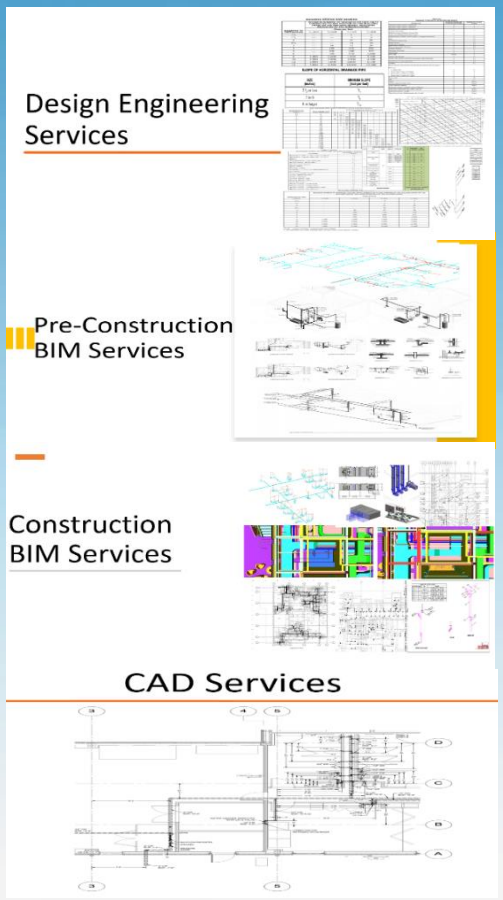
Year 2024-25

Design and Construction Services

For

PLUMBING SYSTEM



Index

About us

DESIGN AND DRAWING SOLUTION offers construction documents for Plumbing systems. Our Plumbing team is having good knowledge of USA, Canada plumbing systems designs & construction document process & codes and guidelines.

| Plumbing – IPC, ASPE

We are familiar with USA, Canada standard practice and requirement of Plumbing construction document for all type of buildings i.e. from Interior Fit outs, single family apartment, high rise apartment, commercial office buildings, hotels, restaurant, hospitals, School, College including infrastructure construction like Airport, metro stains etc. .

We are providing our services worldwide and specially in USA, Canada with MEP Consultants, Plumbing Contractors, general contractors.
Using our BIM and 2D CAD outsourcing services, our clients have numerous advantages i.e. including time and cost savings which are realized during the design phase and more importantly, during the installation and build stages of construction projects. We are certified Autodesk users and started in Mumbai, India from early 2018 and having our representative in US as well as channel Partner.

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

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

Building Types includes

- Interior Fit out for Commercial / Residential
- Bungalows /Residential Apartments
- High Rise Residential building
- Commercial IT / Banks
- Hotels
- Institutional Buildings like school, Libraries, Auditoriums
- Hospital
- Entertainment Zones, Malls and Multiplexe
- Data Centre
- Industrial ware house
- Infrastructure Construction

Design Engineering Services

- Drainage, Vent & Water
- Pump Head Calculation

Pre-Construction BIM Services

- Design 3D Model (LOD 300)
- Design drawing

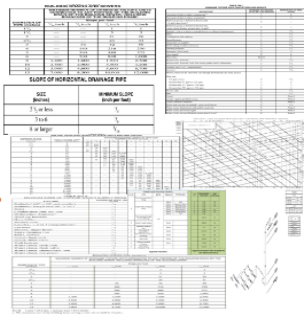
Construction BIM Services

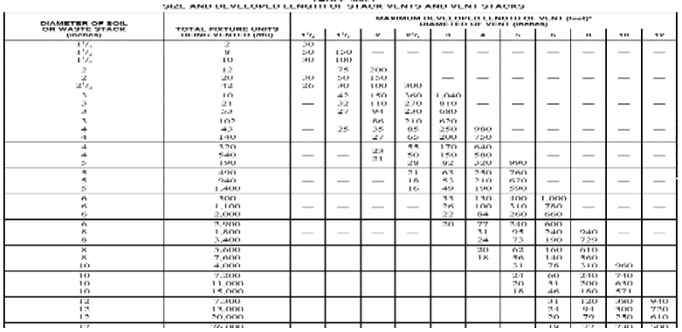
- 3D Modelling – LOD 400
- BIM Co-ordination
- Shop Drawing
- Spool, Hanger & Insert Drawing
- As Built Model &Drawing (LOD 500)

CAD Services

- Shop Drawing
- As Built

Design Engineering Services





Plumbing Hydraulic Calculation

We use to do plumbing hydraulic calculation based on the plumbing fixture values as per code and equivalent water flow based on the plumbing codes like ASPE and IPC.

Drainage Pipe Sizing

Individual fixtures connections are available based on the type of fixture and list as follows.

And maximum no of fixture to be connected as per the standards.

In standard practice we use 2, 3 & 4 inch of pipe sizes to cover the sewer drainage systems in small buildings.

For Highrise buildings, we use to referrer maximum no of fixture to connected on each stack to be followed.

Slope

As per standard practice and guidelines slopes as follows

BUILDING DRAINS AND SEWERS

DIAMETER OF PIPE (inches)	MAXIMUM NUMBER OF DRAINAGE FIXTURE UNITS CONNECTED TO ANY PORTION OF THE BUILDING DRAIN OR THE BUILDING SEWER, INCLUDING BRANCHES OF THE BUILDING DRAIN* Slope per foot			
	1/16 inch	1/8 inch	1/4 inch	1/2 inch
1 1/2	—	—	1	1
1 1/2	—	—	3	3
2	—	—	21	26
2 1/2	—	—	24	31
3	—	36	42	50
4	—	180	216	250
5	—	390	480	575
6	—	700	840	1,000
8	1,400	1,600	1,920	2,300
10	2,500	2,900	3,500	4,200
12	3,900	4,600	5,600	6,700
15	7,000	8,300	10,000	12,000

SLOPE OF HORIZONTAL DRAINAGE PIPE

SIZE (inches)	MINIMUM SLOPE (inch per foot)
2 1/2 or less	1/4
3 to 6	1/8
8 or larger	1/16

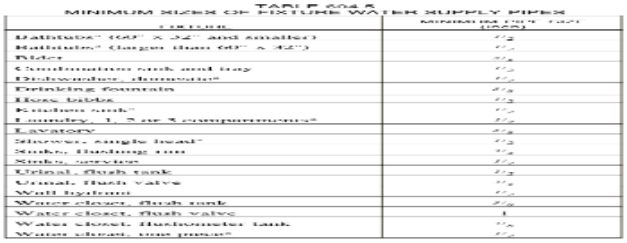
Vent Pipe Sizing

Individual fixtures vent connection to be developed based on the available and on the type of fixture and list as required. And header connections to be followed as per standard table.

Water Supply

To calculate water supply pipe sizing, we use to follow standard fixture consideration inline with code and guidelines and equivalent flow to work out sizes.

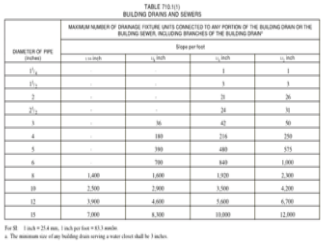
For individual circuit, we use to follow standard fixture sizes.

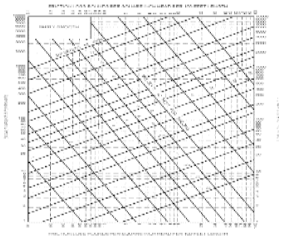


To work out the sizes for branch and header piping networks as per standard velocity method.

As per standard we use to follow

0.5 – 1.5 m/s for branch pipe For Header 1.5- 2.5 m/sec

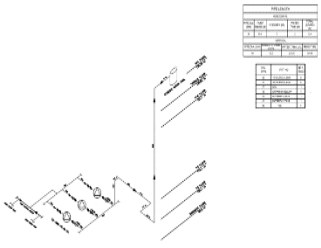


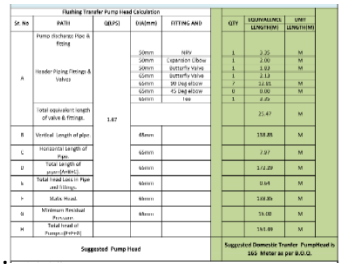


Pump Head Calculation

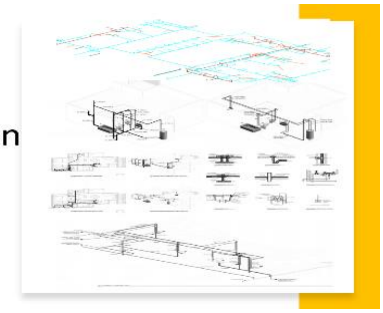
We do the pump head calculation through detail piping route to evaluate horizontal and vertical distance with all required fitting .

And as per the code, we do summarize piping and fitting losses to complete the pump head calculation.





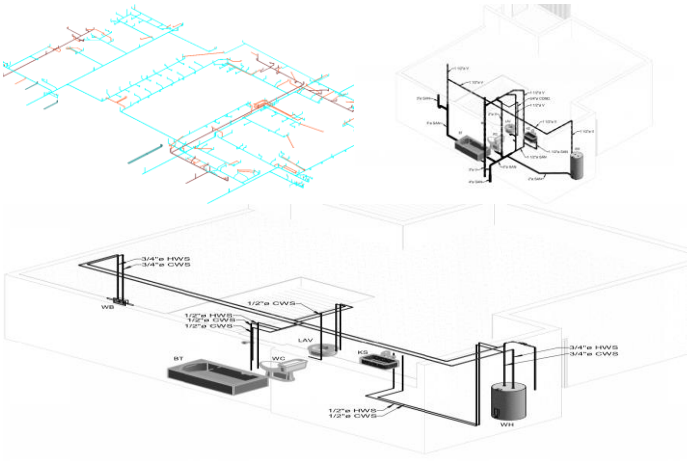
Pre-Construction BIM Services



BIM 3D Model-LOD 300

We are specialize in the virtual construction of 3D models of Plumbing drainage, vent and water supply systems piping, fitting including all valves & accessories with all associated equipment and fixtures.

We produce 3D Models based on the design Mark-ups, reference design drawing, samples provided by the client.

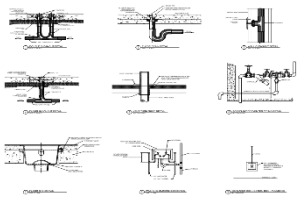


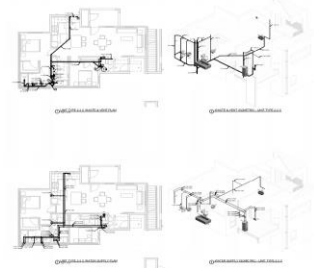
Design Drawing

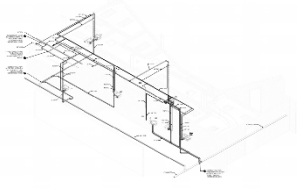
Based on the mark-ups, reference drawing, we produce the design drawing for MEP system and work out the detail branch duct, pipe sizes as per the schematic and produce the complete design drawings /Tender Drawing or Construction drawing.

Design drawing set will have following list of drawing

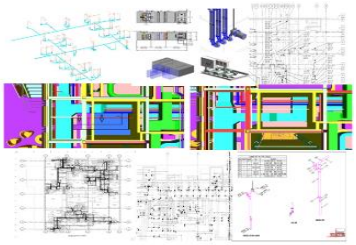
1. Legend, Notes & Specification
2. Floor Plans
3. Schematic / Isometric
4. Detail Sheet
5. Schedule







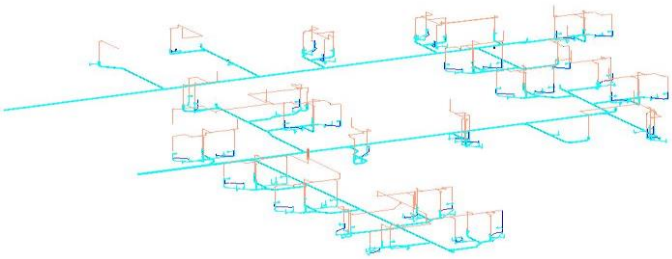
Construction BIM Services



3D Modelling LOD 400

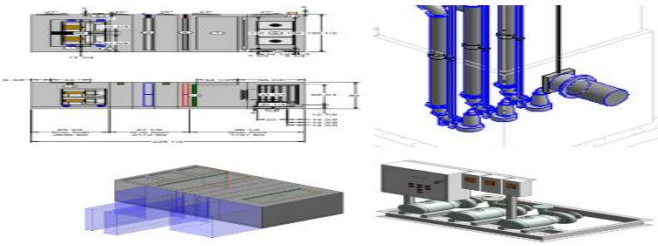
We are specialize in the virtual construction of 3D models @ LOD 400 of Plumbing systems i.e. drainage, water supply, gas, condensate drain piping with fitting including all valves & accessories with all associated equipment's and fixtures.

We produce 3D Models based on contract drawings, technical specifications, and manufacturer details to client standards.



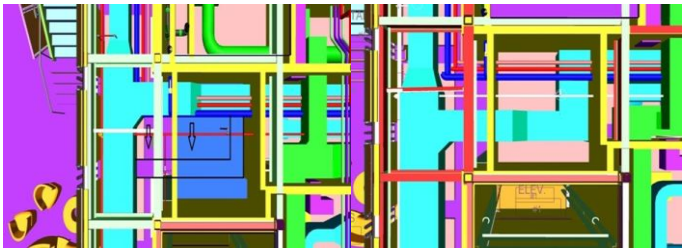
Equipment Modeling

From the manufacturer's 2D drawings and inline with Plumbing schedules, we create a 3D model of all the Plumbing equipment such as PUMPS, Valves with all accessories for Plumbing system.



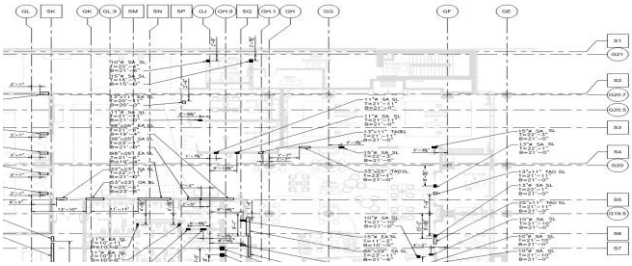
BIM Co-ordination

We generate a coordinated BIM model after resolving the clashes among all disciplines –Architectural, Structural, Concrete, and Plumbing. Clashes are resolved through video conference discussion with all stakeholders regarding the 3D clash snapshot and multiple fix options such as rerouting utilities, changing elevations, and resizing. Value engineering is also utilized to improve system efficiency, reduce costs, and provide for more efficient construction and maintenance.



Penetration Sleeve Drawing

Penetration, Sleeve Drawings are required before a contractor can start pouring concrete on the site. Penetration Drawings are created from the coordinated BIM model after alignment with the architectural grids. Our experienced team keeps the necessary clearances for the penetration as per the contract documents and Specification



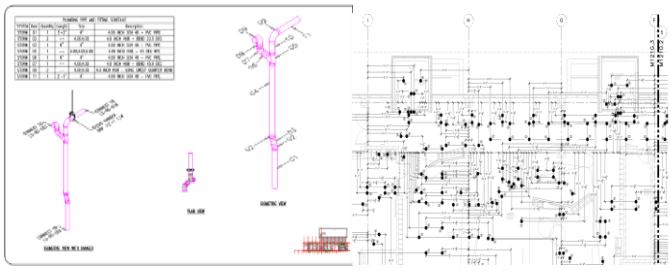
Shop Drawing

We produce Shop drawing after Co-ordination with utilizing coordinated BIM model or coordinated CAD drawings which are detailed enough for workshop fabrication and incorporated with sleeves and penetrations.

We provide the dimensions, BOD, COP & BOP, annotations inline with client standard & requirement as per standard practice.

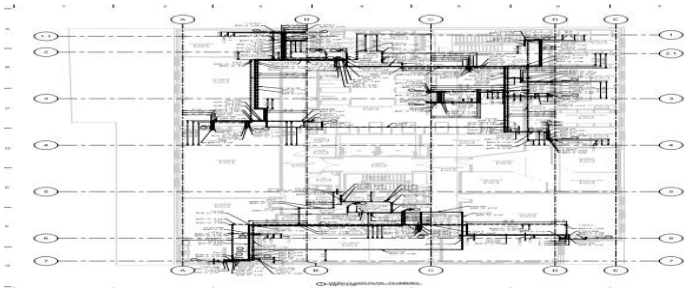
Spool, Hanger & Insert Drawing

D & D produce the Spool drawings, Hanger & insert drawing with proper co-ordination of model and placing the hangers in line with specification. Hanger drawings shows the actual location of hangers with proper dimension from wall or grid. Insert are position of hangers insert points and D & D produce the proper insert drawing coordinating with actual hanger location in the model.

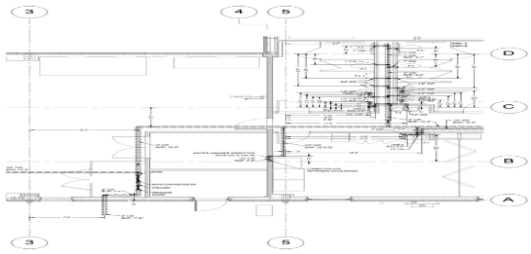


As Built Model & Drawing (LOD 500)

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 .



CAD Services



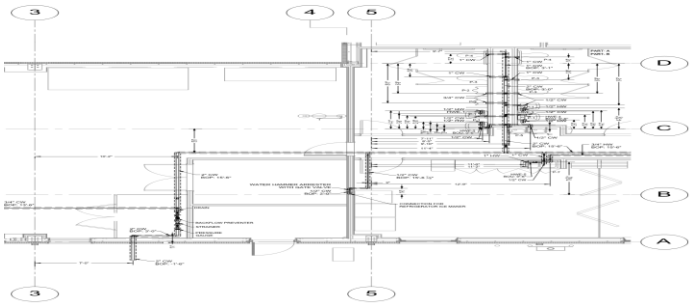
CAD Shop Drawing

Our cad team produce the shop drawing from CAD design drawing to incorporate the details of all fitting, accessories, details including as follows.

Drawings shall be indicative of actual equipment purchased and shall show all offsets, transitions, fittings, dampers, valves, hanger locations.

Co-ordination:- Co-ordination with architectural, structural along with other services to fix the **BOP, BOD** with proper dimension and annotation.

Dimension and Annotation:- Providing proper dimensions and annotation inline with client standard or as per general standard shop drawing.



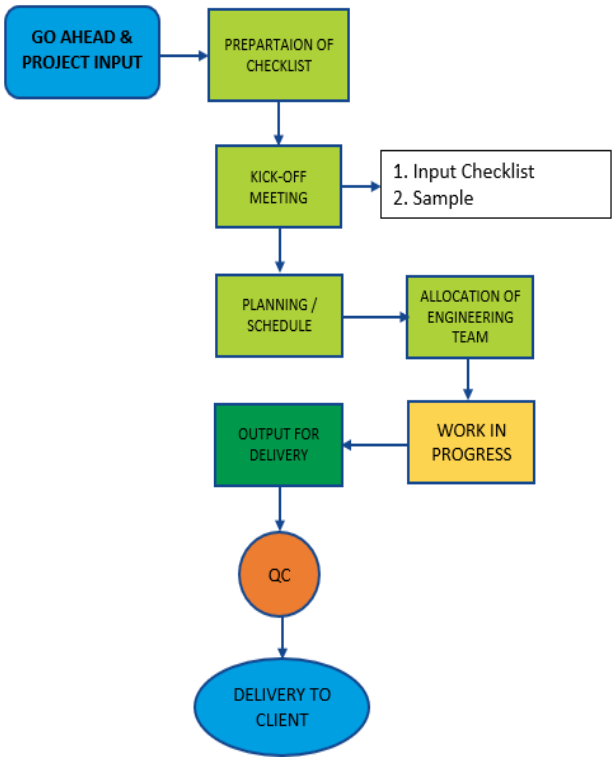
CAD As built Drawing

Our cad team draft the CAD drawing from redline mar-ups and Our As-built/Redline Markup Service is ideal for creating your as-builts drawings or design modifications in AutoCAD.

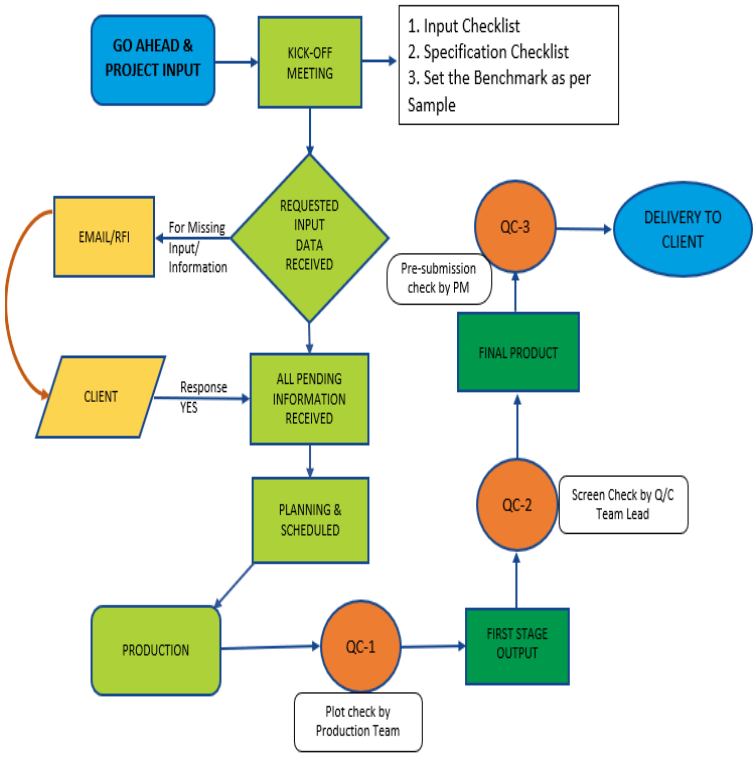
Markups: RED ink for drawing changes.

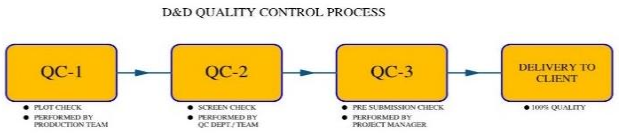
D&D Project Execution

DESIGN ENGINEERING



BIM / CAD





Stage 1: - We do kickoff meeting with our client for better understanding of the project to start.

Stage2: - We do project review, planning and prepare project specification checklist and delivery schedule and share with client.

Stage3: - We allocate our dedicated Team lead with team member inline with the services to start the production activities as per delivery schedule.

Final Stage: - We follow QC process in the execution process before delivered to the client. With the above process, we deliver the high-quality product to client.

Quality Check – 1

The model check is done comparing it with the original contract documents through Team Member.

Quality Check – 2

Team performs a more detailed comparison with specific checklist and project checklist the deliverables and main objective check the following Clashes (Old/New), Elevation, Routing, Fittings, etc. Construction point of view.

Quality Check – 3

The Project manager conducts the pre- shipment check before sending them to client. With the above process, we deliver the high-quality product to client.

Core Team

Irshad Ali Shaikh
CE0 – Co-Founder

Mr. Irshad Ali is the co-owner & founder of DESIGN AND DRAWING SOLUTION. He is having more than 15 years of experience in Building services in construction Industry throughout AEC project execution process from Pre-construction, construction processes like MEP engineering consulting, Designing, installation and handover process of the project.

He has completed BE in Mechanical Engineering from Pune University with Post Graduation in Project Management (PGPPM) from NICMAR Pune, India. In his small journey, he has successfully delivered the more than hundred BIM/CAD project for his satisfied client with the best quality and unique team effort.

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 & Institutional building. Including building Infrastructure projects like metro, airports, globally i.e. USA, Australia, New Zealand & India.

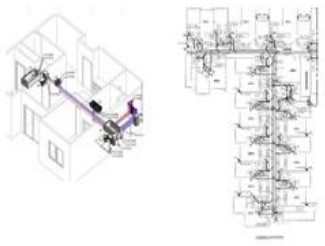
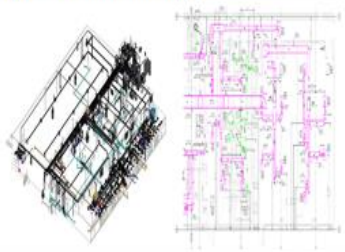
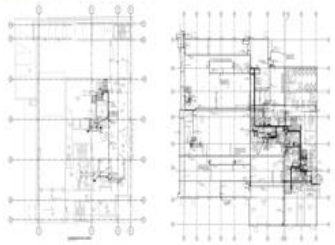
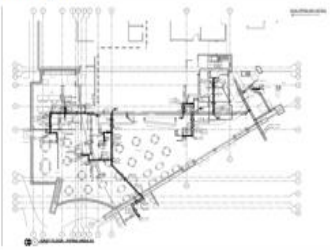
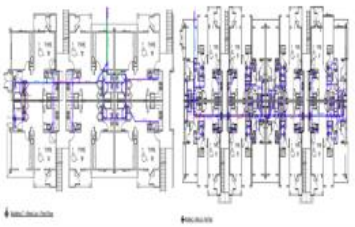
Karishma Bibi
Sales Head

She is the co-owner of DESIGN AND DRAWING SOLUTION and well experienced in offshore sales development initiatives. She is having a good knowledge of result-oriented sales development processes and customer retention. She is leading the complete sales team for B2B sales within the company and managing and monitoring the effectiveness of the entire sales cycle. She has implemented her interior design expertise to improve the technical expertise for client communication for offshore sales which helps her build a long-term relationship with new and existing clientele.

Rupam Mondal
Production Manager

He holds a Mechanical Engineering diploma form WBSCTE, India and having more than 7 years' experience in Building construction Industry for MEP engineering, Drafting, of 3D , 4D , 5D & 6D BIM service .
He is having expertise in MEP engineering calculation, with all Autodesk BIM/CAD tools like Revit, Fabrication, AutoCAD MEP, Navis works and AutoCAD and has complete knowledge of engineering and 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 process of the company, client communication, project management process and assisting with innovative (R & D) solution of new process, tools for new requirement of clients.

Project References

Plumbing Design		Plumbing Construction	
			
Sunset Gardens	2404 Apartment	Bakers college	MARTINSBURG VA MEDICAL CENTER
Albuquerque	Miami Beach	Royal Oak	Martinsburg
New Mexico	Florida	Michigan	West Virginia
Apartment Buildings	Apartment	College	Healthcare Facility
			
Munzing	Dean Rd Transport	Schoolcraft college	Pacific Village apartment phase II
Clover	Cleveland	Livonia	Thurston County
South Carolina	Ohio	Michigan	Washington
Industrial	Transportation Facility	College Building	Residential

Contact US

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

Mumbai Office
108, 1st Floor
Plot No X2/1, MIDC PH-II
Dombivli East, Central Mumbai
– 421203, Thane, MH, India

Kolkatta office:-
56, S.N. BANERJEE ROAD,
SARKARBAGAN BARRACKPORE.
KOL-120, West Bengal , India

Channel Partner-USA
barkarblue Inc
363 N Amphlett Blvd,
San Mateo,
CA 94401, United States