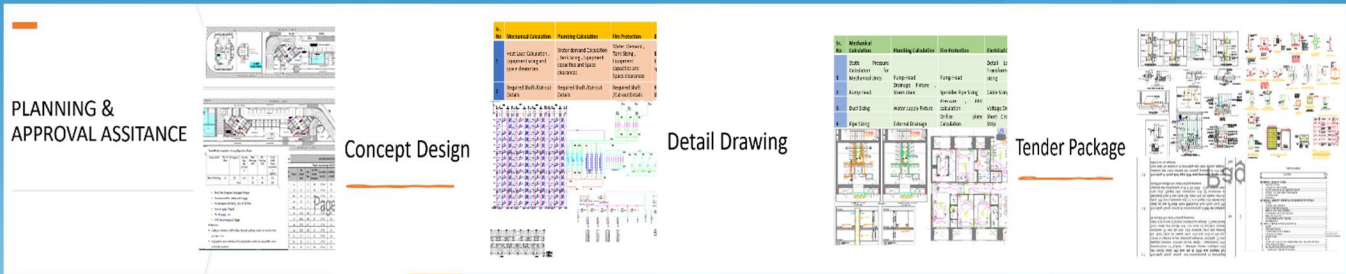
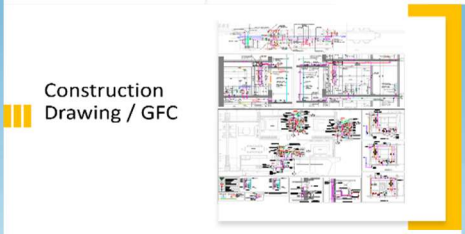
Year 2025-26

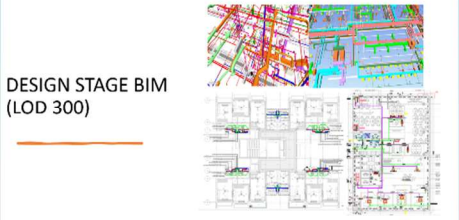
MEP Solution

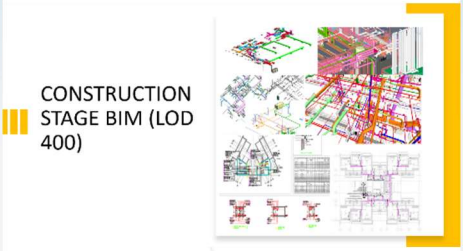
Consulting Engineering & BIM

Building, Infrastructure & Industrial Sector









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About us

At DESIGN AND DRAWING SOLUTION, we are offering innovative and proven design solutions that are backed by our technical excellence and experience. Our expertise design solutions ensuring a comprehensive and unparalleled service for our clients.

We understand that each client is unique and has specific aspirations and technical requirements. That's why we collaborate closely with clients design team to find the perfect balance between commercial considerations, usability, sustainability, and end user MEP requirements.

From initial strategic advice to tender phase or construction documentation, and on-site support, we assist our client team for every step of the way to complete the installation activity that fulfill the MEP solutions of each project.

DESIGN AND DRAWING SOLUTION
ONE STOP BIM | CAD | MEP ENGINEERING SOLUTIONS

6+ Years' Experience | **300+** Completed Projects | **150+** Customer world wide

Overview of the MEP Systems

MEP system consists of basically three systems Mechanical, Plumbing and Electrical including the Fire Protection system. In building, MEP engineering systems plays the major role parallel with the architect, structure from conceptual planning, detail designing stage to execution stage. All individual systems have its own sub system as follows.

Mechanical/HVAC System

- HVAC ducting.
- HVAC piping.
- Mechanical Ventilation

Plumbing System

- Drainage - Soil, Waste & Vent Systems
- Cold water systems
- Hot water system
- Gas System

Special Plumbing System

- STP –Sewage Treatment Plant
- WTP – Water Treatment Plant
- Swimming Pool treatment Plant
- Medial Gas system

Electrical System

- Power & lightning system
- Lightning Protection system.
- UPS & battery system
- Solar system

Extra Low Voltage (ELV) Systems

- Telephones, Data
- CCTV System
- Access control Door system
- Integrated Building Management System

Fire Fighting Systems

- Sprinkler System
- Hydrant system
- Water Curtains & Drencher Systems
- Gas Based; Foam Based protection system
- Fire Extinguishers

Fire Detection System

- Fire Alarm System
- Public Address System
- Smoke Detection System

External / UG Utilities System

Basic site utilities covers with the following

- External Storm water Networks
- External Sewer Network
- External Electrical System
- External Fire-fighting System
- Gas Network

MEP Design Intend

D & D Team use to provide the design deliverables which will have the all the necessary information, details & technical information for the project execution. Our design execution is intended with following parameters.

1. Energy Optimization
2. Cost effective system implementation.
3. Drawing technical details Fit for execution.
4. Automated integration of CAD & BIM.

1. Energy Optimization: -

HVAC Energy Optimizations: -

We perform cooling energy calculation to improve efficiency & meet Building standards like green buildings, IGBC to use less energy which reduce life cycle costs. Our energy-efficient solutions include heat pumps, underfloor air systems, thermal storage, energy recovery & free cooling.

Electrical Energy Optimization: -

We use to design our electrical systems with energy efficient lighting, daylight integration, and smart lighting controls.

2. Cost effective system implementation: -

Using our extensive expertise and years of experience, we carefully analyze the specific design requirements of each project which will be best fit with competitive cost. Cost effective can be integrated with basic considerations of the systems like System efficiency & material.

3. Drawing details fit for execution: -

Our skilled technical team is trained in required technical information for site execution of MEP systems. Uses our experience & expertise, we create the GFC drawing with proper dimension and annotation and section detailed images which is used for execution process.

4. Automated Integration of BIM: -

DESIGN AND DRAWING solution having the integrated tools and process like BIM which are the current trend of construction industries needs to execute the project smoothly and efficiently.

Our field of service include:

Building Sectors

- **Bungalows /Residential Apartments**
- **High Rise Residential building**
- **Commercial IT / Banks**
- **Hotels**
- **Institutional Buildings like school, Libraries, Auditoriums**
- **Hospital**
- **Entertainment Zones, Malls and Multiplexes**
- **Data Centre**

Industrial Sectors

- **Warehouse**
- **Manufacturing Units**
- **Industrial Plants**

Infrastructure Sectors

- **Airport**
- **Metro**
- **Railways**
- **Ports & Harbors**

MEP CONSULTING SERVICES

PLANNING & APPROVAL ASSITANCE

- MOEF
- HIGH RISE

CONCEPT DESIGN

- DBR
- SCHEMATIC

DETAIL DESIGN

- DETAIL ENGINEERING
- DETAIL DRAWING (100%)

TENDER PACKAGE

- TENDER DRAWING
- BOQ & SPECIFICATION

CONSTRUCTION SERVICES

- CONSTRUCTION DRAWING/GFC

BIM SERVICES

DESIGN STAGE BIM (LOD 300)

- 3D MODEL (LOD 300)
- DESIGN / TENDER DRAWING

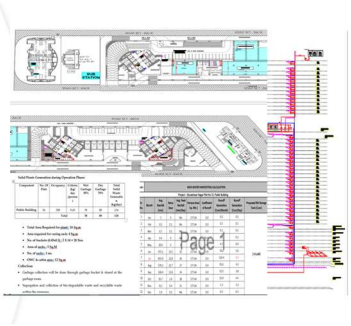
CONSTRUCTION STAGE BIM (LOD 400)

- 3D MODEL (LOD 400)
- BIM CO-ORDINATION
- GFC (CONSTRUCTION) DRAWING

AS BUILT STAGE BIM (LOD 500)

- AS BUILT MODEL & DRAWING

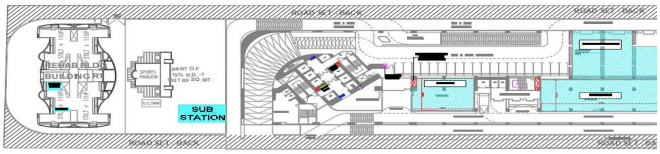
PLANNING &
APPROVAL ASSITANCE

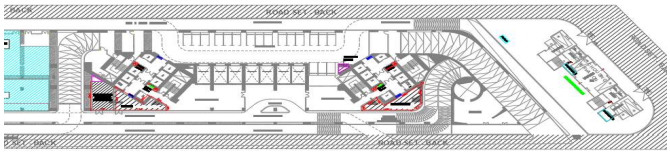


Ministry of Environment & Forest

Builders and developers use to submit the proposed design detail with MOEF team to get the approval from MOEF authority.

Our MEP design team will assist for the basic design and drawing for submission document for details for utilities like drainage water, fire and waste management.

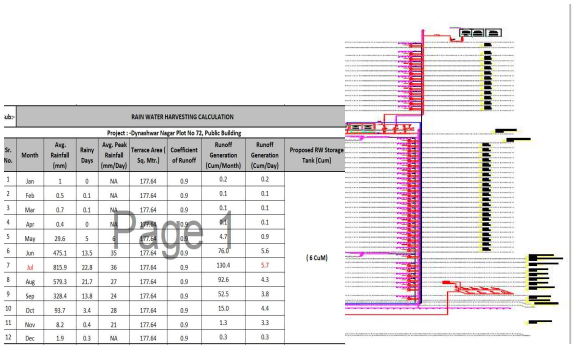




High Rise

Once we engaged in the project with basic planning phase with builders or investor, we assist for the approval process for the building construction.

In the process of approval, utilities clearance is required and our MEP design team is capable to produce the documentation like design and drawing which is required for further approval process.



RAIN WATER HARVESTING CALCULATION

Project :- Dynashwar Nagar Plot No 72, Public Building

Sr. No.	Month	Avg. Rainfall (mm)	Rainy Days	Avg. Peak Rainfall (mm/Day)	Terrace Area (Sq. Mtr.)	Coefficient of Runoff	Runoff Generation (Cum/Month)	Runoff Generation (Cum/Day)	Proposed RW Storage Tank (Cum)
1	Jan	1	0	NA	177.64	0.9	0.2	0.2	
2	Feb	0.5	0.1	NA	177.64	0.9	0.1	0.1	
3	Mar	0.7	0.1	NA	177.64	0.9	0.1	0.1	
4	Apr	0.4	0	NA	177.64	0.9	0.1	0.1	
5	May	29.6	5	15	177.64	0.9	4.7	0.9	
6	Jun	475.1	13.5	35	177.64	0.9	76.0	5.6	
7	Jul	815.9	22.8	36	177.64	0.9	130.4	5.7	(6 CuM)
8	Aug	579.3	21.7	27	177.64	0.9	92.6	4.3	
9	Sep	328.4	13.8	24	177.64	0.9	52.5	3.8	
10	Oct	93.7	3.4	28	177.64	0.9	15.0	4.4	
11	Nov	8.2	0.4	21	177.64	0.9	1.3	3.3	
12	Dec	1.9	0.3	NA	177.64	0.9	0.3	0.3	

Solid Waste Generation during Operation Phase:

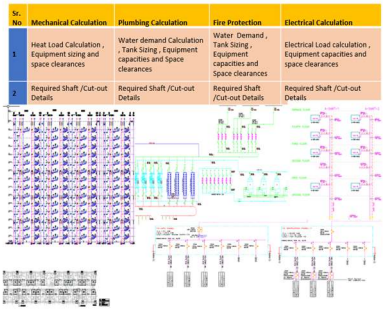
Component	No. Of Flats	Occupancy	Criteria (kg/ day /person)	Wet Garbage 30%	Dry Garbage 70%	Total Solid Waste Generatio n (kg/day)
Public Building	56	280	0.45	38	88	126
		Total		38	88	126

- Total Area Required for plant : 16 Sq.m
- Area required for curing rack: 4 Sq.m
- No. of buckets (0.45x0.3) : 2 X 14 = 28 Nos
- Area of racks : 3 Sq.M
- No. of racks : 1 no.
- OWC & cabin area : 12 Sq.m

Collection:

- Garbage collection will be done through garbage bucket & stored at the garbage room.
- Segregation and collection of bio-degradable waste and recyclable waste within the premises.

Concept Design



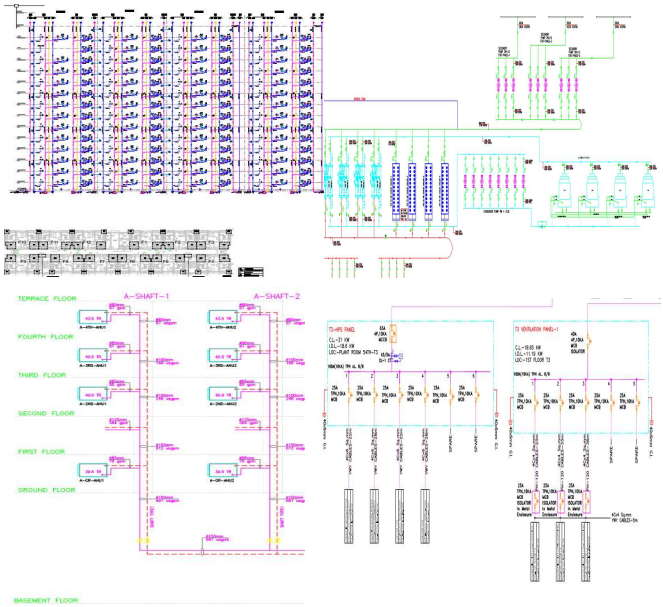
Sr. No	Mechanical Calculation	Plumbing Calculation	Fire Protection	Electrical Calculation
1	Heat Load Calculation , Equipment sizing and space clearances	Water demand Calculation , Tank Sizing , Equipment capacities and Space clearances	Water Demand , Tank Sizing , Equipment capacities and Space clearances	Electrical Load calculation , Equipment capacities and space clearances
2	Required Shaft /Cut-out Details	Required Shaft /Cut-out Details	Required Shaft /Cut-out Details	Required Shaft /Cut-out Details

DBR & Schematic

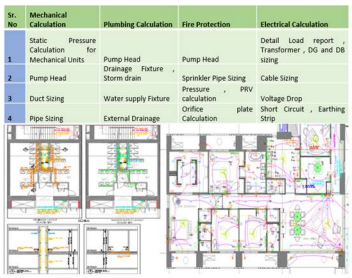
At this stage, we start with basic design consideration and calculations to prepare a proposed systems which will be best fit for each project . Based on the proposed systems, we prepare the systems operational diagram or schematic for each proposed systems.

The Design Basis Report (DBR) provides essential details about the proposed system for a project. It includes basic calculations and information about major equipment like water tanks, pumps, chillers, transformers, and diesel generators (DG). It serves as a simple guide to ensure the system meets project needs. Once the document and schematic are prepared, we share them with the client for approval.

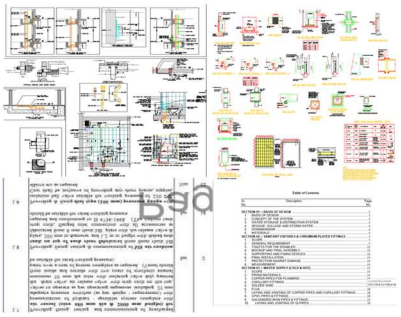
Sr. No	Mechanical Calculation	Plumbing Calculation	Fire Protection	Electrical Calculation
1	Heat Load Calculation , Equipment sizing and space clearances	Water demand Calculation , Tank Sizing , Equipment capacities and Space clearances	Water Demand , Tank Sizing , Equipment capacities and Space clearances	Electrical Load calculation , Equipment capacities and space clearances
2	Required Shaft /Cut-out Details	Required Shaft /Cut-out Details	Required Shaft /Cut-out Details	Required Shaft /Cut-out Details



Detail Drawing



Tender Package



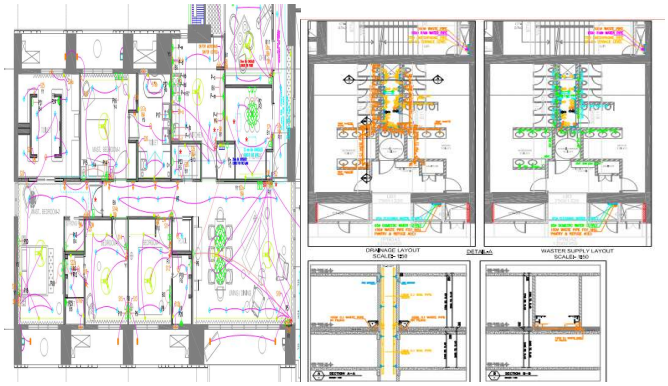
Detail Design calculation

DD (Detail Design) stage is to describe the schematic with all the information line sizes and capacity of each elements of MEP systems. Design Engineering team use to produce the detail calculation for sizing with all unit capacity for drafting the detail drawings. Following calculations to be submitted in the process of detail engineering.

Sr. No	Mechanical Calculation	Plumbing Calculation	Fire Protection	Electrical Calculation
1	Static Pressure Calculation for Mechanical Units	Pump Head	Pump Head	Detail Load report , Transformer , DG and DB sizing
2	Pump Head	Drainage Fixture , Storm drain	Sprinkler Pipe Sizing	Cable Sizing
3	Duct Sizing	Water supply Fixture	Pressure , PRV calculation	Voltage Drop
4	Pipe Sizing	External Drainage	Orifice plate Calculation	Short Circuit , Earthing Strip

Detail Drawing (50 % & 100 %)

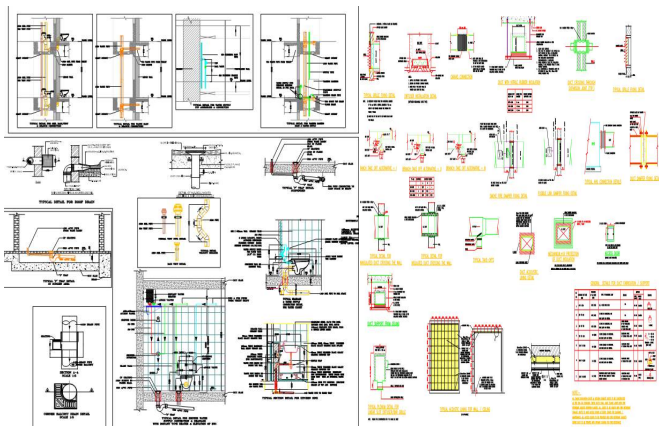
DD (Detail Design) stage is to describe the schematic with all the information line sizes and capacity of each elements of MEP systems. Also to prepare the plans with all information like the size and routine with detail sections, required cutouts and capacities. MEP systems detail drawing always a package of plan, schematic drawings with detail calculation like pipe, duct size, pressure calculation and cable sizes etc. Basically the MEP elements are detailed in the plans and schematics to ensure proper design and setup.



Tender Drawing

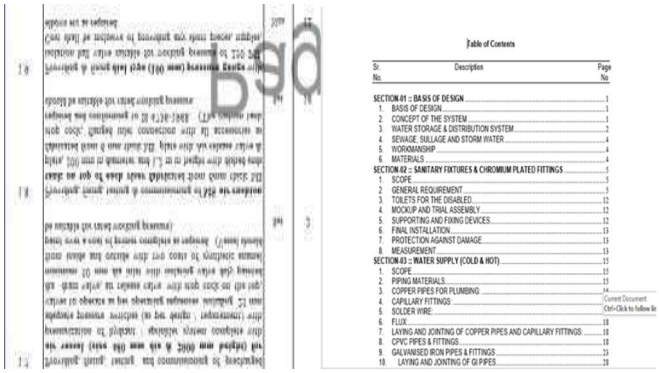
Once we receive the go-ahead from the client on the detail drawing from architect and structure, we do the internal co-ordination of all services and start to production of tender drawing. The tender drawing will have proper annotations, schedules, detailed drawing with the complete package or set for tender drawing.
Tender drawing covers the following drawings in set

1. Cover Page & Drawing List
2. Detailed Schematic
3. Floor plans and sections
4. Detail Sheet & Schedules

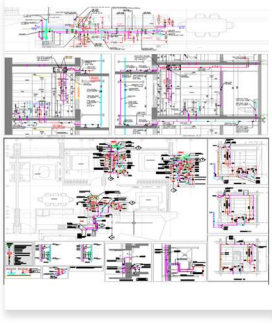


BOQ with Specification (Tender Document)

Approved DD drawings can be proceeded for quantification and tendering stages. Based on the approved Detail drawing, quantity of all elements of MEP systems generated which called BOQ (Bill of Quantity). And specify all equipment's, elements and accessories is called the specification. Tender package is always release with approved detail drawing & BOQ with specification.

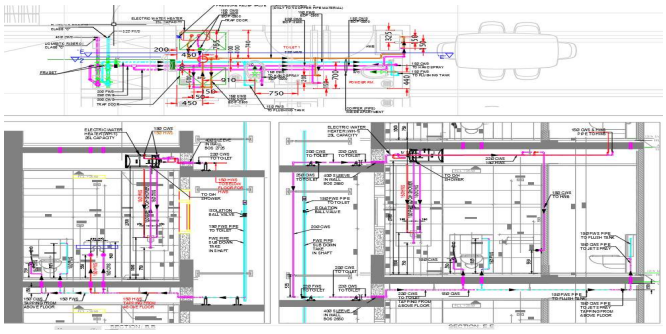


Construction Drawing / GFC



Construction Drawing/GFC

We generate accurate construction drawing after for the site team for execution. Construction drawing will have all the information of required executions like equipment Tag, annotation, dimensions with sectional elevations of all MEPF systems and networks.

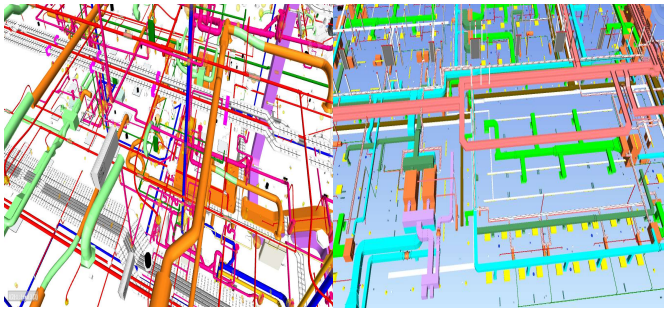


DESIGN STAGE BIM (LOD 300)

3D Model (LOD 300)

We are specialize in the virtual construction of 3D models of MEP systems i. e Mechanical, Plumbing & Electrical systems i.e. duct, pipe, cable tray with fitting including all valves & accessories with all associated equipment and fixtures.

We produce 3D Models based on design schematic, basic plans, engineering markups to produce the system wise 3D model with the proper Sizes & details.

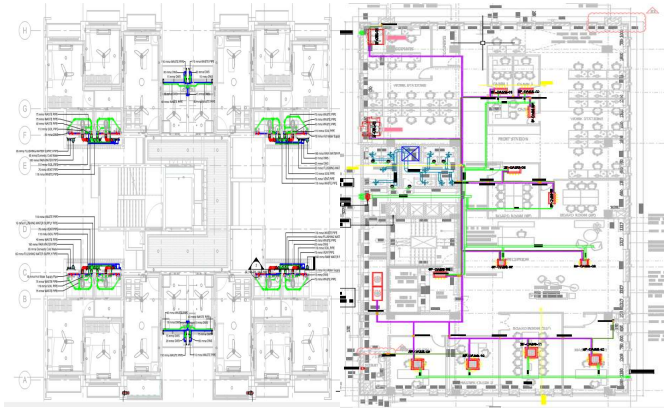


Design / Tender Drawing

After completion of 3D model, we create sheet template with proper title block and start working on the production of design drawing with proper annotation and dimensions.

Design drawing set will have following list of drawing

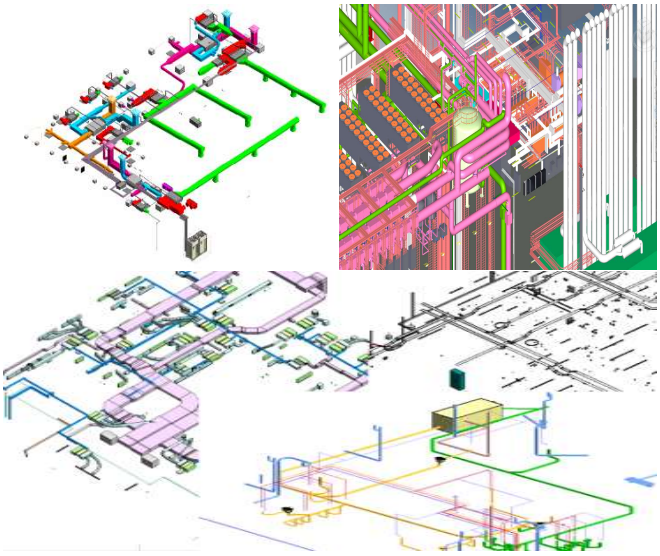
1. Cover Page & Drawing List
2. Detailed Schematic
3. Floor plans and sections
4. Detail Sheet & Schedules



CONSTRUCTION STAGE BIM (LOD 400)

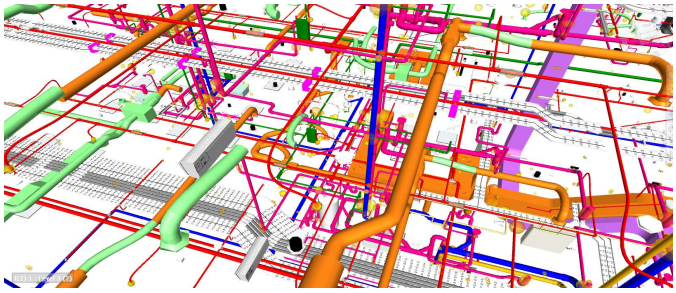
3D Model (LOD 400) – Equipment & MEP Element

After the design model, we do more detailing of equipment's with final detail engineering evaluation of proper size through manufacturer or vendor and final sizing of each & every networks of each trades with final sizes and proper connections of equipment of all accessories along with hangers to develop the model @ LOD 400 .



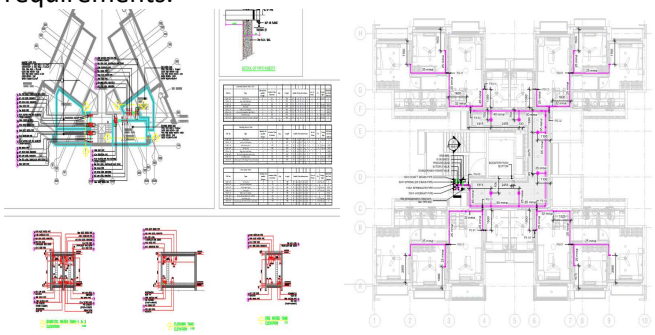
BIM Co-ordination

In this Stage, we do our co-ordination process with linking all the model – Architectural, Structural including all MEPF services to identify the clash and working on the resolution with optimize options to make the model clash free.

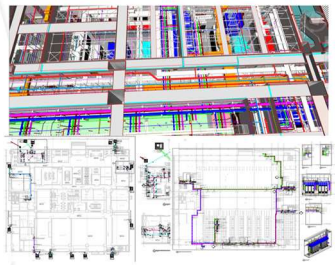


GFC /Construction Drawing

After coordinated model, we produce the GFC drawing with proper dimensions, annotation with proper sections, elevation, inverts inline with field execution requirements.

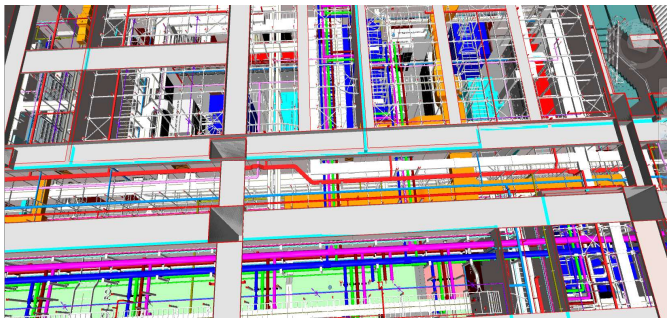


AS BUILT STAGE BIM (LOD 500)



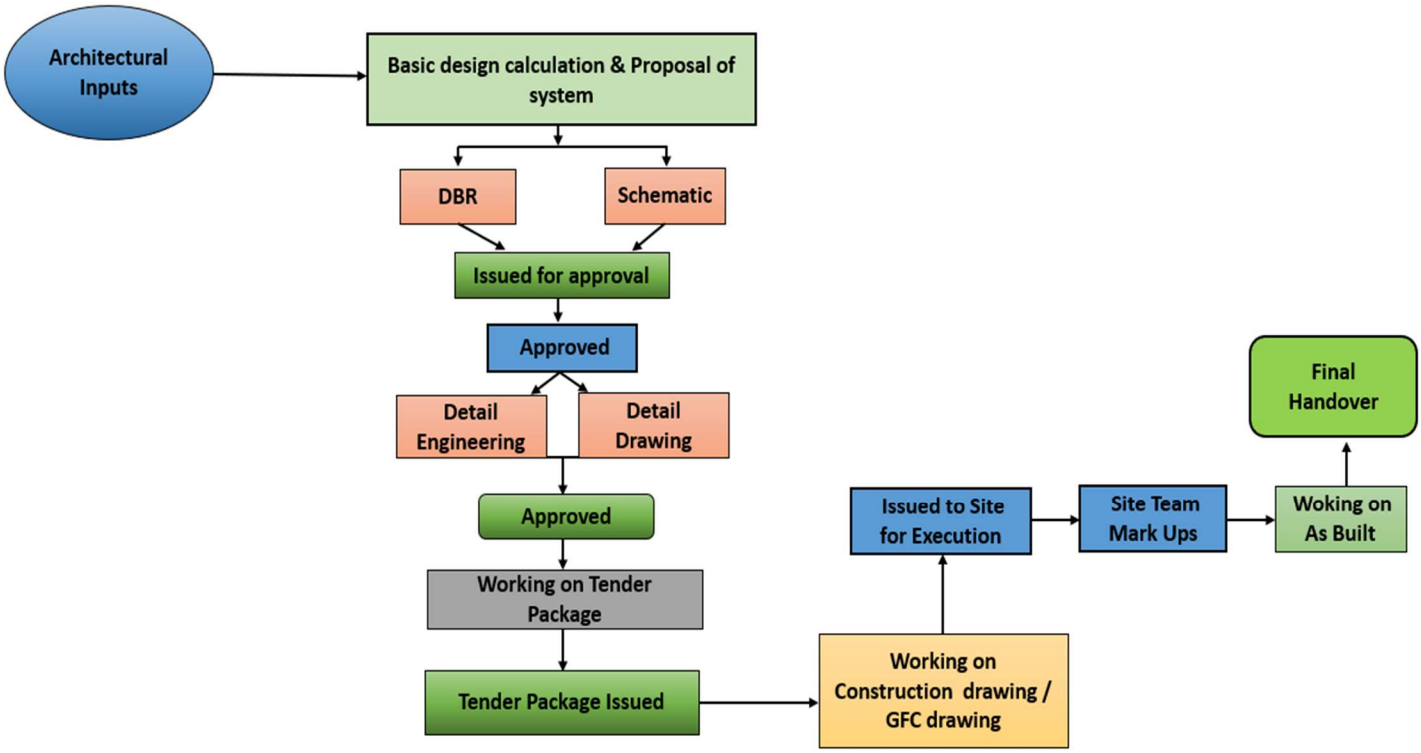
As Built Model & Drawing

Based on the site mark-ups, we create as built 3D model & Drawing and prepare the as built set for project hand over and record.

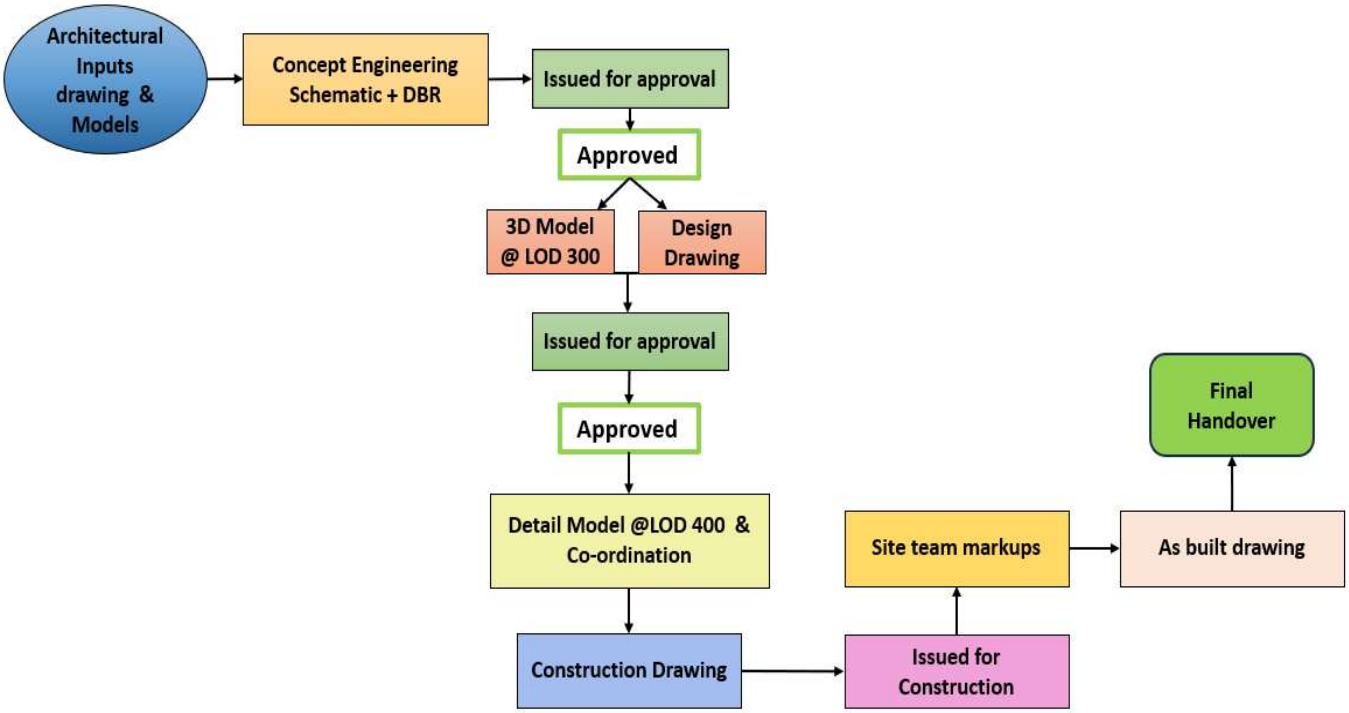


Process We Follow

D & D CONSULTING ENGINEERING EXECUTION PROCESS



D & D BIM EXECUTION PROCESS



Team

Irshad Ali Shaikh
(Principal MEP)

Irshad Ali Shaikh is Principal MEP and He had works with each role of MEP construction industry in India and other part of the world and accumulates the extensive 17 years of experience in MEP engineering services industries. He has done higher qualification of Prost Graduation in Project Management from NICMAR and Engineering from Pune University. In his past career, he had engaged more than hundred different building projects throughout India special in Mumbai region. He has started his journey as a Entrepreneur since early 2018 & In his small journey, he has successfully delivered the more than 300+ design, BIM & CAD projects globally with the best quality and unique team effort.

In his career, he had worked as MEP project Lead with prestigious client like Lodha, Oberoi, Reliance, SBUT, Raheja, & reputed Architect like Sanjay Puri, Hafeez Contractors, Hiten Sethi, Qutubmandiwala. He has experienced in all kind of projects i.e. starting from Residential complex, Commercial, Malls, High rise building, Hotel, Hospital & Institutional building projects including infrastructure projects like airport, Stations, metros. He has trained our engineering team to provide high value engineering solution that best fits them for their specific project.

Rakesh Shelke
(Engineering Co-Ordinator)

He is having more than 7 years of experience in building construction Industry. He is having experience in all type of projects planning and designing for MEP systems. In his career, he had worked in site and gained his knowledge for closely co-ordination with architect, management consultants, strategy, procurement and execution team for project construction. Based on his site experience, he is handy on the co-ordination role to attending the meeting, practical site related issues and attending MEP design co-ordination with our internal team in the process of execution.

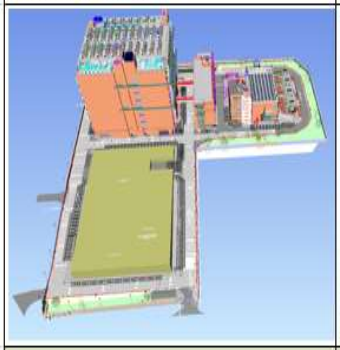
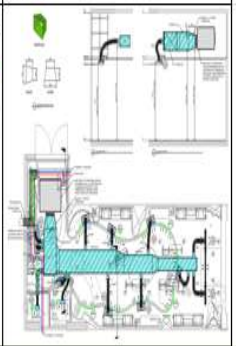
He is qualified civil engineer and has good knowledge of building project execution process in terms of design and construction. He has experienced in all kinds of projects i.e., starting from Residential township, Commercial IT buildings and parks, Malls, High rise building, Hotel, Hospital. Currently coordinating with our existing clients & monitoring the complete delivery of design and document of MEP engineering and BIM works.

Rupam Mondal
(MEP Manager – BIM / CAD)

He is a qualified mechanical engineer and having more than 9 years' experience in Building construction Industry for MEP design, detailing and drawing production through BIM & CAD. He is having expertise Autodesk CAD & BIM tools like AutoCAD, Revit, Fabrication, AutoCAD MEP, Navis works and has complete knowledge of drafting services for all stages (Pre/post) of construction process. He is working in DESIGNING AND DRAWING SOLUTION since from starting period of the company.

With a short period of time, He has gained the managing the drawing production process of the company, client communication in the project execution and assisting with innovative (R & D) solution of new process, tools for new requirement of clients. He is experienced in all kind of projects i.e. starting from Residential complex, Commercial, Malls, High rise building, Hotel, Hospital & Institutional building projects including infrastructure projects like airport, metro in US, Australia, New Zealand and India.

Project Snap

STT DATA CENTRE	ETERNIA TOWER	HIAL	One Plus Store	ED-A-MAMMA
Mahape , Navi Mumbai	Mulund	Delhi	Mumbai	Noida
				
CIDCO	**EMERLD ISLE POWAI**	**DIAL-PH-III**	**Supertails**	**D-MART , DOMBIVLI**
Kharghar , Navi Mumbai	Powai , Mumbai	Delhi	Bangalore	Thane
				

Contact US

DESIGN AND DRAWING SOLUTION
ONE STOP BIM | CAD | MEP ENGINEERING SOLUTIONS

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