Yoma Central Project

Environmental Monitoring Report #3

for

Monitoring period April 2020 - September 2020

Document Title	Environmental Monitoring Report #3
Version	3
Date	16-October-2020
Author	Alexander @ Kyaw Thiha Hla Myint Assistant Compliance and Approval/Social Manager Yoma Central Project, SPA DPS
Reviewed by	Iain Fairbairn Project Director Yoma Central Project, SPA DPS
Approved by	Iain Fairbairn Project Director Yoma Central Project, SPA DPS

Contents

1. Executive Summary

1.1. Introduction

This report is the Environmental Monitoring Report for Yoma Central Project (formerly known as Landmark Project) - Construction Phase for the period of April 2020 to September 2020 by Meeyahta Development Limited (MDL). The project is a premium mixed development, scheme comprising residential, commercial, retail and hotel components located on 6.35-acre plot in the business center of Yangon, corner of Bogyoke Aung San Road and Alan Pya Pagoda Road.

1.2. Environmental Monitoring Commitments

Environmental monitoring requires a set of indicators that could be measured, assessed, and evaluated periodically to confirm that mitigation measures proposed for the Project are adequate to reduce the potential impacts. To control the adverse impacts on the environment and people, management plans and mitigation measures have been implemented by MDL.

Out of (67) environmental and social, occupational health and safety preventive and mitigation measures proposed by MDL in the EIA Report, (11) proposed activities have been completed while (48) are ongoing, (1) pending and the rest (7) are not applicable based on the condition at the time of reporting.

Environmental monitoring programs on ambient air quality, noise level, surface run off, and wastewater were conducted. As committed in the EMP of the EIA Report, the results were compared against environmental baseline surveys/ reference points from neighborhoods, NEQG (2015) and international standards (when applicable).

In general, for effluent discharge, when comparing with baseline data and NEQG (2015), it is observed that most of the parameters are within limit and observed that the project activities posed no major impacts to the environment during the construction phase. However, high levels of TSS were occasionally found in the discharge water due to the basement work activity. Desludging of septic tanks were done by YCDC and total of 389.38 m^3 of sewage were collected and disposed at YCDC.

A total of 2252.26 ton of non-hazardous waste are properly disposed at the designated facility and there is no disposal of non-hazardous waste during this reporting period.

Some occupational accidents were recorded during this reporting period and incident investigations for each case has been conducted to identify the root cause. Corrective actions are identified and implemented accordingly.

A grievance mechanism was implemented in order to keep a close and constant dialogue with the local population. One social grievance was received related to noise disturbances throughout the night which comes from construction project.

1.3. Difficulties Encountered and Remedies in implementation of EMP

There is one difficulty encountered by the Project during this reporting period, which is regarding on the waste water discharge quality, TSS being occasionally high, due to high ground water volumes coming out during excavation of the Basement during the wet (monsoon) season)

1.4. Conclusion and Recommendations

The Project has undertaken all the environmental monitoring programs as proposed in the EIA report. In this monitoring period, except TSS in effluent discharge being occasionally high, all the parameters are within the regulatory requirements/ baseline results. Even though, high TSS effluent was accidently discharge to the environment for a certain period, the Project has neither observed any impact to the surrounding environment nor received any complaint from the neighbourhood. The Contractor has taken a remedial action by identifying the root cause of the incidents and coming up with the mitigation measures to avoid similar incident in the future. The Project Proponent (MDL) will continuously monitor the Contractor's performance on the proposed mitigation measures for this incident as well as the other environmental performance. In accordance with the section-D6, Schedule 2 of Environmental Compliance Certificate for Landmark Project, MDL will disclose this Monitoring Report on its website.

2. Introduction

2.1. Project Background

Meeyahta Development Limited (MDL) intends to redevelop the company's existing 6.35-acre plot in the Yangon City Centre into a premium mixed development scheme comprising residential, commercial, retail and hotel components known as the Yoma Central Project (former Landmark Project, and hereinafter referred to as the "Project"). MDL is a joint venture between Yoma Strategic and its esteemed partners, Mitsubishi Corporation, Mitsubishi Estate, the International Finance Corporation (IFC), the Asian Development Bank (ADB) and First Myanmar Investment Company Limited (FMI).

The Project site is in the Yangon Central Business District (CBD) within Pabedan Township and covers an area of 6.35 acres (25,700 m^2). It is a built environment located at the busiest commercial hub of Yangon City. The overall development site is being shared between the Project and the International Hotel Project of Peninsula Yangon Limited (PYL). However, this report only considers the Project.

2.2. Purpose of the Environmental Monitoring Report

This Monitoring Report has been prepared in order to comply with the EIA Procedure (2015) and to present the information on the compliance of MDL to the commitments outlined in the EIA Report for the Project. In accordance with the EIA Procedure (2015), MDL has undertaken the requirements as listed in Table 2-1.

Table 2-1 Requirements for the Environmental Monitoring as per the EIA Procedure

No	Requirement	Status & Description
1	**Paragraph 106.** Undertake 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.	**Ongoing**. MDL has continuously implementing the Environmental Monitoring as per the requirements in the EIA Report.
2	**Paragraph 107**. Notify and identify in writing to the Ministry any breaches of its obligations or other performance failures or violations of the ECC or permit 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 hours, and in all other cases within seven days of the Project Proponent becoming aware of such incident.	**Ongoing**. Currently there is no breaches of the obligations of the EMP occurred during the Project.
3	**Paragraph 108**. Submit monitoring reports to the Ministry not less frequently than **every six months**, as provided in a schedule in the EMP, or periodically as prescribed by the Ministry.	**Ongoing**. This report is the 3rd Environmental Monitoring Report (April 2020 – September 2020) for Yoma Central Project. 1st Environmental Monitoring Report (April 2019 – September 2019) was submitted to ECD on 7-Nov-2019. 2nd Environmental Monitoring Report (October 2019 – March 2020) was submitted to ECD on 3-June-2020.
4	**Paragraph 109**. The monitoring reports shall include: • Documentation of compliance with all conditions; • 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;	**Completed**. This Environmental Monitoring Report includes: • Documentation of compliance with all conditions; presented in Section 4 and in the appendices. • Progress made to date on implementation of the EMP is presented in Section 5. • Difficulties encountered in implementing the EMP and recommendations for remedying those difficulties are presented in Section 5.2; • The number and type of non-compliance with the EMP and proposed remedial measures are presented in Section 5.1;

No	Requirement	Status & Description
	• Number and type of non-compliance with the EMP and proposed remedial measures and timelines for completion of remediation; Accidents or incidents relating to the occupational and community health and safety, and the environment; and monitoring data of environmental parameters and conditions as committed in the EMP or otherwise required.	Accidents or incidents relating to the occupational and community health and safety, and the environment are presented in Section 4.6.1. Monitoring data of environmental parameters and conditions as committed in the EMP are included in Section 4.2, 4.3, 4.4, 4.5.
5	**Paragraph 110**. Within ten days of completing a monitoring report as contemplated in **Paragraph 108** and **Paragraph 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 days of receiving such request, submit a digital copy via email or as may otherwise be agreed upon with the requestor.	To be completed once this report be submitted to MONREC. MDL will disclose this Monitoring Report on its website (https://yomacentral.com/).

2.3. Structure of the Environmental Monitoring Report

The monitoring report has been structured to align with Article 106 to 110 of the EIA Procedure as follows:

1. Executive Summary
2. Introduction
3. Project Description
4. Environmental Monitoring
5. Implementation of Environmental Management Plan Commitments
6. Reporting Environmental Breaches
7. Conclusions and Recommendations

3. Project Description

3.1. Project Location

The Project is located in the Yangon Central Business District (CBD) within the Pabedan Township. It covers an area of 25,700 m2 (6.35 acres) and is bounded by Bogyoke Aung San Road and Ahlan Pya Pagoda Road. Buildings/structures adjacent to the Project include the Bogyoke Aung San Market, St. Gabriel's Church, Sule Shangri-La Hotel, Central Hotel, and the main central railway line. The overall development site is being shared between the Project and the International Hotel Project of Peninsula Yangon Limited (PYL). The aerial view of the site and its surrounding areas within a 300 m radius are presented in Figure 3-1.

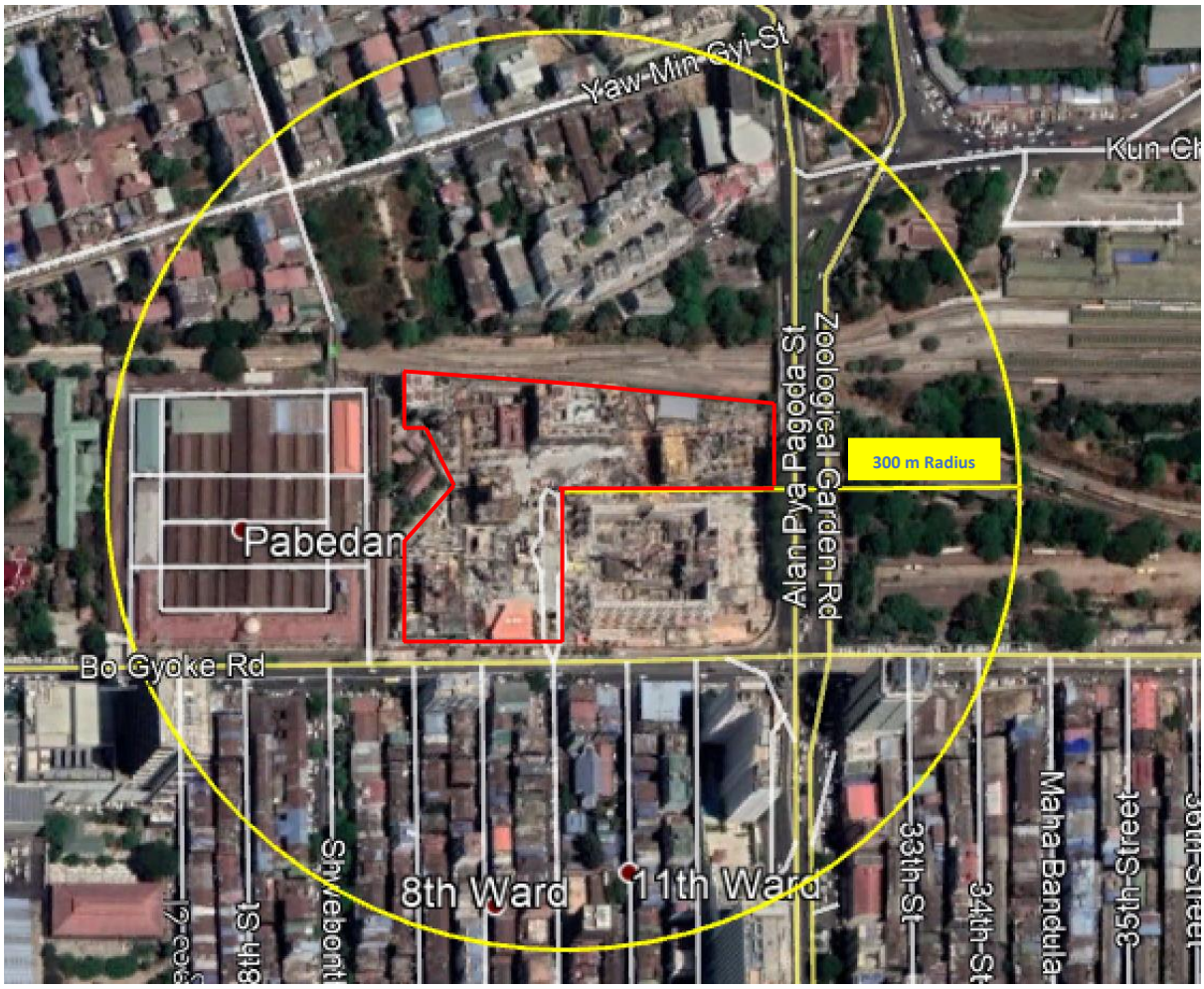


Figure 3-1 Aerial view of project site and surrounding areas within 300m radius

3.2. Project Overview

The Landmark Project involves the establishment of a premium mixed development scheme comprising the following components (Figure 3-2).

1. Office Towers
2. Hotel Tower
3. Residential Tower (Serviced Apartment)
4. Retail Podium
5. Basement Parking

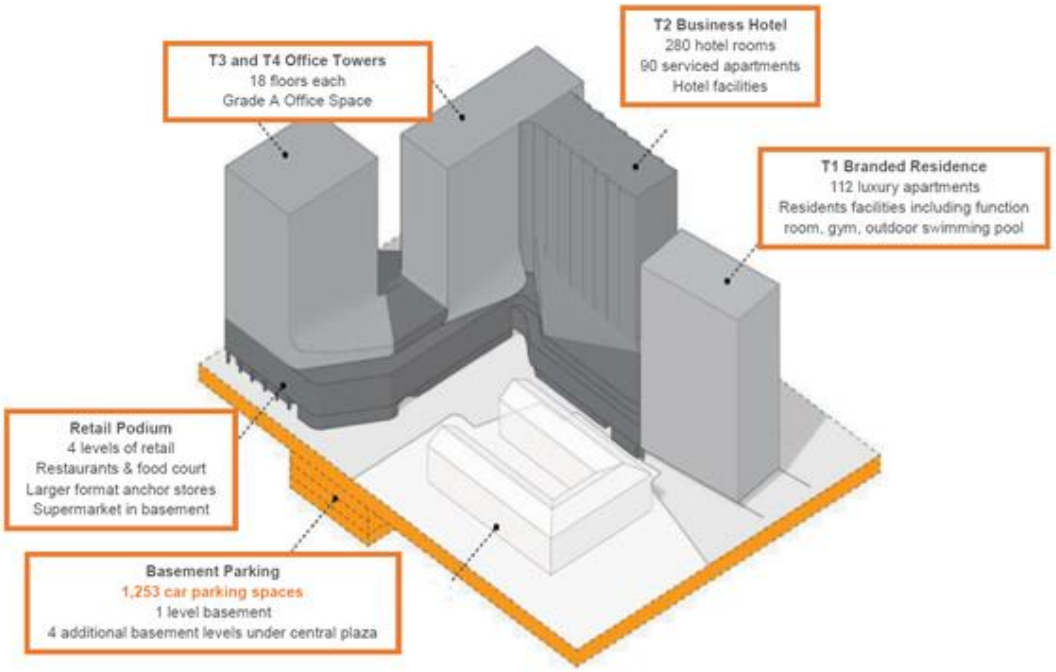


Figure 3-2 Yoma Central Project development components

3.3. Status of the Project

At the cut-off date (20th September 2020), the overall project completion is 35.4% which is based on a weighted percentage of time & value of each trade including direct works.

3.4. Health, Safety, Social and Environment (HSSE) Policies, Systems, Practices and Procedure

The HSSE policies, guidelines, and procedures have been development for Project activities by **MDL/ Yoma Land** is provided in Appendix-1.

4. Environmental Monitoring

4.1. Monitoring Requirements in the EIA Report

Environmental monitoring requires a set of indicators which are used against in measuring, assessing and evaluation of the environmental performance of the performance to ensure the potentials threats and impacts are adequately reduced by the project as reasonably as practical. In order to eliminate the potential impact and associated adverse impact on the People, Environment, Asset and Reputation (PEAR), mitigation measures and management plans are developed and implement by the Project and Contractors. As per the approved EIA report and ECC, the following monitoring programs are implemented for the Project.

- Ambient Air Quality Monitoring
- Noise Monitoring
- Site Run-Off and Wastewater Monitoring
- Waste Management
- Incident Management

The Project has committed, at all time, to comply National Environmental Quality (Emission) Guidelines (2015) and with consideration of the International Guidelines: International Finance Corporation (IFC) Performance Standards on Environmental and Social Sustainability (2012).

Table 4-1 Monitoring Requirement for the EIA Report

Monitoring Components	Monitoring Parameter	Duration	Frequency	Relevant Section of this Monitoring Report
Air Quality	$PM_{2.5}$ PM_{10} NO_X, SO_X,	24-hour 24-hour 1-hour 24-hour	Monthly	Section 4.2
Site Run-off and Wastewater	BOD COD Oil and Grease pH Total coliform bacteria Total nitrogen Total phosphorus Total suspended solids	Grab sampling	Quarterly	Section 4.4
Noise Level	Daytime Night-time	0700-2200 2200-0700	Daily	Section 4.3
Waste	Manifest Disposal Records	Throughout the construction phase	As and when required	Section 4.5
Social	Complaint Monitoring and solving	Throughout the construction phase	As and when required	Section 4.6.2
Occupational Health and Safety	Accidental statistics Cause of accidents Mitigation measures.	Throughout the construction phase	As and when required	Section 4.6.1

4.2. Ambient Air Quality Monitoring

MDL has awarded Environmental Quality Management Co., Ltd. (EQM) to conduct monthly ambient air quality monitoring around the project area. The sampling locations are as per below Table 4-2.

Table 4-2 Ambient air quality monitoring points

Sample Points	Locations	Coordinates	
		N	E
LM 1	St. Gabriel's Church (to the west of YCP site)	16°46'49.71"	96° 9'23.44"
LM 2	Bogyoke Aung San Road, to the side of Sule Shangri-La Hotel	16°46'45.31"	96° 9'30.98"
LM 3	Residential area located at the northern side of the Yoma project site	16°46'53.09"	96° 9'26.04"

Figure 4-1 Air monitoring point around YCP

The monitoring results for this reporting period are shown as below. The monitoring results are compared against with the limits from NEQG (2015) and baseline ambient air sampling, points nearest to the current monitoring locations, which was conducted from 3rd to 9th February 2015. (Reference: Table 5.9, Section 5.5 Air Quality, ESIA Report Sep'18.)

Table 4-3 Ambient air quality at LM 1

	NEQG (2015)	Baseline (Feb 2015)	April 2020	May 2020	June 2020	July 2020	August 2020	September 2020
PM10 (µg/ m3) (24 hour)	50	63	-	33	15	7	19	27
PM2.5 (µg/ m3) (24 hour)	25	59	-	19	8	3	11	15
SO_2 (µg/ m3) (24 hour)	20	42	-	6	5	16	15	18
NO_2 (µg/ m3) (One hour)	200	61	-	37	85	70	71	76

Table 4-4 Ambient air quality at LM 2

	NEQG (2015)	Baseline (Feb 2015)	April 2020	May 2020	June 2020	July 2020	August 2020	September 2020
PM10 (µg/ m3) (24 hour)	50	58	-	25	15	15	18	27
PM2.5 (µg/ m3) (24 hour)	25	38	-	19	7	6	16	17
SO_2 (µg/ m3) (24 hour)	20	94	-	15	13	16	15	18
NO_2 (µg/ m3) (One hour)	200	77	-	56	74	79	69	77

Table 4-5 Ambient air quality at LM 3

	NEQG (2015)	Baseline (Feb 2015)	April 2020	May 2020	June 2020	July 2020	August 2020	September 2020
PM10 (µg/ m3) (24 hour)	50	64	-	20	8	14	24	25
PM2.5 (µg/ m3) (24 hour)	25	51	-	13	5	10	14	15
SO_2 (µg/ m3) (24 hour)	20	75	-	13	12	12	12	14
NO_2 (µg/ m3) (One hour)	200	94	-	34	80	67	75	74

Detail of ambient air monitoring records for LM-1, LM-2 and LM-3 are provided in **Appendix-2**.

Ambient air quality monitoring was not able to be conducted in April 2020 due to the COVID-19 situation and associated Stay-At-Home program as instructed by MOHS.

Based on the above Table 4-3,Table 4-4 and Table 4-5 , it is observed that $PM_{2.5}$, PM_{10}, SO_2 and NO_2 levels at all (3) monitoring locations are well below the baseline data (February 2015) as well as NEQG (2015) values.

The Contractor's current air mitigation measures include:

- Road cleaning and pedestrian walkway cleaning reinforcing the use of brushing system daily.
- Installation of cover and water misting over the batching plant and storage areas to minimize the spread of fugitive dust.
- Use air blowers and water spray bottles to control dust emission in ceiling grinding activities.

4.3. Noise Monitoring

The logarithmic averages of daytime and night-time noise level are continuously monitored by the third-party monitoring company, Bureau Veritas, appointed by the main Contractor.

Table 4-6 Ambient noise level around the project

Ambient Noise Monitoring Location	NEQEG (2015)	North boundary	South East boundary (Sule)	West boundary (Church)
Day time average	70 dB(A)	66.79	70.97	64.66
Night time average	70 dB(A)	62.01	63.90	59.67

Detail of noise level monitoring records are provided in **Appendix-3**.

The above Table 4-6 shows that the ambient noise level at North and West boundary are well within the limit whereas that of south east is slightly above the limit. The monitoring location of south east boundary is located near one of the major crossroads in the city and it is assumed that the level high volume of traffic passing by at that intersection has a significant influence on the monitoring results. Hence, it can be concluded that the project activities do not cause noise pollution to the surrounding neighborhood.

4.4. Wastewater Monitoring

Construction run-off and storm water are channelled to sump pits, followed by pumping out to sedimentation tanks before discharging into public drainage system. Domestic wastewater from site offices and workers' toilets is collected by YCDC. The Main Contractor has been carrying out monthly water testing.

For September 2020, water samplings were collected from discharge points 1, 2, 5 and 7 and from wastewater treatment plant (discharge point 6). Discharge Point-4 has been completely removed due to construction works in the area. There was no outlet water in Discharge Point-3 and hence, sampling for that location was not conducted for Sep-2020.

Ambient water quality was also tested by collecting a sample from one manhole in Bogyoke Aung San Market that is located upstream of the site. The waster sample collection was on 4-Sep-2020 and test results were received on 15 Sep 2020.

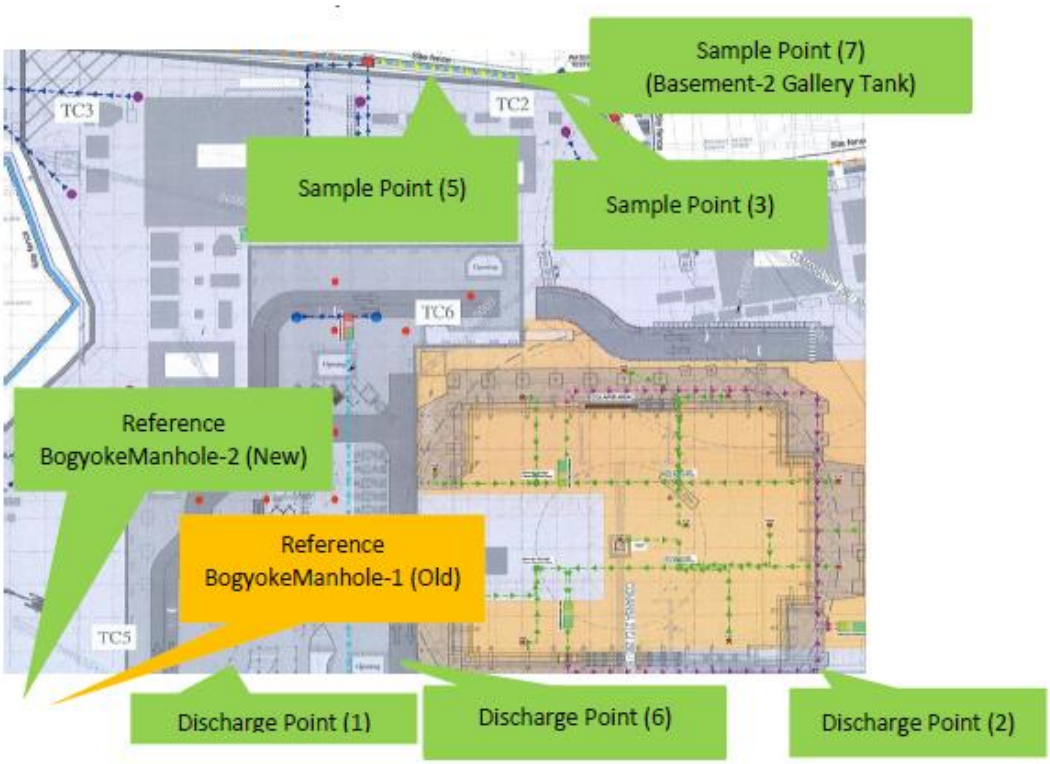


Figure 4-2 Water sampling points

Table 4-7 Effluent discharge analysis result

Parameter	NEQG (2015)	Reference Value *	Discharge Point-1	Discharge Point-2	Discharge Point-3	Discharge Point-4	Discharge Point-5	Discharge Point-6	Discharge Point-7
pH	6-9	8.6	7.8	8.3	-	-	9	8.6	9
Biological Oxygen Demand (mg/L)	30	22	21	27	-	-	28	22	22
Chemical Oxygen Demand (mg/L)	125	64	77	89	-	-	96	64	122
Total Coliform Bacteria (CFU/100ml)	400	20	60	110	-	-	40	30	100
Total Suspended Solid (mg/L)	50	26	26	48	-	-	59	22	265
Total Nitrogen (mg/L)	10	1.5	6.3	1.1	-	-	5.5	3.6	3.1
Total Phosphorus (mg/L)	2	0.14	0.39	<0.05	-	-	<0.05	<0.05	<0.05
Oil & Grease (mg/L)	10	<3.1	<3.1	<3.1	-	-	<3.1	<3.1	<3.1

*Collected from Bogyoke Market Manhole II.

The above table shows that all the parameters at each sample collection points (except TSS for Discharge Point-5 & 7) are within the limit as per NEGQ (2015). This is due to the outlet water of discharge point-7 was punctually muddy by mistake as the pump location and water mixing and contamination in relation with the excavation activity. Effluent discharge analysis lab report is provided in **Appendix-4**.

Moreover, the Contractor has carried out regular desludging of septic tanks by YCDC to ensure the occupational health and well beings of the workers and neighbourhood. The following Table 4-8provide the frequency and volumed of sewage disposed during this reporting period.

Table 4-8 Sewage volume disposed at YCDC

Sr No.	Month	Sewage Volume in m^3
1.	April 2020	57.38
2.	May 2020	63.42
3.	June 2020	69.46
4.	July 2020	63.42
5.	August 2020	60.10
6.	September 2020	75.5
	Total	389.28

The detail of desludging and sewage disposal records are provided in **Appendix-5**.

4.5. Waste Management

All waste is recorded by the Contractor as it leaves the site and is disposed in authorized locations. Wood, plastic, and domestic wastes generated from the site are disposed by YCDC at designated dump yard. Steel waste from the site are handled by Kyaw Group – Steel Furniture company for recycling after refurbishment at No. 253, Ward 64, Industrial Zone (3), South Dagon Township, Yangon.

The volumes of solid wastes generated from the project activities during the reporting period are sorted and shown in theTable 4-9. Total of 2252.26 tonnes of non-hazardous waste are generated and disposed at the designated location whereas, there is no hazardous waste disposal in this reporting period.

The detail records for August/September 2020 are provided in **Appendix-6**.

Table 4-9 Waste disposal quantity and disposal location

Solid Waste Type	Waste Category	Final Disposal Location	Quantity in Tonnes					
			Apr 2020	May 2020	Jun 2020	Jul 2020	Aug 2020	Sep 2020
Wood	Non-hazardous waste	Donation to Monastery	13.2	6.6	19.8	13.2	13.2	9.27
Steel	Non-hazardous waste	Store at warehouse in North Okkalapa to Recycle	95.5	21.22	108.9	86.43	44.49	44.93
Mixed Waste	Non-hazardous waste	Dumping at Dawei Chaung dump yard	45.9	69.9	220.5	138.18	84.6	93.6
Mixed Waste	Non-hazardous waste	Dumping at AMoeNi Cemetery waste disposal area	-	20	12.6	18.8	63.92	7.52
Concrete/ Inert Brick/ FMI demolition	Non-hazardous waste	Reuse as filling material at: i) No. (3017) Air Force Battalion, Mingaladon Tsp. ii) Yan Pyae Block, Thaketa Tsp. iii) WYTU (Technological University)	64	-	-	-	-	936
Chemical Material	Hazardous waste	Dispose at engineered landfill	-	-	-	-	-	-

4.6. Incident Monitoring

4.6.1. Social Grievances

During this reporting period, there is only (1) grievance by the community and detail is as per below Table 4-10.

Table 4-10 Summary of social grievance case

Date Received	26-Jun-2020
Affected Community	St. Gabriel's Church
Summary of Complaint	Noise disturbances throughout the night that comes from construction works as well as from workers shouting
Date Closed	13-Jul-2020
Action Taken	• Trainings are provided to workers to reduce the noise. • No concrete hacking nearby the Church during the night. • Steel rebar cutting station was moved far away from the Church fence. • Upon checking again with affected community on 14 Jul 20, it is confirmed that they are not disturbed by the construction noises from 11PM to 5AM which is acceptable to them.

4.6.2. Occupational Health and Safety Incidents

Occupational health and safety performance of the Contractor is closely monitored by the Project Management Service Company (SPA DPS). During this reporting period, there are (8) case of incidents from the project activities which are summarized in Table 4-11.

Table 4-11 Occupational Health and Safety Incident Summary

No.	Ref.	Date	Time	Location	Description	Contractor	Incident Type	Immediate action taken
1.	YCP -097	04/04/2020	9:30 PM	Tower 4	Worker fell from heights after stepping on an unsecured metallic plank. The worker harness was not hooked on.	BTJV	Notable	Work suspended, area made safe and cordoned off. IP was sent to YGH after receiving first aid treatment from the site medical centre.
2.	YCP -098	08/05/2020	3:30 PM	Tank B3	IP got crushed injury on his right hand while he is undoing the tie rod lock connection the two waler beams on the formwork, the waler beam fell and subsequently hit to his right hand. At that time IP was not wearing his hand gloves.	BTJV	Notable	Area made safe. IP was immediately brought to site clinic where first aid was administered and later to YGH for further management.
3.	YCP -099	30-05-2020	9:45 AM	Tower-2 L1A	A rebar worker was hit on the back by a falling push pull prop that became detached from being installed from form works after a worker stepped on it. The IP's work mate utilizes the props as means of access as none provided at the time. The prop fell from the small opening from the bottom deck of lubeca jump form at	BTJV	Accident with lost time	The gap opening where the prop fell was sealed. IP sent to the clinic by his workmates where first aid was done. He was sent to Yangon General Hospital (YGH) to rule out fracture.

					approximately 3 meters. Below is the IP who was passing the rebar to be installed in the core wall.			
4.	YCP -101	27/6/2020	11:45AM	T-1 L7	Two workers got injuries while they are assisting the signal man to move the scaffolding materials with crane due to the unbalance of the load. One worker got open fracture on the right little finger another worker got injury on his left wrist.	BTJV	Accident with lost time	Injury workers immediately sent for treatment.
5.	YCP -103	8/7/2020	9:05AM	T3 Core wall (CW3.1)	The discharge pipe of the spider concrete placing went on whiplash effect and splashes concrete while the residual concrete being discharge with a cleaning ball. Two workers holding the discharge pipe received injury (bruising and abrasions with chemical burn) on the face and abdomen respectively with splashed concrete.	BTJV	Accident with lost time	Injured parties sent to site clinic for first aid treatment and immediately sent to YGH (Yangon General Hospital) for further management.
6.	YCP -106	4.9.2020	21:30	T2 L2	A rebar worker accidently caught his left index finger on the bar bending point.	BTJV	Accident with lost time	First aid treatment given to IP at the site clinic and sent to YGH for further treatment.

7.	YCP -108	7.9.2020	18:00	T3 L5	A concrete debris dropped from the deck of core wall 3.1 L5 to L4 subsequently hit to the worker's back resulting to abrasions and clavicle dislocation or fracture.	BTJV	Accident with lost time	First aid treatment given by immobilization of the clavicle prior sending to YGH.
8.	YCP -109	10.9.2020	8:30	CW 2.2 L11	A worker was injured on the left leg after struck by a falling corner wall panel used on the jump form. A tie rod used to secure the panel broke and fall to the worker's leg who is securing it with props at the bottom.	BTJV	Accident with lost time	First aid treatment given to IP at the site clinic and sent to YGH for further treatment.

The accident investigation report is provided in **Appendix-7**.

5. Implementation of the Environmental Management Plan

5.1. Number and Type of Non-Compliances and Proposed Remedial Measures

To demonstrate the Project commitments towards sound Environmental Management, the Project has adopted all the commitment listed in the EIA reports. As the Project is in the construction phase, the report emphasizes only on the status of the implementation of ESMP for the construction which is provided in detail in the following Table 5-1.

Out of (67) environmental and social, occupational health and safety preventive and mitigation measures proposed by MDL in the EIA Report, (11) proposed activities have been completed while (48) are ongoing, (1) pending and the rest (7) are not applicable based on the condition at the time of reporting.

During this reporting period, there is one recorded non-compliance regarding surface run-off discharge as per September 2020 water analysis report and detail has been described in Table 5-2.

Table 5-1 ESMP implementation status

No.	Mitigation/ Management Measures	Status
Air Quality		
1	Carry out regular surface damping or wetting on general site areas, stockpiled fill, and aggregates especially during dry ambient conditions;	**Ongoing**
2	Provide site enclosure and covering of any aggregates or stockpiles.	**Ongoing**
3	Ensure that all hardstanding areas and access roads within the site are wet twice a day.	**Ongoing**
4	Provide wheel-washing facilities or trough at the ingress/egress points. These facilities will be equipped with (1) a temporary hardstanding of sufficient size to accommodate a standard sized vehicle and equipped with a sump; and (2) high pressure water jets.	**Completed**
5	Vehicles operating within the Project site and especially within the construction exceeding 10 km/hr.	**Ongoing**
6	Surface damping will be carried out on a 50 m road stretch on the public road outside the site's access point.	**Not applicable**
7	All construction vehicles transporting dusty materials will be secured with appropriate materials/sheets to prevent the escape of fugitive dust.	**Ongoing**
8	Open burning on the site premises is strictly prohibited.	**Ongoing**
9	Turning off trucks' engines and equipment when not in use.	**Ongoing**
10	Turning of equipment when not in use.	**Ongoing**
11	Regular maintenance of construction vehicles/equipment.	**Ongoing**

12	Ambient air quality monitoring to be carried out monthly at two locations along the Project site boundary and one location at the Church compound.	**Ongoing**
Vibration		
13	Pre-construction surveys will be conducted prior to commencement of major site works such as demolition, piling and foundation works.	**Completed**
14	Sequential work arrangement to avoid cumulative vibration impacts.	**Completed**
15	Noise and vibration barrier will be erected.	**Ongoing**
Noise		
16	Consideration for alternative construction methodologies: The use of hydraulic breakers should be avoided, and hydraulic crushers should be used instead. These crushers are typically 6-12 dB(A) quieter.	**Not Applicable**
17	Use of mobile barriers: Movable noise barriers will be used as necessary to achieve 5 dB(A) reduction for movable construction equipment or 10 dB(A) for stationary ones.	**Not Applicable**
18	Construct walled enclosures around especially for noisy activities, or cluster of noisy equipment.	**Completed**
19	The Contractor will submit the method statement to the Engineer for comments on the construction methods, use of equipment and noise mitigation measures intended to be implemented on-site;	**Ongoing**
20	The Contractor will devise and execute working methods to minimize the noise impact on the surrounding sensitive uses, and to provide experienced personnel with suitable training to ensure that those methods are implemented;	**Ongoing**
21	Noisy equipment and noisy activities will be kept as far away from the NSRs as possible	**Ongoing**
22	Unused equipment will be turned off and the parallel use of noisy equipment/ machinery will be avoided;	**Ongoing**

23	Queuing of dump trucks will be avoided. Their intermittent use will be avoided between loading cycles or may be throttled down to a minimum to reduce noise.	**Ongoing**
24	Regular maintenance of all plant and equipment	**Ongoing**
25	Material stockpiles and other structures will be effectively utilised as noise barriers, where practicable.	**Completed**
26	Noise monitoring to be carried out monthly at two locations along the Project site boundary and one location at the Church compound.	**Ongoing**
Water Quality		
27	Sediment retention structures such as silt traps or catch pits of adequate sizes will be provided at suitable locations within the active works area of the Project site to remove soil and sediment in the surface runoff prior to discharge into the receiving drainage channels. The silt traps/ catch pits will be regularly maintained and desilted to provide maximum silt removal efficiencies. Oil and grease removal facilities will also be provided to ensure the overflows from the silt trap do not have traces of oil and grease.	**Ongoing**
28	These structures will be located, designed, and constructed in a manner that will minimize the potential threat of downstream flooding.	**Ongoing**
29	Any disturbed earth caused by construction activities or fill operations will be firmly consolidated and compacted by earth moving vehicles and compactors to reduce the rate of possible erosion and release of loose soil particles.	**Ongoing**
30	Denuded stretches will be re-vegetated or sealed immediately after the construction works. Suitable re-vegetation programmes will be planted as quickly as possible on exposed areas to reduce surface runoff and sediment loss.	**Pending**
31	Uncovered stockpiles of excavated material or topsoil and fill material are prone to erosion and therefore will be protected. Small stockpiles can be covered with tarpaulin sheets and large stockpiles will be stabilized by erosion blankets and regularly damped.	**Ongoing**

32	Construction of a wash trough at the ingress/ egress point of the Project site to remove dirt/soil from vehicles and machinery leaving the site. The wash trough will have spray jet facilities and all surface discharge from the wash trough will be channelled into the temporary drainage system.	**Completed**
33	Development of an Erosion and Sedimentation Control Plan (ESCP) for integration into the Earthworks and Drainage Plan which will be submitted to the YCDC and related agencies.	**Completed**
34	Stockpiles of construction aggregate spoil and excavated soil will be located at areas within the project site that do not permit direct run off into water courses. On-site storage of excessive quantities of such materials will be avoided and where not possible the use of geotextile material or tarpaulin covers and regular damping will be considered to minimise erosion.	**Ongoing**
35	The overflow from the silt traps will be monitored on a quarterly basis to ensure compliance to the following limit: Total Suspended Solids (TSS): 50 mg/l Other parameters to be monitored on a quarterly basis include the following: BOD: 30 mg/l COD: 125 mg/l Total Coliform: 400 MPN/100 ml Oil and Grease: 10 mg/l pH: 6.0 – 9.0	**Ongoing**
36	Temporary and/ or permanent drainage systems will be installed immediately following the site preparation works to minimize downstream flooding.	**Ongoing**
37	Visual monitoring of the temporary and/or permanent drainage system will be carried out on a weekly basis and immediately after a heavy rainfall event. If these channels are obstructed, measures will be taken to prevent drainage impedance.	**Ongoing**
38	Appropriate sanitary facilities will be provided and properly maintained for construction workers throughout the construction stage. Direct discharge of untreated sewage into underlying soil, groundwater or surface water is prohibited. If portable toilets are used at the site, they must be of sufficient numbers and meet the requirements of Yangon City Development Council.	**Ongoing**
39	Temporary septic systems will be provided and properly maintained for construction workers to prevent any release of untreated sewage into YCDC main drain.	**Ongoing**

40	These facilities will be maintained and cleaned daily.	**Ongoing**
41	Periodical desludging of the septic will be carried out by YCDC.	**Ongoing**
42	The effluent (Sewage Effluent and Domestic Wastewaters) will be monitored on a quarterly basis to ensure compliance to the following limit: - TSS: 50 mg/l Other parameters to be monitored on a quarterly basis include the following: - BOD: 30 mg/l - COD: 125 mg/l - Total Coliform: 400 MPN/100 ml - Oil and Grease: 10 mg/l - pH: 6.0 – 9.0	**Ongoing**
43	A secured area (enclosed with hardstanding impervious base) will be provided for the storage of any hazardous materials and hazardous wastes.	**Ongoing**
44	All temporary fuel tanks and drum storage areas will be provided with drip collection devices and be sited on sealed areas (for example, concrete paved areas) with appropriate bunding for accidental spill containment. A valve will be installed at the discharge outlet of the bunded area.	**Ongoing**
45	Any accidental spills of fuel, oil or other hazardous chemicals will be cleaned up immediately. The recovered media (contaminated soil, absorbent pads, rags etc.) will be disposed of as hazardous waste.	**Not applicable yet**
46	All activities that may result in the potential release of hazardous materials to the ground such as changing of engine oils and lubrication oils from construction vehicles, equipment and generators on site will be performed only on designated sealed areas or on drip trays to reduce the risk of direct spill into the underlying soil and groundwater. Spent oil must be handled and disposed of as hazardous waste.	**Ongoing**
47	Daily inspection of the hazardous materials storage area and the areas designated for refuelling.	**Ongoing**

48	Appropriate sanitary facilities will be provided and properly maintained for construction workers throughout the construction stage. Direct discharge of untreated sewage into underlying soil, groundwater or surface water is prohibited. If portable toilets are procured to the site, they must be of sufficient numbers and meet the requirements of Yangon City Development Council.	**Ongoing**
49	Temporary septic systems will be provided for use at the proposed site to prevent any release of untreated sewage into YCDC main drain.	**Ongoing**
50	These facilities will be maintained and cleaned on a daily basis.	**Ongoing**
Non- Hazardous Waste Management		
51	Good housekeeping practices are essential within the site. Open burning of any form of construction waste material within the Project site is strictly prohibited as apart from polluting the atmosphere and reducing the ambient air quality at the site, the activity poses a risk of fire spreading to the hazardous materials storage areas (example, diesel storage area).	**Ongoing**
52	General construction spoil will be recycled on site as much as possible. For example, construction aggregate materials may be considered as possible backfill material.	**Ongoing**
53	Domestic waste generated from the site offices and workers' temporary cabins will be stored in suitable covered receptacles or stored within enclosed areas and collected regularly by a YCDC-licensed contractor for disposal at an approved disposal/ landfill site.	**Ongoing**
54	Unsalvageable construction spoil will be stockpiled at a designated site and sold to salvage yard operators or other contractors interested in recycling the material.	**Ongoing**
55	Daily inspection on housekeeping, storage and disposal of non-hazardous waste generation from the Project Site will be carried out.	**Ongoing**
56	Submission of weekly report on the quantity and type of waste generated and its disposal method. Copies of the receipts used in the sale and/or of the waste materials will also be appended in the report.	**Ongoing**

Hazardous Waste Management

57	As presently there is no collection system for hazardous waste in Yangon, the YCDC entrusts PCCD to collect industrial waste, together with municipal and general waste.	**Not Applicable yet**
58	PCCD collects industrial waste on request.	**Not Applicable yet**
59	Project management team will meet with PCCD to discuss available options in deciding the best option in ensuring safe management and disposal of hazardous waste.	**Not Applicable yet**
60	Daily inspection on housekeeping, storage, and disposal of hazardous waste generation from the Project Site will be carried out.	**Ongoing**
61	Submission of weekly report on the quantity and type of hazardous waste generated and its disposal method. Copies of the receipts used in the sale and/or of the waste materials will also be appended in the report.	**Ongoing**

Landscape and visual

62	A decorative hoarding will be erected around the periphery of the site to screen the temporary construction works from the local low-level receivers, mainly pedestrians. The proposed hoarding would provide a unified edge treatment and interface between the construction site and its landscape context.	**Completed**
63	Mitigation measures to retain existing trees include: - Phased segmental root pruning for tress; - Pruning of branches of existing trees; - Increase watering of existing vegetation; - All works affecting the tree identified for retention and transplantation will be carefully monitored; and - Tree transplanting and planting works will be implemented by approved Landscape Contractors, inspected and approved by qualified Landscape Architect.	**Completed**

Traffic and Transportation		
64	Daily inspection of the hoarding to ensure there are no breaches or damaged areas.	**Ongoing**
65	Construction traffic will avoid the peak traffic hours and adhere to YCDC limitations on vehicle size during specified hours of the day.	**Ongoing**
Health and Safety		
66	The Guidelines on Minimum Health & Safety Standards for Major Works developed by SPAPM will be adopted for the construction and operational phases of the project.	**Completed**
67	During the construction phase, provisions will be made for the appointment of a Health and Safety Officer at the Project site. Alternatively, one of the members of the ET can assume the role of managing the health and safety requirements at the Project site.	**Completed**

Table 5-2 Environmental incident summary

Sample collected date	4-Sep-2020
Issue	Discharge of muddy water which are in high TSS value at discharge point 5 & 7.
Summary event	While the Contractor working in full production on the excavation at Basement-5, muddy water unexpectedly went into the discharge stream due to the pump location and water mixing and contamination in relation with the excavation activity.
Root Cause	• Misunderstanding or inefficient management of the people in charge of the dewatering mainly in tank area • Lack of information and awareness of the involved workers on the water quality issue • Unappropriated number of sedimentation tanks • Unsuitable maintenance of the sedimentation tanks
Mitigation Measures	• Training of the workers by the environmental engineer, • Better daily supervision of the plumber team with a dedicated foreman to control the tank dewatering and sedimentation tanks cleaning, • Improvement of the sedimentation maintenance (manpower and frequency), • As much as possible to pump the water from the dewatering deep wells, • Additional sedimentation tanks to be built along the fence behind tower 2 before discharging to YCDC drain.
Target Completion Date	Subjected to commence of work and approval condition due to COVID-19 situation.

5.2. Difficulties Encountered and Remedies

Major difficulties encountered during this reporting period is unexpected volume of water coming out from Basement-5 excavation activity, leading to overloading the sedimentation tank capacity and occasionally resulting a high TSS effluent discharge to the public storm water drain.

6. Reporting Environmental Breaches

One environmental breach has been recorded as per the water analysis result and incident has be described in Table 5-2.

7. Conclusion and Recommendations

Out of (67) environmental and social, occupational health and safety preventive and mitigation measures proposed by MDL in the EIA Report, (11) proposed activities have been completed while (48) are ongoing, (1) pending and the rest (7) are not applicable based on the condition at the time of reporting.

Environmental monitoring programs on ambient air quality, noise level, surface run off, and wastewater were conducted. As committed in the EMP of the EIA Report, the results were compared against environmental baseline surveys/ reference points from neighborhoods, NEQG (2015) and international standards (when applicable).

In general, for effluent discharge, when comparing with baseline data and NEQG (2015), most of the parameters are within the limit and it is observed that the project activities posed no major impacts to the environment during the construction phase. However, high levels of TSS were found in the discharge water due to the basement work activity. Desludging of septic tanks were done by YCDC and total of 389.38 m^3 of sewage were collected and disposed at YCDC.

A total of 2252.26 ton of non-hazardous waste are properly disposed at the designated facility and there is no disposal of non-hazardous waste during this reporting period.

Some occupational accidents were recorded during this reporting period and incident investigations for each case has been conducted to identify the root cause and failed barriers. Corrective actions are identified and implemented accordingly.

A grievance mechanism was implemented in order to keep a close and constant dialogue with the local population. One social grievance was received related to noise disturbances throughout the night which comes from construction project.

There is one difficulty encountered by the Project during this reporting period, which is regarding on the effluent discharge quality, TSS being high, due to unexpected ground water coming out during excavation of Basement-5. The Contractor has taken a remedial action by identifying the root cause of the incidents and coming up with the mitigation measures to avoid similar incident in the future. The Project Proponent (MDL) will continuously monitor the Contractor's performance on the proposed mitigation measures for this incident as well as the other environmental performance.

In accordance with the section-D6, Schedule 2 of Environmental Compliance Certificate for Landmark Project, MDL will disclose this Monitoring Report on its website.

Appendix-1 Yoma Strategic Holding's Environmental, Health and Safety Policy

Yoma Strategic Holdings Ltd - EH&S Policy

Objective

Yoma Strategic Holdings Ltd ("YSH") and its subsidiaries ("the Group") have implemented its policy on 'Environment, Health and Safety' in support of a Group wide Corporate Governance framework, to:

- foster greater awareness of sustainable approaches across the group;
- enhance its capabilities to identify and manage adverse impacts from all business activities; and
- instill a culture of 'no harm, less pollution and wider conservation approaches to protect the environment' in all business operations.

Our commitment

In line with International Finance Corporation's (IFC) Performance Standards, Asia Development Bank's (ADB) Safeguard policy, national environmental policies and other applicable laws, the Group is required to safeguard the environment by:

- incorporating environmental and social considerations into business strategy, and allocate adequate resources to manage EH&S risks associated with projects;
- promoting a safe, clean and healthy environment and better work culture to minimise any adverse environment, health, safety and social impacts arising out of operations;
- establishing EH&S system and processes to adhere & comply with applicable legislation, regulations and other requirements pertaining to environment, health, safety, labour and community at large;
- optimising the energy and resources with minimising wastes, increasing use of environmentally sustainable products, materials and services;
- monitoring, reporting and improving of applicable procedures and performances (where required) regularly; and
- communicating EH&S policy to all employees, contractors, suppliers and business partners.

This policy will be disseminated and published to all employees, contractors, suppliers and business partners together with all updates and clarifications.

Appendix-2 Ambient Air Monitoring Results

LM-1

Main | Preferences | Header | Data | Report

Environmental Report

Record Cnt 96

Start Date 5/12/2020 6:00:00 AM

End Date 5/13/2020 6:00:00 AM

	NO2 uG/m3	PM10 uG/m3	PM25 uG/m3	RH %	SO2 uG/m3	TmpC Deg. C	WDir Deg.	WSpM kph	Pwr V
Ave	22.0729	32.8020	19.0416	56.125	6	34.7604	218.218	.477083	12.3666
Max	40	41	39	75	9	45	346	2.3	12.8
Min	2	10	5	35	1	30	0	0	11.9

Main | Preferences | Header | Data | Report

Environmental Report

Record Cnt 95

Start Date 6/22/2020 7:35:00 AM

End Date 6/23/2020 7:35:00 AM

	NO2 uG/m3	PM10 uG/m3	PM25 uG/m3	RH %	SO2 uG/m3	TmpC Deg. C	WDir Deg.	WSpM kph	Pwr V
Ave	72.4631	15.3157	8.37894	98.6842	5.37894	27.5789	2.58947	.014736	12.1610
Max	101	84	68	100	9	31	246	.4	12.5
Min	3	2	1	80	1	26	0	0	12

Main | Preferences | Header | Data | Report

Environmental Report

Record Cnt 96

Start Date 7/21/2020 9:05:00 AM

End Date 7/22/2020 9:05:00 AM

	NO2 uG/m3	PM10 uG/m3	PM25 uG/m3	RH %	SO2 uG/m3	TmpC Deg. C	WDir Deg.	WSpM kph	Pwr V
Ave	57.6145	7.48958	2.86458	96.875	16.0416	27.0416	0	.215625	12.3854
Max	77	36	15	100	25	30	0	3.5	12.6
Min	8	2	1	90	9	25	0	0	12

Main | Preferences | Header | Data | Report

Environmental Report

Record Cnt 95

Start Date 8/7/2020 9:00:00 AM

End Date 8/8/2020 8:30:00 AM

	NO2 uG/m3	PM10 uG/m3	PM25 uG/m3	RH %	SO2 uG/m3	TmpC Deg. C	WDir Deg.	WSpM kph	Pwr V
Ave	60.0631	19.0947	11.4315	100	14.6315	26.2315	172.884	.606315	12.3042
Max	99	39	27	100	25	29	306	3.9	12.5
Min	9	2	1	100	1	24	0	0	12

Main | Preferences | Header | Data | Report

Environmental Report

Record Cnt 95

Start Date 9/1/2020 9:15:00 AM

End Date 9/2/2020 8:45:00 AM

	NO2 uG/m3	PM10 uG/m3	PM25 uG/m3	RH %	SO2 uG/m3	TmpC Deg. C	WDir Deg.	WSpM kph	Pwr V
Ave	60.2105	27.1473	14.8105	100	17.5473	26.6947	119.715	.086315	12.1410
Max	111	169	64	100	29	31	146	.6	12.3
Min	8	2	1	100	5	24	0	0	11.9

LM-2

Main | Preferences | Header | Data | Report

Environmental Report

Record Cnt 47

Start Date 5/14/2020 7:00:00 AM

End Date 5/14/2020 7:00:00 PM

	NO2 uG/m3	PM10 uG/m3	PM25 uG/m3	RH %	SO2 uG/m3	TmpC Deg. C	WDir Deg.	WSpM kph	Pwr V
Ave	35.1702	24.8936	18.9148	48.6170	14.9148	32.4468	240.489	.487234	12.3042
Max	60	40	29	92	18	35	359	2.3	12.5
Min	10	12	12	30	10	29	2	0	12

Main | Preferences | Header | Data | Report

Environmental Report

Record Cnt 53

Start Date 6/24/2020 8:15:00 AM

End Date 6/24/2020 11:15:00 PM

	NO2 uG/m3	PM10 uG/m3	PM25 uG/m3	RH %	SO2 uG/m3	TmpC Deg. C	WDir Deg.	WSpM kph	Pwr V
Ave	73.9433	14.8679	7.01886	91.6415	12.7735	28.6415	102.301	.241509	12
Max	93	59	54	100	18	32	297	2.8	12
Min	3	2	1	69	5	26	13	0	12

Main | Preferences | Header | Data | Report

Environmental Report

Record Cnt 52

Start Date 7/23/2020 9:30:01 AM

End Date 7/23/2020 10:30:01 PM

	NO2 uG/m3	PM10 uG/m3	PM25 uG/m3	RH %	SO2 uG/m3	TmpC Deg. C	WDir Deg.	WSpM kph	Pwr V
Ave	67.9807	14.75	6.44230	95.3461	16.0384	27.1923	108	.617307	12.3173
Max	81	42	24	100	40	29	358	4.5	12.5
Min	8	2	1	90	8	26	17	0	11.9

Main | Preferences | Header | Data | Report

Environmental Report

Record Cnt 53

Start Date 8/9/2020 9:35:01 AM

End Date 8/9/2020 10:35:01 PM

	NO2 ug/m3	PM10 uG/m3	PM25 uG/m3	RH %	SO2 ug/m3	TmpC Deg. C	WDir Deg.	WSpM kph	Pwr V
Ave	54.8113	18.3773	15.9811	99.4905	14.8679	28.6415	60.8679	.509433	12.0792
Max	73	78	52	100	30	31	253	4.9	12.2
Min	8	2	1	92	0	27	0	0	12

Main | Preferences | Header | Data | Report

Environmental Report

Record Cnt 53

Start Date 9/3/2020 10:00:00 AM

End Date 9/3/2020 11:00:00 PM

	NO2 uG/m3	PM10 uG/m3	PM25 uG/m3	RH %	SO2 uG/m3	TmpC Deg. C	WDir Deg.	WSpM kph	Pwr V
Ave	55.1320	26.9811	16.7169	96.3584	18.0188	29.0943	158.566	.250943	12.3320
Max	79	68	60	100	30	31	359	1.4	12.5
Min	22	2	1	86	10	27	10	0	12

LM-3

Main | Preferences | Header | Data | Report

Environmental Report

Record Cnt 96

Start Date 5/13/2020 6:30:00 AM

End Date 5/14/2020 6:30:00 AM

	NO2 uG/m3	PM10 uG/m3	PM25 uG/m3	RH %	SO2 uG/m3	TmpC Deg. C	WDir Deg.	WSpM kph	Pwr V
Ave	23.3604	19.7674	12.7790	77.0697	13.4069	29.5813	229.476	.388372	12.2860
Max	39	39	26	100	16	33	358	1.6	12.5
Min	11	2	1	48	10	27	0	0	11.9

Main | Preferences | Header | Data | Report

Environmental Report

Record Cnt 91

Start Date 6/23/2020 8:00:00 AM

End Date 6/24/2020 6:30:00 AM

	NO2 uG/m3	PM10 uG/m3	PM25 uG/m3	RH %	SO2 uG/m3	TmpC Deg. C	WDir Deg.	WSpM kph	Pwr V
Ave	71.0439	8.02197	4.81318	99.6593	12.0989	27.0549	225.593	.156043	12.0285
Max	83	31	42	100	16	30	351	2.8	12.2
Min	9	2	1	94	2	26	13	0	12

Main | Preferences | Header | Data | Report

Environmental Report

Record Cnt 96

Start Date 7/22/2020 9:15:00 AM

End Date 7/23/2020 9:15:00 AM

	NO2 uG/m3	PM10 uG/m3	PM25 uG/m3	RH %	SO2 uG/m3	TmpC Deg. C	WDir Deg.	WSpM kph	Pwr V
Ave	57.6562	14.1875	9.78125	96.8125	12.1354	26.9166	146.614	.979166	12.1843
Max	70	43	44	100	21	29	329	5.6	12.5
Min	8	2	1	87	7	25	6	0	11.7

Main | Preferences | Header | Data | Report

Environmental Report

Record Cnt 95

Start Date 8/8/2020 9:25:00 AM

End Date 8/9/2020 8:55:00 AM

	NO2 ug/m3	PM10 uG/m3	PM25 uG/m3	RH %	SO2 ug/m3	TmpC Deg. C	WDir Deg.	WSpM kph	Pwr V
Ave	65.1894	23.9157	14.3473	100	11.5894	26.0526	151.821	.386315	12.3326
Max	76	50	32	100	25	28	309	2	12.6
Min	30	5	1	100	5	25	127	0	12

Main | Preferences | Header | Data | Report

Environmental Report

Record Cnt 95

Start Date 9/2/2020 12:00:00 AM

End Date 9/3/2020 9:15:00 AM

	NO2 uG/m3	PM10 uG/m3	PM25 uG/m3	RH %	SO2 uG/m3	TmpC Deg. C	WDir Deg.	WSpM kph	Pwr V
Ave	56.6421	25.2842	14.7684	99.9578	14.4315	26.5473	80.7684	.095789	12.1884
Max	80	115	55	100	25	28	129	.7	12.6
Min	25	2	1	98	1	25	0	0	11.9

Appendix-3 Ambient Noise Level Monitoring Results

	North Residential		Bogyoke		Churh	
	Day	Night	Day	Night	Day	Night
1-Apr-20	66.80	62.33	71.99	66.65	64.37	60.37
2-Apr-20	65.73	62.48	72.72	65.87	61.75	59.99
3-Apr-20	65.49	62.85	72.86	67.29	63.54	58.04
4-Apr-20	65.39	63.08	71.55	65.79	62.88	61.67
5-Apr-20	61.11	62.06	72.10	64.52	58.96	59.34
6-Apr-20	65.23	61.08	70.97	63.20	59.90	54.90
7-Apr-20	65.76	62.68	71.99	67.90	60.70	58.40
8-Apr-20	66.86	62.38	71.98	66.60	59.20	57.00
9-Apr-20	65.87	62.62	72.82	65.90	58.90	56.40
10-Apr-20	0	55.96	0	61.20	0.00	46.70
11-Apr-20	0	0	0	0.00	0.00	0.00
12-Apr-20	0	0	0	0.00	0.00	0.00
13-Apr-20						
14-Apr-20						
15-Apr-20						
16-Apr-20						
17-Apr-20						
18-Apr-20						
19-Apr-20						
20-Apr-20	64.30	54.70	68.10	58.60	60.40	53.20
21-Apr-20	63.60	58.60	71.40	60.10	60.70	56.30
22-Apr-20	64.30	58.20	68.90	65.80	61.70	53.80
23-Apr-20	68.10	58.60	69.00	60.10	62.20	55.10
24-Apr-20	63.80	56.40	68.60	58.70	62.90	56.20
25-Apr-20	63.80	57.00	68.10	59.00	60.90	56.90
26-Apr-20	64.10	58.20	67.70	58.00	60.40	53.70
27-Apr-20	63.80	54.60	69.70	58.80	62.30	55.00
28-Apr-20	66.30	56.40	68.90	59.50	62.80	55.00
29-Apr-20	65.10	54.00	68.80	59.30	62.00	53.60
30-Apr-20	67.40	59.30	68.70	59.20	63.40	55.70
1-May-20	63.50	54.40	67.80	59.60	58.80	56.10
2-May-20	66.20	61.30	66.80	68.70	61.50	55.60
3-May-20	64.70	57.90	67.10	58.00	60.10	56.80
4-May-20	65.30	54.50	68.40	61.70	61.80	55.50
5-May-20	61.30	55.60	68.30	59.50	60.50	55.20
6-May-20	62.80	56.90	67.70	59.30	59.50	54.70
7-May-20	65.40	57.60	67.90	63.30	61.70	55.40
8-May-20	65.30	58.40	67.80	59.60	60.90	52.90
9-May-20	64.30	55.60	67.60	61.00	61.30	55.30
10-May-20	60.10	57.20	67.80	61.60	57.50	53.10
11-May-20	66.30	53.50	68.20	59.40	62.20	52.80
12-May-20	64.20	55.80	68.30	59.20	61.40	55.00
13-May-20	65.00	56.90	68.20	64.30	60.50	54.40
14-May-20	65.60	54.90	67.90	62.60	61.90	52.10

15-May-20	64.60	55.00	67.80	59.70	61.40	52.90
16-May-20	65.00	54.70	68.00	60.30	62.80	56.10
17-May-20	65.50	57.00	69.30	60.00	60.90	56.00
18-May-20	65.60	55.40	68.20	65.00	61.90	52.50
19-May-20	66.20	60.80	67.40	59.00	63.10	62.50
20-May-20	68.60	58.50	71.50	60.50	63.50	54.50
21-May-20	70.20	66.30	71.50	62.40	63.50	58.60
22-May-20	67.10	59.50	67.80	60.60	65.30	58.00
23-May-20	65.60	57.10	70.40	60.60	60.80	54.70
24-May-20	60.90	58.30	69.60	65.00	57.70	55.10
25-May-20	67.10	58.30	71.30	62.50	61.50	52.70
26-May-20	66.30	61.70	71.30	62.00	63.90	53.80
27-May-20	70.20	58.00	72.30	62.00	64.40	52.10
28-May-20	68.00	58.00	71.50	62.40	63.20	51.10
29-May-20	68.40	58.20	67.80	61.30	64.00	51.70
30-May-20	68.70	56.90	71.40	61.60	62.40	54.40
31-May-20	64.50	57.80	70.10	62.60	59.30	50.10
1-Jun-20	67.10	56.30	71.70	62.90	63.70	50.30
2-Jun-20	67.60	60.30	72.20	63.00	64.90	51.80
3-Jun-20	68.90	60.30	72.10	63.10	66.20	52.80
4-Jun-20	67.20	59.10	72.30	62.90	61.50	51.10
5-Jun-20	69.80	58.40	67.80	61.30	65.80	51.90
6-Jun-20	66.60	58.00	71.80	62.20	62.70	54.20
7-Jun-20	65.60	56.50	70.80	62.60	59.30	57.00
8-Jun-20	66.60	58.30	72.10	63.20	66.60	59.10
9-Jun-20	66.80	59.90	72.40	63.10	67.50	59.40
10-Jun-20	67.10	64.50	72.70	65.60	67.10	64.50
11-Jun-20	67.60	70.70	72.80	65.90	67.60	70.70
12-Jun-20	66.40	62.90	67.80	62.20	66.40	62.90
13-Jun-20	66.40	57.30	72.10	61.60	66.40	57.30
14-Jun-20	67.00	57.10	71.50	63.50	67.00	57.10
15-Jun-20	66.90	56.90	72.40	63.10	67.60	58.90
16-Jun-20	65.30	61.30	72.10	64.30	62.40	57.30
17-Jun-20	68.30	61.80	72.10	66.10	62.00	58.70
18-Jun-20	69.80	61.50	72.50	63.20	66.70	57.70
19-Jun-20	68.80	65.10	67.80	61.60	66.90	63.70
20-Jun-20	67.40	66.10	67.60	63.40	63.50	61.80
21-Jun-20	68.70	63.10	68.70	64.70	59.30	57.50
22-Jun-20	67.10	60.10	71.00	60.50	62.30	56.40
23-Jun-20	66.30	61.30	72.00	67.90	63.80	59.30
24-Jun-20	66.90	63.40	71.30	69.60	63.50	59.00
25-Jun-20	66.90	63.40	72.10	63.90	63.60	58.10
26-Jun-20	69.30	63.00	72.70	65.00	68.70	63.30
27-Jun-20	67.80	63.20	71.90	65.90	67.80	57.20
28-Jun-20	65.90	62.50	72.20	63.50	62.00	56.40
29-Jun-20	67.40	57.50	72.30	63.20	63.10	55.50
30-Jun-20	67.90	64.60	71.30	62.60	62.40	58.20
1-Jul-20	67.80	63.60	72.30	62.00	63.80	62.30

2-Jul-20	67.40	63.50	69.40	62.70	62.20	58.20
3-Jul-20	68.70	63.70	73.10	63.80	63.10	58.80
4-Jul-20	68.30	63.90	73.30	65.50	62.70	58.80
5-Jul-20	63.10	62.90	70.90	64.10	61.60	59.00
6-Jul-20	69.40	60.60	72.80	63.40	64.40	56.90
7-Jul-20	67.60	63.20	70.20	64.80	63.80	62.10
8-Jul-20	67.70	63.40	72.70	64.60	64.30	59.90
9-Jul-20	67.10	61.40	72.00	64.60	63.00	59.50
10-Jul-20	67.00	64.30	72.20	64.60	63.00	60.10
11-Jul-20	66.50	61.70	71.90	65.00	62.50	60.00
12-Jul-20	68.60	62.30	71.70	63.50	63.40	60.00
13-Jul-20	67.70	57.20	73.00	63.30	65.10	63.70
14-Jul-20	71.50	61.60	73.00	64.70	64.00	60.40
15-Jul-20	67.40	62.70	73.10	64.40	64.20	59.60
16-Jul-20	68.80	61.60	73.30	64.50	68.40	59.50
17-Jul-20	67.00	63.60	72.20	63.80	64.20	58.90
18-Jul-20	66.80	64.80	72.20	65.50	62.20	61.90
19-Jul-20	63.00	60.90	70.70	66.70	55.30	58.00
20-Jul-20	61.50	62.10	70.00	63.10	53.10	47.70
21-Jul-20	67.40	59.90	67.10	60.80	62.30	53.90
22-Jul-20	66.60	62.80	67.10	58.10	63.60	61.10
23-Jul-20	65.90	62.90	67.10	58.10	62.10	61.00
24-Jul-20	66.70	62.50	72.60	62.70	64.60	59.30
25-Jul-20	67.00	63.00	71.60	65.00	64.20	59.30
26-Jul-20	62.40	61.40	70.50	64.50	61.00	61.20
27-Jul-20	67.00	59.60	66.50	63.40	64.40	48.00
28-Jul-20	68.80	62.20	66.90	61.10	63.80	64.20
29-Jul-20	67.90	63.90	67.00	58.70	66.40	61.70
30-Jul-20	68.30	63.60	64.60	62.60	66.00	60.00
31-Jul-20	63.90	63.40	65.40	53.40	62.80	60.60
1-Aug-20	63.50	59.10	69.70	61.30	62.30	58.40
2-Aug-20	59.10	62.80	69.70	62.60	59.60	59.80
3-Aug-20	63.40	48.40	68.60	63.80	61.80	47.60
4-Aug-20	68.50	62.10	65.20	61.40	63.60	62.20
5-Aug-20	69.80	64.20	72.50	63.00	63.70	60.30
6-Aug-20	68.30	64.50	72.50	63.80	64.70	61.80
7-Aug-20	69.00	64.50	63.80	59.90	69.30	61.70
8-Aug-20	68.80	63.50	72.10	62.90	61.60	59.30
9-Aug-20	63.60	63.20	70.70	63.90	62.30	62.40
10-Aug-20	67.80	54.80	72.30	63.30	64.30	47.90
11-Aug-20	67.90	64.40	72.40	64.10	64.60	60.60
12-Aug-20	67.30	63.80	72.50	64.30	65.60	59.80
13-Aug-20	68.90	63.70	73.10	64.20	64.50	59.10
14-Aug-20	68.10	63.60	72.60	66.00	66.60	65.00
15-Aug-20	69.60	62.40	72.50	64.50	65.30	60.50
16-Aug-20	68.50	64.20	72.60	64.60	66.30	63.70
17-Aug-20	66.80	56.90	73.40	63.20	66.30	47.80
18-Aug-20	68.70	63.20	72.70	64.10	72.20	57.40

19-Aug-20	67.80	64.40	72.80	65.40	63.60	60.50
20-Aug-20	67.40	64.70	71.20	65.40	63.30	60.40
21-Aug-20	68.30	62.30	73.00	65.10	73.00	65.10
22-Aug-20	67.70	64.10	72.60	64.40	72.60	64.40
23-Aug-20	61.80	64.30	70.40	69.00	70.40	69.00
24-Aug-20	0.00	63.10	72.50	64.20	72.50	64.20
25-Aug-20	68.40	64.60	72.40	64.10	62.60	58.10
26-Aug-20	68.30	65.20	72.50	65.00	64.20	57.10
27-Aug-20	69.60	63.70	72.40	64.10	65.60	59.30
28-Aug-20	68.90	64.30	73.30	65.20	64.30	62.00
29-Aug-20	66.50	62.80	72.10	65.40	63.40	60.90
30-Aug-20	64.00	64.60	69.90	68.90	57.10	57.80
31-Aug-20	0.00	58.90	72.20	63.10	68.60	47.60
1-Sep-20	67.10	64.40	72.20	65.70	69.90	63.20
2-Sep-20	68.00	64.70	70.90	64.30	67.90	61.50
3-Sep-20	67.80	63.20	72.20	64.70	68.90	64.70
4-Sep-20	67.90	62.70	72.10	64.20	67.40	61.80
5-Sep-20	66.10	61.80	69.50	63.20	64.80	62.00
6-Sep-20	62.00	64.70	68.80	67.90	53.10	60.80
7-Sep-20	0.00	60.30	72.00	62.70	65.30	47.10
8-Sep-20	68.10	64.80	72.10	63.50	64.80	61.50
9-Sep-20	67.50	63.40	71.80	66.10	63.30	58.90
10-Sep-20	67.30	62.30	71.70	63.40	65.00	57.50
11-Sep-20	67.80	63.10	71.70	63.70	66.30	59.30
12-Sep-20	67.40	63.30	70.80	70.20	62.80	62.20
13-Sep-20	59.20	63.50	69.70	63.70	53.90	60.90
14-Sep-20	0.00	57.70	71.40	60.70	63.80	43.30
15-Sep-20	66.70	64.80	71.20	63.20	63.10	59.40
16-Sep-20	67.40	63.10	71.70	63.20	63.10	58.20
17-Sep-20	67.50	64.40	71.20	62.30	64.40	29.80
18-Sep-20	67.50	64.60	71.70	62.70	67.80	60.30
19-Sep-20	67.30	64.40	71.70	69.70	67.70	58.70
20-Sep-20	0.00	57.70	65.30	63.10	0.00	58.20

Appendix-4 Effluent Discharge Monitoring Results

WATER QUALITY TEST REPORT – Bogyoke Manhole-2

Analysis Report

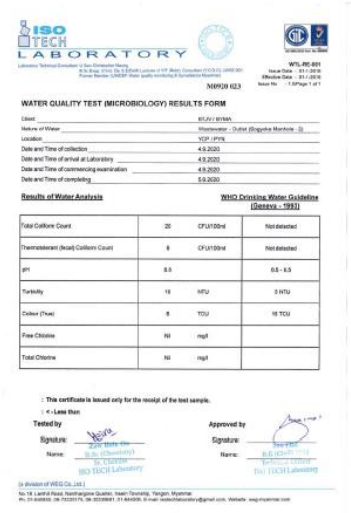
Report No. : GEM-LAB-202009088
Revision No. : 1
Report Date : 15 September, 2020
Application No. : 0262-0301

Client Name : BTJV Myanmar Co.,LTD.
Address :
Project Name : LANDMARK
Sample Description
Sample Name : Bogyoke Manhole-2 — Sampling Date : 4 September, 2020
Sample No. : W-1509056 — Sampling By : Customer
Waste Profile No. : - — Sample Received Date : 4 September, 2020

No.	Parameter	Method	Unit	Result	LOQ
1	Total Nitrogen	HACH Method 10071 (TNT Persulfate Digestion Method)	mg/l	1.8	0.5
2	Total Phosphorous	APHA 4500-P E (Ascorbic Acid Method)	mg/l	0.14	0.05
3	Oil and Grease	APHA 5520 B (Partition-Gravimetric Method)	mg/l	< 3.1	3.1

Remark : LOQ - Limit of Quantation
APHA : American Public Health Association (APHA), the American Water Works Association (AWWA), and the Water Environment Federation (WEF), Standard Methods for the Examination of Water and Wastewater, 22nd edition

Analysed By : Ni Ni Aye Lwin, Assistant Manager
Approved By : Hideki Yama, Managing Director



WATER QUALITY TEST (MICROBIOLOGY) RESULTS FORM

Client : BTJV / BYMA
Nature of Water : Wastewater - Outlet (Bogyoke Manhole - 2)
Location : YCP / PYN
Date and Time of collection : 4.9.2020
Date and Time of arrival at Laboratory : 4.9.2020
Date and Time of commencing examination : 4.9.2020
Date and Time of completing : 5.9.2020

Results of Water Analysis — WHO Drinking Water Guideline (Geneva - 1993)

Total Coliform Count	20	CFU/100ml	Not detected
Thermotolerant (fecal) Coliform Count	8	CFU/100ml	Not detected
pH	8.0		6.5 - 8.5
Turbidity	10	NTU	5 NTU
Colour (True)	5	TCU	15 TCU
Free Chlorine	Nil	mg/l	
Total Chlorine	Nil	mg/l	

: This certificate is issued only for the receipt of the test sample.
: < - Less than

Tested by — Signature: — Name: Zaw Hein Oo, B.Sc (Chemistry), Sr. Chemist, ISO TECH Laboratory
Approved by — Signature: — Name: B.E (Civil), Chemist, ISO TECH Laboratory

WASTEWATER QUALITY TEST RESULTS FORM

WWQ20 069

Client : BTJV / BYMA
Nature of Water : Wastewater - Outlet (Bogyoke Manhole - 2)
Location : YCP / PYN
Date and Time of collection : 4.9.2020
Date and Time of arrival at Laboratory : 4.9.2020
Date and Time of commencing examination : 5.9.2020
Date and Time of completing : 10.9.2020

Results of Wastewater Analysis

Parameters	Results	
pH		
Biochemical Oxygen Demand (BOD) (mg/l) (5 days at 20 °C)	22	
Chemical Oxygen Demand (COD) (mg/l)	64	
Dissolved Oxygen (DO) (mg/l)		
Total Solids (mg/l)		
Total Suspended Solids (mg/l)	28	
Total Dissolved Solids (mg/l)		
Nitrate (mg/l)		
Ammonia Nitrogen (NH_3) (mg/l)		
Ammonium Nitrogen (NH_4) (mg/l)		
Phosphate (mg/l)		

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: B.E (Civil), Chemist, ISO TECH Laboratory

WATER QUALITY TEST REPORT – Discharge Point-1

Analysis Report

Report No. : GEM-LAB-202009083
Revision No. : 1
Report Date : 15 September, 2020
Application No. : 0262-0301

Client Name : BTJV Myanmar Co.,LTD.
Address :
Project Name : LANDMARK
Sample Description
Sample Name : Discharge Point-1 — Sampling Date : 4 September, 2020
Sample No. : W-1509051 — Sampling By : Customer
Waste Profile No. : - — Sample Received Date : 4 September, 2020

No.	Parameter	Method	Unit	Result	LOQ
1	Total Nitrogen	HACH Method 10071 (TNT Persulfate Digestion Method)	mg/l	6.3	0.5
2	Total Phosphorous	APHA 4500-P E (Ascorbic Acid Method)	mg/l	0.39	0.05
3	Oil and Grease	APHA 5520 B (Partition-Gravimetric Method)	mg/l	< 3.1	3.1

Remark : LOQ - Limit of Quantation
APHA : American Public Health Association (APHA), the American Water Works Association (AWWA), and the Water Environment Federation (WEF), Standard Methods for the Examination of Water and Wastewater, 22nd edition

Analysed By : Ni Ni Aye Lwin, Assistant Manager
Approved By : Hideki Yama, Managing Director

WATER QUALITY TEST (MICROBIOLOGY) RESULTS FORM

Client : BTJV / BYMA
Nature of Water : Wastewater - Outlet (Discharge Point - 1)
Location : YCP / PYN
Date and Time of collection : 4.9.2020
Date and Time of arrival at Laboratory : 4.9.2020
Date and Time of commencing examination : 4.9.2020
Date and Time of completing : 5.9.2020

Results of Water Analysis — WHO Drinking Water Guideline (Geneva - 1993)

Total Coliform Count	10	CFU/100ml	Not detected
Thermotolerant (fecal) Coliform Count	10	CFU/100ml	Not detected
pH	7.5		6.5 - 8.5
Turbidity	40	NTU	5 NTU
Colour (True)	20	TCU	15 TCU
Free Chlorine	Nil	mg/l	
Total Chlorine	Nil	mg/l	

: This certificate is issued only for the receipt of the test sample.
: < - Less than

Tested by — Signature: — Name: Zaw Hein Oo, B.Sc (Chemistry), Sr. Chemist, ISO TECH Laboratory
Approved by — Signature: — Name: B.E (Civil), Chemist, ISO TECH Laboratory

WASTEWATER QUALITY TEST RESULTS FORM

WWQ20 064

Client : BTJV / BYMA
Nature of Water : Wastewater - Outlet (Discharge Point - 1)
Location : YCP / PYN
Date and Time of collection : 4.9.2020
Date and Time of arrival at Laboratory : 4.9.2020
Date and Time of commencing examination : 5.9.2020
Date and Time of completing : 10.9.2020

Results of Wastewater Analysis

Parameters	Results	
pH		
Biochemical Oxygen Demand (BOD) (mg/l) (5 days at 20 °C)	21	
Chemical Oxygen Demand (COD) (mg/l)	59	
Dissolved Oxygen (DO) (mg/l)		
Total Solids (mg/l)		
Total Suspended Solids (mg/l)	25	
Total Dissolved Solids (mg/l)		
Nitrate (mg/l)		
Ammonia Nitrogen (NH_3) (mg/l)		
Ammonium Nitrogen (NH_4) (mg/l)		
Phosphate (mg/l)		

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: B.E (Civil), Chemist, ISO TECH Laboratory

WATER QUALITY TEST REPORT – Discharge Point-2

DOWA

GOLDEN DOWA ECO-SYSTEM MYANMAR CO., LTD.
Lot No E1, Thilawa SEZ Zone A, Yangon Region, Myanmar.
Phone No Fax No. (+95) 1 239051

Doc No: GEM-LB-R0043/00
Page1of1

Report No. : GEM-LAB-2020090B4
Revision No. : 1
Report Date : 15 September, 2020
Application No. : 0262-C001

Analysis Report

Client Name : BTJV Myanmar Co.,LTD.
Address :
Project Name : LANDMARK
Sample Description
Sample Name : Discharge Point-2
Sample No. : W-2009052
Waste Profile No. : -
Sampling Date : 4 September, 2020
Sampling By : Customer
Sample Received Date : 4 September, 2020

No.	Parameter	Method	Unit	Result	LOQ
1	Total Nitrogen	HACH Method 10072 (TNT Persulfate Digestion Method)	mg/l	1.1	0.5
2	Total Phosphorous	APHA 4500-P E (Ascorbic Acid Method)	mg/l	< 0.05	0.05
3	Oil and Grease	APHA 5220 B (Partition-Gravimetric Method)	mg/l	< 3.1	3.1

Remark : LOQ - Limit of Quantitation
APHA - American Public Health Association (APHA), the American Water Works Association (AWWA), and the Water Environment Federation (WEF), Standard Methods for the Examination of Water and Wastewater, 22nd edition

Analysed By :
Ni Ni Aye Lwin
Assistant Manager

LAB GEM Sep 15, 2020

Approved By :
Hideki Yorino Sep 15, 2020
Managing Director

ISO TECH LABORATORY

WTL-RE-001
Issue Date : 01-1-2015
Effective Date : 01-1-2015
Issue No : - 1.0/Page 1 of 1

M0920 019

WATER QUALITY TEST (MICROBIOLOGY) RESULTS FORM

Client: BTJV / BYMA
Nature of Water: Wastewater - Outlet (Discharge Point - 2)
Location: YCP / PYIN
Date and Time of collection: 4.9.2020
Date and Time of arrival at Laboratory: 4.9.2020
Date and Time of commencing examination: 4.9.2020
Date and Time of completing: 5.9.2020

Results of Water Analysis

			WHO Drinking Water Guideline (Geneva - 1993)
Total Coliform Count	110	CFU/100ml	Not detected
Thermotolerant (fecal) Coliform Count	40	CFU/100ml	Not detected
pH	8.3		6.5 - 8.5
Turbidity	170	NTU	5 NTU
Colour (True)	100	TCU	15 TCU
Free Chlorine	Nil	mg/l	
Total Chlorine	Nil	mg/l	

: This certificate is issued only for the receipt of the test sample.
: < - Less than

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

Approved by
Signature:
Name: Soe Tun, B.E (Civil) 1988, Technical Officer, ISO TECH Laboratory

(a division of WEG Co.,Ltd.)
No.18, Lanbi Road, Hanthargone Quarter, Insein Township, Yangon, Myanmar.
Ph: 01-640955, 09-73225115, 09-30359681, 01-644506, E-mail: isotechlaboratory@gmail.com Website: weg-myanmar.com

ISO TECH LABORATORY

WTL-RE-002
Issue Date : 01-12-2012
Effective Date : 01-12-2012
Issue No : - 1.0/Page 1 of 1

WW0920 065

WASTEWATER QUALITY TEST RESULTS FORM

Client: BTJV / BYMA
Nature of Water: Wastewater - Outlet (Discharge Point - 2)
Location: YCP / PYIN
Date and Time of collection: 4.9.2020
Date and Time of arrival at Laboratory: 4.9.2020
Date and Time of commencing examination: 5.9.2020
Date and Time of completing: 10.9.2020

Results of Wastewater Analysis

Parameters	Results	
pH		
Biochemical Oxygen Demand (BOD) (mg/l) (5 days at 20 °C)	27	
Chemical Oxygen Demand (COD) (mg/l)	89	
Dissolved Oxygen (DO) (mg/l)		
Total Solids (mg/l)		
Total Suspended Solids (mg/l)	48	
Total Dissolved Solids (mg/l)		
Nitrate (mg/l)		
Ammonia Nitrogen (NH_3) (mg/l)		
Ammonium Nitrogen (NH_4^+) (mg/l)		
Phosphate (mg/l)		

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 Tun, B.E (Civil) 1988, Technical Officer, ISO TECH Laboratory

WATER QUALITY TEST REPORT – Discharge Point-5

DOWA

GOLDEN DOWA ECO-SYSTEM MYANMAR CO., LTD.
Lot No E1, Thilawa SEZ Zone A, Yangon Region, Myanmar.
Phone No Fax No. (+95) 1 239051

Doc No: GEM-LB-R0043/00
Page1of1

Report No. : GEM-LAB-2020090B5
Revision No. : 1
Report Date : 15 September, 2020
Application No. : 0262-C001

Analysis Report

Client Name : BTJV Myanmar Co.,LTD.
Address :
Project Name : LANDMARK
Sample Description
Sample Name : Discharge Point-5
Sample No. : W-2009053
Waste Profile No. : -
Sampling Date : 4 September, 2020
Sampling By : Customer
Sample Received Date : 4 September, 2020

No.	Parameter	Method	Unit	Result	LOQ
1	Total Nitrogen	HACH Method 10072 (TNT Persulfate Digestion Method)	mg/l	3.3	0.5
2	Total Phosphorous	APHA 4500-P E (Ascorbic Acid Method)	mg/l	< 0.05	0.05
3	Oil and Grease	APHA 5220 B (Partition-Gravimetric Method)	mg/l	< 3.1	3.1

Remark : LOQ - Limit of Quantitation
APHA - American Public Health Association (APHA), the American Water Works Association (AWWA), and the Water Environment Federation (WEF), Standard Methods for the Examination of Water and Wastewater, 22nd edition

Analysed By :
Ni Ni Aye Lwin
Assistant Manager

LAB GEM Sep 15, 2020

Approved By :
Hideki Yorino Sep 15, 2020
Managing Director

ISO TECH LABORATORY

WTL-RE-001
Issue Date : 01-1-2015
Effective Date : 01-1-2015
Issue No : - 1.0/Page 1 of 1

M0920 020

WATER QUALITY TEST (MICROBIOLOGY) RESULTS FORM

Client: BTJV / BYMA
Nature of Water: Wastewater - Outlet (Discharge Point - 5)
Location: YCP / PYIN
Date and Time of collection: 4.9.2020
Date and Time of arrival at Laboratory: 4.9.2020
Date and Time of commencing examination: 4.9.2020
Date and Time of completing: 5.9.2020

Results of Water Analysis

			WHO Drinking Water Guideline (Geneva - 1993)
Total Coliform Count	48	CFU/100ml	Not detected
Thermotolerant (fecal) Coliform Count	13	CFU/100ml	Not detected
pH	8.0		6.5 - 8.5
Turbidity	22	NTU	5 NTU
Colour (True)	13	TCU	15 TCU
Free Chlorine	Nil	mg/l	
Total Chlorine	Nil	mg/l	

: This certificate is issued only for the receipt of the test sample.
: < - Less than

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

Approved by
Signature:
Name: Soe Tun, B.E (Civil) 1988, Technical Officer, ISO TECH Laboratory

(a division of WEG Co.,Ltd.)
No.18, Lanbi Road, Hanthargone Quarter, Insein Township, Yangon, Myanmar.
Ph: 01-640955, 09-73225115, 09-30359681, 01-644506, E-mail: isotechlaboratory@gmail.com, Website: weg-myanmar.com

ISO TECH LABORATORY

WTL-RE-002
Issue Date : 01-12-2012
Effective Date : 01-12-2012
Issue No : - 1.0/Page 1 of 1

WW0920 066

WASTEWATER QUALITY TEST RESULTS FORM

Client: BTJV / BYMA
Nature of Water: Wastewater - Outlet (Discharge Point - 5)
Location: YCP / PYIN
Date and Time of collection: 4.9.2020
Date and Time of arrival at Laboratory: 4.9.2020
Date and Time of commencing examination: 5.9.2020
Date and Time of completing: 10.9.2020

Results of Wastewater Analysis

Parameters	Results	
pH		
Biochemical Oxygen Demand (BOD) (mg/l) (5 days at 20 °C)	26	
Chemical Oxygen Demand (COD) (mg/l)	96	
Dissolved Oxygen (DO) (mg/l)		
Total Solids (mg/l)		
Total Suspended Solids (mg/l)	59	
Total Dissolved Solids (mg/l)		
Nitrate (mg/l)		
Ammonia Nitrogen (NH_3) (mg/l)		
Ammonium Nitrogen (NH_4^+) (mg/l)		
Phosphate (mg/l)		

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 Tun, B.E (Civil) 1988, Technical Officer, ISO TECH Laboratory

WATER QUALITY TEST REPORT – Discharge Point-6

DOWA

GOLDEN DOWA ECO-SYSTEM MYANMAR CO., LTD.
Lot No 13, Thilawa SEZ Zone A, Yangon Region, Myanmar.
Phone No/ Fax No: (+951) 2309051

Doc No: GEM-LB-R004(10)
Page1of1

Report No. : GEM-LAB-202009086
Revision No. : 1
Report Date : 15 September, 2020
Application No. : 0262-C001

Analysis Report

Client Name : BTJV Myanmar Co.,LTD.
Address :
Project Name : LANDMARK
Sample Description
Sample Name : Discharge Point-6 — Sampling Date : 4 September, 2020
Sample No. : W-2089084 — Sampling By : Customer
Waste Profile No. : - — Sample Received Date : 4 September, 2020

No.	Parameter	Method	Unit	Result	LOQ
1	Total Nitrogen	HACH Method 10071 (1st Persulfate Digestion Method)	mg/l	3.6	0.5
2	Total Phosphorous	APHA 4500-P E (Ascorbic Acid Method)	mg/l	< 0.05	0.05
3	Oil and Grease	APHA 5520 B (Partition-Gravimetric Method)	mg/l	< 3.1	3.1

Remark : LOQ - Limit of Quantitation
APHA - American Public Health Association (APHA), the American Water Works Association (AWWA), and the Water Environment Federation (WEF), Standard Methods for the Examination of Water and Wastewater, 22nd edition

Analysed By : Ni Ni Aye Lwin, Assistant Manager
Approved By : Hideki Hirno, Managing Director
LAB Sep 15, 2020 GEM

ISO TECH LABORATORY
WTL-RE-001 Issue Date - 01-1-2016 Effective Date - 01-1-2016 Issue No - 1.0/Page 1 of 1

M0920 021

WATER QUALITY TEST (MICROBIOLOGY) RESULTS FORM

Client: BTJV / BYMA
Nature of Water: Wastewater - Outlet (Discharge Point - 6)
Location: YCP / PYN
Date and Time of collection: 4.9.2020
Date and Time of arrival at Laboratory: 4.9.2020
Date and Time of commencing examination: 4.9.2020
Date and Time of completing: 5.9.2020

Results of Water Analysis — **WHO Drinking Water Guideline (Geneva - 1993)**

Total Coliform Count	33	CFU/100ml	Not detected
Thermotolerant (fecal) Coliform Count	13	CFU/100ml	Not detected
pH	8.6		6.5 - 8.5
Turbidity	20	NTU	5 NTU
Colour (True)	10	TCU	15 TCU
Free Chlorine	Nil	mg/l	
Total Chlorine	Nil	mg/l	

: This certificate is issued only for the receipt of the test sample.
: < - Less than

Tested by — Signature: — Name: Zaw Hein Oo, B.Sc (Chemistry), Sr. Chemist, ISO TECH Laboratory
Approved by — Signature: — Name: Soe Thet, B.E (Civil) 1998, Technical Director, ISO TECH Laboratory

(a division of WEG Co.,Ltd.)
No. 16, Landrd Road, Nanthagone Quarter, Insein Township, Yangon, Myanmar
Ph. 01-640805, 09-73220175, 09-30239681, 01-640506, E-mail: isotechlaboratory@gmail.com, Website: weg-myanmar.com

ISO TECH LABORATORY
WTL-RE-002 Issue Date - 01-12-2012 Effective Date - 01-12-2012 Issue No - 1.0/Page 1 of 1

WW0920 067

WASTEWATER QUALITY TIEST RESULTS FORM

Client: BTJV / BYMA
Nature of Water: Wastewater - Outlet (Discharge Point -6)
Location: YCP / PYN
Date and Time of collection: 4.9.2020
Date and Time of arrival at Laboratory: 4.9.2020
Date and Time of commencing examination: 5.9.2020
Date and Time of completing: 10.9.2020

Results of Wastewater Analysis

Parameters	Results	
pH		
Biochemical Oxygen Demand (BOD) (mg/l) (5 days at 20 °C)	20	
Chemical Oxygen Demand (COD) (mg/l)	84	
Dissolved Oxygen (DO) (mg/l)		
Total Solids (mg/l)		
Total Suspended Solids (mg/l)	22	
Total Dissolved Solids (mg/l)		
Nitrate (mg/l)		
Ammonia Nitrogen (NH_3) (mg/l)		
Ammonium Nitrogen (NH_4) (mg/l)		
Phosphate (mg/l)		

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 Thet, B.E (Civil) 1998, Technical Director, ISO TECH Laboratory

(a division of WEG Co.,Ltd.)
No. 16, Landrd Road, Nanthagone Quarter, Insein Township, Yangon, Myanmar
Ph. 01-640805, 09-73220175, 09-30239681, 01-640506, E-mail: isotechlaboratory@gmail.com, Website: weg-myanmar.com

WATER QUALITY TEST REPORT – Discharge Point-7

DOWA

GOLDEN DOWA ECO-SYSTEM MYANMAR CO., LTD.
Lot No 13, Thilawa SEZ Zone A, Yangon Region, Myanmar.
Phone No/ Fax No: (+951) 2309051

Doc No: GEM-LB-R004(10)
Page1of1

Report No. : GEM-LAB-202009087
Revision No. : 1
Report Date : 15 September, 2020
Application No. : 0262-C001

Analysis Report

Client Name : BTJV Myanmar Co.,LTD.
Address :
Project Name : LANDMARK
Sample Description
Sample Name : Discharge Point-7 — Sampling Date : 4 September, 2020
Sample No. : W-2089085 — Sampling By : Customer
Waste Profile No. : - — Sample Received Date : 4 September, 2020

No.	Parameter	Method	Unit	Result	LOQ
1	Total Nitrogen	HACH Method 10071 (1st Persulfate Digestion Method)	mg/l	3.1	0.5
2	Total Phosphorous	APHA 4500-P E (Ascorbic Acid Method)	mg/l	< 0.05	0.05
3	Oil and Grease	APHA 5520 B (Partition-Gravimetric Method)	mg/l	< 3.1	3.1

Remark : LOQ - Limit of Quantitation
APHA - American Public Health Association (APHA), the American Water Works Association (AWWA), and the Water Environment Federation (WEF), Standard Methods for the Examination of Water and Wastewater, 22nd edition

Analysed By : Ni Ni Aye Lwin, Assistant Manager
Approved By : Hideki Hirno, Managing Director
LAB Sep 15, 2020 GEM

ISO TECH LABORATORY
WTL-RE-001 Issue Date - 01-1-2016 Effective Date - 01-1-2016 Issue No - 1.0/Page 1 of 1

M0920 022

WATER QUALITY TEST (MICROBIOLOGY) RESULTS FORM

Client: BTJV / BYMA
Nature of Water: Wastewater - Outlet (Discharge Point - 7)
Location: YCP / PYN
Date and Time of collection: 4.9.2020
Date and Time of arrival at Laboratory: 4.9.2020
Date and Time of commencing examination: 4.9.2020
Date and Time of completing: 5.9.2020

Results of Water Analysis — **WHO Drinking Water Guideline (Geneva - 1993)**

Total Coliform Count	100	CFU/100ml	Not detected
Thermotolerant (fecal) Coliform Count	40	CFU/100ml	Not detected
pH	8.0		6.5 - 8.5
Turbidity	65	NTU	5 NTU
Colour (True)	380	TCU	15 TCU
Free Chlorine	Nil	mg/l	
Total Chlorine	Nil	mg/l	

: This certificate is issued only for the receipt of the test sample.
: < - Less than

Tested by — Signature: — Name: Zaw Hein Oo, B.Sc (Chemistry), Sr. Chemist, ISO TECH Laboratory
Approved by — Signature: — Name: Soe Thet, B.E (Civil) 1998, Technical Director, ISO TECH Laboratory

(a division of WEG Co.,Ltd.)
No. 16, Landrd Road, Nanthagone Quarter, Insein Township, Yangon, Myanmar
Ph. 01-640805, 09-73220175, 09-30239681, 01-640506, E-mail: isotechlaboratory@gmail.com, Website: weg-myanmar.com

ISO TECH LABORATORY
WTL-RE-002 Issue Date - 01-12-2012 Effective Date - 01-12-2012 Issue No - 1.0/Page 1 of 1

WW0920 068

WASTEWATER QUALITY TEST RESULTS FORM

Client: BTJV / BYMA
Nature of Water: Wastewater - Outlet (Discharge Point - 7)
Location: YCP / PYN
Date and Time of collection: 4.9.2020
Date and Time of arrival at Laboratory: 4.9.2020
Date and Time of commencing examination: 5.9.2020
Date and Time of completing: 10.9.2020

Results of Wastewater Analysis

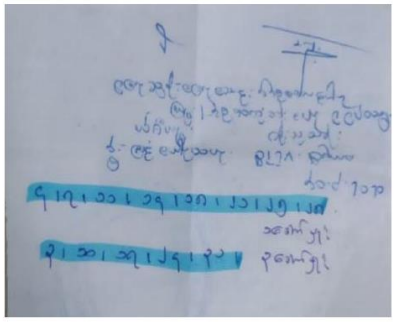
Parameters	Results	
pH		
Biochemical Oxygen Demand (BOD) (mg/l) (5 days at 20 °C)	27	
Chemical Oxygen Demand (COD) (mg/l)	122	
Dissolved Oxygen (DO) (mg/l)		
Total Solids (mg/l)		
Total Suspended Solids (mg/l)	365	
Total Dissolved Solids (mg/l)		
Nitrate (mg/l)		
Ammonia Nitrogen (NH_3) (mg/l)		
Ammonium Nitrogen (NH_4) (mg/l)		
Phosphate (mg/l)		

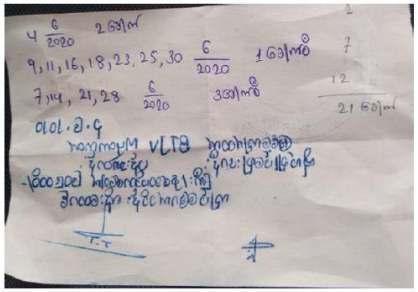
Remark: This certificate is issued only for the receipt of the test sample.

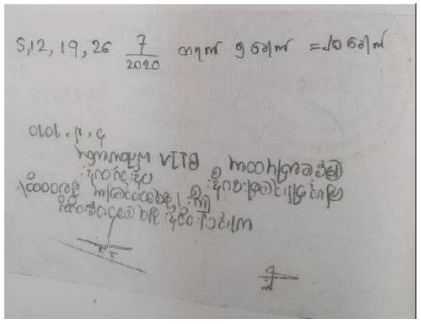
Tested by — Signature: — Name: Zaw Hein Oo, B.Sc (Chemistry), Sr. Chemist, ISO TECH Laboratory
Approved by — Signature: — Name: Soe Thet, B.E (Civil) 1998, Technical Director, ISO TECH Laboratory

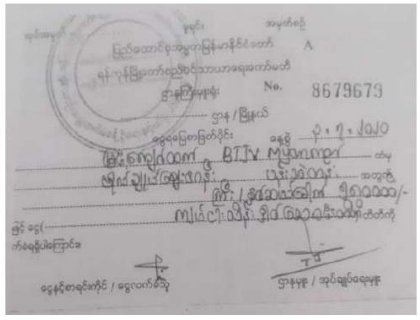
(a division of WEG Co.,Ltd.)
No. 16, Landrd Road, Nanthagone Quarter, Insein Township, Yangon, Myanmar
Ph. 01-640805, 09-73220175, 09-30239681, 01-640506, E-mail: isotechlaboratory@gmail.com, Website: weg-myanmar.com

Appendix-5 Septic tanks desludging and sewage disposal



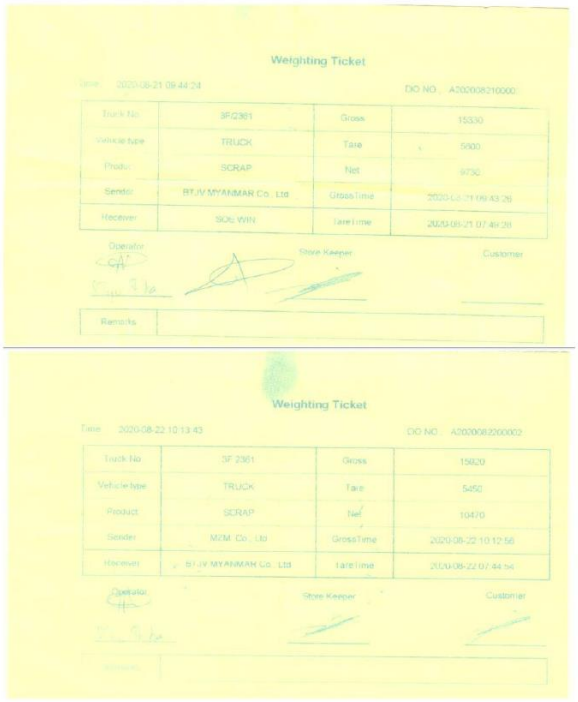






Appendix-6 Waste Disposal Records for August/September 2020

Steel Scrap Receipt



Weighting Ticket

Truck No	3F-2361	Gross	15330
Vehicle type	TRUCK	Tare	5900
Product	SCRAP	Net	9730
Sender	BTJV MYANMAR Co., Ltd	GrossTime	2020-08-21 09:43:26
Receiver	SOE WIN	TareTime	2020-08-21 07:49:28

Operator | Store Keeper | Customer

Remarks

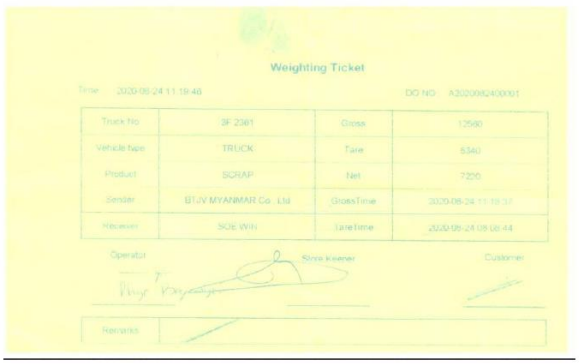
Weighting Ticket

Truck No	3F 2361	Gross	15820
Vehicle type	TRUCK	Tare	5450
Product	SCRAP	Net	10470
Sender	MZM Co., Ltd	GrossTime	2020-08-22 10:12:56
Receiver	BTJV MYANMAR Co., Ltd	TareTime	2020-08-22 07:44:54

Operator | Store Keeper | Customer

Remarks

Steel Scrap Receipt

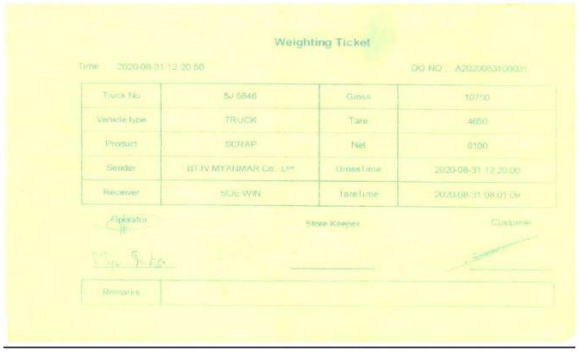


Weighting Ticket

Truck No	3F 2361	Gross	12560
Vehicle type	TRUCK	Tare	5340
Product	SCRAP	Net	7220
Sender	BTJV MYANMAR Co., Ltd	GrossTime	2020-08-24 11:19:37
Receiver	SOE WIN	TareTime	2020-08-24 08:08:44

Operator | Store Keeper | Customer

Remarks



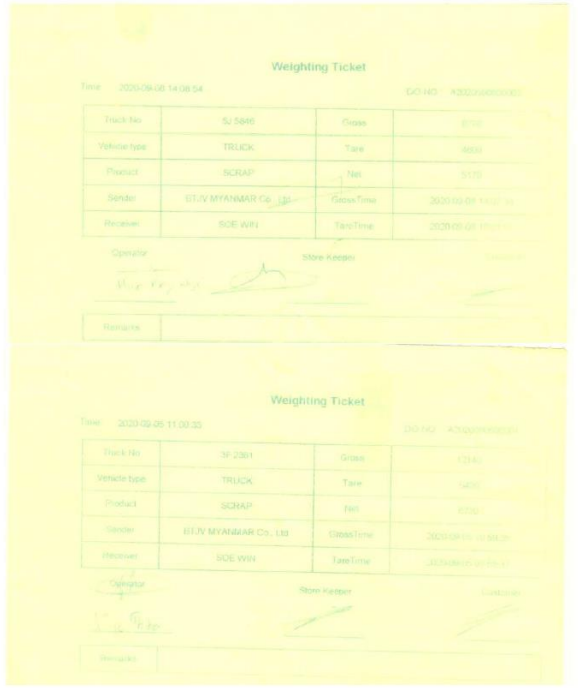
Weighting Ticket

Truck No	5J 5846	Gross	10750
Vehicle type	TRUCK	Tare	4650
Product	SCRAP	Net	6100
Sender	BTJV MYANMAR Co., Ltd	GrossTime	2020-08-31 12:20:00
Receiver	SOE WIN	TareTime	2020-08-31 08:01:09

Operator | Store Keeper | Customer

Remarks

Steel Scrap Receipt



Weighting Ticket

Truck No	5J 5846	Gross	10750
Vehicle type	TRUCK	Tare	4650
Product	SCRAP	Net	6100
Sender	BTJV MYANMAR Co., Ltd	GrossTime	2020-08-31 12:20:00
Receiver	SOE WIN	TareTime	2020-08-31 08:01:09

Operator | Store Keeper

Remarks

Weighting Ticket

Truck No	3F 2361	Gross	13140
Vehicle type	TRUCK	Tare	5450
Product	SCRAP	Net	7690
Sender	BTJV MYANMAR Co., Ltd	GrossTime	2020-09-05 11:04:20
Receiver	SOE WIN	TareTime	2020-09-05 07:39:11

Operator | Store Keeper | Customer

Remarks

Steel Scrap Receipt

Weighting Ticket

Note: BTJV installed weight balance in Project and start using in May-2020.

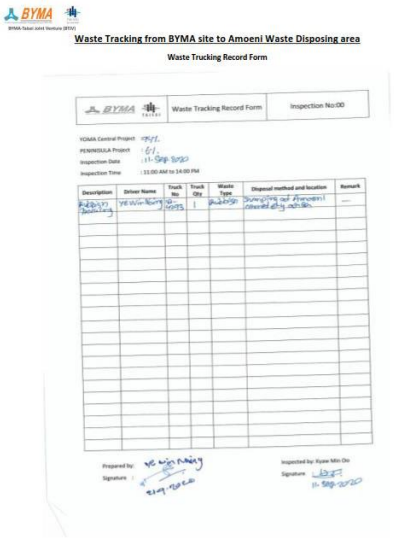
WASTE DISPOSAL RECEIPT

WASTE DISPOSAL RECEIPT

WASTE DISPOSAL RECEIPT

WASTE DISPOSAL RECEIPT

Waste Tracking Form



Waste Tracking from BYMA site to Amoeni Waste Disposing area

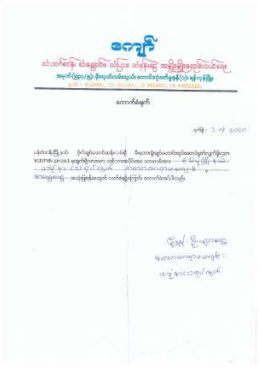
Waste Trucking Record Form

Waste Tracking Form

Waste Tracking from BYMA site to Dawei Chaung Waste Disposing area

Waste Trucking Record Form

RECOMMENDATION LETTER FOR WOOD DONATION



WOOD DONATION PHOTO RECORD

Recommendation Letter Provided by "Ah Thaw Kar Yar Ma" Monastery

Appendix-7 Occupational Health and Safety Incident Reports

BYMA

INCIDENT REPORT

FORM. 17.C.

PART A - DECLARATION

1. GENERAL INFORMATION

Report n° :	YCP-097	Date of issuance :	4/4/2020	Prepared by :	Bernie Pusung

2. COUNTRY / PROJECT

Country	Name of Project	Client	Project Director
MM - MYANMAR	MWL	MDL	Vincent Jaubert

3. IDENTIFICATION OF THE ACCIDENT / INCIDENT AND THE INJURED PERSON

3.1 Date and Incident / Accident location

Date :	4/4/2020	Accident location :	0004 At the usual workplace
Time :	21:30	Exact area :	Tower 4

3.2 Type of accident / incident

☑ Occupational accident	Accident with lost time	If others, please specify :	
☐ Incident / Near miss		If road accident (please provide details below) :	
☐ Road accident		Type of transport	
Multiple victims? YES ☐ NO ☑	If yes, reference of other accident reports :	Transport area	

3.3 Details of injured person

Surname:		First name :	Ye Min Naing	Date of birth :	8/8/2001
Nationality :	MM - MYANMAR	Employer :	BYMA	Company date of employment :	30/01/2020
Gender :	Male	Job title :	General Worker	Date of arrival on Project :	30/01/2020
Marital status :	Single	Qualification :	0103 Worker	Job experience :	2 Months
Contract :	0209 Local personnel	Staff category :	0401 POP A1 - PRODUCTION	Date of last medical check-up :	N/A

3.4 Activity in progress at the time of the accident

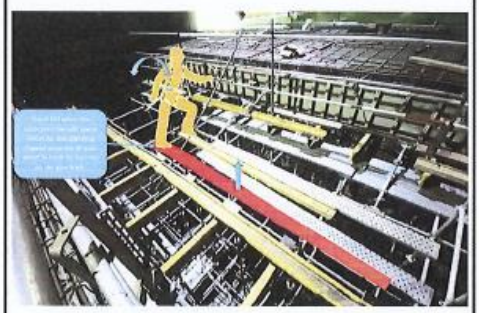
Workstation :	Tower 4	Type of works :	Beam formworks installations
Shift work :	0302 Night	More details :	The Injured Party was part of the team installing horizontal support on the side form of a beam.
Working alone : YES ☐ NO ☑			

3.5 Characteristics of the working environment at the time of the accident (temperature, humidity, ground conditions, wind, noise environment, light...)

Weather conditions :	0004 Temperature > 30°C
More details :	Clear

On 4th April 2020 at approximately 9:30 PM, a worker (Ye Min Naing) fell from a 7.2 meters high shoring tower platform. Ye Min Naing was part of the team installing horizontal support of beam side forms. Ye Min (The Injured Party), was using three metallic planks and a 3.9 meters doka beam laid over the last lift of the shoring tower. The metallic planks and the doka beam were not tied and secured on the shoring tower. Ye Min was standing on the very last end of the doka and the metallic plank. And while he's about to hook his harness on a guardrails, the metallic plank where he's stepping on flip over causing him to fall. He landed on the crash deck of a provided walkway. He was immediately taken by his workmates to the site medical center. The Medical Officer on duty administered first aid and sent the Injured Party immediately to Yangon General Hospital using the ambulance onsite. The IP suffered fracture on the left wrist and small lacerated wound on the right hand including his chin and lips. Investigation revealed that no lifeline installed at the work location. The metallic planks being use are not securely tied on the shoring tower platform.

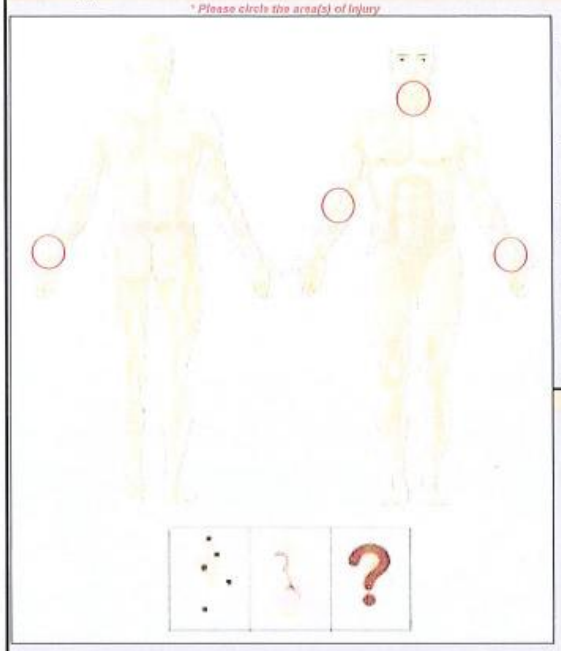
Visuals of the accidental occurrence (reconstruction, workstation, method statement...)



4. DESCRIPTION OF INJURY / INJURIES

4.1 Area of injury

** Please circle the area(s) of injury*



4.2 Nature of injury

Severity of injury : Notable

1st injury

Nature of injury: 0201 Closed fracture

Area of injury: 0503 Wrist

2nd injury

Nature of injury: 0600 Multiple injuries

Area of injury:

4.3 Medical treatment

Intervention of a first aider :	Yes ☑	No ☐	If on medical leave,
First aid treatment :	Yes ☑	No ☐	Initial date stop:
Emergency service was called :	Yes ☐	No ☑	6/4/2020
Sent to hospital or medical centre :	Yes ☑	No ☐	Date of return:
Back to work	Yes ☐	No ☑	TBC

Description of medical treatment :

Left arm was casted and surgery scheduled to be done on the 20th April 2020.

Manner of injury	0100 Falls
Deviation from normal	0005 Falls of persons(Fi
Material element	0200 FALLS FROM HEIGHT IN WORK STATION OR WORK ZONE

5. IMMEDIATE ACTIONS UNDERTAKEN

Work suspended, area made safe and cordoned off. IP was sent to Yangon General Hospital after receiving first aid treatment from the site medical center.

⚠ **Send Part A to the Country Safety Manager and to bbi.safety@bouygues-construction.com within 48 hours**

Before completing Part B, determine the levels of investigation with the help of Appendix 1

BYMA SAISLI

PART B - ANALYSIS AND INVESTIGATION

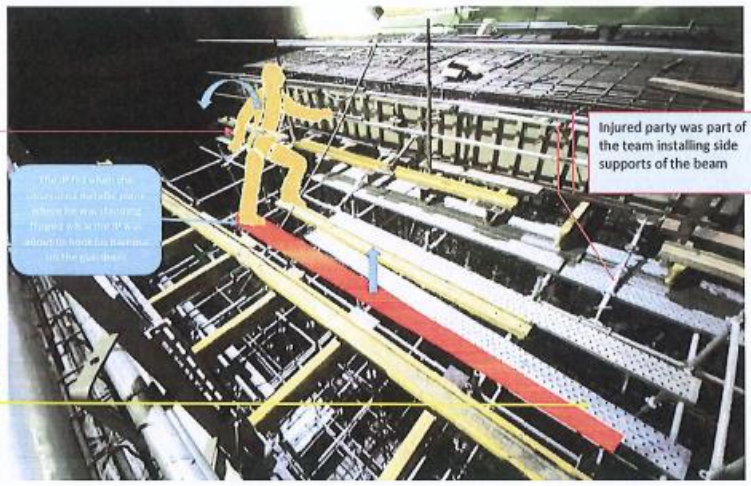
6. INCIDENT INVESTIGATION

6.1 Investigation team members

Name	Position / Job	Company
Bernie Pusung	Safety Manager	BYMA
Aung Soe Than	Safety Officer	BYMA
Dennis Neto	Superintendent	BYMA
Delfim Peraizal	Senior Superintendent	BYMA

6.2 Detailed chronology of events (attach sketches, photos, testimony of the injured person, witnesses and line managers).

Re enacment (done in a very low level for safety reason).



The incident could have been prevented if the platform was fully boarded as shown.

6.3 List of elements and collected documents

7. SOURCE CAUSES (Major and influential factors)

Organisational and environmental		
	Identified failures	**Why ?**
Method / Procedure	Procedures, methods were not provided	No approved method statements regarding the installation of beams using a high rise shoring tower nor approved drawing on installing beam formworks.
Method / Procedure	Risk analysis associated with the task and the environment were not carried out or inadequate	Since no method statements prepared for the task the risk analysis/assessment related to the task was not performed.
Safety Management	Inadequate identification of the risks of the task / site	Leader in charge has no experience on risk identification as hes a carpenter and have no enough experience on managing workers on ensuring their safety.He allowed the use of unsecured metallic planks and doka as working platform.
Technical		
	Identified failures	**Why ?**
People		
	Identified failures	**Why ?**
Management/ Supervisory Staff Leadership	Lack of experience and tolerating unsafe practice	The Supervisor, Foreman and Leader in charge do not have enough experience on managing workers safety as they have both allowed the unsafe practice of using unsecured metallic planks and did not fully boarded the working platform.
Unsafe Act	Deliberate risk taking	The Injured Party unhooked both his lanyard when he moved the planks from one place to another causing him to be exposed in risk of falling.

8. CORRECTIVE ACTION(S)

Immediate / direct causes identified*	Root causes identified*	Corrective actions to be implemented for each root cause identified	Person in charge / Job title	Target action date
Unsecured planks	Not tied on the working platform	Ensure planks are securely tied against the working platform prior allowing operatives to work at heights.	Souk Teso, Deputy Production Manager	6/4/2020
No installed life line to allow easy hooking of harness	Reliant to installed guardrails as anchor points.	While working at heights ensure life lines are installed where people are liable to fall. In addition, catch nets to be installed as fall protection in case people fall from heights.	Delfim Peralzal / Denis Neto (Senior Superintendents) / Souk Teso, Deputy Production Manager	6/4/2020
Not fully boarded working platform	Failure to comply to work at heights policy i.e. the last level of the working platform shall be fully boarded or fully planked.	Always ensure that the last level of working platform shall be fully planke d as mandatory requirement. Wearing of harness is last resort the priority is to fully board the working platform and guardrails system to be ensured installed.	Delfim Peralzal / Denis Neto (Senior Superintendents) / Souk Teso, Deputy Production Manager	6/4/2020
Procedure on installing beam works not provided to the team	No method statement prepared	Structural works are mandatory to be provided with method statements.No work is to be done onsite without an approved method statements and mandatory task launch to be attended by all. Safety Department to condut audit of ongoing works to check whether approved risk assessments and method statements are in place. Copy of method statements to be made available onsite.	All Area Managers / Bernie Pusung, Safety Manager	8/4/2020
Poor Safety Management by Site Supervisions	Lack of experience in Safety by Site Supervisions i.e. allowing adhoc made platform which are unsecured.	Safety roles and responsibilities of all level employees to be issued and explained in the form of MEMO and Safety management training to be organize in order all level employees understand their duties towards on ensuring the Safety onsite.	Bernie Pusung, Safety Manager	9/4/2020
Unsafe act	Unhooking both harness while working at heights	Retrained operatives on the use of fall protections particularly hooking rules. Posters to be place in prominent locations onsite highlighng this rule.	Bernie Pusung, Safety Manager	9/4/2020

9. SIGNATURE

Project Manager / Director	Vincent Jaubert	Date:	7/04/20	Signature:
Production Manager	Stephane Nardin	Date:		Signature:
Safety Manager	Bernie Pusung	Date:	7/4/2020	Signature:

BYMA

INCIDENT REPORT

FORM. 17.C.

PART A - DECLARATION

1. GENERAL INFORMATION

Report n° :	YCP-098	Date of issuance :	11/5/2020	Prepared by :	Bernie Pusung

2. COUNTRY / PROJECT

Country	Name of Project	Client	Project Director
MM - MYANMAR	MWL	MDL	Vincent Jaubert

3. IDENTIFICATION OF THE ACCIDENT / INCIDENT AND THE INJURED PERSON

3.1 Date and Incident / Accident location

Date :	8/5/2020	Accident location :	0004 At the usual workplace
Time :	15:30:00 PM	Exact area :	Tank B3

3.2 Type of accident / incident

☑ Occupational accident	Accident with lost time	If others, please specify :	
☐ Incident / Near miss		If road accident (please provide details below) :	
☐ Road accident		Type of transport	
Multiple victims? YES ☐ NO ☑	If yes, reference of other accident reports :	Transport area	

3.3 Details of injured person

Surname:		First name :	Aung Kyaw Min	Date of birth :	9/4/1977
Nationality :	MM - MYANMAR	Employer :	BTJV	Company date of employment :	19/11/2019
Gender :	Male	Job title :	Team Leader	Date of arrival on Project :	19/11/2019
Marital status :	Married	Qualification :	0103 Worker	Job experience :	6 Months
Contract :	0209 Local personnel	Staff category :	0401 POP A1 - PRODUCTION	Date of last medical check-up :	N/A

3.4 Activity in progress at the time of the accident

Workstation :	Basement 3 - Tank	Type of works :	Deshuttering
Shift work :	0302 Night	More details :	Grout column formworks deshuttering
Working alone : YES ☐ NO ☑			

3.5 Characteristics of the working environment at the time of the accident (temperature, humidity, ground conditions, wind, noise environment, light...)

Weather conditions :	0004 Temperature > 30°C
More details :	Clear

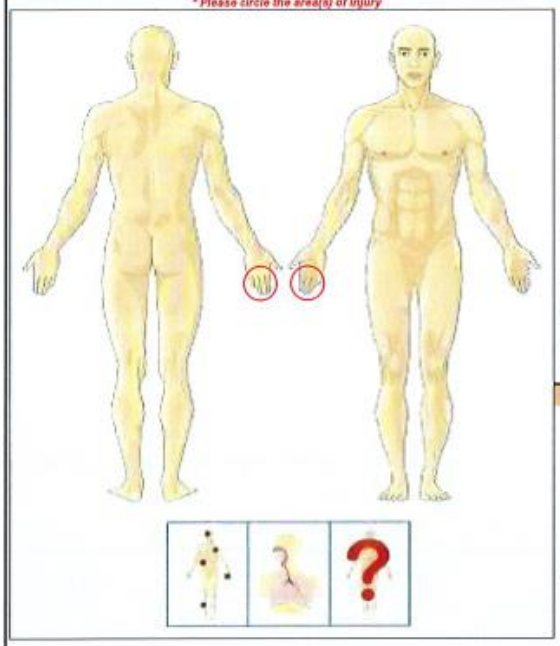
On 8th May 2020 at approximately 3:30 PM, Aung Kyaw Min (Team leader) was injured on the right hand(crushed Injury). Aung Kyaw Min was a team leader engaged on deshuttering of grout column formwork at basement 3 tank. While he's undoing the tie rod lock connecting the two waler beam on the formwork, the waler beam fell and subsequently hit to his right hand. At the time the Injured Party (Ang Kyaw Min) was not wearing his issued gloves. He have removed also the vertical supports to the waler beam in which he's been told not to by his Foreman. Aung Kyaw Min received a first aid treatment at the site medical center and was sent to Yangon General Hospital. Fracture was found on the right index finger. The IP was admitted for the surgery.

Visuals of the accidental occurrence (reconstruction, workstation, method statement...)

4. DESCRIPTION OF INJURY / INJURIES

4.1 Area of injury

** Please circle the area(s) of injury*



4.2 Nature of injury

Severity of injury :

Notable

1st injury

Nature of injury

0202 Open fracture

Area of injury

0505 Other finger(s)

2nd injury

Nature of injury

Area of injury

4.3 Medical treatment

Intervention of a first aider :	Yes ☑ No ☐	If on medical leave,	
First aid treatment :	Yes ☑ No ☐	Initial date stop:	
Emergency service was called :	Yes ☐ No ☑		9/5/2020
Sent to hospital or medical centre :	Yes ☑ No ☐	Date of return:	
Back to work	Yes ☐ No ☑		TBC

Description of medical treatment :

Repair of the index finger by surgery.

Manner of injury	0203 Struck by falling objects during handling
Deviation from normal	0006 Body movements (person in movement)
Material element	0400 OBJECTS BEING MANIPULATED MANUALLY

5. IMMEDIATE ACTIONS UNDERTAKEN

Area made safe. The Injured Party was immediately brought to site clinic where first aid was administered and later to Yangon General Hospital for further management.

⚠ Send Part A to the Country Safety Manager and to bbi.safety@bouygues-construction.com within 48 hours

Before completing Part B, determine the levels of investigation with the help of Appendix 1

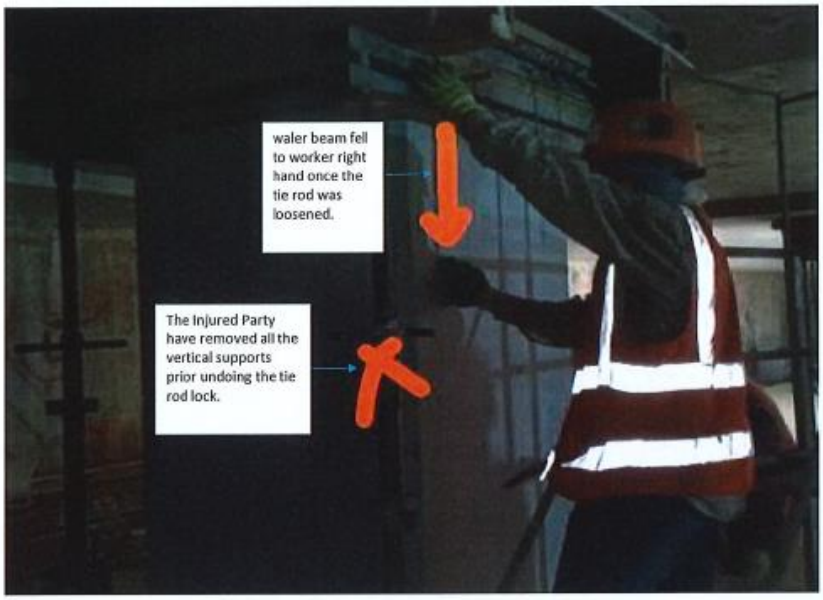
PART B - ANALYSIS AND INVESTIGATION

6. INCIDENT INVESTIGATION

6.1 Investigation team members

Name	Position / Job	Company
Bernie Pusung	Safety Manager	BTJV
Andres Gequinto	Deputy Safety Manager	BTJV
Win Naing	Foreman	BTJV
Aung Soe Than	Safety Officer - Tank Area	BTJV

6.2 Detailed chronology of events (attach sketches, photos, testimony of the injured person, witnesses and line managers).



6.3 List of elements and collected documents

NIL

7. SOURCE CAUSES (Major and influential factors)		
Organisational and environmental		
Identified failures		**Why ?**
Method / Procedure	Method of de shuttering was not followed by the Injured Party	Instead of keeping the vertical supports of the waler beam which is part of the formworks, the injured Party have removed them prior undoing the tie rod lock connecting the two waler beams.
Technical		
Identified failures		**Why ?**
People		
Identified failures		**Why ?**
Unsafe Act	Deliberate risk taking	The Injured Party intentionally didn't follow the Foreman's instruction to not remove the vertical supports prior loosening the tie rod lock connecting the two waler beam. The worker was not wearing the issued gloves. The extent of the injury could have been reduce if the Injured Party wore his gloves.

8. CAUSE ANALYSIS / CORRECTIVE ACTIONS				
Immediate / direct causes identified*	**Root causes identified***	**Corrective actions to be implemented for each root cause identified**	**Person in charge / Job title**	**Target action date**
Waler beam fell to workers hand due to removed vertical supports	The Injured Party deliberately ignore the Foreman instruction to not remove the vertical supports.	Issuance of disciplinary action against the Injured Party for deliberately disobeying the instruction of his superior. Reminder to be done to Supervisions that as much as possible that work instructions are conveyed repeatedly to ensure workers will not commit error. Those who deliberately ignore rules to be sanction or dismissed depending on the extent of the misdemeanour.	Delfin Peralzal/Denis Neto Gomez	11/5/2020

9. SIGNATURE					
Project Manager / Director	Vincent Jaubert	Date:	11/5/20	Signature:	
Production Manager	Stephane Nardin	Date:	11/5/20	Signature:	
Safety Manager	Bernie Pusung	Date:	11/5/20	Signature:	

BYMA

ACCIDENT REPORT

FORM. 17.C.

PART A - DECLARATION

1. GENERAL INFORMATION

Report n° :	YCP-099	Date of issuance :	1/6/2020	Prepared by :	Bernie Pusung

2. COUNTRY / PROJECT

Country	Name of Project	Client	Project Director
MM - MYANMAR	MWL	MDL	Vincent Jaubert

3. IDENTIFICATION OF THE ACCIDENT / INCIDENT AND THE INJURED PERSON

3.1 Date and Incident / Accident location

Date :	30/5/2020	Accident location :	0004 At the usual workplace
Time :	9:45	Exact area :	Tower 2 - Level 1A

3.2 Type of accident / Incident

☑ Occupational accident	Accident with lost time	If others, please specify :	
☐ Incident / Near miss		If road accident (please provide details below) :	
☐ Road accident		Type of transport	
Multiple victims? YES ☐ ☑	If yes, reference of other accident reports :	Transport area	

3.3 Details of injured person

Surname :	-	First name :	Kyaw Min Naing	Date of birth :		22 years old
Nationality :	MM - MYANMAR	Employer :	BTJV	Company date of employment :	6/5/2020	
Gender :	Male	Job title :	Rebar worker	Date of arrival on Project :	6/5/2020	
Marital status :	Single	Qualification :	0103 Worker	Job experience :	24 days	
Contract :	0209 Local personnel	Staff category :	0401 POP A1 - PRODUCTION	Date of last medical check-up :	N/A	

3.4 Activity in progress at the time of the accident

Workstation :	Tower 2 at Corewall 2.2.	Type of works :	Steel fixing
Shift work :	0302 Night	More details :	Reinforcement installation to corewall (CW 2.2.)
Working alone : YES	☐ ☑		

3.5 Characteristics of the working environment at the time of the accident (temperature, humidity, ground conditions, wind, noise environment, light...)

Weather conditions :	0004 Temperature > 30°C
More details :	Clear

On 30th May 2020 at approximately 9:45 AM. A rebar worker (Kyaw Min Naing) was hit on the back by a falling push pull prop that became detached from being installed from a formworks after a worker stepped on it. The IP's workmate utilize the prop as means of access as none provided at the time. The prop fell from the small opening from the bottom deck of lubeca jumpform at approximately 3 meters. Below is the Injured Party's (IP) who was passing rebar to be installed in the core wall. The small gap opening is being use to allow passing the reinforcing bars to be installed. The IP was task to pass rebars hence he's beneath the opening. The IP was immediately sent to site medical center where first aid treatment was given and later was sent to Yangon General Hospital to rule out fracture. The CT scan shows a minor fracture on the C2 vertebrae (neck).

Visuals of the accidental occurrence (reconstruction, workstation, method statement...)

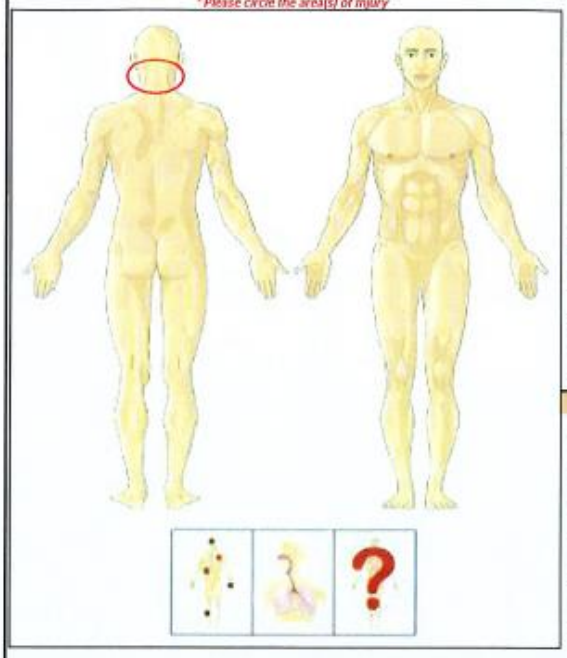
Injured Party's workmate stepped on the push pull prop causing it to fall

At the time the Injured Party was passing rebar when the prop fell to his

4. DESCRIPTION OF INJURY / INJURIES

4.1 Area of injury

** Please circle the area(s) of injury*



4.2 Nature of injury

Severity of injury :

Notable

1st injury

Nature of injury

0201 Closed fracture

Area of injury

0200 NECK, INCLUDING SPINE AND VERTEBRAE IN THE NECK

2nd injury

Nature of injury

Area of injury

4.3 Medical treatment

Intervention of a first aider :	Yes ☑	No ☐	If on medical leave,	
First aid treatment :	Yes ☑	No ☐	Initial date stop:	
Emergency service was called :	Yes ☐	No ☑	1/6/2020	
Sent to hospital or medical centre :	Yes ☑	No ☐	Date of return:	
Back to work	Yes ☐	No ☑	TBC	

Description of medical treatment :

Neck collar applied to immbolize movement of the head.

Manner of injury	0200 Struck by falling objects
Deviation from normal	0000 Body movements (person in movement)
Material element	0400 OBJECTS BEING MANIPULATED MANUALLY

5. IMMEDIATE ACTIONS UNDERTAKEN

The gap on the opening where the prop fell was sealed. Injured Party sent to clinic where first aid treament was done. He was sent to Yangon General Hospital to rule out fracture.

⚠ Send Part A to the Country Safety Manager and to bbi.safety@bouygues-construction.com within 48 hours

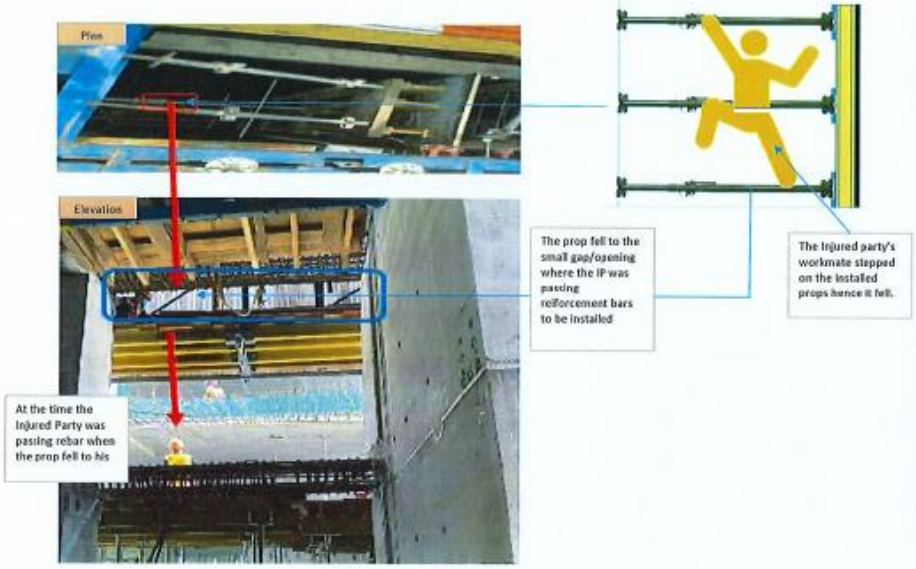
Before completing Part B, determine the levels of investigation with the help of Appendix 1

6. INCIDENT INVESTIGATION

6.1 Investigation team members

Name	Position / Job	Company
Bernie Pusung	Safety Manager	BTJV
Marool	Supervisor	BTJV
Arkar Moe	Safety Officer - Tower 2	BTJV

6.2 Detailed chronology of events (attach sketches, photos, testimony of the injured person, witnesses and line managers).



6.3 List of elements and collected documents

Medical report

7. SOURCE CAUSES (Major and influential factors)		
Organisational and environmental		
Identified failures		**Why ?**
Method / Procedure	Wrong method of shifting the reinforcement bars	The accident could have been prevented if the rebars shifting was done by unloading to the top deck via Tower crane instead of keeping an opening and allowing one by one passing from below level.
Method / Procedure	Full application of the procedure was not followed	Openings where objects/materials could fall must be close/protected by means of cover or by sealing. Breach to Safe Work Procedure standards.
Technical		
Identified failures		**Why ?**
People		
Identified failures		**Why ?**
Unsafe Act	Injured Party workmate utilized the props as access.	No proper access at the work location, which have made the IP to take shortcut by using the installed props on the formworks as access.

8. CAUSE ANALYSIS / CORRECTIVE ACTIONS				
Immediate / direct causes identified*	Root causes identified*	Corrective actions to be implemented for each root cause identified	Person in charge / Job title	Target action date
Unsafe act	The Injured Party's (IP) workmate stepped on the push pull prop causing it to fall. The IP's workmate utilize the prop as means of access as none provided at the time.	Safe means of access and egress to be provided on the work locations at all times preventing workers take shortcuts.	Denis Helo Gomez, Senior Superintendent	1/6/2020
Prop fell through an unprotected opening	Allowing openings to be use to pass materials (rebars) to be installed on the core wall.	The reinforcement bars for the corewall to be lifted to the top deck platform using the Tower crane. Refrain from using gaps or openings allowing workers to shift materials to the corewall. Close all gaps/openings at the bottom deck of the lubeca jumpform	Denis Helo Gomez, Senior Superintendent	1/6/2020

9. SIGNATURE				
Project Manager / Director	Vincent Jaubert	Date:	02/04/2020	Signature:
Production Manager	Stephane Nardin	Date:	02/04/2020	Signature:
Safety Manager	Bernie Pusung	Date:	02/06/2020	Signature:

BYMA

ACCIDENT REPORT

FORM. 17.C.

PART A - DECLARATION

1. GENERAL INFORMATION

Report n° :	YCP-101	Date of issuance :	29/6/2020	Prepared by :	Bernie Pusung

2. COUNTRY / PROJECT

Country	Name of Project	Client	Operations Director
MM - MYANMAR	MWL	MDL	Joris THOMAS

3. IDENTIFICATION OF THE ACCIDENT / INCIDENT AND THE INJURED PERSON

3.1 Date and incident / Accident location

Date :	27/6/2020	Accident location :	0004 At the usual workplace
Time :	11:45	Exact area :	Ttower 1 - Level 7

3.2 Type of accident / incident

☑ Occupational accident	Accident with lost time	If others, please specify :	
☐ Incident / Near miss		If road accident (please provide details below) :	
☐ Road accident		Type of transport	
Multiple victims? YES ☐ NO ☑	If yes, reference of other accident reports :	Transport area	

3.3 Details of injured person

Surname:		First name :	Zayar Lin & Saw Sar Ka Paw	Date of birth :	28, 19 yrs old	respectively
Nationality :	MM - MYANMAR	Employer :	BTJV	Company date of employment :	3/6/2020	11/5/2020
Gender :	Male	Job title :	Carpenter, General Worker	Date of arrival on Project :	3/6/2020	11/5/2020
Marital status :	Single	Qualification :	0103 Worker	Job experience :	24 days	more than a month
Contract :	0209 Local personnel	Staff category :	0401 POP A1 - PRODUCTION	Date of last medical check-up :	N/A	N/A

3.4 Activity in progress at the time of the accident

Workstation :	Tower 2	Type of works :	Assisting Tower Crane signalman on shifting scaffolds
Shift work :	0301 Day	More details :	Shifting of catari scaffolding materials from level 7 to level 8 using tower crane.
Working alone :	YES ☐ NO ☑		

3.5 Characteristics of the working environment at the time of the accident (temperature, humidity, ground conditions, wind, noise environment, light...)

Weather conditions :	0007 Cloudy
More details :	Clear

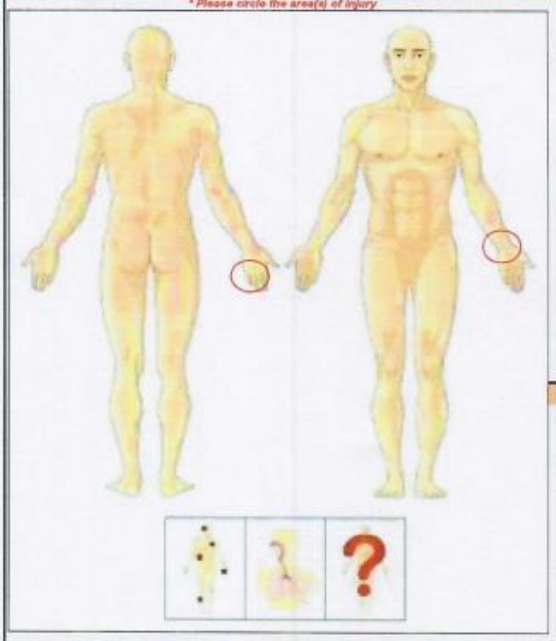
On 27th June 2020 at approximately 11:45 AM, two workers Zayar Lin and Saw Sar Ka Paw assisting the Tower Crane Signalman Tin Aung Win to move Catari scaffolding materials kept on a stillage. The scaffoldings were choke slung and was lifted by the tower crane for about 5 feet when the signalman noticed the load was not in center of gravity (not balance). He have given a signal to the tower crane operator to lower the load. While the load is being lowered, the two workers Zayar and Saw received the load with their bare hand without using the provided tag line or push sticks. The load fell slightly towards the two workers and while pushing back to the other side, Zayar right pinky was trapped between the load and the scaffolding standard erected nearby (see Section 3.6). The other worker Saw Sar tried to push the load away from him however given the heavy load, his hand was injured. Zayar received an open fracture on his right pinky while Saw fractured his right hand. Both of them were attended in the site clinic where first aid was administered and later was sent to YGH(Yangon General Hospital) for further management.

Visuals of the accidental occurrence (reconstruction, workstation, method statement...)

4. DESCRIPTION OF INJURY / INJURIES

4.1 Area of injury

** Please circle the area(s) of injury*



4.2 Nature of injury

Severity of injury : Notable

1st injury

Nature of injury: 0201 Closed fracture

Area of injury: 0504 Hand

2nd injury

Nature of injury: 0202 Open fracture

Area of injury: 0506 Other finger(s)

4.3 Medical treatment

Intervention of a first aider :	Yes ☑ No ☐	If on medical leave,	
First aid treatment :	Yes ☑ No ☐	Initial date stop:	
Emergency service was called :	Yes ☐ No ☑		28/6/2020
Sent to hospital or medical centre :	Yes ☑ No ☐	Date of return:	
Back to work	Yes ☐ No ☑		TBC

Description of medical treatment :

Bone fracture repair by surgery.

Manner of injury	0400 Caught in or between objects
Deviation from normal	0000 Body movements (person in movement)
Material element	0400 OBJECTS BEING MANIPULATED MANUALLY

5. IMMEDIATE ACTIONS UNDERTAKEN

Injured workers immediately sent for treatment.

⚠ **Send Part A to the Country Safety Manager and to bbi.safety@bouygues-construction.com within 48 hours**

Before completing Part B, determine the levels of investigation with the help of Appendix 1

6. INCIDENT INVESTIGATION

6.1 Investigation team members

Name	Position / Job	Company
Bernie Pusung	Safety Manager	BTJV
Carlo Farias	Superintendent	BTJV
Tay Zar Win	Safety Officer	BTJV

6.2 Detailed chronology of events (attach sketches, photos, testimony of the injured person, witnesses and line managers).

Illustration

6.3 List of elements and collected documents

APPENDIX 1: Involved Rigger /Signal Man Certificate (for competency check).
APPENDIX 2: Riggers retraining records.

7. SOURCE CAUSES (Major and influential factors)

Organisational and environmental

	Identified failures	Why ?

Technical

	Identified failures	Why ?

People

	Identified failures	Why ?
Unsafe Act	Lack of due care and diligence	The Tower Crane Signalman allowed the two helpers to received the load with their hands without using the tagline or push sticks.
Unsafe Act	Lifting without ensuring a balance load	The accident could have been prevented if a test lift was undertaken by the rigger to ensure load is at center of gravity.

8. CAUSE ANALYSIS / CORRECTIVE ACTIONS

Immediate / direct causes identified*	Root causes identified*	Corrective actions to be implemented for each root cause identified	Person in charge / Job title	Target action date
Unbalance load	Lifting without doing test lift to ensure load is at center of gravity	Riggers/Signal man to remind to perform test lift first i.e. lift the load slightly (low level) to observed abnormality. - DONE	Myo Aung , Crane Appointed Person.	27/6/2020
Receiving the load by hand without using the provided tag line.	Rigger/signalman didn't forbid the workers to stay away from the load being lifted. He allowed both the workers to received the unstable load with their hand. He should have instructed to use the provided tag line or push sticks.	Rigger/Signal man to be reminded of their role on strict use of tag lines or push sticks while receiving load. - DONE	Myo Aung , Crane Appointed Person.	27/6/2020
		***Tower crane signalman will be remove from rigging and signalling job and will perform another role in the project.		

9. SIGNATURE

Operations Director	Joris THOMAS	Date:	Mr. Joris THOMAS 30 JUN 2020	Signature:
Senior Superintendent	Denis Neto	Date:	29/06/20	Signature:
Safety Manager	Bernie Pusung	Date:	29/06/2020	Signature:

BYMA FAISEI

ACCIDENT REPORT

FORM. 17.C.

PART A - DECLARATION

1. GENERAL INFORMATION

Report n° :	YCP-103	Date of issuance :	9/7/2020	Prepared by :	Bernie Pusung

2. COUNTRY / PROJECT

Country	Name of Project	Client	Operations Director
MM - MYANMAR	MWL	MDL	Joris THOMAS

3. IDENTIFICATION OF THE ACCIDENT / INCIDENT AND THE INJURED PERSON

3.1 Date and Incident / Accident location

Date :	8/7/2020	Accident location :	0004 At the usual workplace
Time :	9:05	Exact area :	T3 Corewall (CW 3.1)

3.2 Type of accident / incident

☑ Occupational accident	Accident with lost time	If others, please specify :	
☐ Incident / Near miss		If road accident (please provide details below) :	
☐ Road accident		Type of transport	
Multiple victims? YES ☐ NO ☑	If yes, reference of other accident reports :	Transport area	

3.3 Details of injured person

Surname:		First name :	Tin Maung Myint & Shine Ko Ko	Date of birth :	15.7.1969	9.6.1997
Nationality :	MM - MYANMAR	Employer :	BTJV	Company date of employment :	7.12.2018	29.5.2020
Gender :	Male	Job title :	Carpenters	Date of arrival on Project :	7.12.2018	29.5.2020
Marital status :	Single	Qualification :	0103 Worker	Job experience :	2 years	1.5 months
Contract :	0209 Local personnel	Staff category :	0401 POP A1 - PRODUCTION	Date of last medical check-up :	NA	NA

3.4 Activity in progress at the time of the accident

Workstation :	Tower 3	Type of works :	Concreting
Shift work :	0301 Day	More details :	Casting of corewal (CW 3.1)
Working alone : YES ☑ NO ☐			

3.5 Characteristics of the working environment at the time of the accident (temperature, humidity, ground conditions, wind, noise environment, light...)

Weather conditions :	0007 Cloudy
More details :	Isolated rain showers

At 9:05 AM at CW 3.1, the discharge pipe of spider concrete placing boom went on a whiplash effect and splashes concrete while the residual concrete being discharge with a cleaning ball. Two workers holding the discharge pipe received injury (bruising and abrasions with chemical burn) on the face and abdomen respectively with the splashed concrete. Small portion of the core wall being casted was not completed and there have been no remaining concrete on the station pump. The remaining concrete within the conveying line was decided to be use to complete casting the remaining small portion. A cleaning ball was use to push the residual concrete, as soon the ball reached the discharge pipe , the pipe went on whiplash effect due to the air pressure. The two workers were unable to hold firmly the discharge pipe subsequently the concrete splashes out injuring both the workers.

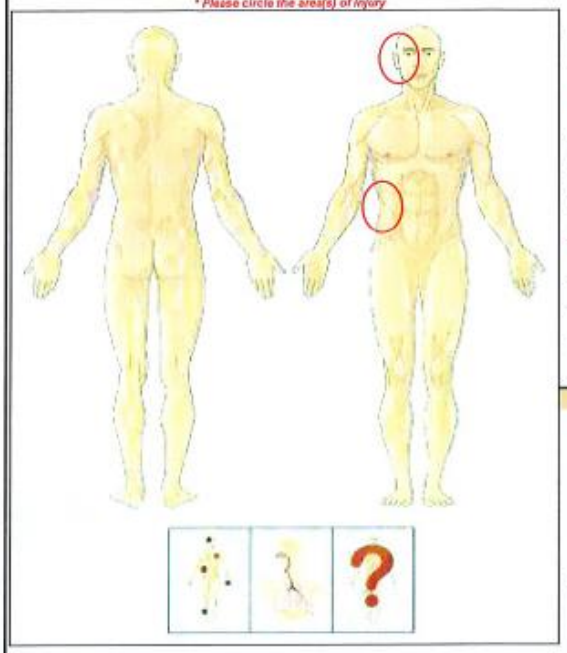
Visuals of the accidental occurrence (reconstruction, workstation, method statement...)

Refer to Section 6.2

4. DESCRIPTION OF INJURY / INJURIES

4.1 Area of injury

** Please circle the area(s) of injury*



4.2 Nature of injury

Severity of injury :

Minor

1st injury

Nature of injury

0104 Bruising

Area of injury

0100 HEAD

2nd injury

Nature of injury

0104 Bruising

Area of injury

Abdomen

4.3 Medical treatment

Intervention of a first aider :	Yes ☑	No ☐	If on medical leave,	
First aid treatment :	Yes ☑	No ☐	Initial date stop:	
Emergency service was called :	Yes ☐	No ☑		8/7/2020
Sent to hospital or medical centre :	Yes ☑	No ☐	Date of return:	
Back to work	Yes ☐	No ☑		TBC

Description of medical treatment :

No abnormal findings. Wound clean and antiseptic applied.

Manner of injury	0303 Striking against moving objects
Deviation from normal	0000 Body movements (person in movement)
Material element	0500 OBJECTS IN MOVEMENT

5. IMMEDIATE ACTIONS UNDERTAKEN

Injured Parties sent to clinic for first aid treatment and immediately sent to YGH (Yangon General Hospital) for further management.

⚠ Send Part A to the Country Safety Manager and to bbi.safety@bouygues-construction.com within 48 hours

Before completing Part B, determine the levels of investigation with the help of Appendix 1

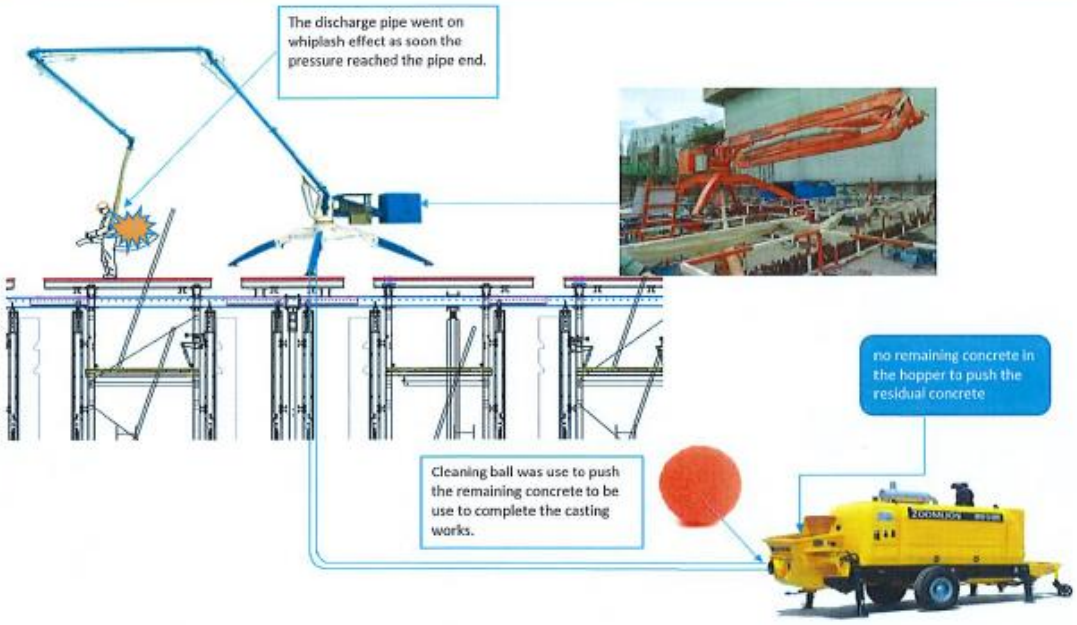
PART B - ANALYSIS AND INVESTIGATION

6. INCIDENT INVESTIGATION

6.1 Investigation team members

Name	Position / Job	Company
Bernie Pusung	Safety Manager	BTJV
Denis Neto	Senior Superintendent	BTJV
Sharma Tripurari	Plant Manager	BTJV
Andres Gequinto	Senior Safety Officer	BTJV

6.2 Detailed chronology of events (attach sketches, photos, testimony of the injured person, witnesses and line managers).



6.3 List of elements and collected documents

NIL

7. SOURCE CAUSES (Major and influential factors)		
Organisational and environmental		
	Identified failures	**Why ?**
Technical		
	Identified failures	**Why ?**
People		
	Identified failures	**Why ?**
Unsafe Act	Workers were allowed to hold the discharge pipe while purging concrete	Unaware of the hazards of whip lash effect as soon the pressure reached the discharge point.

8. CAUSE ANALYSIS / CORRECTIVE ACTIONS				
Immediate / direct causes identified*	**Root causes identified***	**Corrective actions to be implemented for each root cause identified**	**Person in charge / Job title**	**Target action date**
Unsecured discharge pipe while purging concrete	The pipe end (discharge pipe) held by workers instead of securing it properly using clamps	Prior purging concrete following a casting works, the pipe end to be secured with supporting bracket to prevent from being displace or creating a whip lash effect.	Sharma Tripurari, Plant Manager /Denis Neto, Senior Superintendent	9/7/2020
Unsafe act	Allowing worker to hold the discharge pipe while purging concrete	Ensure no persons within the discharge point while residual concrete being purge within the concrete conveying line.	Sharma Tripurari, Plant Manager /Denis Neto, Senior Superintendent	9/7/2020
		****Additional control measures:** When using compressed air to purge the residual concrete, reverse method to be applied i.e. applying air pressure from the casting location back to the station pump. This is to ensure stability of the concrete lines which are held in brackets and to de limit the area with non essential persons.	Sharma Tripurari, Plant Manager /Denis Neto, Senior Superintendent	9/7/2020

9. SIGNATURE				
Operations Director	Joris THOMAS	Date:	13 JUL 2020	Signature:
Senior Superintendent	Denis Neto	Date:	10/07/20	Signature:
Safety Manager	Bernie Pusung	Date:	10/7/20	Signature:

BYMA

ACCIDENT REPORT

FORM. 17.C.

PART A - DECLARATION

1. GENERAL INFORMATION

Report n° :	YCP-106	Date of issuance :	5/9/2020	Prepared by :	Bernie Pusung

2. COUNTRY / PROJECT

Country	Name of Project	Client	Operations Director
MM - MYANMAR	MWL	MDL	Joris THOMAS

3. IDENTIFICATION OF THE ACCIDENT / INCIDENT AND THE INJURED PERSON

3.1 Date and Incident / Accident location

Date :	4/9/2020	Accident location :	0004 At the usual workplace
Time :	21:30	Exact area :	T2 Level 2

3.2 Type of accident / incident

☑ Occupational accident	Accident with lost time	If others, please specify :	
☐ Incident / Near miss		If road accident (please provide details below) :	
☐ Road accident		Type of transport	
Multiple victims? YES ☐ ☑	If yes, reference of other accident reports :	Transport area	

3.3 Details of injured person

Surname:		First name :	Myo Oo	Date of birth :	21 years old
Nationality :	MM - MYANMAR	Employer :	BTJV	Company date of employment :	TBC
Gender :	Male	Job title :	Rebar worker	Date of arrival on Project :	TBC
Marital status :	Single	Qualification :	0103 Worker	Job experience :	TBC
Contract :	0209 Local personnel	Staff category :	0401 POP A1 - PRODUCTION	Date of last medical check-up :	N/A

3.4 Activity in progress at the time of the accident

Workstation :	Tower 2	Type of works :	Rebar works
Shift work :	0301 Day	More details :	Rebar bending using manual rebar bender
Working alone : YES ☑ ☐			

3.5 Characteristics of the working environment at the time of the accident (temperature, humidity, ground conditions, wind, noise environment, light...)

Weather conditions :	0007 Cloudy
More details :	Drizzle

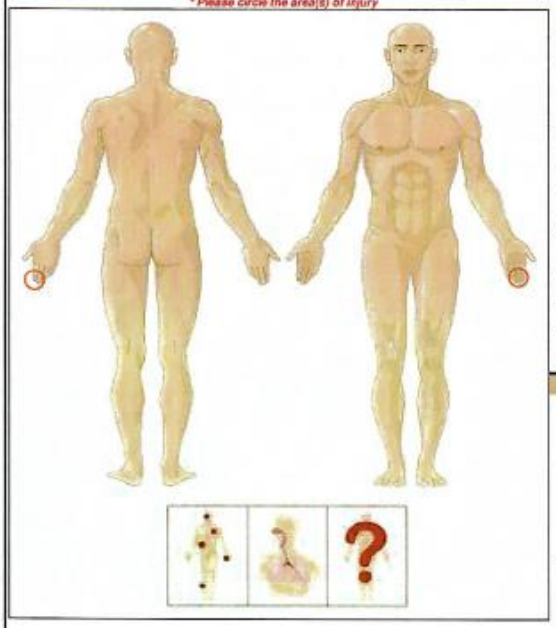
On 05th August 2020, at approximately 2130H, a rebar worker (Myo Oo) accidentally caught his left index finger on the bending point i.e. in between a rebar and manual rebar bender while his workate was bending a rebar. Myo Oo's workmate bend the rebar unknowingly that Myo's Oo finger is on the being point (line of fire). He was sent to site medical center where first aid treatment was given prior sending to YGH for further management. Surgery done to repair the tissue on his finger tip.

Visuals of the accidental occurrence (reconstruction, workstation, method statement...)

4. DESCRIPTION OF INJURY / INJURIES

4.1 Area of injury

** Please circle the area(s) of injury*



4.2 Nature of injury

Severity of injury :

Notable

1st injury

Nature of injury

0400 TRAUMATIC AMPUTATION (N

Area of injury

0506 Other finger(s)

2nd injury

Nature of injury

Area of injury

4.3 Medical treatment

Intervention of a first aider :	Yes ☑	No ☐	If on medical leave,
First aid treatment :	Yes ☑	No ☐	Initial date stop:
Emergency service was called :	Yes ☐	No ☑	5/9/2020
Sent to hospital or medical centre :	Yes ☑	No ☐	Date of return:
Back to work	Yes ☐	No ☑	

Description of medical treatment :

Manner of injury	Over-exertion while reaching a tool
Deviation from normal	0006 Body movements (person in movement)
Material element	0400 OBJECTS BEING MANIPULATED MANUALLY

5. IMMEDIATE ACTIONS UNDERTAKEN

IP sent to clinic and received first then sent to YGH (Yangon General Hospital) for further management. Briefing done with all involve on rebar bending works regarding prevention of hazards of pinch points.

⚠ Send Part A to the Country Safety Manager and to bbi.safety@bouygues-construction.com within 48 hours

Before completing Part B, determine the levels of investigation with the help of Appendix 1

7. SOURCE CAUSES (Major and influential factors)		
Organisational and environmental		
	Identified failures	Why ?
Technical		
	Identified failures	Why ?
People		
	Identified failures	Why ?
Unsafe Act	Lack of due care and diligence	The Injured Party's workmate bend the rebar without asking his workmate (Injured Party) to clear his hand from the bending point.

8. CAUSE ANALYSIS / CORRECTIVE ACTIONS				
Immediate / direct causes identified*	Root causes identified*	Corrective actions to be implemented for each root cause identified	Person in charge / Job title	Target action date
Bending rebar without clearing hands on the contact point or line of fire	Lack of due care and diligence.	Rebar benders using table benders are to be retrained to be vigilant on ensuring that no hands to be kept on the line of fire or bending point.	Superintendents	5/9/2020
		***Additional control measures: Where possible minimize the rebar bending works using manual benders and utilize the rebar bending machines where guards are fitted on rotating parts.	Denis Neto Gomes, Senior Superintendent	5/9/2020

9. SIGNATURE				
Operations Director	Joris THOMAS	Date:	09/09/20	Signature:
Senior Superintendent	Denis Neto	Date:	08/09/20	Signature:
Safety Manager	Bernie Pusung	Date:	07/09/2020	Signature:

BYMA

ACCIDENT REPOR

FORM. 17.C.

PART A - DECLARATION

1. GENERAL INFORMATION

Report n° :	YCP-108	Date of Issuance :	7/9/2020	Prepared by :	Bernie Pusung

2. COUNTRY / PROJECT

Country	Name of Project	Client	Operations Director
MM - MYANMAR	MWL	MDL	Joris THOMAS

3. IDENTIFICATION OF THE ACCIDENT / INCIDENT AND THE INJURED PERSON

3.1 Date and Incident / Accident location

Date :	7/9/2020	Accident location :	0004 At the usual workplace
Time :	18:00	Exact area :	T3 Level 5 (CW 3.1)

3.2 Type of accident / Incident

☑ Occupational accident	Accident with lost time	If others, please specify :	
☐ Incident / Near miss		If road accident (please provide details below) :	
☐ Road accident		Type of transport	
Multiple victims? YES ☐ ☑	If yes, reference of other accident reports :	Transport area	

3.3 Details of injured person

Surname:		First name :	U Aye Thein	Date of birth :	9.3.1971	49 years old
Nationality :	MM - MYANMAR	Employer :	BTJV	Company date of employment :	25-08-2020	
Gender :	Male	Job title :	Carpenter	Date of arrival on Project :	25-08-2022	
Marital status :	Married	Qualification :	0103 Worker	Job experience :	15days	
Contract :	0209 Local personnel	Staff category :	0401 POP A1 - PRODUCTION	Date of last medical check-up :	N/A	

3.4 Activity in progress at the time of the accident

Workstation :	Tower 3	Type of works :	Rebar works
Shift work :	0301 Day	More details :	Reinforcement works
Working alone : YES ☐ ☑			

3.5 Characteristics of the working environment at the time of the accident (temperature, humidity, ground conditions, wind, noise, exposure to light...)

Weather conditions :	0007 Cloudy
More details :	Drizzle

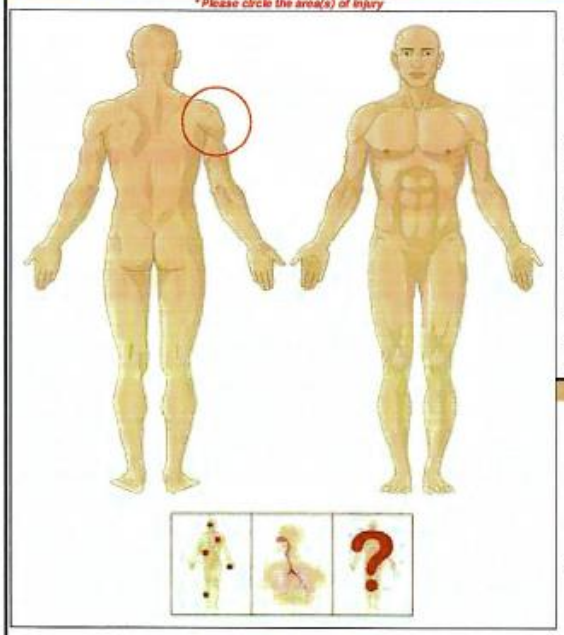
At approximately 0600H on 7th September 2020, a concrete debris on the bottom deck of CW 3.1 lubeca platform fell from level 5 to level 4 subsequently hit to a worker's back resulting to abrasions and clavicle dislocation or fracture on the back.The fall distance is approximately 6 meters. The worker was treated on the site medical center (immobilization) prior sending to YGH for further management (to rule out fracture).
Initial investigation revealed that during casting of core wall some concrete droppings ending up on platforms was missed to be cleaned and gets hardened.
The platform where the concrete debris is located was frequently moving as it use as permanent access, due to shaking the concrete debris escape and fell through the gap.

Visuals of the accidental occurrence (reconstruction, workstation, method statement...)

4. DESCRIPTION OF INJURY / INJURIES

4.1 Area of injury

** Please circle the area(s) of injury*



4.2 Nature of injury

Severity of injury :

Notable

1st injury

Nature of injury

0301 Dislocation & subluxation

Area of injury

0300 Back, other specified parts nc

2nd injury

Nature of injury

Area of injury

4.3 Medical treatment

Intervention of a first aider :	Yes ☑ No ☐	If on medical leave,	
First aid treatment :	Yes ☑ No ☐	Initial date stop:	
Emergency service was called :	Yes ☐ No ☑		8/9/2020
Sent to hospital or medical centre :	Yes ☑ No ☐	Date of return:	
Back to work	Yes ☐ No ☑		TBC

Description of medical treatment :

Immobilisation

Manner of injury	Over-exertion while reaching a tool
Deviation from normal	0907 Body movements (person stationary)
Material element	Falling debris that escape from the gap due to movement

5. IMMEDIATE ACTIONS UNDERTAKEN

First aid treatment given by immobilisation of the clavicle prior sending to YGH for further management.

⚠ Send Part A to the Country Safety Manager and to bbi.safety@bouygues-construction.com within 48 hours

Before completing Part B, determine the levels of investigation with the help of Appendix 1

PART B - ANALYSIS AND INVESTIGATION

5. INCIDENT INVESTIGATION

5.1 Investigation team members

Name	Position / Job	Company
Bernie Pusung	Safety Manager	BYMA
Aung Phyo Thu	Safety Officer	BYMA
Hadrien Varusio	Superintendent	BYMA

5.2 Detailed chronology of events (attach sketches, photos, testimony of the injured person, witnesses and line managers).

Due to frequent movement of the bottom platform the concrete debris fell from the gap.

5.3 List of elements and collected documents

NIL

7. SOURCE CAUSES (Major and influential factors)		
Organisational and environmental		
	Identified failures	Why ?
Environment	Lack of cleanliness (housekeeping)	The platform was not clean from falling debris.
Methods	Lack of provision of falling objects protection	No flaps installed on the edge of the lubeca bottom platform.
Technical		
	Identified failures	Why ?
People		
	Identified failures	Why ?

8. CAUSE ANALYSIS / CORRECTIVE ACTIONS				
Immediate / direct causes identified*	Root causes identified*	Corrective actions to be implemented for each root cause identified	Person in charge / Job title	Target action date
Unprotected edge of a platform	No falling objects prevention installed such as flaps or toeboard to prevent objects to fall	Ensure that all leading edges are protected from falling objects such as provision of toeboards and flaps cover in the case of lubeca platforms.	Denis Neto Gomes, Senior Superintendent	8/9/2020
Loose objects on the platform	Lack of cleaning and housekeeping	All platforms to be cleaned from loose objects or materials that can potentially fall. Following casting on corewalls, ensure spilled and concrete droppings to below level are cleaned as these gets hardened and basically will cause falling objects.	Denis Neto Gomes, Senior Superintendent	8/9/2020

9. SIGNATURE				
Operations Director	Joris THOMAS	Date:	15 SEP 2020	Signature:
Senior Superintendent	Denis Neto	Date:	11/09/20	Signature:
Safety Manager	Bernie Pusung	Date:	11/09/2020	Signature:

BYMA

ACCIDENT REPORT

FORM. 17.C.

PART A - DECLARATION

1. GENERAL INFORMATION

Report n° :	YCP-109	Date of issuance :	10/9/2020	Prepared by :	Bernie Pusung

2. COUNTRY / PROJECT

Country	Name of Project	Client	Operations Director
MM - MYANMAR	MWL	MDL	Joris THOMAS

3. IDENTIFICATION OF THE ACCIDENT / INCIDENT AND THE INJURED PERSON

3.1 Date and Incident / Accident location

Date :	10/9/2020	Accident location :	0004 At the usual workplace
Time :	8:30	Exact area :	CW 2.2 (Level 11)

3.2 Type of accident / incident

☑ Occupational accident	Accident with lost time	If others, please specify :	
☐ Incident / Near miss		If road accident (please provide details below) :	
☐ Road accident		Type of transport	
Multiple victims? YES ☐ ☑	If yes, reference of other accident reports :	Transport area	

3.3 Details of injured person

Surname :		First name :	Zaw Htet	Date of birth :	10.1.1995	25 years old
Nationality :	MM - MYANMAR	Employer :	BTJV	Company date of employment :	27.05.2020	
Gender :	Male	Job title :	Carpenter	Date of arrival on Project :	27.05.2020	
Marital status :	Single	Qualification :	0103 Worker	Job experience :	3 months	
Contract :	0209 Local personnel	Staff category :	0401 POP A1 - PRODUCTION	Date of last medical check-up :	N/A	

3.4 Activity in progress at the time of the accident

Workstation :	Tower 3	Type of works :	Rebar works
Shift work :	0301 Day	More details :	Reinforcement works
Working alone : YES ☐ ☑			

3.5 Characteristics of the working environment at the time of the accident (temperature, humidity, ground conditions, wind, noise environment, light...)

Weather conditions :	0001 Sunny
More details :	Clear

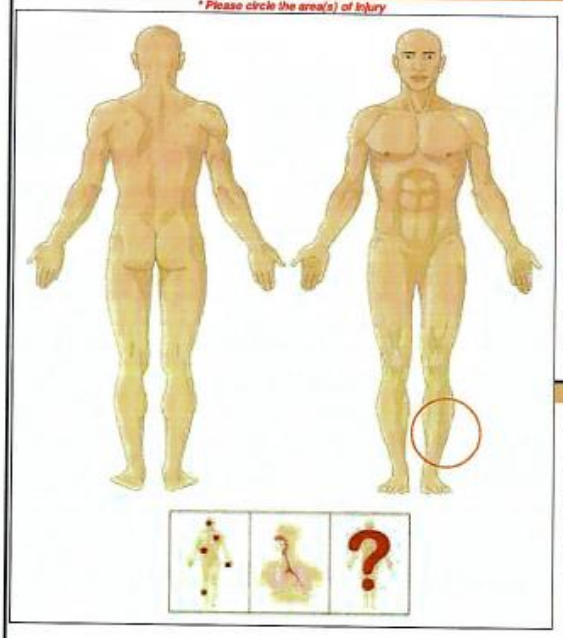
On the 10th September 2020 at approximately 0830H a worker was injured on the left leg after being struck by a falling corner wall panel use on the jump form (CW 2.2) . A tie rod use to secure the panel broke and fell to a worker leg who is securing it with a props at the bottom. The tie rod was hanging on a bracket and secured using a tie rod with wing nut. Due to frequent removal and installations of the panel before and after casting the tie rod was subjected to stress overtime and subsequently broke/fail.

Visuals of the accidental occurrence (reconstruction, workstation, method statement...)

4. DESCRIPTION OF INJURY / INJURIES

4.1 Area of injury

** Please circle the area(s) of injury*



4.2 Nature of injury

Severity of injury :

Notable

1st injury

Nature of injury

0202 Open fracture

Area of injury

0302 Leg, including knee

2nd injury

Nature of injury

Area of injury

4.3 Medical treatment

Intervention of a first aider :	Yes ☑ No ☐	If on medical leave,	
First aid treatment :	Yes ☑ No ☐	Initial date stop:	
Emergency service was called :	Yes ☐ No ☑		11/9/2020
Sent to hospital or medical centre :	Yes ☑ No ☐	Date of return:	
Back to work	Yes ☐ No ☑		TBC

Description of medical treatment :

Wound sutured and leg casted.

Manner of injury	0203 Struck by falling objects during handling
Deviation from normal	0000 Body movements (person in movement)
Material element	0400 OBJECTS BEING MANIPULATED MANUALLY

5. IMMEDIATE ACTIONS UNDERTAKEN

The IP was immediately sent to site medical center where splint was applied to the injured part. He was later sent to YGH for further management.

⚠ Send Part A to the Country Safety Manager and to bbi.safety@bouygues-construction.com within 48 hours

Before completing Part B, determine the levels of investigation with the help of Appendix 1

PART B - ANALYSIS AND INVESTIGATION

6. INCIDENT INVESTIGATION

6.1 Investigation team members

Name	Position / Job	Company
Bernie PUSUNG	Safety Manager	BYMA
Denis NETO GOMES	Senior Superintendent	BYMA
Andres GEQUINTO	Deputy Safety Manager	BYMA
Maroof	Supervisor	BYMA

6.2 Detailed chronology of events (attach sketches, photos, testimony of the injured person, witnesses and line managers).

Tie rod was subjected to stress overtime eventually fail/broken.

Broken tie rod holding the corner wall panel.

Injured Party's left leg was trapped here

6.3 List of elements and collected documents

NIL

7. SOURCE CAUSES (Major and influential factors)

Organisational and environmental

	Identified failures	Why ?

Technical

	Identified failures	Why ?
Material	Faulty material (tie rod)	Tie rod was subjected to stress overtime (i.e. frequent installation and removal before and after casting) . The tie rod became brittle and eventually fail/broken.
Material	Pre mature wear and tear of material (tie rod) which have led to failure	The pre mature wear and tear of the tie rod was not visible as it is concealed on the wing nut.

People

	Identified failures	Why ?

8. CAUSE ANALYSIS / CORRECTIVE ACTIONS

Immediate / direct causes identified*	Root causes identified*	Corrective actions to be implemented for each root cause identified	Person in charge / job title	Target action date
Faulty tie rod	Tie rod was subjected to stress overtime (i.e. frequent installation and removal before and after casting) . The tie rod became brittle and eventually fail/broken.	To adjust tie rod positions on the panel from time to time for each and every casting and during de shuttering. This is to avoid stress to develop in one location of the tie rod. To carry out inspections and remove accordingly potential worn out or old tie rods that are currently installed. Additional control measures: To use additional securing means e.g. wire rope with bulldog grips or chain blocks while moving/adjusting or installing wall panels in the core wall. In case tie rod fails the panel will not fall.	Denis Neto Gomes, Senior Superintendent	11/9/2020

9. SIGNATURE

Operations Director	Joris THOMAS	Date:	15/09/20	Signature:
Senior Superintendent	Denis Neto	Date:	11/09/2020	Signature:
Safety Manager	Bernie Pusung	Date:	11/09/2020	Signature: