TOTAL BUSINESS SOLUTION CO., LTD.
No. 54, Room. 704, Waizayantar Tower, Waizayantar Road
Thingangyun Township, Yangon, Myanmar

HOYA INTERNATIONAL RESORT CO., LTD

INITIAL ENVIRONMENTAL EXAMINATION FOR INTERNATIONAL HOTEL PROJECT

FINAL

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ကတိကဝတ်များ

(က) ဤကနဦးပတ်ဝန်းကျင်ဆန်းစစ်မှုသည် တိကျခိုင်မာမှုများနှင့် ပြည့်စုံစွာ ဆောင်ရွက်ထားပါသည်။

(ခ) ဤလုပ်ထုံးလုပ်နည်းများ အပါအဝင် သက်ဆိုင်ရာဥပဒေများကို တိကျစွာ လိုက်နာ၍ ကနဦးပတ်ဝန်းကျင်ဆန်းစစ်ခြင်းကို ရေးဆွဲထားပါသည်။

(ဂ) စီမံကိန်းဖော်ဆောင်သူသည် ကနဦးပတ်ဝန်းကျင်ဆန်းစစ်ခြင်း အစီရင်ခံစာပါ ကတိကဝတ်၊ ပတ်ဝန်းကျင် ထိခိုက်မှုလျော့ချရေး လုပ်ငန်းများနှင့် အစီအစဉ်များကို အပြည့်အဝ အစဉ်အမြဲလိုက်နာ ဆောင်ရွက်သွားမည်ဖြစ်ပါသည်။

(ဃ) ဤကနဦးပတ်ဝန်းကျင်ဆန်းစစ်ခြင်း အစီရင်ခံစာတွင် စီမံကိန်း ပိတ်သိမ်းမည်ဆိုပါက ပတ်ဝန်းကျင်ထိခိုက်မှု လျော့နည်းစေရန်နှင့် ထိခိုက်မှုမရှိစေရေး အစီအစဉ်များကို ဆောင်ရွက်ထားရှိပါမည်ဖြစ်ကြောင်း ကတိကဝတ်ပြုပါသည်။

Managing Director

Hoya Interantional Resort Co., Ltd

အကြံပေးအဖွဲ့အစည်း၏ဝန်ခံချက်

ဤကနဦးပတ်ဝန်းကျင်စီမံခန့်ခွဲမှု အစီအစဉ်သည် အကြံပေးအဖွဲ့အစည်း လုပ်ငန်းဆိုင်ရာ နားလည်တတ်ကျွမ်းမှု စုံစမ်းရရှိသော အချက်အလက်များကို အခြေခံ၍ ပြည့်စုံမှန်ကန်မှုရှိအောင် ဆောင်ရွက်ထားပါကြောင်း ဝန်ခံပါသည်။

Managing Director

Total Business Solution Co., Ltd

အစီရင်ခံစာအကျဉ်းချုပ်

၁။ နိဒါန်း

HOYA International Resort Co., Ltd သည် အမှတ် (၂၁၈)၊ ရန်ကုန်-အင်းစိန်လမ်း၊ လှိုင်မြို့နယ်၊ ရန်ကုန်တိုင်းတွင် တည်ရှိပြီး ၁.၇၈ ဧကရှိသော ဇရိယာပေါ်ရှိ (၂၄ ထပ်)အဆောက်အဦ၏ မြေအောက်ထပ်အပါအဝင် အထပ် (၁၇) ထပ်အား ငှားရမ်း၍ ဟိုတယ်ဝန်ဆောင်မှုလုပ်ငန်း လုပ်ကိုင်မည်ဖြစ်သည်။

မြန်မာနိုင်ငံရင်းနှီးမြှုပ်နှံမှုကော်မရှင်၏ သဘောထားမှတ်ချက်ကို ရယူရန်အတွက် HOYA International Resort Co., Ltd သည် မတ်လ (၁၅)ရက် ၂၀၁၉ ခုနှစ် တွင် အဆိုတင်သွင်းခဲ့ပါသည်။ မြန်မာနိုင်ငံရင်းနှီးမြှုပ်နှံမှုကော်မရှင်၏ လိုအပ်ချက်အရ ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်း လုပ်ထုံးလုပ်နည်းနှင့်အညီ ကနဦးပတ်ဝန်းကျင်ဆန်းစစ်ခြင်း အစီရင်ခံစာကို ရေးဆွဲရန်ပြင်ဆင်ခဲ့ပါသည်။ ထို့ကြောင့် ကနဦးပတ်ဝန်းကျင်ဆန်းစစ်ခြင်း အစီရင်ခံစာရေးဆွဲရန် Total Business Solution Company Limited အားငှားရမ်းခဲ့ပါသည်။

၂။ ပတ်ဝန်းကျင်ဆိုင်ရာဖွဲ့စည်းတည်ဆောက်ပုံ၊ မူဝါဒများနှင့် ဥပဒေပြုမှုဘောင်များ

HOYA International Resort Co., Ltd သည် သယံဇာတ နှင့် သဘာဝပတ်ဝန်းကျင် ထိန်းသိမ်းရေး ဝန်ကြီးဌာနက ချမှတ်ထားသော ပတ်ဝန်းကျင်ထိခိုက်မှုဆန်းစစ်ခြင်းဆိုင်ရာ လုပ်ထုံးလုပ်နည်း(၂၀၁၅)၊ အမျိုးသားပတ်ဝန်းကျင် အရည်အသွေးလမ်းညွှန်ချက်(၂၀၁၅)၊ မြန်မာ့ခရီးသွားလာရေးဆိုင်ရာဥပဒေ (၂၀၁၈) နှင့် အဆိုပြုစီမံကိန်းနှင့် ဆက်စပ်သော ပတ်ဝန်းကျင်ဆိုင်ရာ နှင့် လူမှုရေးဆိုင်ရာမူဝါဒများကို ဒေသဆိုင်ရာ နှင့် နိုင်ငံတကာကို အခြေခံပြီး ကနဦးပတ်ဝန်းကျင်ဆန်းစစ်ခြင်းအစီရင်ခံစာကို ပြုစုရေးသားခဲ့သည်။ အသေးစိတ်ကို အခန်း (၂) တွင် လေ့လာနိုင်ပါသည်။

၃။ စီမံကိန်းအကြောင်းအရာ

HOYA International Resort Co., Ltd သည် ၁.၇၈ ဧကရှိသော ဇရိယာပေါ်ရှိ (၂၄ ထပ်)အဆောက်အဦ၏ မြေအောက်ထပ်အပါအဝင် အထပ် (၁၇) ထပ်အား ငှားရမ်း၍ ဟိုတယ်ဝန်ဆောင်မှုလုပ်ငန်းအား မြန်မာနိုင်ငံရင်းနှီးမြှုပ်နှံမှုဥပဒေနှင့်အညီ လုပ်ကိုင်မည်ဖြစ်သည်။

ဟိုတယ်တည်ဆောက်ရေးလုပ်ငန်းများကို ၂၀၁၆ ခုနှစ်မှ စတင်လုပ်ကိုင်လျက်ရှိပြီး ၂၀၁၉ ခုနှစ်၊ ဒီဇင်ဘာလတွင် ဟိုတယ်တည်ဆောက်ရေးလုပ်ငန်းများ ပြီးဆုံးရန် ခန့်မှန်းထားပါသည်။

၄။ အနီးပတ်ဝန်းကျင်အခြေအနေ

ပတ်ဝန်းကျင်အခြေအနေ လေ့လာရခြင်း၏ရည်ရွယ်ချက်မှာ စီမံကိန်းအနီးနားရှိ ပတ်ဝန်းကျင် တည်ရှိမှုအခြေအနေ နှင့် လူမှုစီးပွားရေးအပေါ် အကျိုးသက်ရောက်မှုများကို လေ့လာတင်ပြရန် ဖြစ်ပါသည်။ ထိုသို့လေ့လာရာတွင် စီမံကိန်းဇရိယာအနီးနားရှိ အချက်အလက်များကို လေ့လာရာ၌ မြေပုံပေါ်ရှိ အချက်အလက်များ၊ ဒေသဆိုင်ရာအချက်အလက်များ ကိုလေ့လာပြီးနောက် ကွင်းဆင်းလေ့လာခြင်းကို ပြုလုပ်ခဲ့ပါသည်။

စီမံကိန်းဇရိယာ သည် ရန်ကုန်-အင်းစိန်လမ်း၊ လှိုင်မြို့နယ်၊ ရန်ကုန်မြို့တွင် တည်ရှိပါသည်။ ကနဦးပတ်ဝန်းကျင်ဆန်းစစ်မှုတွင် စီမံကိန်း ဇရိယာ၏ ၁ ကီလိုမီတာပတ်လည် အတွင်းရှိ အနီးပတ်ဝန်းကျင်အခြေအနေများကို အသေးစိတ် လေ့လာခဲ့ပါသည်။ စီမံကိန်းဇရိယာကိုဗဟိုပြု၍ ၁ကီလိုမီတာပတ်လည်တွင် မြေအသုံးချမှု အမျိုးအစားများ (၇) မျိုးကို လေ့လာတွေ့ရှိခဲ့ပါသည်။ ၎င်းတို့မှာ (၁) မြေလွတ်မြေရိုင်း၊ (၂) စီးပွားရေးဇရိယာ၊ (၃) အစိုးရဇရိယာ၊ (၄) အပန်းဖြေဇရိယာ၊ (၅) သာသနာမြေ၊ (၆) လူနေဇရိယာ နှင့် (၇) လမ်း တို့ဖြစ်ပါသည်။

လှိုင်မြို့နယ်သည် ရန်ကုန်မြို့တွင်တည်ရှိသည့်အတွက် စီးပွားရေးအချက်အချာကျသည့် မြို့နယ်များတွင်ပါဝင်သည့်အပြင် လမ်းပန်းဆက်သွယ်ရေးကောင်းမွန်ပါသည်။ လှိုင်မြို့နယ်၏ အဓိကစီးပွားရေးလုပ်ငန်းများမှာ စက်ရုံအလုပ်ရုံများနှင့် အိမ်တွင်းစက်မှုလက်မှုလုပ်ငန်းများ ဖြစ်ပါသည်။ (အသေးစိတ်ကို အခန်း ၄ တွင် ဖော်ပြထားပါသည်။)

၅။ သဘာဝပတ်ဝန်းကျင်အပေါ်ဖြစ်ပေါ်နိုင်သော သက်ရောက်နိုင်မှု ဆန်းစစ်ခြင်း

ပတ်ဝန်းကျင်ထိခိုက်မှု စိစစ်သုံးသပ်ပုံမှာ ကမ္ဘာဘဏ်(World Bank)၏ (၁၉၉၁) ခုနှစ် သုံးသပ်ချက်နှင့် အပြည်ပြည်ဆိုင်ရာ ဘဏ္ဍာရေးကော်ပိုရေးရှင်း (IFC)၏ (၁၉၉၈) ခုနှစ် စိစစ်သုံးသပ်မှု ထောက်ခံချက်များကို ကိုးကားပြီး လေ့လာဆန်းစစ် ထားပါသည်။

စီမံကိန်း၏ လုပ်ငန်းဆောင်တာများကြောင့် ပတ်ဝန်းကျင်နှင့် လူမှုဘဝတို့အပေါ် တစ်ခု သို့မဟုတ် တစ်ခုထက် ပို၍ ပြောင်းလဲ သွားနိုင်သောအကြောင်း အချက်အလက်များကို သုံးသပ်၍ သတ်မှတ်ထားခြင်းကို ပမာဏအဆင့် (၆ ဆင့်) ခွဲ၍ ပြသထားပါသည်။

+။ ကောင်းကျိုးသက်ရောက်မှု

၀။ ထိခိုက်မှုဖြစ်နိုင်ခြေမရှိခြင်း

၁။ ပတ်ဝန်းကျင်အပေါ် ထိခိုက်မှု အနည်းငယ်ရှိခြင်း

၂။ ပတ်ဝန်းကျင်အပေါ် ထိခိုက်မှု အလယ်အလတ်ရှိခြင်း

၃။ ပတ်ဝန်းကျင်အပေါ် ထိခိုက်မှုကာလ အလယ်အလတ်အတွင်း ဆိုးရွားစွာ ထိခိုက်မှုရှိခြင်း

၄။ ပတ်ဝန်းကျင်အပေါ် ရေရှည် အလွန်ဆိုးရွားစွာ ထိခိုက်မှုရှိခြင်း

အဆင့်သတ်မှတ်ချက် ပမာဏ ၃ နှင့် ၄ တို့ အခြေအနေ ရောက်ရှိနေသော ပမာဏများကိုမူ မဖြစ်မနေ လျော့ချရေးနှင့် ထိန်းသိမ်းရေး အစီအစဉ်များ ပြုလုပ်ရန် လိုအပ်ပါသည်။

စီမံကိန်း၏ တည်ဆောက်ရေး နှင့် လုပ်ငန်း လည်ပတ်သည့် ကာလများတွင် သဘာဝပတ်ဝန်းကျင်နှင့် လူမှုဝန်းကျင်အပေါ် အကျိုးသက်ရောက်မှုများကို တွက်ချက်ခန့်မှန်း၍ သတ်မှတ်ထားသော ပမာဏ အဆင့် ၄ဆင့်ဖြင့် ဖော်ပြထားသော အကျဉ်းချုပ်ကို အောက်ပါ ဇယား တွင် ပြသထားပါသည်။

ဇယား ထိခိုက်မှု သတ်မှတ်ပုံ အဆင့်ဆင့်

ထိခိုက်မှုသတ်မှတ်ပုံ	အဆင့်			
	၁	၂	၃	၄
ကြာရှိန်	၀-၁ နှစ်	၂-၅ နှစ်	၆-၁၅ နှစ်	စီမံကိန်းကာလတစ်ခုလုံး (ပိတ်သိမ်းသည်အထိ)
သက်ရောက်မှု အကျယ်အဝန်း	စီမံကိန်းအတွင်း	စီမံကိန်းအနီး	ဒေသအတွင်း	နိုင်ငံတကာထိ
ပမာဏ	အလွန်နည်း	အနည်းငယ်	အသင့်အတင့်	ဆိုးရွားသောထိခိုက်မှု
ဖြစ်ပေါ်နိုင်မှု	ဖြစ်နိုင်ခြေ အလွန်နည်း	ဖြစ်ကောင်း ဖြစ်နိုင်	ဖြစ်နိုင်ခြေရှိ	ဖြစ်ရန်သေချာ

စီမံကိန်းကြောင့် ပတ်ဝန်းကျင်နှင့် လူမှုဝန်းကျင်အပေါ် ထိခိုက်မှုရလဒ်များကို အောက်ပါ ဇယားတွင် ဖော်ပြထားပါသည်။ ထိခိုက်မှုများ၏ ရလဒ်များကို လုပ်ငန်းတည်ဆောက်စဉ်ကာလ (CP) နှင့် လုပ်ငန်းလည်ပတ်စဉ်ကာလ (OP) ဟူ၍ (၂)ပိုင်းခွဲ၍ ဖော်ပြထားပါသည်။ စီမံကိန်းလုပ်ငန်းသည် ယခုတွင် တည်ဆောက်ရေးလုပ်ငန်းကို လုပ်ကိုင်လျက် ရှိသောကြောင့် လုပ်ငန်းလည်ပတ်ရာတွင် ဖြစ်နိုင်ခြေရှိသော ထိခိုက်မှုများကို ခန့်မှန်း၍ ဖော်ပြထားပါသည်။

ဇယား ထိခိုက်မှုအကဲဖြတ်ခြင်း၏ ရလဒ်များ

အမျိုးအစား	စီမံကိန်းကာလ		အကဲဖြတ်မှုအကြောင်းအရာ
	လုပ်ငန်းတည်ဆောက်စဉ် (CP)	လုပ်ငန်းလည်ပတ်စဉ် (OP)	
လေအရည်အသွေး	အလယ်အလတ်	အလယ်အလတ်	**CP:** ဆောက်လုပ်ရေးလုပ်ငန်းများ၊ဒီဇယ်မီးစက်နှင့် လုပ်ငန်းသုံးယာဉ်များ (ဖုန်မှုန့် နှင့်သဲမှုန်) **OP:**ဒီဇယ်ဘွိုင်လာ၊ဒီဇယ်မီးစက်နှင့်လုပ်ငန်းသုံးယာဉ်များ (ဖုန်မှုန့်၊ဆာလဖာဒိုင်အောက်ဆိုဒ်၊

အမျိုးအစား	စီမံကိန်းကာလ		အကဲဖြတ်မှုအကြောင်းအရာ
	လုပ်ငန်းတည်ဆောက်စဉ် (CP)	လုပ်ငန်းလည်ပတ်စဉ် (OP)	
			နိုက်ထရိုဂျင်အောက်ဆိုဒ်၊ ကာဗွန်မိုနောက်ဆိုဒ်)
ဆူညံမှုနှင့် တုန်ခါမှု	အလယ်အလတ်	အလယ်အလတ်	**CP:** ဆောက်လုပ်ရေးလုပ်ငန်း အတွက် အသုံးပြုသော ဒီဇယ်မီးစက်၊ လုပ်ငန်းသုံးစက်ပစ္စည်းကိရိယာများ နှင့် ယာဉ်များ။ **OP:** အရေးပေါ်/ လျှပ်စစ်မီးပြတ်တောက်ချိန် ဒီဇယ်မီးစက်အသုံးပြုခြင်း
ရေအရည်အသွေး	နည်းပါး	နည်းပါး	**CP:** ဆောက်လုပ်ရေး လုပ်ငန်းများ ဆောင်ရွက်ရာမှရေဆိုး ထွက်ရှိမှု၊အလုပ်သမားများ အသုံးပြုရာမှ ထွက်ရှိသော ရေဆိုးများ၊ မိုးရွာသွန်းရာမှ ဖြစ်ပေါ်သော ရေဆိုးများ စီးဆင်းမှုကြောင့် မြေအောက်ရေနှင့် မြေပေါ်ရေ အရည်အသွေးများ ကျဆင်းနိုင်ပါသည်။ **OP:** လူသုံးစွန့်ပစ်ရေများ ၊အိမ်သာနှင့်မီးဖိုချောင်မှ ထွက်ရှိသော ရေဆိုးများ
စွန့်ပစ် ပစ္စည်း	အလယ်အလတ်	အလယ်အလတ်	**CP:** ဆောက်လုပ်ရေးလုပ်ငန်းမှ ထွက်ရှိသော မြေအကြွင်းအကျန်များ၊ လုပ်သားများမှထွက်ရှိသော စွန့်ပစ်အမှိုက်များ **OP:** ဟိုတယ်မှထွက်ရှိသော စွန့်ပစ်ပစ္စည်းများ
ကျန်းမာရေးနှင့် ဘေးအန္တရာယ် ကင်းရှင်းမှု	နည်းပါး	နည်းပါး	**CP:** ဆောက်လုပ်ရေးလုပ်သားများ၏ကျန်းမာရေး (ကူးစက်ရောဂါများ၊ လုပ်ငန်းခွင်အတွင်းထိခိုက်မှုများ) **OP:** ဟိုတယ်ဝန်ထမ်းများ၏ကျန်းမာရေး
အရေးပေါ်ဘေးအန္တရာယ်	နည်းပါး	နည်းပါး	**CP/OP:**မီးဘေးအန္တရာယ်၊ ရေကြီးမှု၊ ငလျင် (ပျက်စီးဆုံးရှုံးမှုများဖြစ်ပေါ်နိုင်)

အန္တရာယ်ဖြစ်နိုင်ခြေ ဆန်းစစ်ခြင်း

ဟိုတယ်လုပ်ငန်းတည်ဆောက်ရေးနှင့်လည်ပတ်ရေးလုပ်ငန်းများ ဆောင်ရွက်ရာတွင် ဖြစ်ပေါ်နိုင်သည့် ဘေးအန္တရာယ်အမျိုးမျိုးများ၊ မတော်တဆ ထိခိုက်မှုတို့ကို ဆန်းစစ်နိုင်ရန်အတွက် အောက်ပါနည်းလမ်းများ အတိုင်း ဆောင်ရွက်ပါသည်။

(၁) အန္တရာယ်အမျိုးအစားခွဲခြင်း

(၂) ထိခိုက်ခြင်းအကျိုးဆက်ကို ဆုံးဖြတ်ခြင်း

(၃) ချင့်ချိန်တွက်ချက်၍ ကြိုတင်ကာကွယ်ရန် ဆုံးဖြတ်ခြင်း

(၄) ရာဖွေမှုများနှင့် ကိရိယာတန်ဆာများအား မှတ်တမ်းတင်ထားရှိခြင်း

(၅) သုံးသပ်ခြင်းများပြုလုပ်၍ လိုအပ်ပါက ထပ်မံဖြည့်စွက်ခြင်း စသည်များကို ဆောင်ရွက်ပါသည်။

အောက်ဖော်ပြပါ ဘေးအန္တရာယ်များမှာ ဟိုတယ်တည်ဆောက်ခြင်းလုပ်ငန်းမှ ဖြစ်ပေါ်နိုင်သော ဘေးအန္တရာယ်များဖြစ်ပါသည်။

- မသင့်လျော်သောဆောက်လုပ်ရေးလုပ်ငန်းစဉ်များ
- မကောင်းမွန်သော စက်ကိရိယာများနှင့်ပစ္စည်းများ အသုံးပြုခြင်း
- လုပ်သားအင်အားမလုံလောက်ခြင်းနှင့် လုပ်ငန်းခွင်ဘေးအန္တရာယ်
- လုပ်ငန်းခွင်နှင့်ဆိုင်သော ဘေးအန္တရာယ်လုံခြုံမှု ကောင်းမွန်စွာ မထားရှိခြင်း

အောက်ဖော်ပြပါ ဘေးအန္တရာယ်များမှာ ဟိုတယ်လုပ်ငန်း လည်ပတ်စဉ်ကာလတွင် ဖြစ်ပေါ်နိုင်သော ဘေးအန္တရာယ်များဖြစ်ပါသည်။

- ဟိုတယ်ဝန်ဆောင်မှုလုပ်ငန်းတွင် ကျွမ်းကျင်မှုမရှိခြင်း
- ဟိုတယ်ဝန်ထမ်းများ ဆက်ဆံမှုမပြေပြစ်ခြင်း
- လုပ်ငန်းဆောင်ရွက်ရန်ခွင့်ပြုချက်မရရှိခြင်း

၆။ ဒေသခံပြည်သူများ ချိတ်ဆက်ပါဝင်ခြင်း နှင့် ဒေသဖွံ့ဖြိုးရေး

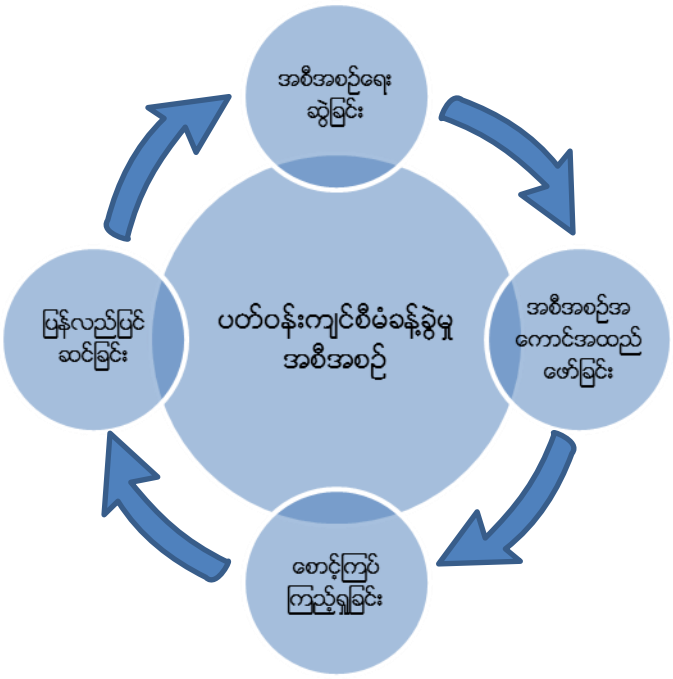
အများပြည်သူနှင့် တွေ့ဆုံဆွေးနွေးပွဲကို လှိုင်မြို့နယ် မီးသတ်ဦးစီးဌာနခန်းမ၊ ရန်ကုန်-အင်းစိန်လမ်း၊ ရန်ကုန်တိုင်းဒေသၦီ အောက်တိုဘာလ ၃ ရက် ၂၀၁၉ခုနှစ် တွင်ကျင်းပခဲ့ပါသည်။ အခမ်းအနားမှူးအဖြစ် TBS မှ ဒေါ်စုမြတ်ကျော် (Environmental Scientist) မှ တာဝန်ယူဆောင်ရွက်ခဲ့ပြီး အဖွင့်အမှာ စကားကို HOYA International Resort Co., Ltd မှ ဦးတင်ဝင်း (တာဝန်ခံ) မှ ပြောကြားခဲ့ ပါသည်။ ထို့နောက် TBS ကုမ္ပဏီမှ ဒေါ်နှင်းလဲ့ဝင်း (Environmental Manager) မှ စီမံကိန်းအချက်အလက်များ၊ ထုတ်လုပ်မှု အဆင့်ဆင့်များ၊ အမှိုက်စွန့်ပစ်မှု စနစ်များ၊ ပတ်ဝန်းကျင်အပေါ် အကျိုးသက်ရောက်မှုများ၊ လျော့ချရေး အစီအစဉ်များ၊ ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှု အစီအစဉ်များ၊ စောင့်ကြပ်ကြည့်ရှုရေးအစီအစဉ်များ နှင့် CSR အစီအစဉ်များကို ရှင်းလင်းတင်ပြ၍ အစိုးရဌာနဆိုင်ရာအဖွဲ့အစည်းများမှ တာဝန်ရှိသူများနှင့် စီမံကိန်းအနီးအနားရှိ ဒေသခံပြည်သူများ တက်ရောက်ကြပါသည်။ အသေးစိတ်ကို အခန်း ၆ တွင် ဖော်ပြထားပါသည်။

၇။ ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှု အစီအစဉ်များ

ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုအစီအစဉ် ရေးဆွဲရခြင်း၏ ရည်ရွယ်ချက်မှာ စီမံကိန်း အကောင်အထည်ဖော်မှုကြောင့် ဖြစ်ပေါ်နိုင်သော ပတ်ဝန်းကျင်အပေါ် သက်ရောက်မှုများ နှင့် လျော့ချရေးအစီအစဉ်များကို လေ့လာမှုသည် အဓိကအခန်းကဏ္ဍ ဖြစ်ပါသည်။ လေ့လာမှုမှ တွေ့ရှိသော

အကျိုးဆက်များကို ကောင်းကျိုး၊ ဆိုးကျိုးများ ခွဲခြားပြီး ကောင်းကျိုးများကို ပိုမိုကောင်းမွန်အောင် ဆောင်ရွက်ရန်နှင့် ဆိုးကျိုးများကို လျော့ချနိုင်ရန် အစီအစဉ်များ ရေးဆွဲခြင်းဖြစ်ပါသည်။

စီမံကိန်းလုပ်ငန်းများကြောင့် ပတ်ဝန်းကျင်အပေါ် သက်ရောက်မှု မရှိစေရန် သက်ဆိုင်ရာ အာဏာပိုင် အဖွဲ့အစည်းများ၏ ချမှတ်ထားသော သဘာဝပတ်ဝန်းကျင်ဆိုင်ရာ ဥပဒေ၊ စည်းမျဉ်းများ နှင့်အညီ သင့်လျော်သော လျော့ချရေးအစီအစဉ်များကို အကောင်အထည်ဖော် ဆောင်ရွက်ခြင်း ဖြစ်ပါသည်။ ထိုသို့ အကောင်အထည်ဖော် ဆောင်ရွက်ရာ၌ အောက်တွင် ဖော်ပြထားသော ပုံ စက်ဝိုင်းအတိုင်း စီမံခန့်ခွဲမှု အစီအစဉ် Plan-Do-Check-Act (PDCA) အချက်လေးချက်ပေါ်မူတည်ပြီး ပြုလုပ်ရပါမည်။



ပုံ ပတ်ဝန်းကျင် စီမံခန့်ခွဲမှု အစီအစဉ်ပြု စက်ဝိုင်း

- **Plan (P)- အစီအစဉ်ရေးဆွဲခြင်း**

စီမံကိန်းကြောင့် ပတ်ဝန်းကျင်အပေါ် ထိခိုက်မှု ဖြစ်စေနိုင်သော လေထုညစ်ညမ်းမှု၊ အသံဆူညံမှု၊ ရေဆိုးစွန့်ပစ်မှု၊ အမှိုက်စွန့်ပစ်မှု၊ ကျန်းမာရေး နှင့် ဘေးအန္တရာယ်ကင်းရှင်းမှု စသော ထိခိုက်မှုများ လျော့ပါးရေး အတွက် အချိန်ဇယား အစီအစဉ်များ ရေးဆွဲရပါမည်။

- **Do (D)- အကောင်အထည်ဖော်ဆောင်ခြင်း**

ပတ်ဝန်းကျင်ထိခိုက်မှု အတွက် ရေးဆွဲထားသော လျော့ချရေး အစီအစဉ်များကို စီမံကိန်းမှ တာဝန်ရှိသူများက အကောင်အထည်ဖော် ဆောင်ရွက်ရပါမည်။

- **Check (C)- စောင့်ကြပ်ကြည့်ရှုခြင်းနှင့်စစ်ဆေးခြင်း**

လျှော့ချရေး အစီအစဉ်များ အကျိုးသက်ရောက်မှု ရှိမရှိကို စောင့်ကြပ်ကြည့်ရှုခြင်းနှင့် စစ်ဆေးခြင်းများ ပြုလုပ်ရပါမည်။ စောင့်ကြည့်မှုအတွက် စီမံကိန်းဖော်ဆောင်သူ အပါအဝင် သက်ဆိုင်ရာ အနီးပတ်ဝန်းကျင်ရှိ ပုဂ္ဂိုလ်များ၊ အုပ်ချုပ်ရေးပိုင်း ဆိုင်ရာ ပုဂ္ဂိုလ်များ အစရှိသော သက်ဆိုင်ရာ အဖွဲ့အစည်းများ စုပေါင်း၍ လေ့လာစောင့်ကြည့်မှု ပြုလုပ်ရပါမည်။ ၄င်းစောင့်ကြည့်မှုကိုလည်း အစီရင်ခံစာ ပြုစုပြီး သက်ဆိုင်ရာ ဝန်ကြီးဌာနသို့ တင်ပြရမည်ဖြစ်သည်။

- **Act (A)- ပြန်လည်ပြင်ဆင်ခြင်း**

စောင့်ကြပ်ကြည့်ရှုခြင်း အစီအစဉ်တွင် လက်ရှိဖြစ်ပေါ်သော ပတ်ဝန်းကျင် ထိခိုက်မှုများနှင့် ကိုက်ညီမှု မရှိခဲ့လျှင် လျှော့ချရေး အစီအစဉ်များကို ပြန်လည်ပြင်ဆင်ခြင်းများ ပြုလုပ်ရပါမည်။

စောင့်ကြပ်ကြည့်ရှုရမည့်အကြောင်းအရာများ

စီမံကိန်းလုပ်ငန်းတွင် အဓိက စောင့်ကြပ်ကြည့်ရှုရမည့် အကြောင်းအရာများမှာ လေထုညစ်ညမ်းမှု၊ အသံဆူညံမှု၊ အမှိုက်စွန့်ပစ်မှု၊ လုပ်သားများ၏ကျန်းမာရေးနှင့် ဘေးအန္တရာယ်ကင်းရှင်းမှု တို့ကို စောင့်ကြပ်ကြည့်ရှုရပါမည်။ စောင့်ကြပ်ကြည့်ရှုခြင်း၏ ရည်ရွယ်ချက်မှာ (၁) စီမံကိန်းလုပ်ငန်း လည်ပတ်နေစဉ်အတွင်း ဖြစ်ပေါ်နိုင်သော ထိခိုက်မှုများကို တိုင်းတာရန်၊ (၂) ပြဌာန်းထားသော ဥပဒေအတိုင်း လုပ်ဆောင်စေရန်၊ (၃) ပတ်ဝန်းကျင်အပေါ် ထိခိုက်နိုင်မှုများအတွက် လျှော့ချရေးနည်းလမ်းများ သတ်မှတ်ရန်၊ (၄) ပတ်ဝန်းကျင် စီမံခန့်ခွဲမှု အစီအစဉ်တွင် ပြည့်စုံစွာ ဖော်ပြနိုင်ရန် တို့ဖြစ်ပါသည်။

ရံပုံငွေလျာထားခြင်းနှင့် အဖွဲ့အစည်းဖွဲ့ခြင်း

ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုနှင့် စောင့်ကြပ်ကြည့်ရှုမှု၊ ကျန်းမာရေး နှင့် ဘေးအန္တရာယ်ကင်းရှင်းရေးဆိုင်ရာ အစီအစဉ်များ အတွက် သုံးစွဲမည့်ခန့်မှန်း စရိတ်များကို ဇယားတွင် ဖော်ပြထားပါသည်။

ဇယား။ ပတ်ဂန်းကျင်ဆိုင်ရာ အစီအစဉ်များအတွက် သုံးစွဲမည့် ခန့်မှန်းစရိတ်များ

စဉ်	ပတ်ဝန်းကျင်လျော့ချရေးအတွက်ပြုလုပ်မည့်အစီအစဉ်များ	ခန့်မှန်းအသုံးစရိတ်(နှစ်စဉ်)
	ပတ်ဝန်းကျင်ဆိုင်ရာလုပ်ငန်းများ	
၁	ပတ်ဝန်းကျင်အရည်အသွေးတိုင်းတာခြင်း၊ စောင့်ကြပ်ကြည့်ရှုခြင်း	၂၅၀၀ အမေရိကန်ဒေါ်လာ
၂	သက်ဆိုင်ရာသင်တန်းများပို့ချခြင်း	၁၀၀၀ အမေရိကန်ဒေါ်လာ
	ကျန်းမာရေးနှင့်ဘေးအန္တရာယ်ကင်းရှင်းရေးဆိုင်ရာလုပ်ငန်းများ	
၃	ဆေးပစ္စည်း၊ တစ်ကိုယ်ရေသုံး အကာအကွယ်ပစ္စည်း ထောက်ပံ့ခြင်း	၁၀၀၀ အမေရိကန်ဒေါ်လာ
၄	လုပ်သားကျန်းမာရေးစစ်ဆေးခြင်း	၁၀၀၀ အမေရိကန်ဒေါ်လာ

ပတ်ဂန်းကျင်စီမံခန့်ခွဲမှုအစီအစဉ်တွင် လေ့လာတွေ့ရှိခဲ့သော ရလဒ်များအရ စီမံကိန်းကြောင့် ပတ်ဂန်းကျင်နှင့်လူမှုဘဂထိခိုက်မှုများကို လျော့ချရေး၊ထိန်းသိမ်းရေးအစီအစဉ် နှင့် လုပ်ဆောင်ရမည့် လုပ်ထုံးလုပ်နည်းများကိုဖော်ပြထားပါသည်။ စီမံကိန်းလုပ်ဆောင်မှုများ အလိုက် စောင့်ကြပ်ကြည့်ရှုရမည့်အစီအစဉ်များ၊ လျော့ချရေးနည်းလမ်းများကို HOYA International Resort Co., Ltd မှ ပြုလုပ်မည့် ကတိကဂတ်များပါရှိသည်။ ထို့အပြင် ပတ်ဂန်းကျင်နှင့် ဘေးအန္တရာယ်ကင်းရှင်းရေး ကိစ္စရပ်များကိုပါ ထည့်သွင်းစဉ်းစားပြီး ချမှတ်ထားသော ပြဌာန်းဥပဒေများကို လိုက်နာဆောင်ရွက်နိုင်ရန် အစီအရင်ခံစာ တွင် အကြံပြုထားပါသည်။ အသေးစိတ်ကို **အခန်း ၇** တွင် ဖော်ပြထားပါသည်။

၈။ နိဂုံး

နိဂုန်းချုပ်အနေဖြင့် ကနဦးပတ်ဝန်းကျင်ဆန်းစစ်လေ့လာမှုတွင် အောက်ဖော်ပြပါအချက်များကို သတ်မှတ်ဖော်ပြထားပါသည်။

၁။ စီမံကိန်းဖော်ဆောင်သူသည် စီမံကိန်းလည်ပတ်ရာတွင် ကောင်းမွန်သော နိုင်ငံတကာ အဆင့်မီ ဟိုတယ်လုပ်ငန်းဖြစ်ရန်လုပ်ဆောင်သွားမည်ဖြစ်သည်။

၂။ စီမံကိန်းဖော်ဆောင်မှုအဆင့်အလိုက် ပတ်ဝန်းကျင်အရည်အသွေးတန်ဖိုးများကို လေ့လာဆန်းစစ်ပြီး အစီရင်ခံစာမူကြမ်းတွင် အသေးစိတ်ဖော်ပြထားပါသည်။

၃။ ကနဦးပတ်ဝန်းကျင်ဆန်းစစ်ခြင်း အစီအရင်ခံစာကို ပြည်သူလူထုသိရှိစေရန် ထုတ်ဖော်တင်ပြခြင်းနှင့် တွေ့ဆုံဆွေးနွေးခြင်းများကို ပြုလုပ်ထားပြီး အများပြည်သူလူထု၏ ထင်မြင်ချက်၊ အကြံပြုချက်၊ မှတ်ချက်များကို တည့်သွင်းစဉ်းစားရေးဆွဲထားပါသည်။

၄။ စီမံကိန်းလုပ်ဆောင်သူသည် ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှု အစီအစဉ်များကို အကောင်အထည်ဖော်မှုကို လိုက်နာစောင့်ထိန်းမည် ဖြစ်သည်။ လိုအပ်သည့် ခွင့်ပြုချက်များ၊ လိုင်စင်များကို ရယူပြီး အရည်အချင်းပြည့်မီသော ဝန်ထမ်းများဖြင့် စီမံကိန်းကိုအဆိုပြု ထားသည့်အတိုင်း အကောင်အထည်ဖော်ဆောင်သွားမည် ဖြစ်ပါသည်။

ထို့ကြောင့် ကနဦးပတ်ဝန်းကျင်ဆန်းစစ်ခြင်း အစီအရင်ခံစာမူကြမ်းတွင်ပါရှိသည့် အဆိုပြု အချက်အလက်များကို အပြည့်အဝလိုက်နာဆောင်ရွက် အကောင်အထည်ဖော်ဆောင်မည်ဖြစ်ကြောင်း နိဂုံးချုပ်အပ်ပါသည်။

EXECUTIVE SUMMARY

1. Introduction

HOYA International Resort Co., Ltd. Is an international hotel located in No. (218), Yangon-Insein Road, Hlaing Township, Yangon, Myanmar.

The investor submitted a proposal for the said investment to Myanmar Investment Commission (Yangon Division) on 15th March 2019. According to MIC requirement, HOYA International Resort Co., Ltd. requires the Initial Environmental Examination (IEE) to meet the environmental assessment requirements of Myanmar Environmental Conservation Law. Therefore, HOYA International Resort Co., Ltd. commissioned Total Business Solution Co., Ltd. (TBS) as an environmental consulting organization for IEE report study.

2. Legal Requirements

Next chapter provides the brief summary of relevant national environmental legislations such as Environmental Impact Assessment Procedure (2015) and National Environmental Quality (emission) Guidelines (2015), established by the Ministry of Natural Resources and Environmental Conservation (MONREC), Myanmar Tourism Law (2018) and overview of current local and international environmental and social policies including related international or regional convention for the proposed project. **(See detail in Chapter 2)**

3. Project Description

A 24-storey building is constructed upon 1.78 acre (7,203.4 m^2). A 10 storeys including basements is rented as an international hotel resort by HOYA. The construction period has been started from 2016 and will be estimated to finish in December, 2019. **(See details in Chapter 1 and Chapter 3)**

4. Description Natural and Social Environmental

The survey of land use is carried out around the 1 km marginal area. The study area consists of the proposed project site and seven types of land use within 1 km marginal area. They are (1) Bareland, (2) Commercial area, (3) Government building, (4) Recreational land (5) Religious area, (6) Residential area and (7) Road. Residential area is largest portion within 1 km marginal area, followed by government area, commercial area, recreational area, road, bareland and religious area. Hlaing township is regarded as one of the central business townships in Yangon City. The local people's livelihood is mainly included services businesses. As it is a developing township, it has a good transportation system. Main business types are industries, factories, workshops, cottage industries. **(See detail in Chapter 4)**

5. Impact Assessment and Mitigation Measures

This chapter provides an assessment of potential impact arising from the project. The methodological approach used for the project impact assessment is adapted from the impact assessment methods recommended by the Canadian Environmental Assessment

Agency (1990), by the World Bank (1991) and by the International Finance Corporation (Dec. 1998).

In order to assess the likely significant environmental and social impacts of the Project were preliminary identified based on the project description and overall environmental and social conditions. The impacts of pollution, natural environment and social environment, health and safety, emergency risk, and others classified as +, 0 to 4 in accordance with the following criteria, assuming no specific measures toward the impacts taken:

+ : Positive impact

0 : No impact or impacts are negligible, no further study required

1 : Impacts are not clear, need more investigation

2 : Some negative impacts

3 : Moderately significant negative impacts

4 : Serious long-term negative impacts

The impact assessment and its scale from the interaction among the probability, extend and duration of the impact is shown in Table.

Table Evaluation of Impact Assessment

Assessment / Scale	A	B	C	D
Probability	Very Probable	Probable	Improbable	Very Improbable
Extend	National	Regional	Local	Site-specific
Duration	Life of operation	6-15 years	2-5 years	0-1 year
Significant	4	3	2	1

Results of the environmental and social impact assessment are shown in Table. These impacts are evaluated in each of the two phases separately namely construction phase (CP) and operation phase (OP). Although the Project is currently in the construction phase, the impacts of the operation phase are estimated in case of the Project proponent has to close due to unexpected cases. **(See detail in Chapter 5)**

Table Results of Impact Assessment

Categories	CP	OP	Reasons of Evaluation
Air Quality	Medium	Medium	CP: Construction activities, diesel generator and vehicle movement (TSP and PM) OP: Diesel boiler operation, diesel generator and vehicle movement (PM, SO_2, NO_x, CO)

Categories	CP	OP	Reasons of Evaluation
Noise	Medium	Medium	CP: Emergency use of diesel generator and the operation of construction equipment and heavy vehicles OP: Emergency use of diesel generator
Water Quality	Low	Low	CP: Surface runoff, domestic wastewater (Organic Matter in wastewater) OP: Domestic wastewater (Organic Matter in wastewater)
Waste	Medium	Medium	CP: Residue waste and domestic waste (Construction materials, office waste and human waste) OP: Industry waste, domestic waste (Production waste, office waste and human waste)
Occupational health and safety	Low	Low	CP: Workers' health at the construction area (Infectious disease; such as AIDS/HIV, Hepatitis B/C, etc. and other physical injuries) OP: Workers' health in operation area (Infectious disease; such as AIDS/HIV, Hepatitis B/C, etc. and other physical injuries)
Emergency	Low	Low	CP/OP: Fire/ Flood/ Earthquake (Damage and loss of Asset)

Risk Assessment

There are five steps of risk assessment such as (1) identify the hazards, (2) decide who might be harmed and how, (3) evaluate the risks and decide on precautions, (4) record the findings and implement them and (5) review the assessment and update if necessary.

Risk occurred during construction phase are (1) improper construction procedures, (2) unsuitable equipment and materials, (3) lack of workers and site safety and (4) poor construction occupational safety.

During operation phase, risks such as (1) unqualify use of hotel utilities, (2) delayed deliveries and disruptions and (3) work permission may be occurred.

6. Public Consultation

Public consultation meeting was hold on Thursday, 3rd October 2019 at Hlaing Fire Station, Yangon-Insein road, Hlaing Township, Yangon. Public consultation was started and opened by Daw Su Myat Kyaw (Environmental Scientist) from TBS

(Environmental Consulting Firm) who performed as an announcer for the meeting. Then, U Tin Win (Head Officer) from HOYA International Resort Co., Ltd. gave an introduction speech about their HOYA International resort. Daw Hnin Lai Win (Environmental Manager) from TBS (Envonmental Consulting Firm), also explained about the objectives of IEE study, baseline data collection, prediction of environmental impact, effective impact mitigation measures and preparation of EMP plan including with Environmental Monitoring Plan and CSR plan etc. **(See details in Chapter 6)**

7. Environmental Management Plan

The EMP for the project provides the procedures and processes, which will be applied to the project activities to check and monitor compliance and effectiveness of the mitigation measures to which HOYA International Resort Co., Ltd. has committed. This EMP is used to ensure compliance with statutory requirements and corporate safety and environmental policies.

The objective of the environmental management is to ensure potential environmental issues managed by proper mitigation measures in compliance with the relevant laws and regulations stipulated by national authorities. Environmental management is based on the basic principles of management known as the PDCA cycle.

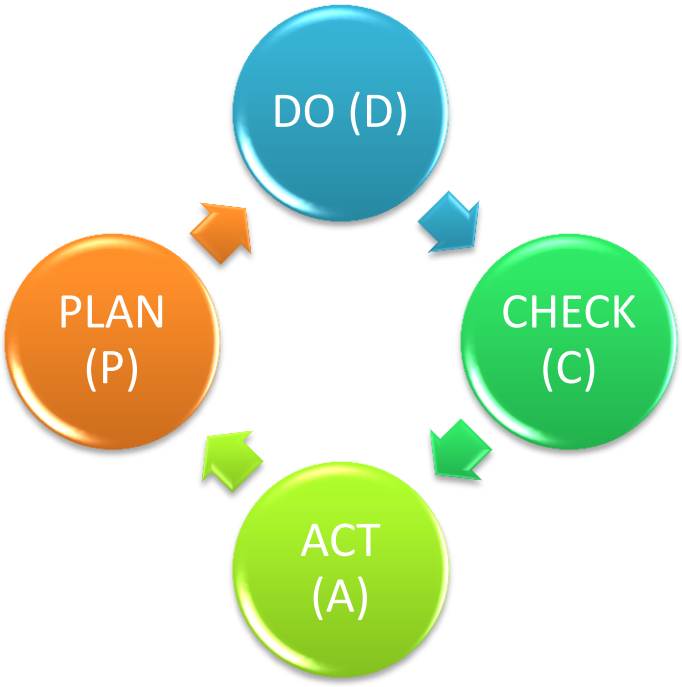


Figure Cycle of P.D.C.A

Environmental management consists of four related tasks as described below:

- Plan (P) - What need to be done

Mitigation measures for the potential environmental impacts of the hotel such as air emission, noise, solid waste, wastewater and health and safety at work are described. The Project Proponent will follow the plan for the mitigation measures according to the scheduled time.

- Do (D) - Implement the plan

The Project Proponent as described in this chapter will implement the mitigation measures for the potential environmental impacts appropriately.

- Check (C) - Monitor and evaluate the results of implementation

The effectiveness of the mitigation measures will be monitored, evaluated and documented.

- Act (A) - Taking corrective actions to improve the results, if found inadequate

If nonconformities are noted with reference to the environmental monitoring benchmarks, corrective actions are needed to be planned to mitigate the existing environmental impacts.

HOYA International Resort Co., Ltd. will manage the development of the proposed project. The project proponent should appoint Health, Safety and Environment (HSE) issues throughout the duration of the project phases. HSE team is responsible for implementation and monitoring of Environmental Management Plan (EMP) and Monitoring Plan as well as coordination with local authorities and the nearby communities. The HSE team also makes regular review of EMP to cover all potential impacts, amendments and modifications.

In order to ensure the sound development and effective implementation of the EMP, it will be necessary to identify and define the responsibilities. The environmental management practices, procedures, and responsibilities are defined herein to get full compliance with the existing environmental policy, laws, rules and regulations of the Republic of the Union of Myanmar. The following entities should be involved in the implementation of this EMP:

- HOYA International Resort Co., Ltd.
- Environmental Conservation Department (ECD)
- Third-Party Environmental Consultant (TBS)

The Environmental Management Plan (EMP) is prepared for the proposed project covers the anticipated impacts of the said project, mitigation measures, management and monitoring plans during each of the phases:

- Construction Phase
- Operation Phase

The Environmental Management Plan (EMP) is a site-specific plan developed to ensure that the project is prepared in an environmentally sustainable manner where all Pacific-PSP including consultants, understand the potential environmental risks. There are five main sections in this EMP plan and detailed EMP plan based on the project activities.

1. Proposed Mitigation Measure
2. Environmental Monitoring Plan including with Monitoring Guidelines and Standards
3. On-site Management Plan
4. Emergency Preparedness Plan and Training Program
5. Budget Allocation for Environmental Management Plan (EMP)
6. Corporate Social Responsibility (CSR) Plan. **(See detail in Chapter 7)**

Main Objectives of Environmental Monitoring Plan

1. To identify and resolve environmental issues and other functions that may arise during the operation phase
2. To implement water quality, air quality and noise impact monitoring plan during the operation phase
3. To conduct regular reviews of monitored data as the basis for assessing mitigation measures are identified, designed and implemented;
4. To assess and interpret all environmental monitoring, data to ascertain whether environmental control measures and practices are functioning in accordance to specifications **(See detail in Chapter 7)**

Budget plan for environmental monitoring plan

Budget plan for environmental monitoring plan is shown in the following table.

Table Budget Plan for Environmental Management and Monitoring

No	Proposed Environmental Mitigation Measures	Estimated Budget (USD)
Environmental Work		
1	Monitoring program	2,500
2	Capacity building and training	1,000
3	Emergency case	2,000
Health and Safety Work		
4	Personal protective equipment	5,000-10,000
5	Medical for Clinic (per year)	3,000
6	Fire Extinguisher	1,000

Necessary responsibilities

(a) Investment of HOYA is composed of foreign (93%) and local (7%) investment.

(b) Environmental management plan is well organized and strongly managed.

(c) The plan is performed strictly and the hotel project followed the instructed procedure with suitable rules and regulations.

(d) HOYA International Resort Co., Ltd will carry out commitments completely and continuously. In these commitments, activities which can reduce the environmental impact and plan will be involved.

(e) During the operation phase, the company will perform the proposed environmental management plan to upgrade by using updated technologies and systems and workplace requirements according to the comments from ECD. **(See detail in Chapter 7)**

HOYA International Resort Co., Ltd will manage environmental and social management plan to avoid the issues to surrounding communities before the closure.

8. Conclusion

The following recommendations have been made for efficient and effective implementation of environmental conservation, health and safety and social responsibilities through the lifespan of the proposed project.

- Follow the comments and suggestions made by ECD after reviewing this IEE report.
- Once concerned authorities approve EMP, strict implementation is essential.
- For full and proper implementation of EMP, well understanding and supports by proponent and authority is deem necessity.
- Well experienced and knowledgeable HSE Manager and HSE Assistants shall be appointed.
- Daily, monthly and annual action plan shall be formulated based on this EMP and practiced at operation level.
- Keep full records of environmental management activities and present to annual independent third-party environment audit.
- Follow the audit report and comments.
- Abide environmental policy, laws, rules and instructions of the Republic of the Union of Myanmar.

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CHAPTER 1
INTRODUCTION

HOYA International Resort Company Limited is regarded as an international hotel located at No. 218, Yangon-Insein Road, Hlaing Township, Yangon, Myanmar. The investor submitted a proposal to Myanmar Investment Commission (Yangon Division) on 15th March, 2019.

According to MIC decision letter, HOYA International Resort Company Limited requires Initial Environmental Examination (IEE) to meet the environmental assessment requirements of Myanmar Environmental Conservation Law. Therefore, HOYA International Resort Company Limited commissioned Total Business Solution Co., Ltd. (TBS) as an environmental consulting organization for IEE report study.

TBS's scope of work included reviewing the available environmental background data, reviewing the factory production processes, wastewater treatment process, health and safety procedures and drawing up Environmental Management Plans. TBS conducted the site visit and collected background data measurements on July 11, 2019. Studying land use around the project area was done on August 1, 2019. On August 26, 2019, measurement of air quality, water quality, noise and vibration at the project site were conducted. Public consultation meeting with stakeholders, local representatives and government officials was completed on October 3, 2019.

1.1. BRIEF DESCRIPTION OF THE PROJECT PROPONENT

The project area is located on 1.78 acres or 7,203.40 m^2. 10 storeys including basements are rent for HOYA International Resort Co., Ltd. Currently, the condition of the project area is construction phase. The construction processes involve piling the foundation, using construction vehicles and machines, decorations for hotel construction processes and so on. At the workplace, construction materials are placed and normal daily routine of construction site can be seen. Required number of workers for construction site are 90.

1.1.1. Proponent information

Table 1-1 Contact Person Address

Name	U Myint Thein
Address	No. 5/6, Lay Daung Kan Street, Shwe Kainnayi Shop House, Bawa Myint Ward, Thingangyun Township, Yangon, Myanmar.
Phone	01-8564530

1.2. THE ENVIRONMENTAL CONSULTING ORGANIZATION

The Environmental and Social Experts professionally provided by TBS. The contact person of the TBS provided below:

Representative: Dr. Soe Moe Kyaw Win, Ph.D., P.Eng.,P.Geo.,
Position: Managing Director/Principal Geotechnical Engineer
Mobil Phone: +959455309359
Office Phone: +959401604493
Email: soemoe@tbs.com.mm, drsoemoe@outlook.com
Address: No.54, Room no. 704, Waizayantar Tower, Waizayantar Road, Thingangyun Township, Yangon, Myanmar.

1.2.1. Background Information on TBS

TBS is registered and located in Yangon. Since its inception in 2012, TBS, in collaboration with TEAM Group of Companies of Thailand, has been providing consulting services to the private and public sectors in Myanmar. TBS services include port and industrial estate development, power transmission, flood control, drainage and sewerage system, EIA, IEE and EMP. Environmental ongoing and completed projects by TBS are shown in Table 1-3 and the experiences of environmental consultants is described in Table 1-2.

Table 1-2 Experience of environmental consultants

No	Name	Position	Education	Experience	Responsibility
1.	Dr. Soe Moe Kyaw Win	Managing Director Principal of Geotechnical and Geoenvironmental Engineer	Ph.D. (Geotechnical Engineering) M.Sc. (Geotechnical Engineering) B.Sc. (Geology)	25 years' experience in the areas of environmental assessment, geotechnical and geological engineering in Southeast Asian, U.S.A and Canada. Dr. Soe Moe's experience includes environment assessments, mine waste management, site investigation, instrumentation, ground improvement, land reclamation and landslide investigation.	Overall review of the report
2.	Ms. Hnin Lai Win	Environmental Manager	M.Sc. (Environmental Engineering and	6 years of experience in Medical and Business	Introduction Project description

No	Name	Position	Education	Experience	Responsibility
			Management) B.Pharm. (Pharamacy)	Administration field in Myanmar. 2 years study in Master level of Environmental Engineering and Management at Asia Institute of Technology (Thailand)	Surrounding Environment Potential environmental impact assessment Environmental management plan
3.	Mr. Htun Lin Kyaw	Environmental Geologist	M.Sc (Structural Geology) B Sc (Hons) Geology	3 years experiences in topography survey and road design work. Coordination with government organizations and villagers, environmental risk assessment and environmental report preparation	Surrounding environment Potential environmental impact assessment Environmental management plan
4.	Mr. Paing Zin Oo	Hydrologist GIS specialist	B.Sc. (Hons) (Hydrology)	2 years experiences in Land Survey, River Survey and GIS Mapping	Generate mapping related to the Project
5.	Mr. Phyo Thu Kyaw	Auto CAD Drafter	B.E. (Mechatronic)	Experiences in Telecom Companies as project coordinator, documentation and drafter. 3 years experiences in project coordinator, documentation, drafter and graphic design.	Project description Surrounding environment
6.	Mr. Tin Htut Hlaing	Environmental Geologist	B.Sc. (Geology)	1-year experience in EMP, IEE, report preparation. Coordination with government organizations and villagers, environmental risk assessment. Land use survey and Air monitoring	Surrounding environment Public consultation

No	Name	Position	Education	Experience	Responsibility
7.	Mr. Tint Naing Zaw	Environmental Scientist	B.Sc. (Forestry) LL.B. P.G.Dip.EIA/ EMS	Participated in community development activities and coordination Environmental and social survey and assessment Legal reviewer over project related documents	Legal requirement Public consultation
8.	Mr. Htet Thiha Phone Myint	Environmental Geologist	B.Sc. (Geology)	2 years experiences in Geological and Soil Study, Land Use Plan, Environmental Assessment and Coordination with government organizations and villagers, environmental risk assessment, environmental monitoring measurement and environmental report preparation	Surrounding environment Project description
9.	Ms. Thandar Kyaw	Environmental Geologist	M.Sc. (Petroleum Geology) B.Sc. (Hons)Geology	2 years' experience in geotechnical laboratory testing. 1-year experience in Geological and Soil Study, Land Use Plan, Environmental Assessment and Coordination with government organizations and villagers, environmental risk assessment, environmental monitoring measurement and environmental report preparation	Introduction Project description Public consultation
10.	Ms. Eaindra Oo	Water Resources Engineer	M.Sc. (Water Engineering and Management) B.Sc. (Civil and Infrastructure Engineering)	Hydropower Engineer in Team Group Researcher in Department of Water Engineering and Management in Asian Institute of	Introduction Project description Public consultation

No	Name	Position	Education	Experience	Responsibility
				Technology	
11.	Ms. Su Myat Kyaw	Environmental Scientist	M.E (Environmental Engineering and Management) B.E (Materials and Metallurgy)	2 years experiences in environmental field	Potential environmental impact assessment Environmental management plan
12.	Mr. Win Pyae Htet	Environmental Geologist	B.Sc. (Hons:) Geology M.Sc. (Crd) Engineering Geology M.Si (Cum Laude) Earth Science (Indonesia)	one-year in exploration geology such as Coal Mining Exploration Project and Stream Sediments Sampling Survey three years in disaster analysis field such as analyzed on spatial variation of geodetic apply to seismic hazard in Yangon and along Sagaing Fault and Timeseries Analysis and Geodetic Velocity Observed by cGPS Measurements in Myanmar (2011-2018), Collaborated with Myanmar Earthquake Committee (MEC) and Earth Observatory of Singapore (EOS)	Earthquake geology Exploration geology and engineering geology Environmental Quality Surveyor Logistic management Facilitation of meeting Disaster analysis

Table 1-3 TBS Environmental project in Myanmar

No.	Project Name	Location	Client	Period
1	Preliminary Environmental Study for Kyaing Tone Power Plant	Southern Shan State	Ratchaburi Electricity Generating Holding PCL.	Feb - Mar 2014
2	Environmental Consideration Study Combined Cycle	Myingyan District, Mandalay Division Region.	Ratchaburi Electricity Generating	2013-2014

No.	Project Name	Location	Client	Period
	Power Plant		Holding PCL.	
3	ESIA for Combined Cycle Power Plant	Kanbauk, Dawei District, TaninTharyi Division Region.	Andaman Power and Utility Co., Ltd.	Jun - Oct 2013.
4	ESIA for the Transmission Line from Mawlamyine-Dawei.	Mawlamyine-Dawei, TaninTharyi Division Region.	Andaman Power and Utility Co., Ltd.	Jun - Sept 2013.
5	EIA of Re-Routing Sections and Soil Disposal Area of Zawtika Onshore Pipeline Construction	Dawei District, TaninTharyi Division Region.	PTTEP International Limited	Feb - April 2013
6	Environmental monitoring program of the onshore pipeline	Dawei District, TaninTharyi Division Region.	PTTEP International Limited	2012 - 2014
7	IEE for New Foodstuffs Factory	Dagon Seikkon Industrial Zone, Yangon.	Makro Manufacturing Co., Ltd.	April - May 2014
8	ESIA for 400MW Gas-Fired Combined Cycle Power Plant	Twantay Township, Yangon Division Region.	RANHILL POWER SdnBhd	July – Dec 2014
9	IEE for Somerset Serviced Apartment and 68 Residence Condominium	Bahan Township, Yangon.	United GP Development Co., Ltd.	June 2015
10	EIA for Somerset Serviced Apartment and 68 Residence Condominium	Bahan Township, Yangon.	United GP Development Co., Ltd.	Sep 2015 - Jan 2016
11	IEE for PVC pipes factory	Shwe Than Lwin Industrial Zone, Hlaing Thar Yar Township, Yangon.	Grand Nawa plastic Myanmar Co., Ltd.	Feb – April 2016
12	EMP report of Garment Factory	Shwe Lin Ban Industrial Zone, HlaingTharyar Township, Yangon	Hangzhou Hundred-Tex Garment (Myanmar) Co., Ltd.	May - July 2016
13	ESIA report of Hantharwaddy International Airport	Bago	Japan Nus Co., Ltd.	Aug - Sep 2016
14	IEE for Jean Washing Factory	ShwePyiThar Industrial Zone (4), Yangon.	REEBLUE MYANMAR LIMITED	Sep - Nov 2016
15	EMP for Electric Component Factory	Hlaing Thar Yar Industrial Zone (2), Hlaing Thar Yar Township, Ynagon.	FTE Corporation (Myanmar) Co., Ltd.	Oct - Nov 2016 – July 17
16	EMP for Hotel project	Dawei	Good Rainbow Trading Co., Ltd.	Nov - Dec 2016

No.	Project Name	Location	Client	Period
17	IEE for paper factory	Lwae-Taught villages track, Lashio Township, Northern Shan State	Swon Phone Tar Co., Ltd	Dec 2016-Feb 2017
18	EMP for Garment factory	Shwe Lin Pan Industrial Zone, Hlaing Thar Yar Township, Yangon	Myanmar Toppy Company Limited	Feb - Mar 2017
19	EIA for Dawei Gold Coast Condominium	Kyat SarPyin Ward, Dawei Township	Degao Construction Co., Ltd	Feb - July 2017
20	EMP for Garment factory	Thar Du Kan Industrial Zone, Shwe Pyi TharTownship,Yangon.	Hundred Garment (Myanmar) Company Limited	Mar – May 2017
21	EMP for Motor factory	Mandalay	CP Motor Myanmar Co., Ltd	April – June 2017
22	IEE for PTTEPI office	8 ½ Mile, Mayangone Township, Yangon.	PTTEP International Limited (PTTEPI)	Feb – May 2017
23	EMP for Garment factory	Indagaw Industrial Zone, Indagaw, Bago Township, Bago Region, Myanmar	Amity (Myanmar) Lingerie Co., Ltd.	July – Sept 2017
24	EMP for Quarry Project	Mandalay-Muse Highway Road, Ohm Chaw Village tract, PatheinGyi Township, Mandalay Region	SeinKyalKabar Mining Co., Ltd.	Aug - Oct 2017
25	EMP for Seafood Processing factory	Yangon fishery department compound, Bayintnaung Road, Gyogone, Insein Township, Yangon	Golden Bay Co., Ltd.	Sept – Nov 2017
26	EMP for food manufacturing factory	No. Art-8/138,139,140,150,151, 64 Street, between Zawgyi Street and Kuthotaw Street, PyiGyiTagon Township, Mandalay Division.	Kan Kaw Soyar Bean	Nov – Jan 2017
27	IEE for Garment factory	Special Industrial Zone (2), OkhThar (9) Ward, Bago Township, Bago Region, Myanmar	Myport Limited	Dec – Feb 2018
28	IEE for Lubricant factory	Thilawa SEZ, Zone A, Thanlyin Township, Yangon Division.	Pacific PSP-Syntech Co., Ltd.	Mar – June 2018
29	IEE for Motorcycle Assembly factory	Taung Yin Yat, Singaing Township, Kyaukse District, Mandalay Division	Karmax Co., Ltd.	Feb - June 2018
30	EMP for Garment factory	Middle Street and No. 32/34, Third Street, Ngwe Pin Lae Industrial Zone, HlaingTharyar Township, Yangon, Myanmar	Saung Oo Shwe Nay (Golden Sunshine) Co., Ltd.	May – July 2018

No.	Project Name	Location	Client	Period
31	EMP for Electric Device Charger factory	U Shwe Bin Street, East Dagon Industrial Zone Part (1), East Dagon Township, Yangon Region, Myanmar	Wisechamp Electronic (Myanmar) Co., Ltd	June – Sept 2018
32	EMP for Garment Factory	No.58, 2nd St Ngwe Pin Lae Industrial Zone, Hlaing Thar Yar, , Yangon Region , Myanmar	Kai Xi (Myanmar) Lingerie Co., Ltd	June – Sept 2018
33	EMP for Paper Box Factory of San Yee Enterprise Co., Ltd	No.(64/ 46) Juction of Mya Taung Wun Gyi U Hmo Street and Twin Thin Taik Wun U TunNyo Street, Industrial Zone 3 , Shwe Pyi Thar Township, Yangon Region , Myanmar	KMD & Associates Co., Ltd	July – Sept 2018
34	EMP for Garment Factory of Sheng Jie (Myanmar) Clothing Co., Ltd	No 296 / 297 Block No (25). Shwe Lin Ban Industrial Zone, Hlaing Thar Yar Township, Yangon Region , Myanmar	Sheng Jie (Myanmar) Clothing Co., Ltd	July – Sept 2018
35	IEE for Quarry factory	Plot No. (14, 15, 16), Myauk Ta Tine Shae Village, Pathein Gyi Township, Mandalay, Myanmar.	Aung Kabar Co., Ltd	Oct 2018-Feb 2019
36	IEE for Quarry factory	Plot No. (551), Oo Paing No (20/21), Ai Gyi Village, Pathein Gyi Township, Mandalay, Myanmar	U Win Khaing Co., Ltd	Oct 2018-Feb 2019
37	IEE for Quarry factory	Oo Paing No (22, 29, 28,27), Ai Gyi Village, Pathein Gyi Township, Mandalay, Myanmar	Shwe La Waddy Co., Ltd.	Oct 2018-Feb 2019
38	EMP for garment factory	Address: N0-53/D, 1002 Mi Chaung Ai Kwinn, Kyaukka Din Track, Helgu Township, Yangon Region	Dong Yuan Richland Fashion (Myanmar) Co., Ltd.	Oct 2018-Feb 2019
39	EMP for garment factory	No. (37), Min Theikdhi Kyaw Swar Street, Shwe Lin Ban Industrial Zone, Hlaing Thar Yar Township, Yangon	Sunan Hung Tak Apparel Limited	March – June 2019
40	EMP for garment factory	Plot No. (A-4), Mingaladon Industrial Park, Corner of No (3) Highway Road and Khayebin Road, Mingaladon Township, Yangon Region	SMK Mingaladon Company Limited	March – June 2019
41	EMP for garment factory	Plot No. 35, Quin No. Special Zone 3, Nyaung Inn Village, Industrial Area, Bago Division, Myanmar	KM Healthcare Myanmar Company Limited	April – May 2019
42	EMP for garment factory	Plot No. (2), Theik Gyi – Phaung Gyi Road, Naung Inn Junction, Ward – 9, Oaktha Myothit, Bago, Myanmar.	Suitstar Garment Co., Ltd.	May 2019-August 2019

No.	Project Name	Location	Client	Period
43	EIA for High-rise-mixed-used Development project	Suite 1906-07, 19th floor, Sule Square, No.221, Sule Pagoda Road, Kyauktada Township, Yangon	Marga Landmark Development Co., Ltd.	May 2019-On going
44	EIA for Industrial park Development project	Near Ma Yin Village Group, Ka Li (Tat Kalay) Village Group and Shan Yar Gyi Village Group, Bago Township, Bago Region	TetNay Ayeyawaddy Group Co., Ltd.	June 2019 – On going
45	IEE for Hotel Construction project	No.281, 13 ward, Yangon-Insein Road, Yangon Township	Hoya International Resort Co., Ltd.	July 2019-On going
46	EMP for Hotel Construction project	No. A/3/10, Manorhari Road, Between 68x69, Chan Mya Thar Si Township, Mandalay, Myanmar	Sein Ou Yin Co., Ltd	July 2019 – on going
47	EMP for Mining Company	Lonkhin village, Hpakant township, Kachin State, Myanmar	Htun Shwe Yee Jewelry Co.,, Kyauk Sein Min Jewelry Co.,, Shwe Htun Win Jewelry Co.,	July 2019 – on going
48	EMP for Garment factory	corner of lower Mingalardon Road and Thiri Mingalar Road, Insein Township, Yangon, Myanmar	Shinsung Tongsang Int'l Co., Ltd	July 2019 – on going
49	EMP for Garment factory	No.198/1, Ka Naung Min Thar Gyi Road, Dagon Seik Kan Township, Industrial Zone (1), Yangon, Myanmar	Fu Yuen Garment Co., Ltd.	July 2019 – on going
50	EMP for Mining Company	Lonkhin village, Hpakant township, Kachin State, Myanmar	Bu Gar Gem Co., Ltd	July 2019 –October 2019
51	EMP for Mining Company	Lonkhin village, Hpakant township, Kachin State, Myanmar	Thwe Family Gem & Jade Exploration Co., Ltd.	July 2019 – on going
52	EMP for Mining Company	Lonkhin village, Hpakant township, Kachin State, Myanmar	San Thit Aryone Gems Co., Ltd	August 2019-on going
53	EMP for Garment factory	No.2/2, Department of Compound, Bayint Naung Road, West Gyogone, Insein Township, Yangon, Myanmar	General Food Technology Industry Co., Ltd	August 2019-on going
54	EMP for Mining Company	Lonkhin village, Hpakant township, Kachin State, Myanmar	Myanmar Sein Lai Aung Gems Co., Ltd	September 2019-on going

No.	Project Name	Location	Client	Period
55	EMP for Mining Company	Lonkhin village, Hpakant township, Kachin State, Myanmar	Kaung Wai Yan Gems Co., Ltd	September 2019-on going
56	IEE for Wood-based Industry	No. 18122, 52/3 Miles Thanphyuzayat-Yay Highway, Sakhangyi Village, Thanphyuzayat Township, Mon State, Myanmar	Diamond Parawood Co., Ltd	September 2019- on going
57	EMP for Agricultural Crops Drying Grinding Factory	Between 58*59 Street, Between 39*40 Street, Mahar Aung Myay Township, Mandalay, Myanmar	Myanmar Satt Satt Paing Co., Ltd	September 2019 – on going

1.3. THE ENVIRONMENTAL CONSULTANTS

The following certificate demonstrates Certificate for Transitional Consultant Registration of the Ministry of Natural Resources and Environmental Conservation shown in **APPENDIX D.**

CHAPTER 2
LEGAL REQUIREMENT

2.1. INTRODUCTION

Hoya International Resort Co., Ltd has environmental policy of doing environmentally and socially responsible with minimal impact on the environment. The company is working with the local communities and government agencies integrating the environment into its planning, operations and policy decisions.

The company is working with the local committees and government agencies, such as Ministry of Natural Resources and Environmental Conservation (MONREC) integrating the environment into its planning, operations and policy decisions. The first and foremost policy is to comply with laws, rules and regulations relating to the physical and social environment. Most of all, it will follow the rules and regulations set up by the ECD, the main agency responsible for environmental management of regional level. The company pledges to do the business that will be environmentally as practical as possible.

Environmental management of the Project/Factory needs to comply with legal requirements of the Environmental Management Plan prescribed in the Environmental Conservation Rules, Notification No. 50/2014 and the EIA Procedure, Notification No. 616/2015.

An EMP is a project document to be prepared according to the requirements and guidance of the MONREC, in order to refrain from, protect against, mitigate and monitor adverse impacts caused by the design, construction, implementation, operation, maintenance, termination, or closure of a project or business or activity; or after its closure, or by any other related cause [Environmental Conservation Rules, 50/ 2014, Chapter I, Article(s 2g)]. An EMP should include programs to manage, implement activities, and monitor changes to the environmental context.

2.2. ENVIRONMENTAL POLICY AND LEGAL FRAME WORK IN MYANMAR

The National Commissions of Environmental Affairs (NCEA) was formed in 1990. Myanmar Agenda-21 was outlined which contains social, economic, institutional and infrastructural improvement programs and most of all, environmental conservations programs.

Respective ministries devised 56 environmental policies and regulations directly related with environmental conservation and protection.

The National Environmental Conservational Committee (NECC) was formed 2011 with the aim to achieve sound environmental management in the country. With a view of effectively implementing the protection and conservation of the environment, the government in 2016 has created the new ministry, the MONREC. The ECD is the focal and coordinating agency for the overall and detail environmental management throughout the country. The following environmental rules and regulations are describing by the Union of Myanmar and MONREC.

2.2.1. National Environmental Policy (2019)

National Environmental Policy of Myanmar was enacted by the Republic of the Union of Myanmar in 2019. This policy was described in section 8 as implementing the national environmental policy in which The Government of the Republic of the Union of Myanmar is committed to putting this National Environmental Policy into action through a Strategic Framework and a series of master plans. The Strategic Framework applies the National Environmental Policy principles to priority thematic areas and sectors. It also provides environmental governance requirements for effective implementation, including institutional strengthening, monitoring and enforcement, public participation, dispute resolution and financing. The Strategic Framework provides guidance for preparing master plans for States and Regions and for the priority thematic areas and sectors. The master plans will contain specific activities, timeframes, budgets and performance targets for achieving the Strategic Framework objectives and, ultimately, the National Environmental Policy vision. The linkages between the National Environmental Policy, Strategic Framework and Master Plans are depicted in the following diagram:

Figure 2-1 National Environmental Policy in Myanmar

2.2.2. Environmental Conservation Law (30th March, 2012)

Environmental Conservation Law was enacted by the Pyidaungsu Hluttaw in 30th March, 2012. This law was approved in section 7 (o) " managing 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. This section was shown in section 14 in which "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." Further, Section 15 was described in 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. According to section 24, The Ministry may, in issuing the prior permission, stipulate terms and conditions relating to environmental conservation. It may conduct inspection whether or not it is performed in conformity with such terms and conditions or inform the relevant Government departments, Government organizations to carry out inspections. This law was prohibited by section 29, "No one shall violate any prohibition contained in the rules, notifications, orders, directives and procedures issued under this Law".

2.2.3. Environmental Conservation Rules (Notification.No.50/2014)

This environmental conservation rule was approved by ministry of environmental conservation and forestry in 5th June, 2014. This law was prohibited by this rules section 69, sub-section (a) and (b),

"(a) Any person shall not emit, ask to emit, dispose, ask to dispose, pile and ask to pile, by any means, hazardous waste or hazardous substances stipulated by notification according to any rules in this rule at any place which may affect the public directly or indirectly.

(b) Nobody shall carry out any activity which can damage the ecosystem and the natural environment which is affected due to such system, except for the permission of the Ministry for the interests of the people."

2.2.4. Environmental Impact Assessment Procedures (December 29, 2015)

This procedure was enacted by the ministry of environmental conservation and forestry in 29 December, 2015. This procedure was directed in responsibility for all adverse impacts in which section 102 to 105;

The Project Proponent shall bear full legal and financial responsibility for:

a) all of the Project Proponent's actions and omissions and those of its contractors, subcontractors, officers, employees, agents, representatives, and consultants employed, hired, or authorized by the Project acting for or on behalf of the Project, in carrying out work on the Project; and

b) PAPs until they have achieved socio-economic stability at a level not lower than that in effect prior to the commencement of the Project, and shall support programs for livelihood restoration and resettlement in consultation with the PAPs, related government agencies, and organizations and other concerned persons for all Adverse Impacts.

103. The Project Proponent shall fully implement the EMP, all Project commitments, and conditions, and is liable to ensure that all contractors and subcontractors of the Project comply fully with all applicable Laws, the Rules, this Procedure, the EMP, Project commitments and conditions when providing services to the Project.

104. The Project Proponent shall be responsible for, and shall fully and effectively implement, all requirements set forth in the ECC, applicable Laws, the Rules, this Procedure and standards.

105. The Project Proponent shall timely notify and identify in writing to the Ministry, providing detailed information as to the proposed Project's potential Adverse Impacts.

This procedure was also described in monitoring about from section 106 to 110;

106. The Project Proponent shall, during all phases of the Project (pre-construction, construction, operation, decommissioning, closure and post-closure), engage in continuous, proactive and comprehensive self-monitoring of the Project and activities related thereto, all Adverse Impacts, and compliance with applicable laws, the Rules, this Procedure, standards, the ECC, and the EMP.

107. The Project Proponent shall notify and identify in writing to the Ministry any breaches of its obligations or other performance failures or violations of the ECC and the EMP as soon as reasonably possible and in any event, in respect of any breach which would have a serious impact or where the urgent attention of the Ministry is or may be required, within not later than twenty-four (24) hours, and in all other cases within seven (7) days of the Project Proponent becoming aware of such incident.

108. The Project Proponent shall submit monitoring reports to the Ministry not less frequently than every six (6) months, as provided in a schedule in the EMP, or periodically as prescribed by the Ministry.

109. The monitoring reports shall include: a) documentation of compliance with all conditions; b) progress made to date on implementation of the EMP against the submitted implementation schedule;

difficulties encountered in implementing the EMP and recommendations for remedying those difficulties and steps proposed to prevent or avoid similar future difficulties; d) number and type of non-compliance with the EMP and proposed remedial measures and timelines for completion of remediation; e) accidents or incidents relating to the occupational and community health and safety, and the environment; and

f) monitoring data of environmental parameters and conditions as committed in the EMP or otherwise required.

110. Within ten (10) days of completing a monitoring report as contemplated in Article 108 and Article 109 in accordance with the EMP schedule, the Project Proponent shall make such report (except as may relate to National Security concerns) publicly available on the Project's website, at public meeting places (e.g. libraries, community halls) and at the Project offices. Any organization or person may request a digital copy of a monitoring report and the Project shall, within ten (10) days of receiving such request, submit a digital copy via email or as may otherwise be agreed upon with the requestor.

Moreover, in section 113 was shown in, for purposes of monitoring and inspection, the Project Proponent:

a) shall grant to the Ministry and/or its representatives, at any time during normal working hours, access to the Project's offices and to the Project site and any other location at which the Project activities or activities related to the Project are performed; and

b) from time to time as and when the Ministry may reasonably require, shall grant the Ministry access to the Project's offices and to the Project site and any other location at which the Project activities or activities related to the Project are performed.

Section 115 was prescribed in the event of an emergency, or where, in the opinion of the Ministry, there is or may exist a violation or risk of violation of the compliance by the Project with all applicable environmental and social requirements, the Project shall grant full and immediate access to the Ministry at any time as may be required by the Ministry.

This procedure was that the Project Proponent shall further ensure that the Ministry's rights of access hereunder shall extend to access by the Ministry to the Project's contractors and subcontractors as section117.

2.2.5. National Environmental Quality (Emission) Guidelines (No. 615/2015) (2015 Dec, 29)

The guidelines are stipulated by former MOECAF by the provision of Paragraph (42), Subparagraph (b) of the Environmental Conservation Law 2012. The objective of the guidelines is to control noise and vibration, emissions and effluents in order to prevent the pollutions for the protection of human health and ecosystem. The guidelines are mainly based on EHS Guidelines of IFC.

The project environmental management plan during construction and operation needs to comply with Myanmar National Environmental Quality (Emission) Guidelines (NEQG) (2015) and the others as appropriate. Guidelines for parameters relevant to the Tourism and Hospitality Development Project are shown in Table 2-1 as follows:

Table 2-1 Effluence Level

Parameter	Unit	Guideline values
5-day Biochemical oxygen demand	mg/l	50
Chemical oxygen demand	mg/l	250
Oil and grease	mg/l	10

Parameter	Unit	Guideline values
pH	S.U.a	6-9
Total coliform bacteria	100 ml	400
Total nitrogen	mg/l	10
Total phosphorus	mg/l	2
Total suspended solids	mg/l	50

a Standard unit

2.3. MAJOR CONCERNED RULES AND REGULATIONS FOR THIS PROJECT

The following rules and regulation enacted by the Union of Myanmar and the Ministry of Hotel and Tourism in Myanmar. This rules and regulations should be followed by the project proponents and doing any business about the hotel and tourism. The project proponents should be followed over this laws and later prescribing laws.

2.3.1. Myanmar Tourism Law (Sept 17, 2018)

Myanmar tourism law was prescribed in September 2018 by Pyidaungse Hluttaw notification no. 26. The objectives of this law are as follows;

a) To support for the effective domestic and international marketing of Myanmar as a tourist destination;

b) To guarantee the safeguarding of the rights and responsibilities of tourism professionals (service providers) as well as the rights of tourists;

c) To ensure adequate quality and security of the tourism services;

d) To enhance cooperation and coordination in developing and managing tourism;

e) To open up more employment opportunities and develop human resources through enhancing tourism education and knowledge;

f) To promote sustainable development of tourism and to undertake short term/long term projects, in order to evolve Responsible Tourism;

g) To promote small and medium enterprise based on tourism and to increase economic income for local peoples and to develop community based enterprises.

h) To study research and doing thesis about the tourism including practical and cooperation with local and / or international university and tourism enterprise.

This law was described in section 14 (b), “Myanmar cultural, traditional and environmental conservation should be priorities.”

2.3.2. Order for Licensing of Hotel and Lodging-house Business (1st sept, 2011)

This order was directed in September 1, 2011 by ministry of hotel and tourism. Hotel means a building containing not less than 20 rooms or 40 beds which travelers are lodged for hire and where food, beverage and other services are provided in order to do

economics interests. But lodging-house means a building containing not less than 10 rooms or 20 beds in which travelers are lodged for hire in order to do economics on payment for the purpose of economic interests. In section 2 of this order was directed in "any person applying for license shall have the following requirements-

a) Either be an owner or a lessee of a building suitable for use as hotel or lodging house;

b) The location and premises of the building mentioned under sub-paragraph (a) shall be suitable for the nature of the business and hygienic;

c) The building mentioned under sub-paragraph (a) must be registered at the township municipally concerned;

d) The building mentioned under sub-para. (a), if hotel shall conform to the minimum standards as per annexure (a), if lodging-house shall conform to the minimum standards as per annexure (b).

2.3.3. Procedures Relating To the Myanmar Tourism Law (1990)

This law was enacted in 1990 by ministry of trade and shall be applied for procedures relating to the Myanmar tourism law. This law was described in chapter 3, section 6, "a person desirous of operating a hotel or lodging-house business shall apply for a license in the prescribed form directly to the Directorate or through a regional branch office. Section 8 has shown the requirements of any person applying for a license to operate a hotel or lodging-house shall have the following –

(a) License issued by the township municipal concerned if it is a lodging-house;

(b) Registered in accordance with the Myanmar companies act if it is a limited company or joint-venture;

(c) Minimum requirements for a hotel or lodging-house, as prescribed by directorate shall be fulfilled;

(d) Certificate for the standard of health and hygiene for the hotel or lodging-house by the department concerned;

(e) Sufficient financial means to establish the business;

(f) A sufficient number of skilled labour.

Moreover, the license-holder or lodging-house business shall abide following essential discipline was described in section 9 in details.

2.4. MYANMAR LAWS AND REGULATIONS RELATING TO THE ENVIRONMENT

- The existing Myanmar laws and regulations are relevant to environmental, health and safety issues of this project. The conducting works of Hoya International Resort Co., Ltd shall comply with the following Laws and Acts;
- Myanmar Constitutional Law (2008)
- Myanmar Company Law (Dec.6, 2017)
- Myanmar Citizens Investment Law (Pyidaungsu Hluttaw Law No. 18 of 29-7-2013)

- Private Industrial Enterprises Law (1990)
- Public Health Law, 1972
- The Prevention and Control of Communicable Diseases Law (20th March, 1995)
- Social Security Law (No.15 of 31-8-2012)
- Myanmar Insurance Law (1993)
- Labour Law Act, 1951
- Minimum Wage Law, 2013
- Minimum Wage (Notification No.2/2015 on 28 August 2015)
- The Payment of Wages Act (25th January 2016)
- The Workmen Compensation act (1951)
- The Settlement of Labor Dispute Law (28th March 2012)
- Labor Organization Law (October 11th, 2011)
- The Leave and Holiday Act, 1951 (Law Amended July, 2014)
- Prevention from Danger of Chemical and Associated Materials Law, 26th August 2013)
- Natural Disaster Management Law (31st July, 2013)
- Myanmar Engineer Council Law (28th November, 2013)
- Occupational safety and health law (March 15, 2019)
- Accident and Injury Prevention law (2014, Dec. 5)
- Electricity Law (2014)
- The Myanmar Fire Brigade Law (17th March, 2015)
- Commercial Tax Law (2014)

2.4.1. Myanmar Constitutional Law (2008)

This law was enacted by a nation-wide referendum in May 29, 2008. This law was described in three mainly sectors as legislature, executive, judicial and the basic law of all the laws of the Union. The constitutional law prescribed in section 45 of the Chapter I; The Union shall protect and conserve natural environment. Further, this law pointed out in section 349 of the Chapter VIII, Citizens shall enjoy equal opportunity in carrying out the following functions:

(a) public employment;

(b) occupation;

(c) trade;

(d) business;

(e) technical know-how and vocation;

(f) exploration of art, science and technology.

Further, Every citizen has, in accord with the law, the right to conduct business freely in the Union, for national economic development and The Union may assist the access to technology, investment, machinery, raw material, so forth, for national economic development was described in section 370 and 371. And then this law directed in section 389, every citizen has the duty to pay taxes to be levied according to the law.

Moreover, the Myanmar constitutional law enacted in section 390: every citizen has the duty to assist the Union in carrying out the following matter:

(a) preservation and safeguarding of cultural heritage;

(b) environmental conservation;

(c) striving for development of human resources;

(d) protection and preservation of public property.

2.4.2. Myanmar Citizens Investment Law (Pyidaungsu Hluttaw Law No. 18 of 29-7-2013)

The objective of the Law is to promote environmentally and socially sustainable economic growth and diversification of the productive sector of the Union, providing Investors with a set of fundamental and enforceable legal rights and guarantees to ensure that the Investors and their Investments are protected and treated with transparency, fairness and in strict accordance with the rule of law and accepted international standards and practice. Chapter 5 of the Law, Article 5 states economic activities which shall be applied by the citizens for investment, except otherwise restricted or prohibited business under this law, or any existing Law.

Article 6 states the investments, which shall be stipulated as the restricted or prohibited business. These are businesses, which can;

- Affect the traditional culture and customs of the national races within the Union
- Affect public's environment, causing noise in the residential area.
- Affect public health.
- Cause damage to the natural environment and ecosystem.
- Affect the land and marine animals, trees, flowers, crops, antique heritage, resources
- Bring the hazardous or poisonous waste into the Union.
- The factory that produce or the business which use hazardous chemicals under international agreements.

2.4.3. Private Industrial Enterprises Law (1990)

This law was enacted by the State Law and Order Restoration Council in 26th November, 1990. This law was described in section (4);

(a) Any person desirous of conducting any private industrial enterprise;

(b) Any person conducting any private industrial enterprise on the day this Law is enacted; by using any type of power which is three horsepower and above or manpower of ten wage-earning workers and above shall register under this Law.

According to section 13, some more important duties of the entrepreneur are as follows -

(b) shall abide by the terms and conditions of the registration certificate;

(f) shall shift the place of enterprise, change the nature of enterprise, amalgamate enterprises and split up enterprises only with the approval of the Directorate;

(g) shall abide by the orders and directives issued from time to time by the Ministry and the Directorate;

Moreover, section 15(a) and (b) was described that the entrepreneur has the right to carry out the followings:-

(a) appointing foreign exports and technicians with the approval of the Ministry;

(b) carrying out change of the name of enterprise, transfer of ownership, temporary suspension or permanent closing down of the enterprise in the manner prescribed and with the approval of the Directorate.

2.4.4. Public Health Law, 1972

This law was enacted by the Myanmar State and Revolution Council with the notification number 1/2972. This law was described in chapter 2 about the protection of public health in which section 2, whatever, other existing laws, the government was working to improve the public health, to protect the public health and the following devices to perform for advices, inspection, supervision, repair, prohibition.

1. Environmental Health Services
2. About the sell and produced food of the people
3. About the usage of household and cosmetic products
4. About the infectious diseases
5. About the private hospital
6. About the usage of medicine for the people

2.4.5. The Prevention and Control of Communicable Diseases Law (20th March, 1995)

This law was enacted by the State Law and Order Restoration Council with the notification no. 1/95 in 20th March, 1995. This law was prevented the outbreak of

Communicable Diseases, the Department of Health shall implement the following project activities in section 3 :-

(a) immunization of children by injection or orally;

(b) immunization of those who have attained majority, by injection or orally, when necessary;

(c) carrying out health educative activities relating to Communicable Disease.

Section 4 was directed when a Principal Epidemic Disease or a Notifiable Disease occurs:-

(a) immunization and other necessary measures shall be undertaken by the Department of Health, in order to control the spread thereof:

(b) the public shall abide by the measures undertaken by the Department of Health under sub-section (a).

Moreover, according to section 11 described in In order to prevent and control the spread of a Principal 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 he carried out:

(d) causing investigation by injection to he carried out;

(e) carrying out other necessary investigations.

2.4.6. Social Security Law (No.15 of 31-8-2012)

This law was enacted by the Pyidaungsu Hluttaw with the notification number 15/2012 in 31th August, 2015. This law was described in section 9 (a) The Ministry of Labour, to enable to provide health care and medical treatment under this Law:

I. carrying out assigning duty jointly or transfer or appoint doctors, dental and oral surgeons, nurses, midwives, and technicians who obtain medical practitioner license or registration certificate issued by the Medical Council of the Republic of the Union of Myanmar, the Dental and Oral Medicine Council, and the Nurses and Midwives Council of the Republic of the Union of Myanmar, practitioners of traditional medicine who obtain registration certificate issued by the Indigenous Medicine Council in co-ordination with the Ministry of Health;

II. if it is, may appoint doctors, dental and oral surgeons, nurses, midwives, technicians and also practitioners of traditional medicine who obtain medical practitioner license or registration certificate issued by the respective council by hiring for a limited period or concluding agreement and determine the functions thereof.

2.4.7. Myanmar Insurance Law (23rd Jul, 1993)

This law was prescribed by the State Law and Order Restoration Council in 23rd July, 1993. This law was directed as a section 15; owners of motor vehicles shall effect compulsory Third Party Liability Insurance with the Myanmar Insurance. An entrepreneur or an organization operating an enterprise which may cause loss to State-owned property or which may cause damage to the life and property of the public or which may cause pollution to the environment shall effect compulsory General Liability Insurance with the Myanmar Insurance under this law according to section 16.

2.4.8. Labour Law Act, 1951

In Chapter 10 (Resignation and Termination), Myanmar's Labour law does provide few details on termination and dismissal of employees. The conditions and requirements for termination are primarily governed by the policies of the Ministry of Labour, most importantly the template contract of the Ministry of Labour.

a) Termination

Under the law, an employer is not required to state any reasons for the termination of an employee by notice. Pursuant to the template contract of the Ministry of Labour, an employee may however only be terminated for the reasons specified in the employment contract or work rules. Even during the probation period, termination would require one (1) months' notice and strong reasons for the termination.

Generally, termination by notices results in severance payments as set out below:

b) Resignation

Pursuant to the template contract of the Ministry of Labour, employees may resign by giving one (1) months' notice (after confirmation) or seven (7) days' notice during the Probation Period.

No severance payment is required.

c) Dismissal

An employee who violates the terms of his contract or the work rules shall–for ordinary misconduct – be given a verbal warning for the first violation, a written warning for the second violation and shall sign an undertaking for the third violation. After the third warning and in case of further violation, the employer shall be entitled to dismiss the employee with disbursement of wages remaining to be paid for days actually worked, but without need to pay severance payment.

d) Severance Payment

Employees terminated by notice or without fault (e.g. for redundancy) are entitled to severance payments as follows in Table 2-2.

Table 2-2 Employees Terminated Notice or Without Fault

Term of Employment	Severance Amount
6 months	-
6 months – 1 year	0.5 month's salary
1 year – 2 year	1 month's salary
2 years – 3 years	1.5 months' salary
3 years – 4 years	3 months' salary
4 years – 6 years	4 months' salary
6 years – 8 years	5 months' salary
8 years – 10 years	6 months' salary
10 years – 20 years	8 months' salary
20 years – 25 years	10 months' salary
>25years	13 months' salary

2.4.9. The Labour Organization Law (11th October, 2011)

This law was enacted by the Pyidaungsu Hluttaw with the notification number in 11th October, 2011. This law was described in section 3 in which "every worker, who has attained the age prescribed in respective existing law to work in any trade or activity shall have the right to:

(a) join as a member in a labour organization and to resign from a labour organization according to their own desire;

(b) join as a member only in a labour organization formed according to the category of trade or activity relating to them."

Moreover, section 18 was prescribed "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."

2.4.10. The Leave and Holiday Act, 1951 (Law Amended July, 2014)

- The Leave and Holidays Act was firstly adopted on 1st January 1952, by the International Labour Organization, Myanmar. Recently, the Act was amended in July 2014. The key objectives of this Act are to allow workers (daily wage worker/temporary worker/permanent worker) to have a leave and holiday allowances, religious or social activities with earn allowance, and health insurance allowances.
- The followings describe the right of workers to leave and have a holiday:
- Causal Leave (6 days)
- Earned Leave (10 days)

- Medical Leave (30 days)
- Maternity leave
- Public Holiday (21 days)
- Penalty for Violation

2.4.11. The Minimum Wage Law (22nd March, 2013)

This law was enacted by the Pyidaungsu Hluttaw with the notification number 7/2013 in 22nd March, 2013. Section 12 was described in the duties of the employer in which

(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 cash and 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.

About the rights of the workers relating to the minimum wage, section 14 (a) was issued that “a worker working in any establishment relating to this law: has the right to obtain the minimum wage stipulated under this Law or, if the employer pay more than the said wage.

2.4.12. Minimum Wage (Notification No.2/2015 on 28 August 2015)

The National Committee for Minimum Wage issued on 28 August 2015 which set the minimum wage at 450 kyat per hour for each standard 8 hour working day (or 3600 kyat a day) with effect from 1 September 2015. This stipulated rate of minimum wage applies uniformly to all workers nationwide and across all industries except those in small, family-run business with a workforce of less than 15 workers.

2.4.13. The Payment of Wages Act (25th January 2016)

This law was prescribed by the Pyidaungsu Hluttaw with the notification number in 25th January, 2016. This law was described in section 3 and 4 in which methods of payment and time-frame. According to the section 3,

The employer must

(a) Pay in local currency or foreign currency recognized by the Central Bank of Myanmar. This may be in cash, check or deposit into the bank account of Employee.

(b) Moreover, pay can be in the means of…

(1) Totally in cash OR half the cash and half in things set according to the local price to those employees working in trade, manufacturing and service sectors.

(2) Totally in cash OR half the cash and half in things set as local price according to local traditions or common agreement to those working in agriculture and livestock sectors.

But, this must be for the sake of the employees and their families. And, it also must be reasonable/fair.

(3) An employee shall receive the payment for 60 days when he/she is in Alternative Civil Service.

Section 4 was described in 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…

(1) Must pay at the end of the payment period when there are not more than 100 workers.

(2) If there are 100 workers and above, pay must not be administered later than 5 days after the end of the payment period.

(d) Upon termination, wages must be paid within 2 days from the date of termination.

(e) If a resignation letter is submitted, wages must be paid at the ending day of the payment period.

(f) If an employee dies, wages must be paid to the legally recognized heir within 2 working days after the day he/she has died.

(g) All wages must be paid during the working day.

2.4.14. The Workmen Compensation act (1951)

The workmen's compensation act enacted in 1951. This act was described in subsection 2 of section 3, If a workman employed in any employment Involving the handling of wool, hair, bristles, or animal carcasses or parts of such carcasses, or in the loading, unloading or transport of any merchandise, or in any work in connection with animals infected with anthrax, contracts the disease of- anthrax, shall be described in schedule (III): List of occupational diseases. After sub-section (2), the following shall be inserted as subsection (3), provided that the compensation shall be recoverable from the employer who last employed the workman during the said twelve months in the employment to the nature of which the disease was due.

2.4.15. The Settlement of Labor Dispute Law (28th March 2012)

This law was enacted by the Pyidaungsu Hlututaw with the notification number 5/2012 in 28th March, 2012. This law was described in section 23, “A party, employer or worker, may complain individual dispute relating to his grievance to the Conciliation Body and if he is not satisfied with the conciliation of such body in accord with stipulated manners, may apply to the competent court in person or by the legal representative.” According to section 38 and 42, it was prohibited in which :

38. No employer shall fail to negotiate and coordinate in respect of the complaint within the prescribed period without sufficient cause.

42. No person shall prohibit the right to work independently of the workers who are not desirous to participate in the strike nor impede the right of a worker to strike.

2.4.16. Labor Organization Law (October 11th, 2011)

This law was enacted by the Pyidaungsu Hluttaw with the notification number in 11th October, 2011. This law was described in section 3 in which “every worker, who has attained the age prescribed in respective existing law to work in any trade or activity shall have the right to:

(a) join as a member in a labour organization and to resign from a labour organization according to their own desire;

(b) join as a member only in a labour organization formed according to the category of trade or activity relating to them.”

Moreover, section 18 was prescribed “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.”

2.4.17. Prevention of Hazard from Chemical and Related Substances Law, (26th August, 2013)

This law was enacted by Pyidaungsu Hluttaw with notification number 28/ 2013 in 26th August 2013. Section 15 was described as a person who has obtained a licence, before starting the respective chemical and related substances business:-

(a) shall be inspected for the safety and the power of resistance of the machinery and equipments by the respective Supervisory Board and Board of Inspection;

(b) shall be attended the person who serve in the work to the respective foreign trainings or the trainings and the expert trainings on prevention of hazard from the chemical and related substances opened by the government department and the government organizations.

A person who has obtained a licence shall follow under section 16 :

(a) shall abide the licence regulations;

(b) shall perform to abide strictly the instructions for being safety in using the chemical and related substances by himself and also the persons who serve the work;

(c) shall keep the required safety equipments enough in the chemical and related substances businesses, furthermore shall grant the personal protection equipments and dresses free of charge to the working persons;

(d) shall make the course of training and study and instruction if necessary to the working persons for using the occupational safety equipment, the personal protection equipment and the dresses systematically in the chemical and related substances business;

(e) shall be inspected by the respective Supervisory Board and Boards of Inspection in respect of whether or not the hazard may impact on the Human Being and Animals' health and the environment;

(f) shall make medical checkup the working persons who will work in the chemical and related substances business and shall permit to serve in that work after obtaining the recommendation that his health is suitable for that work. This medical checkup records shall be kept systematically;

(g) shall send the copy of informative letter of the permission to the respective Department of Township Administration, if the hazardous chemical or related substances are permitted to store;

(h) shall acquire in advance the guidance and agreement of the respective Department of Fire Brigade, if the business that is worried to fire hazard is operated by using the fire hazard substances or the explosive substances;

(i) shall transport only the permitted amount of the chemical and related substances in accordance with the prescriptive stipulations, if they are transported in local;

(j) shall take the permission from the Central Supervisory Board if the chemical and related substance is altered and transferred from one place to any other place which contained in the license;

(k) shall abide and perform in accordance with the related environmental laws not to impact and damage to the environment in operating the chemical and related substances business.

Section 17 was stated a person who has obtained a licence, shall put the insurance in accordance with the prescriptive stipulations to be able to pay the compensation, if the impact and damage is occurred on the Human Being and Animals or the environment in respect of the chemical and related substances businesses. According to section 22, a person who has obtained the registration certificate shall abide the regulations consisted in the registration certificate furthermore shall also abide the order and instructions issued occasionally by the Central Supervisory Board.

About the hazard control and decrease had directed in section 27 in which a person who has obtained the licence to be complied the following matters to control and decrease the hazard of the chemical and related substances:-

(a) classifying the hazard level to protect in advance the hazard according to the properties of the chemical and related substances;

(b) expressing the Material Safety Data Sheet and Pictogram;

(c) providing the safety equipments, the personal protection equipments to protect and decrease the accident and attending to the training to be used systematically;

(d) performing in accordance with the stipulations in respect of transporting, possessing, storing, using, discharging the chemical and related substances;

(e) not being imported or exported the chemical and related substances banned by the Central Supervisory Board and the machinery and equipments which are used them.

2.4.18. Natural Disaster Management Law (31st July, 2013)

This law main objective include to implement systematically the programmes related to natural disaster management to minimize the risks of disaster, to conserve and restore the affected environment due to natural disasters, to upgrade the living conditions of the affected people in terms of health, education, social and livelihood programmes. Moreover, this law encourages to coordinate with organizations including governments and non-government, national and international to perform natural disaster management activities.

2.4.19. Myanmar Engineer Council Law (28th November, 2013)

This law was enacted by the Pyidaungsu Hluttaw with the notification number 37/2013 in 28th November, 2013. This law was taken administrative action in section 34, “If, whoever has received a registration certificate, is found to have breached any rules contained in the registration certificate or violated any prohibition contained in a rule, order or directive enacted under this law or in any stipulation of this law, the executive committee may take the following administrative actions-

(a) giving a warning;

(b) assessing a suitable fine;

(c) suspending the registration certificate;

(d) cancelling the registration certificate.

Moreover, section 37 was directed in which “No one shall perform any engineering work and technological work which are specified as being dangerous to the public by a rule enacted under this law without having received a registration certificate issued by the council, except for engineers appointed in a government department or an organization in the performance of their duties.”

2.4.20. Occupational safety and health law (March 15, 2019)

This law has enacted by Pyidaungsu Hluttaw No. 8/2019 in the Union of Myanmar at 15 March, 2019. The objectives of occupational health and safety law are to implement the safety and health effectively in each sector, to reduce and mitigate suffering from injuries, diseases related to workplaces, to prevent from workplaces

hazards, not encouraging workplaces diseases by employer, employee and related to this law, to promote the productivity and to prevent occupational injuries and hazard following by occupational safety and health law, to create safety and health workplace through regard to suitable our national norm compared with international norm and to support the research for occupational health and safety development. The occupational health and safety law prescribed in chapter (6), sub-section (a), “Safety officer should appoint about the workplaces safety and health as a responsible person for safety workers by industry. Moreover, “the employer should manage and evaluate the necessary things in which machinery equipment hazards and dangerous measures,” was directed in section 26(a) of chapter (8). Further, this law has shown in section 30 (a),”the employee should be used to right the personal protected equipment and its wearing according to regard of department for occupational safety and health by employer.

Accident and Injury Prevention law (2014, Dec. 5)

The accident and injury prevention law was enacted in Pyidaungsu Hluttaw no.53/14 at 5 December 2014. This law enacted for treat and care to emergency patient in time causing various condition in the union. In chapter (2), section 3 directed in “the person who find any emergency patients should responsible to take care of ourselves or other persons for help.

2.4.21. Electricity Law (2014)

The purposes of this law are to perform electricity- related work systematically within country to fulfill the requirement of the electric power, to develop the electric power sector of the country, to enable the wide use of electric power with safety both in urban and rural areas, to develop the advance technology of the electricity and capacity building to the professionals of the electrical technicians, to control and supervise electricity-related work in conformity with the policies of the state, to prevent in advance the occurrence of electrical hazards, to increase the investments from both local and foreign in electricity-related work, and to respect and comply with the international conventions on environmental conservation which were approved and signed by the Union.

2.4.22. The Myanmar Fire Brigade Law (17th March, 2015)

Myanmar Fire Brigade Law Myanmar fire brigade law has been enacted the Pyidaungsu Hluttaw in 2015, March 17. According to the Myanmar fire brigade law have been described in chapter (8), section (17) , the relevant government department, organization should inspect the following facts in case of the fire safety of the fire department not before allowance sanctions-

Section 17 (b) Hotel, Motel and Guest House enterprises

(c) The constructing of factory, industry, or gas holders

(d) Causing fire hazard enterprises or using explosive material enterprise.

2.4.23. Commercial Tax Law (2014)

This law was prescribed in 31 March 1990 and its amended in 2014, March 24. According to this law, section 4(a) of chapter II was shown in which Charging Tax and

Having Responsibility to Pay Tax: “The tax shall be charged on the goods produced in the country as mentioned in the Schedule.” In section 5 has directed in the tax due under section 4 shall be responsible to be paid by the relevant producer, service provider or importer. About the domestic electrical equipment and appliances not elsewhere specified was directed for Goods Chargeable Tax at 5 Percent in schedule 5 in which the following:

1. If it is the imported goods, the tax shall be charged on landed cost.

2. If it is the goods produced in the country, the tax shall be charged on the proceed of sale.

2.5. INTERNATIONAL AND NATIONAL GUIDELINES AND STANDARDS

International policies, guidelines and standards relevant to environmental and social impacts of projects that are referred to by most countries are those issued by the NEQG, World Health Organization (WHO), the U.S Environmental Protection Agency (EPA), the World Bank, and the International Finance Corporation (IFC). The policies, guidelines and standards of the World Bank and IFC are cross referenced and complementary as the IFC is an organization of the World Bank Group. They are also adopted by most development organizations such as the Asian Development Bank, and Japan Bank for International Cooperation. It should be noted that the guidelines and standards recommended by the World Bank and IFC, especially those related to environmental pollution, also provide due consideration to the guidelines and standards of U.S. EPA and WHO.

Only those international policies, guidelines and standards relevant to this Project are discussed herein.

2.5.1. World Bank’s Pollution Prevention and Abatement Handbook (1988)

Toward Clear Production

The World Bank’s Pollution Prevention and Abatement Handbook (PPAH) is a comprehensive document providing guidelines for industrial pollution control, and it recommends emission and ambient quality standards to be applied in environmental management. These recommends standards have taken into account the standards enforced by U.S.EPA and those recommended by WHO. They are referred to in the IFC’s EHS Guidelines.

2.5.2. IFC’s Standards and Guidelines

IFC’s standards and guidelines relevant to this project are described in two documents:

- Performance Standards on Environmental and Social Sustainability, January 1, 2012.
- Environmental, Health and Safety-General Guidelines, April 30, 2007.

The first document describes eight performance standards on environmental and social sustainability which IFC requires its clients to apply throughout the project life cycle.

The following table provides sanitary sewage discharges general guidelines for environmental, health and safety (EHS) for development projects.

Table 2-3 Indicative Values for Treated Sanitary Sewage Discharges [a]

Pollutants	Unit	Guideline values
pH	pH	6-9
BOD	mg/l	30
COD	mg/l	125
Total nitrogen	mg/l	10
Total phosphorus	mg/l	2
Oil and grease	mg/l	10
Total suspended solids	mg/l	50
Total coliform bacteria	MPN [b] / 100 ml	400 [a]

Notes :

a – Not applicable to centralized, municipal, wastewater treatment systems which are included in EHS Guidelines for Water Sanitation.

b – Most Probable Number

CHAPTER 3
PROJECT DESCRIPTION

3.1. PROJECT BACKGROUND

HOYA International Resort Co., Ltd (HOYA) is established by collaboration of the China Company namely Hoya Resort (Samoa) Co., Ltd. (41%), Sky One International Inc. (39%), South East Co., Ltd. (7%), Mr. Chan Kuei Cheng, Mr. Lin Ching Jsiang, Ms. Kao Ti Chen, Mr. Lee Chin Pei, Mr. Lee Tsung Yu, Mr. Juang Tung Chung (1% each) and Alliance Internation development Co., Ltd from Myanmar.(7%).

HOYA Resort (Samoa) Co., Ltd has been constructed as a 24-stroey building and 10 storeys including basement is rented by Hoya International Resort Co., Ltd. The company registration number of HOYA is 911FC/2017-2018(YGN). According to the decision letter of ECD (Yangon), HOYA needs to submit 'Initial Environmental Examination' (IEE) report. Therefore, Total Business Solution Co., Ltd was commissioned for this IEE report.

Figure 3-1 Construction Site of the Project

3.2. PROJECT LOCATION

The hotel project is located at No. 218, Yangon-Insein Road, Hlaing Township, Yangon, Myanmar. Its coordinates are regarded as the Latitude 16° 50′ 55.81″ N and Longitude 96° 7′ 28.38″ E. A 24-storey building is constructed upon 1.78 acre (7,203.4 m^2). A 10 storeys including basements is rented as an international hotel resort by HOYA. The location of the project area is shown in Figure 3-2.

Figure 3-2 Project Location Map

3.3. SURROUNDING AREAS NEARBY PROJECT SITE

The adjacent places of the project area are Myanmar Police Station (Hlaing Township) and DHL Myanmar which are located at the north of the project site. Car dealer place is situated at the west site. Other remarkable buildings and places around the project site are MICT park, Yatanarpon Teleport building, University hostels, Hlaing Yadanar market, Yangon United football club, Hlaing fire station and so on. There are also some well-known halls such as Kaytuma Di, Myat Lay Hall and May Kha Hall. Army's garment factory is also well recognized. The direction of the adjacent places is described in Table 3-1. The details of adjacent places around project site is shown in Figure 3-3.

Table 3-1 Directions of the Adjacent Places

North	• Myanmar Police Forces • DHL Express Myanmar • Hlaing Fire Station • Thardukan Min Monastrey and Kyaik Bar Di Pagoda • MICT Park • Zwegabin Hostel • May Kha Hall • University Villa • Army's Garment Factory • YESB Office • Hlaing Yadanar Market
East	• Materials Science Factory

	• Housing • Kaytuma Di and Myat Lay Hall • Hostel of University • Yantanarpon Teleport
South	• Yangon United Football Club • Hlaing Township Development Committee • Day Childcare Center • GEM Condo
West	• Car Dealer

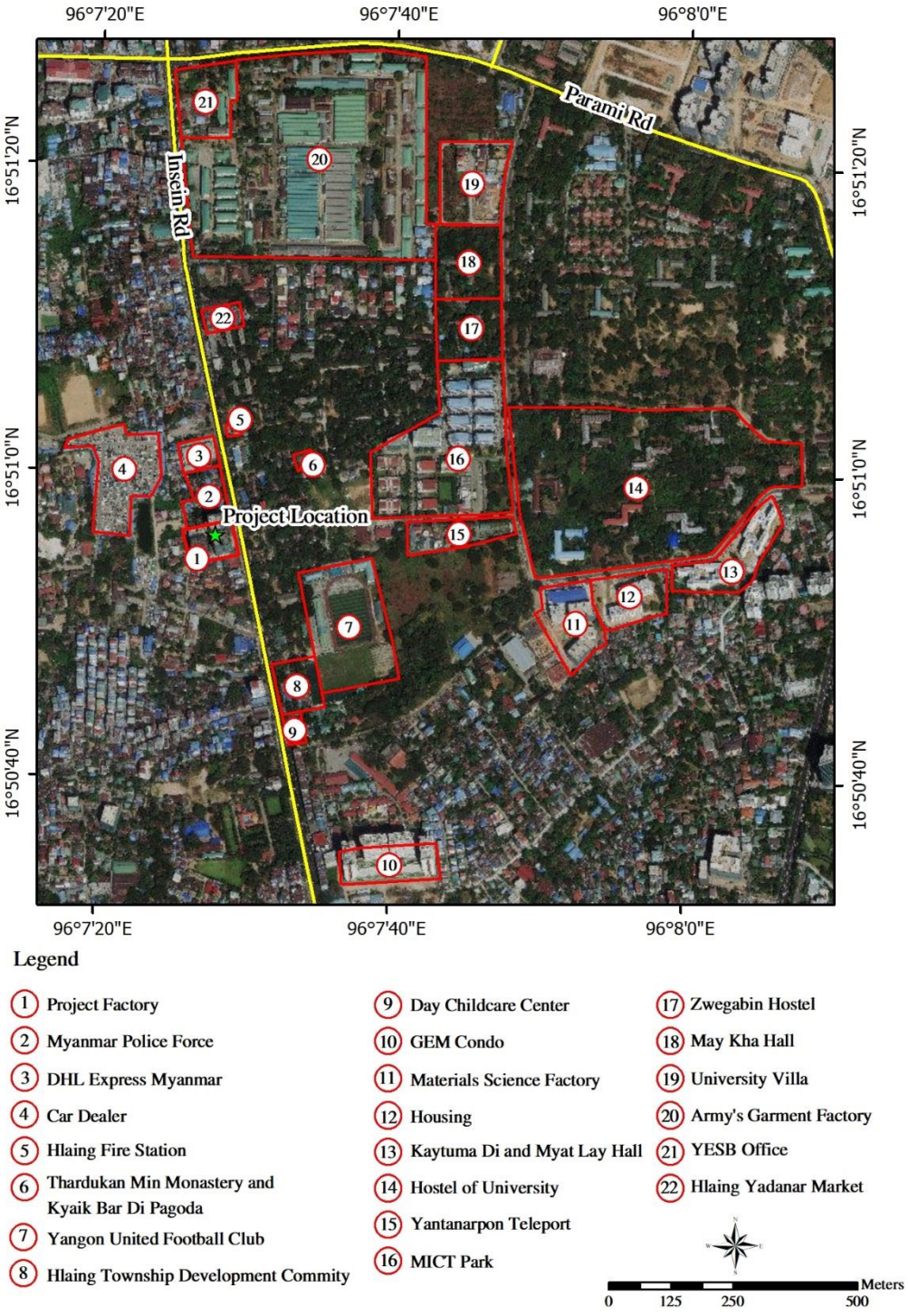


Figure 3-3 Adjacent Places Around the Project Site

3.4. LAND USES PRESCRIPTION

The project site area covers 4838.76 m^2. The building is 75.95 m high. Besides, total building area is 95497.85 m^2 with a combination of 85996.18 m^2 on the ground and 9501.67 m^2 underground. Floor area ratio is 1:10.18 and building coverage ratio is 1:0.667. Tower coverage ratio is 1:0.820. The ground level is regarded as 283.25 ft (86.36 m) and sea level is expressed as 309.25 ft (94.29 m).

The residential area is the largest portion in the study area followed by government area and commercial area. The percentage of landuse and landuse map are shown in Table 3-2 and Figure 3-4.

Table 3-2 Percentages of Land Use

No.	Name	Area (Ha)	Landuse %
1.	Bareland	10.5	3.33
2.	Commercial Area	28.88	9.15
3.	Government Building	64.49	20.43
4.	Recreational Land	14.95	4.74
5.	Religious Area	3.1	0.98
6.	Residential Area	183.1	58.01
7.	Road	10.61	3.36
Total		**315.63**	**100**

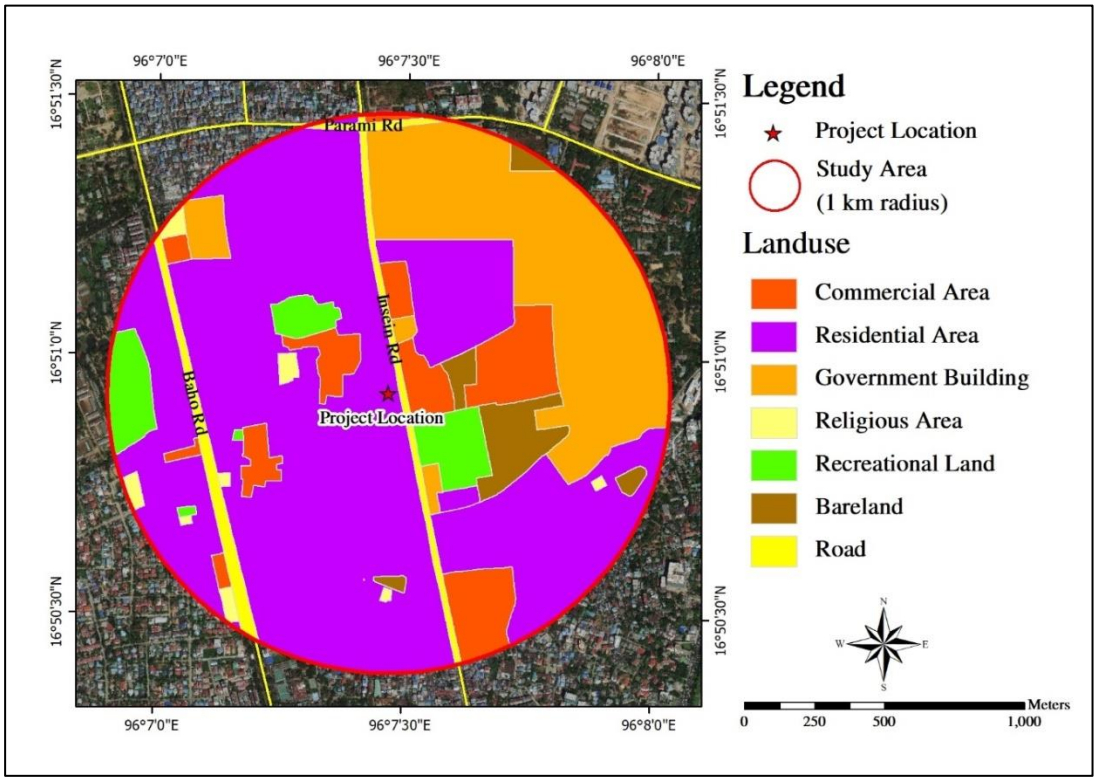


Figure 3-4 Landuse Map

3.5. LANDSCAPING

After the construction and erection works are completed the remaining exposed surfaces of the project site will be treated to landscaping plan. Landscaping plan will be developed by the contractor to provide effective screening of the condominium.

3.6. PROEJCT ALTERNATIVES

Due to construction process of HOYA, environmental and social impacts can be occurred. Most of the surrounding areas of the project site are residential places. If mitigation measures for environmental and social impacts are not considered, pollutions from different sources such as dust from construction, noise and vibration, solid waste and wastewater problems can be generated.

3.6.1. Relocation Alternatives

Relocation to another different site is an option available. Currently, there is no other alternative site for the proposed project. Therefore, the developer has to look for the land if it is necessary and it may take time to search another different area for relocation.

The developer needs to take time to search another different area for relocation.

Looking for the land to accommodate the scale and size of the project and completing official transaction on, it may take a long period. In addition, it is not a guarantee that such land would be available. It is also worth noting that the said project is already underway in terms of seeking developmental approvals in various government departments.

The project proponent would spend another long period of time on design and approvals of the plans by the relevant government departments. The project design and planning before the stage of implantation would call for cost; already encountered in the proposed development i.e. whatever has been done and paid to date would be counted as a loss to the proponent. This would also lead to a situation like No Action Alternative (as explained below). The other consequence of this is that it would discourage both foreign and local investors especially in the construction sector. In consideration of the above concerns and assessment of the current proposed site, relocation is not a viable option.

3.6.2. No Action Alternatives

The No Action Alternative will imply that the project has to be preserved with status quo of current condition. This option is considered as the most suitable alternative from an extreme environmental view as it ensures non-interference with the existing conditions. On the other hand, the construction process of the project site has been started.

3.7. COMPONENTS OF THE PROJECT

3.7.1. Construction Phase

3.7.1.1. Content of the Design and Precautions

Different engineering involves in construction such as architecturual designs, ventilation system, water supply, drainage system, lightning protection plan and integrated wiring.

The construction process should follow the national construction and acceptance codes and autonomous regional level surely. Professions from different fields have to review the drawings, and build based on the drawings. If any mistakes are found in the drawings, the construction should be carried out after the designer revises the drawings.

During the construction procedure of the project, if contradiction problems come out according to the current national and local design codes and rules, the designers should find out the ways quickly and should resolve in time.

If the scope of this project does not encounter the conditions of planning red line, the construction work can only be finished by the allowance of the planning department.

3.7.1.2. Number of Construction Workers

The maximum number of construction workers is around 90 workers. Most of the workers will be local people.

3.7.1.3. Construction Schedule

The construction period will take around 3 years starting from May 2016 to December 2019. Working days are 7 days and working hours start from 7:30 am to 6:00 pm.

3.7.2. Operation Phase

3.7.2.1. Structure of Building and Functional Layout

The structure of a building is first class high-rise reinforced cement concrete (RCC) building. The building is composed of 2 storeys underground and 24 storeys on the ground. The type of the foundation is bored pile foundation which is 50 m deep. The basement exterior wall is diaphragm wall type and its thickness is 20 m.

The apartment building is composed of 4 towers including 345 units and 126 hotel rooms. Ground floor to second floor are used for service facilities and office. On the other hand, basement 2 to second floor are used as parking lots and other facilities.

In functional layout of the project, two basement levels: 1 and 2 are built for equipment and carpark. Level 1 is constructed for shops and clubs. Level 2 is used for shops and carpark lots and level 3 for carparking lots. From level 4 to 24, these levels are used for residential areas. The purposes of each floor level are shown in Table 3-3.

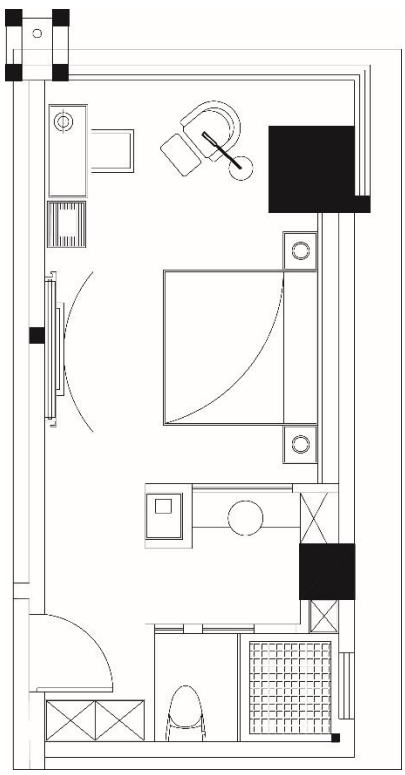
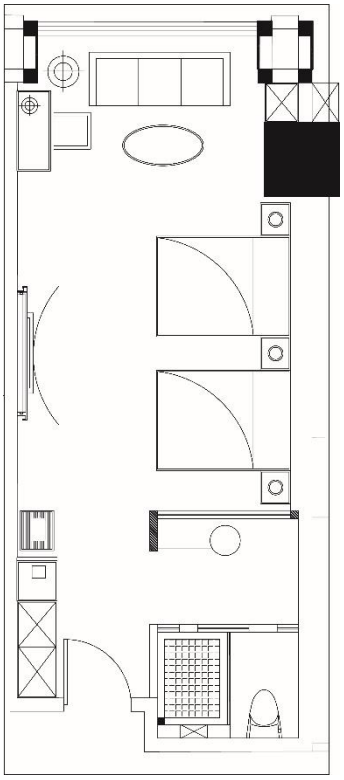
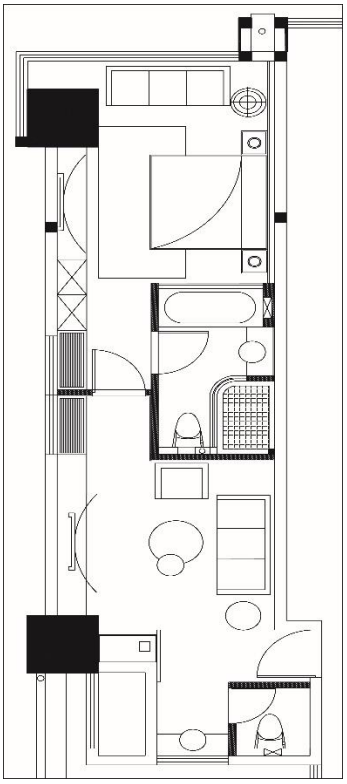
Table 3-3 Organization of Each Floor Level of the Project

Floor Number	Purpose
Level 24	Pent houses (6 apartments)
Level 23	12 apartments
Level 22	12 apartments
Level 21	12 apartments
Level 20	12 apartments
Level 19	18 apartments
Level 18	18 apartments
Level 17	18 apartments
Level 16	18 apartments
Level 15	18 apartments
Level 14	18 apartments
Level 13	18 apartments
Level 12	18 apartments
Level 11	18 apartments
Level 10	18 apartments and 18 hotel rooms
Level 9	18 apartments and 18 hotel rooms
Level 8	18 apartments and 18 hotel rooms
Level 7	18 apartments and 18 hotel rooms
Level 6	18 apartments and 18 hotel rooms
Level 5	18 apartments and 18 hotel rooms
Level 4	18 apartments and 18 hotel rooms
Level 3	Office, hotel and 98 parking lots
Level 2	Office, hotel and 98 parking lots
Level 1	Office, hotel, lobby, gym and swimming pool
Basement 1	136 parking lots
Basement 2	242 parking lots

3.7.2.2. Different Rooms Structure of Hotel

Type of rooms are separated into three types: single type, double type and executive suite type. In single room type, 1 king bed is placed. There are 2 king beds situated in a double type room. Executive suite room type owns the largest area among all room types. The layout plan of different room types is shown in Table 3-4.

Table 3-4 Layout Plan of Different Room Types

		
Single Type	**Double Type**	**Executive Suite Type**

3.7.2.3. Building Entrances, Exits and Parking Lots

One main entrance is connected to the ground floor from Insein Road and the other gate is located at the back site of the building which leads to Dhama Thukha Kyaung street first and then is joined Insein road.

Number of car parking lots for hotel are 80 and the parking lots are existed from basement 2 to level 3. Total number of parking lots for the whole project are 574 lots.

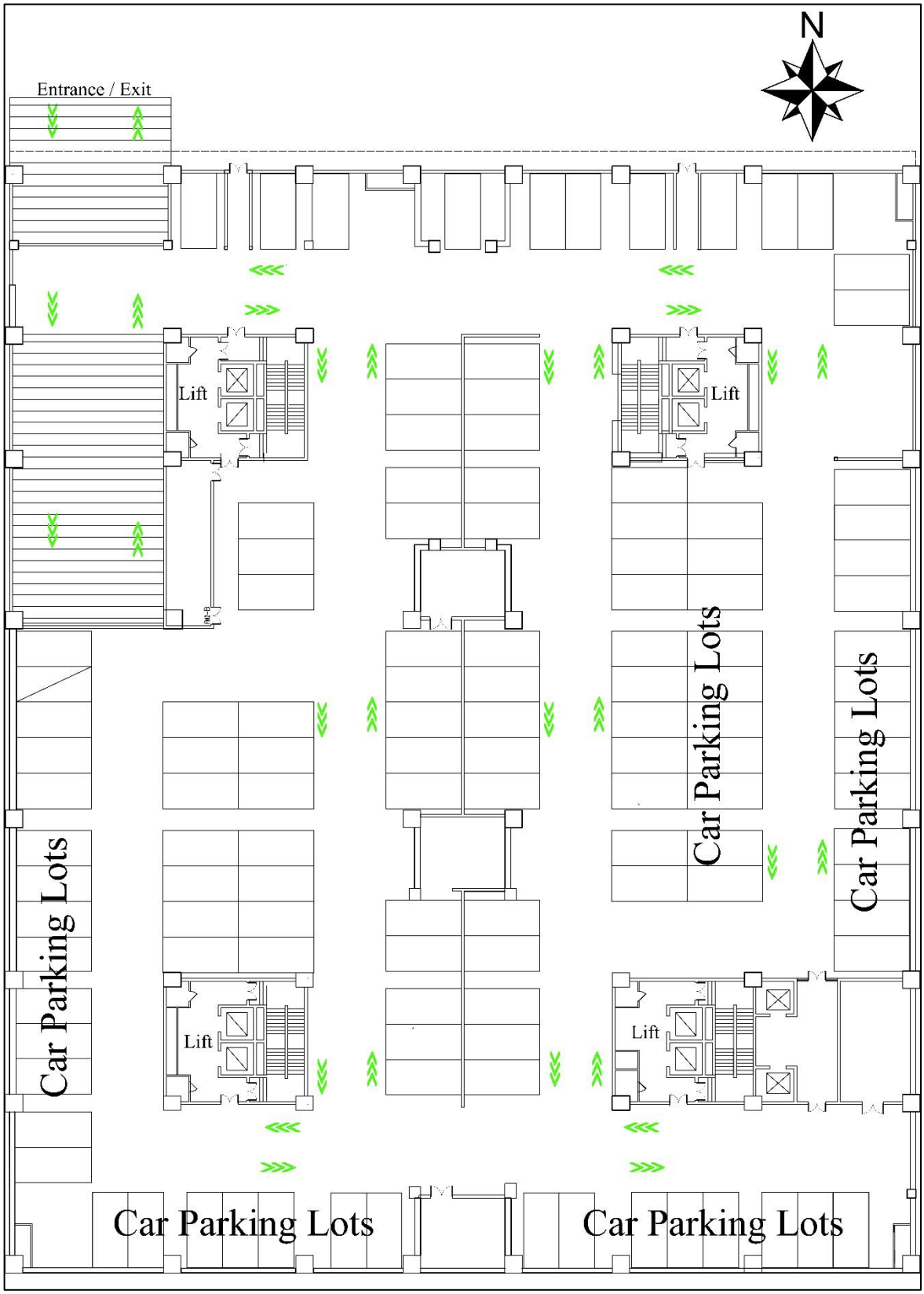


Figure 3-5 Layout Plan of Basement 1

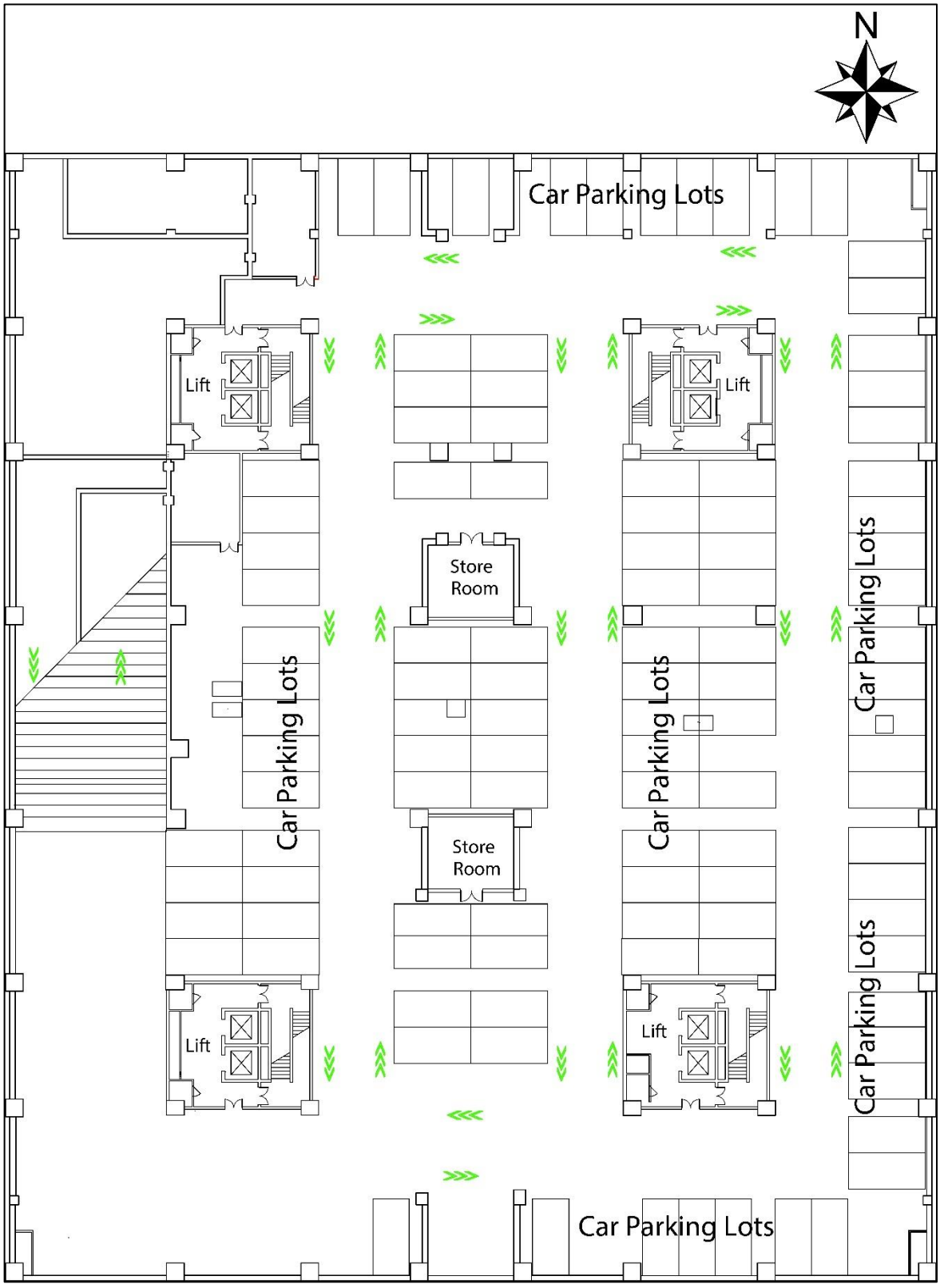


Figure 3-6 Layout Plan of Basement 2

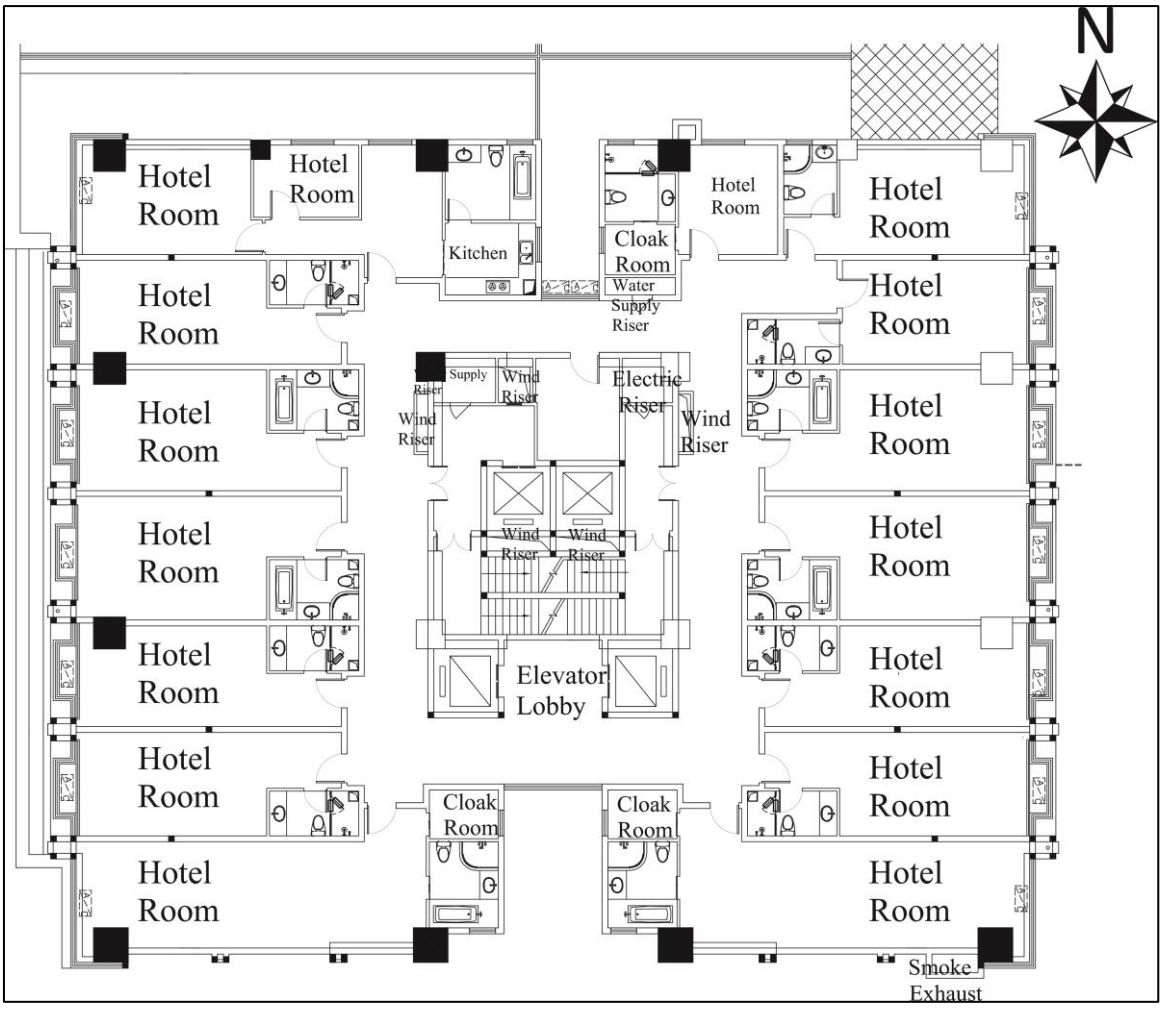


Figure 3-7 Hotel Layout

3.7.2.4. Traffic Congestion

Commuters who often use Insein road may sometimes encounter traffic congestion due to the transportation of construction processes.

3.8. PROJECT UTILITIES

3.8.1. Construction Phase

3.8.1.1. Water Supply System

Water supply for the construction of this project is provided from underground water source. 5,000 gallons is sent for each hour passing through a 8-inch diameter tube. The depth of the groundwater well is 24 feet and 25,000 gallons of water may be mainly consumed for construction processes and other miscellaneous purposes per day.

3.8.1.2. Energy use

For construction phase, the electricity supply is used from the national grid line and generator is standby for emergency use.

3.8.2. Operation Phase

3.8.2.1. Water Supply System

Nearly 100,000 gallons of groundwater may be applied for the whole day for the project. 10,000 gallons of groundwater is required for rest rooms and saniation services. On the other hand, 90,000 gallons water is necessary for residential areas. The capacity of underground water storage tank is 133,161 gallons. Water storage tank for firefighting system can hold 73,968 gallons.

3.8.2.2. Energy Use

Electricity can be accessed from the station (Electric Power Enterprise, Hlaing Township) which passes through 33 kV underground cable. The number of transfomers are 4 and the capacity of each transformer is 1,250 kVA. Moreover, 4 back-up generators are installed and each generator can also hold 1,250 kVA. High voltage room (33 kV) for an extra electric supply is built at basement floor and 5000 kVA transformers will also be placed. Back-up diesel engine generators (2375 kV) will be fixed at basement 3 for an emergency case.

3.8.2.3. Elevators

2 passenger elevators are installed in the hotel building. The elevators can also be used as fire lifts and the maximum weight of each lift is 1000 kg. The speed of each elevator is 2.1 m/s and the up-trip height of the elevator is 80 m. The foundation pit depth is 1.7 m and the number of stop is 12. The dimension of the elevator door is 1,100 mm × 2,500 mm. The materials for sidewall and elevator pit should be used as waterproof materials. Moreover, vibration and noise reduction products should be applied near the walls of bedrooms if the walls are built adjacent to the elevators. For example, sound-proofing glass wool should be used between the elevator passages and the walls of residential areas.

3.8.2.4. Drainage System

Current ditch is situated at the back site of the project and it can be used for a drainage system for the development. The size of the ditch is enough to pass the amount of rain water disposed from the project site. Back side drain dimension (3 ft x 3 ft) along Damathukha Kyaung street is connected to YCDC drain. The proposed drainage system of the hotel project is shown Figure 3-8.

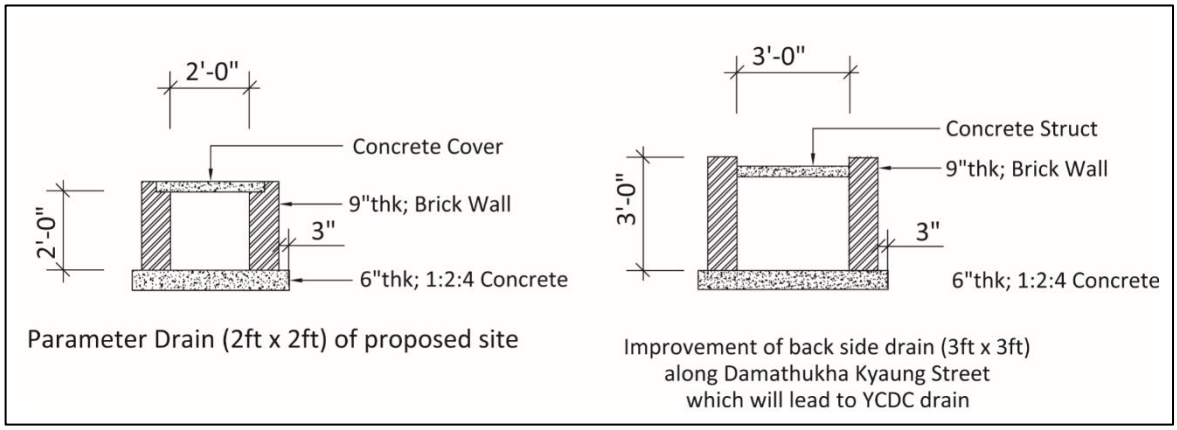


Figure 3-8 Proposed Drainage System

3.9. FIREFIGHTING SYSTEM

Fire resistance rate for this high-rise building is regarded as grade one. For fire emergency case, there is fire control room which is situated at floor one. Fire exits are connected to the outside area of the building directly. The elevator ceases at each level and an antecabinet area is larger than 6 m.

Other firefighting equipments are provided at the project area. Provided firefighting devices are fire hose reels, fire pumps, sprinklers, fire extinguishers and smoke detectors. Smoke control system and fire alarm pull station are installed. Moreover, emergency exits are also constructed.

CHAPTER 4
DESCRIPTION OF THE NATURAL AND SOCIAL ENVIRONMENT

4.1. INTRODUCTION

In the IEE study, it is necessary to establish baseline information on the environmental and socio-economic setting of an area which could receive directly and indirectly impacts from the project construction and operation. The baseline information serves two purpose. Firstly, it is used, in conjunction with the information on the project, for identification of potential impacts of the project and assessment of their significance. Secondly, it serves as the evaluating environmental and social management performance of the project construction and operation.

This requires a sound understanding of the baseline conditions at the project site which was established through desk-based research, site surveys, primary data collection and empirical studies and projections. Together, these describe the current and future characteristic of the Project Site and the value and vulnerability of key environmental and socio-economic resources and receptors. The section below provides a description of the environmental and socio-economic aspects of the Project.

The project study area defined as an area surrounding the project site from which the baseline information collection should collect. The project site is 1.78 acres size located in Hlaing Township. In the IEE report, study area is about 1 kilometer radius around the project site.

4.2. METHODOLOGY FOR DATA COLLECTION AND ANALYSIS

Environmental baseline data measurement was conducted on site such as vibration, temperature, light while air quality, water quality, noise were carried out and sent to respective laboratories.

Information about land use was collected from secondary sources in combination with ground truth surveys. The survey provides to verify and fill gaps of the secondary information. Secondary data on land use was compiled from the following sources:

- Satellite image of GOOGLE EARTH PRO
- Arc Geographic Information System map of Yangon Region

Based on the secondary data, initial land use maps were prepared and used as basic information for subsequent ground truth surveys.

4.2.1. Study Area

Hlaing township is located in the west district of Yangon city. It is situated at 36 ft above mean sea level. Hlaing township is bounded by Mayangone township and Tha Mine creek on the north, Mayangone township and Inya lake on the east, Kamaryut township on the South and Hlaing Tharyar township and Hlaing river on the west of Hlaing township. This township is

bordered by Mayangone township around 0.83 miles and Hlaing river (Hlaing Tharyar township) around 1.31 miles. The area of Hlaing township is 5.29 square miles. The project site is located in 13 ward of Hlaing township. The project site is surrounded by populated land and located in downtown area.

The EIA guidelines have defined the project-surrounding environments into four groups of components: (i) physical components, (ii) biological components, (iii) socio-economic components and (iv) environmental quality monitoring.

The following sections briefly describe each component with details in appendices appropriately. The methods of information collection are described as necessary.

4.2.2. Overview of the project area

The project site will occupy 7,203.4 m^2 in Hlaing Township, Yangon Region, Myanmar. Government buildings, factories, religious buildings, and other commercial areas are located nearby the project site.

4.3. PHYSICAL ENVIRONMENT

The relevant physical environment comprises common adjacent, climate, topography, geology, seismic, tectonic, hydrology and land use described as follows.

4.3.1. Climate and Meteorology

The project area is located at Hlaing Township and climatic based on secondary information source that is available from Hlaing Administration Department. Hlaing Township which is located in Yangon has a tropical monsoon climate under the Koppen climate classification system. The city typically experiences a distinct rainy season from the month of May to October when a substantial amount of precipitation occurs; and dry season which commences from November and ends in April. In Hlaing township, the maximum temperature is 30 °C and the minimum temperature is 28 °C.

The project area has tropical monsoon climate characterized by three seasons. The summer season normally begins in March and April. During this period, the weather is relatively warm and humid. During March and April, a transition period prevails during which the northeast monsoon begins to withdraw and the air mass movements bring warm air to the country from southeast directions. Some light rainfalls, known as the pre-monsoon rain, could be expected during this period.

The rainy season follows the summer season normally from May and lasts until the end of October. Intense rainfalls can be normally occurred in June, July, August and September as clearly indicated by the number of days with rainfalls and the monthly amount of rainfalls. In Hlaing township, between 2016 and 2017, the total annual rainfall was 102.64 inches. The highest temperature in summer is 40 °C and the lowest temperature in winter is 12 °C in the whole year, 2016-2017.

The winter season follows the rainy season normally begins in November and lasts until February. During this period, the weather is relatively cold and dry due to the northeast monsoon. The monthly mean minimum temperature are normally between 19 – 26 ℃. There is practically very little or no rain during this period. The yearly status of rainfall and temperature and climate classification map of Myanmar as shown in Table 4-1 and Figure 4-1.

Table 4-1 Yearly Status of Rainfall and Temperature (2016-2017)

No	Year	Rainfall*		Temperature*	
		Raining Days	Total Rainfall (inch)	Summer	Winter
				Higher °C	Lower °C
1	2016-2017	131	102.64	40	12

* Department of Administration in Hlaing Township, 2017

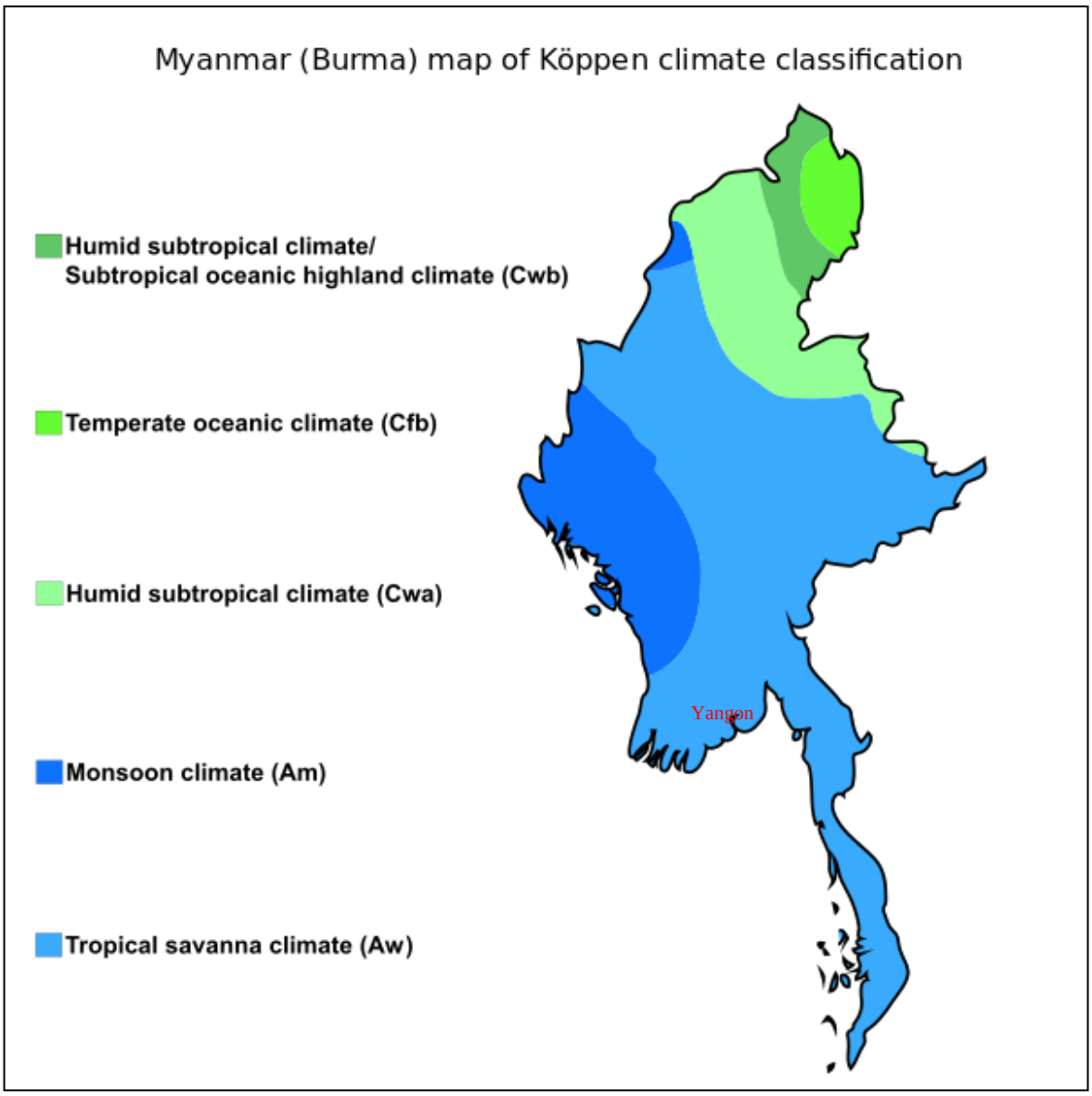


Figure 4-1 Climate Classification Map of Myanmar

4.3.2. Topography

The project area is located in Hlaing Township, Yangon Region. It lies between the Latitude 16° 49.5' to 16° 51.5' N and Longitude 96° 6' to 96° 8' E of 36 ft above mean sea level. Dimension of the study area is 1.47 miles long in east-west direction and 3.60 miles wide in north south direction; area extent is 5.29 square miles.

Hlaing township is bounded by Mayangon in the east and north, Kamayrut in the south and Hlaingthayar in the west. There is no valleys, ravines and banks which are naturally formed and it is flat land area. All channels are flowing from west to east direction and the main river of this township is Hlaing river that flowing north to south direction which shown in Figure 4-2.

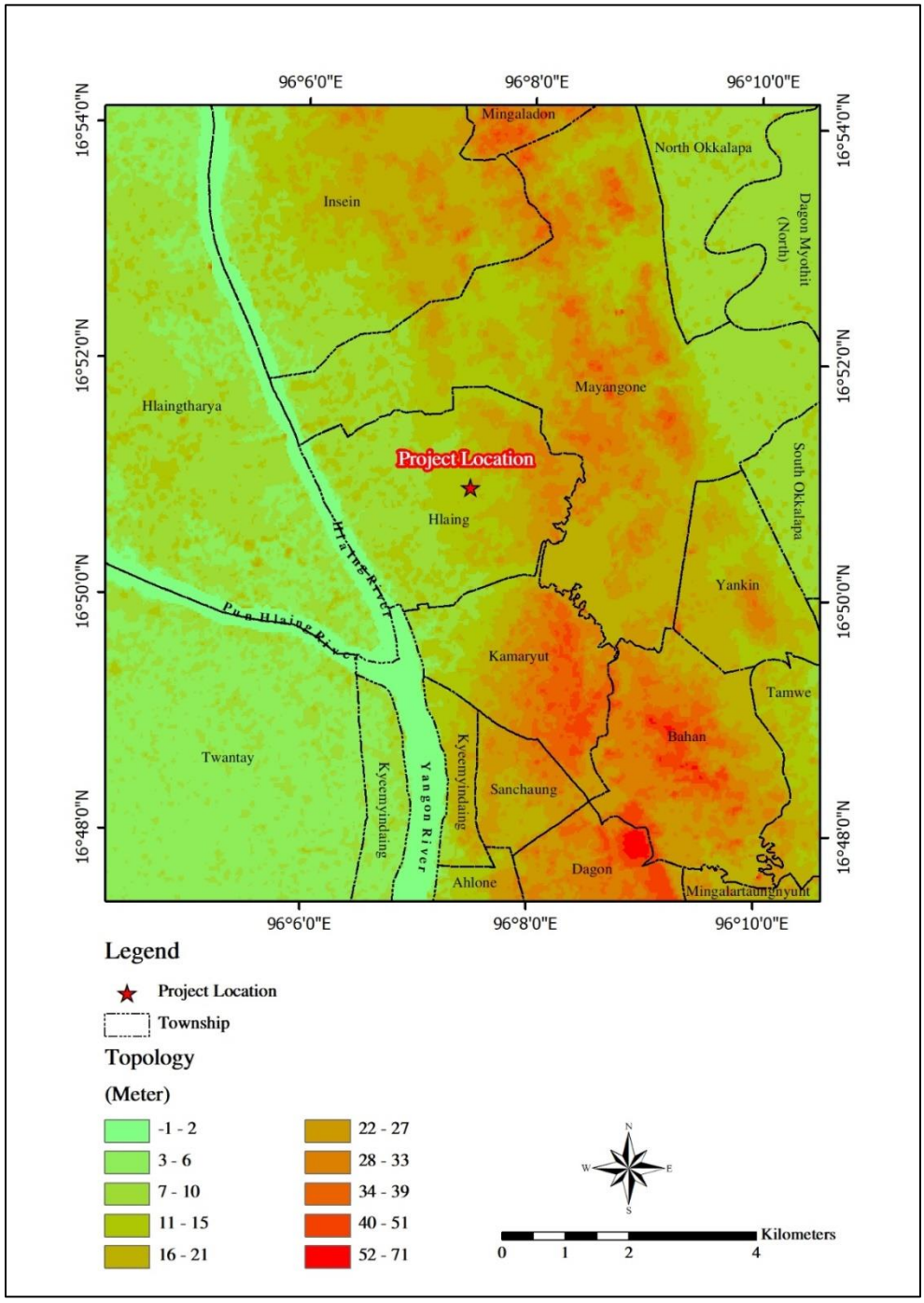


Figure 4-2 Topographic Map of the Project Area[1]

[1] Source from: https://earthexplorer.usgs.gov/

4.3.3. Geology

Alluvial deposits (Pleistocene to Recent), the non-marine fluvial tile sediments of Irrawaddy Formation (Pliocene), and hard massive sandstone of Pegu series (early-late Miocene) underlie Yangon area. The rock type in Yangon is mainly soft rocks, which consist of sandstone, shale, limestone and conglomerate. Alluvial deposits are composed of gravel, clay, silts, sands and laterite, which lies upon the eroded surface of Irrawaddy Formation at 3 to 4.6m above sea level. The central part of Yangon area occupied by the anticlinal ridge as a backbone, 30m above mean sea level and covered with sands, sand rock, soft sandstones, shale, clays and laterite of Irrawaddy Formation. The hard-compact sandstone and shale of Pegu series can be found at the northwest corner of Hlawga Lake with NNW-SSE strike dipping to the east.

The study area is mainly composed of yellowish grey, bluish grey silts and clays of Younger Alluvium and Recent. This Formation included the Danyingon clays and Arzarnigon sand rocks. The Danyingon clays consist mainly of clays; siltstone with interbedded sand rocks which exposed in Danyingon. The Arzarnigon sand contain admixture of silt, clay and fine gravel at various percentage. These sand rocks expose along Shwedagon and on the eastern bank of Hlawgar Lake[2]. The regional geological map of Yangon as shown in Figure 4-3.

[2] Ya Moan Phyu 2012, groundwater monitoring for connection with tidal effect at Myayamon waterfront villa project, Dagon Myothit (south), Yangon Region.

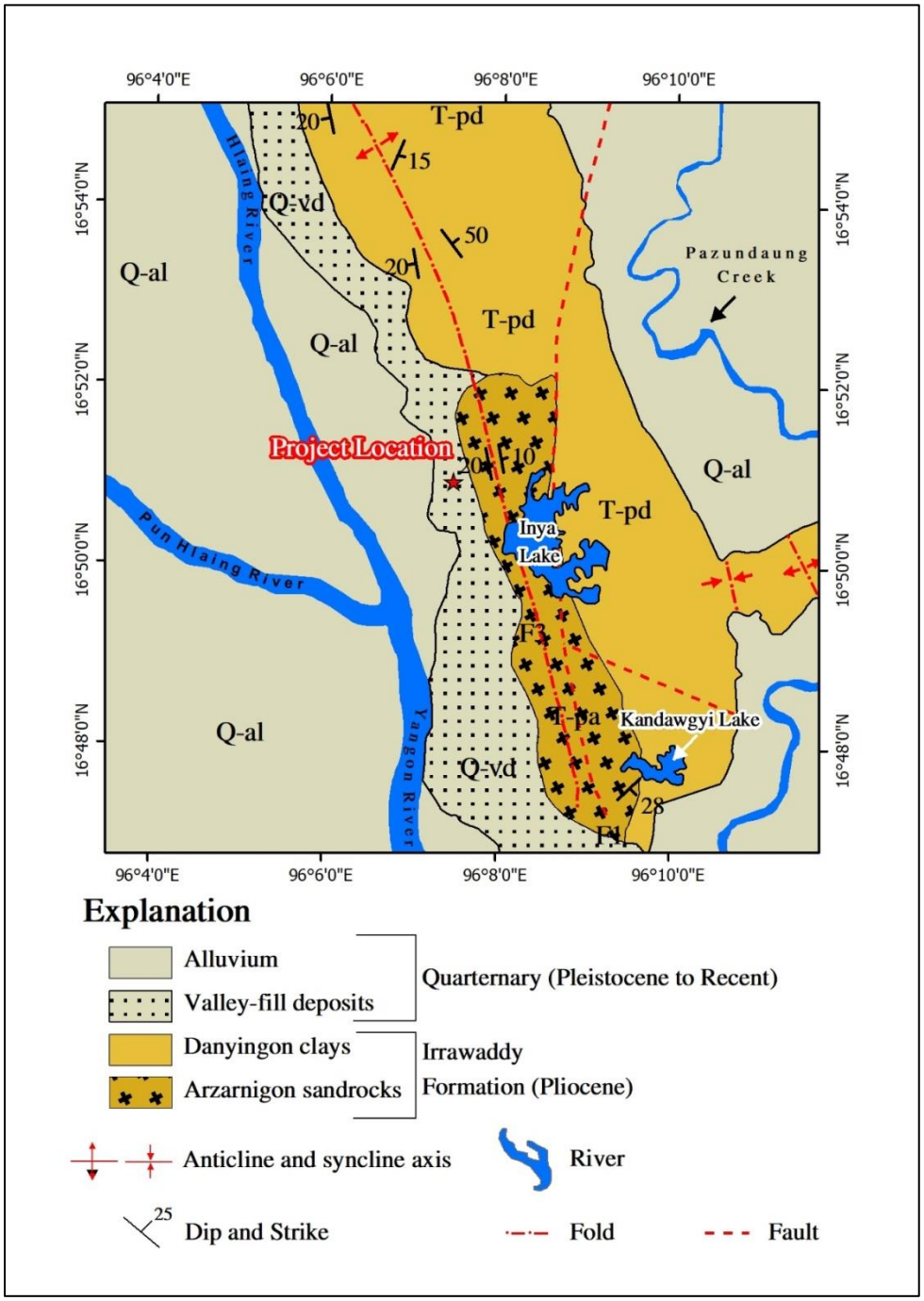
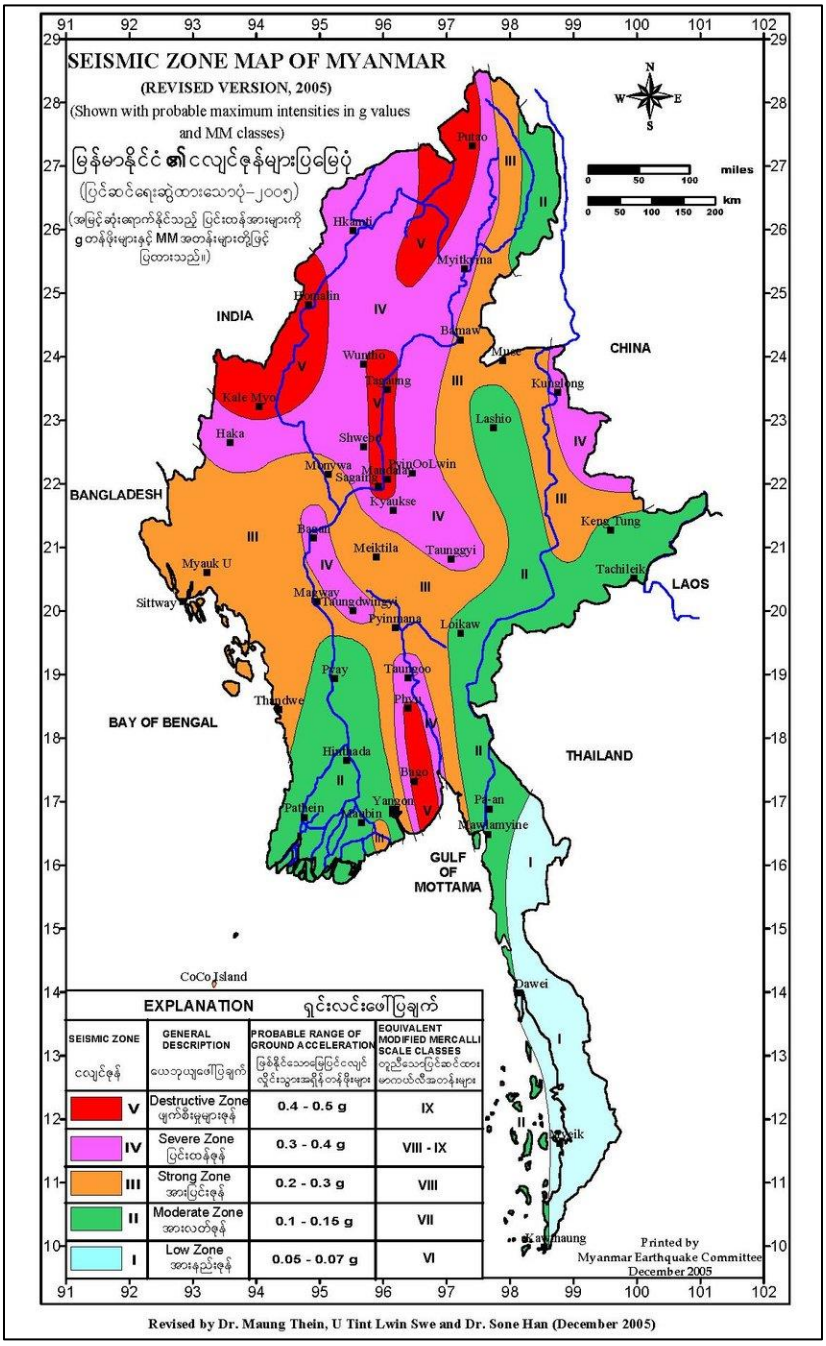


Figure 4-3 Geological Map of the Project Area[3]

[3] Win Naing, 1972, The hydrogeology of greater Rangoon area

4.3.4. Seismology

In Myanmar, five seismic zones are demarcated and named (from low to high) Zone I (Low Zone), Zone II (Moderate Zone), Zone III (Strong Zone), Zone IV (Severe Zone), and Zone V (Destructive Zone), mainly following the nomenclature of the European Macroseismic Scale 1992. For each zone, a probable range of ground acceleration in g values and equivalent Modified Mercalli (MM) Scale classes are given. The highest intensity zone designated for Myanmar is the Destructive Zone (with probable intensity range of 0.4 – 0.5 g) which is equivalent to MM class IX. There are four areas in that zone; namely, Bago-Phyu, Mandalay-Sagaing-Tagaung, Putao-Tanaing, and Kale Myo - Homalin areas. The latter two, however, would not have major earthquake hazards as they are only sparsely populated. Yangon straddles the boundary between Zone II and Zone III, with the old and new satellite towns in the eastern part in Zone III, and the original city in Zone II. The seismic zone map is shown in Figure 4-4.



[4]Figure 4-4 The Seismic Zones Map of Myanmar[4]

[4] Soe Thura Tun, 2015, Sagaing Fault: A dusk study report on seismotectonic implications in Myanmar.

4.3.5. Tectonic

Tectonically, Yangon is situated in the southern part of the Central Lowland, which is one of three major tectonic provinces of Myanmar. The Taungnio Range of the Gyophyu catchments area is in Taikkyi District, north of Yangon, through the Thanlyin Ridge, south of Yangon. Thanlyin Ridge is forming a series of isolated hill is probably resulted from the progressive deformation of the Upper Miocene rocks as the eastern continuation of the subduction or stretching and compression along the southern part of the Central Basin and regional uplifting of the Bago Yoma[5]. The Bago Yoma, Sagaing fault, and Central Andaman spreading center are the most significant structures of shear band of Sagaing fault with 100km width.

4.3.6. Hydrogeology

Yangon is rich in groundwater resources conserved by unconsolidated Tertiary-Quaternary deposits. In Yangon, groundwater mostly extracts from Valley filled deposits and Ayeyarwady sandstones. Groundwater availability is generally based on the distribution of permeable and relatively impermeable rocks. The nature of openings in the rocks determines permeability of rocks.

Based on local geological considerations, potential groundwater source of Yangon is roughly divided into two sub regions, namely the low potential area and high potential area. Low potential areas are areas with those rock units of Hlawga shale, Thadugan sandstones and Basepet alternation of upper Pegu group (Miocene epoch) and Danyingon clays of Irrawaddy rocks. These rocks and formations possess a dense, massive and consolidated nature and have impervious characteristic. Pliocene series and recent Formations underlie high potential areas. High potential area covers approximately 85 percent of the Yangon city. Based on the monitoring results recorded up to 8 December 2012 (Win Naing, 1972)[6], stabilized groundwater level observed to range between 0.49 m MSL to -1.81 m MSL.

4.4. BIOLOGICAL ENVIRONMENT

Hlaing township area is recognized as an urban area. Therefore, there are no significant information of flora and fauna.

[5] Aung Lwin and Myint Myint Khaing 2012, Yangon River geomorphology identification and is environmental impact analysis by optical and radare sensing techniques.

[6] Win Naing, 1972. The hydrogeology of greater Rangoon area.

4.5. SOCIO ECONOMIC ENVIRONMENT

4.5.1. Population

Types of population in Hlaing township consists of ethnics (local people) and foreigners. Number of residents are separated into male and female population depending on the ages (above 18 and below 18).

4.5.1.1. Different ethics and total population of Hlaing township

Different 8 ethnics mainly live in Hlaing township and total number of population is 125060. The highest number of ethic is Burma (104966) and the lowest number of ethic is Kayar (45). Details of number of different ethnics and percentages of population are shown in Table 4-2.

Table 4-2 Ethnicity and Population Percentage in Hlaing Township

No	Nationality	Population of Living	Population of Hlaing Township	Percentages of Population
1	Kachin	203	125,060	0.16%
2	Kayar	45	125,060	0.04%
3	Kayin	2,520	125,060	2.05%
4	Chin	922	125,060	0.7%
5	Mon	982	125,060	0.78%
6	Burma	104,966	125,060	83.98%
7	Rakhine	2,640	125,060	2.12%
8	Shan	964	125,060	0.78%
9	Other	11,818	125,060	9.45%
Total		**125,060**	**125,060**	**100%**

Source: Department of Administration in Hlaing Township, 2017

Table 4-3 List of Religions in Hlaing Township

Township	Buddhist	Christian	Hindu	Islam	Other	Total
Hlaing	114,238	2,314	4,051	2,911	1,546	125,060

Source: Department of Administration in Hlaing Township, 2017

4.5.1.2. Number and percentage of population of foreigners

The number of foreigners living in Hlaing township are differentiated into four nations. Most common foreigners are Indians (5,553) and Bengali (410). The percentages of population and population of Hlaing township are described in Table 4-4.

Table 4-4 Number and Population Percentage of Foreigners

No	Nation	Citizens	Population of Living	Population of Hlaing Township	Percentages of Population
1	China	Chinese	3,520	125,060	2.81%
2	India	Indian	5,553	125,060	4.44%
3	Pakistan	Pakistani	789	125,060	0.63%
4	Bangladesh	Bengali	410	125,060	0.33%
5	Other	Other	1,546	125,060	1.24%
Total			**11,818**	**125,060**	**9.45%**

Source: Department of Administration in Hlaing Township, 2017

4.5.1.3. Male and female population

Type of residents are urban residents and the number of residents are separated into male and female.

Table 4-5 Male and Female Population depending on Ages (above 18 and below 18)

No	Type of Residents	Above 18			Below 18			Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
1	Urban	43,212	51,118	94,330	15,423	15,307	30,730	58,635	66,425	125,060

Source: Department of Administration in Hlaing Township, 2017

4.5.2. Number of House and Household

The number of houses in Hlaing township are regarded as 14,139 houses and there are 29,668 of households. Moreover, 16 wards are situated in Hlaing township. Summary data of house and households are provided in Table 4-6.

Table 4-6 Number of Houses, Households and Wards in Hlaing

No	Type of Households	House	Household	Ward
1	Urban	14,139	29,668	16

Source: Department of Administration in Hlaing Township, 2017

4.5.3. Health Profile

The diseases of high prevalence reported in 2017 are tuberculosis TB (Sputum), followed by diarrhea, TB (Sputum) and HIV/AIDS. With reference to the Township Health Profile (2017) of Hlaing township, most of diseases are diarrhea and TB. (Hlaing Administrative Department, 2017). The common diseases are shown in Table 4-7.

Table 4-7 Common Diseases

Disease	Hlaing Township	
	Morbidity	Mortality
Diarrhea	62	-
TB (Sputum)	560	4
HIV/AIDS	32	6

Source: Department of Administration in Hlaing Township, 2017

Table 4-8 Access to Health Care Center

No.	Hospital Name	Government/Private	Disease focus
1	Regional Clinic	Government	TB (Sputum)
2	Maternity Clinic	NGO	Pregnant Patients

Source: Department of Administration in Hlaing Township, 2017

Table 4-9 Health Care Services

No	Residents	Doctors	Ratio of Doctors and Residents	Nurses	Ratio of Nurses and Residents	Health Assistant	Ratio of Health Assistant and Residents
1	125,060	2	1:62,322	2	1:62,322	2	1:124,645

Source: Department of Administration in Hlaing Township, 2017

Table 4-10 Maternal Mortality

No	Number of Mothers	Number of Infants	Per 1,000 people			
			Birth Rate	Mother Mortality Rate	Infant Mortality Rate	Abortion Rate
1	2,447	11,433	19.5	-	1.64%	0.16%

Source: Department of Administration in Hlaing Township, 2017

4.5.4. Economic Profile

Hlaing township is regarded as one of the central business points in Yangon city. Most of local people provide business related to services business. Local people do their business as production. In well-known MICT park, business related to computer services are available. In 2015, March, 25 car sales center were set up.

4.5.4.1. Industries

Five kinds of industries and factories in Hlaing township are provided in Table 4-11.

Table 4-11 Locations of Industries in Hlaing

No	Factory Name	Government Factory	Private Factory	Workers Number
1	Jute Industry	-	1	623
2	Army Garment's Factory	1	-	1,500
3	No. 8, Wood Manufacturing Factory	1		189
4	No. 5, Furniture Industry	1		91
5	Aluminum Factory	1	-	165
Total				**2,568**

Source: Department of Administration in Hlaing Township, 2017

4.5.4.2. Workshops

People work in some local workshops. Types of workshops consist of garment, plastic production, paper industry and wood cutting workshop.

Table 4-12 Types of Workshops in Hlaing Township

No	Workshop Name	Type	Government or Private	Number of Employees
1	Garment	Clothes	Private	40
2	Plastic	Bags	Private	25
3	Paper Industry	Carton	Private	20
4	Wood cutting Workshop	Cutting wood	Private	15
Total				**100**

Source: Department of Administration in Hlaing Township, 2017

4.5.4.3. Cottage industry

Cottage industry is a small-scale production which needs few workers and eight types of cottage industries are commonly occurred. Details of cottage industries in Hlaing township is shown in Table 4-13.

Table 4-13 Cottage Industries in Hlaing Township

No	Cottage Industry Type	Quantity	Number of Workers
1	Bakery	1	2
2	Traditional medicine business	2	8
3	Air compressor business	6	15
4	Aluminum ware	1	10
5	Noodle processing machine	3	15
6	Automobile workshop	28	25

7	Car body workshop	16	15
8	Rice noodle production	2	4
Total		**59**	**94**

Source: Department of Administration in Hlaing Township, 2017

4.5.5. Education Level

4.5.5.1. Number of Schools

In Hlaing township, different education levels of schools are constructed. High schools, middle schools, primary schools, kindergartens and monastic schools are situated. There are 4 high schools, 7 middle schools, 27 primary schools, 9 kindergartens and 5 monastic schools situated in Hlaing township. According to Hlaing Administration Department information, details information of school name, area of schools, number of teachers and students and ratio of teachers and students are shown from Table 4-14 to Table 4-18.

Table 4-14 Number of High Schools in Hlaing township

No	School name	Area (acre)	Teachers	Students	Ratio of Teachers and Students
1	B.E.H.S-1	1.26	39	674	1:17
2	B.E.H.S-2	0.75	55	1695	1:13
3	B.E.H.S-3	0.65	32	657	1:21
4	B.E.H.S-4	0.54	39	916	1:23
Total		**3.2**	**165**	**3945**	**1:24**

Source: Department of Administration in Hlaing Township, 2017

Table 4-15 Number of Middle Schools in Hlaing township

No	School name	Area (acre)	Teachers	Students	Ratio of Teachers and Students
1	B.E.M.S-1	0.53	30	708	1:24
2	B.E.M.S-3	1.02	13	252	1:19
3	B.E.M.S-4	0.52	29	858	1:30
4	B.E.M.S-5	0.65	20	362	1:18
5	B.E.M.S-6	1.07	35	1,191	1:34
6	B.E.M.S-7	0.53	29	893	1:31
7	B.E.M.S-8	1.09	20	290	1:15
Total		**6.41**	**176**	**4,554**	**1:25**

Source: Department of Administration in Hlaing Township, 2017

Table 4-16 Number of Primary Schools in Hlaing Township

No	Number of schools	Teachers	Students	Ratio of Teachers and Students
1	27	186	4,505	1:24

Source: Department of Administration in Hlaing Township, 2017

Table 4-17 Number of Kindergartens in Hlaing Township

No	School name	Teachers	Students	Ratio of Teachers and Students
1	Elite	3	57	1:19
2	Pyoe Khin	2	38	1:18
3	Wine Yin Khwin	2	40	1:19
4	Yin Tway Yadanar	3	57	1:19
5	A Nar Gat	4	76	1:18
6	Kha Yay	2	38	1:18
7	Myit Tar Pan	3	57	1:19
Total		**28**	**535**	**1:18**

Source: Department of Administration in Hlaing Township, 2017

Table 4-18 Number of Monastic Schools in Hlaing Township

No	School name	Teachers	Students	Ratio of Teachers and Students
1	Kyan Khin Monastery (5^{th} ward)	5	103	1:21
2	Myitthar War Di (16^{th} ward)	5	161	1:32
3	Aung Thate Di (12^{th} ward)	5	51	1:10
4	Thiri Zay Yone (13^{th} ward)	4	67	1:17
Total		**19**	**382**	**1:20**

Source: Department of Administration in Hlaing Township, 2017

Table 4-19 Summary Information of Different Levels of Schools in Hlaing Township

Highest Grade	Division/ Township	Teachers	Students	Ratio of Teacher and student
Pre-school	Yangon, Hlaing	28	535	1:18
Primary		186	4505	1:24
Middle		176	4554	1:25
High		165	3945	1:24
Monastic schools		19	382	1:20

Source: Department of Administration in Hlaing Township, 2017

4.5.5.2. School enrollment percentage

Percentage of school enrollment in Hlaing is 100% and details information is summarized in the following Table 4-20.

Table 4-20 School Enrollment Information of Hlaing Township

No	Number of 5 Years Old Children			School Enrolment			Percentage of School Enrolment (%)
	Male	Female	Total	Male	Female	Total	
1	540	547	1,087	540	547	1,087	100%

Source: Department of Administration in Hlaing Township, 2017

4.5.5.3. Matriculation examination pass rate

In 2015-2016, number of candidates are 2,059 and number of successful students are 874. The matriculation exam rate for 2015-2016 is 42.45% and in 2016-2017, the rate increases to 45.27%. The number of participants in 2016-2017 is 2074 and number of successful candidates are 939. Matriculation exam pass rate is described in Table 4-21.

Table 4-21 Matriculation Examination Pass Rate of Hlaing Township

No	2015-2016				2016-2017			
	Reported Number of Students	Candidates	Students Passed Exam	%	Reported Number of Students	Candidates	Students Passed Exam	%
1	2,196	2,059	874	42.45	2,264	2074	939	45.27%

(Source: Department of Administration in Hlaing Township)

4.5.5.4. Literacy rate

There are 125,060 residents living in Hlaing township and total number of literates are 110,877. The literacy rate for Hlaing township is 98.88% and is provided in Table 4-22. Besides, total number of libraries is 62 and library information is described in Table 4-23.

Table 4-22 Literacy Rate of Hlaing Township

No	Residents	Residents above 15 years old	Number of Literates	Literacy Rate
1	125,060	112,133	110,877	98.88%

Source: Department of Administration in Hlaing Township, 2017

Table 4-23 Number of Libraries in Hlaing Township

No	Administration Sector	Education Sector	Ministry of Information	Monastic Education Sector	Total
1	18	38	2	4	62

Source: Department of Administration in Hlaing Township, 2017

4.5.6. Religious Information

Various types of religious buildings in Hlaing township are presented as follows.

4.5.6.1. Buddhism Information

Table 4-24 Buddhist Religious Buildings

No	Pagodas	Monasteries	Nunneries	Religious Halls
1	19	63	3	30

Source: Department of Administration in Hlaing Township, 2017

Table 4-25 Buddhist Religious Buildings

No	Monks	Novices	Nuns
1	944	665	107

Source: Department of Administration in Hlaing Township, 2017

Table 4-26 Other Religious Buildings

No	Christian	Islam	Hindu	Chinese Temple
1	1	4	7	5

Source: Department of Administration in Hlaing Township, 2017

4.6. ENERGY AND ELECTRICITY SECTOR

Energy and electricity sector in Hlaing is described in the following Table 4-27 Petrol industries and natural gas stations can be easily seen in Hlaing township.

Table 4-27 Different Fuel Stations in Hlaing

No	Shop Name	Government	Private	Barrels Per Year	
				Petrol	Diesel
1	Myat Myit Tar Mon	-	1	31,688	23,040
2	MAX	-	1	29,800	18,030
3	0237	1	-	26,750	-
4	360 (Petrol)	-	New station	-	-
5	Shwe Zin Yaw	-	1	28,900	18,530
Total				**117,138**	**59,600**

Source: Department of Administration in Hlaing Township, 2017

Table 4-28 Natural Gas Stations

No	Shop Name	Government	Private	Barrels Per Year
1	Parami	Government	-	110,340
Total				**110,340**

Source: Department of Administration in Hlaing Township, 2017

4.7. TRANSPORTATION AND COMMUNICATION SYSTEM

4.7.1. Railways and Train Stations

In Hlaing township, there are 3 small train stations and circular railway runs from No. (2) ward to No. (16) ward.

Table 4-29 Railways and Train Stations

No	Railway Name	Within Hlaing Township		Length (mile)	Number of Railway Stations	
		From	To		Big	Small
1	Circular Railway	No. (2) ward	No. (16) ward	1.5	-	3

Source: Department of Administration in Hlaing Township, 2017

4.8. ENVIRONMENTAL QUALITY

4.8.1. Land Use

4.8.1.1. Methodology

Information about land use was collected from secondary sources in combination with ground truth surveys. The survey provides to verify and fill gaps of the secondary information.

4.8.1.2. Secondary Data Collection

Secondary data on land use was compiled from the following sources:

- Satellite image of GOOGLE EARTH PRO
- Arc Geographic Information System map of Yangon Region

Based on the secondary data, initial land use maps were prepared and used as basic information for subsequent ground truth surveys.

4.8.1.3. Field survey

Field survey was conducted on 1st August 2019 around 1 km marginal area of the project site. It is used to verify the land use information in the initial land use map. The results are used to recheck, revise, and modify the accuracy of each type of land used on Arc GIS mapping software. Finally, the land use map is generated and is shown in Figure 4-5.

4.8.1.4. Land Uses Prescription

The project site area covers 4838.76 m^2. The building is 75.95 m high. Besides, total building area is 95497.85 m^2 with a combination of 85996.18 m^2 on the ground and 9501.67 m^2 underground. Floor area ratio is 1:10.18 and building coverage ratio is 1:0.667. Tower coverage ratio is 1:0.820. The ground level is regarded as 283.25 ft (86.36 m) and sea level is expressed as 309.25 ft (94.29 m).

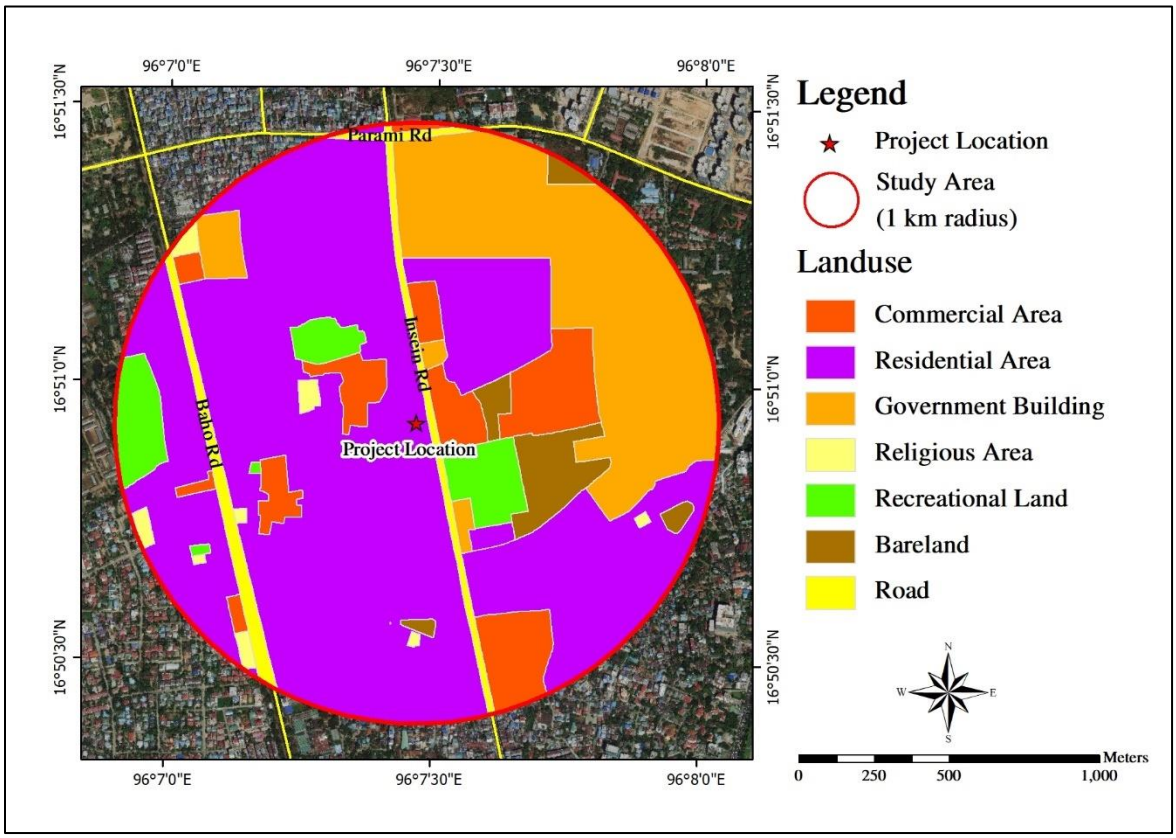


Figure 4-5 Land Use Map on Study Area

4.8.1.5. Result of the study

Results of landuse is produced from the investigation of the project area. The study area consists of the proposed project site and land use type is characterized into seven types within 1 km marginal area. They are (1) Commercial area, (2) Residential area, (3) Government building, (4) Religious area, (5) Recreational land, (6) Bareland and (7) Road. Residential area owns the largest portion within 1 km marginal area, followed by government buildings, commercial area, recreational land, road, bareland and religious area. Land use type and area is summarized and illustrated in Table 4-30.

Residential area covers about 58.01% of the study area and other government buildings are scattering around the project area. This type of land use covers with commercial area, residential area, government building, religious area, recreational land, bareland and road. Government building area is 20.43 % and located at north side of project site. On the other hand, percentage of commercial land area is 9.15%. Percentage of bareland is 3.33% and road area covers 3.36% respectively.

The residential area is the largest portion in the study area followed by government area and commercial area. The percentage of landuse and landuse map are shown in Table 4-30 and Figure 4-5.

Table 4-30 Percentages of Land Use

No.	Name	Area (Ha)	Landuse %
1.	Bareland	10.5	3.33
2.	Commercial Area	28.88	9.15
3.	Government Building	64.49	20.43
4.	Recreational Land	14.95	4.74
5.	Religious Area	3.1	0.98
6.	Residential Area	183.1	58.01
7.	Road	10.61	3.36
Total		**315.63**	**100**

Table 4-31 Existing Land Use Photos within Study Area

	
Bazaar	**Religious Area**
	
Government Area	**Residential Area**
	
Government Factory	**Road**

Source: TBS Site Visit during 2019, 1st August

4.8.2. Air quality

The air monitoring survey was completed using the High Volume Air Sampler (TISCH Environmental) for Total Suspended Particulate (TSP) and Particulate Matter less than 10 micrometer (PM_{10}). TISCH High volume air samplers are used for the collection of airborne particulate matter in ambient air. They are available for the collection of Total Suspended particulates (TSP), particulate matter with an aerodynamic diameter of less than 10µm (PM10). This instrument is factory calibrated with the appropriate US EPA certified target gas and correlated with US EPA methods. (Ref: Code of Federal Regulation 40CFR part 53).

Air quality measurement was conducted at in the study area for 24-hour at 26th August, 2019 to 27th August, 2019.Air pollutants level including dust (TSP and PM10) measured at the 16° 50' 55.8'' N and 96° 7' 29.67''E.

To reveal the existing status of baseline air quality, the average air quality compared with NEQG and international standard WHO 1979 and World Bank guideline. The air quality measurement result of TSP was within the range of standard while PM_{10} result was slightly higer than the standard. The result from the high volume gravimetric air sampler shown in Table 4-32, location map of air monitoring point and measurement activities are shown in Figure 4-6 and Figure 4-7. The laboratory air result are described in ***APPENDIX C***.

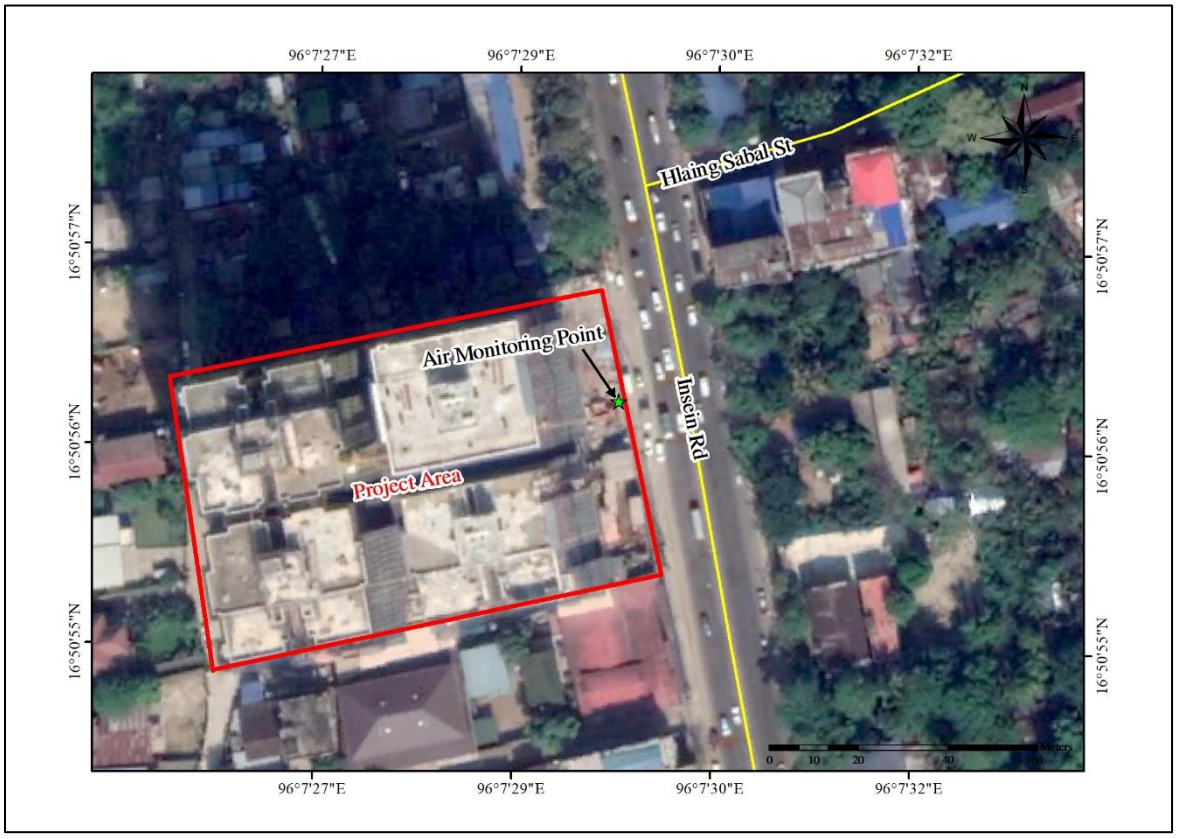


Figure 4-6 Location Map of Air Monitoring Point

Table 4-32 Results from the high-volume gravimetric air sampler

Station	Parameter	Unit	Average hour	Results	WHO 1979 (WHO Guidelines)[1]	World Bank (General Environmental Guidelines)[2]	NEQG[3]
A1	TSP	$\mu g/m^3$	8-hour	223.10	150-230 (24-hour)	-	-
	PM_{10}	$\mu g/m^3$	8-hour	76.08	-	70 (24-hour)	50 (24-our)

Figure 4-7 TSP and PM_{10} Sampling Photo

4.8.3. Noise

MONREC has issued National Environmental Quality (Emission) Guidelines to provide the basis for regulation and control of noise level. Noise impact should not exceed the levels presented in Table 4-33.

Table 4-33 Noise Level Standard

Receptor	One Hour LAeq (dBA)[a]	
	Daytime 07:00-22:00 (10:00-22:00 for Public holidays)	Nighttime 22:00 – 07:00 (22:00 – 10:00 for Public Holidays)
Residential, Institutional, educational	55	45
Industrial, commercial	70	70

[a] Equivalent continuous sound level in decibels

Operation noise impacts issued for near sensitive receptor of the construction phase. Therefore, the consultant conducted the noise measurement on September 26, 2019 to September 27, 2019 for 24-hour within the hotel compound at potential noise sensitive receivers including construction working places. There are no significant negative impacts on the workers and nearby community because most of the noise results are within the noise standard value. Measured data are shown in Table 4-34, Figure 4-8 and Table 4-35 shows the noise level measurement activities.

Table 4-34 Monitoring Measurement of Noise

No.	Location	Measure value
		Laeq (dBA)
1	Lobby Aera	70.11
2	Inside the hotel	72.96
3	Outside the hotel	65.46

*National Environmental Quality (Emission) Guidelines, 29 Dec 2015

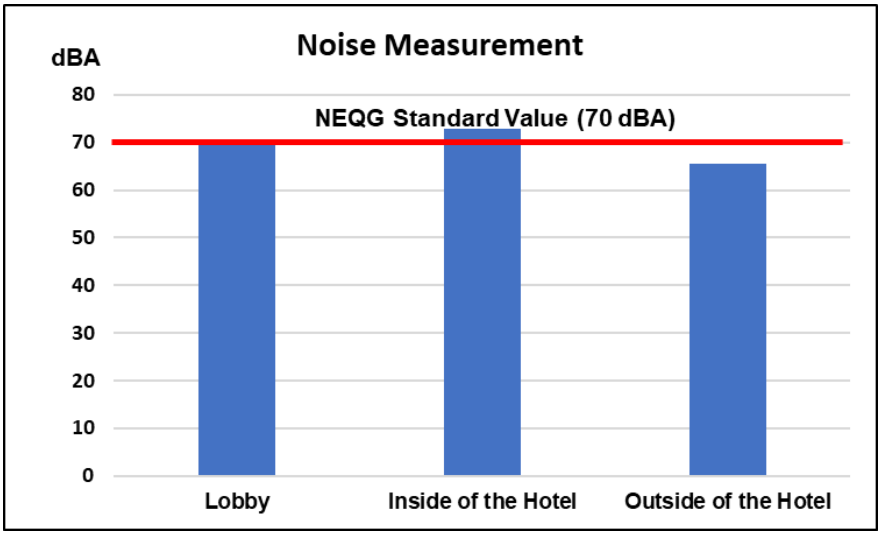
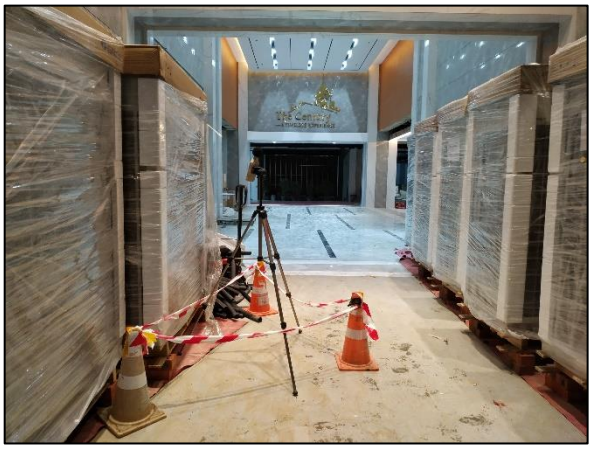


Figure 4-8 Noise Measurement Result in Bar Chart

Table 4-35 Noise level measurement activities

	
Lobby Aera	**Outside the hotel**
	
Inside the hotel	

4.8.4. Lighting and Temperature

Lighting and ventilation are important for the work place. Activities of the workers in the construction workers are highly dependent on the quality of light and temperature. Therefore, the consultant conducted the light and temperature measurement in the hotel during July 11, 2019 site visit. Light measured data are as shown in Table 4-37and Figure 4-9 where temperature measured data are described in Table 4-38 and Figure 4-10respectively. The light and temperature measurement activities are shown in Table 4-39.

Table 4-36 IFC Light Intensity Guideline

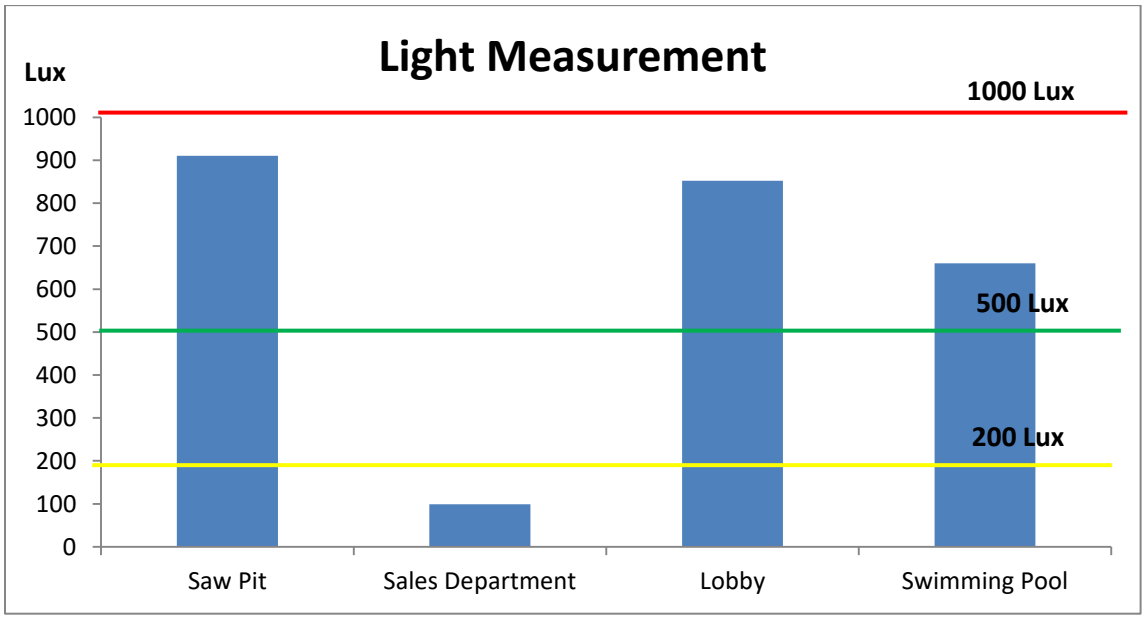
No.	Location/activity	Light Intensity (Lux)
1.	Emergency light	10
2.	Outdoor non-working areas	20
3.	Simple orientation and temporary visits (machine storage, garage, warehouse)	50
4.	Workspace with occasional visual tasks only (corridors, stairways, lobby, elevator, auditorium, etc.)	100
5.	Medium precision work (simple assembly, rough machine works, welding, packing, etc.)	200
6.	Precision work (reading, moderately difficult assembly, sorting, checking, medium bench and machine works, etc.), offices	500
7.	High precision work (difficult assembly, sewing, color inspection, fine sorting, etc.)	1,000 – 3,000

*International Finance Corporation (Environmental Health and Safety Guideline) General

Table 4-37 Light Measurement Result

No	Location	Measure value (Lux)
1.	Saw Pit	910
2.	Sales Department	98.8
3.	Lobby	852
4.	Swimming Pool	660

*International Finance Corporation (General Environmental Health and Safety Guideline)

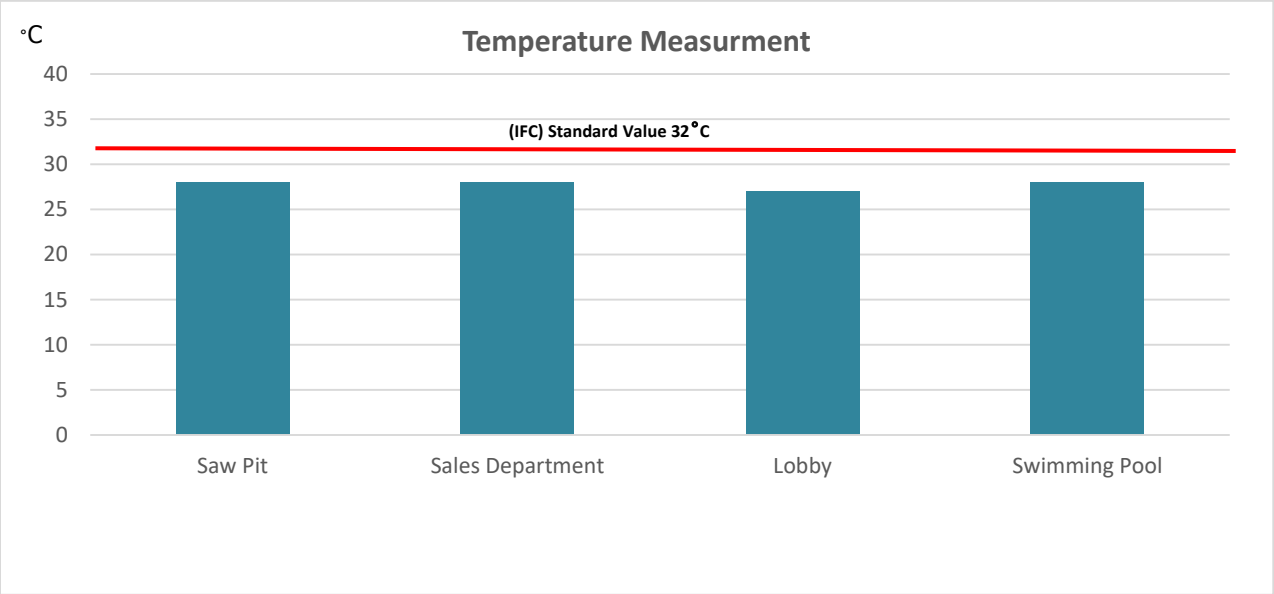


*International Finance Corporation (Environmental Health and Safety Guideline) General

Figure 4-9 Light Measurement Result in Bar Chart

Table 4-38 Temperature Measurement Result

No	Location	Measure Value (°C)	(IFC) Standard Value* (°C)
1.	Saw Pit	28	32
2.	Sales Department	28	
3.	Lobby	27	
4.	Swimming Pool	28	



*International Finance Corporation (Environmental Health and Safety Guideline) General

Figure 4-10 Temperature Measurement Result in Bar Chart

Table 4-39 Temperature and Light Measures Activities Photos

Temperature measurement activities

Light measurement activities

4.8.5. Vibration

The vibration was measured on 1 point near saw pit. The results from saw pit is quite higher than the ISO guideline where the other results are within acceptable level. The result and ISO guideline can be seen in Figure 4-11 and Table 4-40.

Table 4-40 Vibration Measurement

No	Location	Measure value (mm/s)
1.	Saw Pit	3.1

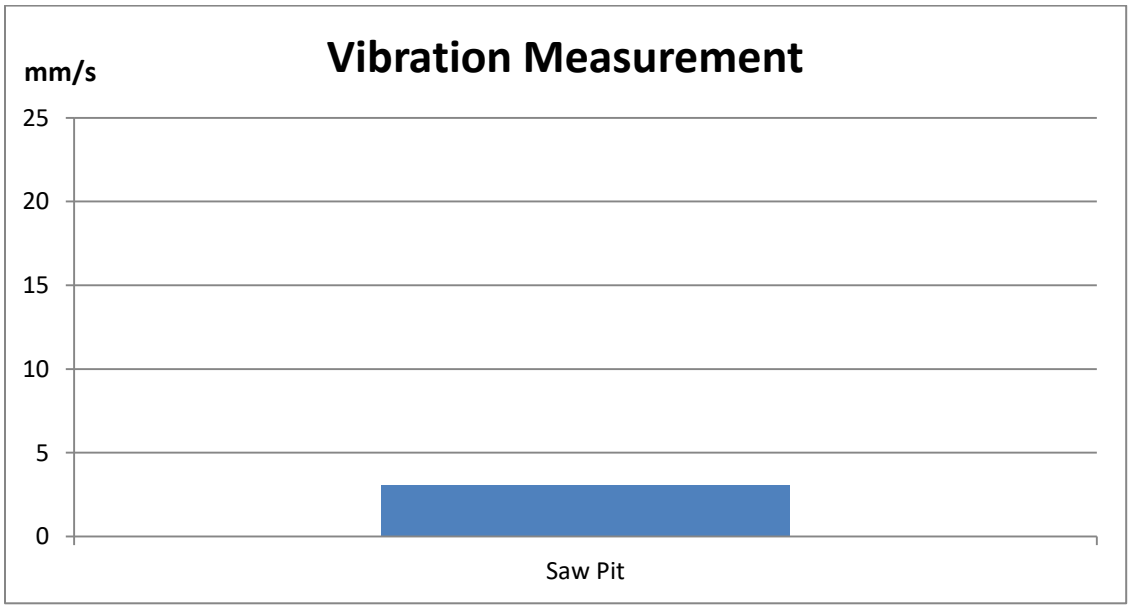


Figure 4-11 The Vibration Result

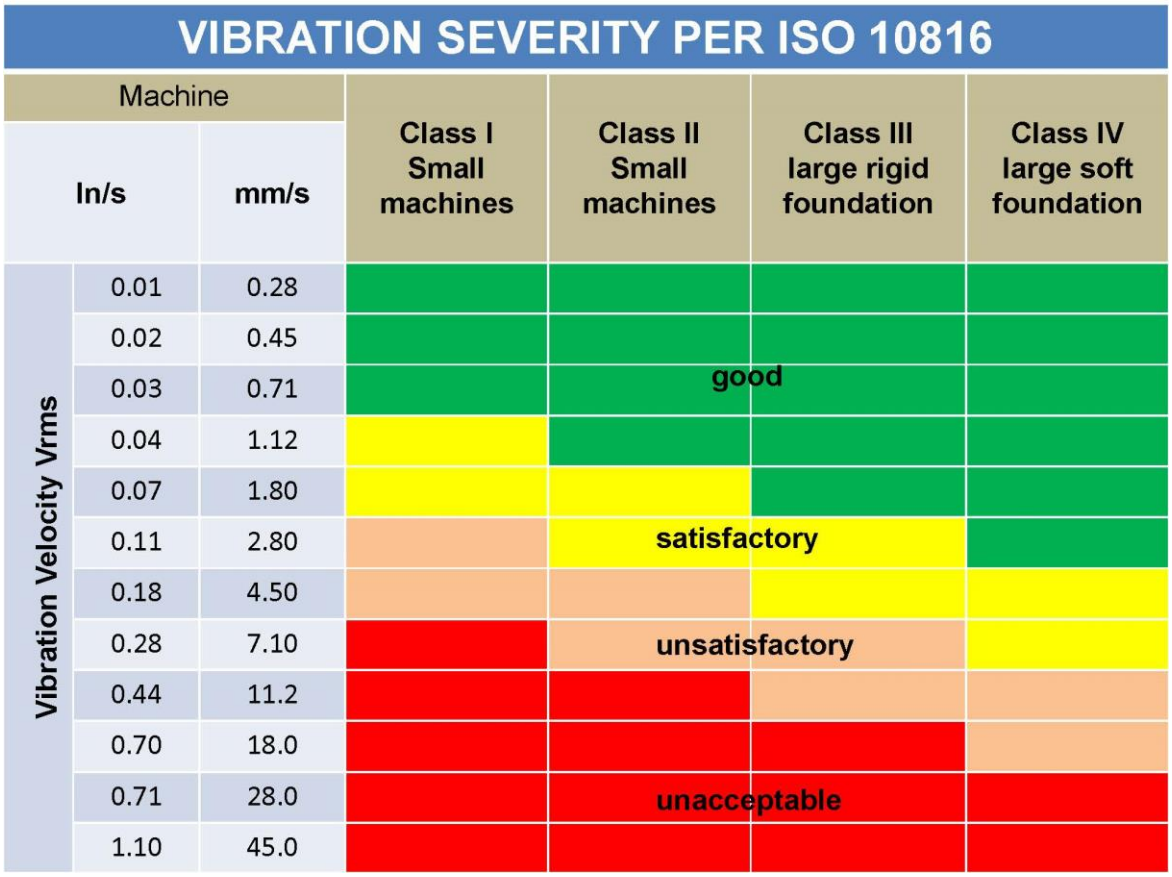


Figure 4-12 Vibration Severity Per ISO 10816

CHAPTER 5
ENVIRONMENTAL IMPACT ASSESSMENT

5.1. SUMMARY OF ENVIRONMENTAL, SOCIAL AND HEALTH IMPACT ASSESSMENT

This chapter presents a potential impact assessment arising from the project. The methodological approach required for the project impact assessment is viewed from the impact assessment methods recommended by the Canadian Environmental Assessment Agency (1990), by the World Bank (1991) and by the International Finance Corporation (Dec. 1998).

5.2. ASSESSMENT METHODOLOGY

The assessment consists of description of how an environmental impact will be formed or how the project will interact with the environment, the mitigation and environmental protection measures aimed to reduce or eliminate the environmental impact and the characterization of the project remaining environmental effects. This would constitute an evaluation of the probability, extent and duration of potential positive or negative impact. These three aspects are combined under one synthesis indicator. Figure 5-1 presents a basic process for evaluating potential impacts from the project.

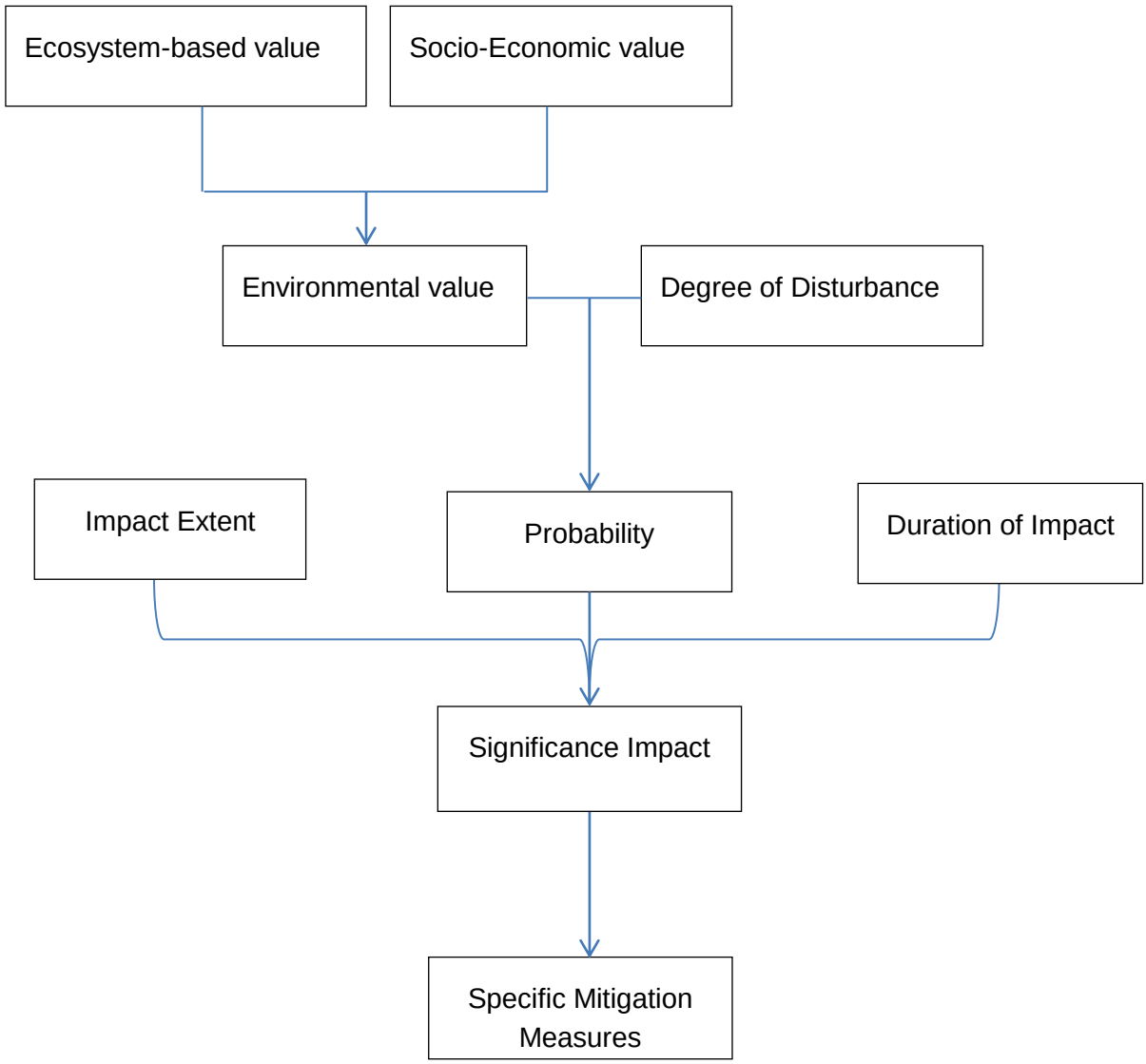


Figure 5-1 Methodology of Impact Evaluation

5.2.1. Environmental Value

The environmental value of a component is the combination of its ecosystem based value and social value.

Ecosystem based value: mention the relative significance of a compound to the ecosystem as measured by its role or part. It coordinates other ideas as representativeness, designs usage and diversity/rare/unique characteristics. This value shows the result of judgment of professionals depending on an efficient examination of the characteristics of the environmental component. The component can be distinguished as follows.

- High: when the component is of major interest in terms of its ecosystem-based function, biodiversity or exceptional qualities and there is an opinion in the scientific community that it should be protected.
- Medium: when the component is of strong interest and recognized qualities and there is concern, although it is not agreed to protect or conserve.
- Low: when the component has little intrigue, holds few eminent qualities and there is little concern for its protection or conservation

Social value: express the relative significance ascribed to the component by the public, the different level of government or any other authoritative or administrative specialists. The social value demonstrates the prevalent or political want or will to moderate the integrity or the initial character of a component. This will is expressed through the legal assurance that the component is agreed or by the concern of the nearby or territorial public for the component. The social value evaluation is dependent on the information collect during various public consultations in the project area. It can be considered as:

- High: when the component is the object of legislative or regulatory measures (conservation parks, etc.) or is essential to human activities (e.g., potable water),
- Medium: when the component is valued or used by a significant portion of the concerned population but is not legally protected,
- Low: when the component is of little concern or not used by the public.

The environmental value can be determined based on the ecosystem-based value and the social value as shown in Table 5-1.

Table 5-1 Determination Grid for Environmental Value

Social Value	Ecosystem-Based Value		
	High	**Medium**	**Low**
High	High	High	High
Medium	High	Medium	Medium
Low	High	Medium	Low

5.2.2. Degree of Disturbance

The degree of disturbance for a component determines the range of the changes that affect the component provided its sensitivity to the proposed development. The changes for a given component may be negative or positive and direct or indirect effect. The total, synergetic or delayed impacts, beyond the simple connection of cause and impact, could open up the degree of disturbance of an environmental component when the environment is particularly delicate. The four levels of degree of disturbances are;

- High: when an affect continues reasonability of the environmental component, strongly and irreversible disables the component or limits its usage in a critical way,
- Medium: when the affect changes, either by diminishing or expanding, the quality or usage of the environmental component influenced, without, however compromising its astuteness,
- Low: when the affect influences the quality use or integrity of the environmental component in a way that is scarcely distinguishable.

5.2.3. Probability of Impacts

The impact probability shows the relative significance of results attributable to a change in an environmental component. The intensity of the affect is an integration of the component's environmental value can be either positive or negative. The impact probability comes out from the interaction of the degrees of disturbance with the environmental value as shown in Table 5-2.

Table 5-2 Determination Grid of Impact Intensity

Degree of Disturbance	Environmental Value		
	High	Medium	Low
High	Highly Probable	Probable	Improbable
Medium	Probable	Probable	Very Improbable
Low	Improbable	Very Improbable	Very Improbable

5.2.4. Extent of Impacts

The impact extent mentions the spatial impacts created by an intervention on the environment. This means either a distance or an area over which a component will undergo changes. It could also mean the population part that will be influenced by the changes. The three levels of the impact extent on the geographical scope of the development as the outline are-

1. National; when an impact affects a large geographic area or few components situated a critical distance from the study area
2. Regional; when an affect influences regional places or a number of components found a critical distance from the development area.
3. Local; when the affect influences a generally limited area situated inside, near or at a restricted distance from the development area,
4. Site-specific; when the impact influences only a very limited site in the closeness of the development site.

5.2.5. Duration of Impacts

The time length of the impact means the time range within a component encounters changes due to the impact, is not necessarily same to the duration in which the direct source of impact is effective. It must also take into review the frequency when discontinuous impact is occurred. It can be considered as;

1. (Life of operation) when continuous effects are occurred for the life of the facility or even beyond if the impact is irreversible.
2. (6-15) when the duration of the effects occur as a long delay, but the duration is shorter than that of life of the operation.
3. (2-5 years) when the effects are occurred over a relatively longed time period during construction.
4. (0-1 year) when the impacts are produced over a restricted time range, generally corresponding to the initial period.

5.2.6. Significance of Impacts

The significance of each impact depending on the identifications that general mitigation measures will be organized into the development. For instance, if the development expresses as a general mitigation measures that woodlands will be protected near watercourses, the affect examination assumes that all forests will be untouched wherever there will be activities near watercourses. Therefore, when the general mitigation measures decrease impacts to the point of rendering them insignificant, they prohibited from advance investigation.

Once the importance of the affect set up as more than irrelevant, described and additional, specific mitigation measures may be proposed to allow optimal integration of the project into the environment. The final assessment phase includes determining the remaining significance of the affect after all mitigation measures are taken in consideration.

In order to assess the likely significant environmental and social impacts of the project were preliminary identified based on the project description and overall environmental and social conditions. The impacts of pollution, natural environment and social environment, health and safety, emergency risk, and others classified as +, 0 to 4 in accordance with the following criteria, assuming no specific measures toward the impacts taken:

+ : Positive impact

0 : No impact or impacts are negligible, no further study required

1 : Impacts are not clear, need more investigation

2 : Some negative impacts

3 : Moderately significant negative impacts

4 : Serious long term negative impacts

The impact assessment and its scale from the interaction among the probability, extend and duration of the impact as shown in Table 5-3.

Table 5-3 Impact Assessment Evaluation

Assessment / Scale	A	B	C	D
Probability	Very Probable	Probable	Improbable	Very Improbable
Extend	National	Regional	Local	Site-specific
Duration	Life of operation	6-15 years	2-5 years	0-1 year
Significant	**4**	**3**	**2**	**1**

5.3. ASSESSEMENT OF ENVIRONMENTAL IMPACTS DURING CONSTRUCTION PROCESS

The construction activities from the project site generate impacts significantly which can affect environment and local people.

The activities may include transportation of construction materials to the construction site (cement bags, sand, etc.), M & E (mechanical and electrical), installation processes and other processes.

Due to these construction process, pollution in air, water, noise and vibration can be occurred. Therefore, proper prior planning of the project site, disposal of waste, health and safety plan should be performed carefully. Evaluation of environmental impacts results during construction phase are presented in Table 5-4.

5.3.1. Negative Impact on Air Pollution

During construction process, especially particulate matter (PM) are emitted from concrete mixer trucks, digging floors and ground of the development, drilling walls for decoration, transportation activities of heavy-duty vehicles, rock blasting, earth moving machines and so on. Besides, air quality can be contaminated due to running diesel generator. However, these processes are normal ones in the construction site and PM emission can be assumed that it is not a serious impact on air quality.

5.3.2. Noise Pollution

Noise may come out from the operation of heavy machineries such as concrete mixer machines, saw pit, earth-moving heavy equipment, rotating concrete mixers, generators and so on. Transportation vehicles can also generate noise emission. Noise generation during construction phase can affect to the surrounding environment. Although the duration of this noise impact may be short, this noise pollution can impact to the surrounding communities

significantly. Local people living near the project site can encounter noise pollution for some time until the project finish because the project site is located in urban area.

5.3.3. Water Pollution

Groundwater is accessed from tube well water. It is used for all construction processes and domestic use. The period of construction activities is restricted, and amount of water is not much used for construction processes. Therefore, wastewater is not produced from construction and renovation operations.

However, domestic wastewater from construction employees was generated from during working time. Source of domestic wastewater generation is toilets and wash water. Therefore, volume of discharged water is negligible amount and this negative impact is insignificant to the environment.

5.3.4. Solid Waste Generation

(a) Domestic solid waste from employees

Construction workers generate domestic solid waste (plastic waste, bottles, food waste, etc.,)

(b) Non-hazardous solid waste from construction processes

Paint buckets, residual waste from the site, cement bags, broken construction materials and other hotel construction wastes were discharged.

5.3.5. Social Components

5.3.5.1. Local economy and livelihood

Positive impacts can be seen in economy and livelihood sector during long-term construction phase. The development can create new job openings for local people especially in construction work. It can also improve the economic growth of Hlaing township.

5.3.6. Health and Safety

5.3.6.1. Facilities

Health and well-being facilities for employees should be supported as follows.

(a) Clean toilets and basins

(b) Adequate purified drinking water

(c) Storage units (e.g., lockers) to keep clothes or their belongings

(d) Clean canteen with good ventilation system and good lighting to relax and have meals

5.3.6.2. Health and safety issues

Construction workers can face health problems especially respiratory systems due to emission of particulate matter (dust) from construction activities. On the other hand, other health issues such as HIV/AIDS and drug addiction can be occurred. Moreover, construction employees can encounter auditory system problems due to noise from heavy machines. Potential negative impacts in health and safety during construction time are presented as follows.

(a) Working at high building during installation materials and painting.

(b) Increased temperature of equipment surface

(c) Air quality of working environment was contaminated with increased amount of dust

(d) Common injuries such as over exertion, dehydration, slips and falling from height likely to be faced

(e) Health risks from handling or exposure to hazardous materials that will be utilized at the construction site

In order to access a healthy working environment, the following facts should be considered.

- Good hearing protectors
- Dust masks
- A reasonable working temperature
- An airy area
- A workplace with waste containers

During construction phase, safety issues can be found and described in the following list.

(a) Control the premises and heavy equipment

(b) No obstacles should be kept on the site routes

(c) Well-maintenance of vehicles/machineries in the project area

(d) Should wear sufficient Personal Protective Equipment (PPE)

5.3.6.3. Accident and Incident

A report of accident, incident at work and occupational disease should be collected to get successful healthy and safety plans. The report can indicate the plans which are needed to decrease the damage. All injuries starting from small case to the big case should be investigated and reported to avoid repetitive damage.

5.3.6.4. First aid kit

First aid kits should be provided in the workplace to protect accidents and sickness. Basic needs and equipment should be included in a first aid kit. A basic first aid instruction guidebook should be placed within the first aid kit. An appointed person have to look after the first aid kit and share essential information to the employees.

5.3.6.5. Maintenance of machineries

Construction staff should maintain and control machineries carefully. Machineries should also be cleaned regularly. Besides, the following list should be considered during maintenance of machineries step.

- Access to equipment and machinery well maintained and regularly cleaned
- Surfaces, structures and installations should be cleaned and maintained, and not allow for accumulation of hazardous compounds
- Regular services of equipment, routine checks, repair work, and replacement of damaged or nonfunctional parts
- Need to maintain heavy duty industrial machines and simple hand-operated devices

Table 5-4 Evaluation and Prediction of Significant Impacts for Construction Phase

Potential Impact	Activities and Source	Components	Magnitude	Duration	Extent	Probability	Significant
Air	Construction activities, diesel generator and vehicle movement	TSP and PM	2	1	2	2	Medium
Noise	Emergency use of diesel generator and the operation of construction equipment and heavy vehicles	Noise	2	4	2	3	Medium
Water	Surface runoff, domestic wastewater	Organic Matter in wastewater	1	1	1	1	Low
Waste	Residue waste and domestic waste	Construction materials, office waste and human waste	2	4	1	3	Medium
Occupational health and safety	Workers' health at the constuction area	Infectious disease; such as AIDS/HIV, Hepatitis B/C, etc. and other physical injuries	1	1	1	1	Low

5.4. ASSESSEMENT OF ENVIRONMENTAL IMPACTS DURING OPERATION PROCESS

The following impacts are potential impacts during operation phase of hotel business;

- Air Quality
- Noise
- Water
- Waste
- Occupational health and safety

All of the impacts during operation phase are not affected directly to surrounding environments. However, some environmental impacts are primarily related to the hotel operation process in which resource utilization is a problem that should be found from a sustainable development perspective, fuels burning, and utilization of raw materials, emission and health and safety for staff performing at the development. All of the significant affects during hotel operation process are shown in Table 5-5.

5.4.1. Potential Negative Impacts on Air Quality

Air pollution may be caused by fugitive dust from loading and unloading of materials and cleaning the floor during the operation phase. In addition, generator used for emergency case, vehicle movements and transportation of materials may produce particulate matters (PM_{10} and $PM_{2.5}$) and other gaseous pollutants such as CO, SO_2, NO_2, and CO_2. However, the impact is not significant because the generator and movements of vehicles will be operated for a short time.

5.4.2. Potential Negative Impacts on Noise

Noise can come out from vehicles that are normally used in transportation field. In some occasion, some people give parties especially during night period. However, the walls of the hotel is constructed with soundproofing materials. Even though neighbors can be interrupted to some range, these negative impacts can be negligible.

According to the result of noise measurement, noise level of source at the operation area within the hotel compound is within the noise level of 70 dBA of NEQ (emission) guideline. Therefore, it can be regarded as it may not be harmful to occupational health and safety of employees.

5.4.3. Potential Negative Impacts on Wastewater

During high demand period, when the hotel operates at its full strength, amount of water consumption will be increased by the use of guests and other requirements of hotel facilities such as laundry, showering, flush toilet, cooking, etc. The proper wastewater treatment plant will be planned to build to treat the hotel wastewater from various sources.

5.4.4. Potential Negative Impacts from Solid Waste

Solid waste from hotel operations will be generated from the cleaning routine of hotel room, kitchen, and dining room as well as from hotel's staff. Variety of solid wastes are paper, glass, plastics, cans, bottles, tins, food waste, etc. Food waste will be produced daily that cause unpleasant odor, other vector-borne diseases and affect the health of the people.

5.4.5. Occupational Health and Safety

5.4.5.1. Lighting and temperature

Hotel will use light tubes and bulbs for general lighting purposes. There are space lighting and task lighting. Activities of the employees in the operating part base on the light quality; thus, it is vital to support sufficient lighting to those operating areas.

5.4.5.2. Physical injuries

Physical injuries may be found in workplaces such as fall on slippery surfaces, improper use of machines and tools and improper product loading and unloading in the store.

5.4.6. Negative Impacts

5.4.6.1. Lack of emergency and firefighting

Fire could start due to many reasons. Potential fire hazards could come from poor electrical connections, improper fuel storage and throwing of cigarettes. In the hotel, fire can spread immediately if fire extinguishers or sprinklers are not sufficiently supplied.

Fire drill training that educates safe and clear exit routes should be supplied. In order to protect fire hazard, smoking lounge should be situated far away from the fuel storage tank.

Table 5-5 Evaluation and Prediction of Significant Impacts for Operation Phase

Potential Impacts	Activities and Source	Components	Magnitude	Duration	Extent	Probability	Significant
Air	Diesel boiler operation, diesel generator and vehicle movement	PM, SO_2, NO_x, CO	2	1	2	2	Medium
Noise	Emergency use of diesel generator	Noise	2	4	2	3	Medium
Water	Domestic wastewater	Organic Matter in wastewater	1	1	1	1	Low
Waste	Industry waste Domestic waste	Production waste Office waste and human waste	2	4	1	3	Medium
Occupational health and safety	Workers' health in operation area	Infectious disease; such as AIDS/HIV, Hepatitis B/C, etc. and other physical injuries	1	1	1	1	Low
Emergency	Fire/ Flood/ Earthquake	Damage and loss of Asset	1	1	1	1	low

5.5. POSITIVE IMPACTS

Potential positive impacts can be found in socio-economic field because more job opportunities are occurred during the project operation phase. Both skilled-level and unskilled-level local worker s will be hired for the hotel services. The development will implement the following practices during operation process:

- Promote the fair treatment, consider non-discrimination and have equal opportunity for employees;
- The project plans to increase the production capacity in this years, surrounding communities will achieve advantages from the source of work force for the hotel;
- Ensure total compliance with national labor and employment laws;
- To avoid exploitation of child labor by contractor, sub-contractor and supply chain; and
- Develop safe and healthy working conditions; and
- The project proponent should try to mitigate or minimize negative impacts when positive impacts are enhanced and maximized to their optimum.

5.6. RISK ASSESSMENT

Risk assessment is carried out in order to protect from accidents and to raise the awareness to prevent from accidents happening. There are five steps of risk assessment such as (1) identify the hazards, (2) decide who might be harmed and how, (3) evaluate the risks and decide on precautions, (4) record the findings and implement them,(5) review the assessment and update if necessary.

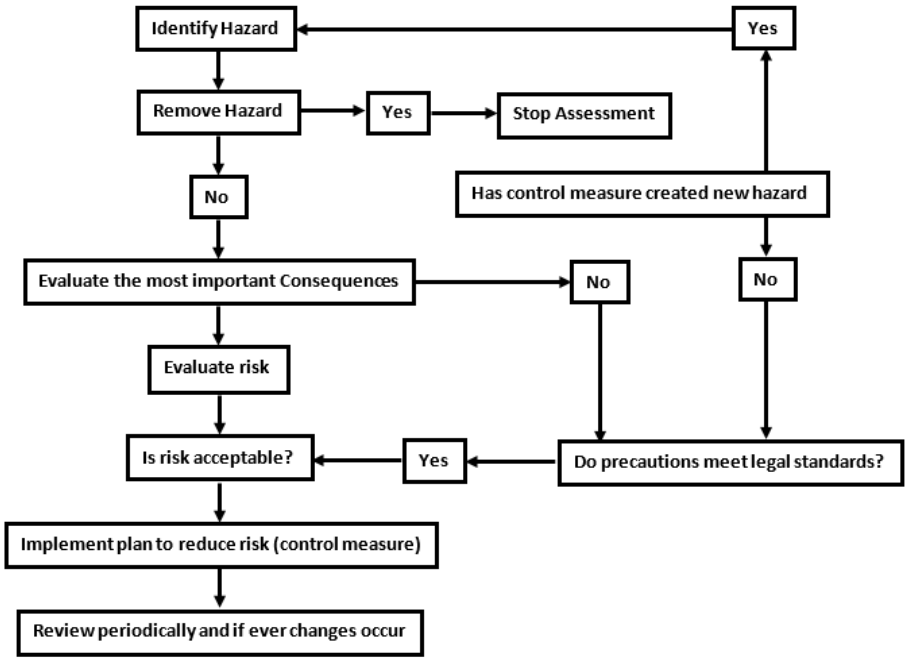


Figure 5-2 Risk Assessment Methodology

5.6.1. Risk During Construction Phase

1. Improper construction procedures
2. Unsuitable equipment and materials
3. Lack of workers and site safety
4. Poor construction occupational safety

5.6.2. Risk During Operation Phase

1. Unqualify use of hotel utilities
2. Delayed deliveries and disruptions
3. Work permission

CHAPTER 6
PUBLIC CONSULTATION AND PUBLIC PARTICIPATION

6.1. OBJECTIVE OF PUBLIC CONSULTATION

The main objective of public consultation is to provide project information, production procedures, waste management and potential environmental impacts to the regulators, authorities and stakeholders. During the public consultation, U Tin Win (Head Officer of Hoya International Hotel) and TBS (consultant) presented the project background, operation processes, environmental conditions, summary of impacts assessment and proposed mitigation measures. Suggestions and comments from the regulators, authorities and stakeholders incorporated in the IEE report. The public consultation held in Fire Station, beside the Yangon-Insein road, Hlaing Township. The detail of the public consultation event is presented below and summary table of attendance sheets, received invitation list and presentation slides are described in ***APPENDIX A*****.**

6.2. ENVIRONMENTAL MANAGEMENT PLAN REQUIREMENTS

Public consultation is necessary as a part of the IEE study. The project proponent and its consultant have to organize a public consultation among regulators, local community, local authority and other relevant organizations on the project development and plans. As a part of IEE requirement, the project proponent publicized about the project developments to the concerned stakeholders as follows;

1. Informing the stakeholders about the project, environmental and social issues related to project operation, and mitigation measures to minimize environmental and social impacts;
2. Considering the views, concerns, and perceptions of stakeholders, communities and individuals that could be affected by the project or who otherwise have an interest in the project

Results of the public consultation are useful to the IEE investigation and public consultation during the remaining course of the IEE.

6.3. APPROACH TO PUBLIC MEETING

The following approach to the public meeting adopted:

- TBS coordinated with, U Tin Win (Head Officer of Hoya International Hotel) to inform and consult about the date and venue of the public consultation meeting.
- TBS prepared and issued the invitation letter and sent to the identified stakeholders and households near the project site on October 3, 2019.
- Informed to all of the concerned stakeholders 8 days prior to IEE study of public consultation meeting.

- The Power Point presentation for IEE study of the project was written and presented in Myanmar language. Further elaboration focuses on environmental monitoring and mitigation measures.
- After finishing the presentation, an open forum is provided for further discussion. Both of U Tin Win (Hoya) and TBS were responsible for answering questions from the participants and addressing the public concern regarding the project development plan in the meeting.

Public Consultation for IEE report following the EIA procedure was conducted on 3rd, October 2019. The methodology and approach which are used to conduct public consultation for Hoya International Hotel Project is summarized below:

6.4. SUMMARY OF PUBLIC CONSULTATIONS AND ACTIVITIES UNDERTAKEN

Public consultation is conducted on 3rd, October 2019 at Hlaing Fire Station, beside Yangon- Insein road, Hlaing Township. The participants in the public consultation were the project proponent, TBS (consultant performing the IEE study), Environmental Conservation Department (Yangon), Ministry of Hotels and Tourism, Township Fire Service Department, Yangon City Development Committee, Directorate of Industrial Supervision and Inspection, Social Security Board, local administrator, and nearby communities. Agenda of the public consultation meeting is shown in Table 6-1.

Table 6-1 Agenda of the Public Consultation Meeting

No	Activities	Time
1	Registration	10:00-10:30
2	Opening Speech	10:30-10:45
3	Introduction Speech from U Tin Win (Head Officer of Hoya International Hotel)	10:45-11:00
4	Power Point Presentation of project description, existing environmental conditions, potential impacts, mitigation measures and environmental management plan by TBS	11:00-12:00
5	Discussion time – comments and suggestion by the concerned stakeholders	12:00-12:30

The Public Consultation started with the announcement of the agenda by Daw Su Myat Kyaw (Environmental Scientist) from TBS. Furthermore, U Tin Win (Head Officer) from Hoya international Hotel gave an introduction speech related to the hotel project profile.

U Tin Win stated that the hotel is located in No. 218, Yangon-Insein Road, Hlaing Township, Yangon, Myanmar and the project is 10-stories building including basements which will be rented as an international hotel resort from a 24-storey building.

Daw Hnin Lai Win (Environmental Manager) of TBS explained and discussed about the IEE requirements for the project. Question and answer section followed after the TBS presentation. Presentation slide shown in ***Appendix A*****.**

6.5. DISCUSSING AND FEEDBACKS RECEIVED FROM MEETING

After the presentation, discussion started for questions and answers section. The main discussion was about environmental issues, as shown below.

Discussion	Photos
Question By U Wanna San (Local Resident):13 Quarter, Hlaing Township ➢ Where do you locate the generator? ➢ What would you do if the noise level from operating generator exceed the standard noise level (NEQG) 70 dBA? ➢ How do you set the direction of the stack? ➢ What is your environmental management plan after the project finished? **Answer** By Daw Hnin Lai Win (Environmental Manager): Total Business Solution Co., Ltd. ➢ The generator is located in the basement room. ➢ The generators can be upgraded or replaced with new one to reduce noise level. Moreover, the generator will be used only for emergency case and when the electricity is shut down. ➢ The direction of the stack will be set according to wind direction and smoke filters will also be used in the stack. ➢ The Hoya International Resort Co., Ltd will conduct environmental monitoring and report to ECD once in every 6 months as long as the project is operating.	 **(1) Question by U Wanna San (Local Resident)**  **(2) Answer by Daw Hnin Lai Win (Environmental Manager Total Business Solution Co., Ltd.)**

Question

By Daw Phyu Phyu Aung (Township Officer): Water supply and Irrigation Department.

- How will you manage the groundwater leakage from basement since the foundation is started?

Answer

By U Tin Win (Head Officer): Hoya International Resort Co., Ltd.

- Pumping the groundwater leakage by compressor and discharge to water channel but the water is still leaking.

By Dr. Soe Moe Kyaw Win (Managing Director and Geological Expert): Total Business Solution Co., Ltd.

- Groundwater leakage is a part of natural phenomenon which cannot be prevented by human activities. However, it will be stopped when the groundwater level reduces naturally in summer otherwise the basement should be filled up.

Advice

From U Wanna San (Local Resident):13 Quarter, Hlaing Township

- The water from leakage can be stored and use for various purposes such as cleaning the construction area, incorporating in mixed concrete, water usage for employee and so on.

(3) Question by Daw Phyu Phyu Aung (Township Officer)

(4) Answer by U Tin Win (Head Officer Hoya International Resort Co., Ltd.)

Question

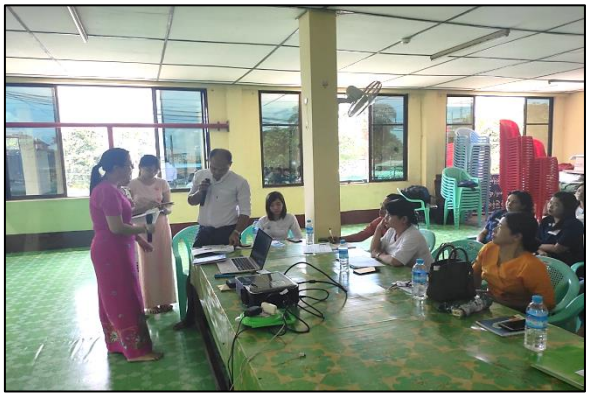
By Daw Than Than Sint (Committee Member (1)): Yangon City Development Committee

- How will you manage the water drainage system?
- What is the plan to extend car parking (proposed 80 vehicles parking space) at the backyard of the hotel because the existing road is narrow and it can disturb the transportation of the local community?

(5) Question by Daw Than Than Sint (Committee Member (1)): Yangon City Development Committee.

Answer

By U Tin Win (Head Officer): Hoya

International Resort Co., Ltd. ➢ We have surveyed along the existing drainage channel and reported to YCDC. We will implement the drainage system as soon as YCDC approved the design of the drainage system. ➢ Currently, we have no plan to build the entrance at the backyard to access the basement car parking. We will use only the main entrance (on the Yangon-Insein road) for the transportation. If we have to extend the construction due to the business growth, we will declare to the local community, government and stakeholders.	
Question By U Aung Phyo Wai (Deputy Staff Officer): Environmental Conservation Department ➢ Where did you collect the wastewater sample? **Answer** By Daw Hnin Lai Win (Environmental Manager): Total Business Solution Co., Ltd. ➢ The wastewater sample was collected from the hotel outlet point where all the wastewater from the project hotel was discharged. **Advice** By U Aung Phyo Wai (Deputy Staff Officer): Environmental Conservation Department ➢ For air quality monitoring, PM2.5 should be monitored according to NEQG guideline.	 **(6)** Question by U Aung Phyo Wai (Deputy Staff Officer): Environmental Conservation Department
Advice From U Soe Min (Deputy Head of Section): Fire Station of Hlaing Township ➢ U Soe Min requested Hoya International Resort Co.,Ltd to supply the water to the Fire Station for emergency cases.	 **(7)** Advice from U Soe Min (Deputy Head of Section): Fire Station of Hlaing Township

6.5.1. Summary of Public Consultation Feature

Twenty-five participants attended the public consultation meeting. Out of total participants, 12% represented the near the project site, 68% represented government authorities and 20% represented the Project proponent. in Table 6-2. Figure 6-1 to Figure 6-5 shown some pictures of the meeting.

Table 6-2 Percentage of Participates and attended of Public Consultation

Community	Number of participants	Total (%)
Nearby communities	3	12
Project proponent	5	20
Government authorities	17	68
Total	**25**	**100**

Figure 6-1 Opening Speech by Daw Su Myat Kyaw (Environmental Scientist from TBS)

Figure 6-2 Introduction Speech by U Tin Win (Head Officer of Hoya International Resort Co., Ltd)

Figure 6-3 Presentation by Daw Hnin Lai Win (Environmental Manager of TBS)

Figure 6-4 Discussion in the Meeting

Figure 6-5 Participants in the Meeting

CHAPTER 7
ENVIRONMENTAL MANAGEMENT PLAN

7.1. INTRODUCTION

This chapter includes the Environmental Management Plan (EMP) of a hotel project. This EMP refers to the procedures and processes, which will be applied to the hotel activities to check and monitor compliance and effectiveness of the mitigation measure to Hoya International Resort has committed. Besides, this EMP is used to ensure compliance with statutory requirement and corporate safety and environmental policies.

7.1.1. Scope of the Environmental Management

The objective of the environmental management is to make sure potential environmental problems arranged by proper mitigation measures in compliance with the relevant laws and regulations stipulated by national authorities. Environmental management based on the basic principles of management known as the P.D.C.A cycle (see Figure 7-1). Environmental management is composed of four related tasks as described below:

- **Plan (P) - What need to be done**

  Mitigation measures for the potential environmental impacts of the hotel such as air emission, noise, solid waste, wastewater and health and safety at work described in this chapter. The Project Proponent will follow the plan for the mitigation measures according to the scheduled time.

- **Do (D) - Implement the plan**

  The Project Proponent as described in this chapter will implement the mitigation measures for the potential environmental impacts appropriately.

- **Check (C) - Monitor and evaluate the results of implementation**

  The effectiveness of the mitigation measures will be monitored, evaluated and documented.

- **Act (A) - Taking corrective actions to improve the results, if found inadequate**

  If nonconformities noted with reference to the environmental monitoring benchmarks, corrective actions need to plan to mitigate the existing environmental impacts.

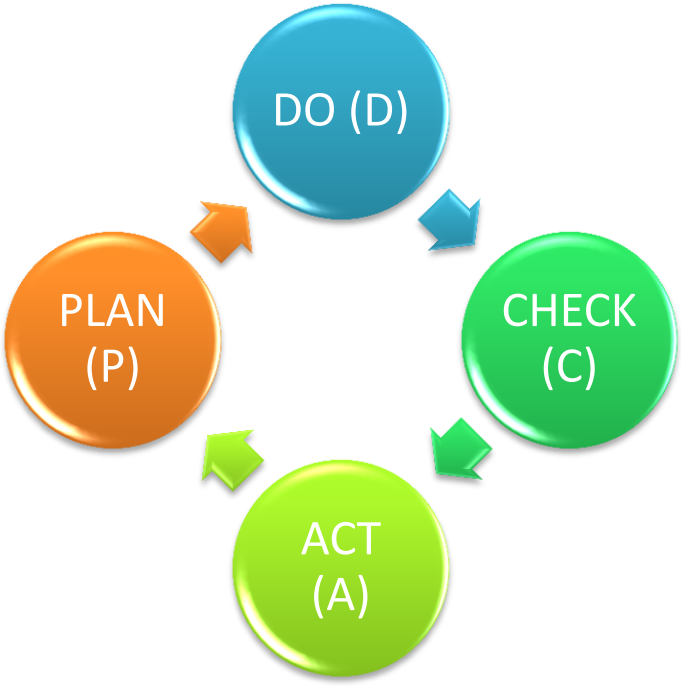


Figure 7-1 Cycle of P.D.C.A

7.2. INSTITUTIONAL REQUIREMENT

HOYA will manage the development of the proposed Project. The Project proponent should appoint Health, Safety and Environment (HSE) team throughout the duration of the Project phases. HSE team is responsible for implementation and monitoring of Environmental Management Plan (EMP) and Monitoring Plan as well as coordination with local authorities and the nearby communities. The HSE team also makes regular review of EMP to cover all potential impacts, amendments and modifications.

7.2.1. Responsibilities of the EMP

In order to ensure the sound development and effective implementation of the EMP, it will be necessary to identify and define the responsibilities. The environmental management practices, procedures, and responsibilities are defined herein to get full compliance with the existing environmental policy, laws, rules and regulations of the Republic of the Union of Myanmar. The following entities should be involved in the implementation of this EMP:

- HOYA International Resort Co., Ltd.
- Environmental Conservation Department (ECD)
- Third-Party Environmental Consultant (TBS)

The environmental management practices, procedures and responsibilities are defined herein to get full compliance with the existing environmental policy, laws, rules and regulations of the Republic of the Union of Myanmar. The Environmental Management Plan (EMP) is prepared for the proposed project covers the anticipated impacts of the said project, mitigation measures, management and monitoring plans during each of the phases:

- Construction Phase

- Operation Phase
- Decommission Phase

The Environmental Management Plan (EMP) is a site-specific plan developed to ensure that the Project is prepared in an environmentally sustainable manner where the Project proponent including consultants, understand the potential environmental risks. There are five main sections in this EMP plan and detailed EMP plan based on the project activities.

i. Proposed Mitigation Measure
ii. Environmental Monitoring Plan including with Monitoring Guidelines and Standards
iii. On-site Management Plan
iv. Emergency Preparedness Plan and Training Program
v. Budget Allocation for Environmental Management Plan (EMP)
vi. Corporate Social Responsibility (CSR) Plan

7.3. ENVIRONMENTAL MITIGATION MEASURES

This section presents the proposed mitigation measures that HOYA will adopt to facilitate the management and control of potential adverse impacts associated with the project activities, which were described in **Chapter 5**. The proposed mitigation measures are verified to be practical and implementable in operational conditions. Mitigation measures will be taken into account in project implementation and execution such that potential adverse impacts are reduced to as low as reasonable practical. The mitigation measures are presented for each phase in Table 7-1 and Table 7-2.

Table 7-1 Environmental Mitigation Measures for Construction/ Decommission Phase

Source	Mitigation Measures
Air Emission	
▪ Traffic emission ▪ Combustion processes such as diesel engines and gas turbines ▪ Fugitive gases from loading operations and losses from equipment ▪ Burning sources from well testing Paint and other related chemical for construction activities	▪ Water should be sprayed as suppressants to increase the moisture content. ▪ Chemical dust suppressants are an alternative to water application. ▪ Construction material should be covered by Tarpaulin while transportation. ▪ Mask with dusk filter should be provided to workers. ▪ Banning of old diesel or gasoline powered cars for construction by defining specific types and ages of vehicle. ▪ Improved in the quality of diesel/ gasoline for construction related vehicle/equipment. ▪ Restore, resurface and rehabilitate the disturbed area as soon as practicable after completion of construction or renovation.
Solid Waste	
Construction processing material waste such as iron, steel scrap, fly ash, wood pieces, clay, brick, stone, ceramics, rubber, gypsum, wire, aluminum products, light bulbs, etc.	▪ Prepare proper waste bins or containers for separate waste collection in construction site. ▪ Provide enough storage area for construction materials. ▪ Inspect temporary waste disposal site regularly. ▪ Prohibit open burning waste in the project site. ▪ Health impact training for workers related to waste handling.
Noise	
▪ Using heavy machines Construction activities	▪ Use equipment and machines which generate low noise levels. ▪ Change vehicle types and driving habits can affect the intensity of exposure to noise. ▪ Driving behaviors such as over-revving or tire squealing that intentionally increase noise should be prohibited to drivers. ▪ Uneven driving such as frequent acceleration or deceleration of speed can result in increase in noise emissions. ▪ Provide adequate ear protection (ear plugs or muffs) to workers working in the excessive noise areas.
Occupational Health and Safety	

Source	Mitigation Measures
▪ Heat stroke and heat exhaustion ▪ Hypotension ▪ Vomiting ▪ Heavy sweating ▪ Faintness ▪ Dizziness ▪ Fatigue ▪ Weak, rapid pulse ▪ Low blood pressure upon standing ▪ Muscle cramps ▪ Nausea ▪ Headache	▪ Insulated gloves, insulated suits, reflective clothing, or infrared reflecting face shields should be provided. ▪ Rotating job functions and incorporate work/rest cycles among workers can help minimize to heat exposure. ▪ Workers should have an emergency response plan in place if works suffer heat-related illness. ▪ Workers must have adequate potable (safe for drinking) water close to the working area and should drink water frequently.
▪ Slip and fall ▪ Bumping ▪ Use of heavy vehicle Moving parts of machinery	▪ Clean working area regularly. ▪ Avoid walking on slippery floors. ▪ Warning signs around spills or wet floors. ▪ Use non-slip footwear. ▪ Illegal drugs or alcohol must be prohibited at any time on working hours. ▪ Workers who are taking prescription medication that may affect their safety at work should be informed to the supervisor to assign appropriate duties. ▪ Provide all workers for construction site with PPE. ▪ Provide First Aid Kids sufficiently at the construction area and coordinated with nearby hospital for admission in case of accidents. ▪ Restricted to use mobile phone while driving a motor vehicle or equipment. ▪ Wearing seat belts while operating a moving vehicle. ▪ Firefighting equipment and portable fire extinguishers shall be properly provided in construction area.
▪ Direct contact of person to person, animal to person ▪ Insect bites ▪ Food contamination ▪ Poor personal hygiene practices ▪ Poor cleanliness in the workplace	▪ Wash the hands thoroughly with water and soap after visiting the toilet, preparing food, and after touching equipment. ▪ Any cuts or abrasions should be covered with a waterproof dressing. ▪ Do not share personal items such as towels, clothing, razors, toothbrushes, and shavers among workers. ▪ Regularly wash the floors, bathrooms and surfaces with hot water and detergent. ▪ Health impact training for workers about waste handling. ▪ Stay at home if workers have signs and symptoms of an infection. ▪ Practice about good personal hygiene for workers. ▪ Environmental and health related education programs

Source	Mitigation Measures
	should be provided to raise awareness.
Vibration	
▪ Poorly designed or maintained vehicles or machinery during construction activities	▪ Install a non-vibrating products or tools. ▪ Proper and regular maintenance of all vehicles and machinery. ▪ Limit the amount of time of a worker or frequent breaks from exposure of vibration.

Table 7-2 Environmental Mitigation Measures for Operation Phase

Source	Mitigation Measures
Air Emission	
▪ Vehicles movement used for transportation of the guests and other required materials for hotel. Operation of emergency generators, air conditioning system, refrigerators, and boiler.	▪ Install sufficient ventilation/fume hoods must be used in places where exposures can be excessive ▪ Regular maintenance of vehicle for operation controls. ▪ Speed control is enforced around hotel area. ▪ Install sufficient exhaust stack in the hotel. ▪ Use vacuum cleaner for cleaning the works place. ▪ Turn off equipment when not in use. ▪ Proper ventilation for generator house. ▪ Regular maintenance of equipment and machines. ▪ Provide enough PPE to employee.
Solid Waste	
▪ Domestic solid waste from hotel and employees such as food waste, plastic, paper, glass, metal can, sanitary napkins, tissue paper, garden waste, etc.	▪ Waste should be segregated at source by types of waste and systematically disposed into separate containers. ▪ 3R (reuse, refuse, recycle) should be promoted for employees by awareness-raising campaigns and environmental training program. ▪ Use marked bins to segregate hazardous and non-hazardous wastes. ▪ Used qualify chefs for the kitchen and assign certain employees to check the expiry data of all foods every day. ▪ Separated stored the meals and vegetables in the kitchen.
Wastewater	
▪ Domestic wastewater such as from toilets, showers, and kitchen sinks, laundries, etc. ▪ Storm water runoff from roofs, roads, paths into drains after	▪ Avoid generating unnecessary wastewater by installing the water-saving device in the hotel. ▪ Separate the drainage and pipeline system for sewer line, surface runoff, treated wastewater.

Source	Mitigation Measures
raining. ▪ Septic tank	▪ Regularly check the septic tank to avoid leakage of sewage.
Noise	
▪ Operating machinery and equipment	▪ Use equipment and machines which generate low noise levels. ▪ Reducing the volume of the sources by periodic maintenance by covering, period cleaning, lubricating machinery, aligning moving parts. ▪ Creating barriers, using sound-absorbing materials wall to prevent and reduce reflection. ▪ Provide adequate ear protection (ear plugs or muffs) to workers working in the excessive noise areas such as near generator and air compressor.
Fire Hazard	
▪ Fire hazard ▪ Flammable and explosive chemicals ▪ Improper wiring system	▪ The hotel designates the emergency response team and receives training in fire prevention, use of fire equipment, first aid and emergency medical rescue. ▪ The employees receive basic firefighting from a local firefighting authority. ▪ Draw up a plan for emergency response and procedures. ▪ Provide adequate PPE, provision of firefighting equipment, install lighting rods and arresters. ▪ Display warning signs, addresses/phone numbers of fire Brigade, ambulance service, hospital, police station, etc. ▪ Educate workers for safety awareness in work place.
Natural Disaster	
▪ Flood	▪ Project area is elevated enough to protect the flooding during monsoon season. ▪ Proper drainage system should be managed to protect flooding condition. ▪ Emergency response team should be training to evacuate during flooding condition.
Occupational health and safety	
▪ Operation area	▪ Create safety condition for work places ▪ Educate and train workers for good working practice, good safety practice and good house-keeping practice ▪ Prevent and avoid accidents at work places. ▪ Use eye protection and impermeable gloves as protective equipment while handling the hazardous

Source	Mitigation Measures
	materials. ▪ Educate and train them for health education and workers in First Aid Kid training. ▪ Provide first aid box with medicines and drugs comprising anti-malaria, anti-cholera and anti-toxicant. ▪ The workplace must be hygiene with adequate facilities provided for cleaning food, utensils and equipment. ▪ Employees who are directly involved in the production process should not work while affected by infectious diseases. ▪ Factory shall have a dispensary run by a certified nurse. ▪ Conduct annual medical checkup for current staffs. ▪ A qualified medical doctor shall be appointed to perform medical checkups. ▪ Reporting of occupational incidents.

7.4. ENVIRONMENTAL MONITORING PLAN

Monitoring of the anticipated environmental and social impacts in the receiving environments is important in evaluating the effectiveness of mitigation plan and compliance with the regulatory measures in place. During the operation phase and closing phase, monitoring will be undertaken to ensure that proposed mitigation measures for negative impacts and enhancement measures for positive impacts are implemented.

Main objectives of environment monitoring plan include;

5. To identify and resolve environmental issues and other functions that may arise during the operation phase
6. To implement water quality, air quality and noise impact monitoring plan during the operation phase
7. To conduct regular reviews of monitored data as the basis for assessing mitigation measures are identified, designed and implemented;
8. To assess and interpret all environmental monitoring, data to ascertain whether environmental control measures and practices are functioning in accordance to specifications

7.4.1. Internal monitoring and inspection report

The responsible EMP cell members may conduct daily, weekly or monthly general inspections of the Project area and facilities. The objectives are to identify non-compliances to EMP. Operation and closing phase on site monitoring program are shown in Table 7-3 and Table 7-4.

Table 7-3 Operation phase on-site monitoring program

Monitoring item	Monitoring Parameter	Monitored Aera	Frequency	Responsible Person
Air quality	TSP and PM_{10}	Operating Area	Twice a year during operation phase	Consultants under supervision Team/Responsible officer of HOYA
Noise	Noise level (dB(A) scale)	Operating Area	Twice a year during operation period	Consultants under supervision Team/Responsible officer of HOYA
Solid waste	Domestic waste, food waste, and paper and general office waste	• Temporary storage sites within the Project compound • Record disposed frequency	Weekly	Waste Collector/ Responsible officer of HOYA
Hazardous and Chemical Substances	Record hazardous & nonhazardous material in storage area	Fuel storage area	Monthly	Responsible officer of HOYA
Occupational Health and Safety	Incident/accident records	At the production site	Monthly	Responsible officer of HOYA

Table 7-4 Construction/ Decomission phase on-site monitoring program

Monitoring item	Monitoring Parameter	Monitored Aera	Frequency	Responsible Person
Air quality	TSP and PM_{10}	1 station at closure site	Once during Construction/ Decomission period	Consultants under supervision of contractor/ HOYA
Noise	Noise level (dB(A) scale)	1 station at construction site	Once during Construction/ Decomission period	Consultants under supervision of contractor/ HOYA
Solid Waste	Demolition debris, including concrete, rocks, metal, drywall, wood, glass, adhesives, and other hazardous demolished materials	Disposal sites of closing phase of factory	Once during Construction/ Decomission period	Contractor/ HOYA

Monitoring item	Monitoring Parameter	Monitored Aera	Frequency	Responsible Person
Occupational Health and Safety	Incident/accident records	Decomission site and working area	Daily	Contractor/ HOYA

7.5. ON-SITE MANAGEMENT PLAN

7.5.1. Wastewater Management

During operation, an average 150 liters/person/day[7], total volume of wastewater to be generated from 200 workers has been estimated at 30,000 liters/day. On-site drainage channel and proper sanitation facility are installed around the Project compound. Domestic wastewater which is relatively small quantity discharges to the drainage channel is flowed to the nearby municipal drainage.

7.5.2. Solid Waste Management

Waste generated within the Project compound shall be well managed. Solid wastes such as domestic wastes from worker shall be properly dumped at approved dumped site. 78 kg/day of domestic solid waste generated by about 200 employees[8].

It is recommended that the Project proponent will dump remaining solid waste two times per week at the MCDC solid waste collecting sites and also domestic wastes from workers will dump together at the collecting sites. All the mitigation measures described earlier will be duly implemented.

7.5.3. Fire Management

The Project proponent has to form the fire protection and fire fighters teams in order to train practical proper usage of fire extinguisher, fire sand, fire stick and fire hook. Fire precaution signboard and all posters such as Fire Caution, No Smoking, etc., need to be hang-up visibly in necessary places.

Moreover, the Project proponent has to install fire detectors, alarm systems, sprinkler systems and provision of fire-fighting equipment based on the requirements of Myanmar's fire codes. Safety manager has to arrange fire-fighting training once a year and conduct fire drill monthly. Safety manager has to establish emergency exit ways and muster points in the factory compound with clear marking.

Safety manager has to provide access to emergency services of the nearby hospitals and direct communication link with local fire brigades and other relevant government authorities.

7.5.4. Provided Factory Clinic

Workers can be injured due to falling on slippery floors and improper use of machine and tools.

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[7] U.S.EPA. (1978), Environmental impact statement phase II, Facility Plan Handover Country, Virginia 3rd Edition.

[8]The Yangon City solid waste generation rate as of 2012 is 0.39 kg per person per day (Pollution Control and Cleansing Department, Yangon City Development Committee, 2014).

Food-borne diseases like diarrhea, food poisoning and seasonal diseases such as influenza (Flu) and dengue fever may occur among the workers. The crowded conditions in the quarry site create ideal conditions for transmission of infectious diseases.

It is required to provide clean and healthy facilities such as hygienic eating areas, ventilated working areas and clean toilets etc. Provide first aid service under the supervision of qualified medical officer and nursing staff. Yearly medical check-up should be provided for the workers for their health and safety. It is also required to draw up emergency response plan, nearest hospital location maps and phone numbers of fire department, administrative offices.

7.6. EMERGENCY RESPONSE PLAN

Health and safety manager are responsible for the emergency response plan, which is the factory Occupational Health, Safety and Environmental program (OHSE) part. Factory emergency respond procedure should be listed as follows:

- Fully provided first aid facilities
- Essential fire-fighting equipment for burning cases
- Assessment of emergency services from convenient hospital
- Communication network with industrial or fire services departments and other relevant government organizations
- Safety training procedure for working environment.

Health and environmental management also play a major role in emergency response plan.

7.6.1. Good working practices and Good safety practices

HOYA shall follow, as practical as possible environmental health and safety standard and guidelines. The Project proponent has own program for capacity building and training covering good working practices and good safety practices. The Project proponent shall also follow EHS guidelines and international standards for the ecofriendly operation of the quarry production as already mentioned earlier.

The Project proponent has a plan to construct clean and hygienic toilets separating between men and women workers. Daily sanitation shall be done using proper pest control system. The purified drinking water for all workers should easily be assessed. Uniforms and safety wares for workers have to be arranged adequately.

7.6.2. Reporting on training program

As mentioned earlier, there must be a regular monitoring and inspection of all training programs provided such as firefighting training, first aid training and training for quick response and preparedness such as drills and mock drills.

EMP cell members conducting monitoring and inspection works must be able to interpret and assess the overall condition of the training processes especially assessment of the effectiveness and applicability of each training.

A report on the training program including assessment on its effectiveness must be submitted at the end of each training program.

7.6.3. Incident, accident and emergency report

In incident and accident cases of work place, these reports will be submitted immediately. This must also be submitted not only by verbal statement but also by written report. In the written statement, more comprehensive information should be reported in which the situation and cause of accidents, time period and accident intensity are included. Besides, the report should include how actions for emergency and contingency plans are taken. However, incidents are not necessary to report because most security staff inform these cases and take action.

7.7. RECORDING AND REPORTING

Recording and reporting processes are regarded as important management tools to make the operation to be sustainable.

Two types of monitoring reports after environmental monitoring and site inspection are differentiated. In the first type, it is for internal usage to get feedback for the environmental management system. Finally, annual review should be arranged and an annual environmental management report should be submitted to the MONREC/ECD every 6 month under the EIA procedure.

7.8. BUDGET PLAN FOR ENVIRONMENTAL MANAGEMENT AND MONITORING

This section describes the budget plans for the environmental management and environmental monitoring by the project proponent. On the other hand, HOYA will take necessary environmental mitigation measures and its expenses for the environmental management not only at the operation phases but also at the closing phase in accordance with their responsibility for the studies of recommendation.

A small EMP cell consisting of 2-5 members has formed; the hotel manager should be the EMP cell leader. Other cell members will include and differentiate into technicians together with employees. If possible, some of these cell members should deploy for doing monitoring and inspection works effectively to implement EMP.

The following table shows the expenditures for the implementation of Environmental Management Plan for operation phase annually. Estimation cost for EMP implementation is presented in Table 7-5.

Table 7-5 Cost estimated for EMP implementation

No	Proposed Environmental Mitigation Measures	Estimated Budget (USD)
Environmental Work		
1	Monitoring program	2,500
2	Capacity building and training	1,000
3	Emergency case	2,000
Health and Safety Work		
4	Personal protective equipment	5,000-10,000
5	Medical for Clinic (per year)	3,000
6	Fire Extinguisher	1,000

7.9. CORPORATE SOCIAL RESPONSIBILITY (CSR) PLAN

The CSR activities have the objective to upgrade the quality of life and achieve favorable relations from all communities in the operation area.

HOYA has a plan to implement and donate 2 percent of the profit (2%) per year for Corporate Social Responsibility (CSR) and Employee Welfare Arrangement in Table 7-6.

Table 7-6 Table 7-7 Corporate Social Responsibility (CSR) Program Purposes

No	Donation Purposes	Contribution in percentage (%)
1.	To support the protection of the environment	0.4
2.	To provide education sector	0.4
3.	Elderly and other charity work	0.4
4.	Orphanages and religious purposes	0.4
5.	Other general development of the city	0.4

7.10. COMMITMENTS OF HOYA INTERNATIONAL RESORT CO., LTD

HOYA has responsibility for the conservation of the environment of the development site and surrounding areas. Moreover, it shall perform by following Ministry of Natural Resources and Environmental Conservation (MONREC) procedures. In order to prepare an EMP report, measurements are necessary to perform for protection, mitigation and monitoring significant environment impacts which come out from the implementation and operations of a project. Besides, mitigation activities should also be prepared and include in the EMP report. In accordance with the environmental policy, submission of EMP report will be carried out. HOYA shall have responsibilities for environmental impact assessment. Necessary responsibilities are described as follows.

(f) Investment of HOYA is composed of foreign (93%) and local (7%) investment.

(g) Environmental management plan is well organized and strongly managed.

(h) The plan is performed strictly and the hotel project followed the instructed procedure with suitable rules and regulations.

(i) HOYA International Resort Co., Ltd will carry out commitments completely and continuously. In these commitments, activities which can reduce the environmental impact and plan will be involved.

(j) During the operation phase, the company will perform the proposed environmental management plan to upgrade by using updated technologies and systems and workplace requirements according to the comments from ECD.

(k) HOYA International Resort Co., Ltd will manage environmental and social management plan to avoid the issues to surrounding communities before the closure.

CHAPTER 8
CONCLUSION AND RECOMMENDATION

8.1. CONCLUSION

This Initial Environmental Examination (IEE) report and Environmental Management Plan (EMP) has been prepared for HOYA International Resort Co., Ltd. The main objective of the study is to identify the major environmental impacts due to the implementation of the project activities in all phases such as construction/decommission phase and operation phase. Therefore, assessment of potential environmental impacts and preparing of environmental management plan with recommended impact mitigation measures were prepared for operation phase and closure phase according to the compliance with environmental impact assessment procedure (2015) and National Environmental (Emission) Guidelines.

In this IEE report study, baseline environmental data collection and site visit activities conducted on 2019, July 11th and August 1st, 26th, 27th. According to the data interpretation for monitoring results were compared with National and Environmental Quality (emission) guideline and international guideline standards.

The assessment of each impact is based on consideration of the magnitude, duration, extent and probability of activities which are going to be carried out during operation and closure phases. Evaluation of environmental and social impact assessment and detail consideration can be seen in **Chapter 5**.

In conclusion, it has been figured out that, the Project proponent creates local employment opportunities and enhance capabilities and working skills of employees. Consequently, their socio-economic standard is expected to be improved and undertaking corporate social responsibilities (CSR) as recommended. The study further concluded that positive impacts will be of immense benefit to the local community and national development as well.

8.2. RECOMMENDATIONS FOR FUTURE WORKS

The following recommendations have been made for efficient and effective implementation of environmental conservation, health and safety and social responsibilities through the lifespan of the Project.

- Follow the comments and suggestions made by ECD after reviewing this IEE report.
- Once concerned authorities approve EMP, strict implementation is essential.
- For full and proper implementation of EMP, well understanding and supports by proponent and authority is deem necessity.
- Well experienced and knowledgeable HSE manager and HSE assistants shall be appointed.

- Daily, monthly and annual action plan shall be formulated based on this EMP and practiced at operation level.
- Keep full records of environmental management activities and present annually to independent third party for environment audit.
- Follow the audit report and comments.
- Abide environmental policy, laws, rules and instructions of the Republic of the Union of Myanmar.

APPENDIX A
Public Consultation Meeting

Hoya International Hotel အတွက် တက်ရောက်သူစာရင်း

စဉ်	အမည်	ရာထူး	ဌာန	ဖုန်းနံပါတ်	လက်မှတ်
၁။	ဒေါ် ချုချုအောင်	မြို့နယ်တာဝန်ခံ	ရေပေးရေး	09250062242	[signature]
၂။	ဒေါ်ဝေဝေမာ	ဦးစီးအရာရှိ	လူမှုဖူလုံရေးအဖွဲ့	09420093889	[signature]
၃	[illegible]	[illegible]	[illegible]	09252696167	[signature]
၄။	[illegible]	[illegible]	[illegible]	09450041530	[signature]
၅	[illegible]	[illegible]	[illegible]	09-450391718	[signature]
၆	ဦးကိုကိုအောင်	[illegible]	[illegible]	09977275227	[signature]
၇.	[illegible]	[illegible]	[illegible]	0944455592	[signature]
၈.	[illegible]	[illegible]	[illegible]	09250181800	[signature]
၉	[illegible]	[illegible]	"	09.779 599654	[signature]
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၁၁.	[illegible]	[illegible]	[illegible]	09-974222928	[signature]
၁၂.	[illegible]	[illegible]	[illegible]	09.54039592	[signature]
၁၃	[illegible]	[illegible]	[illegible]	09-260517963	[signature]

Hoya International Hotel အတွက် တက်ရောက်သူစာရင်း

စဉ်	အမည်	ရာထူး	ဌာန	ဖုန်းနံပါတ်	လက်မှတ်
၁၄	ဦးအောင်မြင့်ဝေ	DSO	ပတ်ဝန်းကျင်ထိန်းသိမ်းရေး	09971490556	[signature]
၁၅.	ဒေါ်လင်းလင်းချစ်	တာဝန်ခံ (ရေဆိုး)	စည်ပင် -	09443075075	[signature]
၁၆	ဦးသန့်ဇော်ဦး	ဒု တာဝန်ခံ (သယ်ပို့)	လမ်း / တံတား	09421011897	[signature]
၁၇	ဦးကျော်ဘိုက်.	တာဝန်ခံ (ဘဏ္ဍာ) ရေစီး/ရေလာ	ရေစီးရေလာ ဌာန.	၀၉. 787241770.	[signature]

Hoya International Hotel အတွက် တက်ရောက်သူစာရင်း

စဉ်	အမည်	ရာထူး	ဌာန	ဖုန်းနံပါတ်	လက်မှတ်
1.	Aik Maung Nyunt	DM	HoYA Hotel	0925734562?	Maung nyunt
၃	[illegible]	head century [illegible]	The century [illegible]	09.77817328	[illegible]
3	[illegible]		The century	09.9601579[illegible]	[illegible]
4.	U Ye Win Aung.	supervisor.	HOYA Hotel.	09.4523341[illegible]	[illegible]
5.	Naing Naing		The Century	09.796384381	[illegible]
6	U THEIN SHWE	[illegible]	13 [illegible]	09.260922295	[illegible]
7	TIN MG TUN	[illegible]	13 [illegible]	09. 260922295	[illegible]
8	[illegible]	"	13 [illegible]	09 [illegible]	[illegible]

HOYA INTERNATIONAL RESORT CO., LTD.

ကနဦးပတ်ဝန်းကျင်ဆန်းစစ်ခြင်းအစီအစဉ် (IEE) အများပြည်သူနှင့် တွေ့ဆုံဆွေးနွေးပွဲ

Presented by
Total Business Solution Co., Ltd

(၃) ရက်၊ အောက်တိုဘာလ၊ ၂၀၁၉ ခုနှစ်၊

ဆွေးနွေးတင်ပြမည့် အကြောင်းအရာများ

၁။ ကနဦးပတ်ဝန်းကျင် ဆန်းစစ်ခြင်းအစီအစဉ်(IEE) ပြုလုပ်ရခြင်း၏ ရည်ရွယ်ချက်။

၂။ ဟိုတယ်စီမံကိန်း၏ အကြောင်းအရာများကို တင်ပြခြင်း။

၃။ ဟိုတယ်စီမံကိန်းလုပ်ငန်းကြောင့် ဖြစ်ပေါ်လာနိုင်သော ပတ်ဝန်းကျင်အပေါ် အကျိုးသက်ရောက်မှုနှင့် လျော့ပျောရေး အစီအစဉ်များ။

၄။ ပတ်ဝန်းကျင် စီမံခန့်ခွဲမှု နှင့် စောင့်ကြပ်ကြည့်ရှုမှု အစီအစဉ်။

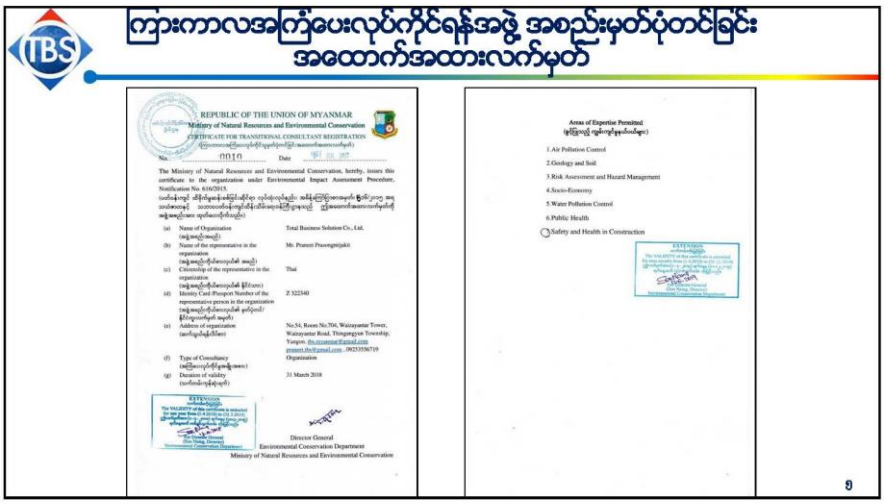
(၃) ရက်၊ အောက်တိုဘာလ၊ ၂၀၁၉ ခုနှစ်၊ ၂

ကနဦးပတ်ဝန်းကျင်ဆန်းစစ်ခြင်းအစီအစဉ်ပြုလုပ်ခြင်း၏ရည်ရွယ်ချက်

- စီမံကိန်း ဖော်ဆောင်မှုကြောင့် သဘာဝပတ်ဝန်းကျင် နှင့် လူမှုဝန်းကျင်အပေါ် အကျိုးသက်ရောက်မှုများကို လေ့လာခြင်း။
- လေ့လာတွေ့ရှိသော အကျိုးဆက်များကို ကောင်းကျိုး၊ ဆိုးကျိုး ခွဲခြင်း။
- ကောင်းကျိုးများကို ပိုမိုကောင်းမွန်စေရန် နှင့် ဆိုးကျိုးများကို လျော့ချနိုင်ရန် အစီအစဉ်များ ရေးဆွဲခြင်း။
- စီမံကိန်းမှထွက်ရှိသော အရည်အသွေးရလဒ်များကို အချိုးသားပတ်ဝန်းကျင်ဆိုင်ရာ အရည်အသွေး(ထုတ်လွှတ်မှု) လမ်းညွှန်ချက်များဖြင့် ကိုက်ညီစွာဆောင်ရွက်ရန်နှင့် သဘာဝပတ်ဝန်းကျင်ထိခိုက်မှု လျော့ပါးအောင် ပြုလုပ်ရန်။
- အများပြည်သူနှင့် တွေ့ဆုံဆွေးနွေးပွဲ ပြုလုပ်ခြင်းနှင့် အကြံပြုချက် သဘောထားများကို ရယူခြင်း။

TOTAL BUSINESS SOLUTION CO., LTD

- မြန်မာနိုင်ငံတွင် ၂၀၁၂ ခုနှစ်တွင် စတင်တည်ထောင်ခဲ့ပါသည်။
- TBS မှ တာဝန်ယူဆောင်ရွက် ပေးနေသော လုပ်ငန်းဆောင်တာ များမှာ
  - ပတ်ဝန်းကျင်ထိခိုက်မှု ဆန်းစစ်ခြင်းဆိုင်ရာ လုပ်ငန်းများ
  - ဘူမိအင်ဂျင်နီယာဆိုင်ရာ လုပ်ငန်းများ
  - ဆောက်လုပ်ရေးပိုင်းဆိုင်ရာ စီမံခန့်ခွဲမှု နှင့် စစ်ဆေးရေး လုပ်ငန်းများ
  - သတ္တုတူးဖော်ရေး အစီအစဉ် နှင့် သတ္တုတွင်းပိတ်သိမ်းရေး လုပ်ငန်းများ


ကြားကာလအကြံပေးလုပ်ကိုင်ရန်အဖွဲ့ အစည်းမှတ်ပုံတင်ခြင်း
အထောက်အထားလက်မှတ်
REPUBLIC OF THE UNION OF MYANMAR
Ministry of Natural Resources and Environmental Conservation
CERTIFICATE FOR TRANSITIONAL CONSULTANT REGISTRATION
No. 0010
Date
The Ministry of Natural Resources and Environmental Conservation, hereby, issues this certificate to the organization under Environmental Impact Assessment Procedure, Notification No. 616/2015.
(a) Name of Organization
Total Business Solution Co., Ltd.
(b) Name of the representative in the organization
Mr. Pramot Prasongmajakit
(c) Citizenship of the representative in the organization
Thai
(d) Identity Card /Passport Number of the representative person in the organization
P. 3223340
(e) Address of organization
No.54, Room No.704, Waizayantar Tower, Waizayantar Road, Thingangyun Township, Yangon.
(f) Type of Consultancy
Organization
(g) Duration of validity
31 March 2018
EXTENSION
Director General
Environmental Conservation Department
Ministry of Natural Resources and Environmental Conservation
Areas of Expertise Permitted
1.Air Pollution Control
2.Geology and Soil
3.Risk Assessment and Hazard Management
4.Socio-Economy
5.Water Pollution Control
6.Public Health
Safety and Health in Construction
EXTENSION
9


စီမံကိန်းအကြောင်းအရာများ
(၃) ရက်၊ ဧပြော်တိုဘာလ၊ ၂၀၁၉ ခုနှစ်။
6

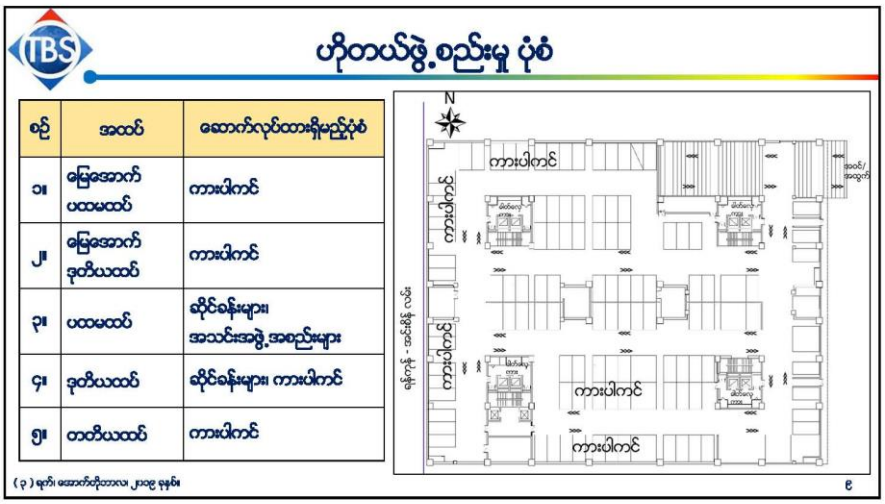
စီမံကိန်းတည်နေရာ

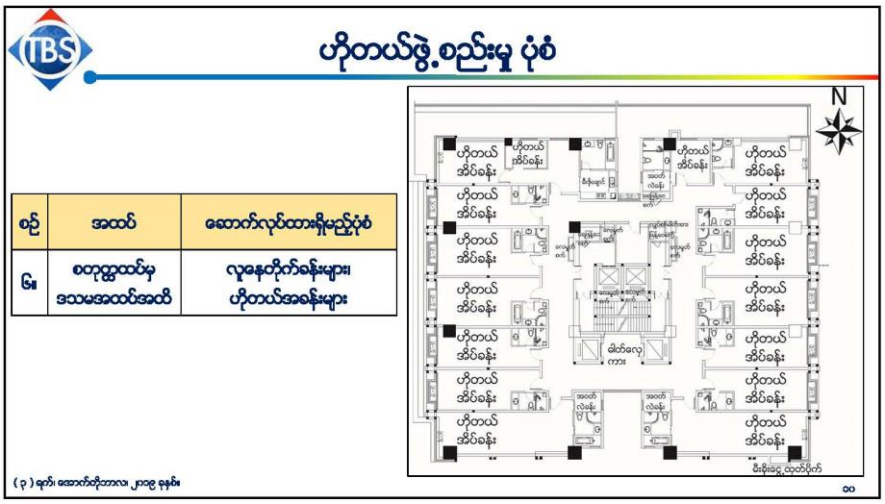
အမှတ်(၂၁၈)၊ ရန်ကုန်-အင်းစိန်လမ်း၊
လိုင်မြို့နယ်၊ ရန်ကုန်တိုင်းဒေသကြီး။

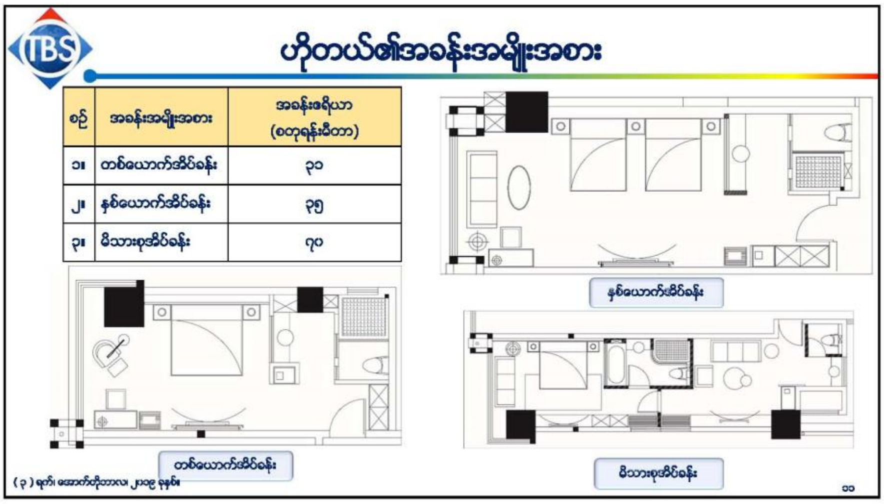
- လတ္တီတွဒ် : 16° 50′ 55.81″ N
- လောင်ဂျီတွဒ် : 96° 7′ 28.38″ E

ကုမ္ပဏီအကြောင်းအရာများ

ကုမ္ပဏီအမည်	HOYA International Resort Co., Ltd
လိပ်စာ	အမှတ်(၂၁၈)၊ ရန်ကုန်-အင်းစိန်လမ်း၊ လိုင်မြို့နယ်၊ ရန်ကုန်တိုင်းဒေသကြီး။
စတင်တည်ထောင်သည့်နှစ်	၂၀၁၆
စီမံကိန်း ဧရိယာ	၇,၂၀၃.၄ စတုရန်းပေတာ
ဆက်သွယ်ရန်ပုဂ္ဂိုလ်	ဦးအောင်ဇော်ထူး
ဖုန်းနံပါတ်	၀၉ - ၅၁၂၅၅၂၆
လုပ်ငန်းအမျိုးအစား	ဟိုတယ်လုပ်ငန်း
ကုန်ကြမ်း	ဆောက်လုပ်ရေးသုံးပစ္စည်းများ နှင့် အဝိုပစ္စည်းများ
အထပ်အရေအတွက်	၁၀ ထပ်
ဝန်ထမ်းဦးရေ	စုစုပေါင်းဝန်ထမ်း ၉၀ ယောက်
အလုပ်ချိန်	ပုံမှန်အလုပ်ချိန် ▪ မနက် ၇း၃၀ နာရီ မှ ညနေ ၆း၀၀ နာရီ (တနင်္လာ မှ စနေ)


ဟိုတယ်ဖွဲ့စည်းမှု ပုံစံ
စဉ်
အထပ်
ဆောက်လုပ်ထားရှိမည့်ပုံစံ
၁။
မြေအောက် ပထမထပ်
ကားပါကင်
၂။
မြေအောက် ဒုတိယထပ်
ကားပါကင်
၃။
ပထမထပ်
ဆိုင်ခန်းများ၊ အသင်းအဖွဲ့အစည်းများ
၄။
ဒုတိယထပ်
ဆိုင်ခန်းများ၊ ကားပါကင်
၅။
တတိယထပ်
ကားပါကင်
N
ကားပါကင်
ကားပါကင်
ကားပါကင်
ကားပါကင်
၉


ဟိုတယ်ဖွဲ့စည်းမှု ပုံစံ
စဉ်
အထပ်
ဆောက်လုပ်ထားရှိမည့်ပုံစံ
၆။
စတုတ္ထထပ်မှ ဒသမအထပ်အထိ
လူနေတိုက်ခန်းများ၊ ဟိုတယ်အခန်းများ
N
ဟိုတယ် အိပ်ခန်း
၀၀


ဟိုတယ်၏အခန်းအမျိုးအစား
စဉ် | အခန်းအမျိုးအစား | အခန်းဧရိယာ (စတုရန်းမီတာ)
၁။ | တစ်ယောက်အိပ်ခန်း | ၃၁
၂။ | နှစ်ယောက်အိပ်ခန်း | ၃၅
၃။ | မိသားစုအိပ်ခန်း | ၇၀
နှစ်ယောက်အိပ်ခန်း
တစ်ယောက်အိပ်ခန်း
မိသားစုအိပ်ခန်း
(၃) ရက်၊ အောက်တိုဘာလ၊ ၂၀၁၉ ခုနှစ်။
၁၁


လုပ်ငန်းခွင်တည်ဆောက်ထားရှိမှုအခြေအနေ
ဟိုတယ်မျက်နှာစာ
ဟိုတယ်အတွင်းပိုင်း
ဧည့်ကြိုခန်း
အိမ်ရာအရောင်းပြခန်း
ဟိုတယ်အတွင်းပိုင်း
လုပ်ငန်းသုံးဓာတ်လှေကား
(၃) ရက်၊ အောက်တိုဘာလ၊ ၂၀၁၉ ခုနှစ်။
၁၂


TBS
လုပ်ငန်းခွင်တည်ဆောက်ထားရှိမှုအခြေအနေ
တစ်ယောက်အိပ်ခန်း
နှစ်ယောက်အိပ်ခန်း
ဟိုတယ်အတွင်းရှိရေကူးကန်
မိသားစုအိပ်ခန်း
ရေချိုးခန်းနှင့်အိမ်သာ
ရေကူးကန်ရေမြောင်းဘောင်
(၃) ရက်၊ အောက်တိုဘာလ၊ ၂၀၁၉ ခုနှစ်
၁၃


TBS
လုပ်ငန်းခွင်တည်ဆောက်ထားရှိမှုအခြေအနေ
လုပ်ငန်းသုံးပစ္စည်းများထားရှိမှု
ယာယီအမှိုက်ပုံ
ဓာတ်လှေကား
မြေအောက်ကားပါကင်
အထပ်မြင့်ကားပါကင်
(၃) ရက်၊ အောက်တိုဘာလ၊ ၂၀၁၉ ခုနှစ်
၁၄

စွမ်းအင်နှင့် ရေအရင်းအမြစ်သုံးစွဲမှု

လျှပ်စစ်အသုံးပြုမှု	ရေအရင်းအမြစ်သုံးစွဲမှု
❖ မြန်မာ့လျှပ်စစ်ဓာတ်အားလုပ်ငန်းမှ ဓာတ်အားကို ၃၃/၁၁ kV ဓာတ်အားလိုင်းမှ ၁,၂၅၀ kVA အားရှိသော ထရန်စဖော်မာ ၄ လုံး ဖြင့် ရယူသုံးစွဲပါသည်။ ❖ ထိုထရန်စဖော်မာများကို မြေအောက်ထပ်တွင် ထားရှိမည်ဖြစ်သည်။ ❖ ထို့အပြင် မီးစက် ၄ လုံးကို အရံထားရှိပြီး ၁ လုံးလျှင် ၁,၂၅၀ kVA အားရှိပါသည်။ ❖ လျှပ်စစ်ဓာတ်အား ပြတ်တောက်သွားချိန်နှင့် အရေးပေါ်သုံးစွဲရန် အတွက် ၂,၃၇၅ kVA အားရှိသော ဒီဇယ်မီးစက် ၁ လုံးကို စီစဉ်ထားရှိပါသည်။	❖ အနီးအနားရှိ ပေ ၅၀၀ နက်သော အဝီစိတွင်း ၂ တွင်းမှ ရရှိသော ရေကို လုပ်ငန်းတွင်အသုံးပြုပါသည်။ ❖ ဆောက်လုပ်ရေးလုပ်ငန်းများနှင့် အခြားလုပ်ငန်းများအတွက် တစ်ရက်လျှင် ရေ ၂၅,၀၀၀ ဂါလံခန့် အသုံးပြုပါသည်။ ❖ လူနေအခန်းများအတွက် ၉၀,၀၀၀ ဂါလံခန့်လိုအပ်ပါသည်။ ❖ မြေအောက်ရှိရေသိုလှောင်ကန်မှာ ၁၃၃,၁၆၀ ဂါလံဆန့်ပါသည်။ ❖ မီးငြိမ်းသတ်ရန်အတွက် ၇၃,၉၆၈ ဂါလံဆန့်ရေကန်မှ ရေကို အသုံးပြုပါသည်။ ❖ ရေအသုံးပြုမှု အများဆုံးနေရာမှာ ဆောက်လုပ်ရေးလုပ်ငန်း ၊ ရေချိုးခန်း နှင့် အိမ်သာများမှ ဖြစ်ပါသည်။

(၃) ရက်၊ အောက်တိုဘာလ၊ ၂၀၁၉ ခုနှစ်၊ ၁၅

စွန့်ပစ်ပစ္စည်းများ ထွက်ရှိမှု နှင့် စီမံခန့်ခွဲမှု

စွန့်ပစ်ပစ္စည်း ထွက်ရှိရာနေရာ	စွန့်ပစ်ပစ္စည်းအမျိုးအစား	စွန့်ပစ်ပစ္စည်းစီမံခန့်ခွဲမှု
လုပ်ငန်း တည်ဆောက်ခြင်း	စီမံကိန်းစတင်ဖော်ဆောင်စဉ် မြေပြင်မှထွက်လာသော ပေါင်းပင်နှင့် အမှိုက်များ	➢ လက်ရှိဝန်ထမ်း ၉၀ ခန့်မှ အမှိုက် စွန့်ပစ်မှုမှာ တစ်နေ့လျှင် ၃၆ ကီလိုဂရမ်ခန့် ထွက်ရှိနိုင်ပါသည်။ ➢ ထိုအမှိုက်များကို ဟိုတယ်ဝင်းအတွင်းရှိ အမှိုက်ပုံးများသို့ စွန့်ပစ်ပါသည်။ ➢ အမှိုက်ပုံးမှအမှိုက်များကို ရန်ကုန်မြို့တော်စည်ပင်သာယာရေးကော်မတီ နှင့် ချိတ်ဆက်ပြီး တစ်လ ၂ ကြိမ် စနစ်တကျ စွန့်ပစ် ပါသည်။ ➢ ဆောက်လုပ်ရေးလုပ်ငန်းမှထွက်ရှိသော စွန့်ပစ်အမှိုက်များကို (၃)တန်ဆံ့ကားဖြင့် တစ်နေ့လျှင် ၂ ကြိမ် စည်ပင်သာယာအမှိုက်ပုံသို့ သွားရောက်စွန့်ပစ်ပါသည်။ ➢ ထို့အပြင်ဆေးသုတ်ခြင်းလုပ်ငန်းမှ ထွက်ရှိလာသော ဆေးပုံးအခွံများကိုလဲ ပြန်လည်ဝယ်ယူသူများထံ ရောင်းချပါသည်။
	မြေကြီးများတူးဖော်ရာမှ ထွက်ရှိလာသော မြေစာများ	
	ဆောက်လုပ်ရေးသုံးပစ္စည်း အကျိုးအပဲ့များ	
	လုပ်သားများမှ ထွက်ရှိလာသော အမှိုက်များ	
	ဆေးသုတ်ရာတွင်အသုံးပြုသည့် ဆေးပုံးအခွံများ	
လုပ်ငန်း လည်ပတ်ခြင်း	ဝန်ထမ်းများ၊ ဟိုတယ်အခန်းများ၊ ရုံးခန်းနှင့် မီးဖိုဆောင် များမှထွက်ရှိလာသော စက္ကူများ၊ ပလတ်စတစ်အိတ်များ၊ ရေဘူးခွံများ၊ စားကြွင်းစားကျန်များ	

စွန့်ပစ်ရေ ထွက်ရှိမှု နှင့် စီမံခန့်ခွဲမှု

ဟိုတယ်တည်ဆောက်နေစဉ်တွင်

- ပန်ထမ်းများမှရေအသုံးပြုခြင်း၊ ကားဒီးများဆေးကြောခြင်း နှင့် ကွန်ကရစ်များဆေးကြောခြင်းတို့မှ စွန့်ပစ်ရေများထွက်ရှိနိုင်ပါသည်။
- လက်ရှိပန်ထမ်း ၉၀ ခန့်မှ အသုံးပြုပြီး ထွက်ရှိလာသော စွန့်ပစ်ရေပမာဏမှာ တစ်နေ့လျှင် ဂါလံ ၃,၅၆၆ ခန့် ရှိနိုင်ပါသည်။
- ထွက်ရှိလာသော စွန့်ပစ်ရေများကို စီမံကိန်းနေရာပတ်လည်ရှိ ရေနုတ်မြောင်းများမှတဆင့် စည်ပင်ရေမြောင်းသို့ စွန့်ထုတ်ပါသည်။
- မိလ္လာကန်မှ ထွက်ရှိသော ရေဆိုးများကို ရန်ကုန်မြို့တော်စည်ပင် သာယာရေးကော်မတီ နှင့် သိုက်ဆက်ပြီး ၆ လ တစ်ကြိမ် စွန့်ပစ်ပါသည်။

စွန့်ပစ်ရေစွန့်ထုတ်ရာ ရေမြောင်း

စီမံကိန်းတည်ဆောက်စဉ်ပန်ထမ်းများအတွက် စီစဉ်ထားရှိမှု

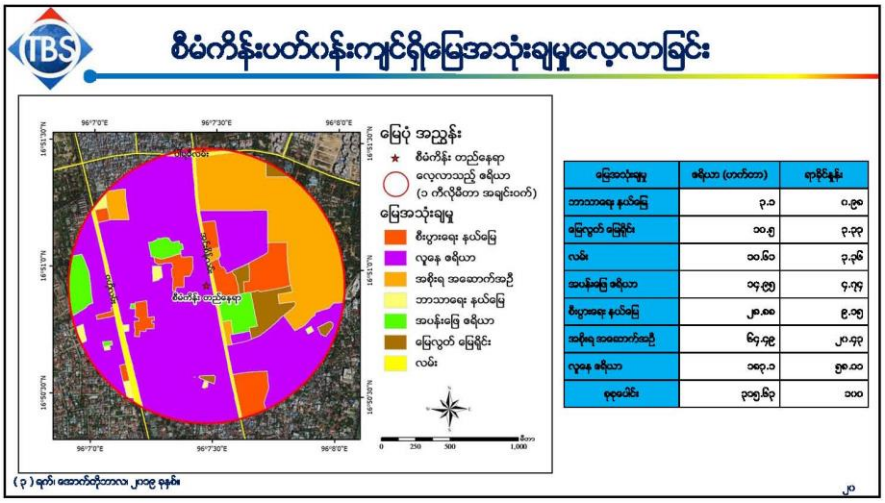
တစ်ကိုယ်ရေသုံး ကာကွယ်ရေးပစ္စည်းများ

ရေသန့်

ယာယီအိမ်သာ

ယာယီလုံခြုံရေး


ပတ်ပန်းကျင် အခြေအနေ လေ့လာမှု
ကွင်းဆင်းရက်
၁၁ ရက်၊ နိုဧပြီလ ၊ ၂၀၁၉ ခုနှစ် ပထမအကြိမ်
၁ ရက်၊ ဩဂုတ်လ ၊ ၂၀၁၉ ခုနှစ် ဒုတိယအကြိမ်
၂၆ ရက်၊ ဩဂုတ်လ ၊ ၂၀၁၉ ခုနှစ် တတိယအကြိမ်
ကွင်းဆင်းလေ့လာမှု
စီမံကိန်းဧရိယာ အနီးပတ်ပန်းကျင် မီတာ (၅၀၀) ပတ်လည် လေ့လာခြင်း
အသံဆူညံမှုတိုင်းတာခြင်း
တုန်ခါမှုတိုင်းတာခြင်း
အခန်းတွင်းအပူချိန် တိုင်းတာခြင်း
အလင်းရောင် တိုင်းတာခြင်း
လေထုအရည်အသွေး တိုင်းတာခြင်း
ရေအရည်အသွေး တိုင်းတာခြင်း
ဟိုတယ်တည်ဆောက်ပုံ လိုအပ်သော အချက်အလက်ရယူခြင်း
အသံဆူညံမှုတိုင်းတာခြင်း
ရေနုပ်နာကောက်ယူခြင်း
အလင်းရောင်တိုင်းတာခြင်း
တုန်ခါမှုတိုင်းတာခြင်း


စီမံကိန်းပတ်ပန်းကျင်ရှိမြေအသုံးချမှုလေ့လာခြင်း
မြေပုံ အညွှန်း
စီမံကိန်း တည်နေရာ
လေ့လာသည့် ဧရိယာ
(၁ ကီလိုမီတာ အချင်းဝက်)
မြေအသုံးချမှု
စီးပွားရေး နယ်မြေ
လူနေ ဧရိယာ
အစိုးရ အဆောက်အဦ
ဘာသာရေး နယ်မြေ
အပန်းဖြေ ဧရိယာ
မြေလွတ် မြေရိုင်း
လမ်း
မြေအသုံးချမှု
ဧရိယာ (ဟက်တာ)
ရာခိုင်နှုန်း
ဘာသာရေး နယ်မြေ ၃.၁ ၈.၉၈
မြေလွတ် မြေရိုင်း ၁၀.၅ ၃.၃၇
လမ်း ၁၀.၆၀ ၃.၃၆
အပန်းဖြေ ဧရိယာ ၁၄.၉၅ ၄.၇၄
စီးပွားရေး နယ်မြေ ၂၈.၈၈ ၉.၁၅
အစိုးရ အဆောက်အဦ ၆၇.၇၉ ၂၁.၄၃
လူနေ ဧရိယာ ၁၈၃.၁ ၅၈.၀၀
စုစုပေါင်း ၃၁၅.၆၃ ၁၀၀

လှိုင်မြို့နယ်၏သဘာဝပတ်ဝန်းကျင်

- သဘာဝပေါက်ပင်
  - ပိန္နဲ၊ စိန်ပန်း၊ အုန်းနဲ၊ ညောင်၊ ပိတောက်၊ မန်ကျည်း၊ ကုက္ကို စသည်တို့ဖြစ်ပါသည်။
- တောရိုင်းတိရိစ္ဆာန်များ
  - မရှိပါ။

ရာသီဥတု

ခုနှစ်	မိုးရေချိန်		အပူချိန်	
	မိုးရွာရက်	စုစုပေါင်း မိုးရေချိန် (လက်မ)	နေ့ရာသီ (°C) အမြင့်ဆုံး	ဆောင်းရာသီ (°C) အနိမ့်ဆုံး
၂၀၁၆ - ၂၀၁၇	၁၃၁	၁၀၂.၆၄	၄၀	၁၂

Source: GAD, April, 2017

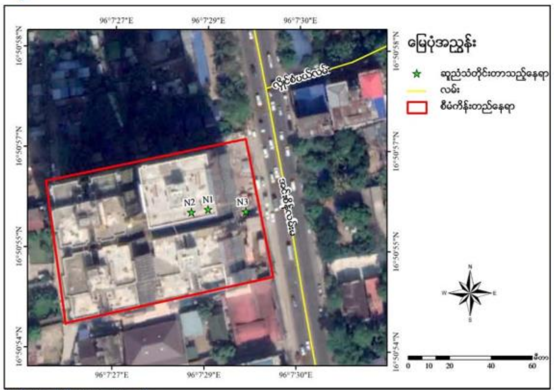
သဘာဝဘေးအန္တရာယ်ကျရောက်မှု

အမျိုးအစား	ဖြစ်ပွားကြိမ်	အဆောက်အဦး ပျက်စီးမှု	ဆုံးရှုံးမှုတန်ဖိုး (ကျပ်သန်း)
မီးဘေး	၃	၁၉	၁၅.၁၀

Source: GAD, April, 2017

(၃) ရက်၊ အောက်တိုဘာလ၊ ၂၀၁၉ ခုနှစ်။ ၂၁

အသံဆူညံမှုတိုင်းတာခြင်း

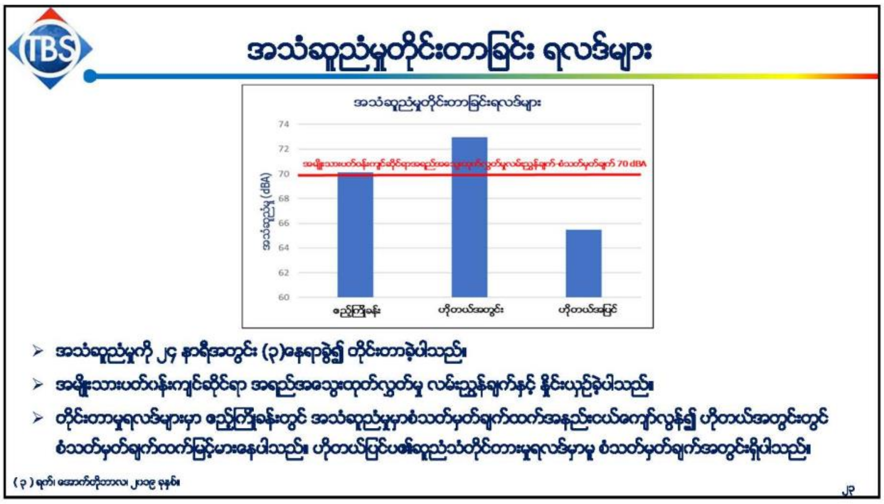


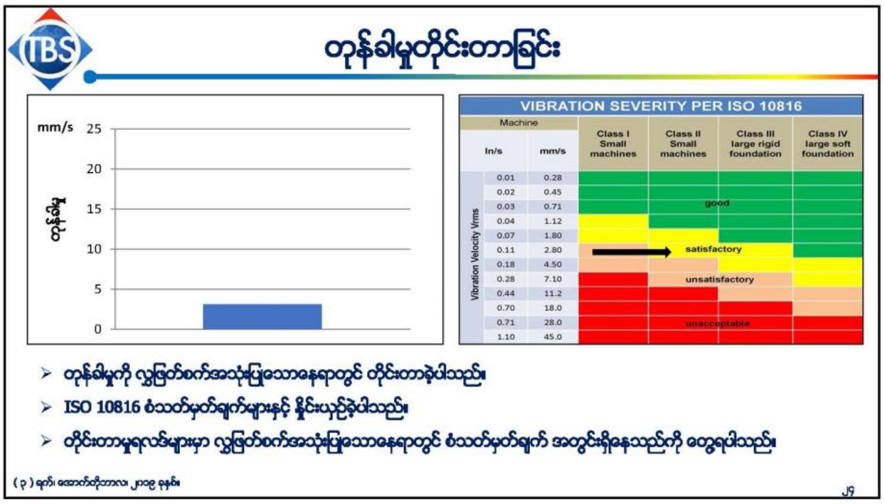
N1
- လတ္တီတွဒ် : 16° 50´ 55.57" N
- လောင်ဂျီတွဒ် : 96° 7' 28.91" E

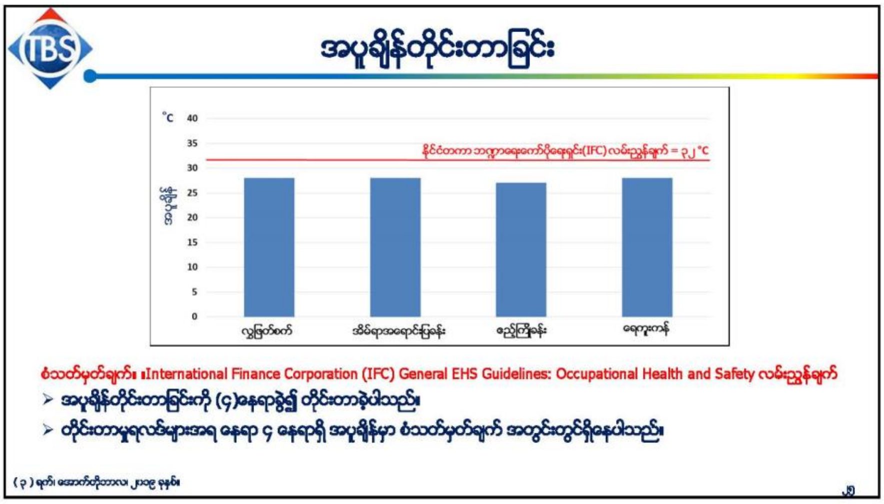
N2
- လတ္တီတွဒ် : 16° 50´ 55.54" N
- လောင်ဂျီတွဒ် : 96° 7' 28.75" E

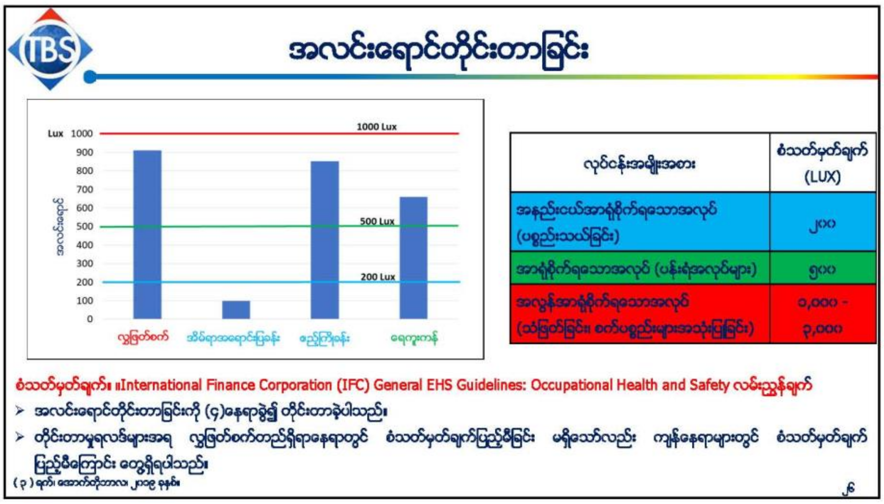
N3
- လတ္တီတွဒ် : 16° 50´ 55.54" N
- လောင်ဂျီတွဒ် : 96° 7' 29.51" E

(၃) ရက်၊ အောက်တိုဘာလ၊ ၂၀၁၉ ခုနှစ်။ ၂၂

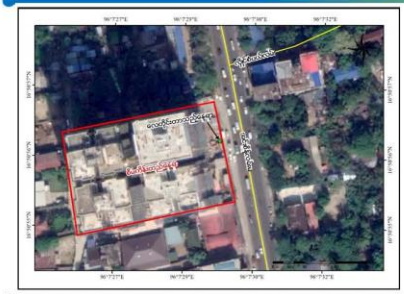

TBS
အသံဆူညံမှုတိုင်းတာခြင်း ရလဒ်များ
အသံဆူညံမှုတိုင်းတာခြင်းရလဒ်များ
အသံဆူညံမှု (dBA)
74
72
70
68
66
64
62
60
ညောင်ကြီးခန်း
ဟိုတယ်အတွင်း
ဟိုတယ်အပြင်
➢ အသံဆူညံမှုကို ၂၄ နာရီအတွင်း (၃)နေရာခွဲ၍ တိုင်းတာခဲ့ပါသည်။
➢ အမျိုးသားပတ်ဝန်းကျင်ဆိုင်ရာ အရည်အသွေးထုတ်လွှတ်မှု လမ်းညွှန်ချက်နှင့် နှိုင်းယှဉ်ခဲ့ပါသည်။
➢ တိုင်းတာမှုရလဒ်များမှာ ညောင်ကြီးခန်းတွင် အသံဆူညံမှုမှာစံသတ်မှတ်ချက်ထက်အနည်းငယ်ကျော်လွန်၍ ဟိုတယ်အတွင်းတွင် စံသတ်မှတ်ချက်ထက်မြင့်မားနေပါသည်။ ဟိုတယ်ပြင်ပ၏ဆူညံသံတိုင်းတာမှုရလဒ်မှာမူ စံသတ်မှတ်ချက်အတွင်းရှိပါသည်။
(၃) ရက်၊ အောက်တိုဘာလ၊ ၂၀၁၉ ခုနှစ်။
၂၃


TBS
တုန်ခါမှုတိုင်းတာခြင်း
mm/s
25
20
15
10
5
0
VIBRATION SEVERITY PER ISO 10816
Machine
In/s
mm/s
Class I Small machines
Class II Small machines
Class III large rigid foundation
Class IV large soft foundation
Vibration Velocity Vrms
0.01 0.28
0.02 0.45
0.03 0.71
0.04 1.12
0.07 1.80
0.11 2.80
0.18 4.50
0.28 7.10
0.44 11.2
0.70 18.0
0.71 28.0
1.10 45.0
good
satisfactory
unsatisfactory
unacceptable
➢ တုန်ခါမှုကို လျှပ်စစ်ဓာတ်အားသုံးပြုသောနေရာတွင် တိုင်းတာခဲ့ပါသည်။
➢ ISO 10816 စံသတ်မှတ်ချက်များနှင့် နှိုင်းယှဉ်ခဲ့ပါသည်။
➢ တိုင်းတာမှုရလဒ်များမှာ လျှပ်စစ်ဓာတ်အားသုံးပြုသောနေရာတွင် စံသတ်မှတ်ချက် အတွင်းရှိနေသည်ကို တွေ့ရပါသည်။
(၃) ရက်၊ အောက်တိုဘာလ၊ ၂၀၁၉ ခုနှစ်။
၂၄


အပူချိန်တိုင်းတာခြင်း
°C
40
35
30
25
20
15
10
5
0
အပူချိန်
နိုင်ငံတကာ ဘဏ္ဍာရေးကော်ပိုရေးရှင်း(IFC) လမ်းညွှန်ချက် = ၃၂ °C
လှိုဖြတ်စက်
အိမ်ရာအရောင်းပြခန်း
ဧည့်ကြိုခန်း
ရေကူးကန်
စံသတ်မှတ်ချက်။ ။International Finance Corporation (IFC) General EHS Guidelines: Occupational Health and Safety လမ်းညွှန်ချက်
➢ အပူချိန်တိုင်းတာခြင်းကို (၄)နေရာခွဲ၍ တိုင်းတာခဲ့ပါသည်။
➢ တိုင်းတာမှုရလဒ်များအရ နေရာ ၄ နေရာရှိ အပူချိန်မှာ စံသတ်မှတ်ချက် အတွင်းတွင်ရှိနေပါသည်။
(၃) ရက်၊ အောက်တိုဘာလ၊ ၂၀၁၉ ခုနှစ်။
၂၅


အလင်းရောင်တိုင်းတာခြင်း
Lux 1000
900
800
700
600
500
400
300
200
100
0
အလင်းရောင်
1000 Lux
500 Lux
200 Lux
လှိုဖြတ်စက်
အိမ်ရာအရောင်းပြခန်း
ဧည့်ကြိုခန်း
ရေကူးကန်
လုပ်ငန်းအမျိုးအစား | စံသတ်မှတ်ချက် (LUX)
အနည်းငယ်အာရုံစိုက်ရသောအလုပ် (ပစ္စည်းသယ်ခြင်း) | ၂၀၀
အာရုံစိုက်ရသောအလုပ် (ပန်းရုံအလုပ်များ) | ၅၀၀
အလွန်အာရုံစိုက်ရသောအလုပ် (သံဖြတ်ခြင်း၊ စက်ပစ္စည်းများအသုံးပြုခြင်း) | ၁,၀၀၀ - ၃,၀၀၀
စံသတ်မှတ်ချက်။ ။International Finance Corporation (IFC) General EHS Guidelines: Occupational Health and Safety လမ်းညွှန်ချက်
➢ အလင်းရောင်တိုင်းတာခြင်းကို (၄)နေရာခွဲ၍ တိုင်းတာခဲ့ပါသည်။
➢ တိုင်းတာမှုရလဒ်များအရ လှိုဖြတ်စက်တည်ရှိရာနေရာတွင် စံသတ်မှတ်ချက်ပြည့်မီခြင်း မရှိသော်လည်း ကျန်နေရာများတွင် စံသတ်မှတ်ချက် ပြည့်မီကြောင်း တွေ့ရှိရပါသည်။
(၃) ရက်၊ အောက်တိုဘာလ၊ ၂၀၁၉ ခုနှစ်။
၂၆

လေအရည်အသွေးတိုင်းတာခြင်း



- လတ္တီတွဒ် : 16° 50′ 55.8″ N
- လောင်ဂျီတွဒ် : 96° 7′ 29.67″ E

Parameter	Unit	Average hour	Results	WHO 1979 (WHO Guidelines)1	World Bank (General Environmental Guidelines)2	NEQG
TSP	µg/m³	24-hour	223.10	150-230 (24-hour)	-	-
PM_{10}	µg/m³	24-hour	76.08	-	70 (24-hour)	50 (24-hour)

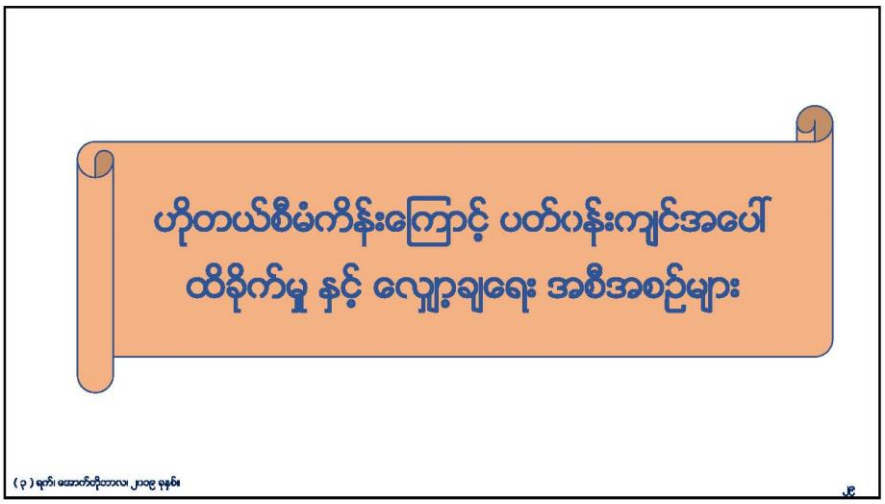
(၃) ရက်၊ အောက်တိုဘာလ၊ ၂၀၁၉ ခုနှစ်။

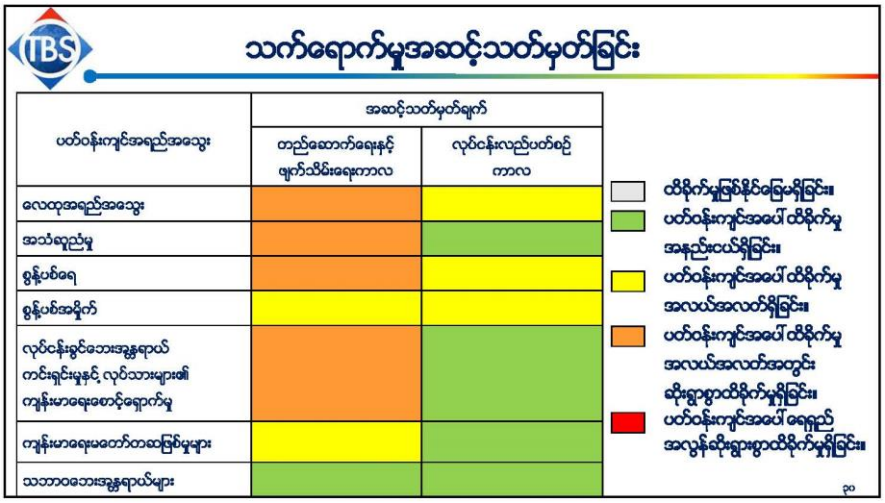
စွန့်ပစ်ရေအရည်အသွေးတိုင်းတာခြင်း

- လတ္တီတွဒ် : 16° 50′ 53.87" N
- လောင်ဂျီတွဒ် : 96° 14′ 2.7" E

(၃) ရက်၊ အောက်တိုဘာလ၊ ၂၀၁၉ ခုနှစ်။

စဉ်	ညွှန်ကိန်း	ယူနစ်	ရလဒ် အဝေြ	WHO Guidelines	မှတ်ချက်
၁	ချဉ်ဓာတ်ကိန်း		၁၁.၅	၆.၅-၈.၅	အတိုင်းအတာထက် ကျော်လွန်
၂	နောက်ကျိမှု	NTU	၄၂၀	၅	အတိုင်းအတာထက် ကျော်လွန်
၃	သံသတ္တုဓါတ်	mg/l	၂.၃	၀.၃	အတိုင်းအတာထက် ကျော်လွန်
၄	ဆိုင်းငြိုအနည်	mg/l	၅၈၈	-	သာမန်
၅	ကျောင်းအနည်များ	mg/l	၄၉၀	၁၀၀၀	သာမန်
၆	ဒီဇယ်ဓါတ်	mg/l	၂.၂	-	သာမန်
၇	အပူချိန်	°C	၂၅.၀	-	သာမန်
၈	နိုက်ထရိတ်	mg/l	၅.၈	၅၀	သာမန်
၉	ဓာတုဆိုင်ရာ အောက်ဆီဂျင် လိုအပ်မှု	mg/l	၃၂၀	-	သာမန်
၁၀	ဇီဝဆိုင်ရာ အောက်ဆီဂျင်လိုအပ်မှု	mg/l	၉၀	-	သာမန်


ဟိုတယ်စီမံကိန်းကြောင့် ပတ်ဝန်းကျင်အပေါ်
ထိခိုက်မှု နှင့် လျော့ချရေး အစီအစဉ်များ


သက်ရောက်မှုအဆင့်သတ်မှတ်ခြင်း
ပတ်ဝန်းကျင်အရည်အသွေး
အဆင့်သတ်မှတ်ချက်
တည်ဆောက်ရေးနှင့် ဖျက်သိမ်းရေးကာလ
လုပ်ငန်းလည်ပတ်စဉ် ကာလ
လေထုအရည်အသွေး
အသံဆူညံမှု
စွန့်ပစ်ရေ
စွန့်ပစ်အမှိုက်
လုပ်ငန်းခွင်ဘေးအန္တရာယ် ကင်းရှင်းမှုနှင့် လုပ်သားများ၏ ကျန်းမာရေးစောင့်ရှောက်မှု
ကျန်းမာရေးဗဟော်တာဆေးမြစ်မှုများ
သဘာဝဘေးအန္တရာယ်များ
ထိခိုက်မှုဖြစ်နိုင်ခြေမရှိခြင်း။
ပတ်ဝန်းကျင်အပေါ် ထိခိုက်မှု အနည်းငယ်ရှိခြင်း။
ပတ်ဝန်းကျင်အပေါ် ထိခိုက်မှု အလယ်အလတ်ရှိခြင်း။
ပတ်ဝန်းကျင်အပေါ် ထိခိုက်မှု အလယ်အလတ်အတွင်း ဆိုးရွားစွာထိခိုက်မှုရှိခြင်း။
ပတ်ဝန်းကျင်အပေါ် ရေရှည် အလွန်ဆိုးရွားစွာထိခိုက်မှုရှိခြင်း။


လေထုအရည်အသွေး
သက်ရောက်မှုကာလ
သက်ရောက်မှု
လျော့ပျောရေးနည်းလမ်းများ
တည်ဆောက်ရေး နှင့် ဖျက်သိမ်းစဉ်ကာလ
အဆောက်အဦး အောက်ခံတည်ဆောက်ခြင်း
လုပ်ငန်းခွင်အတွင်း ဒုန်မှုန့်များသောနေရာများတွင် ရေဖြန်းဓလေ့ခြင်း။
ဆောက်လုပ်ရေးကုန်ကြမ်းများ သယ်ယူပို့ဆောင်ခြင်း
ဆောက်လုပ်ရေးပစ္စည်းများကို သယ်ယူရာတွင် တာပေါ်လင်စများဖြင့် ဖုံးအုပ်ခြင်း။
သန့်ရှင်းရေးလုပ်ငန်းများလုပ်ဆောင်ခြင်း
လုပ်သားများကို နာခေါင်းစည်းအစရှိသည့် တစ်ကိုယ်ရေသုံး ကာကွယ်ပစ္စည်းများ ထောက်ပံ့ပေးခြင်း။
လုပ်ငန်းလည်ပတ်စဉ်ကာလ
ဟိုတယ်အတွင်း ဧည့်သည်များနှင့် အခြားအရာများ သယ်ယူပို့ဆောင်ရန် အတွက် စက်တပ်ယာဉ် အသုံးပြုခြင်း
လည်ပတ်အသုံးပြုနေသော စက်တပ် ယာဉ်များအတွက် ပုံမှန်ပြုပြင်ထိန်းသိမ်းမှုလုပ်ခြင်း။
အရေးပေါ်မီးစက်များ၊ လေအေးပေးစနစ်များ၊ ရေခဲသေတ္တာများ၊ ရေပူစက်များ အသုံးပြုခြင်း
လူနေများသောနေရာများတွင်လေဝင်လေထွက် ကောင်းသောအဆိုးများနှင့် လေသန့်စင်စက်များ တပ်ဆင်အသုံးပြုခြင်း။
(၃) ရက်၊ ဆောက်လုပ်ကာလ၊ ၂၀၁၉ ခုနှစ်
၃၀


အသံဆူညံမှု
သက်ရောက်မှုကာလ
သက်ရောက်မှု
လျော့ပျောရေးနည်းလမ်းများ
တည်ဆောက်ရေး နှင့် ဖျက်သိမ်းစဉ်ကာလ
လုပ်ငန်းခွင်တွင် အသုံးပြုသည့် စက်ပစ္စည်းများ
ဆူညံသံများသော စက်ပစ္စည်းများနှင့် ကားများကိုပြောင်းလဲစေခြင်း။
ဆောက်လုပ်ရေး လုပ်ငန်းစဉ်
ဆူညံသံများသော နေရာများတွင် လုပ်ကိုင်သော လုပ်သားများကို နားကြပ်များ ထောက်ပံ့ပေးခြင်း။
လုပ်ငန်းလည်ပတ်စဉ်ကာလ
ဟိုတယ်လုပ်ငန်းခွင်တွင် အသုံးပြုသည့် စက်ပစ္စည်းများ
ဆူညံမှုနည်းသောစက်ပစ္စည်းများကို အသုံးပြုခြင်း။
(၃) ရက်၊ ဆောက်လုပ်ကာလ၊ ၂၀၁၉ ခုနှစ်
၃၂

စွန့်ပစ်ရေ

သက်ရောက်မှုကာလ	သက်ရောက်မှု	လျော့ချရေးနည်းလမ်းများ
တည်ဆောက်ရေး နှင့် ဖျက်သိမ်းစဉ်ကာလ	ဝန်ထမ်းများ အသုံးပြုရာမှ ထွက်ရှိသော သုံးစရေ	စီမံကိန်းဒရိုယာအတွင်းရှိရေမြောင်းများကို စနစ်တကျ ပြုလုပ်ထားခြင်း။
	မိလ္လာကန်မှရေဆိုး ထွက်ရှိခြင်း	လုံလောက်သော မိလ္လာကန် စနစ်များ ထားရှိခြင်း။
	မိုးရေစီးဆင်းမှု	ရေဆိုးခြောင်းများအား ရေစီးရေလာ ကောင်းအောင်ပုံမှန် စစ်ဆေးခြင်း။
လုပ်ငန်းလည်ပတ်စဉ် ကာလ	မိလ္လာရေ၊ မျိုးရေ၊ အဝတ်လျော်ရေ ၊ မီးဖိုဆောင်မှ စွန့်ပစ်ရေ စသည့် အိမ်သုံးစွန့်ပစ်ရေများ	ဟိုတယ်အတွင်းမှ မလိုအပ်သော ရေဆိုးများထွက်ခြင်းကို စွန့်ပစ်ရေသိုလှောင်ကန်များ တပ်ဆင်၍ ကာကွယ်ခြင်း။
	မိုးရေ၊ မိုးရွာသွန်းမှုကြောင့် လမ်းပေါ်တွင် တင်ကျန်ခဲ့သော ရေများ	မိလ္လာလိုင်းများ၊ ရေမြောင်းများနှင့်ရေဆိုးများ အတွက် ပိုက်လိုင်းများ ခွဲခြားသွယ်တန်းခြင်း။
	မိလ္လာကန်	မိလ္လာအညစ်အကြေးများ စိမ့်ထွက်ခြင်းမှ ကာကွယ်ရန် မိလ္လာကန်များကို ပုံမှန်စစ်ဆေးပေးခြင်း။

(၃) ရက်၊ ဆောက်လုပ်ကာလ၊ ၂၀၁၉ ခုနှစ်။ ၃၅

စွန့်ပစ်အမှိုက်

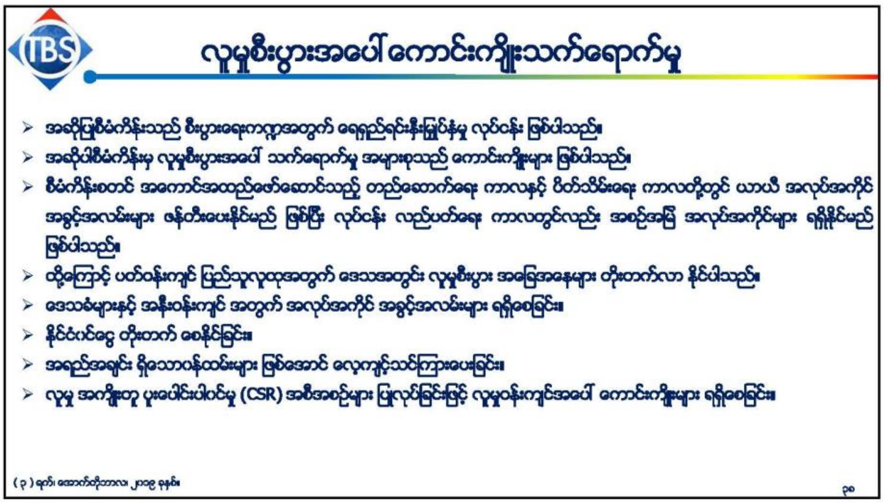
သက်ရောက်မှု ကာလ	သက်ရောက်မှု	လျော့ချရေးနည်းလမ်းများ
တည်ဆောက်ရေး နှင့် ဖျက်သိမ်းစဉ်ကာလ	သံ၊ သံတိုသံစများ၊ ပြာမှုန့်၊ သစ်အတိုအစများ၊ ရွှံ့၊ အုတ်အကျိုး၊ ကျောက်ခဲ၊ ကြွေထည်မြေထည်များ၊ ရာဘာ၊ ဂါယာကြိုး၊ အလှဝိနိယစ်ပစ္စည်းများ၊ မီးသီးများ	အမျိုးအစားတူ အမှိုက်များကို တစ်နေရာထဲတွင် စုပုံထားရှိ ခြင်း။
	အလုပ်သမားများ စွန့်ပစ်သောအမှိုက် စားကြွင်း စားကျန်၊ တစ်ရှူး၊ ပလတ်စတစ်အိတ်၊ သံဘူးခွံ	လုပ်ငန်းခွင်အတွင်းတွင် အမှိုက်ပစ်ရန်ပုံးများထားရှိပေးခြင်း နှင့် ရန်ကုန်မြို့တော်စည်ပင်သာယာရေးကော်မတီ နှင့် ချိတ်ဆက်ပြီး ပုံမှန် အမှိုက်သိမ်းရန် စီစဉ်ထားရှိခြင်း။
လုပ်ငန်းလည်ပတ်စဉ် ကာလ	ဟိုတယ်နှင့် ဝန်ထမ်းများမှ ပလတ်စတစ်၊စားကြွင်း စားကျန်၊ စတ္တူတစ်ရှူးကဲ့သို့ သော အစိုင်အခဲ စွန့်ပစ်ပစ္စည်းများ	အမှိုက်များအား ထွက်ရှိရာဌာနပင် အမျိုးအစားခွဲခြား၍ အမှိုက်ပုံးထဲသို့ စနစ်တကျစွန့်ပစ်ခြင်း။

(၃) ရက်၊ ဆောက်လုပ်ကာလ၊ ၂၀၁၉ ခုနှစ်။ ၃၆

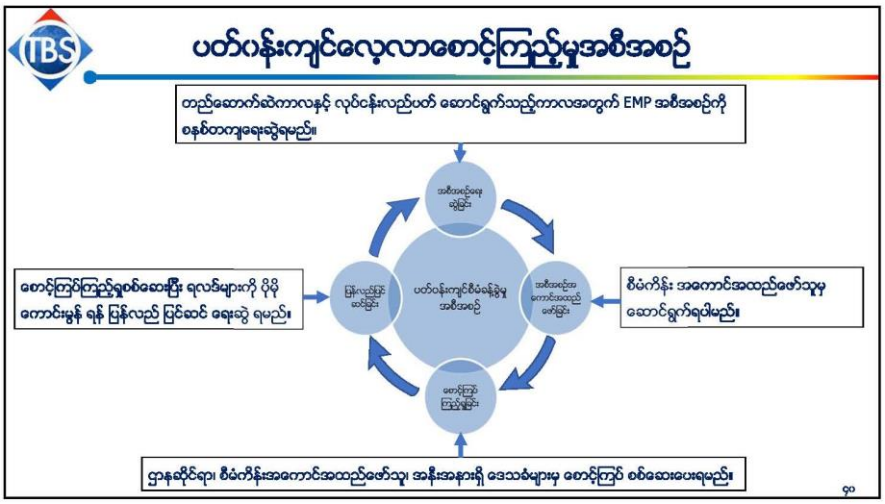

လုပ်ငန်းခွင်ဘေးအန္တရာယ်ကင်းရှင်းမှု
သက်ရောက်မှု ကာလ
သက်ရောက်မှု
လျော့ချရေးနည်းလမ်းများ
တည်ဆောက်ရေး နှင့် ဖျက်သိမ်းစဉ်ကာလ
လည်ပတ်/ဧရိယာများ အသုံးပြုခြင်း
ချော်လဲခြင်း
ခလုတ်တိုက်ခြင်း
ဆောင့်မိခြင်း
အန္တရာယ်ရှိသောနေရာများတွင်အမှတ်အသားများ ဆိုင်းဘုတ်များ ပြသထားခြင်း။
ဆောက်လုပ်ငန်းစဉ် စက်ပစ္စည်းများအား ထိန်းသိမ်းမှုအားနည်းခြင်း
စက်ပစ္စည်းများအားလုံးကို ပုံမှန်ပြုပြင်ထိန်းသိမ်းခြင်း။
လုပ်ငန်းလည်ပတ်စဉ် ကာလ
ဒီဇိုင်းနှင့် ဆောက်လုပ်မှု အားနည်းခြင်း
ဖြေဆုည်စ်ညမ်းမှုမဖြစ်စေရန် သင့်တော်သော ရေဆင်းစနစ်နှင့် အဆောက်အဦ ဒီဇိုင်းတည်ဆောက်ခြင်း။
(၃) ရက်၊ အောက်တိုဘာလ၊ ၂၀၁၉ ခုနှစ်
၃၅

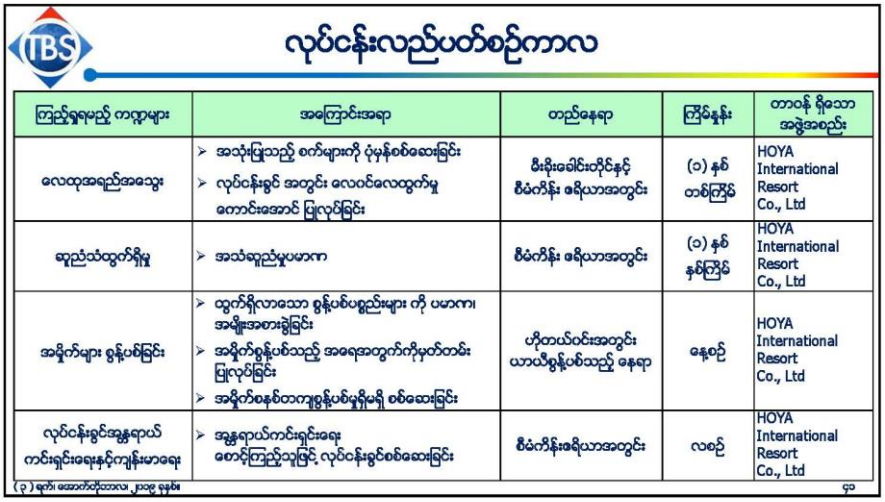

လုပ်သားများ၏ကျန်းမာရေးစောင့်ရှောက်မှု
သက်ရောက်မှု ကာလ
သက်ရောက်မှု
လျော့ချရေးနည်းလမ်းများ
တည်ဆောက်ရေး နှင့် ဖျက်သိမ်းစဉ်ကာလ
အစားအသောက်မသန့်ရှင်းခြင်း
စက်ပစ္စည်းများ ကိုင်တွယ် အသုံးပြုပြီးကိုင်း လက်ကို ဆပ်ပြာနှင့် စင်ကြယ်စွာဆေးကြောခြင်း။
ပိုးမွှားများကိုက်ခြင်း
လုပ်ငန်းခွင်အတွင်း သန့်ရှင်းစင်ကြယ်စွာ ထားရှိခြင်း။
ရောဂါပိုးရှိသူနှင့် ထိတွေ့ဆက်ဆံမိခြင်း
ကူးစက်ရောဂါဖြစ်ပွားနေသော လုပ်သားများကို လုပ်ငန်းခွင်မှ အနားပေးခြင်း။
အမှုလျှပ်ခြင်းနှင့်အားအင်ကုန်ခန်းခြင်း၊ အော့အန်ခြင်း၊ ချွေးထွက်လွယ်ခြင်း၊ သတိမေ့ခြင်း၊ ခေါင်းမူးခြင်း၊ မောပန်းနွမ်းနယ်ခြင်း၊သွေးအတက်အကျ ဖြစ်နိုင်ခြင်း၊ ကြွက်တက်ခြင်း၊ မအီမသာဖြစ်ခြင်း၊ ခေါင်းကိုက်ခြင်း
လုပ်ကိုင်နေသော လုပ်သားများကို အလှည့်ကျ လုပ်ကိုင်စေခြင်း။
လုပ်ငန်းလည်ပတ်စဉ် ကာလ
လုပ်ငန်းခွင်အတွင်း
အရေးပေါ်တုံ့ပြန်ရေးနှင့် လုံခြုံရေးဆိုင်ရာ သင်တန်းများကို ဝန်ထမ်းများအားလေ့ကျင့် သင်ကြားပေးခြင်း။
(၃) ရက်၊ အောက်တိုဘာလ၊ ၂၀၁၉ ခုနှစ်
၃၆


TBS
သဘာဝဘေးအန္တရာယ်များနှင့်မီးဘေးအန္တရာယ်
သက်ရောက်မှုကာလ
သက်ရောက်မှု
လျော့ချရေးနည်းလမ်းများ
တည်ဆောက်ရေး နှင့် ဖျက်သိမ်းစဉ်ကာလ
ငလျင်
အဆောက်အအုံများကို ငလျင်ဒဏ်ခံနိုင်သည့် ဒီဇိုင်းဖြင့် ဆောက်လုပ်ခြင်း။
ရေကြီးရေလျှံ
လုပ်ငန်းခွင်နေရာကို ရေကြီးမှုဒဏ် ခံနိုင်သည့်အမြင့်ထိ မြှင့်ထားခြင်း။
ပေါ့ဆမီး
မတော်တဆမီး
အရေးပေါ်ကယ်ဆယ်ရေးအဖွဲ့၊ မီးသတ်ပစ္စည်းများ နှင့် အရေးပေါ် ဆေးဘက်ဆိုင်ရာ ကယ်ဆယ်ရေး အစီအစဉ်များ ထားရှိခြင်း။
လုပ်ငန်းလည်ပတ်စဉ် ကာလ
လုပ်ငန်းခွင်အတွင်း
ရေမြောင်းများ ရေစီးရေလာကောင်းစေရန် စီမံထားရှိခြင်း။
အရေးပေါ်ကယ်ဆယ်ရေးအဖွဲ့၊ မီးသတ်ပစ္စည်းများ နှင့် အရေးပေါ် ဆေးဘက်ဆိုင်ရာ ကယ်ဆယ်ရေး အစီအစဉ်များ ထားရှိခြင်း။
(၃) ရက်၊ အောက်တိုဘာလ၊ ၂၀၁၉ ခုနှစ်။
၃၇


TBS
လူမှုစီးပွားအပေါ် ကောင်းကျိုးသက်ရောက်မှု
➢ အဆိုပြုစီမံကိန်းသည် စီးပွားရေးကဏ္ဍအတွက် ရေရှည်ရင်းနှီးမြှုပ်နှံမှု လုပ်ငန်း ဖြစ်ပါသည်။
➢ အဆိုပါစီမံကိန်းမှ လူမှုစီးပွားအပေါ် သက်ရောက်မှု အများစုသည် ကောင်းကျိုးများ ဖြစ်ပါသည်။
➢ စီမံကိန်းစတင် အကောင်အထည်ဖော်ဆောင်သည့် တည်ဆောက်ရေး ကာလနှင့် ပိတ်သိမ်းရေး ကာလတို့တွင် ယာယီ အလုပ်အကိုင် အခွင့်အလမ်းများ ဖန်တီးပေးနိုင်မည် ဖြစ်ပြီး လုပ်ငန်း လည်ပတ်ရေး ကာလတွင်လည်း အစဉ်အမြဲ အလုပ်အကိုင်များ ရရှိနိုင်မည် ဖြစ်ပါသည်။
➢ ထို့ကြောင့် ပတ်ဝန်းကျင် ပြည်သူလူထုအတွက် ဒေသအတွင်း လူမှုစီးပွား အခြေအနေများ တိုးတက်လာ နိုင်ပါသည်။
➢ ဒေသခံများနှင့် အနီးဝန်းကျင် အတွက် အလုပ်အကိုင် အခွင့်အလမ်းများ ရရှိစေခြင်း။
➢ နိုင်ငံ၀င်ငွေ တိုးတက် စေနိုင်ခြင်း။
➢ အရည်အချင်း ရှိသောဝန်ထမ်းများ ဖြစ်အောင် လေ့ကျင့်သင်ကြားပေးခြင်း။
➢ လူမှု အကျိုးတူ ပူးပေါင်းပါဝင်မှု (CSR) အစီအစဉ်များ ပြုလုပ်ခြင်းဖြင့် လူမှုဝန်းကျင်အပေါ် ကောင်းကျိုးများ ရရှိစေခြင်း။
(၃) ရက်၊ အောက်တိုဘာလ၊ ၂၀၁၉ ခုနှစ်။
၃၈


ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှု အစီအစဉ်


ပတ်ဝန်းကျင်လေ့လာစောင့်ကြည့်မှုအစီအစဉ်
တည်ဆောက်ဆဲကာလနှင့် လုပ်ငန်းလည်ပတ် ဆောင်ရွက်သည့်ကာလအတွက် EMP အစီအစဉ်ကို စနစ်တကျရေးဆွဲရမည်။
စောင့်ကြပ်ကြည့်ရှုစစ်ဆေးမှုရလဒ်များကို ပိုမို ကောင်းမွန် ရန် ပြန်လည် ပြင်ဆင် ရေးဆွဲ ရမည်။
ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှု အစီအစဉ်
စီမံကိန်း အကောင်အထည်ဖော်သူမှ ဆောင်ရွက်ရပါမည်။
ဌာနဆိုင်ရာ၊ စီမံကိန်းအကောင်အထည်ဖော်သူ၊ အနီးအနားရှိ ဒေသခံများမှ စောင့်ကြပ် စစ်ဆေးပေးရမည်။



လုပ်ငန်းလည်ပတ်စဉ်ကာလ

ကြည့်ရှုရမည့် ကဏ္ဍများ	အကြောင်းအရာ	တည်နေရာ	ကြိမ်နှုန်း	တာဝန် ရှိသော အဖွဲ့အစည်း
လေထုအရည်အသွေး	➢ အသုံးပြုသည့် စက်များကို ပုံမှန်စစ်ဆေးခြင်း ➢ လုပ်ငန်းခွင် အတွင်း လေဝင်လေထွက်မှု ကောင်းအောင် ပြုလုပ်ခြင်း	မီးခိုးခေါင်းတိုင်နှင့် စီမံကိန်း ဧရိယာအတွင်း	(၁) နှစ် တစ်ကြိမ်	HOYA International Resort Co., Ltd
ဆူညံသံထွက်ရှိမှု	➢ အသံလွှည့်မှုပမာဏ	စီမံကိန်း ဧရိယာအတွင်း	(၁) နှစ် နှစ်ကြိမ်	HOYA International Resort Co., Ltd
အမှိုက်များ စွန့်ပစ်ခြင်း	➢ ထွက်ရှိလာသော စွန့်ပစ်ပစ္စည်းများ ကို ပမာဏ၊ အမျိုးအစားခွဲခြင်း ➢ အမှိုက်စွန့်ပစ်သည့် အရေအတွက်ကိုမှတ်တမ်း ပြုလုပ်ခြင်း ➢ အမှိုက်စနစ်တကျစွန့်ပစ်မှုရှိမရှိ စစ်ဆေးခြင်း	ဟိုတယ်ဝင်းအတွင်း ယာယီစွန့်ပစ်သည့် နေရာ	နေ့စဉ်	HOYA International Resort Co., Ltd
လုပ်ငန်းခွင်အန္တရာယ် ကင်းရှင်းရေးနှင့်ကျန်းမာရေး	➢ အန္တရာယ်ကင်းရှင်းရေး စောင့်ကြည့်သုံးသပ်ခြင်း လုပ်ငန်းခွင်စစ်ဆေးခြင်း	စီမံကိန်းဧရိယာအတွင်း	လစဉ်	HOYA International Resort Co., Ltd

(၃) ရက်၊ အောက်တိုဘာလ၊ ၂၀၁၉ ခုနှစ်

လုပ်ငန်းလည်ပတ်စဉ်ကာလ

ကြည့်ရှုရမည့် ကဏ္ဍများ	အကြောင်းအရာ	တည်နေရာ	ကြိမ်နှုန်း	တာဝန် ရှိသော အဖွဲ့ အစည်း
မီးဘေး အန္တရာယ်	➢ အသုံးပြု နေသော လျှပ်စစ်မီးကြိုး များ၊ safeguardများ၊ breakerများ အခြေအနေ ➢ မီးသတ်ဆေးဘူးနှင့် မီးသတ် ရေကန် အခြေအနေ ➢ မီးဘေး အန္တရာယ် အချက်ပေး စနစ် နှင့် အသိပေး ဆိုင်းဘုတ်များ ➢ အရေးပေါ် ဆေးကုသရေး နှင့် မီးသတ်ဌာန၊ အစိုးရ ဌာနများနှင့် ဆက်သွယ်ရန် ဖုန်းနံပါတ်များ	လုပ်ငန်းခွင် ဧရိယာအတွင်း	လစဉ်	HOYA International Resort Co., Ltd

❖ ပတ်ဝန်းကျင် စီမံခန့်ခွဲမှု အစီရင်ခံစာ တွင် ပတ်ဝန်းကျင် စောင့်ကြပ်ကြည့်ရှုရေး အစီအစဉ်များနှင့် စီမံခန့်ခွဲမှု အစီအစဉ်များကို ထည့်သွင်း ရေးသားထားပါသည်။

❖ စောင့်ကြည့်မှု အစီအစဉ်မှရလဒ်များကို ပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဦးစီးဌာန (ECD) သို့ ၆လ တစ်ကြိမ် တင်ပြရမည်။

(၃) ရက်၊ အောက်တိုဘာလ၊ ၂၀၁၉ ခုနှစ်

ပတ်ဝန်းကျင်စီမံခန့်ခွဲမှုအစီအစဉ် ဖော်ဆောင်ရန် ဘဏ္ဍာငွေလျာထားမှု

ပတ်ဝန်းကျင်ဆိုင်ရာလုပ်ငန်းများ

ပတ်ဝန်းကျင်လေ့လာ စောင့်ကြည့်ရေးလုပ်ငန်းစဉ်	ခန့်မှန်းအသုံးစရိတ် US ဒေါ်လာ (နှစ်စဉ်)
ပတ်ဝန်းကျင်အရည်အသွေး တိုင်းတာခြင်း၊ စောင့်ကြပ်ကြည့်ရှုခြင်း	၂,၅၀၀
သက်ဆိုင်ရာသင်တန်းများ ပို့ချခြင်း	၁,၀၀၀
အရေးပေါ်အခြေအနေ	၂,၀၀၀

ကျန်းမာရေးနှင့် ဘေးအန္တရာယ် ကင်းရှင်းရေးဆိုင်ရာ လုပ်ငန်းများ

ပတ်ဝန်းကျင်လေ့လာ စောင့်ကြည့်ရေးလုပ်ငန်းစဉ်	ခန့်မှန်းအသုံးစရိတ် US ဒေါ်လာ (နှစ်စဉ်)
လုပ်ငန်းခွင်သုံးကာကွယ်ရေး ပစ္စည်း	၅,၀၀၀ - ၁၀,၀၀၀
ကျန်းမာရေးအထောက်အပံ့	၃,၀၀၀
မီးသတ်ဆေးဘူး	၁,၀၀၀




လူမှုအကျိုးတူပူးပေါင်းပါဝင်မှု (CSR) အစီအစဉ်

- ပြန်ဖာရင်းနှီးမြှုပ်နှံမှု တော်မတီ၏ ချမှတ်ထားသော နည်းလမ်းများအတိုင်း အမြတ်ဝင်ငွေမှ ၂ % ကို (CSR) အတွက် အသုံးပြုခြင်း ။
- ကုမ္ပဏီတွင်လည်း CSR အစီအစဉ်များချမှတ်ဆောင်ရွက်ခြင်း။

(၃) ရက်၊ ဧပြော်တိုဘာလ၊ ၂၀၁၉ ခုနှစ်။


ကျေးဇူးတင်ပါသည်။

APPENDIX B
Air Quality Results

ပတ်ဝန်းကျင်ရေးရာဓာတ်ခွဲခန်း
Ecological Laboratory

စိမ်းလန်းအမိမြေဖွံ့ဖြိုးတိုးတက်ရေးအသင်း (Advancing Life and Regenerating Motherland, ALARM)

Reference Number/ စာအမှတ်: EL-R / 03618

Date / နေ့စွဲ: 4 September, 2019

Laboratory Analysis Report /ဓာတ်ခွဲစစ်ဆေးမှုအစီအရင်ခံစာ

Sample Profileနမူနာရာဇဝင်

နမူနာအမည် /Sample Name	HOYA (TSP)	နမူနာအမှတ်/ Sample ID	5561	
နေရာ (မြို့နယ်) Location (Township)	Hlaing Tsp	လတ္တီတွဒ် Latitude	N 16°50′ 55.78″	
နေရာ (တိုင်း/ပြည်နယ်) Location (Division/State)	Yangon	လောင်ဂျီတွဒ် Longitude	E 96°7′ 29.71″	
ပေးပို့သူအမည် Sender Name	THEIN TUN OO	နမူနာကောက်ယူချိန် (နေ့၊ နာရီ) Sampling Time (Date, Time)	26.8.2019	-
အဖွဲ့အစည်းOrganisation	Total Business Solution			
ဆက်သွယ်ရန် Contact	095195669	နမူနာရောက်ရှိချိန် (နေ့၊ နာရီ) Arriving Time (Date, Time)	3.9.2019	-

(This laboratory analysis report is based solely on the sample submitted by the customer)
(ဤဓာတ်ခွဲစစ်ဆေးမှုအစီရင်ခံစာသည် ပေးပို့သူမှပို့ဆောင်ခဲ့သည့်နမူနာကိုသာအခြေခံထားပါသည်။)

Analysis Results စမ်းသပ်ချက်အဖြေ

Pure filter weight= 3.5095g

စဉ် Sr.	Sample Name	နည်းစဉ် Method	ရလဒ်အဖြေ (Results)
1.	HOYA (TSP)	METTLER (Weighting Balance)	0.435 g

* Myanmar Emission Guideline 2015 NG=No Guideline ND= Not Detected

စမ်းသပ်ပြီး Tested by

Daw May Myat Khine
Lab. Technician II
Ecological Laboratory
ALARM

တာဝန်ခံApproved by

Dr. Aye Aye Win
Laboratory In-Charge
Ecological Laboratory
(ALARM)

A-2, Kan Street, Hlaing Township, 11051, Yangon, Myanmar. Tel: +95 1 503301 | Fax: +95 1 503302
Email: alarm.myanmar@gmail.com | website: www.myanmaraffairs.com

ပတ်ဝန်းကျင်ရေးရာဓာတ်ခွဲခန်း
Ecological Laboratory

စိမ်းလန်းအဓိမြေဖွံ့ဖြိုးတိုးတက်ရေးအသင်း (Advancing Life and Regenerating Motherland, ALARM)

Reference Number/ စာအမှတ်: EL-R / 03619

Date / နေ့စွဲ: 4 September, 2019

Laboratory Analysis Report /ဓာတ်ခွဲစစ်ဆေးမှုအစီအရင်ခံစာ

Sample Profileနမူနာရာဇဝင်

နမူနာအမည် /Sample Name	HOYA (PM 10)	နမူနာအမှတ်/ Sample ID	5562	
နေရာ (မြို့နယ်) Location (Township)	Hlaing Tsp	လတ္တီတွဒ် Latitude	N 16°50′ 55.78″	
နေရာ (တိုင်း/ပြည်နယ်) Location (Division/State)	Yangon	လောင်ဂျီတွဒ် Longitude	E 96°7′ 29.71″	
ပေးပို့သူအမည် Sender Name	THEIN TUN OO	နမူနာကောက်ယူချိန် (နေ့၊ နာရီ) Sampling Time (Date, Time)	26.8.2019	-
အဖွဲ့အစည်းOrganisation	Total Business Solution			
ဆက်သွယ်ရန် Contact	095195669	နမူနာရောက်ရှိချိန် (နေ့၊ နာရီ) Arriving Time (Date, Time)	3.9.2019	-

(This laboratory analysis report is based solely on the sample submitted by the customer)
(ဤဓာတ်ခွဲစစ်ဆေးမှုအစီရင်ခံစာသည် ပေးပို့သူမှပို့ဆောင်ခဲ့သည့်နမူနာကိုသာအခြေခံထားပါသည်။)

Analysis Results စမ်းသပ်ချက်အဖြေ

Pure filter weight= 2.844g

စဉ် Sr.	Sample Name	နည်းစဉ် Method	ရလဒ်အဖြေ (Results)
1.	HOYA (PM 10)	METTLER (Weighting Balance)	0.162 g

* Myanmar Emission Guideline 2015 NG=No Guideline ND= Not Detected

စမ်းသပ်ပြီး Tested by

Daw May Myat Khine
Lab. Technician II
Ecological Laboratory
ALARM

တာဝန်ခံApproved by

Dr. Aye Aye Win
Laboratory In-Charge
Ecological Laboratory
(ALARM)

A-2, Kan Street, Hlaing Township, 11051, Yangon, Myanmar. Tel: +95 1 503301 | Fax: +95 1 503302
Email: alarm.myanmar@gmail.com | website: www.myanmaraffairs.com

APPENDIX C
Water Quality Results

ISO TECH LABORATORY

ISO 9001:2015 Cert. No. 688600

Laboratory Technical Consultant: U Saw Christopher Maung
B.Sc Engg: (Civil), Dip S.E(Delft) Lecturer of YIT (Retd), Consultant (Y.C.D.C), LWSE 001,
Former Member (UNICEF, Water quality monitoring & Surveillance Myanmar)

WTL-RE-001
Issue Date - 01-12-2012
Effective Date - 01-12-2012
Issue No - 1.0/Page 1 of 2

WW0819 091

WATER QUALITY TEST RESULTS FORM

Client: Total Business Solution
Nature of Water: Wastewater (Inlet)
Location: Hoya International Resort Co.,Ltd., Hlaing Township, N - 16.848297, E - 96.124083
Date and Time of collection: 26.8.2019 (11:45 AM)
Date and Time of arrival at Laboratory: 26.8.2019
Date and Time of commencing examination: 27.8.2019
Date and Time of completing: 1.9.2019

Results of Water Analysis

			WHO Drinking Water Guideline (Geneva - 1993)
pH	11.5		6.5 - 8.5
Colour (True)		TCU	15 TCU
Turbidity	421	NTU	5 NTU
Conductivity		micro S/cm	
Total Hardness		mg/l as $CaCO_3$	500 mg/l as $CaCO_3$
Calcium Hardness		mg/l as $CaCO_3$	
Magnesium Hardness		mg/l as $CaCO_3$	
Total Alkalinity		mg/l as $CaCO_3$	
Phenolphthalein Alkalinity		mg/l as $CaCO_3$	
Carbonate ($CaCO_3$)		mg/l as $CaCO_3$	
Bicarbonate (HCO_3)		mg/l as $CaCO_3$	
Iron	2.30	mg/l	0.3 mg/l
Chloride (as CL)		mg/l	250 mg/l
Sodium chloride (as NaCL)		mg/l	
Sulphate (as SO_4)		mg/l	500 mg/l
Total Solids		mg/l	1500 mg/l
Total Suspended Solids	588	mg/l	
Total Dissolved Solids	490	mg/l	1000 mg/l
Manganese		mg/l	0.05 mg/l
Phosphate	2.2	mg/l	
Phenolphthalein Acidity		mg/l	
Methyl Orange Acidity		mg/l	
Salinity		ppt	

Remark: This certificate is issued only for the receipt of the test sample.

Tested by
Signature:
Name: Zaw Hein Oo
B.Sc (Chemistry)
Sr. Chemist
ISO TECH Laboratory

Approved by
Signature:
Name: Soe Thit
B.E (Civil) 1980
Technical Officer
ISO TECH

(a division of WEG Co.,Ltd.)

No.18. Lanthit Road, Nanthargone Quarter, Insein Township, Yangon, Myanmar.
Ph: 01-640955, 09-73225175, 09-30339681, 01-644506, E-mail: isotechlaboratory@gmail.com, Website: weg-myanmar.com

ISO TECH LABORATORY

ISO 9001:2015 Cert. No. 688600

Laboratory Technical Consultant: U Saw Christopher Maung
B.Sc Engg: (Civil), Dip S.E(Delft) Lecturer of YIT (Retd), Consultant (Y.C.D.C), LWSE 001.
Former Member (UNICEF, Water quality monitoring & Surveillance Myanmar)

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WW0819 091

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Date and Time of collection: 26.8.2019 (11:45 AM)
Date and Time of arrival at Laboratory: 26.8.2019
Date and Time of commencing examination: 27.8.2019
Date and Time of completing: 1.9.2019

Results of Water Analysis

			WHO Drinking Water Guideline (Geneva - 1993)
Temperature (°C)	25.0	°C	
Fluoride (F)		mg/l	1.5 mg/l
Lead (as Pb)	Nil	mg/l	0.01 mg/l
Arsenic (As)	Nil	mg/l	0.01 mg/l
Nitrate ($N.NO_3$)	5.8	mg/l	50 mg/l
Chlorine (Residual)		mg/l	
Ammonia (NH_3)		mg/l	
Ammonium (NH_4)		mg/l	
Dissolved Oxygen (DO)	Nil	mg/l	
Chemical Oxygen Demand (COD)	320	mg/l	
Biochemical Oxygen Demand (BOD) (5 days at 20 °C)	90	mg/l	
Cyanide (CN)	Nil	mg/l	0.07 mg/l
Zinc (Zn)		mg/l	3 mg/l
Copper (Cu)		mg/l	2 mg/l
Magnesium (Mg)		mg/l	
Silica (Si)		mg/l	

Remark: This certificate is issued only for the receipt of the test sample.

Tested by
Signature:
Name: Law Hein Oo
B.Sc (Chemistry)
Sr. Chemist
ISO TECH Laboratory

Approved by
Signature:
Name: Soe Thit
B.E (Civil) 1980,
Technical Officer
ISO TECH

APPENDIX D
Consultant Registration

REPUBLIC OF THE UNION OF MYANMAR

Ministry of Natural Resources and Environmental Conservation

CERTIFICATE FOR TRANSITIONAL CONSULTANT REGISTRATION

(ကြားကာလအကြံပေးလုပ်ကိုင်သူမှတ်ပုံတင်ခြင်း အထောက်အထားလက်မှတ်)

No. 0010 Date 07 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၊ ၆၁၆/၂၀၁၅ အရ သယံဇာတနှင့် သဘာဝပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဝန်ကြီးဌာနသည် ဤအထောက်အထားလက်မှတ်ကို အဖွဲ့အစည်းအား ထုတ်ပေးလိုက်သည်။)

(a)	Name of Organization (အဖွဲ့အစည်းအမည်)	Total Business Solution Co., Ltd.
(b)	Name of the representative in the organization (အဖွဲ့အစည်းကိုယ်စားလှယ်၏ အမည်)	Mr. Praneet Prasongnitjakit
(c)	Citizenship of the representative in the organization (အဖွဲ့အစည်းကိုယ်စားလှယ်၏ နိုင်ငံသား)	Thai
(d)	Identity Card /Passport Number of the representative person in the organization (အဖွဲ့အစည်းကိုယ်စားလှယ်၏ မှတ်ပုံတင်/ နိုင်ငံကူးလက်မှတ် အမှတ်)	Z 322340
(e)	Address of organization (ဆက်သွယ်ရန်လိပ်စာ)	No.54, Room No.704, Waizayantar Tower, Waizayantar Road, Thingangyun Township, Yangon. tbs.myanmar@gmail.com praneet.tbs@gmail.com , 09253556719
(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 (၃၁-၃-၂၀၁၉) ရက်နေ့အထိ တစ်နှစ်သက်တမ်း တိုးမြှင့်သည်။
12.10.2018
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.Geology and Soil

3.Risk Assessment and Hazard Management

4.Socio-Economy

5.Water Pollution Control

6.Public Health

7.Safety and Health in Construction

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။
Soe Naing
12.6.2019
For Director General
(Soe Naing, Director)
Environmental Conservation Department