltd.)** စီမံကိန်းကြီးများတည်ဆောက်လာမှုကြောင့် ပတ်ဝန်းကျင်ရှိလူများ၊ အပင်နှင့် တိရိစ္ဆာန်များအား ထိခိုက်ပျက်စီးလာစေခြင်းများ ဖြစ်ပေါ်လေ့ရှိသဖြင့် နိုင်ငံတော်မှဥပဒေများပြဋ္ဌာန်းပြီး ပတ်ဝန်းကျင်ထိခိုက်မှုလျော့နည်းပြီး အကျိုးကျေးဇူးများပြားလာရန် ဆောင်ရွက်စေခဲ့ကြောင်း၊ ယခုစီမံကိန်းသည် စက်ရုံ အလုပ်ရုံ မဟုတ်ဘဲ ဟိုတယ်စီမံကိန်းဖြစ်သဖြင့် ပတ်ဝန်းကျင်ထိခိုက်မှု လျော့နည်းနိုင်ကြောင်းများ ရှေးဦးစွာရှင်းလင်းတင်ပြပြီး၊ ဆက်လက်၍ သဘာဝပတ်ဝန်းကျင် ထိခိုက်မှုနှင့် လူမှုဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်းဆိုင်ရာလုပ်ငန်းစဉ်များအကြောင်း၊ စီမံကိန်းဆိုင်ရာအချက်အလက်များအား ဆန်းစစ်ခြင်း၊ တည်ဆောက်ရေးကာလနှင့် လည်ပတ်ချိန်တွင် ထိခိုက်လာနိုင်သည့် အချက်အလက်များအား ဆန်းစစ်ခြင်း၊ လက်ရှိတိုင်းတာထားသော ပတ်ဝန်းကျင်ရှိ လေထု၊ မြေထု၊ ရေထု အရည်အသွေးတိုင်းတာခြင်းလုပ်ငန်းစဉ်များနှင့် ပတ်ဝန်းကျင်ထိခိုက်နိုင်မှုလျော့နည်းစေရန် လုပ်ဆောင်မှုများအား စောင့်ကြည့်ရမည့်အစီအမံများအား အသေးစိတ်ဆွေးနွေးတင်ပြသွားပါသည်။
၃။	**ဒေါက်တာကျော်စွာတင့် (Team Leader, SIA Group)** ❖ လူမှုဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်းဆိုင်ရာ လုပ်ငန်းစဉ်များအကြောင်း၊

စဥ်	တင်ပြဆွေးနွေးသူ / အဓိကဆွေးနွေးချက်များ
	❖ ဟိုတယ်တည်ဆောက်မှုကြောင့် ပတ်ဝန်းကျင်ရှိဒေသခံ လူထုအပေါ် ထိခိုက်လာနိုင်မှုများ၊ ❖ လူမှုပတ်ဝန်းကျင်ထိခိုက်မှုများ လျော့နည်းသက်သာစေရန် ဆောင်ရွက်ရမည့်နည်းလမ်းများနှင့် ❖ ဆောင်ရွက်ချက်များအပေါ် စောင့်ကြည့်ရမည့် အစီအစဉ်များ ❖ ပထမအကြိမ်တွေ့ဆုံပွဲမှ ရရှိသုံးသပ်ချက်များ၊ ဒေသခံလူထု၏ စိုးရိမ်မှုများအား ကွင်းဆင်းလေ့လာရရှိမှု အချက်အလက်များ၊ ပညာရှင်အဖွဲ့၏ လေ့လာသုံးသပ်ချက်များ အား အသေးစိတ်ဆွေးနွေး တင်ပြသွားပါသည်။

တွေ့ဆုံပွဲအတွင်းတက်ရောက်လာသူများမှဆွေးနွေးချက်များနှင့်သက်ဆိုင်သူများမှပြန်လည်ဖြေကြားချက်များ

စဥ်	ဆွေးနွေးသူ / အဓိကဆွေးနွေးချက်များ	ပြန်လည်ဖြေကြားသူ/ဖြေကြားချက်
၁။	**ဦးစပ်ထွန်းအောင် (ပြည်သူ့လွှတ်တော်ကိုယ်စားလှယ်)** ▪ ရေသုံးစွဲရာတွင် စည်ပင်နှင့်အဝီစိရေအားသုံးစွဲမည်ဆိုပါက ဟိုတယ်၏ တစ်နေ့ရေသုံးစွဲမှုပမာဏ ဂါလံ ၄၁၀၀၀ သည် စည်ပင်မှဖြန့်ဖြူးသော ဂါလံ ၁၀ သိန်းမှထုတ်ယူသုံးစွဲမည်ဖြစ်သဖြင့် မြို့ပေါ်ဖြန့်ဝေမှုတွင် ရေမလုံလောက်မှုရှိလာနိုင်ကြောင်း ▪ ထို့အတူ လျှပ်စစ်မီးသုံးစွဲရာတွင်လည်း မူဆယ်မြို့တွင် ၁၀ မဂ္ဂါဝပ်မျှ သုံးစွဲနေပါကြောင်း ဟိုတယ်စီမံကိန်းမှ ၁ မဂ္ဂါဝပ်မျှ ထုတ်ယူသုံးစွဲမည် ဆိုပါက လျှပ်စစ်မလုံလောက်မှုရှိနိုင်ကြောင်း ဆွေးနွေးသွားပါသည်။	**ဦးငွေစိုး စီမံကိန်းမန်နေဂျာ (IBIS Styles Hotel)** ➢ ရေအရင်းအမြစ်နှင့်ပက်သတ်၍ ရွှေလီမြစ်ရေတင်စီမံကိန်းဆောင်ရွက်ရန် ရှိပါကြောင်း၊ စီမံကိန်းမစတင်မီတွင် ကြယ်ခေါင်မှရေအား ရယူသုံးစွဲနိုင်ရန် စီစဉ်ထားပြီးဖြစ်ပါကြောင်း ➢ လျှပ်စစ်မီးနှင့်ပက်သတ်၍လည်း နမ့်ခမ်းရေအားလျှပ်စစ်မှတရုတ်ပြည်သို့ ပို့လွှတ်သောလျှပ်စစ်အား နှစ်ဖက်ညှိနှိုင်းပြီးရယူသုံးစွဲနိုင်ရန် စီစဉ်ထားပါကြောင်း ရှင်းလင်းသွားပါသည်။
၂။	**ဦးစိုင်းဝင်းမောင်(အမျိုးသားလွှတ်တော်ကိုယ်စားလှယ်)** ▪ မီးဘေးကာကွယ်ရေးအတွက် ဟိုတယ်မှ သီးသန့်ဆောင်ရွက်ထားခြင်း	**ဦးငွေစိုး စီမံကိန်းမန်နေဂျာ (IBIS Styles Hotel)** ➢ မီးဘေးကာကွယ်ရေး စနစ်အား စံချိန်စံညွှန်းနှင့်အညီ တပ်ဆင်ထားပါကြောင်း၊

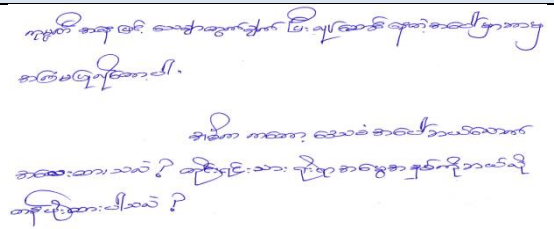
စဉ်	ဆွေးနွေးသူ / အဓိကဆွေးနွေးချက်များ	ပြန်လည်ဖြေကြားသူ/ဖြေကြားချက်
	ရှိ/မရှိ၊ အနီးအနားရှိရပ်ကွက်များမှအဖွဲ့အစည်းများနှင့်ပူးပေါင်းဆောင်ရွက်ခြင်း ရှိ/မရှိ ▪ ဒေသလုံခြုံရေးနှင့်ပတ်သက်၍ ဟိုတယ်၏လူအဝင်အထွက်၊ ဝန်ထမ်းများ၏စာရင်းများအား ဧည့်စာရင်းပို့ရာတွင် ဟိုတယ်မှ သီးခြားဆောင်ရွက်သလား၊ ဒေသခံရပ်ကွက်စာရင်းနှင့်ဆောင်ရွက်သလားဟု ဆွေးနွေးမေးမြန်းသွားပါသည်။	ဟိုတယ်အထပ်တိုင်း၊ အခန်းတိုင်းတွင် မီးသတ်စနစ်များ တပ်ဆင်ထားပါကြောင်း၊ ထို့အပြင် ဟိုတယ်၏မီးသတ်စနစ်အား ရန်ကုန် သို့မဟုတ် နေပြည်တော်ရှိ မီးသတ်ဦးစီးဌာနသို့ သွားရောက်ပြီး ရှင်းလင်းတင်ပြသွားမည် ဖြစ်ပါကြောင်း။ ➢ ဧည့်စာရင်းတိုင်ကြားရာတွင် ရပ်ကွက်အုပ်ချုပ်ရေးမှူးသို့မိတ္တူတစ်စောင်ပေးပြီး ရဲစခန်း (သို့မဟုတ်) သက်ဆိုင်ရာအုပ်ချုပ်ရေးအဖွဲ့သို့ တိုက်ရိုက်ပေးပို့သွားမည်ဖြစ်ကြောင်း ရှင်းလင်းတင်ပြသွားပါသည်။
၃။	**ဦးစိုင်းသိန်းကျော် (ရပ်ကွက်အုပ်ချုပ်ရေးမှူး)** ▪ ဒေသခံများအား အလုပ်အကိုင်အခွင့်အလမ်းများ ဖန်တီးပေးရာတွင် ခန့်အပ်ပြီးသော စာရင်းနှင့်ထပ်မံ၍ မည်သို့ဖန်တီးပေးမည်ကို ရှင်းလင်းပြောကြားပေးပါရန်၊ ▪ ဓလေ့ထုံးတမ်း၊ ယဉ်ကျေးမှုနှင့်ပတ်သက်၍ ဟိုတယ်၊ လမ်းများ အမည်ပေးရာတွင် ဓလေ့ထုံးစံနှင့် ဒေသပုံရိပ်များပါစေလိုကြောင်း၊ ▪ ဒေသခံများနှင့် ပြောင်းရွှေ့လာသူများ၏ ဓလေ့စရိုက်များ၏ သက်ရောက်မှု၊ ဒေသခံများ၏သက်မွေးမှုပြောင်းလဲလာမည့်အပေါ် ကုမ္ပဏီမှ မည်သို့ထိန်းကျောင်းစီမံသွားမည့်အကြောင်း၊ ▪ ရရှိလာသော အကျိုးအမြတ်အား ဒေသဖွံ့ဖြိုးရေးအတွက် မည်မျှသုံးစွဲမည်ဖြစ်ကြောင်းအား ရှင်းလင်းပြောကြားစေလိုကြောင်းဆွေးနွေး	**ဦးငွေစိုး စီမံကိန်းမန်နေဂျာ (IBIS Styles Hotel)** ➢ ဒေသခံများ၏ဆင်းရဲနွမ်းပါးမှုလျော့နည်းစေရေး ရည်ရွယ်ခြင်းဖြစ်သဖြင့် လာရောက်လက်တွဲသူမှန်သမျှအား ၎င်းတို့၏ကျွမ်းကျင်မှုအလိုက် အလုပ်ခန့်ထားပေးပါကြောင်း၊ ➢ ဒေသခံများမှ အလုပ်မရွေးဘဲလုပ်ချင်စိတ်ရှိမည်ဆိုပါက သန့်ရှင်းရေး၊ စားဖိုဆောင်၊ အိပ်ဆောင်၊ ဧည့်ကြိုစသည်ဖြင့် ခန့်ထားပေးရန်နေရာများ ရှိပါကြောင်း၊ ➢ လမ်းများ၊ အမည်ပေးအပ်နိုင်ရန် ရပ်ကွက်အုပ်ချုပ်ရေးမှူးများထံမှလည်း အကြံဥာဏ်များ ရယူပြီးဆောင်ရွက်နေပါကြောင်း၊ အမှတ်(၃) လမ်းမအား ရှမ်းအမည်မှည့်ရန် စီစဉ်ထားပြီးဖြစ်ပါကြောင်း၊ ကျန်သောလမ်းများ၊ အဆောက်အဦများအားလည်း ရှမ်းအမည်များ မှည့်ခေါ်နိုင်ရန် ဆောင်ရွက်

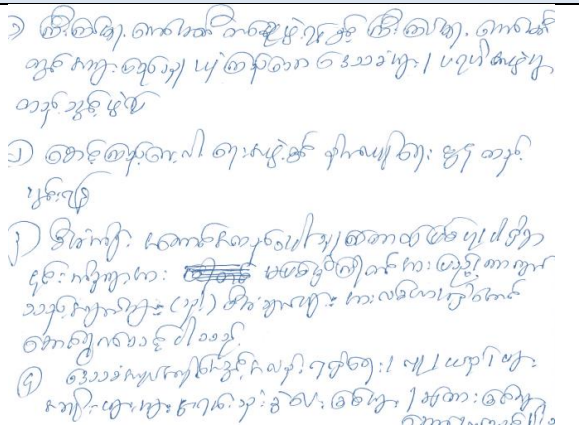
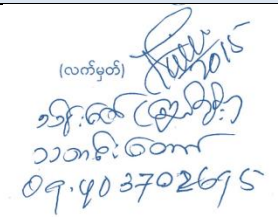
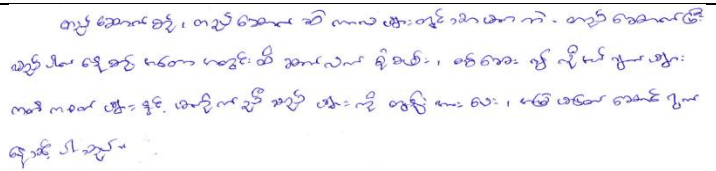
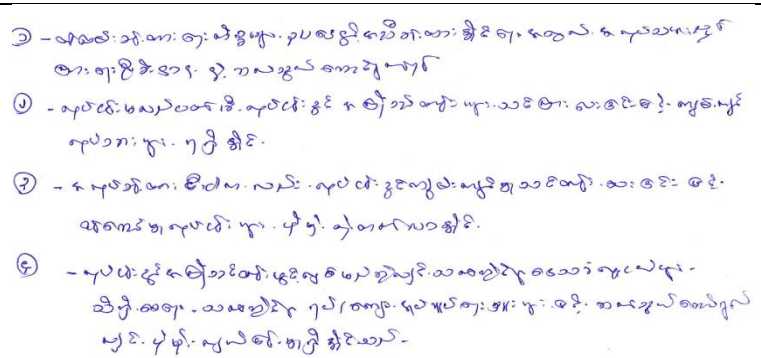
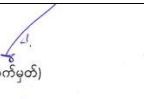
စဉ်	ဆွေးနွေးသူ / အဓိကဆွေးနွေးချက်များ	ပြန်လည်ဖြေကြားသူ/ဖြေကြားချက်
	သွားပါသည်။	သွားမည် ဖြစ်ပါကြောင်း ရှင်းလင်းတင်ပြသွားပါသည်။ **Dr. ကျော်စွာတင့်** ➢ အကျိုးအမြတ်မှဒေသဖွံ့ဖြိုးရေးအတွက်ခွဲဝေရေးကိစ္စတွင် အခွန်ဆောင်ပြီး ရရှိလာသောအမြတ်၏ ၀.၅ % မှ ၂.၀ % အား နှစ်စဉ်သုံးစွဲသွားရန် အဆိုပြုထားပါကြောင်းနှင့် သုံးစွဲပြီးသောပမာဏအား စနစ်တကျ စာရင်းပြုစုထားရန် လိုအပ်ပါကြောင်း ဆွေးနွေးသွားပါသည်။
၄။	**ဦးသိန်းဇော် (မြန်မာ့အလင်းသတင်းထောက်)** ▪ စောင့်ကြည့်လေ့လာရေးအဖွဲ့များ အနေဖြင့် မည်သည့် အတိုင်းအတာအထိ လုပ်ပိုင်ခွင့် ရှိပြီး မည်မျှအထိ ဆောင်ရွက်မည်ဖြစ်သည်ကို သိရှိလိုပါကြောင်း၊ ▪ ဒေသခံကိုယ်စားလှယ်ရွေးချယ်ရာတွင်မည်သည့်မူဖြင့်ရွေးချယ်မည်ကို သိရှိလိုပါကြောင်း၊ ▪ စိုက်ပျိုးရေးဌာနအားလည်း အဖွဲ့တွင် ထည့်သွင်းစေလိုကြောင်း၊ ▪ စီမံကိန်းစတင်သည့်ကာလနှင့် ပြီးဆုံးမည့်ကာလအား သိရှိလိုပါကြောင်း မေးမြန်းသွားပါသည်။	**ဦးစိန်သောင်းဦး Chairman (GMES)** ➢ စောင့်ကြည့်ရေးအဖွဲ့သည် အဆိုပြုထားခြင်းသာဖြစ်ပါကြောင်း၊ မြို့နယ် အုပ်ချုပ်ရေး၊ စီမံကိန်းကိုယ်စားလှယ်၊ ဒေသခံကိုယ်စားလှယ်ဟူ၍ ပါဝင်ဖွဲ့စည်းရမည် ဖြစ်ပါကြောင်း၊ ထို့ကြောင့် လုပ်ငန်းရှင်များ မမှန်ကန်သောလုပ်ရပ်များ ပြုလုပ်ပါက ချက်ချင်းသိရှိနိုင်ပြီး အရေးယူဆောင်ရွက်နိုင်ကြောင်းနှင့် မီဒီယာများအနေဖြင့်လည်း ရရှိသော သတင်းအချက်အလက်များအား ပြည်သူသို့ ပြန်လည်တင်ပြခြင်းဖြင့် တစ်ဖက်မှ ထိန်းသိမ်းပေးရာရောက်ကြောင်း၊ ရပ်မိရပ်ဖများသာလျှင် ဒေသခံများ၏ခံစားမှုများအား ပိုမိုသိရှိနိုင်ပြီး အုပ်ချုပ်ရေးအဖွဲ့များမှတစ်ဆင့်ဆောင်ရွက်သွားနိုင်မည် ဖြစ်ပါကြောင်း ဆွေးနွေးသွားပါသည်။

စဉ်	ဆွေးနွေးသူ / အဓိကဆွေးနွေးချက်များ	ပြန်လည်ဖြေကြားသူ/ဖြေကြားချက်
		ဦးငွေစိုး စီမံကိန်းမန်နေဂျာ (IBIS Styles Hotel) ➢ စီမံကိန်းအား ၂၀၁၂ တွင် စတင်၍ မြေယာလျော်ကြေးများ ပေးအပ်ပြီး စတင်ခဲ့ပြီး ၂၀၁၆ အတွင်း အပြီးသတ်နိုင်ရန် ကြိုးစား ဆောင်ရွက်သွားမည်ဖြစ်ကြောင်း အသိပေး ရှင်းလင်းခဲ့ပါသည်။
၅။	**(ရှမ်း/မြောက် လူငယ်ကွန်ရက်)** ▪ ရိုးရာဓလေ့အရ ကျေးရွာများတွင် ကာလသားခေါင်းများရှိပါကြောင်းနှင့် ၎င်းတို့အား လစဉ် ထောက်ပံ့မှုအဖြစ် ကျေးရွာမှ စပါး ပေးရပါကြောင်း၊ ယခုအခါစီမံကိန်းများဝင်ရောက်လာသဖြင့်လယ်မြေများမရှိတော့သဖြင့် ထောက်ပံ့ရန်ခက်ခဲသွားပါသဖြင့် ကုမ္ပဏီမှ ဖြေရှင်းဆောင်ရွက်ပေးစေလိုကြောင်း၊ - စွန့်ပစ်အမှိုက်နှင့်ပက်သက်၍ အမျိုးအစားခွဲခြား၍ စွန့်ပစ်သောစနစ်ကျင့်သုံးပြီး Reuse, Recycle နည်းစဉ်များအသုံးပြုသွားရန်နှင့် လူထုအခြေပြု ပညာပေးလုပ်ငန်းစဉ်များ ဆောင်ရွက်ပေးရန် အကြံပြုဆွေးနွေးသွားပါသည်။	**Dr.ကျော်စွာတင့်** ➢ ကာလသားခေါင်းများထောက်ပံ့မှုအား ဒေသဖွံ့ဖြိုးရေးအသုံးစရိတ်ထဲမှ ခွဲဝေသုံးစွဲမည်ဆိုပါက သင့်လျော်မည်ဖြစ်ကြောင်း ဆွေးနွေးတင်ပြသွားပါသည်။ **ဦးစိန်သောင်းဦး Chairman (GMES)** ➢ စွန့်ပစ်ပစ္စည်းများအား စနစ်တကျ စွန့်ပစ်ရန် စွန့်ပစ်ပစ္စည်း စီမံခန့်ခွဲမှု အစီအစဉ်အား ထည့်သွင်းရေးဆွဲထားပါကြောင်း၊ သက်ဆိုင်ရာစည်ပင်သာယာရေးဌာန၏လမ်းညွှန်မှုနှင့်အညီ ဆောင်ရွက်ရန် အကြံပြုထားပါကြောင်းနှင့် လူထုအခြေပြုပညာပေးလုပ်ငန်းအား မူလတန်းကျောင်းများမှစတင်ရန် လိုအပ်ပါကြောင်း အကြံပြုဆွေးနွေးသွားပါသည်။ **ဦးစိုင်းဝင်းမောင်(အမျိုးသားလွတ်တော်ကိုယ်စားလှယ်)** ➢ မူဆယ်မြို့တွင်း အမှိုက်သိမ်းစနစ်အကောင်အထည်ဖော်ရန် ကုမ္ပဏီတစ်ခုနှင့် ချိတ်ဆက်ထားပြီး ဖြစ်ပါကြောင်း၊ ၎င်းကုမ္ပဏီနှင့်ချိတ်ဆက်ဆောင်ရွက်မည် ဆို

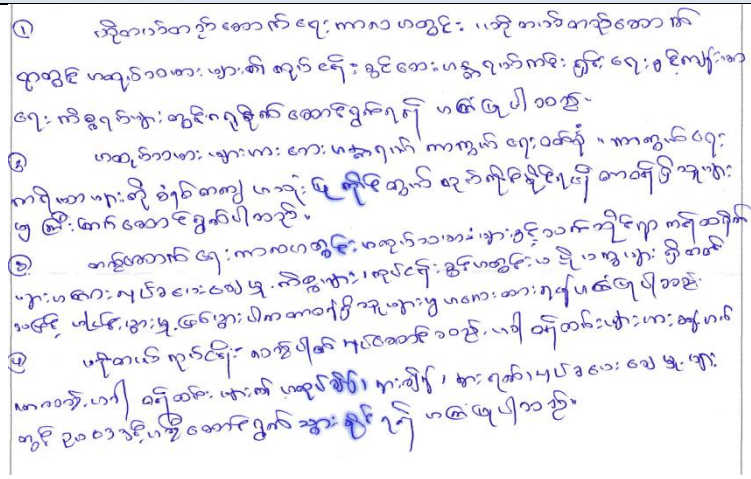
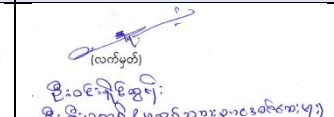
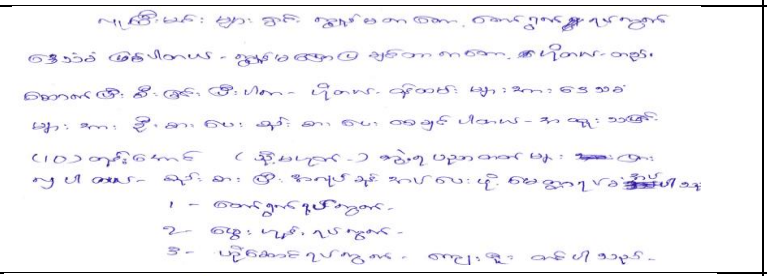
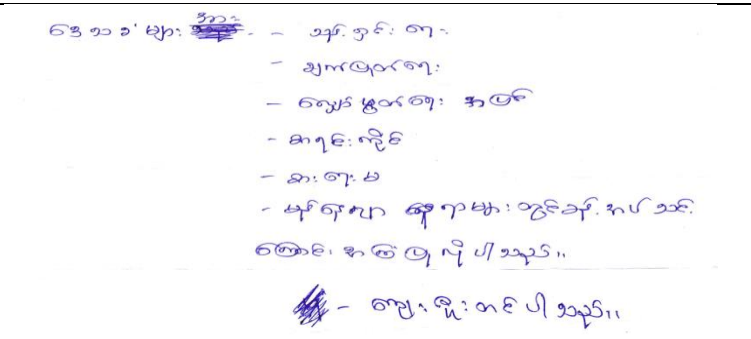
စဉ်	ဆွေးနွေးသူ / အဓိကဆွေးနွေးချက်များ	ပြန်လည်ဖြေကြားသူ/ဖြေကြားချက်
		ပါက ယခုကိစ္စ ပြေလည်သွားနိုင်ပါကြောင်း ဆွေးနွေးသွားပါသည်။
၆။	**ဦးတင်ငွေ (Executive Director ၊ New Starlight Construciton Co., Ltd.)** **New Starlight Construction Co., Ltd.** မှ ဆက်လက်ဆောင်ရွက်မည့် စီမံကိန်းများနှင့် လုပ်ငန်းစဉ်များအား ရှင်းလင်းတင်ပြပြီး တက်ရောက်လာသော ဧည့်သည်တော်များအား အထူးပင်ကျေးဇူးတင်ရှိပါကြောင်း ပြောကြားခဲ့ပါသည်။	

ဒုတိယအကြိမ်တွေ့ဆုံဆွေးနွေးပွဲမှ ဆွေးနွေးချက်များနှင့်ပြန်လည်ဖြေကြားချက်များ

စဉ်	အကြံပြုချက်	အကြံပြုဆွေးနွေးသူ	ပြန်လည်ဖြေကြားသူ/ဖြေကြားချက်
၁။		-	**ဦးမောင်စိန်** **Director, New Starlight Construciton Co., Ltd.** ➢ တိုင်းရင်းသားရိုးရာအမွေအနှစ်များစီမံကိန်းတွင်ထည့်သွင်းအကောင်အထည်ဖော်ဆောင်ရွက်သွားပါမည်။

စဉ်	အကြံပြုချက်	အကြံပြုဆွေးနွေးသူ	ပြန်လည်ဖြေကြားသူ/ဖြေကြားချက်
၂။		 (လက်မှတ်)	**ဦးမောင်စိန်** **Director, New Starlight Construciton Co., Ltd.** ➢ အကြံပြုချက်များအတိုင်းလိုက်နာဆောင်ရွက်သွားပါမည်။
၃။		 (လက်မှတ်)	**ဦးမောင်စိန်** **Director, New Starlight Construciton Co., Ltd.** ➢ အကြံပြုချက်များအတိုင်းလိုက်နာဆောင်ရွက်သွားပါမည်။
၄။		 (လက်မှတ်)	**ဦးမောင်စိန်** **Director, New Starlight Construciton Co., Ltd.** ➢ အကြံပြုချက်များအတိုင်းလိုက်နာဆောင်ရွက်သွားပါမည်။

စဉ်	အကြံပြုချက်	အကြံပြုဆွေးနွေးသူ	ပြန်လည်ဖြေကြားသူ/ဖြေကြားချက်
၅။	- တာဝေးမှာရှိတဲ့ နှင့် ပတ်သက်ပြီး ရှင်းပြပေးပါသည်။ (ရှိခိုးကမ်း အကြောင်း) ရေအောင်းခြင်းများ၊ ဂုဏ်ရည်ကျဆင်းခြင်းများ၊ မျက်စိဖွင့်ပြီး ကြားသိရမှာ ဖြစ်ပြီး အကြောင်းအရာတွေ၊ ကြောင်း၊ ကောင်းကို နှိုင်းယှဉ်ပြီး အကြောင်းအရာများ ဖြစ်ပေါ်လာခြင်း ဘာကြောင့်လဲ ဆိုတာကို ရှင်းပြပေးပါသည်။	(လက်မှတ်) ဒေါ်ခင်မောင်လှ ၀၅/ဇဂဂ ၅၅၇ 09 : 2600621 6837	**ဦးမောင်စိန်** **Director, New Starlight Construciton Co., Ltd.** ➢ အကြံပြုချက်များအတိုင်းလိုက်နာဆောင်ရွက်သွားပါမည်။
၆။	၁) တည်ခိုက်ဆောက်လုပ်ရေးကာလ မီးကျေးလွဲဖြစ် ကျေးရွာတွင်း စောင့်ရှောက်ခံ နှင့် သုတ်သင်ရေး မီးသတ်ပညာ ဖျန်းဆောက်ခြေထားရန် လို အပ်ပါသည်။ ၂) စောင့်ကြည့်ရေး ကာလ ပစ္စည်း၊ ပျက်စီးမှုဆိုင်ရာ ကိစ္စများရှိပါက ပြန်လည်ကုစားပေးရန် အပ်ပါသည်။ သင်တန်း ဖျန်းဆောက်ခြင်း ဦးစီးဌါန ၂၄ ရက်ခွဲ ပေးသွားပါမည်။ ၃) စောင့်ရှောက်ခြင်းကာလ မီးကျေးလွဲဖြစ် ကျေး ပစ္စည်း ပျက်စီး ခဲ့ရသည်ဖြစ်စေ စာပိုဆောင်မှု အလေ့ မီးသတ်ဦးစီးဌါန ၂၄ နာရီပြည့်အောင် ဆောင်ရွက်ပေးခဲ့သည်ဖြစ်ရာ ကျန်ရှိ အပ်ပါသည်။ ၄) ထို အပ်ပါက အလွန်အကျိုးကောင်း ခဲ့ရှိပါကောင်း နှင့် ကူညီလေ့လာနိုင်ရန် ပါကြောင်း-	(လက်မှတ်) ဦးကို ကို ကြီး လက်ထောက်ဒုတိယမှူး (ခရိုင်မီးသတ်) 09492273303	**ဦးမောင်စိန်** **Director, New Starlight Construciton Co., Ltd.** ➢ အကြံပြုချက်များအတိုင်းလိုက်နာဆောင်ရွက်သွားပါမည်။
၇။	၁။ IBIS Styles Hotel ဆိုမယ်ဆိုရင် ပတ်သက်ဆက်ဖြစ် ရှုဆပ်ပြီး၊ စနေ ပြုစု ဖွံ့ဖြိုးတိုးတက်လာတာနဲ့ ကျွဲ ဒီ status ဆောင်ရွက်ရှိ ဟိုတယ် တစ်ခု တည်ဆောက် ခြင်းဟာ ဒေသခံ များ အလုပ်အကိုင် အခွင့်အလမ်း များ ပေးရှိစေခြင်း၊ ဒေသ ဖွံ့ဖြိုး တိုး တက် ခြင်း၊ နိုင်ငံခြားသား ခရီးသွား၊ ပြင်ပ၊ များ ကဏ္ဍက် ဆက်သွယ်ပေါ်လာဖြစ် နိုင်စေ ကော် ဒေသခွင့် အွေလည်၊ ပိုမို ဂုဏ်ရှိ စေမှာ ဖြစ်ပါ ကယ်။ ၂။ ဒေသအသ ပတ်ဝန်းကျင် ထိန်းသိမ်းရေး လုပ်ငန်း များနှင့် ပတ်သက်ပြီး၊ ထိခိုက်မှု လျော့နည်း စေခြင်း၊ အကျိုးရလဒ်များ ဖြစ်ထင်ခြင်းအားဖြင့်. နှုတ်လစ်း ၊ အောင်ကြည့်ရှုလေ့လာအား ဖြစ်စေခြင်း၊ အခြားအခံ များ အကျိုးရှိ ဆောင်ရွက်နိုင်ခြင်း ဆောင်ကြည့်ရှုလေ့လာမှု အဖွဲ့ များ ဖြင့်၊ ချုပ်ခြုပ်ကျ အောင်ကြည့်ရှုလေ့လာမှု အဖွဲ့ ပါ ကြောင်း အကြံပြုအပ်ပါ သည်။	(လက်မှတ်) ဦးမျိုးနိုင် နှ.ဦ.ဖွံ့ ၊ ဖြိုး နှ ၁၁၄ ဌာန/ဗျူး ၀၅- 25634/6553	**ဦးမောင်စိန်** **Director, New Starlight Construciton Co., Ltd.** ➢ အကြံပြုချက်များအတိုင်းလိုက်နာဆောင်ရွက်သွားပါမည်။

စဉ်	အကြံပြုချက်	အကြံပြုဆွေးနွေးသူ	ပြန်လည်ဖြေကြားသူ/ဖြေကြားချက်
၈။			**ဦးမောင်စိန်** **Director, New Starlight Construciton Co., Ltd.** ➢ အကြံပြုချက်များအတိုင်းလိုက်နာဆောင်ရွက်သွားပါမည်။
၉။		-	**ဦးမောင်စိန်** **Director, New Starlight Construciton Co., Ltd.** ➢ သတ်မှတ်ချက်နှင့်ကိုက်ညီသောဒေသခံများအား ဦးစားပေးအလုပ်ခန့်အပ်သွားမည်ဖြစ်ပါသည်။
၁၀။		-	**ဦးမောင်စိန်** **Director, New Starlight Construciton Co., Ltd.** ➢ အကြံပြုချက်များအတိုင်းလိုက်နာဆောင်ရွက်လျက်ရှိပါသည်။

APPENDIX V

SUMMARY OF SIA REPORT FOR PUBLIC DISCLOSURE

"လူမှုဝန်းကျင်ထိခိုက်မှုလေ့လာဆန်းစစ်ခြင်းအနှစ်ချုပ်အစီရင်ခံစာ"

၁။ လုပ်ဆောင်ခဲ့ပြီးသည့်လူမှုစီးပွားထိခိုက်မှုလေ့လာဆန်းစစ်ခြင်းလုပ်ငန်းများ

လူမှုစီးပွားထိခိုက်မှုလေ့လာဆန်းစစ်ခြင်းအဖွဲ့အနေဖြင့်အောက်ဖော်ပြပါလူမှုထိခိုက်မှုဆန်းစစ်ခြင်းလုပ်ငန်းများအား လုပ်ဆောင်ခဲ့ပြီးဖြစ်ပါသည်။

(က) သက်ရောက်မှုမှုရှိနိုင်မည့်နယ်နိမိတ်အား သတ်မှတ်ခြင်း၊

(ခ) သတ်မှတ်နယ်နိမိတ်များအတွင်းသို့ကွင်းဆင်းဆောင်ရွက်ခြင်း၊

(ဂ) လူထုတွေ့ဆုံပွဲပြုလုပ်ခြင်း (ပထမအကြိမ်)

(ဃ) ထိခိုက်မှုရှိနိုင်သည်များအား လူမှုစီးပွားကျွမ်းကျင်ပညာရှင်များမှ စနစ်တကျလေ့လာ ဖော်ထုတ်ခြင်း၊ ထိခိုက်နိုင်မှုအဆင့်သတ်မှတ်ခြင်းနှင့် ထိခိုက်မှုလျော့နည်းသက်သာအောင် လုပ်ဆောင်နိုင်သည့်နည်းလမ်းများ ရှာဖွေခြင်း၊

(င) လူမှုစီးပွားစောင့်ကြည့်လေ့လာရေး အစီအစဉ်များသတ်မှတ်ခြင်း၊

(စ) စောင့်ကြည့်လေ့လာရေးအဖွဲ့ ဖွဲ့စည်းပေးခြင်း အစရှိသည် တို့အား လုပ်ဆောင်ခဲ့ပြီးဖြစ်ပါသည်။

ဆက်လက်ပြီး ဒုတိယအကြိမ်လူထုတွေ့ဆုံပွဲအား ဆက်လက်ပြုလုပ်သွားမည်ဖြစ်ကာ အဆိုပါတွေ့ဆုံပွဲတွင် လေ့လာဆန်းစစ်ခြင်းအဖွဲ့မှတွေ့ရှိချက်များအား ကြိုတင်သိရှိနိုင်ရန်နှင့် လိုအပ်သည်များအားဆက်လက်ပြီးအကြံပြုဆွေးနွေးသွားနိုင်ရေးအတွက်အနှစ်ချုပ်အစီရင်ခံစာအားတင်ပြခြင်းဖြစ်ပါသည်။

(က) သက်ရောက်မှုရှိနိုင်မည့်နယ်နိမိတ်အား သတ်မှတ်ခြင်း

သက်ရောက်မှုနယ်နိမိတ်အား သတ်မှတ်နိုင်ရေးအတွက် စီမံကိန်းတာဝန်ရှိသူများ၊ ကျေးရွာအုပ်ချုပ်ရေးမှူးများနှင့် တွေ့ဆုံဆွေးနွေးပြီး ဟိုတယ်စီမံကိန်းကြောင့် ထိခိုက်မှုရှိနိုင်မည့် လူမှုစီးပွားနယ်ပယ်အား သတ်မှတ်ခဲ့ပါသည်။ နယ်နိမိတ်သတ်မှတ်ချက်အနေဖြင့် ဟိုတယ်စီမံကိန်းအားဗဟိုပြု၍ ၂ ကီလိုမီတာပတ်လည်ရှိ လူနေရပ်ကွက်များအား သက်ရောက်မှုရှိနိုင်သည့် လူနေရပ်ကွက်များအဖြစ် သတ်မှတ်ခဲ့ပါသည်။ အဓိကအားဖြင့်အောက်ဖော်ပြပါလူနေရပ်ကွက်များပါဝင်ခဲ့ပါသည်။

(က) တော်ရွက်

(ခ) ဖွေးဟုန်း

(ဂ) ဟိုဆောင်

(ဃ) ကောင်းမူးတုံ

(c) ခရစ်ယာန်

(စ) ဗျူးရပ်ကွက် တို့ဖြစ်ပါသည်။

(ခ) သတ်မှတ်နယ်နမိတ်များအတွင်းသို့ကွင်းဆင်းဆောင်ရွက်ခြင်း

သတ်မှတ်ထားရှိသောနယ်နိမိတ်များဖြစ်သည့် တော်ရွက်၊ ဖွေးဟုန်း၊ ဟိုဆောင်၊ ကောင်းမူးတုံ ရပ်ကွက်အတွင်းရှိ လူနေအိမ်များသို့ လူမှုစီးပွားကျွမ်းကျင်သူများပါဝင်သည့်အဖွဲ့ဖြင့် ကွင်းဆင်းဆောင်ရွက်ခဲ့ပြီး လူမှုစီးပွားအခြေအနေများ၊ ဟိုတယ်တည်ဆောက်ခြင်းကြောင့် ပတ်ဝန်းကျင်လူထုအပေါ် ထိခိုက်မှုရှိနိုင်သည်များနှင့် စီမံကိန်းအပေါ် လူထုသဘောထားအမြင်များအား စစ်တမ်းကောက်ယူခဲ့ပါသည်။ ထိုသို့ကောက်ယူရာတွင် သက်ဆိုင်ရာရပ်ကွက်များမှ အုပ်ချုပ်ရေးမှူးများနှင့် ညှိနှိုင်းဆောင်ရွက်ခဲ့ပြီး ရပ်ကွက်အကွက်မှူးများ ပူးပေါင်းပါဝင်သောအဖွဲ့ဖြင့် ကွင်းဆင်းလုပ်ဆောင်ခဲ့ပါသည်။

ထိုသို့ကွင်းဆင်းဆောင်ရွက်ရာတွင် ဘာသာစကားအခက်အခဲကြောင့် လူနေအိမ်များသို့ တိုက်ရိုက်ကွင်းဆင်းဆောင်ရွက်ရာတွင် အခက်အခဲအနည်းငယ်ရှိနိုင်သဖြင့် လူနေရပ်ကွက်များအား စုပေါင်းမေးမြန်းခြင်းက ပိုမိုထိရောက်မှုရှိနိုင်ကြောင်း သက်ဆိုင်ရာရပ်ကွက်အုပ်ချုပ်ရေးအဖွဲ့ဝင်များမှ တင်ပြကြသဖြင့် တော်ရွက်ရပ်ကွက်ခမ္မာရုံတွင် စုပေါင်းတွေ့ဆုံမေးမြန်းခဲ့ပါသည်။ ထိုသို့စုပေါင်းတွေ့ဆုံစစ်တမ်းကောက်ယူရာတွင် ဒေသခံဘွဲ့ရလူငယ်များ ပူးပေါင်းကူညီဆောင်ရွက်ခဲ့ကြပါသည်။

အဆိုပါတွေ့ဆုံမေးမြန်းပွဲမှ ဒေသခံလူထုစိုးရိမ်မှုများမှာ အောက်ပါအတိုင်းဖြစ်ပါသည်။

(က) လမ်းများပိတ်ဆို့မှု၊

(ခ) ရိုးရာယဉ်ကျေးမှုအပေါ် ထိခိုက်နိုင်ခြင်း၊

(ဂ) အလုပ်အကိုင်အခွင့်အလမ်း၊

(ဃ) ကျေးရွာနယ်နမိတ်များကျဉ်းမြောင်းလာမှု၊

(စ) ရေမြောင်းများပိတ်ဆို့မှု အစရှိသည်တို့ဖြစ်ပါသည်။

ဒေသခံများအနေဖြင့် ဟိုတယ်ဆောက်လုပ်ခြင်းစီမံကိန်းအပေါ် တားဆီးလိုခြင်းမျိုးမရှိပဲ ထိခိုက်မှုရှိနိုင်သည်များအား အနည်းဆုံးဖြစ်စေရန် လျှော့ချပေးရန်သာ လိုလားကြကြောင်း တွေ့ရှိရပါသည်။

(ဂ) ပထမအကြိမ်လူထုတွေ့ဆုံပွဲ

ပထမအကြိမ်လူထုတွေ့ဆုံပွဲအား (၁၉.၉.၂၀၁၅) ရက်နေ့တွင် ဖွေးဟုန်းခမ္မာရုံတွင် ပြုလုပ်ခဲ့ပြီး ဒေသဆိုင်ရာအာဏာပိုင်များ၊ ရပ်ကွက်အုပ်ချုပ်ရေးမှူးများ၊ အကွက်မှူးများ၊ ရပ်မိရပ်ဖများ စုစုပေါင်းအင်အား (၁၅၀) ခန့် တက်ရောက်ခဲ့ပါသည်။ ဟိုတယ်တည်ဆောက်ရေးတာဝန်ရှိသူများမှ တည်ဆောက်ရေးလုပ်ငန်းစဉ်များအကြောင်း ရှင်းလင်းပြောကြားခြင်း၊ ပတ်ဝန်းကျင်ထိခိုက်မှု လေ့လာဆန်းစစ်ရေးအဖွဲ့မှ လေ့လာဆန်းစစ်ခြင်းဆိုင်ရာလုပ်ငန်းစဉ်များနှင့် ကွင်းဆင်းဆောင်ရွက်မှုမှရရှိသည့် လူထုသဘောထား

များနှင့် ဒေသခံလူထုစိုးရိမ်မှုများအား ဆွေးနွေးတင်ပြကြပါသည်။ တက်ရောက်လာသူများမှ သိရှိလိုသည် များအား မေးမြန်းကြပြီး လုပ်ငန်းရှင်ဘက်မှ သိရှိလိုသမျှ ရှင်းလင်းဖြေကြားခဲ့ပါသည်။ အဓိကအားဖြင့် ဟိုတယ်လုပ်ငန်းကြောင့် ယဉ်ကျေးမှုထိခိုက်နိုင်ခြင်းမရှိစေရေး အဓိကထားလုပ်ဆောင်ရန်၊ စောင့်ကြည့် လေ့လာရေးအစီအစဉ်များ ချမှတ်ဆောင်ရွက်ရန် အစရှိသည်များအား အဓိကထားဆွေးနွေးခဲ့ကြပါသည်။ လုပ်ငန်းရှင်ဘက်မှလည်း ဒေသခံလူထုလိုလားချက်များအား အလေးထားလုပ်ဆောင်သွားမည်ဖြစ်ကြောင်း ကတိပြုပြောကြားခဲ့ပါသည်။

(ဃ) ပထမအကြိမ်တွေ့ဆုံပွဲမှအဓိကဆွေးနွေးချက်များ

ပထမအကြိမ်လူထုတွေ့ဆုံပွဲတွင် ဆွေးနွေးပွဲအတွင်း ကိုယ်တိုင်ကိုယ်ကျ ဆွေးနွေးနိုင်စေရန်အပြင် စာဖြင့်အကြံပြုဆွေးနွေးနိုင်စေရန် (၂) မျိုးစီစဉ်ထားရှိပါသည်။ ဆွေးနွေးပွဲအတွင်း အဓိကဆွေးနွေးချက် များမှာ -

(၁) ရိုးရာယဉ်ကျေးမှုထိန်းသိမ်းရေးနှင့်

(၂) စောင့်ကြည့်လေ့လာရေးအစီအစဉ်များသေချာမှုရှိစေရန် လုပ်ဆောင်စေရေး အစရှိသည့် အချက်များအား အဓိကထားဆွေးနွေးခဲ့ကြပါသည်။

စာဖြင့်အကြံပြုချက်များမှာ-

(၁) ရိုးရာယဉ်ကျေးမှုထိန်းသိမ်းနိုင်ရန်၊

(၂) အလုပ်အကိုင်အခွင့်အလန်းအတွက်သင်တန်းများပေးရန်၊

(၃) လမ်းပိတ်ဆို့မှုမရှိစေရန်၊

(၄) CSR အစီအစဉ်များပွင့်လင်းမြင်သာစွာချပြရေး၊

(၅) မီဒီယာများအားဖိတ်ကြားပေးရန် အစရှိသည့်အချက်များ အဓိက အကြံပြုဆွေးနွေးထား ပါသည်။

(c) လူမှုစီးပွားထိခိုက်မှုရှိနိုင်သည်များအား လေ့လာဖော်ထုတ်ခြင်းနှင့် လျော့နည်းသက်သာစေမည့် နည်းလမ်းများရှာဖွေခြင်း

ဆက်လက်ပြီးတည်ဆောက်ခြင်းလုပ်ငန်းစဉ်များကြောင့် ဖြစ်ပေါ်လာနိုင်သည့် လူမှုစီးပွားထိခိုက် မှုများအား ကျွမ်းကျင်သူများမှ စနစ်တကျရှာဖွေဖော်ထုတ်ခဲ့ပြီး အဆိုပါအချက်များထဲမှ အဓိကကျသည့် ထိခိုက်နိုင်မှုများနှင့် လျော့နည်းသက်သာရန် လုပ်ဆောင်ရမည့် နည်းလမ်းများအား အောက်ပါအတိုင်း တင်ပြအပ်ပါသည်။

စဉ်	အကျိုးကျေးဇူး (သို့) ထိခိုက်နိုင်မှုများ	သက်ရောက်မှု အမျိုးအစား	အကျိုးကျေးဇူးပိုမိုရရှိစေရန် (သို့) လျော့နည်းသက်သာရန်ထိန်းသိမ်းလုပ်ဆောင်ရန်လိုအပ်မှု ရှိ/မရှိ	အကျိုးကျေးဇူးပိုမိုရရှိစေရန် (သို့) လျော့ နည်းသက်သာရန် ထိန်းသိမ်းလုပ်ဆောင်ရမည့်နည်းလမ်းများ
၁။	အလုပ်အကိုင်အခွင့် အလမ်း	အကျိုးကျေးဇူး	အကျိုးကျေးဇူးမြှင့်တင်ပေးရန်လိုအပ်	➢ ဒေသခံများဦးစားပေးခန့်အပ်ရန်နှင့် အနိမ့်ဆုံးခန့်အပ်မည့် ဒေသခံအလုပ်သမားသတ်မှတ်ထားရှိရန်၊ ➢ လိုအပ်ပါက ဒေသခံများအား သင်တန်းပေးခန့်အပ်ရန်၊ ➢ ကျား/မခွဲခြားခန့်ထားခြင်းမပြုရန်၊ ➢ တစ်ဆင့်ခံလုပ်ငန်းများနှင့် သဘောတူစာချုပ်များတွင်အထက်ပါအချက်အား ထည့်သွင်းချုပ်ဆိုပေးရန်၊
၂။	ဒေသဝင်ငွေတိုးတက်ခြင်း	အကျိုးကျေးဇူး	အကျိုးကျေးဇူးမြှင့်တင်ပေးရန်လိုအပ်	➢ တည်ဆောက်ခြင်းနှင့် လည်ပတ်ခြင်းလုပ်ငန်းစဉ်များအတွက် လိုအပ်မည့် ပစ္စည်းများ၊ အသုံးအဆောင်များ၊ ဝန်ဆောင်မှုများ အား ဒေသတွင်းမှသာ ဝယ်ယူအသုံးပြုရန်၊ ➢ လိုအပ်ပါက ဝန်ဆောင်မှုများအတွက် ရန်ပုံငွေ/မတည်ငွေများ တည်ထောင်ပေးရန်၊ ➢ တစ်ဆင့်ခံ လုပ်ငန်းများ သဘောတူ စာချုပ်များတွင် အထက်ပါအချက်အား ထည့်သွင်းချုပ်ဆိုပေးရန်၊
၃။	ဆက်စပ်စီးပွားရေးလုပ်ငန်းများ တိုးတက်ခြင်း	အကျိုးကျေးဇူး	အကျိုးကျေးဇူးမြှင့်တင်ပေးရန်လိုအပ်	➢ ဆက်စပ်လျက်ရှိသည့်ဒေသတွင်းစီးပွားရေးလုပ်ငန်းများတိုးတက် ရန်လက်တွဲကူညီသွားရေး ပေါ်လစီချမှတ်ဆောင်ရွက်ရန်၊ ➢ တစ်ဆင့်ခံလုပ်ငန်းများတွင်လည်း အဆိုပါအချက်အား လိုက်နာလုပ်ဆောင်နိုင်ရေး သဘောတူစာချုပ်များတွင် ထည့်သွင်းချုပ်ဆို ရန်၊
၄။	နိုင်ငံဝင်ငွေတိုးတက်ခြင်း	အကျိုးကျေးဇူး	အကျိုးကျေးဇူးမြှင့်တင်ပေးရန်လိုအပ်	➢ ဒေသအာဏာပိုင်များ၏လမ်းညွှန်မှုများအတိုင်း အတိအကျ

စဉ်	အကျိုးကျေးဇူး (သို့) ထိခိုက်နိုင်မှုများ	သက်ရောက်မှု အမျိုးအစား	အကျိုးကျေးဇူးပိုမိုရရှိစေရန် (သို့) လျော့နည်းသက်သာရန်ထိန်းသိမ်းလုပ်ဆောင်ရန်လိုအပ်မှု ရှိ/မရှိ	အကျိုးကျေးဇူးပိုမိုရရှိစေရန် (သို့) လျော့ နည်းသက်သာရန် ထိန်းသိမ်းလုပ်ဆောင်ရမည့်နည်းလမ်းများ
				လိုက်နာပူးပေါင်းဆောင်ရွက်ရန်၊ ➢ ဒေသဖွံ့ဖြိုးမှုလုပ်ငန်းများ ပါဝင်ကူညီဆောင်ရွက်ပေးရန်၊ ➢ တာဝန်သိ/တာဝန်ယူမှုရှိသော အခွန်ပေးဆောင် ခြင်းစနစ်တည် ဆောက် ကျင့်သုံးရန်၊
၅။	တိုင်းရင်းသားယဉ်ကျေးမှု အား ထိခိုက်နိုင်ခြင်း	ထိခိုက်မှု	ထိခိုက်မှုလျော့ချလုပ်ဆောင်ပေးရန်လိုအပ်	➢ ဟိုတယ်တည်ဆောက်စဉ်ယဉ်ကျေးမှုအငွေ့အသက်လက်ရာများ ထည့်သွင်းတည်ဆောက်ပေးရန်၊ ➢ ဒေသယဉ်ကျေးမှုအားလွှမ်းမိုးချယ်လှယ်နိုင်သည့်အရာများရှောင် ရှားပြီး ဒေသယဉ်ကျေးမှုမပျောက်ပျက်ရေးအတွက် ကူညီဆောင် ရွက်ပေးရန်၊
၆။	ဒေသနယ်နိမိတ်အပေါ် ထိခိုက်မှုရှိနိုင်ခြင်း	ထိခိုက်မှု	ထိခိုက်မှုလျော့ချလုပ်ဆောင်ပေးရန်လိုအပ်	➢ လိုအပ်သောနယ်နိမိတ်အတိုင်း အနည်းဆုံးသာတိုးချဲ့ရန်၊ ➢ အနီးအနားပတ်ဝန်းကျင်ရပ်ကွက်များ၏နယ်နိမိတ်အား ထိခိုက်မှု မရှိစေရေန်၊
၇။	လူသွားလမ်းများပိတ်ဆို့ ခြင်း	ထိခိုက်မှု	ထိခိုက်မှုလျော့ချလုပ်ဆောင်ပေးရန်လိုအပ်	➢ စီမံကိန်းသွားလမ်းများသည် မူလရှိပြီးဖြစ်သော လူသွားလမ်းများ အား ပိတ်ဆို့မှုမရှိစေရေးဆောင်ရွက်ရန်၊ ➢ ပိတ်ဆို့ခဲ့မည်ဆိုပါက အခြားနည်းလမ်းဖြင့် အစားထိုးပေးရန်၊
၈။	ဒေသတွင်းကျန်းမာရေး စောင့်ရှောက်မှု၊ရေမီး၊ အမှိုက်သိမ်းစနစ်အသုံးပြုမှု အပေါ် သက်ရောက်မှု ရှိခြင်း	ထိခိုက်မှု	ထိခိုက်မှုလျော့ချလုပ်ဆောင်ပေးရန်လိုအပ်	➢ ကိုယ်ပိုင်ကျန်းမာရေးဝန်ဆောင်မှုပေးရန်၊ ➢ ဒေသခံများ သုံးစွဲသည့်ရေနှင့် လျှပ်စစ်မီးအားတိုက်ရိုက်သုံးစွဲခြင်း နှင့် အမှိုက်စွန့်ပစ်မှုအသုံးပြုခြင်းမရှိသည့် နည်းလမ်းရှာဖွေသုံးစွဲရန်၊ ➢ ရေအသုံးပြုမှု၊ လျှပ်စစ်ဓာတ်အား အသုံးပြုမှု ချွေတာသုံးစွဲရန်၊

စဉ်	အကျိုးကျေးဇူး (သို့) ထိခိုက်နိုင်မှုများ	သက်ရောက်မှု အမျိုးအစား	အကျိုးကျေးဇူးပိုမိုရရှိစေရန် (သို့) လျော့နည်းသက်သာရန်ထိန်းသိမ်းလုပ်ဆောင်ရန်လိုအပ်မှု ရှိ/မရှိ	အကျိုးကျေးဇူးပိုမိုရရှိစေရန် (သို့) လျော့ နည်းသက်သာရန် ထိန်းသိမ်းလုပ်ဆောင်ရမည့်နည်းလမ်းများ
၉။	ယာဉ်အသွားအလာနှင့် ယာဉ်ထိခိုက်မှု တိုးလာနိုင်ခြင်း	ထိခိုက်မှု	ထိခိုက်မှုလျော့ချလုပ်ဆောင်ပေးရန်လိုအပ်	➢ သင့်တော်သည့် ယာဉ်အသွားအလာ ထိန်းချုပ်မှုစနစ်ထားရှိရန်၊ ➢ လမ်းပေါ်တွင် သတိပေးဆိုင်းဘုတ်များနှင့် အရှိန်လျော့စနစ်များ တပ်ဆင်နိုင်ရန်ဒေသဆိုင်ရာ အာဏာပိုင်များနှင့် ညှိနှိုင်းဆောင် ရွက်ရန်၊ ➢ ကားပါကင်လုံလောက်စွာထားရှိရန်၊ ➢ လမ်းမပေါ်တွင်ကားရပ်နားခြင်းမပြုရေးရှင်းလင်းလုပ်ဆောင်သွား ရန်၊ ➢ အရှိန်လျော့မောင်းနှင်ရန်နှင့် လူရှင်းသည့် အချိန်သွားလာရန်၊
၁၀။	ဒေသတွင်းလူနေအိမ်များပိုမိုလိုအပ်လာခြင်း	ထိခိုက်မှု	ထိခိုက်မှုလျော့ချလုပ်ဆောင်ပေးရန်လိုအပ်	➢ ဒေသခံများအားဦးစားပေးခန့်အပ်ရန်၊ ➢ ရပ်ဝေးဒေသမှအလုပ်သမားရှိပါကဟိုတယ်ဝင်းအတွင်းအဆောင် လုံလောက်စွာ စီစဉ်ပေးရန်၊
၁၁။	ခိုက်ရန်ဖြစ်မှုများ နှင့် ဒေသလုံခြုံရေး	ထိခိုက်မှု	ထိခိုက်မှုလျော့ချလုပ်ဆောင်ပေးရန်လိုအပ်	➢ ဒေသခံများဦးစားပေးခန့်အပ်ရန်၊ ➢ ဒေသယဉ်ကျေးမှုနှင့် လူနေမှုဓလေ့များအတိုင်း လိုက်နာနိုင်ရန် အလုပ်သမားများအားအသိပညာပေးရန်၊ ➢ ဒေသအာဏာပိုင်များနှင့် ပူးပေါင်းဆောင်ရွက် ဖြေရှင်းရန်၊ ➢ တစ်ဆင့်ခံလုပ်ငန်းများ သဘောတူစာချုပ်များ တွင်အထက်ပါ အချက်အား ထည့်သွင်းချုပ်ဆိုရန်၊
၁၂။	မီးဘေးအန္တရာယ်	ထိခိုက်မှု	ထိခိုက်မှုလျော့ချလုပ်ဆောင်ပေးရန်လိုအပ်	➢ အဆင့်မြင့်မီးသတ်စနစ်များတပ်ဆင်ရန်၊ ➢ ကိုယ်ပိုင်မီးသတ်တပ်ဖွဲ့ထားရှိရန်၊

စဉ်	အကျိုးကျေးဇူး (သို့) ထိခိုက်နိုင်မှုများ	သက်ရောက်မှု အမျိုးအစား	အကျိုးကျေးဇူးပိုမိုရရှိစေရန် (သို့) လျော့နည်းသက်သာရန်ထိန်းသိမ်းလုပ်ဆောင်ရန်လိုအပ်မှု ရှိ/မရှိ	အကျိုးကျေးဇူးပိုမိုရရှိစေရန် (သို့) လျော့ နည်းသက်သာရန် ထိန်းသိမ်းလုပ်ဆောင်ရမည့်နည်းလမ်းများ
				➢ အလုပ်သမားများအား ပုံမှန်မီးသတ်သင်တန်းပေးရန်၊ ➢ ဒေသခံမီးသတ်တပ်ဖွဲ့နှင့် စဉ်ဆက်မပြတ်ပူးပေါင်းဆောင်ရွက် ရန်၊

(စ) လူမှုစီးပွားစောင့်ကြည့်ေလ့လာရေးအစီအစဉ်များ

စောင့်ကြည့်လေ့လာလုပ်ဆောင်သွားရမည့်အချက်များအနေဖြင့် အောက်ဖော်ပြပါလုပ်ငန်းစဉ်များအား လုပ်ဆောင်ရန် အကြံပြုတင်ပြထားပါသည်။

စဉ်	စောင့်ကြည့်ရမည့် အကြောင်းအရာ	အကျိုးကျေးဇူး (သို့) ထိခိုက်မှု	စောင့်ကြည့်ရမည့်နည်းလမ်း	စောင့်ကြည့်ရ မည့်အကြိမ်
၁။	အလုပ်အကိုင်ရရှိမှု အခြေအနေ	အကျိုးကျေးဇူး	➢ ဒေသခံအလုပ်ခန့်အပ်ထားမှုရာခိုင်နှုန်း	လစဉ်
၂။	ဒေသတွင်း လုပ်ငန်းများ ဖွံ့ဖြိုးမှု အခြေအနေ	အကျိုးကျေးဇူး	➢ ဒေသတွင်း အသေးစားနှင့် အလတ်စား လုပ်ငန်းများဖွံ့ဖြိုးမှုအခြေအနေ ➢ ဒေသတွင်းမှဝယ်ယူသည့်ပစ္စည်းများနှင့် အသုံးပြုခဲ့သည့် ဝန်ဆောင်မှုများအခြေအနေ	၆လ တစ်ကြိမ်
၃။	နိုင်ငံစီးပွား အထောက်အပံ့ပေးနိုင်မှု	အကျိုးကျေးဇူး	➢ အခွန်ပေးဆောင်မှု မှတ်တမ်းများ ➢ ဒေသအကျိုးပြုလုပ်ငန်းများ	နှစ်စဉ်
၄။	တာဝန်သိ လူမှုဖွံ့ဖြိုးရေး အစီအစဉ်များ	အကျိုးကျေးဇူး	➢ ဒေသတွင်း လူမှုဖွံ့ဖြိုးရေးလုပ်ဆောင်မှု မှတ်တမ်းများ ➢ ရန်ပုံငွေအသုံးပြုမှု မှတ်တမ်းများ ➢ ဒေသခံလူထုလိုလားချက်များ ဖြည့်ဆည်းပေးနိုင်မှု အခြေအနေ	၃လ တစ်ကြိမ်
၅။	လမ်းပိတ်ဆို့မှုများ	ထိခိုက်မှု	➢ လှေဆိပ်သွားလမ်းနှင့်အခြားလမ်းများ ပိတ်ဆို့မှု ရှိ/မရှိအခြေအနေ ➢ လမ်းများပိတ်ဆို့ကြောင်း ဒေသခံများမှ ကန့်ကွက်ပြောကြားမှုမှတ်တမ်းများ	လစဉ် (တည်ဆောက်ရေးကာလအတွင်း)
၆။	ယာဉ်ပိတ်ဆို့မှု	ထိခိုက်မှု	➢ ဟိုတယ်သွားလမ်းပေါ်ယာဉ်အသွားအလာ မှတ်တမ်းများ ➢ ဟိုတယ်သွားလမ်းပေါ်ယာဉ် မတော်တဆမှု မှတ်တမ်းများ ➢ ယာဉ်အသွားအလာ ထိန်းချုပ်မှုစနစ် တိုးချဲ့/ပြုပြင်ထိန်းသိမ်းမှုမှတ်တမ်းများ	လစဉ်
၇။	ဒေသခံလူထု လုံခြုံရေး	ထိခိုက်မှု	➢ ဟိုတယ်အလုပ်သမားနှင့်သက်ဆိုင်သည့် ရဲမှုခင်း ပြစ်မှုမှတ်တမ်းများ ➢ မတော်တဆဖြစ်ရပ်မှတ်တမ်းများ	လစဉ်
၈။	ဒေသ သယံဇာတများ သုံးစွဲမှု	ထိခိုက်မှု	➢ လစဉ်ရေသုံးစွဲမှုမှတ်တမ်း ➢ လစဉ်လျှပ်စစ်သုံးစွဲမှုမှတ်တမ်း	လစဉ်

စဉ်	စောင့်ကြည့်ရမည့် အကြောင်းအရာ	အကျိုးကျေးဇူး (သို့) ထိခိုက်မှု	စောင့်ကြည့်ရမည့်နည်းလမ်း	စောင့်ကြည့်ရ မည့်အကြိမ်
			➢ အမှိုက်စွန့်ပစ်သည့်ပမာဏနှင့် စွန့်ပစ်သည့် နေရာ	
၉။	ယဉ်ကျေးမှု တိမ်ကောလာခြင်း	ထိခိုက်မှု	➢ ဟိုတယ်အတွင်းယဉ်ကျေးမှုအမွေအနှစ်များ ထည့်သွင်းထားမှုမှတ်တမ်းများ ➢ အနီးအနားမှလူနေရပ်ကွက်များတွင် ယဉ်ကျေးမှုတိုးတက်လာစေရေးကူညီ ထောက်ပံ့မှုမှတ်တမ်းများ	၃လ တစ်ကြိမ်
၁၀။	မီးဘေးအန္တရာယ်	ထိခိုက်မှု	➢ ဟိုတယ်နှင့်တိုက်ရိုက် (သို့) သွယ်ဝိုက်သက်ဆိုင်သည့် မီးဘေး မတော်တဆ ဖြစ်ရပ်မှတ်တမ်းများ ➢ အလုပ်သမားများအား မီးဘေးကာကွယ်ရေးသင်တန်းပေးမှုမှတ်တမ်းများ ➢ ဒေသခံမီးသတ်အဖွဲ့နှင့်ပူးပေါင်းဆောင် ရွက်မှုမှတ်တမ်းများ	လစဉ်

(ဆ) စောင့်ကြည့်လေ့လာရေးအဖွဲ့ ဖွဲ့စည်းပေးခြင်း

စောင့်ကြည့်လေ့လာရေးအဖွဲ့အားကုမ္ပဏီမှ တာဝန်ရှိသူများအပြင် ဒေသအာဏာပိုင်အဖွဲ့အစည်းများ၊ ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဦးစီးဌာနမှ တာဝန်ရှိသူများ၊ ဆက်စပ်လျက်ရှိသည့် ဌာနဆိုင်ရာအချို့မှ တာဝန်ရှိသူများ၊ ရပ်ကွက်များမှ တာဝန်ရှိပုဂ္ဂိုလ်များဖြင့် ဖွဲ့စည်းထားရှိရန်နှင့် လိုအပ်သလို ပူးပေါင်းဆောင်ရွက်သွားရန် လုပ်ငန်းရှင်အား အကြံပြုထားရှိပါသည်။

၂။ ဒေသခံလူထုအလုပ်အကိုင်အခွင့်အလမ်းရရှိနိုင်မှုအတွက်အစီအစဉ်များ

အလုပ်အကိုင်အခွင့်အလမ်းရရှိမှုအနေဖြင့် ဟိုတယ်တည်ဆောက်ခြင်းနှင့် လည်ပတ်ခြင်းလုပ်ငန်းစဉ်များတွင် သတ်မှတ်အရည်အချင်းကိုက်ညီမှုရှိပါက ဒေသခံများအား ဦးစားပေးခန့်ထားပေးမည်ဖြစ်ကြောင်း ပထမအကြိမ်လူထုတွေ့ဆုံပွဲတွင် လုပ်ငန်းရှင်ဘက်မှ ကတိကဝတ်ပြုပြောကြားခဲ့ပြီးဖြစ်ပါသည်။

၃။ တာဝန်သိလူမှုဖွံ့ဖြိုးရေးအစီအစဉ်များ

လူမှုဖွံ့ဖြိုးရေး အစီအစဉ်များအနေဖြင့် နှစ်စဉ် အခွန်ဆောင်ပြီး အမြတ်ငွေများထဲမှ (၁) ရာခိုင်နှုန်းခန့် နှစ်စဉ် သုံးစွဲသွားမည်ဖြစ်ကြောင်း လုပ်ငန်းရှင်ဘက်မှ အဆိုပြုပြောကြားထားပါသည်။

ENVIRONMENTAL IMPACT ASSESSMENT (EIA) REPORT

FOR

IBIS STYLES HOTEL PROJECT

(Part-III)

Health Impact Assessment Report for IBIS Style Hotel (Muse)

Reported by:

Socially Responsible Partner

Social and Health Impact Assessment Group

Contents

ABBREVIATIONS

AIDS	Acquired Immune Deficiency Syndrome
CBD	Central Economic District
CSW	Commercial Sex Worker
ESHMP	Environmental, Social and Health Management Plan
HIA	Health Impact Assessment
HIR	Health Impact Rating
HIV	Human Immunodeficiency Virus
HMP	Health Management Plan
HNA	Health Needs Assessment
HRA	Health Risk Assessment
HSE	Health, Safety and Environment
IARA	Identification and Risk Assessment
NGO	Non-Governmental Organization
OHRA	Occupational Health Risk Assessment
PAPs	Project Affective Persons
RHCC	Rural Health Care Centre
RHS	Rural Health Service
SIA	Social Impact Assessment
TB	Tuberculosis
WHO	World Health Organization

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1. EXECUTIVE SUMMARY

1.1. Introduction

This HIA was conducted by Socially Responsible Partner (SRP) Social and Health Impact Assessment Group, and the potential health impact of the proposed hotel project on local communities and the wider society were assessed. This HIA report will provide the developer to identify the positive and negative health effects of the proposed project on physical activity and social cohesion and to a lesser extent on access to healthy food as well as to make recommendations to maximize these effects and to minimize any potential negative health effects.

1.2. Objectives of HIA

HIA provides a systematic analysis of the potential community health impacts as well as developing options for maximizing the positive health impacts, minimizing the negative impacts and enhancing health equity/reducing health inequalities.

1.3. Key Steps in the HIA Process

HIA for proposed hotel project was conducted by scoping; identification and assessment of potential health impacts; mitigation and management as shown in Table 1.1.

Table 1.1. Stages Involved in Conducting HIA for IBIS Style Hotel

No.	Stage of Health Impact Assessment	Purposes	Outcomes
1.	Scoping	To determine the scope of the HIA to be undertaken.	Outlines of how the HIA will be conducted including the time, resources and activities required.
2.	Identification and assessment of potential health impacts	To identify and assess the potential health outcomes.	Document that describes the potential health outcomes of the proposed hotel project.
3.	Mitigation	To minimize and remedy for potential health impacts.	Set of mitigation measures to prevent, reduce and minimize for potential impacts of proposed hotel project.
4.	Management and	To manage the	Document that manage and

	Monitoring	effectiveness of the HIA and monitor health outcomes.	monitor the HIA process and other outcomes.

1.4. Scope of the Study

This study also involves developing a baseline assessment and community profile with a particular focus on existing health and wellbeing problems and assets. Initially, a detailed understanding of the project, its aims and objectives is developed. This is followed by a desk-based community health and wellbeing profile using existing local health information from Public Health Department (Muse). Based on secondary data collection, HIA for local people in nearest villages follows by a more detailed community health impact based on the ground fieldwork, social surveys, focus groups and discussions with key informants such as community health and development workers and local health/public health officials.

2. Health Profile and Baseline Information

This section of the HIA provides a high level overview of the existing health conditions in Muse Township. Secondary data are collected from local public health department and primary data were collected by household survey from Project Affective Persons, PAPs.

2.1. Healthcare and Wellbeing Profile by Secondary Data Collection

The following are the profile for health and wellbeing of Muse Township.

2.1.1. Healthcare Facilities and Infrastructure

There are one 100-bed hospital and four 16-bed hospitals in the township. There are also 18 rural health care centers and one malaria campaign clinic. Private hospital and clinics are also found in the township. Infrastructures for health care services are not seemed to be sufficient for rural people from 280 villages in the Muse area.

Table 2.1. Healthcare Facility

No. of Doctors	Ratio	No. of Nurses	Ratio	No. of Healthcare Assistant	Ratio
22	1:6745	82	1:1810	4	1:37097

Table 2.2. Healthcare Infrastructure

Government					Private		NGO
100-Beded Hospital	16-beded Hospital	RHC	RHS	Malaria Campaign clinic	Hospital	Clinic	MMCWA Childbirth center
1	4	4	14	1	1	19	1

In public health sector, the ratios of medical service personnel and local population indicate the existing conditions of the inadequate health care access in the region.

2.1.2. Prevalent Diseases

In Muse, the most common diseases include Diarrhea, Malaria, Stomach Ailment, Tuberculosis, and Hepatitis. It was also found out that there were substantial amount of incidence of Diarrhea, Malaria, Tuberculosis and Stomach Ailment in the township.

Table 2.3. Prevalent Diseases

Sr. No.	Disease	Incidence
1.	Malaria	424
2.	Diarrhea	1380
3.	TB	281
4.	Stomach Ailment	420
5.	Hepatitis	88

2.1.3. HIV/AIDS

HIV/AIDS prevalence is significantly increased in 2013 than in 2012 as shown in Table 2.4.

Table 2.4. HIV/AIDS

2012		2013	
Infected	Dead	Infected	Dead
79	-	278	15

2.1.4. Health Indices

The following table shows important health indices for Muse Township.

Table 2.5. Health Indices

Fertility Rate	Per 1000			
	Birth Rate	Maternal Mortality Rate	Infant Mortality Rate	Abortion Rate
80.5	19.8	0.3	5.9	69.1

2.2. Health and Wellbeing Profile by Primary Data Collection

The following are the primary data collection of healthcare and wellbeing profile of local people in nearest villages.

2.2.1 Health Care Service

According to household survey result for health care facilities, relatively adequate public health facilities are available in the project area. Private clinics were found to be major health care services provides that the largest portion of respondents usually consulted. Public clinics and hospital was the second most services providers for emergency and major health cases.

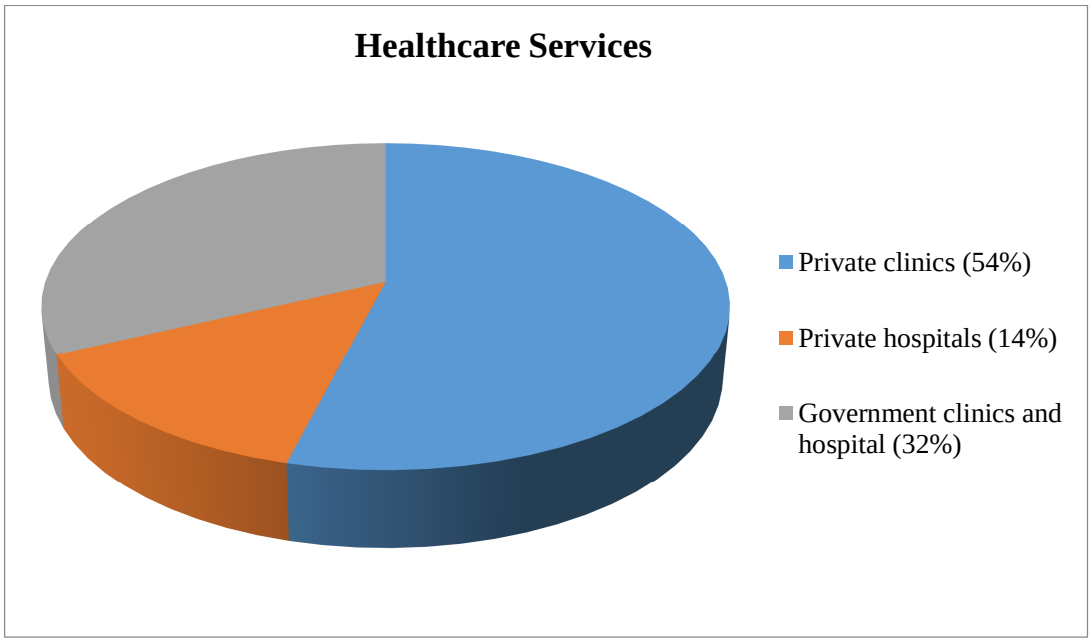

Figure 2.1. Key Health Care Service Providers for Nearest Villages

2.2.2. Common Diseases

According to household survey, only two cases were reported in the project area despite there were 82 cases of malaria in 2013-14 in the overall township. There was also small number of cases of Tuberculosis in the area. Five incidences of dengue hemorrhagic fever were reported by respondents in the household survey. According to field survey, mortality rate of children under 5 year seemed to be significant in the surveyed area. The most frequently reported health problems in the survey were miscellaneous diseases such as flu (seasonal), sore throat, nose irritation, and asthma.

2.2.3. Drinking and Domestic Water

Access to clean and safe water is crucial to the health population and thus have a direct impact on the quality of life of local community. The survey results on domestic water sources used by communities in the project area are provided in the following figure. Majority of households in the project area obtained their domestic water from protected well (94%). Artesian well (6%) was found to be another source of domestic use of water in the area as shown in Figure 2.2.

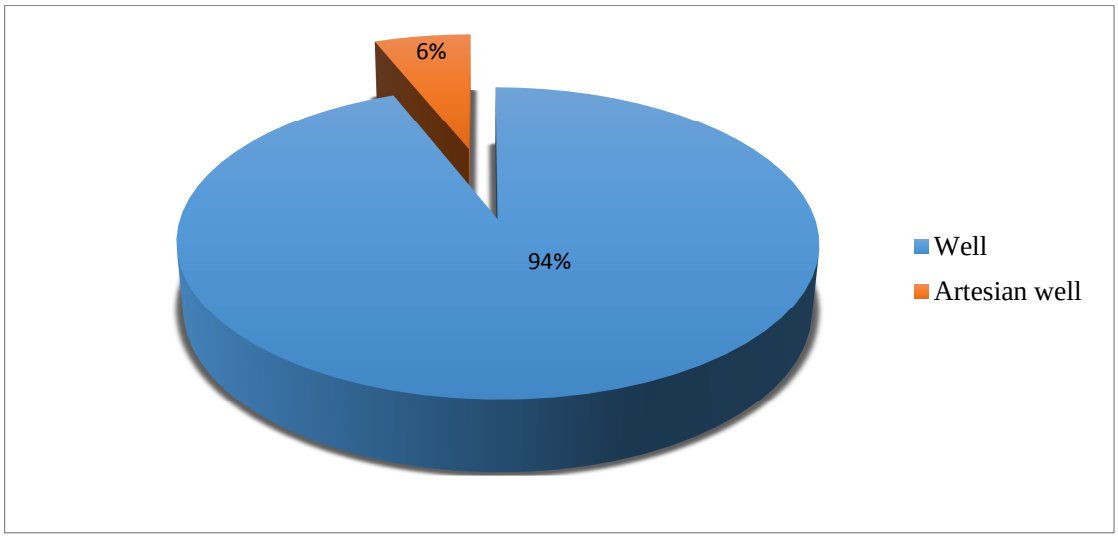

Figure 2.2. Source of Domestic and Drinking Water

According to the household survey, only 6 percent of the respondents answered that they used drinking water by boiling of raw water and other respondents answered that they drink directly from wells. The percentage of drinking boiled water is too small compared to drinking directly from wells. So, it is necessary to promote awareness program to local people to drink boiled water.

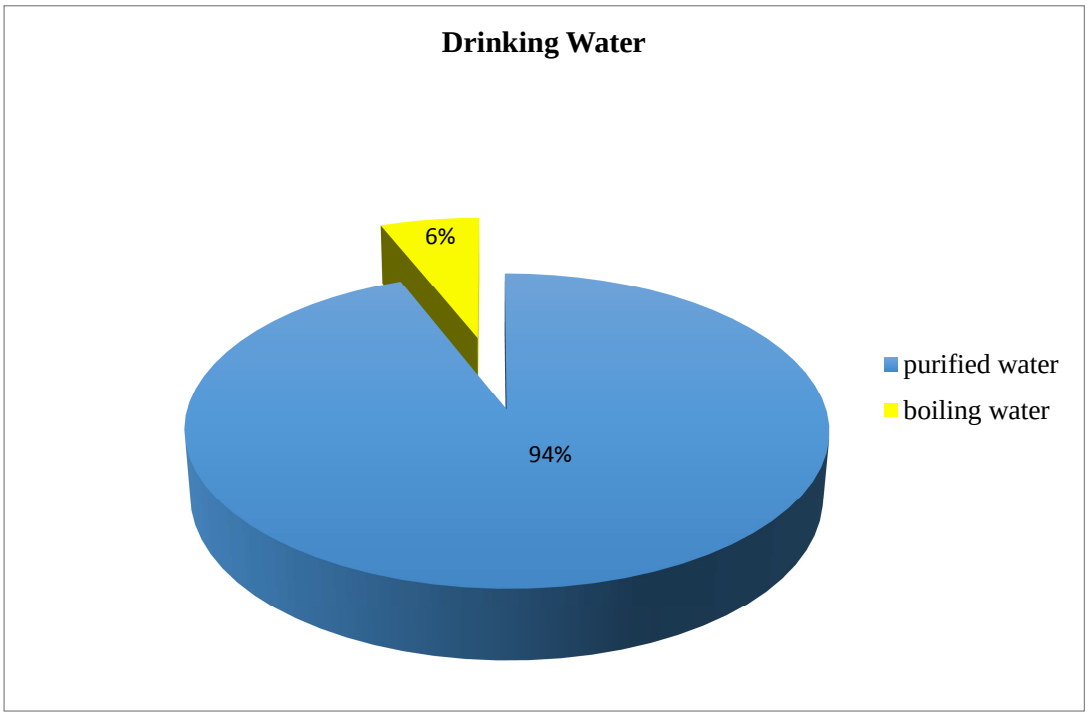

Figure 2.3. Drinking Water

Some respondents (about 27%) answered that they have a little problem about drinking and domestic water because some wells within the villages are dry up of water in summer.

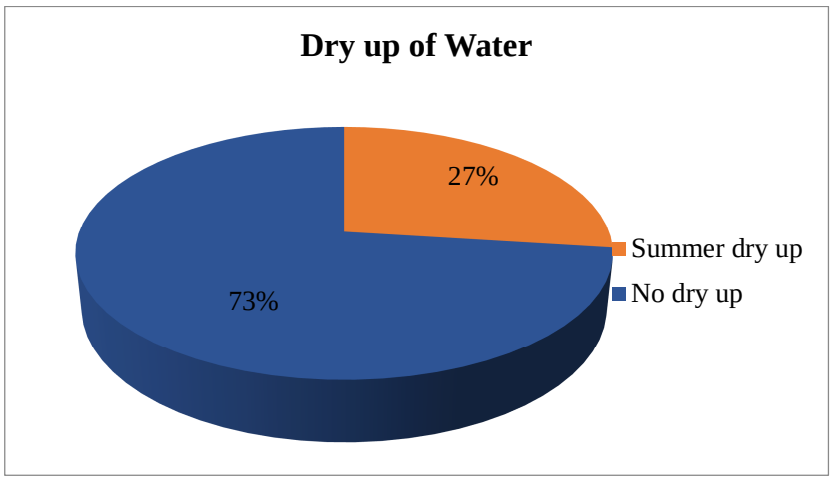

Figure 2.4. Dry up of Water

2.2.4. Livelihood and Occupation

Agriculture employed the majority of population in the area to be affected by proposed factory. In the project area (42%) of the household population enumerated in the household survey reported that their main occupation was farming. The largest proportion of households in the area is rural based, and farming is the major source of household income.

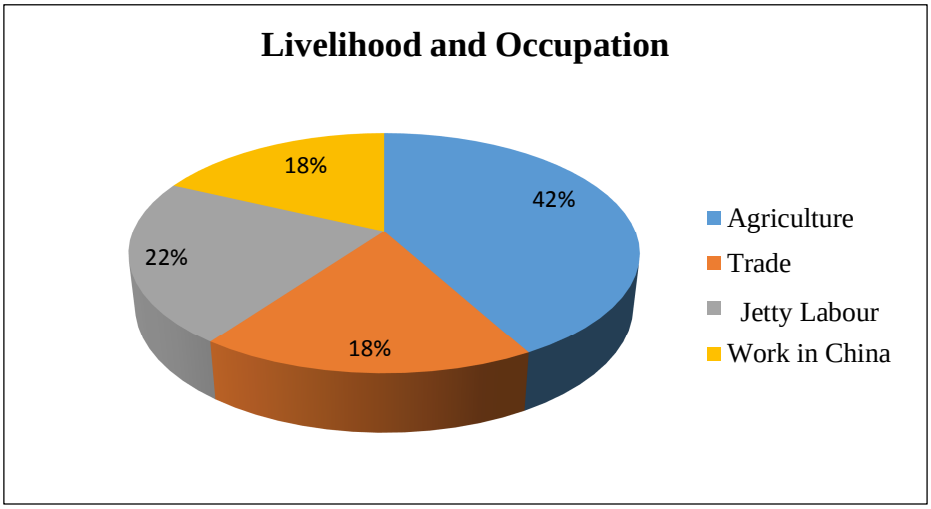

Figure 2.5. Livelihood and Occupation

As the main occupation of nearest villages is farming, there will have potential to respiratory diseases due to the use of fertilizer.

3. HEALTH IMPACT ASSESSMENT

HIA for proposed hotel was conducted by the following strategies.

3.1. Health Impact Assessment Methodology

There is no universally agreed formula for assessing public health significance, although assessments are mostly based on a subjective judgment about the magnitude of the potential health impacts (size of the affected population and scale of the positive or negative health impact); its likelihood of occurrence; and the degree of confidence in the impact actually occurring (based on scientific and other evidence of the health impact occurring in similar circumstances elsewhere).Table 2.1 shows a Health Impact Significance Rating Methodology of SRP Group.

Table 3.1. Health Impact Significance Rating Methodology

	Likelihood of Occurrence of Health Impact		
	Low	Medium	High
Magnitude of Health Impact	Unlikely to occur	Likely to occur sometimes	Likely to occur often
None	No significance	No significance	No significance
Low	Very Low	Low	Medium
Medium	Low	Medium	High
High	Medium	High	Very High

When analyzing health impacts, it is important to consider the magnitude, likelihood and public health significance of the potential impacts. This analysis involves expert judgment based on a consideration of the evidence gathered and its applicability to the local context and the specific project.

Distributional, health equity and inequality impacts are analyzed by examining how particular sub-groups within a population, particularly vulnerable groups, are likely to be affected by the project. The scoping and community profiling steps are likely to have already identified potentially vulnerable groups through existing local information on

these individuals/groups or through community surveys and meetings with key informants e.g. community leader, community health worker or local NGO.

Health equity/inequality impacts occur when the projects benefits and harms are unevenly distributed. This includes where the risk is equally distributed, such as air pollution, but the impact is disproportionate – affecting particularly children, older people and those with existing ill health.

Analysis of health impacts involves systematically determining the range of potential impacts, their relative importance and where, when and how likely they are to occur. The information for the HIA was obtained from the primary data collection (household survey), literature review, community profile and Muse Health Data from Pubic Health Department (Muse) as well as knowledge and expertise of the HIA Consultant of SRP Group.

3.2. Phases for HIA

HIA for IBIS Style Hotel (Muse) will only be conducted into the following phases.

(a) Phase I: Construction Phase; and
(b) Phase II: Operation Phase.

Health related impacts during pre-construction and decommissioning phases will not significance due to short-term and low probability.

3.3. Anticipated Health Impact and Proposed Mitigation Measures

One of the most important tasks in HIA is to analyze how the positive and negative health impacts are likely to be distributed within and across local communities. This section will discuss the potential health impacts and possible mitigation/enhancement measures during construction phase and operation phase. The following health related impacts are considered in the assessment of health impact for IBIS Style Hotel (Muse).

(a) Infectious Diseases (Malaria, HIV and influenza);
(b) Chronic diseases (Heart disease, cancer, bronchitis, and asthma);
(c) Nutritional disorders (Malnutrition, vitamin deficiencies and obesity); and
(d) Mental health and wellbeing (Depression, stress and anxiety).

3.3.1. Anticipated Health Impact and Mitigation Measures for Construction Phase

During construction phase, the anticipated health impacts are as follow:

3.3.1.1. Increase in Traffic Accidents

Increases in transportation and traffic during project construction can impact health and safety of local community by increasing the risk of motor vehicle accidents, release of hazardous pollutants, creation of road dust, and impediment of walking and transportation routes. Due to the nature of the project there will an increase in traffic both within and to and from the site. The increase in traffic will be contributed to by construction activities and transporting of supplies within the site. This may potentially increase the number of accidents. Because children often walk without safety conscious, they are more vulnerable than most adults to the impacts of traffic safety during the construction phase.

Impact Significance for Traffic Accidents

The impact will be considered as low because most of the vehicles and heavy machinery for construction activities will use new 6 ways road to construction site which were donated by New Star Light and will not use internal roads within the villages for during construction period.

Who will affected?	Magnitude/Consequence of impact			Likelihood/Probability of impact			Health Impact Significance Rating		
	Low	Medium	High	Unlikely to occur	Likely to occur sometimes	Likely to occur often	Low	Medium	High
People in nearest residents	√	-	-	-	√	-	√ (HIR 1)		-

HIR = Health Impact Rating

Mitigation Measures for Traffic Accidents

The developer and construction contractors should communicate and coordinate with local authorities and official concerned to develop plan for transportation and safety needs of

local community and children going to and from school by car, bus, motor cycle and walking to prevent injury to local people and school children.

The contractor should instruct drivers of construction vehicles to reduce truck speed limits in the project area to prevent accidents and to reduce the severity of injury when an accident occurs. The contractor should install speed control measures and should post decreased speed limits signs, real time speed measurement signs, and place speed bumps in the area to prevent workers from speeding.

The contractor should mark pedestrian/motor cycle high use routes and establish safe crossing zones to alert drivers, potential pedestrians and motor-cyclers. Safe driver training for workers penalty system for unsafe drivers should be implemented to encourage safe driving.

3.3.1.2. Changes in Noise and Vibration Levels

Construction activities normally generate a lot of noise. Noises will also arise from various construction machinery at site. Both acute loud noise and chronic lower level noise have been associated with a variety of negative health effects. Hearing loss and impairment are known to occur as a result of exposure to acute, high decibel noise (greater than 85 dB). The odds of hearing loss increase as the decibel level increases. A significant relationship between noise level and hearing loss exists. Cardiovascular risk factors have been shown to be impacted by noise levels in the range of 51-70 dB in persons with several years of exposure. Noise annoyance can lead to stress related impacts on health such as feelings of displeasure, interference with thoughts, feelings, and activities and disturbed sleep and can have impacts on mood, performance, fatigue, and cognition. Noise levels that produce these impacts can vary: annoyance can occur at 55dB; school performance can be impacted at 70 dB; and sleep can be impacted by as little as 35-60 dB.

Ground vibration and low frequency noise may cause health impacts similar to those associated with noise annoyance. Changes in noise and vibration levels of the project area due to project construction activities will adversely affect health of local people in short-term duration.

Impact Significance for Noise and Vibration

The impact will be considered as low because most of the vehicles and heavy machinery for construction activities will use new 6 ways road to construction site which were donated by New Star Light and will not use internal roads within the villages for during construction period.

Who will affected?	Magnitude/Consequence of impact			Likelihood/Probability of impact			Health Impact Significance Rating		
	Low	Medium	High	Unlikely to occur	Likely to occur sometimes	Likely to occur often	Low	Medium	High
People in nearest residents	√	-	-	-	√	-	√ (HIR 1)		-
Worker at site	-	√	-	-	-	√	-	√ (HIR 2)	-

Mitigation Measures for Noise and Vibration

The Occupational Safety and Health Administration (OSHA) has recommended permissible noise exposure limit for industrial workers, which is based on 90 dB (A) for 8 hours exposure a day with 5 dB (A) trading rates. The limits are given in Table 3.2.

Table 3.2. Permissible Exposure Noise Limits

Total Time of Exposure Per Day in Hours	Noise Level dB(A)
8	90
6	92
4	95
3	97
5	100
1	105
½	110
¼	115

According to OSHA, the maximum allowable noise level for the workers is 90 dB (A) for 8 hours exposure a day. Therefore, adequate protective measures in the form of ear muffs/ear plugs to the workers working in high noise areas need to be provided if actual noise level monitoring result (in dB(A)) is more than 90dB(A) at worksite for working time 8 hrs.

The following are some of the suggested ways to reduce the potential impact of noise and vibration.

1. Reduce speed limits for trucks in the project area to reduce noise and vibration levels.
2. Apply best available noise reduction technology for heavy equipment, including trucks and truck brakes, to reduce noise levels.
3. Alert residents of anticipated noise, including time, duration, decibel levels, and machinery to be used to protect public health.
4. Develop and implement a plan that includes a variety of noise control strategies to protect public health and to prevent long-term nuisance noise levels.

3.3.1.3. Increase Infection of Air-borne Diseases

An influx of large groups of workers can lead to overcrowded conditions where air-borne diseases such as tuberculosis, influenza and meningitis can spread easily. Various construction activities will have adverse health impacts on by increasing air pollution in the immediate vicinity and the surrounding community. Particulate matter emissions from construction activities will also expose the workers and the local people in nearest villages to bronchial and other respiratory tract diseases.

Impact Significance for Increase Infection of Air-borne Diseases

According to the secondary data collection, infections of TB are continuously increased in Muse Region. So, impact rating for air-borne diseases will be considered as follow:

Who will affected?	Magnitude/Consequence of impact			Likelihood/Probability of impact			Health Impact Significance Rating		
	Low	Medium	High	Unlikely to occur	Likely to occur sometimes	Likely to occur often	Low	Medium	High
People in nearest residents	√	-	-	-	√	-	√ (HIR 1)	-	-
Construction workers	-	√	-	-	√	-	-	√ (HIR 2)	-

Mitigation Measures for Increase Infection of Air Borne Diseases

This potential impact will be minimized by implementing the following mitigation measures:

-Dust control measure - wetting of roads, dust screens and equipment which generates low dust emissions;

- Ensuring that the premises are watered during construction;

- Efficient scheduling of deliveries to reduce traffic load;

- Provide medical check for workers who are susceptible infection of air-borne diseases;

- Provide healthcare program to prevent infection of air-borne diseases.

3.3.1.4. Increase Infection of Water Borne Diseases

The incidence rate of water borne diseases such as cholera and diarrhea will increase if there will be no proper sanitation practices at the construction site. Improper waste disposal of construction debris will also have potential to increase water borne diseases. Project activities could become sources of pollution, as a result of infiltration into the surface stream. The possible negative impacts considered significant are:

- Loose soil from earthworks may be washed into stream.
- During the construction phase, activities such as mixing of cement and stockpiling of waste potentially lead to contamination.

- Irresponsible dumping of domestic solid waste can lead to underground water contamination, due to contaminants emanating from various products into the groundwater and filtering through to the aquifers. This will be a particular problem during the rainy season.
- Potential surface water pollution can emanate from waste products generated by construction activities entering the surface drainage.

Impact Significance for Increase Infection of Water Borne Diseases

According to the secondary data collection, infections of water borne diseases such as diarrhea are still the most public healthcare problems in Muse Region and so the impact will be considered as medium as follow:

Who will affected?	Magnitude/Consequence of impact			Likelihood/Probability of impact			Health Impact Significance Rating		
	Low	Medium	High	Unlikely to occur	Likely to occur sometimes	Likely to occur often	Low	Medium	High
People in nearest residents	-	√	-	-	√	-	-	√ (HIR 2)	-
Construction workers	-	√	-	-	√	-	-	√ (HIR 2)	

Mitigation Measures for Increase Infection of Water Borne Diseases

Proper sanitation system should be provided for construction workers during construction period. Construction debris should be disposed at suitable location that does not impact on local water resources. Construction activities should ensure that no loose soil is permitted into watercourses and stockpiles are located away from surface water. All mixing of cement should be carried out in a designated area away from surface water and areas of potential runoff. All areas of fuel storage should be banned to prevent hydrocarbon pollution of surface water.

3.3.1.5. Infections from Mosquito

The blockage of drainage system along the access road to proposed hotel will cause bleeding zone for mosquitoes and can cause potential to cause infections from mosquitoes especially in rainy season.

Impact Significance for Infections from Mosquito

As malaria is one of the most infection diseases in Muse Region, impact significance will be considered as medium as follow:

Who will affected?	Magnitude/Consequence of impact			Likelihood/Probability of impact			Health Impact Significance Rating		
	Low	Medium	High	Unlikely to occur	Likely to occur sometimes	Likely to occur often	Low	Medium	High
People in nearest residents	-	√	-	-	√	-	-	√ (HIR 2)	-
Construction workers	-	√	-	-	√	-	-	√ (HIR 2)	

Mitigation Measures for Infections from Mosquito

Proper temporary or permanent drainage system should be compensated as the blocked drainage system along the access road. Ensure that there are no stagnant pools of water during the construction phase. Provide local people with impregnated mosquito nets and/or better access to malaria prophylaxis and treatment.

3.3.1.6. Impacts on Community Wellness

Community wellness is characterized by a compilation of factors such as school enrollment, rates of sexually transmitted infection, incidence of criminal activity, substance abuse, and other immeasurable factors such as quality of life, social cohesion, and social capital.

An inflow of construction workers and their dependents from other areas may also be accompanied by possible concomitant increase in social pathologies and crime including drug and alcohol abuse, assault, theft and violence.

Negative effects on community wellness may include increased substance abuse, crime, sexually transmitted infection, heavier industrial traffic and visible impacts to natural environment, demands on the education system beyond current capacity, interference with recreational activity and decreased social cohesion. The demand for public services will be affected by increases in population. Social service facilities to be impacted due to the increase in population will be healthcare services, water, electricity, housing, and sanitary facilities among others.

It is possible that the elderly or youth of the community are more vulnerable to impacts on community well-being. Elderly may be more vulnerable to crimes of theft or burglary, and are the likely group most affected by changes in social service availability and accessibility. Children would be most affected by changes in school enrollment and class size.

Impact Significance for Impacts on Community Wellness

Who will affected?	Magnitude/Consequence of impact			Likelihood/Probability of impact			Health Impact Significance Rating		
	Low	Medium	High	Unlikely to occur	Likely to occur sometimes	Likely to occur often	Low	Medium	High
People in nearest residents	-	√	-	-	√	-	-	√ (HIR 2)	-

Mitigation Measures for Impacts on Community Wellness

The following are some of the suggested ways to reduce the potential impact to community wellness.

1. Establish a mechanism to facilitate on-going community engagement between the developer and local residents for early identification of impacts to community wellness.
2. Review sexually transmitted infection clinic access and education, with particular attention to in-migrant workforce to reduce spread of sexually transmitted infections within the community.

3. Encourage contractors to implement drug and alcohol free work-place programs and to reduce drug and alcohol abuse.
4. Develop plans to address temporary and permanent population influx that may affect demand and capacity of social services, schools and other key community facilities and programs.

3.3.1.7. Impact on Health Care Infrastructure

Health infrastructure can include private and public medical services, hospitals, and emergency transport services. Availability, access and quality of local clinical and public health services can be limited in overall Muse Township. However, impacts to the health care system are anticipated to be small. The development site is located not too far from Muse downtown area concentrated with heavy health care facilities including Township hospital, private hospital, private clinics, and pharmacies. There is a potential for increased utilization of the health care services to strain existing services, however, the extent of such a strain may be small enough that it is unlikely to lead to decreased availability and quality of services.

Impact Significance for Impacts on Health Care Infrastructure

Who will affected?	Magnitude/Consequence of impact			Likelihood/Probability of impact			Health Impact Significance Rating		
	Low	Medium	High	Unlikely to occur	Likely to occur sometimes	Likely to occur often	Low	Medium	High
People in nearest residents	√	-	-	-	√	-	√ (HIR 1)	-	-

Mitigation Measures for Impacts on Health Care Infrastructure

During the construction phase, the project proponent and contractors should develop plans to address temporary population influx that may affect demand and capacity of existing health care services and facilities.

3.3.1.8. Increase Risk of Sexually Transmitted Infections

During construction phase, the improved economic status of the area and the influx of new people, living away from their families, can also lead to an increased risk of sexually transmitted infections such as HIV/AIDS, gonorrhoea and chlamydia. Major outbreaks of infectious diseases can have a devastating effect not only on or near the hotel site but also on local communities.

Impact Significance for Increase Risk of Sexually Transmitted Infections

Impact rating for sexually transmitted infection can be considered as high due to the increased in HIV/AIDS infection rate from 2012 to 2013 in Muse Township. Impact significance of increase risk of sexually transmitted infections during construction phase can be considered as follow:

Who will affected?	Magnitude/Consequence of impact			Likelihood/Probability of impact			Health Impact Significance Rating		
	Low	Medium	High	Unlikely to occur	Likely to occur sometimes	Likely to occur often	Low	Medium	High
Local people	-	-	√	-	√	-	-	-	√ (HIR 3)

Mitigation Measures for Increase Risk of Sexually Transmitted Infections

Review sexually transmitted infection clinic access and education to reduce spread of sexually transmitted infections within the community. Provide information and education to workers about safe sex and implement HIV control program for workers.

3.3.2. Anticipated Health Impact and Mitigation Measures for Operation Phase

The following will be the anticipated health impacts of the operation of IBIS Style Hotel (Muse).

3.3.2.1. Improved Mental Health

Access to jobs, income, goods and services can enhance mental health and wellbeing and reduce stress. Having a sense of control over one's life is crucial for mental wellbeing, so proposed hotel project can improve mental health by reducing poverty, increasing self-esteem and empowering local communities.

Impact Significance for Improved Mental Health

Job opportunity in proposed hotel will help to improve mental health to local people. Impact can be rated as low due to the low number of workers in hotel.

Who will affected?	Magnitude/Consequence of impact			Likelihood/Probability of impact			Health Impact Significance Rating		
	Low	Medium	High	Unlikely to occur	Likely to occur sometimes	Likely to occur often	Low	Medium	High
People in Muse	√	-	-	-	√	-	√ (HIR 1)	-	-

Enhancement Measures for Improve Mental Health

Appoint local people with relevant skills as much as possible during operation period.

3.3.2.2. Improved Recreational Place for Local People

The proposed project will bring the recreational places for local people leisure and recreational activities. This will be positive health effects on local leisure and recreational activities.

Impact Significance for Improved Recreational Place for Local People

Small daily changes in walking, cycling or sporting activity within the project area can have significant effects on a range of health outcomes including heart disease, certain cancers and mental wellbeing. As there were not too much places for recreation purposes in Muse Region, this positive impact will be great benefits to local people and so the impact will be considered as high as follow:

Who will affected?	Magnitude/Consequence of impact			Likelihood/Probability of impact			Health Impact Significance Rating		
	Low	Medium	High	Unlikely to occur	Likely to occur sometimes	Likely to occur often	Low	Medium	High
Local people in Muse	-	√	-	-	-	√	-	-	√ (HIR 2)

Enhancement Measures for Improved Recreational Place for Local People

Design the project to enhance or lead to a positive health impact affected communities as a whole are included from the start e.g. health promotion programs, access to green space, hygienic and well ventilated worker accommodation, training and development of employees, and social investment program for affected communities.

3.3.2.3. Increase Chronic Diseases

Sudden improvement can bring changes that affect people's lifestyles (e.g. diet, level of physical activity, smoking, alcohol and drug consumption) that increase their risk of chronic illnesses such as heart disease, diabetes, and cancer and can also affect the mental health status of the local population. Obesity and micronutrient deficiencies can co-occur when calorie intake is high and the food eaten is low in essential vitamins and minerals. This is a particular risk in regions of rapid economic development, where the influx of cash income into a subsistence economy can disrupt traditional patterns of food production, food distribution, land access and water use. This can be through increased incomes as well as the increased availability of tobacco and alcohol. Alongside infectious diseases, cardiovascular diseases (heart disease and strokes) are one of the leading causes of death, ill health and disability worldwide.

Impact Significance for Increase Chronic Diseases

Even small changes in these chronic disease risk factors can have significant long term effects on local community health and wellbeing. So, this kind of impact can be rated as medium.

Who will affected?	Magnitude/Consequence of impact			Likelihood/Probability of impact			Health Impact Significance Rating		
	Low	Medium	High	Unlikely to occur	Likely to occur sometimes	Likely to occur often	Low	Medium	High
Local people in Muse	√	-	-	-	√	-	√ (HIR 1)	-	-

Mitigation Measures for Increase Chronic Diseases

Provide awareness program for workers and local people in nearest villages about disadvantages of smoking, drug consumption, and nutrients disorder to human health.

3.3.2.4. Increase Risk of Sexually Transmitted Infections

Increased risk of sexually transmitted infections such as HIV/AIDS, gonorrhoea and chlamydia will be continued during operation phase. Major outbreaks of infectious diseases can have a devastating effect not only on or near the hotel site but also on local communities. Moreover, the influx of large groups of, generally, male workers can sometimes lead to social unrest which may include violence and sexual assault in Muse region. Similarly, an increase in commercial sex workers (CSW) can have significant, long term, negative individual and community health and wellbeing impacts. It will also impact on custom of local people.

Impact Significant for Increase Risk of Sexually Transmitted Infections

According to the nature of Hotel business, demand for prostitution may increase, leading to long term psychosocial harm for those forced into the sex industry, as well as increased transmission of sexually transmitted infections and other social harms associated with commercial sex work. So, impact can be rated as medium.

Who will affected?	Magnitude/Consequence of impact			Likelihood/Probability of impact			Health Impact Significance Rating		
	Low	Medium	High	Unlikely to occur	Likely to occur sometimes	Likely to occur often	Low	Medium	High
Local people in Muse	-	√	-	-	√	-	-	√ (HIR 2)	-

3.3.2.5. Health, Social Care and Public Services

Proposed hotel project may also place additional pressures on local health, social care and public services (including emergency services) due to the increase in population that they can bring, particularly if they also cause disruption and lead to new, or exacerbate existing, health and social problems. These can be overwhelmed by local people demanding to be treated in them if existing private local health services are seen to be inaccessible or expensive. Pressure on local water resources may occur because the project uses local water for its own processes and workers at the expense of local community's sanitation systems and access to clean drinking water. This in turn can lead to the spread of water borne diseases such as typhoid and cholera (bacterial); hepatitis A and polio (viral); schistosomiasis and guinea worm (parasites); and amoebiasis and giardiasis (protozoal). Although availability, access and quality of local clinical and public health services can be limited in overall Muse Township, especially in the rural areas, impact on the health care facility are expected to be small.

Impact Significant for Health, Social Care and Public Services

As the general clinic attendance percent is continuously increased in clinics and hospital (both private and public sections), there will be medium impact on community health care facilities due to increased in number of hotel workers.

Who will affected?	Magnitude/Consequence of impact			Likelihood/Probability of impact			Health Impact Significance Rating		
	Low	Medium	High	Unlikely to occur	Likely to occur sometimes	Likely to occur often	Low	Medium	High
Local people in Muse	-	-	√	-	√	-	-	√ (HIR 2)	-

Mitigation Measures for Health, Social Care and Public Services

This potential impact can avoid by well planned to avoid the use of local resources and provide medical personnel and clinic in the hotel.

3.3.2.6. Impact on Community Wellness

The commencement of proposed hotel project may stimulate some forms of social pathologies and crime including increased substance abuse, crime, human trafficking and decreased social cohesion. Social service facilities to be impacted due to the project operation will be healthcare, water, electricity, housing, and sanitary facilities among others. It will impact on mental health of people in nearest villages.

Impact Significance for Impact on Community Wellness

Impact significance of impact on community wellness will be as follow:

Who will affected?	Magnitude/Consequence of impact			Likelihood/Probability of impact			Health Impact Significance Rating		
	Low	Medium	High	Unlikely to occur	Likely to occur sometimes	Likely to occur often	Low	Medium	High
People in nearest residents	√	-	-	-	√	-	√ (HIR 1)	-	-

Mitigation Measures for Impact on Community Wellness

The following are some of the suggested ways to reduce the potential impact to community wellness.

1. Establish a mechanism to facilitate on-going community engagement between the developer and local residents for early identification of impacts on community wellness.
2. Implement drug free programs.
3. Develop plans to reduce demand and capacity of social services and other key community facilities.
4. To protect local communities in case of disease outbreaks among the workforce, a premedical examination for workers should be conducted, followed by routine medical examination during the works and a final post medical examination.

5. Adequate sanitation facilities should be provided at site. The contractor should ensure that the construction site is fenced and hygienically kept with adequate provision of facilities including waste disposal receptacles, sewage, fire-fighting and clean and safe water supply.

4. HEALTH IMPACT MANAGEMENT PROGRAM

The Health Impact Management Program (HIMP) identifies the relevant responsible institutions, authorities and stakeholders to manage the negative social impacts and enhance potential benefits and to monitor these impacts to adjust mitigation strategies. The following tables show health impact significance rating and responsible stakeholders for mitigation and enhancement measures.

Table 4.1. Impact Significance Rating for Construction Phase

No.	Pathway of health impact	Nature of health impact	Who is negatively affected?	Who benefits?	Health Impact Significance Rating			Mitigation/ Enhancement Required	Responsibility
					Low	Medium	High		
1.	Increase in Traffic Accidents	Negative	Local people in nearest residents and construction workers	-	√ (HIR 1)	-	-	Yes	Construction contractors
2.	Changes in noise and vibration levels	Negative	Local people in nearest residents	-	√ (HIR 1)	-	-	Yes	Construction contractors
			construction workers	-		√ (HIR 2)	-	Yes	Construction contractors
3.	Increase infection of Air-borne Diseases	Negative	Local people in nearest residents	-	√ (HIR 1)	-	-	Yes	Construction contractors
			Construction workers	-	-	√ (HIR 2)	-	Yes	Construction contractors

4.	Increase infection of water borne Diseases	Negative	Local people in nearest residents	-	-	√ (HIR 2)	-	Yes	Construction contractors
			Construction workers	-	-	√ (HIR 2)	-	Yes	Construction contractors
5.	Increase malaria carrying mosquitoes	Negative	Local people in nearest residents and construction workers	-	-	√ (HIR 2)	-	Yes	Construction contractors
6.	Impacts on community wellness	Negative	Local people in nearest residents	-	-	√ (HIR 2)	-	Yes	Construction contractors
7.	Impact on health care infrastructure	Negative	Local people in Muse	-	√ (HIR 1)	-	-	Yes	Construction contractors
8.	Increase Risk of Sexually Transmitted Infections	Negative	Local people in Muse	-	-	-	√ (HIR 3)	Yes	Construction contractors

Table 4.2. Impact Significant Rating for Operation Phase

No.	Pathway of health impact	Nature of health impact	Who benefits? Who is negatively affected?	Health Impact Significance Rating			Mitigation/ Enhancement Required
				Low	Medium	High	
1.	Improved mental health	Positive	Local people in nearest residents	√ (HIR 1)	-	-	Yes
2.	Leisure and recreation	Positive	Local people in Muse Township	-	-	√ (HIR 2)	Yes
3.	Increase chronic diseases	Negative	Local people in nearest residents	√ (HIR 1)	-	-	Yes
4.	Increase Risk of Sexually Transmitted Infections	Negative	Local people in Muse Township		√ (HIR 2)		Yes
5.	Health, Social Care and Public Services	Negative	Local people in nearest residents		√ (HIR 2)		Yes
6.	Impact on community wellness	Negative	Local people in nearest residents	√ (HIR 1)	-	-	Yes

HIR = Health Impact Rating

4.1. Health Impact Monitoring Program

Any monitoring program should monitor both the positive and negative community health impacts and provide an early warning system that health problems are occurring at community level. Some changes such as the prevalence of infectious diseases can be easier to monitor than project-related chronic disease and the economic and social benefits of the project that lead to positive health and wellbeing impacts. Table 4.3 shows proposed monitoring parameters for IBIS Style Hotel (Muse) during construction and operation phases.

Table 4.3. Mitigation Measures and Monitoring Parameters for IBIS Style Hotel (Muse)

No.	Impact Type	Affected People	Health Issues	Monitoring	Frequency	Responsibility
1. Construction Phase						
1.	Negative Impact	Local people in nearest villages	Particulate air emissions	PM_{10} and $PM_{2.5}$	Monthly	Construction contractors
2.	Negative Impact	Construction workers	Infection of diseases	Regular medical check to construction worker	Biannually	Construction contractors
No.	**Impact Type**	**Affected People**	**Health Issues**	**Monitoring**	**Frequency**	**Responsibility**
2. Operation Phase						
1.	Positive Impact	Local people in nearest villages	Mental health and wellbeing	Improvement of public area and recreation places in hotel compound	Yearly	New Star Light Construction Co., Ltd.
2.	Positive Impact	Local people in nearest villages	Improve health care facilities	Improvement of health care services in nearest villages before and after the project	Yearly	New Star Light Construction Co., Ltd.
3.	Negative Impact	Local resources use and impact on local health care services	Impact on community wellness	No pressure on local resources use and health care facilities	Yearly	New Star Light Construction Co., Ltd.

5.1 HIA Monitoring Team

Aspects of the monitoring program may be commissioned through independent agencies to maintain the trust of local communities. HIA monitoring team of the proposed hotel project should be the same or similar members of EIA or SIA monitoring team. Typically, the HIA team involves:

(i) project manager,
(ii) health and safety advisors,
(iii) CSR officer or coordinator,
(iv) community health and development workers,
(v) public health officials and/or community representatives.

5.2 Evaluation and Auditing of the Health Impacts

A public health evaluation of a project involves asking whether the project achieved its overall aims and objectives in a way that protected and enhanced the health and wellbeing of local communities. An evaluation of the project and its potential impacts on local communities' health and wellbeing should be undertaken at regular intervals, e.g. every three years, by an independent agency or consultancy as part of an adaptive project management process. As with the monitoring program, a steering or advisory group made up of a range of stakeholders can enhance the credibility, effectiveness and value of the evaluation.

5.3 Reporting

The findings and recommendations of a monitoring and evaluation processes should be written up in summary form and reported to BOD of New Star Light and local authority. The recommendations should be reviewed by the project team, the HIA Steering or Advisory Group, local government, health and social care agencies and community representatives. Where feasible the findings should form part of the project information that is made public.

5.4 Stakeholder and Community Involvement

Stakeholders are those individuals and groups that are affected by, or express an interest in, the project. Stakeholder and community involvement is concerned with developing

two-way dialogue and information/knowledge exchange between the HIA specialist, project team, key stakeholders and local communities. However, stakeholders and communities do not always have the time to be involved throughout the process and are likely to engage to a greater or lesser degree as time and interest permits.

6. PROPOSED HEALTH CARE FACILITIES FOR LOCAL PEOPLE

The construction of hotel, other facilities and landscaping should have been carefully considered to ensure that the potentially positive health impacts of the local residents. The following are the proposed health care facilities as one portion of the CSR program to improve public health.

6.1 Extend Health Care Facilities

The health care facilities of proposed Hotel should be expanded to local people with the reasonable charge as much as possible. Moreover, health care facilities of proposed hotel should be accessible outside of the working hours (17:00 to 19:00) for local people because most of the people in nearest villages are not free in working hours in daytime. Ambulance of proposed hotel should be helped to local people for emergency cases and contact number for ambulance should be informed to local people.

6.2 Facilities for Public Relaxation

The new landscaped within the hotel project should be open space for use by residents in the scheme. The design of the open space should encourage interaction between residents of the new apartments by providing seating in a pleasant and tranquil setting. The new seating should be arranged to parents to watch toddlers and young children enjoying the play facilities. It will also improve the mental and health conditions of local residents.

6.3 Planting

The landscape strategy during construction and operation of proposed hotel should include the planting of new trees. The location of the plantation trees should be carefully considered to provide shade for the main roads, recreational areas, seating areas and the surface car parking spaces to reduce heat stress and to improve mental health.

7. RECOMMENDATIONS

The HIA process provides a useful framework for bringing the developer and the health care facilities of IBIS Style Hotel (Muse) together to think about the impact of hotel construction on public health. It is important to use HIA early in the hotel planning process to inform policy decision-makers on the potential impact of their policy or plan on health. A set of recommendations was developed that highlighted the initiatives that support health and included ways to maximise health benefits as follow:

- All of the mitigation and enhancement measures described in this report should be implemented by New Star Light Constrution Co., Ltd.
- Improvements to open space and recreation areas (including installation of picnic areas) will provide greater opportunity for physical activity as well as provide a meeting place to allow improved social cohesion for local people.
- Extend health care facilities of hotel project to local people or provide the facilities to private health clinic to nearest villages.

8. CONCLUSION

According to the health impact assessment, the proposed hotel project will have both positive and negative impacts on public health. There will no significant health impact according to HIA study due to proposed hotel project. All of the anticipated health impact can be minimized to acceptable levels with proposed mitigation measures. On the positive side, potential to improvement of health care facilities to nearest villages can have significant beneficial effects on local people. CSR programmes for local health and wellbeing improving program (development of private clinic, health and wellbeing awareness program, etc.) will also benefit the healthiness of local people. Recreational facilities and places for physical activities for visitors, workers and local people will help to maintain good health condition for all because physical activity has been shown to reduce the risk of coronary heart disease mortality, non-insulin-dependent diabetes mellitus and colon cancer and to relieve symptoms of depression and anxiety (Commonwealth Department of Health & Family Services, 1998; US Department of Health and Human Services, 1996). Moreover, physical activity ranks as one of most important factor in chronic disease prevention in Myanmar. So, the development of hotel project will have more beneficial impacts rather than negative ones.

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