



SATHYABAMA

INSTITUTE OF SCIENCE AND TECHNOLOGY

(DEEMED TO BE UNIVERSITY)

Accredited "A" Grade by NAAC | 12B Status by UGC | Approved by AICTE

www.sathyabama.ac.in

SCHOOL OF BUILDING AND ENVIRONMENT

DEPARTMENT OF ARCHITECTURE

M. Arch (Building management)

PROFESSIONAL TRAINING (S84APT)

JULY 2022 - AUG 2022

Name of the Student : S.NITHIN KUMAR

Semester : III

Reg No. : 41840010

Batch : 2021-2023



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VIVA-VOCE EXAMINATION

This is to certify that the Professional Training Report (S84APT) is the work of **S.Nithin Kumar** who had undergone training in **Jones Lang LaSalle** and has been monitored by the continuous assessment during July 2022 to Aug 2022.

Dr. Devyani Gangopadhyay
HOD AND DEAN

Submitted for Viva voce Examination held on 20.12.2022

Internal Examiner
(A. RAMESH KUMAR)

External Examiner
(A. DEVIPRASADA)



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DEPARTMENT OF ARCHITECTURE

M. Arch (Building management)

DECLARATION

I **S.Nithin Kumar** hereby declare that this Professional Training Report **July 22 to Aug 22** done by me under the guidance of **Mr.Jothi Krishnan** is submitted in partial fulfillment of the requirements for the completion of practical training session.



Date : 20.12.2022
Place : Chennai

Signature of Candidate

ACKNOWLEDGEMENT

I am pleased to acknowledge my sincere thanks to Board of Management of **SATHYABAMA INSTITUTE OF SCIENCE & TECHNOLOGY** for their kind encouragement in doing this project and for completing it successfully. I am grateful to them.

I convey my thanks to **Dr.Devyani Gangopadhyay, Dean, School of building and Environment** for providing me necessary support and details at the right time during the progressive reviews.

I would also like to express my sincere thanks to **Ar.Surya Raj Kumar** (Internal Co-Ordinator) for her valuable guidance, during the entire Professional Training period.

I wish to express my thanks to all Teaching and Non-teaching staff members of the Department of Architecture who were helpful in many ways for the completion of the project.

I would like to express my sincere and deep sense of gratitude to **Mr.Baskar V** (Associate Director) for the encouragement throughout the Internship tenure. I would like to extend my gratitude to **Mr.Jothi Krishnan** (Project Manager) for the successful completion of Internship under his supervision and mentorship.

I am grateful to the whole **JLL team** for their time and constant support for helping me to understand the various concepts of Construction, Safety and Quality management, methods & processes of Project Management.



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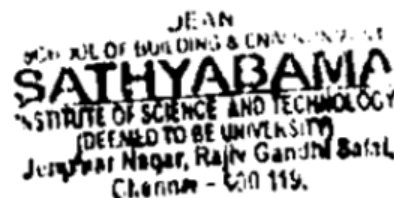
Date: 11.05.2022

TO WHOMSOEVER IT MAY CONCERN

NITHIN KUMAR S (Reg No- 41840010) is a bonafide student of our institution pursuing **Masters in Architecture in Building Management (Batch 2021-2023)**. As part of the curriculum the students are required to undergo Professional Training for a minimum period of 30 working days. Kindly grant permission for the same in your esteemed organization. We also assure that information collected about any project will be used for academic purpose only.

Thanking You,

Dr. Devyani Gangopadhyay
Dean, School of Building & Environment



Level 12 Tower B
DLF Cyber Park Udyog Vihar Phase II
Gurgaon 122 008 Haryana
tel +91 124 460 5000 fax +91 124 460 5001

www.joneslanglasalle.co.in

Nithin Kumar

Chennai
June 28, 2022

Dear Nithin,

We are pleased to inform you that you have been selected as "Intern" with Jones Lang LaSalle Property Consultants (India) Pvt. Ltd. in the "Project and Development Services" on the following terms and conditions: -

1. The Internship is for a period from **July 12, 2022** to **August 20, 2022**
2. Your Internship will be subject to your acceptance of the Statement of Principal terms and conditions of employment (which are attached hereto).
3. The statement of principal terms and conditions will together with this letter constitute your selection for internship.
4. If the above terms and conditions are acceptable to you, please sign the attached document in token of your acceptance.

Yours Sincerely,
For & on behalf of
Jones Lang LaSalle Property Consultants (India) Pvt. Ltd.,

Touseef Ahmed
Talent Acquisition Leader
JLL Property Consultants (India) Pvt Ltd

Registered Office
Jones Lang LaSalle Property Consultants
(India) Pvt Ltd
1108-1110 Ashoka Estate Barakhamba Road
Connaught Place New Delhi 110 001
Company CIN No. U74140DL1997PTC091209



Level 12 Tower B
DLF Cyber Park Udyog Vihar Phase II
Gurgaon 122 008 Haryana
tel +91 124 460 5000 fax +91 124 460 5001
www.joneslanglasalle.co.in

August 28, 2022

TO WHOM IT MAY CONCERN

This is to certify that Mr.Nithin Kumar has successfully completed his Internship with Jones Lang LaSalle Property Consultants (India) Pvt. Ltd. in the **"Project and Development Services"** for the period **12 July 2022 to 19 Aug 2022.**

He has successfully met the expectations of the Project undertaken. He has been punctual, diligent and self-motivated.

We wish him the very best for his career

Best Regards,
For & on behalf of
Jones Lang LaSalle Property Consultants (India) Pvt. Ltd.,

Touseef Ahmed
Talent Acquisition Leader
JLL Property Consultants (India) Pvt Ltd

Registered Office
Jones Lang LaSalle Property Consultants
(India) Pvt Ltd
1108-1110 Ashoka Estate Barakhamba Road
Connaught Place New Delhi 110 001
Company CIN No. U74140DL1997PTC091209

COMPLETION CERTIFICATE

WORK DIARY

DAY	PROJECT NAME	WORK DONE
1	WTC-Residence	1. Project Overview. 2. Project MSP Overview.
2	WTC-Residence	1. Schedule of Joineries checking. 2. Mivan Formwork Onsite study. 3. Rebar Checking @Tower A2- Second Floor.
3	WTC-Residence	1. Internal Finishes checking @ Tower A1. 2. Painting, plumbing, electrical, waterproofing quality process Checklist study. 3. Tiles and Plumbing coordination issue.
4	WTC-Residence	1. Weekly progress meeting discussion on Man power, structural works and finishing progress. 2. Column checking @Tower A4. 3. Electrical awareness program.
5	WTC-Residence	1. EHS Operational Control Procedure –Study. 2. Work order(WO), Environmental Clearance (EC), Quality control (QC), EHS Tender specification).- Study.
6	WTC-Residence	1. Project Overview- Portfolio. 2. Project MSP Updation.
7	WTC-Residence	1. Mivan Formwork Assemble process.
8	WTC-Residence	1. Preparation for GIC Meeting. 2. Project Schedule.
9	WTC-Residence	1. Preparation for JMC Meeting. 2. Manpower.
10	WTC-Residence	1. Preparation for JMC Meeting. 2. BOS & TES.
11	WTC-Residence	1. Preparation for JMC Meeting.
12	WTC-Residence	1. JMC Meeting at Site Office. 2. MOM. 3. Terrace Parapet wall Concreting checking.
13	WTC-Residence	1. Preparation for GIC Meeting. 2. Project Schedule.
14	WTC-Residence	1. MSP Schedule updation. 2. External Area Work front sheet.
15	WTC-Residence	1. Audit work-Documents collection.

DAY	PROJECT NAME	WORK DONE
16	WTC-Residence	1. Quality and Safety Audit.
17	WTC-Residence	1. Quality and Safety Audit. 2. HSE Checklist.
18	WTC-Residence	1. Concrete Checklist.
19	WTC-Residence	1. Drawing Register. 2. RFI Tracker. 3. Outward Transmittal.
20	WTC-Residence	1. Quality Checklist.
21	WTC-Residence	1. Quality and Safety Audit.
22	WTC-Residence	1. Quality and Safety Audit. 2. HSE Checklist.
23	WTC-Residence	1. Concrete Checklist.
24	WTC-Residence	1. Drawing Register. 2. RFI Tracker. 3. Outward Transmittal.
25	WTC-Residence	1. Project Portfolio. 2. GIC Report.
26	WTC-Residence	1. GIC Report.
27	WTC-Residence	1. Portfolio. 2. GIC Report.
28	WTC-Residence	1. Project Timeline analysis.
29	WTC-Residence	1. Project Architectural and MEP Overview.
30	WTC-Residence	1. Project's Management and different Phases under PMC perceptive.

Signature of the Head of
the Office/ Organization:



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M. Arch (Building management) Batch 2021-2023

Continuous Assessment Report for Professional training

(Continuous progress report of the trainee architect/Project Manager for the period of 15 working days in the office to be submitted to HOD)

1. Name of the office / organization :	Jones Lang LaSalle
2. Address & Contact Number	: TVH Belicia Tower, RA Puram, CH-600 028; 9585573545
3. Name of the student	: S. Nithin Kumar
4. Duration	: From 12-07-22 To 29-07-22
5. Total No. of days	: 15 days
6. Evaluation of Performance criteria shall be on	

* Note: Kindly grade the student as per his/her overall performance in the office during the assessment month;

Description of works	Excellent	Good	Fair	Poor	NA
Understanding of office culture	✓				
Skillssets related to project management		✓			
Design Management		✓			
Understanding the Triple Constraints		✓			
Observation during Site Visits	✓				
Understanding of construction details	✓				
Understanding of Construction sequences	✓				
Site Supervision / Discussion with clients	✓				
Adherence to Time schedule	✓				
Quantitative aptitude	✓				
Documentation skills	✓				
Coordination with other consultants		✓			

Overall Grading*

A-8.0

(A - 8.0, B - 7.0, C - 6.0, D - 5.5, E - 5.0, F - <5)

7. Any other Remarks

: Excellent person, who's doing thinks just

8. Signature of the
Head of the Office /
Organization (With Seal)

11/30/22
11/30/22



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2. Address & Contact Number	: TVH Belicia Tower, RA Puram, CH-600 028; 9585573545
3. Name of the student	: S. Nithin Kumar
4. Duration	: From 30-07-22 To 19-08-22
5. Total No. of days	: 15 days
6. Evaluation of Performance criteria shall be on	

* Note: Kindly grade the student as per his/her overall performance in the office during the assessment month;

Description of works	Excellent	Good	Fair	Poor	NA
Understanding of office culture	✓				
Skillssets related to project management	✓				
Design Management		✓			
Understanding the Triple Constraints		✓			
Observation during Site Visits		✓			
Understanding of construction details	✓				
Understanding of Construction sequences	✓				
Site Supervision / Discussion with clients	✓				
Adherence to Time schedule	✓				
Quantitative aptitude	✓				
Documentation skills	✓				
Coordination with other consultants	✓	✓			

Overall Grading*

A.

(A - 8.0, B - 7.0, C - 6.0, D - 5.5, E - 5.0, F - <5)

7. Any other Remarks

: Good Aptitude student.

8. Signature of the
Head of the Office /
Organization (With Seal)

MANOJ KIRAN
Sr. mgr - projects.

TABLE OF CONTENTS

CHAPTER NO	TITLE	PAGE NO
1	About the Company	01
2	WTCR – Architectural & MEP Overview	01
3	WTCR- Management Aspect	07
4	Project Timeline & Milestone Analysis	10
5	Integrated Master Schedule	13
6	Mivan Formwork Study	23
7	Quality Checklist on Mivan Formwork	26
8	Manpower Histogram	28
9	HSSE Risk Concerns & Action Plan	29
10	EHS Observation & First Aid Injury Tracker	30
11	Safety Checklist for Equipment & Site Environment	32
12	Critical Overview	35

ABOUT THE COMPANY



JLL which is a **service and investment management firm** offers specialized real estate services to the client by owning, occupying and investing in real estate. JLL has more than **230 corporate offices globally present in more than 80 countries**.

Europe, Middle East and Africa (EMEA) and Asia Pacific are the three geographic segments where real estate services of JLL are delivered.

In India JLL is a premier and largest professional services firm specializing in real estate. The firm is growing from strength to strength in India for over the past 20 years.

JLL has an extensive geographic footprint across **10 cities - Ahmedabad, Delhi, Mumbai, Bangalore, Pune, Chennai, Hyderabad, Kolkata, Kochi and Coimbatore**.

Some of the **awards or recognitions** which JLL has secured are as follows

- **ETHISPHERE 2008-2022** - JLL is recognized as the World's most ethical companies for a span of 14 years in a row. (2008-2022)
- **FORTUNE 2017-2022**- World most admired companies.
- **FORTUNE 2015-2022**- Distinguished 2022 list recognizes firm's revenue growth over last year
- **GOLDEN REACOCK GLOBAL AWARD** – Global excellence in corporate governance (2016) and sustainability (2022)
- **INTERNATIONAL PROPERTY AWARDS ASIA PACIFIC** – Best Property Consultancy India (5 star) 2016-17
- **CNBZ** – AWAZ 10th Real Estate Awards 2021 – Property Consultants of the Decade.
- **CORPORATE INTERNATIONAL GLOBAL AWARDS 2015** – Capital markets Property Advisor of the year in India
- **ASIAN REAL ESTATE LEADERSHIP AWARDS 2022** – Innovative real estate marketing campaign of the year.
- **REAL ESTATE AND INFRASTRUCTURE ROUND TABLE AND AWARD 2022** – Most admired real estate website of the year.

The firm provides investors, developers, local corporate and multinational companies with a comprehensive range of services. This includes research, strategic advisory and consultancy, capital markets, transaction management, project and development services, integrated facilities management, property and asset management.

These services cover various asset classes such as commercial, residential, industrial, retail, warehouse and logistics, hospitality, healthcare, senior living and education.

JLL was recognized as one of the Best Places to Work in India **2022**

Also JLL spots **185th** position in the prestigious **fortune 500 list** which ranks the 500 largest companies based on their total revenue.

PROJECT ARCHITECTURAL OVERVIEW

Spread across an area of **4.94 acres**, **Residences @ WTC** is a **landmark project** in the residential space segment in Chennai. The total built up area of the project is **8.44 lakhs Sq.ft.**

The complex consists of :

- **Tower Astra** – This is a **26-floor tower** with 133 – 3 BHK , 7 combined unit and 2 no's of penthouse. Height of this tower is **97.45m** above ground level
- **Tower Zenith** - This is a **26-floor tower** with 133 – 3 BHK , 7 combined unit and 2 no's of penthouse. Height of this tower is **97.45m** above ground level.
- **Serviced Apartment (A3)** – This is a **13-floor tower** with 60 units. Height of this tower is **54.1m** above ground level
- **Club house**– This is a **Three floor tower** with Architectural design roof.
- **2 Common Basements, Ground floor and podium**



- Client: **Brigade Group (PREPL - Perungudi Real Estate Private Limited)**
- Project Management Consultants: **Jones Lang LaSalle**
- Principle Architect: **HOK Engineering Company**
- Local Architect: **C R Narayana Rao Architects**
- Structural Consultants: **Sterling Engineering Consultancy Services Pvt Ltd**
- MEP Consultants: **Ralys Consulting Engineers**
- Cost Consultants: **Hill International**
- Façade Consultants: **Global Façade Solutions**
- LEED Consultants: **Lead Consultancy and Engineering Services**
- Landscape Consultants: **Terra Firma Landscape Architects**
- Principle Contractor: **JMC Projects (India)Ltd.**

In the particular project JLL has the responsibility to **manage the project efficiently throughout the tenure of the project** from initiation till the closure and handing over of the project. As a Project Management Consultants JLL strategize the various activities of the project to maintain a win-win situation for the Client and other Stakeholders involved in the project.

- Site extent: **21400 sq m (2.30 lakh sq ft)**
- Built-up Area: **8.44 lakh sq ft**



MASTER PLAN

PROJECT MEP OVERVIEW

CONCEPT OF SERVICES

The design intend for the building is done with main focus for MEP towards **sustainable system design with conservation of energy.**

- Every effort shall be made to design, layout and install equipment in locations which will tend to encourage routine preventive maintenance by providing easy access for operation personnel.
- Manual isolation will be provided to enable servicing, expansion or renovation of any part of the System without interrupting the services in adjacent areas

ELECTRICAL OVERVIEW

DESIGN BASIS

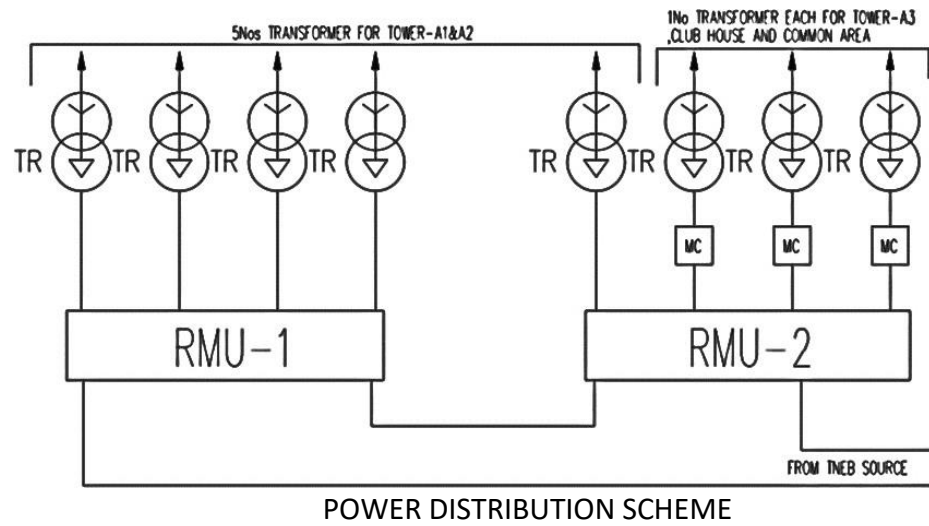
- Metering - LT metering
- Total DG Power requirement
- **Power allocation on EB**
3 BHK: 8.3 kW
Penthouse: 9.5 kW
- **Power allocation on DG**
3 BHK: 4 kW
Penthouse: 5 kW
- Metering to each apartment - **Independent metering** to each apartment monitored by TNEB & Single bulk meter for common area loads as per TNEB rules.
- One earth leakage circuit breaker (ELCB/RCCB) for each apartment.
- Telephone, TV points & AC provision as per Client standards
- **Auto source Change** over between EB and DG supply through ACCL.
- **Timer & sequential controls** for common area lighting
- **Conventional type Lightning protection** for the entire building.
- Home automation system – Curtain control, Video door monitoring , Lighting & fan control

EQUIPMENT SIZING

- **Transformers** are located in **centralized location at stilt floor.**
- All transformers are as per **TNEB requirement.**
- Transformers are of **11kV/0.433V oil type**
- **DG's** are located at **ground/Stilt level**
- Residential silencer shall be provided for each DG set
- Independent flue pipe from each DG set will be taken though a dedicated shaft to the terrace level. **Flue gas** will be discharged outdoors as per **pollution control board norm.**

POWER DISTRIBUTION

- Total power will be tapped from the **33/11KVsubstation** as per the TNEB feasibility report
- 11Kv HT power shall be received from substation through underground **HT cables as ring main upto 11kV RMU** located inside the site premises.
- LT Power from Transformer shall be tapped to the **Metering panel** using 1100volts suitable size LT cable located in the stilt floor of each tower.
- **TNEB Energy meters** will be located in the **Metering panel.**



EMERGENCY POWER
DIESEL GENERATORS

- Each Apartment will be provided with **Partial load DG backup**.
- For all **common area & utility loads 100% DG backup** will be provided
- All DG sets are provided in **Ground floor level**.

SOLAR POWER

- **10% to 20%** of **External street lights** are proposed with individual **Solar PV backup** along with grid supply.

LIGHTING

Inside the Landlord areas **lighting control** shall be provided as described below.

Sl.No	Area description	Lux levels
COMMON AREA		
1	Reception Lobby	300
2	Lift Lobby	200
3	Staircase Lobby	200
4	Passage & corridors	200
5	Covered parking areas - Driveway	30
6	Covered parking areas - Parking slot	15
7	Open Parking slots	5
8	Open to Sky driveways	15
9	Open to Sky Pathways	10
10	MEP service rooms	200
11	Rest rooms	200
APARTMENTS		
1	Living	100-150
2	Bedroom	100-150
3	Toilet	100-150
4	Study area	200-300
5	Dress	200-300
6	Kitchen	200-300
7	Utility	100-150

- There are a number of areas where a **central lighting management system** (can be either through sensors or MCB inside the DB) shall be used, as follows:
 - Parking in the basement
 - All staircases and elevator lobbies.
 - All public circulation areas

HVAC
AIR CONDITIONING SYSTEM
APARTMENTS

- All apartments will have the possibility of the installation of **Ductable units as VRV unit** systems. The Outdoor units can be placed in **AC ledges or Balconies** of same apartment.
- Dedicated shaft provided for Ventilation of toilets and bathrooms.
- Considered **one out door unit** for multiple Indoor unit as per tenant requirement Air Conditioning (AC) sleeve & power point provisions are provided.
- Toilets will be forced ventilated through the dedicated exhaust fans.

CLUBHOUSE & APARTMENT

- Keeping in mind Fresh air for IAQ as well Better Hygiene & Better operational power & cost savings, **Variable Refrigerant Volume system (VRV System)** will be provided considering the operational savings of the system.
- All the **rooms** will be Air conditioned through the dedicated **Hi wall Units & ceiling suspended units** Connected to Outdoor Unit.

DUCTLESS - JET VENT SYSTEM

- The proposed system consists of **forced ventilation and forced exhaust**.
- The polluted air shall be extracted from the basement through jet vent fans mounted at strategic locations through “Transfer of momentum” principle and exhausted into the atmosphere. During normal operation the Jet fans shall operate at first lower speed.
- During **emergency mode** both the **main extractor fans** shall operate together for smoke extraction, and the **jet fans** shall operate at **second high speed to create smoke free escape** to occupants.

STAIRCASE & LIFT LOBBY (GF) PRESSURIZATION

- All staircases & Lift lobby (GF) shall be pressurized to ensure smoke free escape during fire / emergency. Based on the signal received from the fire control panel, pressurization fan will come into the operation to ensure smoke free zone

STP

- Dedicated Exhaust & Fresh air fans are considered for STP area. **Exhaust CFM considered for 30ACPH** above water level & fan located at terrace level of the same building & fresh air fan located at ground floor level

DG

- Considered **Natural ventilation** for DGS.(DGs are located Ground floor).

Pump Rooms

- Considered **Louvers** for both Fresh air & Exhaust airs.

PLUMBING

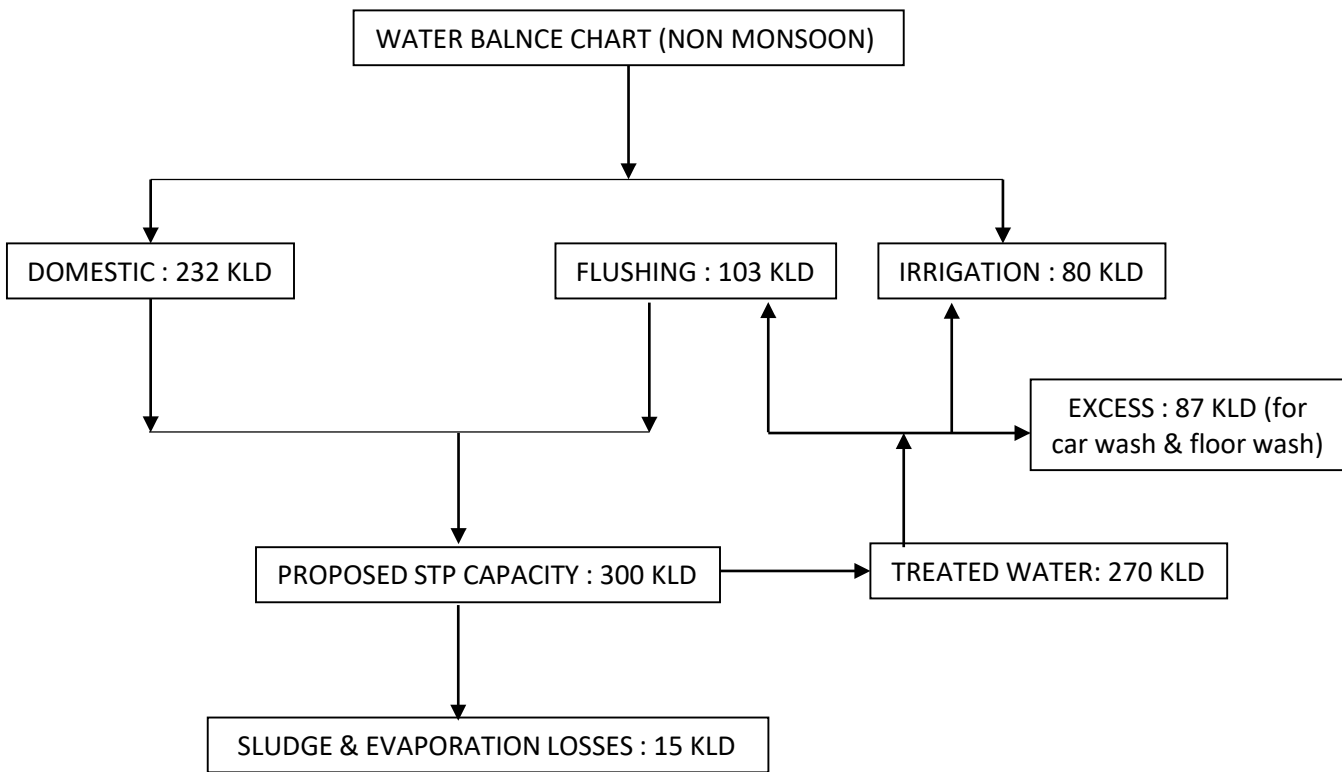
KEY DESIGN FEATURES

- Water efficient sanitary ware & CP fittings, which can result in potable water savings.
- Water storage tanks are designed to tackle eventuality of intermittent water supply by the municipal authorities
- Zero discharge** from the premises by recycling the treated water which can further be used for toilet flushing, landscape, etc.
- Selection of associated mechanical equipment's based on **energy savings, high efficiency, ecofriendly, low operation and maintenance cost**. A trouble-free plumbing installation in a Building would involve following **three major considerations**: -
 - An easily maintainable, simple and user-friendly design.
 - Selection of the appropriate materials.
 - Adopting sound installation practice employing skilled manpower and experienced supervisory staff.

DESIGN CONSIDERATIONS

Water demand for the development is based following considerations

- Flat counts, Occupancy load.
- Source of water supply is from tanker, rainwater and municipal water.
- Flushing, landscape, and car wash demand is met by treated STP water.
- UG sumps are proposed in the basement level.
- Storage, pumping and water supply piping shall be as per the requirements of landscape consultants.
- Proposed centralized Sewage Treatment is of Sequencing Batch Reactor (SBR) type.
- The Rainwater Harvesting system is designed based on the rainfall data obtained from Indian Meteorological Department.



WATER DEMAND BALANCE CHART

WATER TREATMENT

- Bureau of Indian Standards (IS: 10500) recommendations constitutes the minimum quality of water.
- It is proposed to provide **water treatment with filtration, disinfection** before supplying the water to usage points.
- The treatment process involves the following units (refer the scheme):
 - Filtration Units** – Pressure Sand Filter and Carbon filter.
 - Softener Units** (Decided based on water quality)

WATER METER

Water meters will be **provided at desired locations** to meet inlet water measurements.

- Raw water will be metered at source.
- Overhead tank
- STP treated water
- Irrigation water
- Water metering at every flat- Only provisions are made.

WATER DISTRIBUTION

- The domestic water supply distribution system shall be through **gravity Feed** to ensure **minimum pressure of 15- 20 psi** to the most hydraulically remote fixture during minimum pressure and maximum flow conditions.
- The **maximum pressure** permitted to fixtures will be **3.5 bar**. In order to address the static water pressure at **top most zone** , **booster pump system** shall be provided .

SANITARY SCHEME FOR THE BUILDING

- The sanitary system will be designed in conformity with National Building Code 2016 and SP – 35: 1987.
- The **internal sewerage system** shall be **Double stack system** consists of a separate line for soil and waste water.
- Drainage from ground floor toilets** shall be taken separately without connecting to the **vertical header**.
- Anti-siphon pipes** are provided for **each soil down takes**. **Vent cowls** provided at every stack for **primary venting**.

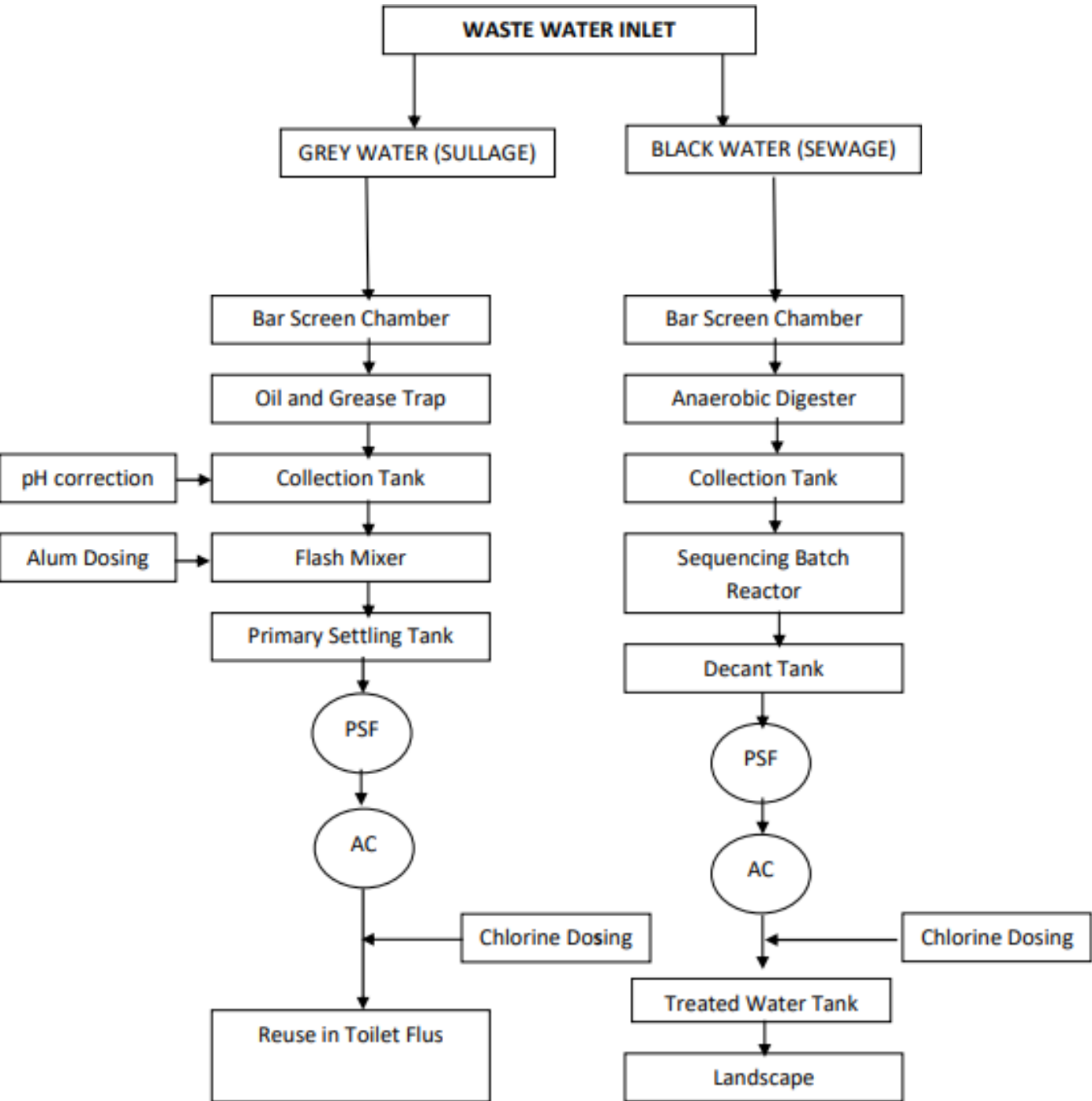
RAINWATER HARVESTING SYSTEM

Storm water disposal is divided into **3 Groups**

- Terrace Storm water disposal
 - Site Storm water disposal
 - Parking level storm water disposal
- The **entire rainwater from the terrace** would be disposed through suitable rain water pipes at **ground level**.
 - This water will be utilized for domestic purpose after necessary treatment and **overflow shall be discharged to the external storm water drain** based on level.
 - The **entire storm water from the site** would be disposed off to the **rainwater recharge pits** and the excess is diverted to **external storm water drainage**.
 - Basement surface drainage** shall be pumped to external drain through **submersible pumps**.

SEWAGE TREATMENT PLANT

- The **domestic waste** from the building will be treated combined at proposed STP.
- Treated effluent will have chemical characteristics so that it is suitable for **flushing and irrigation** usage as per IS 10500.
- The building is proposed with STP of **300 KLD treating.100% of wastewater** generated shall be treated to reusable standards.



SEWAGE TREATMENT PLANT SCHEME

FIRE FIGHTING

CODES AND STANDARDS

- Fire protection system is designed and installed as per National Building Code (NBC) of India 2016, Part – 4, **Fire and Life Safety** and the recommendations made by local fire department.

HAZARD CLASSIFICATION

- As per NBC, premises is classified under Residential buildings, **Group – A, Sub – division – A4, apartment houses (light hazard), exceeding 60m in height.**
- There are 3 residential towers namely Tower – 1 & Tower – 2. Towers 1 &2 are having 2 basements, ground and 26 upper floors.

STAIRCASES

- Tower 1 & 2, have two internal type staircases** and located that **one of the wall is abutting to external wall of building.**
- Located in such a way that occupant need **not travel more than 30 m to reach exit** from any remote place on the respective floors.
- All staircases are with **clear width of minimum 1200mm**. Minimum **width of tread is 300 mm** for other buildings, maximum **height of rise is 150 mm & maximum 15 steps in a flight**, hand rails is not less than 1000mm in height.
- Clear **head room** of each staircase is **minimum 2.2 m** and no other structure like columns, beams etc is reduces the clear widths of stairs. Also no living rooms like electrical, Toilets are opening directly in to stairwells also **no services are passing through the stairs.**

FIRE DOORS

- Fire escape staircases, Service rooms like, electrical, D.G room, Communication room & Pump rooms are to provided with fire doors.

REFUGE AREA

- Tower -1 & Tower 2, Each apartment has a balcony, however **above 60mtr height** residential building should be provided with **refuge are for every 30mtr**. Same to be considered **on 17th floor & as 26th floor is terrace.**

TYPES OF SYSTEM PROPOSED

Sl.no	Description	Area/Building
1	Fire Hydrant system	All towers
2	Wet riser cum Down comer System	All towers
3	Automatic Sprinkler System	On all floors of all towers
4	Smoke detection and Fire alarm system	On all floors of all towers
5	Two – way Public address system	On all floors of all towers
6	Fire Extinguishers	Complete premises
7	Water curtain system	Basements

Fire alarm panel & Public address system equipment are proposed to locate in the Fire control room in the entry at ground floor of the building.

FIRE WATER STORAGE TANKS

Capacity of Water tanks worked out as per National Building Code (NBC) of India, Part – 4, Fire and Life safety and as required by local fire department.

Sl.no	Tank Capacity	Location	System
1	200 cum	Basement level	Hydrant & Sprinkler systems
2	10 cum at Terrace level	Terrace of each Wet riser	Hydrant system
3	75cum	Basement level	Water Curtain system

FIRE WATER PUMPS

Fire pumps are as per BIS and selected based on, that the pump should deliver water at remote point (ie, terrace) with **minimum pressure of 3.5bar**. The capacities of the pumps are as per NBC

Sl.no	Description	Capacity	Location	Remarks
1	2Nos. Electrical motor driven main pump (One for hydrant and one for Sprinkler system)	2850 LPM	Basement	Pumps are multi stage, multi out let type.
2	1 No. Diesel engine driven standby pump	2850 LPM	Basement	
3	2 No. Jockey pump	180 LPM	Basement	
4	1 No. Elec pump	1620LPM	Basement	Water curtain pump

PORTABLE FIRE EXTINGUISHERS

Portable fire extinguishers are provided at locations mentioned below,

- ABC powder type** fire extinguisher of capacity **6 kilograms** fitted with gun metal cap, high pressure carbon dioxide cartridge, with suitable mounting brackets, **near main switch board room, transformer, generator room, pump room, lift machine room, landing of every staircase on each floor and one for every car park in the basement floors.**
- ABC powder type** fire extinguisher of capacity **3 kilograms** fitted with gun metal cap, high pressure carbon dioxide cartridge, with suitable mounting brackets, inside each **kitchen.**
- Carbon dioxide type** fire extinguishers of capacity **4.5 kilograms** fitted with valve, discharge horn, located in **electrical panel room, pump room, lift machine room and D.G. Rooms.**
- Mechanical foam type** fire extinguishers of **9 lts.** Capacity fitted with all accessories shall be provided at **D.G. Rooms, and Firewater pump house and near oil filled Transformers.**

P.A. SYSTEM

- P.A. & Emergency announcement system will be installed with **Speakers / control consoles** etc. **Two way talk back speakers** shall be fixed on all landings of **every staircase** and announcements shall be made from control room as manual by using the selector console & micro phones to respective zones / floor wise. **Main Control console** shall be located at **fire control room.**
- Smoke detectors are proposed **one layer at ceiling level** on all floors, utility rooms.
- Detectors will be wired in the form of **Class – 1** to respective Control panels. Fire alarm panels will be net workable type.

LV SYSTEM

OUTDOOR CCTV SYSTEMS

- Outdoor PTZ and fix cameras** are used to monitor the activity outside the Building (limited to building's periphery and entry/exits),
- The cameras will have a minimum resolution of **460 TV lines** and be adjustable by remote control.
- The central unit will be located in the security room. The **power** will be supplied from **one of the UPS networks with generator backup.**

ACCESS CONTROL SYSTEM

- Shall be provided for **public areas like club house only.**
- The buildings will be designed with a **telephone system** for the apartments, parking garage, mixed used and special rooms.
- Fiber to the home (FTTH) system** considered for telecommunication, LAN and IPTV network for the Project.
- Complete backbone of the network considered with fiber optic cable and till apartment entrance fiber optic will take and terminated to the optical network unit (ONU)
- The central equipment for telephone in the building will be located in a **PABX room, which is on Basement floor level.**

CABLE TELEVISION NETWORK

- Coaxial & telephone cable** from all apartments to shaft shall be provided
- Dish** shall be mounted on the **terrace of each tower by service provider** with **vertical cabling & splitter box.**

AV STREAMING / PIPE MUSIC

- External piped music shall be provided in the **common area of residential unit blocks.** This system can be wired and also through non wired/wifi system.

VIDEO DOOR PHONE

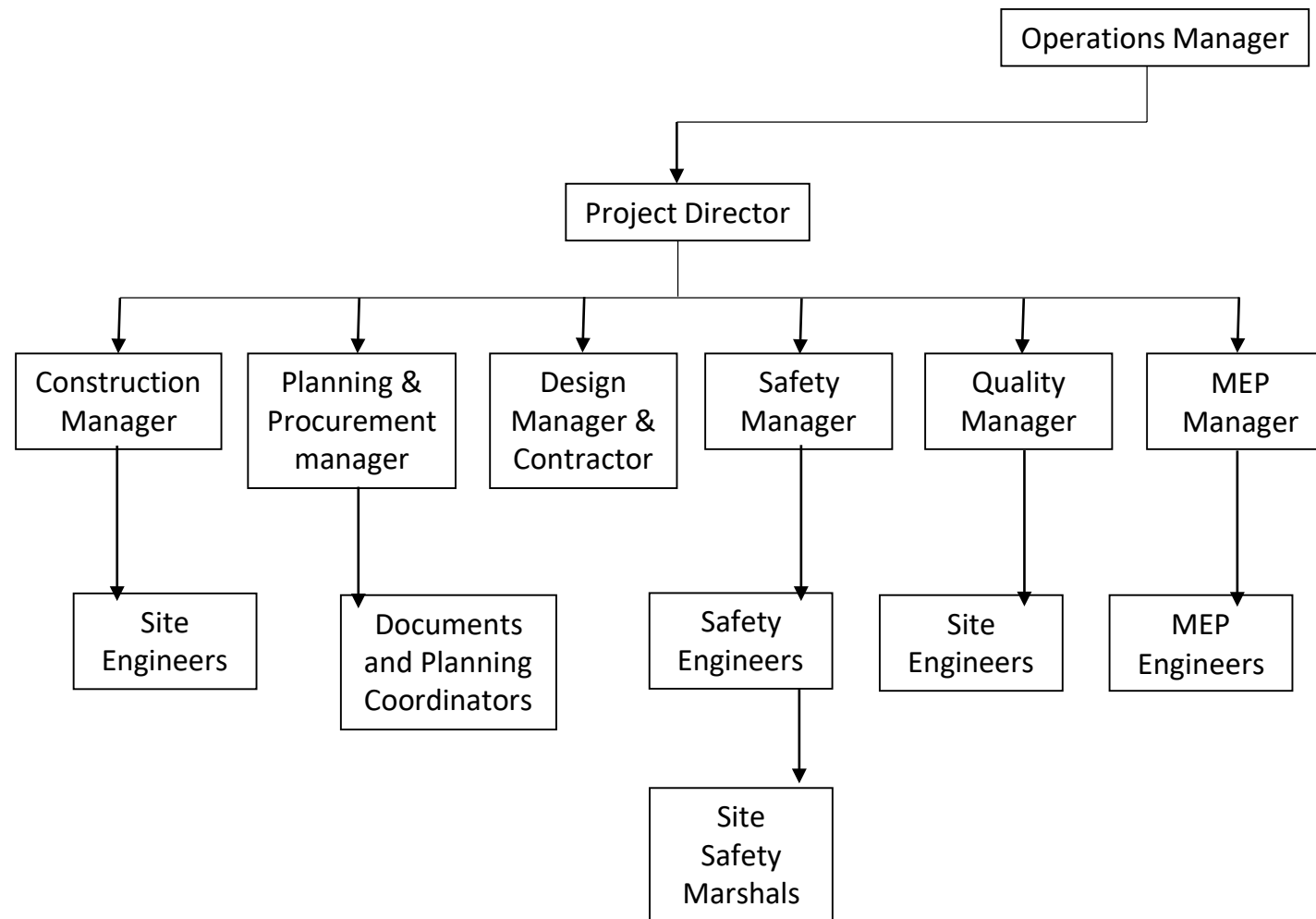
- Video Door phones** will be provided with two unit inside the apartment near dinning & dining room.
- This unit will be connected with **Main camera** to monitor/respond to the people at the flat entrance.
- Individual VDP** will has a provision to connect to **main security desk** at the apartments/Tower

HOME AUTOMATION SYSTEM

- Provision for controlling lights, curtains, AC, intruder system, music system, Panic alarm etc, shall be provided in **LVDB.**
- This controlling can be done **with wire or wireless system.** LVDB shall have provision to get in synch with **Backnet.**

MANAGEMENT ASPECT

- The following is the hierarchy of the JLL Project Team.



- In the managerial view this project has **5 phases** which it has to pass through for the completion of the project and they are as follows
 - Initiate Phase**
 - Design Phase**
 - Planning & Procurement Phase**
 - Construction Phase**
 - Closeout Phase**
- From the Construction perspective there are **3 stages** which are as follows for the commissioning of managerial activities and they are
 - Pre Construction stage**
 - Construction Stage**
 - Close out Stage**

Pre-Construction Stage

- All the activities which occur prior to the commencement of construction is classified into Pre-Construction stage. This stage involves **Initiate, Design, and Planning & Procurement phases**.

INITIATE

- Initially any construction project is acquired by the **Business Development Team** of the Project Management Consultancy and then the transition occurs from the **Business Development Team to the Project Management Team**.
- The Architects will be on board and the master plan obtained from the Principal Architect will be the architectural intent according to which the design, construction and commissioning of any package WILL be based on.
- The Site Information is obtained from the Client and this might include the following information such as
 - Existing uses.**
 - Existing drawings.**
 - Site availability.**
 - Boundaries.**
 - Easements, rights of way and rights to light.**
 - Site access conditions.**
 - Information about existing buildings and property condition.**
 - Information about existing services and statutory utilities (such as capacities).**
 - Local amenities.**
 - Legislative constraints.**
 - Existing policies (such as environmental policies).**
- Once the site Information and the Master plan are obtained then the initial feasibility study is undertaken to check for the project feasibility.
- During this phase of the project the Initial Project Survey takes place which may involve the detailed studies which will be carried out to support and validate the site information provided by the client. Before conducting the survey the **PMC have to facilitate** in deciding the survey team with the **list of surveys** that are required to be carried out.
- Also the **project stakeholders** such as Cost Consultants, Structural Consultants, MEP Consultants, Façade Consultants, Landscape Consultants, and Façade Lighting Consultants are finalized.
- Once the Stakeholders are finalized the **Scope of the Project** is defined which is a written statement describing the various work needed to be carried out in the construction process. This scope will **clearly define the roles of various stakeholders** involved in the Project. Once after Project Charter and Project Justification are formulated the list of Project requirements are arrived which will **describe the deliverables and significant milestones to be achieved**. Once Project Scope is completed the same should be **signed off and accepted by respective Stakeholders**.
- Also a Project directory which will contain details such as address, contact person, mobile number, email id are mentioned for all the stakeholders such as Client, PMC, Architects, Consultants.
- Project Communication Protocol** is planned which will elaborate the type of communication and the person/representative of the Stakeholder who should originate the communication. This communication protocol is followed for communicating Design related, MEP related, Commercial & Procurement related, Health & Safety related, Construction & Site related, Purchase order & Payment related, Quality related queries, decisions and discussions. The Communication Protocol must be strictly followed. Once communication protocol is approved then communication is initiated.

PROCESS & PLANNING PHASE

- The first and foremost activity in planning phase is preparing a project execution plan which will elaborate on how a project will be executed. It will detail the **procedure which will be undertaken by the PMC for Controlling Documents, Managing communication, Design, Procurement, Cost, Change, Risk etc.**
- **Project Safety plan and Project Quality Plan** are supposed to be formulated by PMC since completing a project in a short time frame with good quality and safe practice is the key feature which the PMC will have to follow for successful completion of project.
- A **Milestone schedule is prepared by the Planning Manager** which make sures whether the most important and crucial deliverables of the entire project and process can be delivered within the stipulated time.
- **Each and every item involved in the project** is identified and a list of package is made for which vendors must be finalized during the **procurement stage**.
- Once a Milestone Schedule is made and list of packages are identified an **Integrated Master Schedule** is prepared which will incorporate each and every activity which is to be performed during the entire tenure of the project.
- Based on this Integrated Master Schedule, a **Budget is prepared** which must be approved by the Client.
- **Cash Flow** is made which is a most important parameter used for tracking cost and schedule using the **earned value technique**.
- In addition to the above mentioned activities there are some **statutory approvals** which must be obtained during the **Pre-Construction Phase** which are as follows
 - **NOC from Fire Department**
 - **CTE - Water and Air from TNPCB**
 - **Planning Permit from CMDA**
 - **Environmental Clearance**
 - **ELCOT**
 - **Airport Authority of India**
 - **CMC (Chennai Metro Corporation)**

DESIGN PHASE

- The Design Stage of the Project will involve most of the Stakeholders because obtaining the **design and drawing for each construction and service activity is a critical task** before the commencement of that particular activity.
- **Design Kickoff meeting takes place once the concept design is provided by the Architect.** All the consultants must be on board before the commencement of this meeting. Various design Management processes are discussed in this meeting.
- Also any value addition which might reduce the duration, cost and increase quality will be recommended by the PMC.
- The list of Drawings must be obtained from the consultants.
- The Architect will provide a detailed design for each floor which must be passed on to the Structural, MEP, Façade, Landscape, Façade lighting Consultants.
- Along with is process each of the consultants must provide a Design Basis Report (DBR) which will brief the design intent which each consultant have proposed for the particular project which include government laws and regulations, owner's standard specifications, Industry codes and standards.

- Once the **detailed design is finalized and approved** by all the stakeholders the **Good for Construction (GFC) drawings** must be provided by the consultants and the same is executed at Site.

PROCUREMENT PHASE

- Before the start of the Procurement phase the **Procurement team must be finalized from the Client, PMC and Cost Consultants.**
- Once when the list of packages is finalized, a **Tender Event Schedule (TES)** is formulated in an efficient way so that the **vendor finalization process and issuance of Purchase Order** takes place before the planned commencement of the particular package/activity.
- The procurement phase is divided into 3 stages such as:
 - **Pre-Tendering Process,**
 - **During Tender Process, and**
 - **Post Tendering Process.**
- The Pre-Tendering process will involve activities which will be the **base work for Floating tender.**
- In the Pre-Tendering process, Design closure which involves drafting of the BOQ, **Tender Specifications and Tender Drawings by the Architects and Consultants takes place.** The same must be reviewed by the PMC and finalized by the Client.
- Once Design Closure is over the **General Contract Conditions (GCC) and Special Contract Conditions (SCC)** must be approved by the Legal Team from the Client side and the Tender Documents are finalized.
- After this process the **vendor list is obtained from the consultants by the PMC** and combined with the PMC's own list and approval for the same from the Client is obtained. Also the vendor list from the Client is incorporated and the final list is made ready.
- Once the vendor list is approved by the Client the **Pre-qualification process** takes place wherein the PMC sends a Pre-qualification template to the vendors listed and the same must be filled by the vendors. This **Pre-qualification template will contain questions based on which the vendors will be evaluated.** These questions will be regarding the details of vendor, their financial positions and position in the industry, additional certificates possessed by the vendors, previous project details and milestone project completed by the vendor etc.
- Along with this process each of the consultants will provide a **Design Basis Report (DBR)** which will **brief the design intent** which each consultant have proposed for the particular project which include **government laws and regulations, owner's standard specifications, Industry codes and standards.**
- Once the pre-Bid meeting is over, the vendors must submit the tender as per required means as mentioned in **Instructions to Tenderers (ITT)** in the Tender Documents.
- Once the Client finalizes the vendors **LOI/WO/PO is issued by the Client** and Contract is signed off between the Client and the successful vendor.
- Finally the successful vendors are asked to submit a **procurement and construction schedule** within stipulated time **from the date of issuance of LOI/WO.**
- The negotiations may happen in two ways. Negotiations may occur for fixed number of times as mentioned in the Procurement strategy or may occur until the bidder reduces the price so that it matches with the budgeted price.

CONSTRUCTION PHASE

- Once the pre-construction processes gets over the Construction activity begins wherein a **number of activities and documents are to be recorded** and maintained before and throughout the process.
- The **first and foremost activity** in the Construction phase is **Construction Kickoff meeting** which will be a key indicating the start of the Construction phase.
- The vendor should provide their **Safety and Quality plan** which will be **approved and recorded**.
- Also there are certain **statutory approvals** which must be obtained during this phase and they are as follows among which some are mandatory for the initiation of the construction
 - **ISMW Registration Certificate**
 - **BOCW Registration**
 - **Contractor All Risk Policy**
 - **Workmen Compensation Policy**
 - **Contractor Labor Registration Certificate**
 - **Renewal of CLRA (Contract Labor and ISMW)**
 - **TNPCC Approval for Batching Plant Erection**
 - **CEIG Approval for DG**
 - **Approval from PWD**
- The **site logistics plan** must be **obtained from the vendor** and the same must be approved by the Client and the PMC. This site logistics plan may undergo number of revisions and the same must be recorded and tracked.
- By the same time the material must be delivered for the start of the construction and **material will be tracked** so that it **arrives on time and the delay tracker will be initiated**.
- Also the equipment must be mobilized and installed (i.e.) **Tower crane, Batching plant, Quality testing lab etc** must be installed. Once the equipment are installed, calibration of the same must be carried out.
- It is very important to manage the design side by side also for other packages it must be taken care that the vendors provide the shop drawings and the same must be approved by the Client and the PMC.
- PMC will **inspect the quality, work carried out, and stock or materials** delivered. An inspection checklist is prepared for the same and must be approved.
- In case of any deviations from the approved practice or plan the same must be recorded in **Non Compliance report** and is maintained throughout the project.
- Once after the pre-construction processes gets over the Construction activity begins The activities recorded in the non compliance report must be corrected or taken care of.
- The vendor should provide the daily progress report to the PMC.
- PMC will report the **weekly progress and the monthly progress to the Client**. These report will cover the entire activities may it be management or construction which takes place throughout the project.
- In case of any **non tender items** which arises when there is **any change in the specifications** or any element missed in the BOQ provided in the Tender document then a rate analysis must be done in which the vendor must give a breakup of rate which will include the basic price, transportation charge, profit margin.

CLOSE OUT PHASE

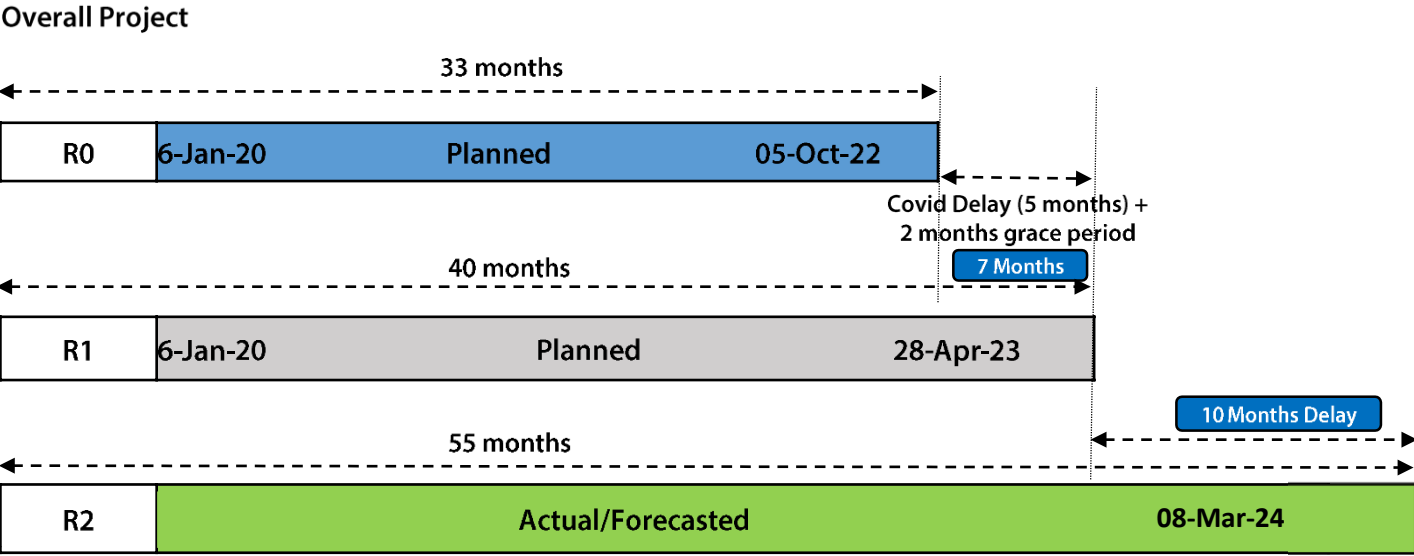
- This particular phase comprises of **two stages** such as **Technical Closeout and Commercial Closeout**.
- In the Technical Closeout stage the as built drawings are obtained from the vendor and the same should be validated by the PMC. Also the PMC must prepare a **snag list or punch list** wherein detects are highlighted and the same must be rectified unless and until the final payment will not be approved and hence the same shall be withheld. Also the **Operations and management manual will be compiled**. In this stage a virtual certificate will be handed over by the PMC.
- Once the defects in the snag list are rectified, the **vendor shall be provided with the final completion certificate and the final payment shall be cleared**.

PROJECT TIMELINE ANALYSIS

INTRODUCTION

- Bhoomi Pooja of the project was conducted on 6th Dec’19 and the start date of the project was 6th Jan’20.
- The project scope includes Common Basement, Podium, Astra (2B + G + 26 floors), Zenith (2B + G + 26floors), Serviced Apartment (A3)(2B + G + 12 floors) and Club House (2B + G + 3 floors).
- The overall duration of the project for the entire scope of work including mobilization, Excavation, Civil structure, finishes, External works, MEP Services (by Others) and handing over shall be 27 months + 6 months = 33 months & additional 2 months grace period
- The initial planned construction completion date of the project was 5th Dec’22;
- Later on 11th Sep’20, completion date was revised to 28th Apr’23 by Main Contractor due to covid first wave.

PROJECT TIMELINE-PLANNED VS ACTUAL / FORECASTED



PLANNED VS CURRENT STATUS

YET TO UPDATE

Tower Name	Planned	Current status
Astra	- Structure – 100% completion - Finishes - 24th floor should be in progress	- Structure - LMR floor slab is in progress - Finishes - 18nd floor is in progress
Club House	- Structure – 100% Slab Completion - Finishes – 2nd floor should be in progress	- Structure – 90% Slab completed - Finishes - NA
Zenith	- Structure – completion of Podium slab by 8th May’21 - Finishes - Basement 2 work should be in progress	- Structure – 2nd floor slab in progress - Finishes – yet to start
Serviced Apartment (A3)	Structure – All slab will be completed	Structure – 6th floor slab in progress

SUMMARY OF BARGRAPH

- Project commencement date was 6th Jan’20 as per contract, but JMC have commenced the work on 25th Jan’20.
- Due to Covid first wave work stopped from 24th Mar’20 to 25th May’20 (2 months) and JMC have resumed the works from 26th May’20.
- Revised schedule(R1) was signed off between PREPL and JMC on 11th Sep’20 with 4 months 23 days extension for Covid first wave.
- JLL was on boarded by 1st Sep’20.
- Further revised schedule R2 between PREPL/JLL and JMC was discussed on 19th Jul’21 and request for extension of timeline with 5 months 2 days delay from R1 schedule was submitted by JMC.
- The Extended timelines provided for R1 & R2 schedule does not deviate any contract conditions and the contract terms remain same as mentioned in the work order, any cost of statutory documents required as per extended timelines shall be borne by M/s. JMC.

R1 SCHEDULE VS R2 SCHEDULE

Task Name	As per R1 schedule			As per R2 schedule			Additional duration taken by JMC (A - B)
	Start	Finish	Duration (A)	Start	Finish	Duration (B)	
Astra							
Civil Structure	04-06-2020	11-10-2021	494	04-06-2020	02-08-2022	789	295
Finishes and MEP	01-02-2021	08-06-2022	492	30-06-2021	13-01-2023	562	70
Zenith							
Civil Structure	22-12-2020	17-09-2022	634	13-02-2021	26-08-2023	924	290
Finishes and MEP	26-08-2021	28-04-2023	610	23-06-2022	21-01-2024	577	-33
Serviced apartment(A3)							
Substructure(till Podium)	23-09-2020	05-03-2021	163	26-09-2020	15-07-2023	1022	859
Finishes	NA	NA		20-12-2021	18-06-2023	545	
Club House							
Structure	19-02-2021	01-11-2021	255	10-04-2021	20-07-2022	466	211
Finishes and MEP	24-08-2021	18-04-2022	237	01-03-2022	09-01-2023	314	77

COLLECTIVE MILESTONE DELAY WRT TO R2 –TOWER A1- ASTRA**YET TO UPDATE**

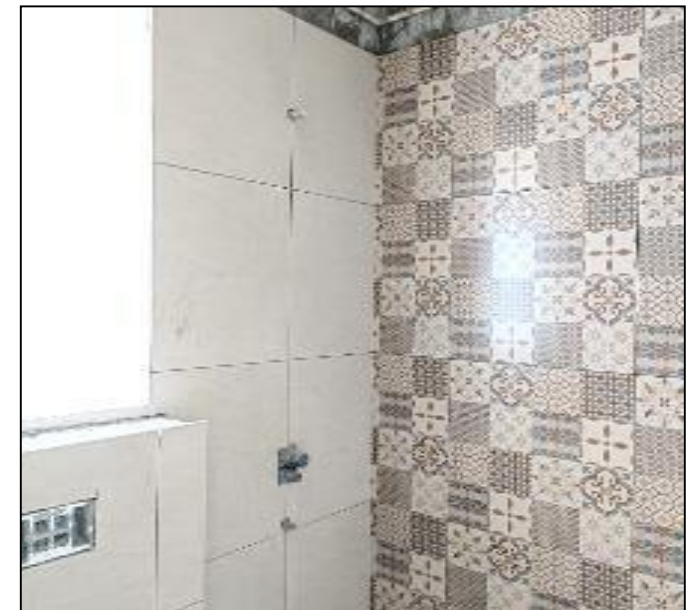
Sl.No	Milestone	As per JMC schedule	Actual date	Delay in days w.r.t R2 schedule
1	Casting of footing/raft	19-Aug-20	19-Aug-20	0
2	Casting of first basement slab	15-Oct-20	15-Oct-20	0
3	Casting of ground floor slab	01-Dec-20	1-Dec-20	0
4	Casting of Fifth floor slab	09-Jun-21	9-Jun-21	0
5	Casting of Tenth floor slab	20-Aug-21	27-Aug-21	7
6	Casting of Fifteenth floor slab	19-Oct-21	20-Nov-21	32
7	Casting of Twentieth floor slab	30-Dec-21	7-Feb-22	39
8	Casting of Terrace slab	01-Apr-22	25-Jun-22	85
9	Commencement of flooring - 1st floor to 5th floor	26-Jul-21	18-Oct-21	84
10	Commencement of flooring - 6th floor to 10th floor	08-Oct-21	24-Dec-21	77
11	Commencement of flooring - 11th floor to 15th floor	19-Dec-21	6-May-22	138
12	Commencement of flooring - 16th floor to 20th floor	17-Feb-22	21-Jul-22	154
13	Commencement of flooring - 21st floor & above	30-Apr-22		83
14	Commencement of Installation of lifts	08-Aug-22		
15	Commencement of painting - 1st floor to 5th floor	12-Jul-21	19-Jul-21	7
16	Commencement of painting - 6th floor to 10th floor	24-Sep-21	9-Dec-21	76
17	Commencement of painting - 11th floor to 15th floor	05-Dec-21	18-Jan-22	44
18	Commencement of painting - 16th floor to 20th floor	03-Feb-22	5-Apr-22	61
19	Commencement of painting - 21st floor & above	16-Apr-22	4-Jul-22	79
20	Commencement of fixing of door and windows - 1st floor to 5th floor	14-Oct-21	19-Jul-22	278
21	Commencement of fixing of door and windows - 6th floor to 10th floor	27-Dec-21		
22	Commencement of fixing of door and windows - 11th floor to 15th floor	09-Mar-22		
23	Commencement of fixing of door and windows - 16th floor to 20th floor	08-May-22		
24	Commencement of fixing of door and windows - 21st floor & above	19-Jul-22		
25	Possession	06-Dec-22		



TERRACE SLAB IN PROGRESS

15TH FLOR HVAC

BASEMENT PLUMBING

17TH FLOOR TILING

COLLECTIVE MILESTONE DELAY WRT TO R2 –TOWER A2- ZENITH

Sl.No	Milestone	As per JMC schedule	Actual date	Delay in days w.r.t R2 schedule
1	Casting of footing/raft	07-Jul-21	07-Jul-21	0
2	Casting of first basement slab	30-Jul-21	30-Jul-21	0
3	Casting of ground floor slab	27-Aug-21	27-Aug-21	0
4	Casting of Fifth floor slab	30-Jun-22	30-Jun-22	0
5	Casting of Tenth floor slab	10-Sep-22		
6	Casting of Fifteenth floor slab	09-Nov-22		
7	Casting of Twentieth floor slab	20-Jan-23		
8	Casting of Terrace slab	22-Apr-23		
9	Commencement of flooring - 1st floor to 5th floor	26-Jul-22		
10	Commencement of flooring - 6th floor to 10th floor	08-Oct-22		
11	Commencement of flooring - 11th floor to 15th floor	19-Dec-22		
12	Commencement of flooring - 16th floor to 20th floor	17-Feb-23		
13	Commencement of flooring - 21st floor & above	30-Apr-23		
14	Commencement of Installation of lifts	08-Aug-23		
15	Commencement of painting - 1st floor to 5th floor	12-Jul-22		
16	Commencement of painting - 6th floor to 10th floor	24-Sep-22		
17	Commencement of painting - 11th floor to 15th floor	05-Dec-22		
18	Commencement of painting - 16th floor to 20th floor	03-Feb-23		
19	Commencement of painting - 21st floor & above	16-Apr-23		
20	Commencement of fixing of door and windows - 1st floor to 5th floor	14-Oct-22		
21	Commencement of fixing of door and windows - 6th floor to 10th floor	27-Dec-22		
22	Commencement of fixing of door and windows - 11th floor to 15th floor	09-Mar-23		
23	Commencement of fixing of door and windows - 16th floor to 20th floor	08-May-23		
24	Commencement of fixing of door and windows - 21st floor & above	19-Jul-23		
25	Possession			

2ND FLOOR SLAB POUR 2 IN PROGRESS

POUR 2 REINFORCEMENT



POUR 2 SHUTTERING

ID	Task Name	% Complete	Duration	Baseline2 Start	Baseline2 Finish	Anticip Start	Anticip Finish	Predecessors	Finish Variance	1st Half1st Half			
										d C 1st Q 3rd Q 1st Q 3	M J S M J S M J S		
1	Residences @ WTCC	19%	1429.5 days	Thu 04-06-20	Fri 08-03-24	Thu 04-06-20	Fri 03-05-24		55.5 days				
2	Pre Construction	17%	751.5 days	Sat 19-06-21	Sun 16-04-23	Sat 19-06-21	Mon 10-07-23		84.5 days				
362	Construction	20%	1350 days	Thu 04-06-20	Fri 05-01-24	Thu 04-06-20	Tue 13-02-24		39 days				
363	Excavation Works (Inclusive of All Towers)	100%	525 days	Thu 04-06-20	Fri 30-07-21	Thu 04-06-20	Wed 10-11-21		103 days				
364	Balance area	100%	204.08 days	Thu 04-06-20	Fri 30-07-21	Thu 04-06-20	Wed 10-11-21		103 days				
365	Tower A1 (26 Floor + Terrace level)	36%	1198.5 days	Thu 04-06-20	Mon 10-04-23	Thu 04-06-20	Fri 15-09-23		157.5 days				
366	Civil/MEP/Interior	36%	1198.5 days	Thu 04-06-20	Mon 10-04-23	Thu 04-06-20	Fri 15-09-23		157.5 days				
367	Structure Works	94%	893.74 days	Thu 04-06-20	Tue 02-08-22	Thu 04-06-20	Mon 14-11-22		103.74 days				
888	Finishing Works	33%	807.5 days	Wed 30-06-21	Fri 13-01-23	Wed 30-06-21	Fri 15-09-23		245 days				
889	Ground Floor	18%	589 days	Sun 12-12-21	Thu 29-12-22	Sun 12-12-21	Sun 23-07-23		206 days				
923	1st Floor	58%	657.2 days	Wed 30-06-21	Tue 13-09-22	Wed 30-06-21	Tue 18-04-23		170.2 days				
1000	2nd Floor	66%	643.2 days	Sat 17-07-21	Tue 13-09-22	Sat 17-07-21	Fri 21-04-23		170.2 days				
1077	3rd Floor	59%	629.2 days	Sat 31-07-21	Tue 13-09-22	Sat 31-07-21	Fri 21-04-23		170.2 days				
1154	4th Floor	56%	628.2 days	Sat 14-08-21	Tue 13-09-22	Sun 01-08-21	Fri 21-04-23		170.2 days				
1231	5th Floor	57%	625.2 days	Sat 28-08-21	Tue 13-09-22	Wed 04-08-21	Fri 21-04-23		170.2 days				
1308	6th Floor	49%	586.2 days	Sat 11-09-21	Fri 16-09-22	Wed 15-09-21	Mon 24-04-23		170.2 days				
1385	7th Floor	43%	562.2 days	Sat 25-09-21	Fri 16-09-22	Sat 09-10-21	Mon 24-04-23		170.2 days				
1462	8th Floor	44%	539.2 days	Sat 09-10-21	Fri 16-09-22	Mon 01-11-21	Mon 24-04-23		170.2 days				
1539	9th Floor	42%	534.2 days	Thu 21-10-21	Fri 16-09-22	Sat 06-11-21	Mon 24-04-23		170.2 days				
1616	10th Floor	40%	529.2 days	Tue 02-11-21	Fri 16-09-22	Thu 11-11-21	Mon 24-04-23		170.2 days				
1693	11th Floor	35%	509.2 days	Sun 14-11-21	Mon 19-09-22	Sat 04-12-21	Thu 27-04-23		170.2 days				
1770	12th Floor	39%	501.5 days	Fri 26-11-21	Mon 19-09-22	Mon 13-12-21	Fri 28-04-23		171.5 days				
1847	13th Floor	36%	509.5 days	Wed 08-12-21	Mon 19-09-22	Wed 15-12-21	Mon 08-05-23		181.5 days				
1924	14th Floor	45%	501.5 days	Mon 20-12-21	Mon 19-09-22	Sun 02-01-22	Thu 18-05-23		191.5 days				
2001	15th Floor	40%	498.5 days	Sat 01-01-22	Mon 19-09-22	Sat 15-01-22	Sun 28-05-23		201.5 days				
2078	16th Floor	27%	485.5 days	Thu 13-01-22	Thu 22-09-22	Mon 07-02-22	Wed 07-06-23		208.5 days				
2079	Flats	34%	485.5 days	Thu 13-01-22	Sun 22-05-22	Mon 07-02-22	Wed 07-06-23		220 days				
2080	GI Wire Pulling in conduits	100%	4 days	Thu 13-01-22	Sun 16-01-22	Wed 13-04-22	Sat 16-04-22	742,2003SS+12 days	69 days				
2081	RCC clearance	100%	15 days	Thu 03-02-22	Thu 17-02-22	Tue 08-03-22	Tue 26-04-22	2080SS	67.5 days				
2082	MEP 1st fix	99%	191 days	Mon 07-02-22	Fri 25-03-22	Mon 07-02-22	Wed 17-08-22		144 days				
2083	HVAC	99%	121 days	Fri 04-03-22	Fri 25-03-22	Mon 18-04-22	Wed 17-08-22		144 days				
2084	Support works	100%	3 days	Fri 04-03-22	Sun 13-03-22	Mon 18-04-22	Wed 20-04-22	2080,2007	38 days				
2085	Copper pipes	100%	0 days	Fri 11-03-22	Tue 15-03-22	Thu 21-04-22	Thu 21-04-22	2084FF+2 days	37 days			21-04	
2086	Control cables	100%	3 days	Sun 13-03-22	Thu 17-03-22	Thu 21-04-22	Sat 23-04-22	2085FF+2 days	37 days				
2087	Drain pipes	100%	3 days	Tue 15-03-22	Sat 19-03-22	Thu 21-04-22	Sat 23-04-22	2086FF+2 days	35 days				
2088	Ducts	90%	0 days	Thu 17-03-22	Mon 21-03-22	Sat 23-04-22	Wed 17-08-22	2087FF+2 days	148 days			17-08	
2089	Duct insulation	100%	0 days	Sat 19-03-22	Wed 23-03-22	Sat 23-04-22	Sat 23-04-22	2088FF+2 days	31 days			23-04	
2090	Fresh air pipe	100%	1 day	Mon 21-03-22	Fri 25-03-22	Sun 24-04-22	Sun 24-04-22	2089FF+2 days	30 days				
Project: Residences @ WTC Task Split Milestone Summary Project Summary External Tasks External Milestone Inactive Task Inactive Milestone Inactive Summary Manual Task Duration-only Manual Summary Rollup Manual Summary Start-only Finish-only Deadline Critical Critical Split Baseline Baseline Milestone Baseline Summary Progress Slippage													
Page 1													

ID	Task Name	% Complete	Duration	Baseline2 Start	Baseline2 Finish	Anticip Start	Anticip Finish	Predecessors	Finish Variance	1st Half		1st Half	
										1st Q	2nd Q	3rd Q	4th Q
										M	J	S	M
2091	PHE	100%	76 days	Mon 07-02-22	Sun 06-03-22	Mon 07-02-22	Sat 23-04-22		48 days				
2092	Core cutting	100%	1 day	Mon 07-02-22	Mon 07-02-22	Mon 07-02-22	Mon 07-02-22	2080,2015	0 days				
2093	PVC puddle flange	100%	1 day	Tue 08-02-22	Tue 08-02-22	Wed 23-02-22	Wed 23-02-22	2092	15 days				
2094	Concealed & divertor fixing	100%	3 days	Fri 25-02-22	Sun 27-02-22	Mon 18-04-22	Wed 20-04-22	2106FF	52 days				
2095	PVC & water supply pipe	100%	4 days	Mon 28-02-22	Thu 03-03-22	Tue 19-04-22	Fri 22-04-22	2094	50 days				
2096	Gravity & Pressure testing	100%	2 days	Fri 04-03-22	Sat 05-03-22	Wed 20-04-22	Thu 21-04-22	2095	47 days				
2097	Groove packing	100%	1 day	Sun 06-03-22	Sun 06-03-22	Sat 23-04-22	Sat 23-04-22	2096	48 days				
2098	FPS	100%	5 days	Mon 07-02-22	Fri 11-02-22	Mon 07-02-22	Fri 11-02-22		0 days				
2099	Support fixing	100%	1 day	Mon 07-02-22	Mon 07-02-22	Mon 07-02-22	Mon 07-02-22	2080,2022	0 days				
2100	Pipe laying	100%	2 days	Tue 08-02-22	Wed 09-02-22	Tue 08-02-22	Wed 09-02-22	2099	0 days				
2101	Sprinkler fixing	100%	1 day	Thu 10-02-22	Thu 10-02-22	Thu 10-02-22	Thu 10-02-22	2100	0 days				
2102	Testing	100%	1 day	Fri 11-02-22	Fri 11-02-22	Fri 11-02-22	Fri 11-02-22	2101	0 days				
2103	FA & PA	100%	5 days	Sun 20-03-22	Fri 25-03-22	Tue 31-05-22	Sat 04-06-22		71 days				
2104	Cable laying	100%	5 days	Sun 20-03-22	Tue 22-03-22	Tue 31-05-22	Sat 04-06-22	2108,2027	74 days				
2105	Smoke detector fixing	0%	3 days	Wed 23-03-22	Fri 25-03-22	Sat 01-10-22	Mon 03-10-22	2028	192 days				
2106	Water Proofing & protection Screed including bore	100%	20 days	Tue 08-02-22	Sun 27-02-22	Tue 08-03-22	Fri 27-05-22	2080SS+5 days	89 days				
2107	Ledge wall Block Work & Plastering	100%	6 days	Sat 26-02-22	Wed 09-03-22	Thu 26-05-22	Tue 31-05-22	2106FF+10 days	83 days				
2108	2 Coarse and fine Putty	100%	3 days	Wed 02-02-22	Thu 03-03-22	Tue 15-03-22	Thu 17-03-22	2107FF+10 days	-2 days				
2109	Temporary MS Main door	100%	5 days	Tue 22-02-22	Sat 26-02-22	Mon 25-04-22	Sun 29-05-22	2108SS+20 days	76 days				
2110	Toilet Dadoing	90%	2.5 days	Sat 05-03-22	Tue 29-03-22	Mon 06-06-22	Wed 17-08-22	2107SS+5 days,2033FF+7	140.25 days				
2111	Granite Counter in Toilets	0%	3 days	Fri 18-03-22	Tue 29-03-22	Sat 10-09-22	Mon 12-09-22	2034	167 days				
2112	Flooring - Toilets/Rooms Inc. Balcony	100%	11 days	Sun 13-02-22	Sat 19-03-22	Thu 16-06-22	Sun 26-06-22	2109FF+5 days,2110FF+5	55 days				
2113	Skirting	25%	30 days	Wed 13-04-22	Thu 12-05-22	Thu 14-07-22	Thu 08-09-22	2112FF+10 days	118.5 days				
2114	Cornice Works	0%	20 days	NA	NA	Wed 17-08-22	Mon 05-09-22	2108FF,2112FF+7 days	0 days				
2115	Toilet False ceiling & false ceiling for Kitchen	0%	3 days	Tue 15-03-22	Sat 26-03-22	Mon 09-01-23	Thu 12-01-23	2107,2110FF+7 days,211	247.8 days				
2116	Windows & Balcony Sliding doors Fixing	0%	273.5 days	Fri 29-04-22	Wed 08-06-22	Wed 07-09-22	Wed 07-06-23		364.15 days				
2117	Balcony railing	0%	10 days	Fri 29-04-22	Wed 04-05-22	Sun 28-05-23	Wed 07-06-23	2040	399.15 days				
2118	Sliding door	0%	7 days	Wed 04-05-22	Mon 09-05-22	Fri 07-10-22	Fri 14-10-22	2041FF	158.18 days				
2119	Windows & Ventilators	0%	7 days	Sun 29-05-22	Wed 08-06-22	Wed 07-09-22	Tue 13-09-22	2042FF	97.65 days				
2120	Invisible Grill	0%	8 days	Wed 08-06-22	Mon 13-06-22	Tue 22-11-22	Tue 29-11-22	2119,2122,2043	169.65 days				
2121	FCU installation & False celing covering	0%	15 days	Tue 20-09-22	Wed 05-10-22	Tue 11-04-23	Tue 25-04-23	2044FF+8 days	202.5 days				
2122	one coat fine putty,Primer & 1st coat Painting	0%	15 days	Thu 05-05-22	Thu 19-05-22	Wed 31-08-22	Thu 15-09-22	2108FF+7 days,2113FF+7	118.5 days				
2123	Shaft Doors	0%	10 days	Sat 30-04-22	Mon 09-05-22	Wed 17-08-22	Fri 26-08-22	2108FF+7 days,2112FF+7	109 days				
2124	Wiring & LV Cable laying	0%	5 days	Fri 01-04-22	Mon 25-04-22	Wed 17-08-22	Sun 21-08-22	2109FF+3 days	86 days				
2125	DB dressing & Switch plate fixing	0%	9 days	Thu 28-07-22	Sat 06-08-22	Thu 27-10-22	Fri 04-11-22	2122,2124,2126	90.9 days				
2126	Wooden door frame & shutter fixing - All doors	0%	4 days	Wed 13-04-22	Mon 02-05-22	Sun 23-10-22	Wed 26-10-22	2122FF+7 days,2124FF+7	90.9 days				
2127	Grouting	0%	12 days	Sat 23-07-22	Thu 04-08-22	Sat 22-10-22	Wed 02-11-22	2126FF+7 days	90.9 days				
2128	Video Phone Fixing	0%	7 days	Wed 05-10-22	Wed 12-10-22	Wed 26-04-23	Tue 02-05-23	2126,2121	202.5 days				
Project: Residences @ WTC Task Split Milestone Summary Project Summary External Tasks External Milestone Inactive Task Inactive Milestone Inactive Summary Manual Task Duration-only Manual Summary Rollup Manual Summary Start-only Finish-only Deadline Critical Critical Split Baseline Baseline Milestone Baseline Summary Progress Slippage													
Page 2													

ID	Task Name	% Complete	Duration	Baseline2 Start	Baseline2 Finish	Anticip Start	Anticip Finish	Predecessors	Finish Variance	1st Half				1st Half			
										1st Half				1st Half			
										1st Q	2nd Q	3rd Q	4th Q	1st Q	2nd Q	3rd Q	4th Q
2129	Main Door & CP & Sanitary Fittings	0%	12 days	Wed 05-10-22	Mon 17-10-22	Sun 30-04-23	Thu 11-05-23	2052FF+10 days	206.5 days								
2130	Wooden flooring	0%	10 days	Wed 05-10-22	Sat 15-10-22	Wed 19-04-23	Fri 28-04-23	2053	195.5 days								
2131	Final Coat of Painting With Snag & Desnag works	0%	25 days	Wed 05-10-22	Sun 30-10-22	Wed 26-04-23	Sat 20-05-23	2129FF+5 days,2130FF+5	202.5 days								
2132	Corridor & Lift lobby	6%	399 days	Tue 08-02-22	Thu 10-11-22	Mon 25-04-22	Sun 28-05-23		199 days								
2133	Corridor	8%	398 days	Tue 08-02-22	Sun 06-11-22	Mon 25-04-22	Sat 27-05-23		202.5 days								
2134	Coarse Putty, Fine Putty	100%	3 days	Sun 20-03-22	Tue 22-03-22	Mon 25-04-22	Thu 09-06-22	2108	79 days								
2135	Primer	0%	3 days	Wed 23-03-22	Fri 25-03-22	Wed 17-08-22	Fri 19-08-22	2134	147 days								
2136	MEP 1st fix	20%	5 days	Tue 08-02-22	Sat 12-02-22	Mon 25-04-22	Sat 20-08-22	2099,2102FF	189 days								
2137	False Ceiling Framing	0%	5 days	Fri 13-05-22	Tue 17-05-22	Wed 14-09-22	Mon 19-09-22	2136,2143	124.6 days								
2138	MEP droppers	0%	2 days	Wed 18-05-22	Thu 19-05-22	Mon 19-09-22	Wed 21-09-22	2137,2140	124.6 days								
2139	False Ceiling Board	0%	5 days	Fri 20-05-22	Tue 24-05-22	Wed 21-09-22	Mon 26-09-22	2138,2143	124.6 days								
2140	Flooring - corridor	0%	3 days	Sat 30-04-22	Mon 02-05-22	Thu 01-09-22	Sun 04-09-22	2134,2063FF,2112FF+2 c	124.6 days								
2141	Ceiling/Wall paint -1st coat Inc bubble texture	0%	5 days	Tue 03-05-22	Sat 07-05-22	Sun 04-09-22	Fri 09-09-22	2135,2140	124.6 days								
2142	Staircase Fire door, duct door & window installation	0%	3 days	Sun 08-05-22	Thu 12-05-22	Mon 07-11-22	Thu 10-11-22	2141,2065	181.2 days								
2143	Electrical wiring	0%	5 days	Sun 08-05-22	Thu 12-05-22	Fri 09-09-22	Wed 14-09-22	2141	124.6 days								
2144	Light fixture	0%	3 days	Wed 07-09-22	Sat 10-09-22	Wed 22-03-23	Sat 25-03-23	2067	196.45 days								
2145	Paint - final coat	0%	7 days	Sun 30-10-22	Sun 06-11-22	Sun 21-05-23	Sat 27-05-23	2143,2131	202.5 days								
2146	Lift lobby	2%	399 days	Tue 08-02-22	Thu 10-11-22	Mon 25-04-22	Sun 28-05-23		199 days								
2147	MEP 1st fix	20%	5 days	Tue 08-02-22	Sat 12-02-22	Mon 25-04-22	Sat 20-08-22	2136FF	189 days								
2148	Lift wall cladding	0%	7 days	Thu 06-10-22	Wed 12-10-22	Sat 25-03-23	Sat 01-04-23	3100SS+12 days,3120SS+	170.2 days								
2149	False Ceiling Framing	0%	5 days	Thu 13-10-22	Mon 17-10-22	Sat 01-04-23	Thu 06-04-23	2148	170.2 days								
2150	MEP droppers	0%	1 day	Tue 18-10-22	Tue 18-10-22	Thu 06-04-23	Fri 07-04-23	2149	170.2 days								
2151	False Ceiling Board	0%	5 days	Wed 19-10-22	Sun 23-10-22	Fri 07-04-23	Wed 12-04-23	2150	170.2 days								
2152	Flooring - lift lobby	0%	10 days	Mon 24-10-22	Wed 02-11-22	Wed 12-04-23	Sat 22-04-23	2151	170.2 days								
2153	Painting	0%	5 days	Thu 03-11-22	Mon 07-11-22	Sun 21-05-23	Thu 25-05-23	2152,2131	199 days								
2154	MEP Fixtures	0%	3 days	Tue 08-11-22	Thu 10-11-22	Fri 26-05-23	Sun 28-05-23	2153,2131	199 days								
2155	17th Floor	27%	485.5 days	Tue 25-01-22	Thu 22-09-22	Thu 17-02-22	Sat 17-06-23		214 days								
2232	18th Floor	32%	481.5 days	Sun 06-02-22	Thu 22-09-22	Thu 03-03-22	Tue 27-06-23		216 days								
2309	19th Floor	26%	480.5 days	Fri 18-02-22	Thu 22-09-22	Mon 14-03-22	Fri 07-07-23		218 days								
2386	20th floor	20%	479.5 days	Wed 02-03-22	Thu 22-09-22	Fri 25-03-22	Mon 17-07-23		220 days								
2462	21st floor	16%	461.5 days	Mon 14-03-22	Sun 25-09-22	Fri 22-04-22	Thu 27-07-23		222 days								
2463	Flats	20%	461.5 days	Mon 14-03-22	Thu 21-07-22	Fri 22-04-22	Thu 27-07-23		230 days								
2464	GI Wire Pulling in conduits	100%	4 days	Mon 14-03-22	Thu 17-03-22	Tue 03-05-22	Fri 06-05-22	827,2388SS+12 days	29 days								
2465	RCC clearance	80%	15 days	Mon 04-04-22	Mon 18-04-22	Tue 03-05-22	Fri 19-08-22	2464SS	123 days								
2466	MEP 1st fix	76%	180 days	Fri 08-04-22	Tue 24-05-22	Fri 22-04-22	Tue 18-10-22		147 days								
2467	HVAC	80%	80 days	Sat 23-04-22	Sat 14-05-22	Wed 01-06-22	Fri 19-08-22		97 days								
2468	Support works	100%	7 days	Sat 23-04-22	Mon 02-05-22	Tue 02-08-22	Mon 08-08-22	2464,2392	98 days								
2469	Copper pipes	25%	4 days	Sat 30-04-22	Wed 04-05-22	Wed 10-08-22	Fri 19-08-22	2468FF+3 days	107 days								
Project: Residences @ WTC Task Split Milestone Summary Project Summary External Tasks External Milestone Inactive Task Inactive Milestone Inactive Summary Manual Task Duration-only Manual Summary Rollup Manual Summary Start-only Finish-only Deadline Critical Critical Split Baseline Baseline Milestone Baseline Summary Progress Slippage																	

ID	Task Name	% Complete	Duration	Baseline2 Start	Baseline2 Finish	Anticip Start	Anticip Finish	Predecessors	Finish Variance												
										1st Half	1st Half	1st Half	1st Half	1st Half	1st Half	1st Half	1st Half	1st Half	1st Half	1st Half	1st Half
2470	Control cables	100%	1 day	Mon 02-05-22	Fri 06-05-22	Fri 12-08-22	Fri 12-08-22	2469FF+2 days	98 days												
2471	Drain pipes	100%	0 days	Wed 04-05-22	Sun 08-05-22	Sat 13-08-22	Sat 13-08-22	2470FF+2 days	97 days												
2472	Ducts	100%	1 day	Fri 06-05-22	Tue 10-05-22	Wed 01-06-22	Mon 08-08-22	2471FF+2 days	90 days												
2473	Duct insulation	100%	1 day	Sun 08-05-22	Thu 12-05-22	Wed 01-06-22	Tue 09-08-22	2472FF+2 days	89 days												
2474	Fresh air pipe	100%	1 day	Tue 10-05-22	Sat 14-05-22	Thu 02-06-22	Wed 10-08-22	2473FF+2 days	88 days												
2475	PHE	77%	124.6 days	Fri 08-04-22	Thu 05-05-22	Fri 22-04-22	Wed 24-08-22		110.6 days												
2476	Core cutting	100%	1 day	Fri 08-04-22	Fri 08-04-22	Fri 22-04-22	Fri 22-04-22	2464,2400	14 days												
2477	PVC puddle flange	90%	1 day	Sat 09-04-22	Sat 09-04-22	Wed 22-06-22	Wed 17-08-22	2476	129.1 days												
2478	Concealed & divertor fixing	90%	3 days	Tue 26-04-22	Thu 28-04-22	Sat 23-07-22	Sun 21-08-22	2490SS+7 days	114.6 days												
2479	PVC & water supply pipe	90%	4 days	Fri 29-04-22	Mon 02-05-22	Sun 03-07-22	Mon 22-08-22	2478FF+1 day	111.6 days												
2480	Gravity & Pressure testing	50%	2 days	Tue 03-05-22	Wed 04-05-22	Wed 03-08-22	Tue 23-08-22	2479	110.6 days												
2481	Groove packing	0%	1 day	Thu 05-05-22	Thu 05-05-22	Tue 23-08-22	Wed 24-08-22	2480	110.6 days												
2482	FPS	100%	20.8 days	Fri 08-04-22	Tue 12-04-22	Sat 07-05-22	Fri 27-05-22		44.8 days												
2483	Support fixing	100%	1 day	Fri 08-04-22	Fri 08-04-22	Sat 07-05-22	Thu 26-05-22	2464,2407	47.2 days												
2484	Pipe laying	100%	2 days	Sat 09-04-22	Sun 10-04-22	Sun 08-05-22	Thu 26-05-22	2483	45.6 days												
2485	Sprinkler fixing	100%	1 day	Mon 11-04-22	Mon 11-04-22	Tue 10-05-22	Thu 26-05-22	2484	44.8 days												
2486	Testing	100%	1 day	Tue 12-04-22	Tue 12-04-22	Thu 26-05-22	Fri 27-05-22	2485	44.8 days												
2487	FA & PA	80%	39.7 days	Thu 19-05-22	Tue 24-05-22	Mon 18-07-22	Fri 26-08-22		93.7 days												
2488	Cable laying	80%	5 days	Thu 19-05-22	Sat 21-05-22	Mon 18-07-22	Fri 26-08-22	2492,2412	96.7 days												
2489	Smoke detector fixing	0%	3 days	Sun 22-05-22	Tue 24-05-22	Sun 16-10-22	Tue 18-10-22	2413	147 days												
2490	Water Proofing & protection Screed including bore	85%	7 days	Sat 09-04-22	Thu 28-04-22	Mon 13-06-22	Thu 18-08-22	2464SS+5	111.05 days												
2491	Ledge wall Block Work & Plastering	0%	12 days	Wed 27-04-22	Sun 08-05-22	Wed 17-08-22	Sun 28-08-22	2490FF+10 days	112 days												
2492	2 Coarse and fine Putty	80%	12 days	Sun 03-04-22	Mon 02-05-22	Fri 10-06-22	Thu 25-08-22	2416FF+7 days	98.7 days												
2493	Temporary MS Main door	0%	5 days	Sat 23-04-22	Wed 27-04-22	Wed 17-08-22	Sun 21-08-22	2492SS+20 days	100 days												
2494	Toilet Dadoing	0%	5 days	Wed 04-05-22	Sat 28-05-22	Fri 16-09-22	Wed 21-09-22	2491SS+7 days,2418FF+7	115.25 days												
2495	Granite Counter in Toilets	0%	3 days	Tue 17-05-22	Sat 28-05-22	Sat 24-09-22	Tue 27-09-22	2419	121.4 days												
2496	Flooring - Toilets/Rooms Inc. Balcony	0%	22 days	Thu 14-04-22	Wed 18-05-22	Fri 09-09-22	Sat 01-10-22	2493FF+5 days,2494FF+1	101.25 days												
2497	Skirting	0%	30 days	Thu 02-06-22	Fri 01-07-22	Sun 11-09-22	Tue 11-10-22	2496FF+10 days	101.25 days												
2498	Cornice Works	0%	20 days	NA	NA	Sun 18-09-22	Sat 08-10-22	2492FF,2496FF+7 days	0 days												
2499	Toilet False ceiling & false ceiling for Kitchen	0%	3 days	Sat 14-05-22	Wed 25-05-22	Tue 24-01-23	Fri 27-01-23	2491,2494FF+7 days,249	212.8 days												
2500	Windows & Balcony Sliding doors Fixing	0%	309.5 days	Tue 24-05-22	Thu 28-07-22	Wed 21-09-22	Thu 27-07-23		364.15 days												
2504	Invisible Grill	0%	10 days	Thu 28-07-22	Tue 02-08-22	Sun 01-01-23	Tue 10-01-23	2503,2506,2428	161.65 days												
2505	FCU installation & False celing covering	0%	15 days	Sun 30-10-22	Mon 14-11-22	Sun 21-05-23	Sun 04-06-23	2429FF+8 days	202.5 days												
2506	one coat fine putty,Primer & 1st coat Painting	0%	15 days	Fri 24-06-22	Fri 08-07-22	Mon 03-10-22	Tue 18-10-22	2492FF+7 days,2497FF+7	101.25 days												
2507	Shaft Doors	0%	10 days	Sun 19-06-22	Tue 28-06-22	Wed 28-09-22	Sat 08-10-22	2492FF+7 days,2496FF+7	101.25 days												
2508	Wiring & LV Cable laying	50%	10 days	Tue 31-05-22	Fri 24-06-22	Thu 02-06-22	Tue 30-08-22	2493,2432	45 days												
2509	DB dressing & Switch plate fixing	0%	9 days	Fri 16-09-22	Sun 25-09-22	Fri 11-11-22	Sat 19-11-22	2506,2508,2510	55.9 days												
2510	Wooden door frame & shutter fixing - All doors	0%	3 days	Sun 12-06-22	Fri 01-07-22	Tue 08-11-22	Thu 10-11-22	2506FF+7 days,2508FF+7	55.9 days												
Project: Residences @ WTC Task Split Milestone Summary Project Summary External Tasks External Milestone Inactive Task Inactive Milestone Inactive Summary Manual Task Duration-only Manual Summary Rollup Manual Summary Start-only Finish-only Deadline Critical Critical Split Baseline Baseline Milestone Baseline Summary Progress Slippage																					
Page 4																					

ID	Task Name	% Complete	Duration	Baseline2 Start	Baseline2 Finish	Anticip Start	Anticip Finish	Predecessors	Finish Variance	1st Half				1st Half			
										1st Half				1st Half			
										1st Q	2nd Q	3rd Q	4th Q	1st Q	2nd Q	3rd Q	4th Q
										M	J	S	M	J	S	M	J
2511	Grouting	0%	12 days	Sun 11-09-22	Fri 23-09-22	Sun 06-11-22	Thu 17-11-22	2510FF+7 days	55.9 days								
2512	Video Phone Fixing	0%	7 days	Mon 14-11-22	Mon 21-11-22	Mon 05-06-23	Sun 11-06-23	2510,2505	202.5 days								
2513	Main Door & CP & Sanitary Fittings	0%	12 days	Mon 14-11-22	Sat 26-11-22	Mon 19-06-23	Fri 30-06-23	2436FF+10 days	216.5 days								
2514	Wooden flooring	0%	10 days	Mon 14-11-22	Thu 24-11-22	Mon 05-06-23	Wed 14-06-23	2510FF+7 days,2505	202.5 days								
2515	Final Coat of Painting With Snag & Desnag works	0%	25 days	Mon 14-11-22	Fri 09-12-22	Sun 11-06-23	Wed 05-07-23	2513FF+5 days,2514FF+5	208.5 days								
2516	Corridor & Lift lobby	0%	331 days	Sat 09-04-22	Sat 17-12-22	Wed 17-08-22	Thu 13-07-23		208.5 days								
2517	Corridor	0%	330 days	Sat 09-04-22	Fri 16-12-22	Wed 17-08-22	Wed 12-07-23		208.5 days								
2530	Lift lobby	0%	331 days	Sat 09-04-22	Sat 17-12-22	Wed 17-08-22	Thu 13-07-23		208.5 days								
2539	22nd floor	11%	454.5 days	Sat 26-03-22	Sun 25-09-22	Mon 09-05-22	Sun 06-08-23		224 days								
2616	23rd floor	13%	440.5 days	Thu 07-04-22	Sun 25-09-22	Thu 02-06-22	Wed 16-08-23		229 days								
2693	24th floor	1%	418.5 days	Tue 19-04-22	Sun 25-09-22	Mon 04-07-22	Sat 26-08-23		231 days								
2770	25th floor	0%	393.5 days	Fri 29-04-22	Sun 25-09-22	Mon 08-08-22	Tue 05-09-23		238 days								
2848	26th floor	0%	374.5 days	Mon 09-05-22	Sat 01-10-22	Tue 06-09-22	Fri 15-09-23		245 days								
2925	Refuge area	6%	129 days	Fri 07-01-22	Sat 22-01-22	Mon 25-04-22	Wed 31-08-22		221 days								
2929	Staircase Finishes	15%	523.6 days	Tue 12-10-21	Sun 18-09-22	Tue 12-10-21	Sun 19-03-23		181.6 days								
3004	Shower partition MBR	0%	104 days	Mon 22-08-22	Sat 03-12-22	Thu 16-03-23	Tue 27-06-23		206 days								
3031	Elevation	0%	240 days	Sun 07-08-22	Fri 13-01-23	Sat 17-09-22	Mon 15-05-23		121.74 days								
3032	External Painting	0%	200 days	Sun 07-08-22	Sat 19-11-22	Sat 17-09-22	Wed 05-04-23		136.74 days								
3037	Signage	0%	110 days	Tue 06-09-22	Fri 13-01-23	Wed 25-01-23	Mon 15-05-23		121.74 days								
3042	Façade - Utility Louver	0%	120 days	NA	NA	Wed 16-11-22	Thu 16-03-23		0 days								
3045	MEP Works	10%	652 days	Mon 18-10-21	Mon 10-04-23	Mon 18-10-21	Mon 31-07-23		112 days								
3339	Tower A2 (26 Floor + Terrace level)	3%	1096 days	Sat 13-02-21	Wed 27-12-23	Sat 13-02-21	Tue 13-02-24		48 days								
3340	Civil/MEP/Interior	3%	1096 days	Sat 13-02-21	Wed 27-12-23	Sat 13-02-21	Tue 13-02-24		48 days								
3341	Structure Works	35%	983 days	Sat 13-02-21	Sat 26-08-23	Sat 13-02-21	Mon 23-10-23		58 days								
3342	Foundation Works	100%	160 days	Sat 13-02-21	Thu 22-07-21	Sat 13-02-21	Thu 22-07-21		18 days								
3361	Basement 1 Floor slab	100%	190 days	Fri 19-03-21	Fri 30-07-21	Fri 19-03-21	Fri 24-09-21		56 days								
3383	Slab Deshuttering	100%	7 days	Sat 07-08-21	Fri 13-08-21	Sat 02-10-21	Thu 09-12-21	3382FS+7 days	117.8 days								
3384	Stilt or Ground Floor slab	100%	211 days	Fri 14-05-21	Fri 27-08-21	Fri 14-05-21	Fri 10-12-21		105 days								
3406	Slab Deshuttering	100%	7 days	Sat 04-09-21	Fri 10-09-21	Sat 18-12-21	Tue 28-12-21	3405FS+7 days	108.6 days								
3407	Retaining wall & Backfilling	95%	21 days	Tue 17-08-21	Mon 06-09-21	Thu 20-01-22	Thu 18-08-22	3398,3405FF+10 days	345.1 days								
3408	Podium or First Floor Slab	100%	249 days	Wed 21-07-21	Wed 29-09-21	Thu 09-12-21	Sun 14-08-22		319 days								
3430	Slab Deshuttering	0%	7 days	Thu 07-10-21	Wed 13-10-21	Mon 22-08-22	Sun 28-08-22	3429FS+7 days	319 days								
3431	2nd Floor Slab	95%	52 days	Mon 23-08-21	Sun 01-05-22	Fri 01-07-22	Sun 21-08-22		112 days								
3432	Pour - 01	100%	17 days	Mon 23-08-21	Sun 24-04-22	Fri 05-08-22	Sun 21-08-22		119 days								
3433	Column & Core wall Reinforcement work	100%	3 days	Mon 23-08-21	Wed 01-09-21	Mon 08-08-22	Wed 10-08-22	3415,3422FF	343 days								
3434	Mivan Setting Inc electrical conduits	100%	7 days	Mon 28-03-22	Thu 21-04-22	Fri 05-08-22	Wed 17-08-22	3433,861FS+5 days	118 days								
3435	Slab Reinforcement work	100%	4 days	Fri 22-04-22	Sat 23-04-22	Fri 05-08-22	Sun 21-08-22	3434	120 days								
3436	Slab Concrete work	100%	2 days	Sun 24-04-22	Sun 24-04-22	Sat 13-08-22	Sun 14-08-22	3435	112 days								
Project: Residences @ WTC Task Split Milestone Summary Project Summary External Tasks External Milestone Inactive Task Inactive Milestone Inactive Summary Manual Task Duration-only Manual Summary Rollup Manual Summary Start-only Finish-only Deadline Critical Critical Split Baseline Baseline Milestone Baseline Summary Progress Slippage ◆ ▲ ■ ▬ ▬																	

ID	Task Name	% Complete	Duration	Baseline2 Start	Baseline2 Finish	Anticip Start	Anticip Finish	Predecessors	Finish Variance		1st Half	1st Half
											d C 1st Q 3rd Q 1st Q 3	d C 1st Q 3rd Q 1st Q 3
											M J S M J S M J S	M J S M J S M J S
3437	Pour - 02	82%	48 days	Wed 08-09-21	Sun 01-05-22	Fri 01-07-22	Wed 17-08-22		108 days			
3438	Column & Core wall Reinforcement work	100%	2.56 days	Wed 08-09-21	Fri 17-09-21	Fri 01-07-22	Tue 02-08-22	3422	318.51 days			
3439	Mivan Setting Inc electrical conduits	100%	0 days	Mon 25-04-22	Fri 29-04-22	Fri 05-08-22	Sat 06-08-22	873FS+10 days,3438,868	99 days			06-08
3440	Slab Reinforcement work	100%	2 days	Sat 30-04-22	Sat 30-04-22	Fri 05-08-22	Sat 06-08-22	3439FS+1 day	98 days			
3441	Slab Concrete work	0%	1 day	Sun 01-05-22	Sun 01-05-22	Tue 16-08-22	Wed 17-08-22	3440,3429	108 days			
3442	Slab Deshuttering	0%	6 days	Mon 09-05-22	Sun 15-05-22	Thu 25-08-22	Tue 30-08-22	3441FS+7 days	107 days			
3443	3rd Floor Slab	0%	14 days	Mon 25-04-22	Mon 16-05-22	Wed 17-08-22	Tue 30-08-22		106 days			
3454	Slab Deshuttering	0%	2 days	Tue 17-05-22	Wed 18-05-22	Wed 31-08-22	Thu 01-09-22	3453	106 days			
3455	4th Floor Slab	0%	14 days	Tue 10-05-22	Tue 31-05-22	Wed 31-08-22	Tue 13-09-22		105 days			
3466	Slab Deshuttering	0%	2 days	Wed 01-06-22	Thu 02-06-22	Wed 14-09-22	Thu 15-09-22	3465	105 days			
3467	5th Floor Slab	0%	14 days	Wed 25-05-22	Wed 15-06-22	Wed 14-09-22	Tue 27-09-22		104 days			
3478	Slab Deshuttering	0%	2 days	Thu 16-06-22	Fri 17-06-22	Wed 28-09-22	Thu 29-09-22	3477	104 days			
3479	6th Floor Slab	0%	14 days	Thu 09-06-22	Thu 30-06-22	Wed 28-09-22	Tue 11-10-22		103 days			
3490	Slab Deshuttering	0%	2 days	Fri 01-07-22	Sat 02-07-22	Wed 12-10-22	Thu 13-10-22	3489	103 days			
3491	7th Floor Slab	0%	14 days	Fri 24-06-22	Fri 15-07-22	Wed 12-10-22	Tue 25-10-22		102 days			
3502	Slab Deshuttering	0%	2 days	Sat 16-07-22	Sun 17-07-22	Wed 26-10-22	Thu 27-10-22	3501	102 days			
3503	8th Floor Slab	0%	14 days	Sat 09-07-22	Sat 30-07-22	Wed 26-10-22	Tue 08-11-22		101 days			
3514	Slab Deshuttering	0%	2 days	Sun 31-07-22	Mon 01-08-22	Wed 09-11-22	Thu 10-11-22	3513	101 days			
3515	9th Floor Slab	0%	14 days	Sat 23-07-22	Sat 13-08-22	Wed 09-11-22	Tue 22-11-22		101 days			
3526	Slab Deshuttering	0%	2 days	Sun 14-08-22	Mon 15-08-22	Tue 22-11-22	Wed 23-11-22	3525	100 days			
3527	10th Floor Slab	0%	14 days	Fri 05-08-22	Fri 26-08-22	Tue 22-11-22	Mon 05-12-22		101 days			
3538	Slab Deshuttering	0%	2 days	Sat 27-08-22	Sun 28-08-22	Mon 05-12-22	Tue 06-12-22	3537	100 days			
3539	11th Floor Slab	0%	13 days	Sat 20-08-22	Wed 07-09-22	Mon 05-12-22	Sat 17-12-22		101 days			
3550	Slab Deshuttering	0%	2 days	Thu 08-09-22	Fri 09-09-22	Sat 17-12-22	Sun 18-12-22	3549	100 days			
3551	12th Floor Slab	0%	13 days	Thu 01-09-22	Mon 19-09-22	Sat 17-12-22	Thu 29-12-22		101 days			
3562	Slab Deshuttering	0%	2 days	Tue 20-09-22	Wed 21-09-22	Thu 29-12-22	Fri 30-12-22	3561	100 days			
3563	13th Floor Slab	0%	13 days	Tue 13-09-22	Sat 01-10-22	Thu 29-12-22	Tue 10-01-23		101 days			
3574	Slab Deshuttering	0%	2 days	Sun 02-10-22	Mon 03-10-22	Tue 10-01-23	Wed 11-01-23	3573	100 days			
3575	14th Floor Slab	0%	13 days	Sun 25-09-22	Thu 13-10-22	Tue 10-01-23	Sun 22-01-23		101 days			
3586	Slab Deshuttering	0%	2 days	Fri 14-10-22	Sat 15-10-22	Sun 22-01-23	Mon 23-01-23	3585	100 days			
3587	15th Floor Slab	0%	13 days	Fri 07-10-22	Tue 25-10-22	Sun 22-01-23	Fri 03-02-23		101 days			
3598	Slab Deshuttering	0%	2 days	Wed 26-10-22	Thu 27-10-22	Fri 03-02-23	Sat 04-02-23	3597	100 days			
3599	16th Floor Slab	0%	13 days	Wed 19-10-22	Sun 06-11-22	Fri 03-02-23	Wed 15-02-23		101 days			
3610	Slab Deshuttering	0%	2 days	Mon 07-11-22	Tue 08-11-22	Wed 15-02-23	Thu 16-02-23	3609	100 days			
3611	17th Floor Slab	0%	13 days	Mon 31-10-22	Fri 18-11-22	Wed 15-02-23	Mon 27-02-23		101 days			
3622	Slab Deshuttering	0%	2 days	Sat 19-11-22	Sun 20-11-22	Mon 27-02-23	Tue 28-02-23	3621	100 days			
3623	18th Floor Slab	0%	13 days	Sat 12-11-22	Wed 30-11-22	Mon 27-02-23	Sat 11-03-23		101 days			
3634	Slab Deshuttering	0%	2 days	Thu 01-12-22	Fri 02-12-22	Sat 11-03-23	Sun 12-03-23	3633	100 days			
Project: Residences @ WTC Task Split Milestone Summary Project Summary External Tasks External Milestone Inactive Task Inactive Milestone Inactive Summary Manual Task Duration-only Manual Summary Rollup Manual Summary Start-only Finish-only Deadline Critical Critical Split Baseline Baseline Milestone Baseline Summary Progress Slippage												
Page 6												

ID	Task Name	% Complete	Duration	Baseline2 Start	Baseline2 Finish	Anticip Start	Anticip Finish	Predecessors	Finish Variance	1st Half				1st Half				
										d	C	1st Q	3rd Q	d	C	1st Q	3rd Q	
																		M
3635	19th Floor Slab	0%	16 days	Thu 24-11-22	Thu 22-12-22	Sat 11-03-23	Sun 26-03-23		94 days									
3646	Slab Deshuttering	0%	2 days	Fri 23-12-22	Sat 24-12-22	Mon 27-03-23	Tue 28-03-23	3645	94 days									
3647	20th Floor Slab	0%	14 days	Thu 15-12-22	Thu 05-01-23	Mon 27-03-23	Sun 09-04-23		94 days									
3658	Slab Deshuttering	0%	2 days	Fri 06-01-23	Sat 07-01-23	Mon 10-04-23	Tue 11-04-23	3657	94 days									
3659	21th Floor Slab	0%	14 days	Fri 30-12-22	Thu 19-01-23	Mon 10-04-23	Sun 23-04-23		94 days									
3670	Slab Deshuttering	0%	2 days	Fri 20-01-23	Sat 21-01-23	Mon 24-04-23	Tue 25-04-23	3669	94 days									
3671	22th Floor Slab	0%	12 days	Sat 14-01-23	Tue 31-01-23	Mon 24-04-23	Fri 05-05-23		94 days									
3682	Slab Deshuttering	0%	2 days	Wed 01-02-23	Thu 02-02-23	Sat 06-05-23	Sun 07-05-23	3681	94 days									
3683	23th Floor Slab	0%	12 days	Thu 26-01-23	Sun 12-02-23	Sat 06-05-23	Wed 17-05-23		94 days									
3694	Slab Deshuttering	0%	2 days	Mon 13-02-23	Tue 14-02-23	Thu 18-05-23	Fri 19-05-23	3693	94 days									
3695	24th Floor Slab	0%	12 days	Tue 07-02-23	Fri 24-02-23	Thu 18-05-23	Mon 29-05-23		94 days									
3706	Slab Deshuttering	0%	2 days	Sat 25-02-23	Sun 26-02-23	Tue 30-05-23	Wed 31-05-23	3705	94 days									
3707	25th Floor Slab	0%	14 days	Sun 19-02-23	Sat 11-03-23	Tue 30-05-23	Mon 12-06-23		93 days									
3718	Slab Deshuttering	0%	2 days	Sun 12-03-23	Mon 13-03-23	Tue 13-06-23	Wed 14-06-23	3717	93 days									
3719	26th Floor Slab	0%	12 days	Mon 06-03-23	Thu 23-03-23	Tue 13-06-23	Sat 24-06-23		93 days									
3730	Slab Deshuttering	0%	1 day	Fri 24-03-23	Fri 24-03-23	Sun 25-06-23	Sun 25-06-23	3729	93 days									
3731	Terrace Floor slab	0%	15 days	Sat 18-03-23	Fri 07-04-23	Sun 25-06-23	Sun 09-07-23		93 days									
3742	Slab Deshuttering	0%	2 days	Sat 08-04-23	Sun 09-04-23	Mon 10-07-23	Tue 11-07-23	3741	93 days									
3743	Refuge area	0%	18 days	NA	NA	Sun 02-04-23	Wed 19-04-23		0 days									
3748	Above Terrace Works	0%	104 days	Mon 15-05-23	Sat 26-08-23	Wed 12-07-23	Mon 23-10-23		447 days									
3762	Finishing Works	0%	521.15 days	Thu 23-06-22	Wed 27-12-23	Sun 21-08-22	Wed 24-01-24		28 days									
5889	Elevation	0%	140 days	Thu 29-06-23	Fri 15-12-23	Sat 26-08-23	Fri 12-01-24		28 days									
5900	MEP Works	0%	410 days	Thu 27-10-22	Wed 27-12-23	Sat 31-12-22	Tue 13-02-24		48 days									
6192	Tower A3 Service Apt (12 Floor + Terrace level)	8%	1136 days	Sat 26-09-20	Sat 15-07-23	Sat 26-09-20	Sun 05-11-23		113 days									
6193	Civil/MEP/Interior	8%	1136 days	Sat 26-09-20	Sat 15-07-23	Sat 26-09-20	Sun 05-11-23		113 days									
6194	Structure Works	56%	980 days	Sat 26-09-20	Mon 12-12-22	Sat 26-09-20	Fri 02-06-23		172 days									
6457	Finishing Works	0%	686 days	Mon 20-12-21	Sun 18-06-23	Mon 20-12-21	Sun 05-11-23		140 days									
6458	Ground Floor	11%	392 days	Mon 20-12-21	Sun 03-07-22	Mon 20-12-21	Sun 15-01-23		196.5 days									
6459	Blockwork	63%	35 days	Mon 20-12-21	Mon 14-02-22	Mon 20-12-21	Mon 29-08-22	6283	196.5 days									
6460	Plastering	0%	35 days	Fri 04-02-22	Fri 11-03-22	Sat 20-08-22	Fri 23-09-22	6459FS-10 days	196.5 days									
6461	MEP 1st fix & Interior works	0%	90 days	Sun 06-03-22	Sat 04-06-22	Mon 19-09-22	Sat 17-12-22	6460FS-5 days	196.5 days									
6462	Painting	0%	12 days	Sat 04-06-22	Thu 16-06-22	Sun 18-12-22	Thu 29-12-22	6461	196.5 days									
6463	Floor marking - Car park	0%	30 days	Wed 01-06-22	Fri 01-07-22	Thu 15-12-22	Fri 13-01-23	6462FF+15 days	196.5 days									
6464	MEP fixtures	0%	7 days	Sun 26-06-22	Sun 03-07-22	Mon 09-01-23	Sun 15-01-23	6463FS-5 days	196.5 days									
6465	1st Floor	0%	164 days	Mon 14-02-22	Thu 28-07-22	Tue 30-08-22	Thu 09-02-23		196.5 days									
6471	2nd Floor	2%	341 days	Sun 27-02-22	Thu 11-05-23	Fri 05-08-22	Tue 11-07-23		61 days									
6525	3rd Floor	0%	330 days	Thu 17-03-22	Thu 11-05-23	Tue 16-08-22	Tue 11-07-23		61 days									
6579	4th Floor	0%	301 days	Mon 04-04-22	Sun 14-05-23	Sat 17-09-22	Fri 14-07-23		61 days									
											Task Split Milestone Summary Project Summary External Tasks External Milestone Inactive Task Inactive Milestone Inactive Summary Manual Task Duration-only Manual Summary Rollup Manual Summary Start-only Finish-only Deadline Critical Critical Split Baseline Baseline Milestone Baseline Summary Progress Slippage ◆ ▲ ■ ▬ ▬							

Page 7

ID	Task Name	% Complete	Duration	Baseline2 Start	Baseline2 Finish	Anticip Start	Anticip Finish	Predecessors	Finish Variance	1st Half				1st Half			
										1st Half				1st Half			
										1st Q	2nd Q	3rd Q	4th Q	1st Q	2nd Q	3rd Q	4th Q
										M	J	S	M	J	S	M	J
6633	5th Floor	0%	283 days	Fri 22-04-22	Sun 14-05-23	Wed 05-10-22	Fri 14-07-23		61 days								
6687	6th Floor	0%	265 days	Tue 10-05-22	Sun 14-05-23	Sun 23-10-22	Fri 14-07-23		61 days								
6741	7th Floor	0%	250 days	Sat 28-05-22	Wed 17-05-23	Thu 10-11-22	Mon 17-07-23		61 days								
6795	8th Floor	0%	232 days	Wed 15-06-22	Wed 17-05-23	Mon 28-11-22	Mon 17-07-23		61 days								
6849	9th Floor	0%	214 days	Sun 03-07-22	Wed 17-05-23	Fri 16-12-22	Mon 17-07-23		61 days								
6903	10th Floor	0%	187 days	Tue 02-08-22	Sat 20-05-23	Sun 15-01-23	Thu 20-07-23		61 days								
6957	11th Floor	0%	172 days	Wed 17-08-22	Sat 20-05-23	Mon 30-01-23	Thu 20-07-23		61 days								
7011	12th Floor	0%	275 days	Thu 01-09-22	Fri 02-06-23	Sat 04-02-23	Sun 05-11-23		156 days								
7017	Staircase Finishes	0%	134 days	Sun 08-01-23	Sun 18-06-23	Fri 10-03-23	Fri 21-07-23		33 days								
7042	Elevation	0%	180 days	Thu 24-11-22	Mon 22-05-23	Sat 21-01-23	Wed 19-07-23		58 days								
7053	MEP Works	0%	204 days	Sat 24-12-22	Sat 15-07-23	Thu 23-02-23	Thu 14-09-23		61 days								
7099	Tower A4 (Club House)	14%	827 days	Sat 10-04-21	Mon 09-01-23	Sat 10-04-21	Sat 15-07-23		187 days								
7100	Structure Works	57%	620 days	Sat 10-04-21	Wed 20-07-22	Sat 10-04-21	Tue 20-12-22		153 days								
7208	Civil, MEP & Finishing Works	2%	409 days	Tue 01-03-22	Mon 09-01-23	Thu 02-06-22	Sat 15-07-23		187 days								
7209	Ground Floor - Banquet Hall, Conference Room, Informal work	4%	409 days	Tue 01-03-22	Tue 29-11-22	Thu 02-06-22	Sat 15-07-23		228 days								
7210	Block work	70%	15 days	Tue 01-03-22	Tue 15-03-22	Thu 02-06-22	Wed 24-08-22	7155	161.5 days								
7211	Plastering	20%	15 days	Tue 08-03-22	Tue 22-03-22	Mon 01-08-22	Wed 31-08-22	7210FF+7 days	161.5 days								
7212	IPS	0%	5 days	Wed 23-03-22	Sun 27-03-22	Wed 31-08-22	Mon 05-09-22	7211	161.5 days								
7213	MEP 1st Fix	0%	40 days	Mon 28-03-22	Wed 11-05-22	Mon 05-09-22	Sat 15-10-22	7212,7211	156.5 days								
7214	False Ceiling framing	0%	30 days	Wed 27-04-22	Thu 26-05-22	Thu 05-01-23	Fri 03-02-23	7212,7213FS+35 days,73	253 days								
7215	Sliding/Folding Wall Partition door support works above	0%	30 days	Wed 04-05-22	Thu 02-06-22	Thu 12-01-23	Fri 10-02-23	7214FF+7 days	253 days								
7216	MEP Droppers	0%	15 days	Thu 12-05-22	Thu 26-05-22	Sat 15-10-22	Sun 30-10-22		156.5 days								
7221	False ceiling board	0%	20 days	Fri 03-06-22	Mon 27-06-22	Sat 11-02-23	Thu 02-03-23	7217,7215,7218,7219,72	248 days								
7222	Paint - 1st coat	0%	15 days	Tue 28-06-22	Tue 12-07-22	Fri 03-03-23	Fri 17-03-23	7221	248 days								
7223	Flooring	0%	20 days	Wed 13-07-22	Mon 01-08-22	Sat 18-03-23	Thu 06-04-23	7222	248 days								
7224	Doors	0%	10 days	Tue 02-08-22	Thu 11-08-22	Fri 07-04-23	Sun 16-04-23	7223	248 days								
7225	Wall Finishes	0%	20 days	Fri 12-08-22	Sat 10-09-22	Mon 17-04-23	Sat 06-05-23	7224	238 days								
7226	Sliding/Folding Wall Partition finishes	0%	20 days	Sun 11-09-22	Mon 10-10-22	Sun 07-05-23	Fri 26-05-23	7225	228 days								
7227	Paint 2nd coat	0%	20 days	Tue 11-10-22	Sun 30-10-22	Sat 27-05-23	Thu 15-06-23	7225,7226	228 days								
7228	MEP 2nd Fix	0%	10 days	Mon 31-10-22	Wed 09-11-22	Fri 16-06-23	Sun 25-06-23	7227	228 days								
7229	Carpet Installation	0%	10 days	Thu 10-11-22	Sat 19-11-22	Mon 26-06-23	Wed 05-07-23	7224,7228	228 days								
7230	Furniture Installation	0%	10 days	Sun 20-11-22	Tue 29-11-22	Thu 06-07-23	Sat 15-07-23	7229	228 days								
7231	First Floor	2%	286 days	Sat 02-04-22	Fri 09-12-22	Mon 25-07-22	Sat 06-05-23		148 days								
7278	Second Floor	0%	195 days	Thu 19-05-22	Mon 19-12-22	Thu 27-10-22	Tue 09-05-23		141 days								
7296	Third Floor	0%	195 days	Wed 01-06-22	Tue 27-12-22	Wed 09-11-22	Mon 22-05-23		146 days								
7326	Terrace Floor Finishes - Party Hall	0%	60 days	Thu 27-10-22	Mon 09-01-23	Fri 07-04-23	Mon 05-06-23	7322FF+45 days,7313FF+	147 days								
7327	Staircase finishes	0%	79 days	Thu 19-05-22	Wed 24-08-22	Thu 27-10-22	Fri 13-01-23		142 days								
7344	Lift Works	0%	172 days	Mon 13-06-22	Mon 10-10-22	Thu 27-10-22	Sun 16-04-23		188 days								
Project: Residences @ WTC Task Split Milestone Summary Project Summary External Tasks External Milestone Inactive Task Inactive Milestone Inactive Summary Manual Task Duration-only Manual Summary Rollup Manual Summary Start-only Finish-only Deadline Critical Critical Split Baseline Baseline Milestone Baseline Summary Progress Slippage ◆ ▲ ■ ■ ■																	
Page 8																	

ID	Task Name	% Complete	Duration	Baseline2 Start	Baseline2 Finish	Anticip Start	Anticip Finish	Predecessors	Finish Variance		1st Half	1st Half
											d C 1st Q 3rd Q	d C 1st Q 3rd Q
											M J S M J S M J S	M J S M J S M J S
7367	Elevation	0%	120 days	Tue 21-06-22	Sun 27-11-22	Wed 16-11-22	Wed 15-03-23		108 days			
7383	Podium Area (Non tower area)	76%	1149 days	Sat 01-08-20	Thu 27-07-23	Sat 01-08-20	Sat 23-09-23		58 days			
7384	Structure Works	99%	753.5 days	Sat 01-08-20	Tue 22-02-22	Sat 01-08-20	Wed 24-08-22		182.7 days			
7555	Finishing Works	0%	395.5 days	Tue 22-02-22	Thu 27-07-23	Wed 24-08-22	Sat 23-09-23		58 days			
7572	Ground & Basement works	37%	870 days	Mon 03-05-21	Mon 06-11-23	Mon 03-05-21	Tue 19-09-23		-48 days			
7573	Zone 1(A1, A3 & NT - 50%)	58%	740.5 days	Mon 03-05-21	Sat 11-03-23	Mon 03-05-21	Sat 13-05-23		62.5 days			
7574	Basement 1	53%	589.5 days	Wed 01-09-21	Fri 10-02-23	Wed 01-09-21	Thu 13-04-23		62.5 days			
7575	Civil	78%	589.5 days	Wed 01-09-21	Fri 10-02-23	Wed 01-09-21	Thu 13-04-23		62.5 days			
7576	Blockwork	100%	20 days	Wed 01-09-21	Mon 20-09-21	Wed 01-09-21	Mon 20-09-21	468	0 days			
7577	Plastering	100%	15 days	Fri 29-10-21	Wed 29-12-21	Fri 29-10-21	Thu 30-12-21	7576	1 day			
7578	Ceiling Painting	100%	12 days	Sat 11-09-21	Fri 07-01-22	Sat 11-09-21	Thu 20-01-22	7577	13 days			
7579	Floor screed	90%	10 days	Fri 07-01-22	Mon 17-01-22	Tue 01-03-22	Thu 22-09-22	7775FF+5 days	248.2 days			
7580	Final painting,Column painting & flooring marking	0%	15 days	Thu 26-01-23	Fri 10-02-23	Wed 29-03-23	Thu 13-04-23	7579,8423SF-83 days	62.5 days			
7581	MEP	47%	464.2 days	Mon 04-10-21	Sat 31-12-22	Mon 04-10-21	Wed 11-01-23		10.2 days			
7613	Ground floor	36%	585.5 days	Mon 20-09-21	Fri 24-02-23	Mon 20-09-21	Fri 28-04-23		62.5 days			
7614	Civil	51%	585.5 days	Mon 20-09-21	Fri 24-02-23	Mon 20-09-21	Fri 28-04-23		62.5 days			
7615	Blockwork	100%	20 days	Mon 20-09-21	Fri 07-01-22	Mon 20-09-21	Fri 07-01-22	7576	0 days			
7616	Plastering	100%	15 days	Mon 04-10-21	Thu 13-01-22	Mon 04-10-21	Sat 08-01-22	7615,7577	-5 days			
7617	Ceiling Painting	90%	15 days	Fri 15-10-21	Wed 12-01-22	Fri 15-10-21	Thu 18-08-22	7578	218.2 days			
7618	Floor screed	0%	30 days	Mon 17-01-22	Thu 27-01-22	Mon 12-09-22	Wed 12-10-22	7617,7696FF+15 days	258.2 days			
7619	Column painting & flooring marking	0%	15 days	Fri 10-02-23	Fri 24-02-23	Thu 13-04-23	Fri 28-04-23	7580	62.5 days			
7620	MEP	29%	456.5 days	Mon 15-11-21	Fri 20-01-23	Mon 15-11-21	Tue 14-02-23		24.5 days			
7649	Basement 2	71%	740.5 days	Mon 03-05-21	Sat 11-03-23	Mon 03-05-21	Sat 13-05-23		62.5 days			
7690	Zone 2(A4, A2 & NT-50%)	36%	596.5 days	Mon 08-11-21	Tue 25-04-23	Mon 08-11-21	Tue 27-06-23		62.5 days			
7808	Electrical rooms- A1	14%	629 days	Fri 01-10-21	Sun 19-02-23	Fri 01-10-21	Wed 21-06-23		122 days			
7820	Electrical rooms- A2	0%	383 days	Thu 23-06-22	Mon 06-11-23	Fri 02-09-22	Tue 19-09-23		-48 days			
7831	DG Works - Phase 1	0%	167.1 days	Sat 23-04-22	Mon 16-01-23	Thu 13-10-22	Wed 29-03-23		71.6 days			
7856	DG Works - Phase 2	0%	391.5 days	Wed 13-04-22	Thu 17-08-23	Wed 24-08-22	Tue 19-09-23		33 days			
7881	Mechanical Car parking	0%	250 days	Wed 01-03-23	Sat 28-10-23	Tue 25-04-23	Sun 31-12-23		63.5 days			
7888	External Development Works	14%	1137 days	Tue 29-12-20	Fri 05-01-24	Tue 29-12-20	Thu 08-02-24		34 days			
8366	Post Construction	12%	1008.5 days	Wed 08-12-21	Thu 07-03-24	Wed 28-07-21	Thu 02-05-24		55.5 days			
8367	Phase 1	12%	827.5 days	Thu 09-12-21	Sat 09-09-23	Wed 28-07-21	Fri 03-11-23		54.5 days			
8368	Fire Compliance - A1 & A4	4%	365.5 days	Wed 19-01-22	Tue 09-05-23	Sat 25-06-22	Sun 25-06-23		46.5 days			
8413	CC - A1 & A4	0%	326.5 days	Thu 02-06-22	Mon 10-07-23	Wed 12-10-22	Sun 03-09-23		54.5 days			
8426	CTO	0%	162.5 days	Mon 15-05-23	Sat 09-09-23	Wed 24-05-23	Fri 03-11-23		54.5 days			
8433	CEIG	12%	806.5 days	Wed 28-07-21	Sat 19-08-23	Wed 28-07-21	Fri 13-10-23		0 days			
8482	Phase 2	2%	738.5 days	Wed 08-12-21	Thu 07-03-24	Sun 24-04-22	Thu 02-05-24		55.5 days			
8483	Fire Compliance - A2 & A3	4%	606 days	Wed 08-12-21	Sat 28-10-23	Sun 24-04-22	Thu 21-12-23		54 days			
Project: Residences @ WTC Task Split Milestone Summary Project Summary External Tasks External Milestone Inactive Task Inactive Milestone Inactive Summary Manual Task Duration-only Manual Summary Rollup Manual Summary Start-only Finish-only Deadline Critical Critical Split Baseline Baseline Milestone Baseline Summary Progress Slippage ◇ ▲ ▬ ▬ ▬												
Page 9												

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INTRODUCTION

PARAMETER	CONVENTINAL FORMWORK	MIVAN FORMWORK
Quality	Conventional formwork provides normal quality structural members.	Mivan formwork provides superior quality due to monolithic casting of structural members as casting is done in continuous operation.
Construction speed / work pace	Speed of construction is very slow while using conventional formwork due to step by step construction.	While using mivan formwork concrete can be poured for wall with roof in single site operation and thus, increasing pace of work.
Cost with respect to total project cost	Conventional formwork costs about (10 to 15) % of total project cost.	Mivan formwork can cost up to (20 to 25) % of total cost of project.
Future modifications	Future alterations were easily possible while conventional formwork were in use.	If mivan formwork is used, future changes are difficult, in fact not possible in most cases.
Maintenance cost	Maintenance cost is high in case of conventional formwork, due to damages caused.	In case of mivan formwork, maintenance cost is least or say, negligible.
Plinth area usage	Conventional formwork has lower efficiency than mivan formwork, in terms of plinth area usage.	Mivan formwork results into approximately 87.5% efficiency. This might be due to thin shear wall.
Ease to carry	Various conventional formwork such as wooden or steel formwork are difficult to carry due to their heavy weight.	Mivan formwork is very lightweight and quite easy to carry.
Resistant to seismic forces	Comparatively lower resistant to seismic forces.	Structures formed by using mivan formwork are comparatively more resistant to seismic forces.
Durability	Lower	Higher
Miscellaneous problems such as leakage and moisture absorption.	Conventional formwork faces various unwanted problems such as, leakage and absorption of water in wooden formwork, corrosion in steel formwork, etc.	Mivan formwork is totally free from such issues.

ADVANTAGES

- Mivan formwork is **light in weight** so, it can be handled easily
- As it has a fixed set of procedure its installation doesn't require any skilled labour
- Superior quality is obtained due to casting of whole structural components together, resulting into monolithic construction
- More resistant to seismic forces
- Rapid pace/ High construction speed due to which whole construction is completed in less duration, making this technique economically sound by reducing indirect costs of project
- Lower maintenance required as the number of joints is less
- Efficient in terms of plinth area usage
- Provides a natural aesthetics as the surfaces formed are smooth. Further, no requirement of plastering
- Formwork panel can be used as much as 200 times
- Aluminum does not have corrosion problem such as steel
- Less fabrication cost and correspondingly less debris generation

FORMWORK DRAWINGS

Site will be provided with a set of formwork drawings which entailed the followings: -

- Shell Plan Layout
- Formwork layout drawings,
 - Wall panel Layout,
 - Slab Panel Layout,
 - Starter Block Layout,
 - Corner Layouts,
 - Beam Panel Layout,
 - Soffit Layout,
 - Staircase Layout,
 - Bracket and Soldier layout,
 - Miscellaneous Layout which includes sunken portion, up stand portion etc.,
- Elevations and sections drawings indicating the location of formwork panels component,
- Typical Fixing Detail drawings,
- Location of Box outs and Transfer Box out drawings for transfer of Formwork, etc.

TRAINING

All persons who may be exposed to workplace health and safety risks resulting from the use of formwork equipment are provided with information and training which include the following details: -

- The formwork system and its accessories,
- The method of assembly and dismantling of the formwork equipment,
- Safe working measures, including the use of mechanical aids and devices where appropriate,
- The use and maintenance work, including requirement and prohibitions on the use of the formwork equipment,
- The use of personal protective equipment at work site.

SAFETY

- Control measures are taken to identify and minimize the hazards associated with work involving the assembly and dismantling of formwork equipment such as falls from height, slips, falling objects, noise, dust and manual tasks.
- The external working brackets/platforms or scaffoldings are not be used to stack materials or equipment.
- Mixing of formwork components should be avoided to prevent unsafe installation.
- Partially assembled or dismantled formwork are secured during break time to prevent against overturning or collapsing due to strong wind or accidentally / unintentionally knock over by workers.
- Protruding flat ties or projecting nails should be removed immediately with appropriate tools at dismantling stage.
- Use of personal protective equipment by all persons working at work areas (such as safety harness, safety helmets, eye protection etc) should be strictly implemented.

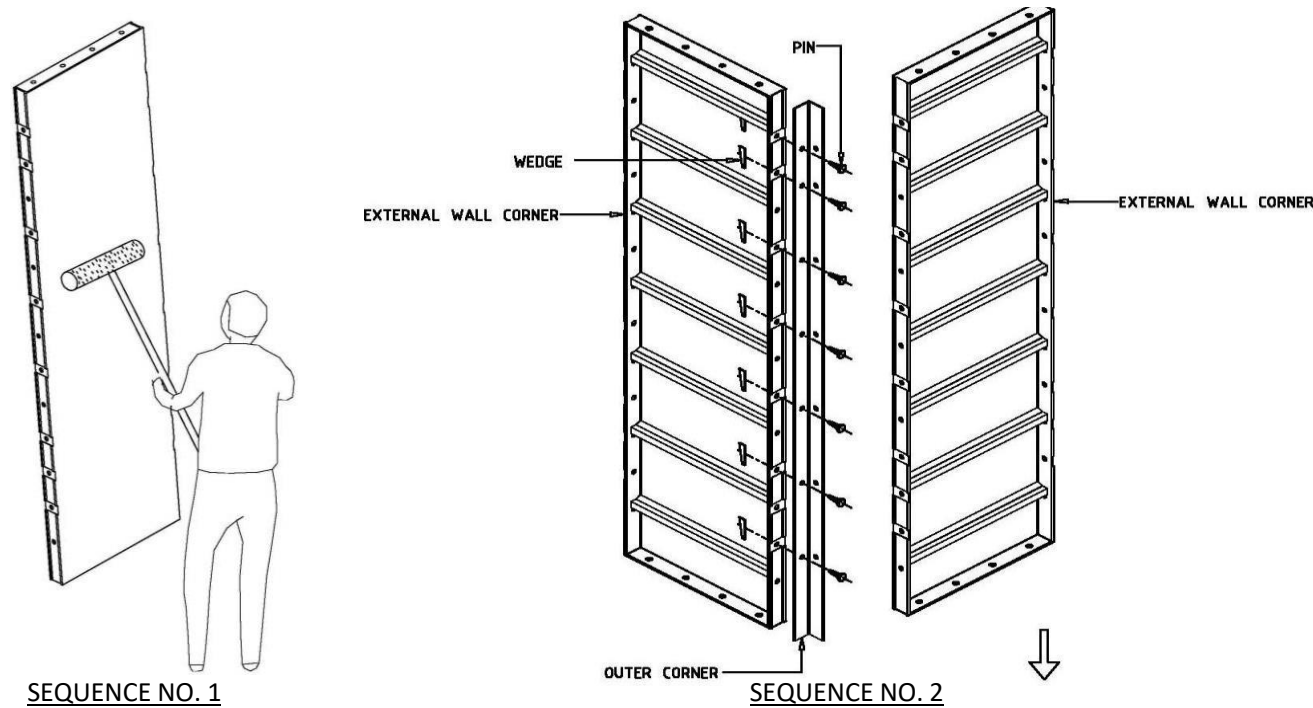
ASSEMBLY PROCESS

SEQUENCE NO. 1

Form Release agent (Solvent based) to be applied on the surface of all the panels before the assembly process.

SEQUENCE NO. 2

Outer Corner is fixed to External Wall Corner panel by round pin and wedge.

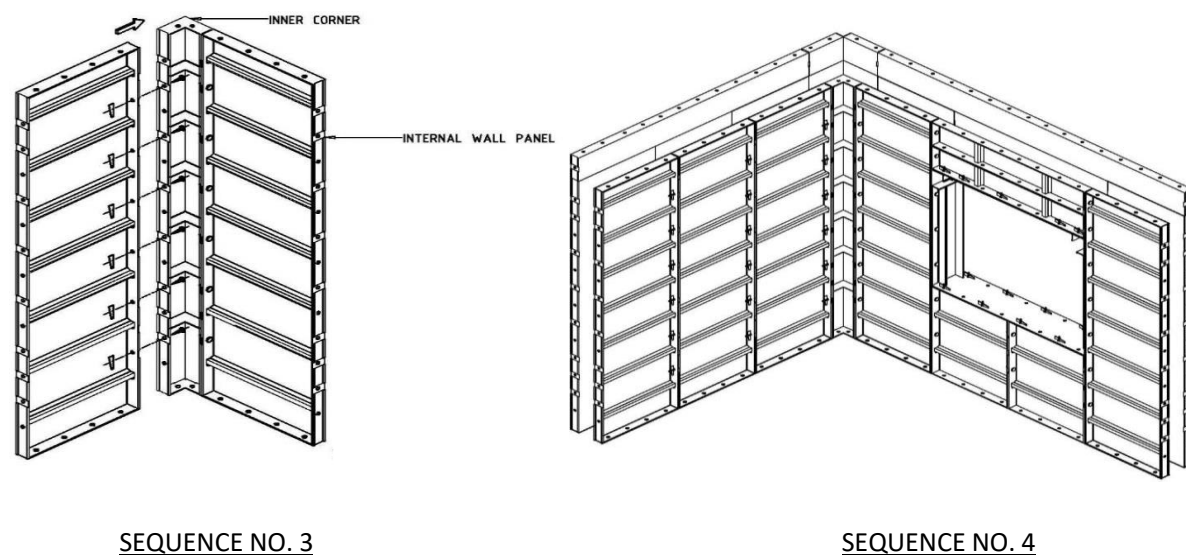


SEQUENCE NO. 3

Inner Corner is fixed to the Internal Wall panels by round pin & wedge. The Internal and External Wall Panels are held by Flat Tie with Tie Bar Shield in between the panels.

SEQUENCE NO. 4

Repeat Sequence No. 3 to complete the assembly of both the Internal and External Wall Panels.

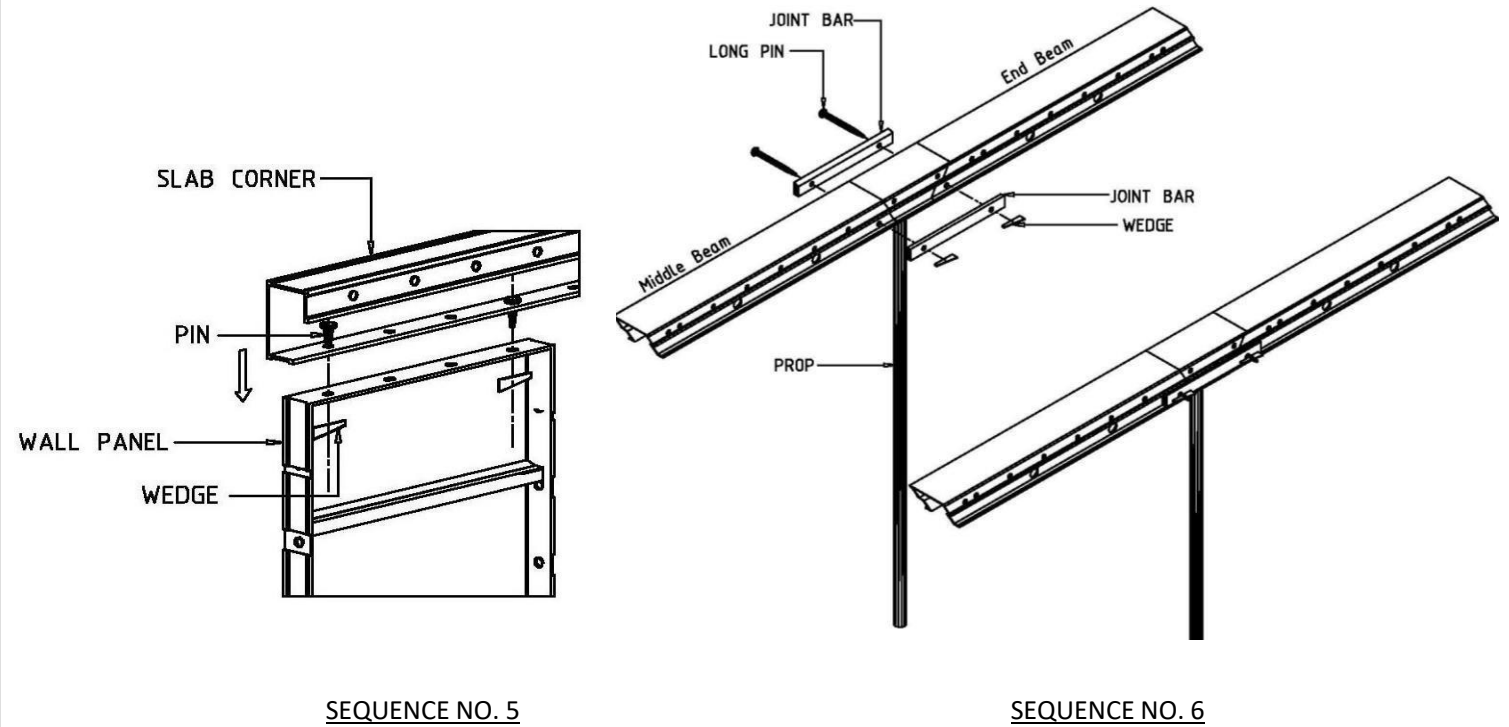


SEQUENCE NO. 5

Install Slab Corner on the top portion of the Wall Panels with round pin & wedge.

SEQUENCE NO. 6

S-form and Prop head are combined by Beam splice bar with long pin and wedge at the bottom section

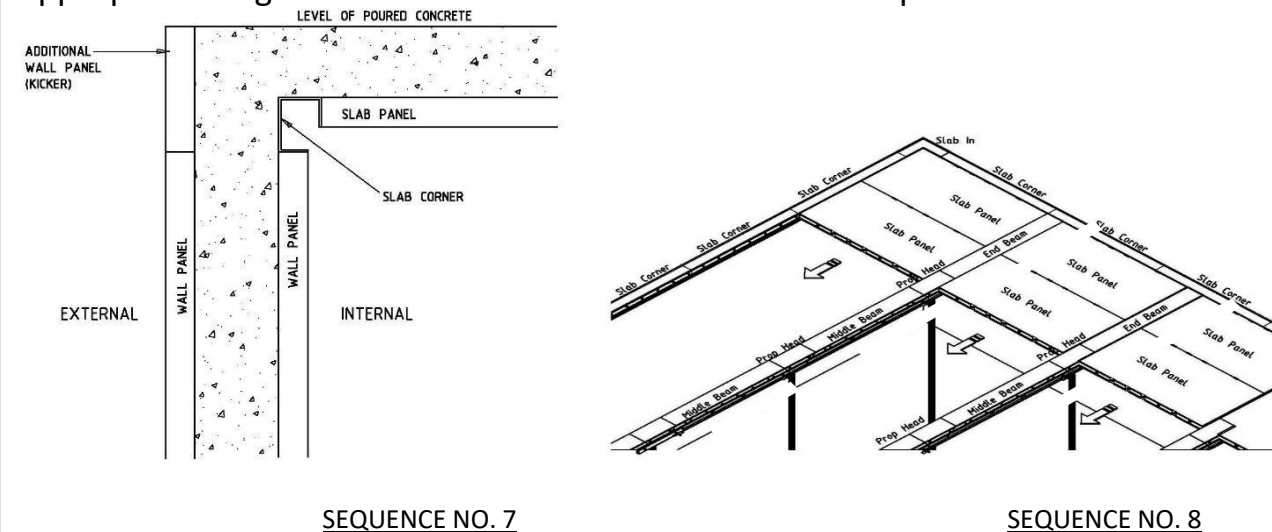


SEQUENCE NO. 7

Start the assembly of the Slab Panels from the Slab corner Internal. Subsequently, fill out the whole slab area by pinning the slab panels together with the s-form (Comprises of s-form and cantilevers).

SEQUENCE NO. 8

Additional Wall Panels (or Kickers) are fixed to the external Wall Panels to raise to the appropriate height to contain the slab concrete when it is poured

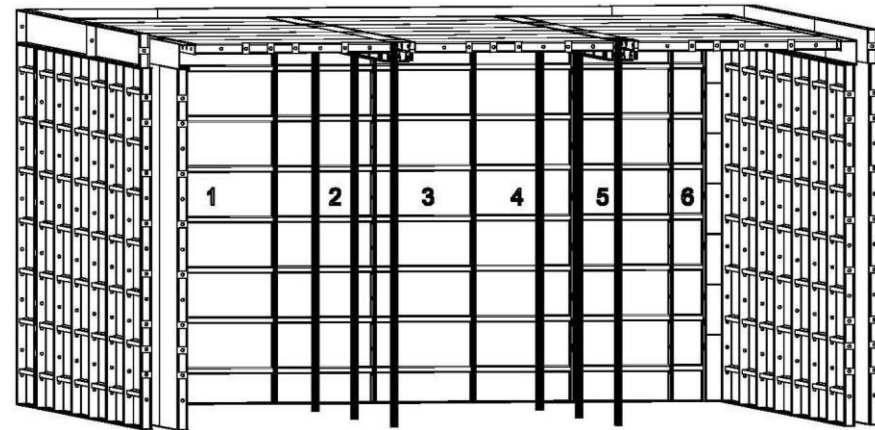


SEQUENCE NO. 9

Upon completion of the installation and fixing of the Wall and Slab Panels, a numbering sequence will be made for each of these panels with colour identification scheme to differentiate each of the unit area such as bedrooms, living room, bathroom etc. This numbering and colour identification scheme will ensure that each panels can be determined as to their exact location once they are transferred to the next level for installation.

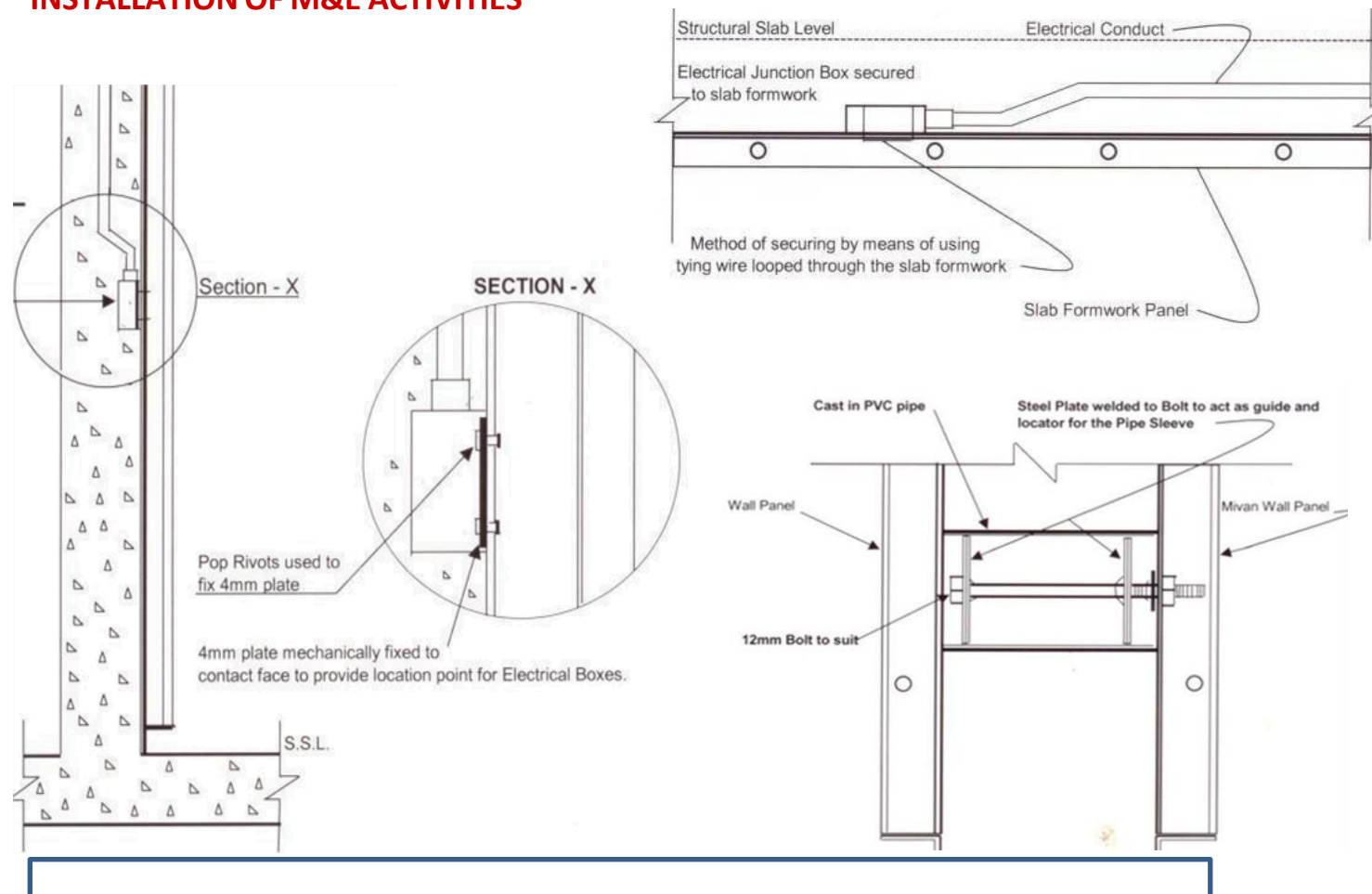
SEQUENCE NO. 10

Always ensure that wall ties, pins and wedges are properly installed and secured before pouring concrete into the forms. Ensure that concrete pouring is distribute evenly throughout the Wall Panels section before commencing to cast the slabs level area.



SEQUENCE NO. 9

INSTALLATION OF M&E ACTIVITIES



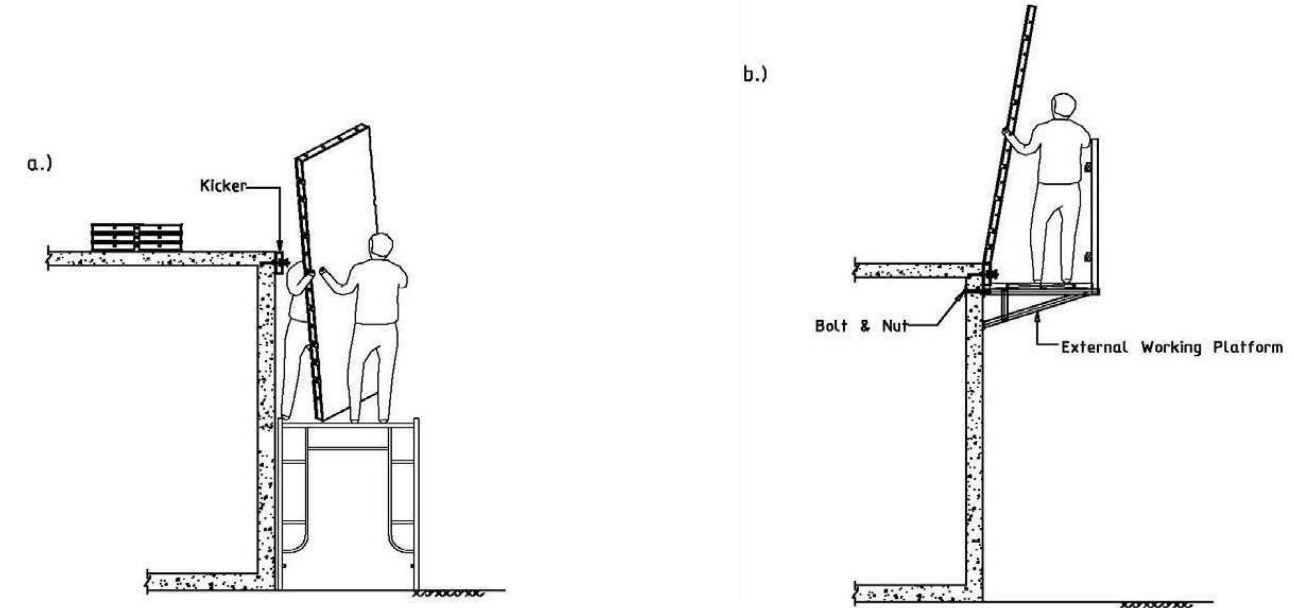
DISMANTLING PROCESS

SEQUENCE NO. 1

After 12 hours, remove the Internal Wall panels by knocking out the wedges and pins. The Wall Panels are to be moved to upper floor through the slab opening as shown.

SEQUENCE NO. 2

After removing the External Wall Forms (the starter Block (kicker) should remain undisturbed), the dismantled wall forms are moved to upper floor. Access Scaffolding is use for transferring of external wall panels from the ground floor level. For level 1 and above, an external working platform is fixed to the external wall. The external wall forms from level 1 onward shall be supported by the kickers. (These steps are to be repeated from one floor to another floor).



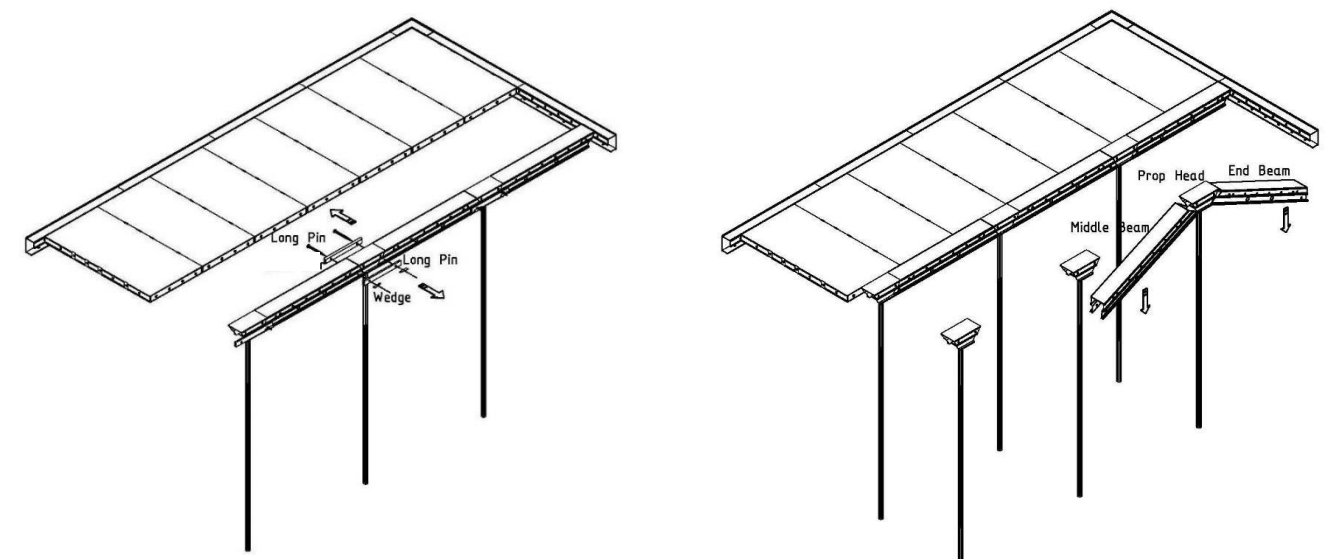
SEQUENCE NO. 2

SEQUENCE NO. 3

After removing the Wall Panels, proceed to the Slab Panels after 36 hours by removing the long pins and wedges on the joint bars the end and middle beam section.

SEQUENCE NO. 4

Upon removing the S-form and S-Form cantilevers, the prop shall remained undisturbed during this process to support the concrete slab.



SEQUENCE NO. 3

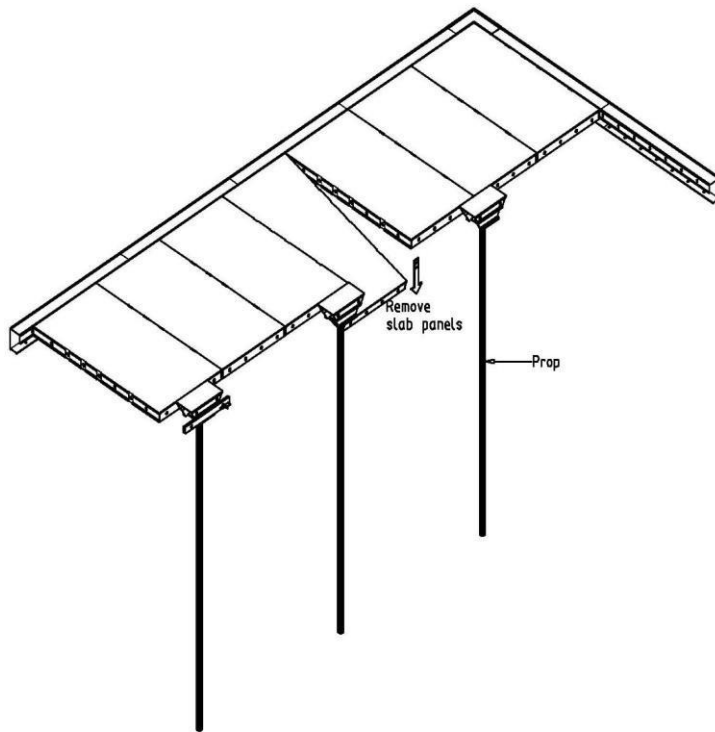
SEQUENCE NO. 4

SEQUENCE NO. 5

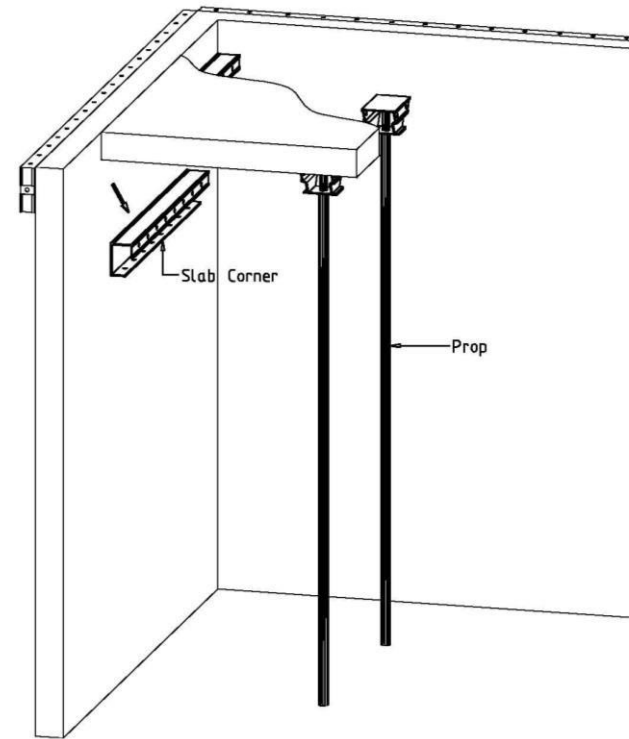
Proceed to strip the Slab Panels and transfer to the next level according to the designated area and installation sequence.

SEQUENCE NO. 6

Strip the Slab Corner.



SEQUENCE NO. 5



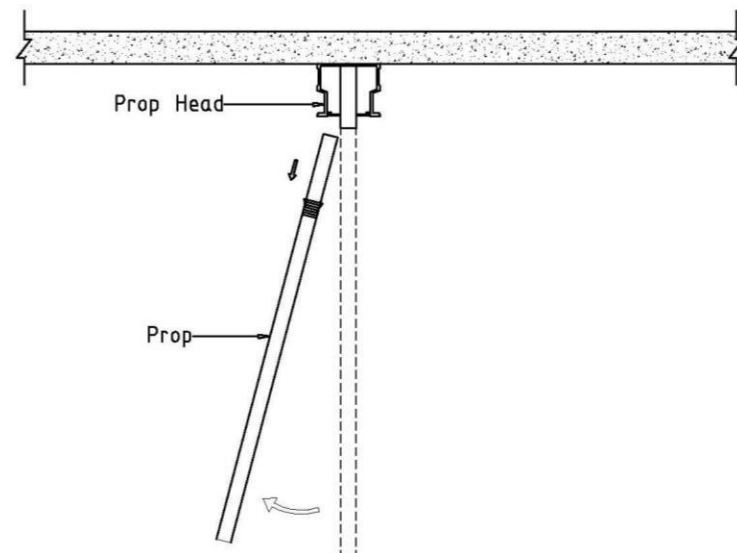
SEQUENCE NO. 6

SEQUENCE NO. 7

Pull out Wall flat Tie using Wall Tie puller and remove the Wall tie sleeve using Nose player.

SEQUENCE NO. 8

When the cube tests show that the slab concrete is sufficiently strong, the prop together with the prop heads are removed and transferred to the next level.



SEQUENCE NO. 8

CHECKLIST FOR ALUMINIUM FORM WORK - SLAB & BEAMS		CHECK LIST NO.	CL-ENG-COM 07		
		PAGE NUMBER	1 of 1		
		ISSUE DATE / REVISION NO.	01-Jun-2020 / 00		
PROJECT NAME: BWTR		DATED: 16/8/22			
LOCATION: Flat - 6 - A2 - 1st to 2nd floor slab		TIME:			
Sl.No	Description	YES	NO	NA	REMARKS
1	Check whether the latest relevant drawings are available	/			
2	Check Shear wall layout before starting shuttering work.	/			
3	Check Shear wall reinforcement as per structural drawing as per reinforcement checklist before starting shuttering work.	/			
4	Check Shear wall cover block fixing before starting shuttering work.	/			
5	Check whether the form work surface is given a coat shuttering oil of approved quality	/			
6	Check the Electrical boxes are fixed properly in shear wall as per drawing.	/			
7	Check whether all the wall tie and wedge pins are fixed properly.	/			
8	Check whether the waller are fixed properly	/			
9	Check whether shuttering is in proper right angle, alignment and verticality	/			
10	Check whether the slab is properly levelled and the vertical supports properly checked	/			
11	Check for the dimensions as per the drg.	/			
12	Check depth and width of the beam	/			
13	Check the Kicker alignment and level	/			
14	Check whether the outer side wall bracket is fixed	/			
15	Check whether the slab electrical conduits are placed properly as per drawing.	/			
16	Check DB cut-outs, door, window & ventilator openings as per architectural drawing	/			
17	Check stoppers in construction joint	/			
18	Check for window Flns/External Architectural features/Drip mould Grooves/Ledge walls	/			
19	Check for cut-outs and plumbing sleeves as per the MEP drawings	/			
20	Check for Aluminium Shuttering Sets Identification coding	/			
CORRECTIVE ACTIONS PROPOSED:		REPORT:			
1					
2					
CONTRACTOR: S. H. Subram		CLIENT:			
Project Engr.	Project Mngr.	Project Engr.	Project Mngr.		
Signature	Prepared	Checked	Approved by HOD		
			Approved by M.A.		

CHECKLIST FOR REINFORCEMENT WORKS	CHECK LIST NO.	CL-ENG-CON-02
	PAGE NUMBER	1 of 1
	ISSUE DATE / REVISION NO.	01-Jun-2020 / RO

PROJECT NAME: BWTR DATED: 16/8/22
 LOCATION: A2 - flat - 6 1st to 2nd floor slab TIME:

Sl. No.	Description	YES	NO	NA	REMARKS
1.	Check whether the latest relevant GFC drawings are available	☒			
2.	Check whether the reinforcement is free from dust, dirt, corrosion etc.,	☒			
3.	Check that the steel has passed the required tests	☒			
4.	Check Nos, Size and spacing of bars, lap lengths etc.,	☒			
5.	Check for alignment and position of reinforcement	☒			
6.	Check for the clean cover from the main reinforcement & Cover Blocks	☒			
7.	Check for Laps Location of bars	☒			
8.	Check for the spacing of bars / stirrups	☒			
9.	Check for the chairs for slabs	☒			
10.	Check for the joggle joint in the column beam junctions	☒			
11.	Check for the tension & torsion reinforcement	☒			
12.	Check for skin / face reinforcement for beams	☒			
13.	Check for dowels required if any	☒			
14.	Check for anchorage to the top and bottom bars of beams	☒			
15.	Check for pins/spaces for two layer reinforcements	☒			

CORRECTIVE ACTIONS PROPOSED:

1	
2	

REPORT:

CONTRACTOR:		CLIENT:	
<u>S. H. Subram</u> Project Engr.	<u>S. H. Subram</u> Project Mngr.	<u>S. H. Subram</u> Project Engr.	<u>S. H. Subram</u> Project Mngr.
SIGNATURE	PREPARED	CHECKED	APPROVED BY HOD
			APPROVED BY M.A.

FORMAT -
CONCRETE POUR CARD

SECTION NO.	FM-ENG-GEN-06
PAGE NUMBER	Page 1 of 1
DATE / REVISION NO.	30-May-2022 / R1

CONCRETE POUR CARD					
1.	Project Name:	<u>BWTR</u>			
2.	Pour location/Member:	<u>A2 - 1st to 2nd floor Flat - 6.</u>			
	Grid:	<u>Level: 110.50 m.</u>			
3.	Grade of Concrete:	<u>M40 SDC & M40 SDC.</u>			
	Approx. qty:	<u>75 m³</u>			
4.	Reference Drawing:	<u>M40 SDC</u>			
5.	Request for Inspection	1. Date:	16/8/22	Time:	10.00pm
		2. Date:		Time:	
6.	Pre-Pour Checks:	<u>points enclosed</u>			
Items	Contractor	BEL	Non-conformance (if any)	Measurements of elements invisible post concreting	Sign & Date
Layout	☒	☒			
Reinforcement	☒	☒			
Cover blocks	☒	☒			
Form work including staging	☒	☒			
Electrical conduiting	☒	☒			
Cutouts / Sleeves & inserts	☒	☒			
Cleanliness	☒	☒			
Construction Jt. Detail	☒	☒			
7.	No. of Cubes to be cast (min. 6 Nos. per 50 Cum):				
8.	Remarks:				
	Approved for concreting (✓) <u>APPROVED</u>				
	Re-inspection on date: <u>17/8/22</u>				
9.	Date of concreting:	17/8/22			
10.	Instructions / Details enclosed:				
11.	Casted Cube identification No.s				
	C-1	C-2	C-3	C-4	C-5
	C-6	C-7	C-8	C-9	C-10
	C-11	C-12			
PREPARED BY:	<u>S. H. Subram</u>		VERIFIED BY:		
CONTRACTOR'S ENGINEER	<u>S. H. Subram</u>		PROJECT ENGINEER <u>S. H. Subram</u>		
Signature of Structural Consultant:					
Note: Signature of structural consultant is required for all critical concrete					

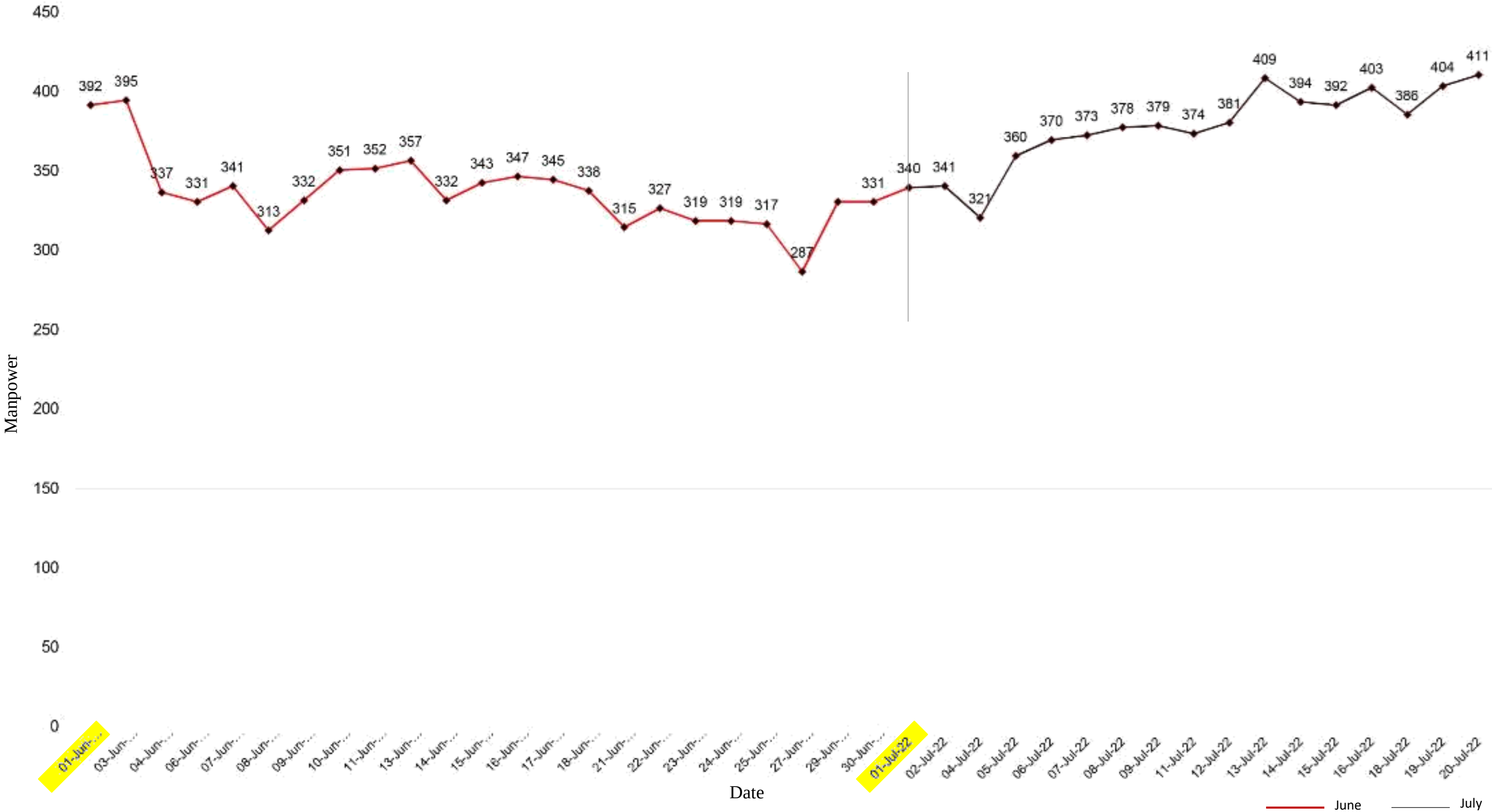
SIGNATURE	PREPARED	CHECKED	APPROVED BY HOD	APPROVED BY M.A.

Manpower Histogram report

Committed manpower on **15-Jul-22** would be **511**, where the actual is **411** as on 22-Jul-22. **100 nos** short fall, which is majorly on Mason, tile, & Finishes team.

The concern on the slow progress at clear work front is due to shortfall in labor strength which has impact of **major 73 days delay** in works schedule.

Manpower	Committed for	Actual at site	Average		Committed for	Available at site on
Trade	30th June22	30 th June 22	July -1 st week	July -2 nd week	15 th Ju1 22	21 th July 22
Total Labour Strength	411	331	364	392	511	419



Sl.No	Concern Description	Action Plan to Close the Concern
1	Use of Damaged MS platforms and Ladders & material shortage of the mentioned items	300 meters of working platform required (width :0.6 to 0.8m) – 2 sets (Minimum) - Minimum of 25 Nos ladders required of height (1.5 to 2m) - Minimum of 20 Nos ladders required of height (3m and above)
2	Unsafe height work using scaffolding concerns not addressed since last meeting.	- Every day scaffolding inspection and TAGGING - Appointing Scaffold inspector or Scaffolding Guru External height work training for JMC site staffs
3	Site Electrician Shortage / Poor quality electrical cables / Implementation of single pole MCB still pending.	4 Additional number of electricians to be deployed during day shift. 150 number of single pole MCB's to be purchased (40 Nos DB's to be changed with single pole MCB) - Branded products to be used : Cable – Polycab / RCCB – legrand - local products other than the above mentioned will be rejected if purchased in future.
4	Non availability of Hazardous waste and chemical storage at site / Spillage control / Concrete waste NOC.	Separate Stores needed for Chemical and Hazardous waste NOC to be received by JMC from the land owner regarding the concrete waste disposal. 3m x 6m sized dip trays 10 Nos to be purchased and used to control spillage
5	Mivan Work sequence failure – External Bracket Fixing in T-A2	External platform to be provided before started work at edges for A2- 2nd floor.
6	Manufacturer Maintenance for Tower Crane and Passenger Hoist 6 - Major Breakdowns and parts failure recorded since April 2022	- Manufacturer annual maintenance enrollment to be done for TC and PH - Frequency 3 months - Report must be shared to M/s BEL & JLL
7	Concrete pipe line inspection frequency to be set and done at site	- Pipe line thickness measuring gauge to purchased. Inspection to be done every 3 months or after major concreting.
8	Confined SPACE work requirements.	Oxygen meter, Exhaust fan for ventilation and emergency rescue kit to be made available at site. - Must be made available before starting confined space water proofing work



EHS OBSERVATION TRACKER From 01-7-2022 to -31-7-2022		
Sl.No	OBSERVATIONS POINTS	Total Observations : 105
1	Unsafe access to workplace	6
2	Working without applicable PPE's	
3	Safety Helmet	0
	Safety Shoes	1
	Safety Harness	0
	Hand Gloves and Goggles	0
4	Working on height without safety harness and work permit	2
5	Unsafe Electrical connections , cables laid on floor	9
6	Unguarded cut-outs (shafts, Lift openings etc.)	16
7	Protruding steel rods (U Bar on floor, steel rods etc.)	1
8	Poor illumination	2
9	Curing water logging	0
10	Damaged curing hose	0
11	Concrete wastage (Batching plant, site, near pump)	0
12	Unsafe working platform	41
13	Oil spillage	0
14	Using wooden ladder/short length ladder/Ladder without handrail	1
15	Unsafe deshuttering	0
16	Dust pollution from Batching Plant/Road	1
17	Loose shuttering material hanging	3
18	Uncleaned Safety nets	0
19	Unsafe stacking of shuttering material	0
20	Unhygienic toilet and drinking water facility	0
21	Unauthorised plant and Machinery Operation	7
22	Housekeeping	2
23	Scattered nails	0
24	Smoking at site	0
25	Consuming tobacco products	0
26	Uncharged fire extinguisher/ Hot works without fire extinguisher	0
27	Poor first aid arrangements	0
28	Engaging child workers	0
29	Excavation	6
30	Confined space	7

Monthly Safety Joint Program					JLL, JMC,NKS,SRE,SAN, Sri Vignesh,GEFAB, Stonemart
August 2022					
Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1	2	3	4	5	6
2:30pm - MEP Vendors HSE Documents Inspection	2:30pm - JMC HSE Documents Inspection	IMS 3rd internal Audit	2:30pm - NKS & Shrivignesh - Safety belts,Electrical distribution boards and fire extnguisher and power tools monthly safety inspection	2:30pm- Santech & Sree Electrical- Safety belts,Electrical distribution boards and fire extnguisher and power tools monthly safety inspection	2:30pm- GEFAB Safety belts,Electrical distribution boards and fire extnguisher and power tools monthly safety inspection
			2:30pm - Fire Extinguisher Inspection	2:30pm - Barbending & Cutting Machine Inspection	2:30pm - Earth pit ,DG & DB & RCCB Inspection
				Santech - Height Work Training / Fall arrestor	Training - Mivan shuttering safety
8	9	10	11	12	13
10:00am - Safety committee meeting	2:30 pm - Formwork Checklist Aluminium Shuttering, Safety net inspection Floor edge protection.	2:30 pm - Batching plant inspection, Mateial hoist & passenger hoist Inspection	2:30 pm - Waste Management Checklist - JMC	12:00pm - Environment, Health and Safety Checklist for Civil Works	2:30pm - Formwork Checklist Conventional Shuttering,Scaffolding Inspection
2:30 PM - Environmental Site Inspection Checklist	2:30pm- Environment, Health And Safety Checklist (For MEP, Lift, Structural Fabrication Works)		2:30 pm - Waste Management Checklist - MEP Vendors	2:30 pm- Tower crane Inspection	2:30pm- Stonemart, Electrical distribution boards and fire extnguisher and power tools monthly safety inspection
			Training - Shri Vignesh Working at height/shafts works		Training - Scaffolding safety
15	16	17	18	19	20
	12pm- Environment, Health And Safety Checklist (For MEP, Lift, Structural Fabrication Works)	12:00pm - First aid room and box inspection	2:30pm- Mateial hoist & passenger hoist and SCP Inspection.	2:30pm- Vehicle inspection & Stautory check	12:00pm - Environment, Health and Safety Checklist for Civil Works
		4.00pm MEP All Vendor Stores, First Aid Box and Material Stacking Inspection		2.30pm- All MEP / Geefab / StoneMart Statutory checking	
	2:30pm- Environmental Site Inspection Checklist	2:30pm - Batching plant inspection			2:30pm - Power tools Inspection Tower A1
		Training -NKS - Hot work safety requirements.			Training - Fire safety
22	23	24	25	26	27
12:00pm - Mandatory PPE'S availability inspection and Covid 19 - Preventive Measure Check	12pm- Environment, Health And Safety Checklist (For MEP, Lift, Structural Fabrication Works)	12:00pm - Batching plant inspection	12:00pm - Environment, Health and Safety Checklist for Civil Works	2:30pm - Safety harness inspection T-A3&A4	2:00pm - Safety motivation program
		4.00pm Geefab / Stonemart Stores, First Aid Box and Material Stacking Inspection			
2:30pm - Environmental Site Inspection Checklist	2:30pm - Safety Harness inspection T-A2	2:30pm - Safety harness Inspection T-A1	2:30pm- Mateial hoist & passenger hoist and SCP Inspection.		2:30pm- Tower crane Inspection
			Training - Geefab - Height work safety requirements.		Training - Lifting safety - all crane and lift operators.
29	30	31			
2:30pm - JMC - Lifting Tool and Gears Inspection	2:30pm - Environment, Health And Safety Checklist (For MEP, Lift, Structural Fabrication Works)	HOH Audit			

FIRST AID INJURY DETAILS

PROJECT & LOCATION		Brigade Residences @WTC, Chennai.							Jun 2022 to Dec 2022			
S.No	Date & Time injured	Source of Injury	Nature of Injury	Vendor's name	Injured Person Name	Age /Sex	Body part injured(In detail)	Treatment	Date-Time of injured resumed to work	Root cause	corrective Action taken	Remarks
1	11.06.2022	Materials Handling	Laceration	M/s.JMC Project (India) Ltd	Samir kr acharya	39 Male	Left hand thumb finger Scratch injury	First Aid	11.06.2022	Failure to follow safety norm (including PPEs)- Worker was engaged for masonry work at , while he was breaking the solid block by using of hammer which hit on his left hand thumb finger and got injury on his same finger.	1. Hand gloves provided to workers who involved in block work . 2. Safety awareness training conducted to workers who involved in block work. 3. Instructed site supervisor to ensure the hand gloves while workers are working the block work.	
2	11.06.2022	Materials Handling	Laceration	M/s.JMC Project (India) Ltd	Nilratan mondal	49 Male	Left hand thumb finger injury	First Aid	11.06.2022	Failure to follow safety norm (including PPEs)- Worker was engaged for staircase deshuttering works, while deshuttering, one shuttering board fell and hit on his left hand thumb finger and got a small injury on his thumb finger of left hand.	1. Hand gloves provided to workers who involved in shuttering and deshuttering work . 2. Safety awareness training conducted to workers who involved in shuttering and deshuttering work. 3. Instructed site engineer to ensure the hand gloves while workers are doing the shuttering works.	
3	22.06.2022	Materials Handling	Laceration	M/s.JMC Project (India) Ltd	Basanth Nayak	46 Male	Left hand elbow scratch injury	First Aid	22.06.2022	Improper access- Worker was engaged in de watering work, while he is shifting cotton hose pipe for de watering to basement floor, he slipped on floor of basement 2 and fell in rain water small drain and hit his left hand elbow on floor and got a scratch injury on his left hand elbow.	1. Instructed dewatering team to ensure the access before entering into basement floor for dewatering work and don't enter into barricaded area and dedicated supervision also at dewatering area.	
4	18.07.2022	Shuttering Work	Scratch Injury	M/s.JMC Project (India) Ltd	Ajit Besra	34 Male	Right leg knee	First Aid	18.07.2022	Improper access - Improper material stacking Safe access or dedicated walk ways not declared. Lack of supervision	Must maintain safe material stacking Always maintain material free passage or access way Tower incharge must check daily material stacking condition and must maintain hazard free access and pathways at site.	
5	21.07.2022	Buffing work of mivan boards	Scratch Injury	M/s.JMC Project (India) Ltd	Sanjib Murmu	30 Male	Left abdomen	First Aid	21.07.2022	Loose clothes (reflective jacket) got pulled in while worker was using the power tool.	Awareness training provided to the buffing team regarding safe power tools operations and Do's and Don'ts Strict monitoring or damaged and loose reflective jacket will be done and such loose jackets will be replaced (especially for power tools handling workers)	
6	30.07.2022	Material Handling	Crush Injury on ring finger	M/s.NK Sanitation Pvt Ltd	Mr. Nayav	45/ male	Left hand ring finger	First Aid	30.07.2022	Adequate packing or floaters not used during unloading and material stacking by workers	1. Awareness pep talk given to all team members. 2. Instruction given to use 4 inch runners or wooden floaters below the material stacking area to avoid future accidents.	

E H S	Checklist for Aluminum Shuttering	Ref. No.: BG/CL/EHS/06B/ R0
		Date: 01-June-2020 / R0
		Frequency: Before slab casting

Project Name: BWTR	Agency name: Jmc Projects (P) Ltd
Brigade Staff Name:	Contractor Staff Name: Ranjith Kumar
Location/Block/Floor: Site - T. A2 2nd floor (Poc. 1)	Date: 5/8/22

Sl. No.	Description	Condition	Modification required	Remarks
ALUMINIUM FORM WORK SHUTTERING				
1	Is the toolbox talks done for workers engaged for shuttering works?	Yes		
2	Are the workers using applicable PPEs?	Yes		
3	Presence of experienced supervisor keeping a continuous watch for any dangerous situation.	Yes		
4	Is the permit for height works taken before commencing the work?	Yes		
5	Is the access free from obstruction to reach the shuttering area with proper stacking of material?	Yes		
6	Adequate supply of spare props, clamps, bolts, wedges and skilled workers at site.	Yes		
7	Are all aluminum shuttering system been checked prior to use?	Yes		
9	Is it ensured that all the vertical panels are adequately supported to prevent fall of material to avoid any damages?	Yes		
10	Are the brackets securely fixed and leveled for safe working platform?	Yes		
11	Are the guardrail fixed around the working platform?	Yes		
12	Are the safety nets fixed in two levels to prevent fall?	Yes		
13	Are the wall ties and panels properly pinned using adequate pins and wedges?	Yes		
14	Is the cutout used for material shifting from lower floors secured appropriately?	Yes		
15	Are all the cutouts (a shaft, lift pits etc.) closed/barricaded?	Yes		
16	Lighting arrangements in the stair case and on the slab for night works?	Yes		
17	Safe and secure electrical connections ensured?	Yes		
18	Proper stools provided for height works?	Yes		
19	Alignment, camber, level and plumb (verticality) maintained while concreting is in progress.	Yes		

ANY OTHER POINTS:

② Mixing platform not fall
 Inspected and certified for safe concreting by:
 ① Bracket provision / level rods to be pinned at 2nd floor level as bracket drawing before pouring

Sl. No.	Representatives	Name	Agency Name	Signature
1	Contractor Engineer	Ranjith Kumar	Jmc	
2	Contractor Safety Officer	Amir Bhutta	Jmc	
3	Brigade Representative	Sebastian P	JW	

③ Staircase back propping to be done if reqd. ④ Pm to be pinned using of steel rods in props.
 ⑤ Platform to be pinned in staircase window shop -

Check list for Material Hoist

Ref. No.: BG/CL/EHS/06B/ R0
 Dt: 01-June-2020 / R0
 Frequency: Weekly once OR in case of major breakdown

Project Name: WTC Residence	Agency name: JML
Location: Tower A2	Date: 12/08/22
Identification No. and Make: Tower hoist.	Date of last inspection: NA (New)
	Operator Name: Anil Kumar Pradhan

Sl. No.	Description	Condition	Modification required	Remarks
1	Is the operator undergone training on safe operation of hoist, briefed the operating procedure and Operator permit issued?			To be submitted by Anil Kumar Pradhan
2	Has the operator undergone medical checkup?	Yes		
3	Are workers prohibited from riding the hoist?	OK		
4	Is overhead protection provided over the cage or platform and the operator's position?			Not provided
5	Are there at least three full wraps on the winding drum when the platform is at the lowest point of travel?	Yes		
6	Are entrances to hoist way guarded or barricaded?	NO		
7	Mast foundation or soil condition.	OK		
8	Working condition of motor.	OK		
9	Condition of the wire ropes and wire drum	OK		
10	Condition of the brake liner.	OK		
11	Condition of the sprocket.	OK		
12	Stability of the outer frame.	OK		
13	All rotating parts are guarded.			Not ok
14	Load chart provided. (No. of concrete blocks, cement bags, sand bags etc.)			Not ok
15	Operating lever condition.	OK		
16	Power supply cable condition and earthing connection intact.	Earthing OK		Not provided
17	Track rail condition.	OK		
18	Are the limit switches operating when the travel limit exceeds.	OK		
19	Third party inspection certificate.	OK		
20	Is the hoist maintenance carried out as per maintenance schedule to prevent breakdowns?			To be submitted

Sl. No.	Representatives	Name	Agency	Signature
1	Contractor Tower Incharge	Prakash R	Jmc	
2	Contractor P&M Incharge	Amir Bhutta	Jmc	
3	Contractor Safety Officer	Amir Bhutta	Jmc	
4	Brigade Representative	Sebastian P	JW	

② Over load limit switch not found in material hoist
 ① operator permit to be displayed.

① Earthing to be provided from the hoist
 ② Lifting arrangement to be provided on mast of builder hoist

E H S	Checklist for Site Environmental	Ref. No.: BG/CI/EHS/16 P0
		Dt: 01 June 2020 / P0 Frequency: (Weekly once)

Project Name: <u>BuTR.</u>	Contractor Name: <u>Time Project (S) Ltd</u>
Inspection Date: <u>28.07.2022.</u>	Inspection Time: <u>3.00 PM.</u>
Inspected by: <u>Zahir Hussain</u>	Weather: <u>Hot.</u>

Inspection Items	Implemented		Remarks (i.e. specify location, good practices, problem observed, possible cause of nonconformity and/or proposed corrective/preventative action)
	Yes	No	
1. Air Pollution Control			
1.1. Are the construction sites watered to minimize dust generated?	Yes		
1.2. Are stockpiles of dusty materials (size with more than 20 bags cement) covered or watered?	Yes		
1.3. Cement debagging process undertaken in sheltered areas	Yes		
1.4. Are all vehicles carrying dusty loads covered/watered over prior to leaving the site?	Yes		
1.5. Are demolition work areas watered? (e.g. trimming activities by using breaker)			NA
1.6. Are dusty roads sprayed with water?	Yes		
1.7. Are dust controlled during percussive drilling or rock breaking?	NA		NA
1.8. Are plant and equipment well maintained?	Yes		
1.9. Are there enclosures around the main dust-generating activities? (e.g. grout mixing)			NA
1.10. Hoarding (not <2.4m) provided along boundaries and properly maintained			NA
1.11. Are speed control measures applied? (e.g. speed limit sign)	Yes		Signages Placed Various Location.
1.12. Others (please specify)			NA
2. Water Pollution Control			

Inspection Items	Implemented		Remarks (i.e. specify location, good practices, problem observed, possible cause of nonconformity and/or proposed corrective/preventative action)
	Yes	No	
2.1. Are conditions of the license complied with? (check the monitoring records and observe physically)	Yes		
2.2. Are wastewater treatment system being used and properly maintained on site? (e.g. desilting tank)			NA
2.3. Are measures provided to properly direct effluent to silt removal facilities? (e.g. provide earth bunds / U-channels)			NA
2.4. Are sedimentation traps and tanks free of silt and sediment?		NO	
2.5. Are sandbags/earth bund adopted to prevent washing away of sand/silt and wastewater to drains, catchpit, public road and footpath?	Yes		
2.6. Are vehicles and plants cleaned before leaving the site?	Yes		
2.7. Are wheel washing facilities well maintained to prevent overflow, flooding sediment?		NO	
2.8. Is sand and silt settled out in wheel washing bay and removed?			NA
2.9. Is the public road/area around the site entrance and site hoarding kept clean and free of muddy water?	Yes		
2.10. Others (please specify)			NA
3. Noise Control			
3.1. Do air compressors and generators operate with doors closed?	Yes		
3.2. Is idle plant/equipment turned off or throttled down?	Yes		
3.3. Do air compressors and hand-held breakers have valid noise emission labels (NEL)?	Yes		
3.4. Any noise mitigation measures adopted (e.g. use noise barrier / enclosure)?	Yes		
3.5. Are silenced equipment's utilized?	Yes		

Inspection Items	Implemented		Remarks (i.e. specify location, good practices, problem observed, possible cause of nonconformity and/or proposed corrective/preventative action)
	Yes	No	
3.6. Others (please specify)			NA
4. Waste Management			
4.1. Is the site kept clean and tidy? (e.g. litter free, good housekeeping)	Yes		
4.2. Are debris chutes used	Yes		
4.3. Are separated labelled containers / areas provided for facilitating recycling and waste segregation?	Yes		
4.4. Are construction wastes / recyclable wastes and general refuse removed off site regularly?	Yes		
4.5. Are construction wastes collected and disposed of properly by licensed collectors?	Yes		
4.6. Are oil drums and plants/equipment's provided with drip trays (Secondary container)?	Yes		
4.7. Are drip trays free of oil and water?	Yes		
4.8. Is there any oil spillage? Clean-up the contaminated soil immediately?	Yes		
4.9. Others (please specify)			NA
5. Storage of Chemicals and Dangerous Goods			
5.1. Are chemicals used for construction stored and labelled properly?	Yes		
5.2. Does storage of DG comply with license conditions (include types and quantities if DG store is available,	Yes		
5.3. Are proper measures to control oil spillage during maintenance or to control other chemicals spillage? (e.g. provide drip trays)	Yes		Drip tray must be use for Preventing Spillage
5.4. Are spill kits / sand / saw dust used for absorbing chemical spillage readily accessible?	Yes		
5.5. Others (please specify)			NA
6. Protection of Flora, Fauna and Historical Heritage			

Inspection Items	Implemented		Remarks (i.e. specify location, good practices, problem observed, possible cause of nonconformity and/or proposed corrective/preventative action)
	Yes	No	
6.1. Are disturbance to terrestrial flora minimized (e.g. plants to be preserved)?	Yes		
6.2. Are disturbance to terrestrial fauna minimized (if rare species identified)?	Yes		
6.3. Any historical heritage exists on site? If yes, appropriate measures taken to preserve it	Yes		
6.4. Others (please specify)			NA
7. Resource Conservation			
7.1. Is water recycled wherever possible for dust suppression?	Yes		
7.2. Is water pipe leakage and wastage prevented?	Yes		
7.3. Are diesel-powered plants and equipment's shut off while not in use?	Yes		
7.4. Are energy conservation practices adopted?	Yes		
7.5. Are metal or other alternatives used to minimize the use of timber?	Yes		
7.6. Are materials stored in good condition to prevent deterioration and wastage (e.g. covered, separated)?	Yes		
7.7. Others (please specify)			NA
8. Emergency Preparedness and Response			
8.1. Are fire extinguishers / fighting facilities properly maintained and not expired? Escape not blocked / obstructed?	Yes		
8.2. Are accidents and incidents reported and reviewed, and corrective & preventive actions identified and recorded?	Yes		
8.3. Others (please specify)			NA

Inspection Team:

Sl. No.	Representatives	Name	Agency	Signature
1	Contractor Safety officer	Amir Hussain	JMC	
2	Contractor P&M Incharge	Alangara Prakash	JMC	
3	Brigade representative	Michael	JMC	

CRITICAL OVERVIEW- LEARNINGS, ASSIGNMENTS, ROLES & RESPONSIBILITIES, OBSERVATIONS:

- Studied the entire **Architectural drawings and Design Basis Report (DBR)** to understand the design intent of the proposed Building project. The same was briefed by the Design Manager of the JLL Project Team. Understandings are detailed under the Architectural Aspect.
- The services related to **MEP works** included in the Design Development and Design Coordination package are detailed by the MEP Manager of the JLL Project Team. Understandings regarding the same are detailed under the Functional Aspect.
- Site visits were arranged by the **Construction & Quality Manager** wherein activities at site including Maivan Assembling and Dismantling process, Concrete pour and batching plant, Quality Testing Lab are visually observed which is detailed in the Construction Aspect.
- The entire project cycle is briefed explaining each of its individual phases for complete understanding and the same has been recorded in the Management Aspect of which Earned Value Management (EVM) can be highlighted, Also the supporting documents are overviewed for better understandings which includes the Project approach plan, Weekly progress report, Monthly progress report, Risk register, Procurement strategy, Tender event schedule, Project quality plan, Tender Documents, Audit report, Cash flow documents etc.
- Assigned to prepare an **Integrated Master Schedule** for the ongoing WTCR project and the same has been attached. An Integrated Master Schedule will contain each and every activity right from the initiation phase till the closeout phase which is utilized to have a track on the activities and milestones.
- Roles and responsibilities include preparing **transmittal** for the Good for Construction drawings (GFC) obtained at the Site.
- Attended **Design Review Meeting (DRM)** every Friday for duration of about 1 hour and 30 minutes and was responsible for drafting the **Minutes of Meeting (MOM)** for the same.
- Assisted in drafting the Monthly progress report under the guidance of the Design Manager of the JLL Project Team.
- Observed **internal meetings of JLL Project Team, safety meetings with Client and Contractor** as a part, initial meeting for discussion with Client regarding a particular design development package Landscape wherein the design intent of the landscape was understood. Learned the way meetings are held and was driven through these observations.