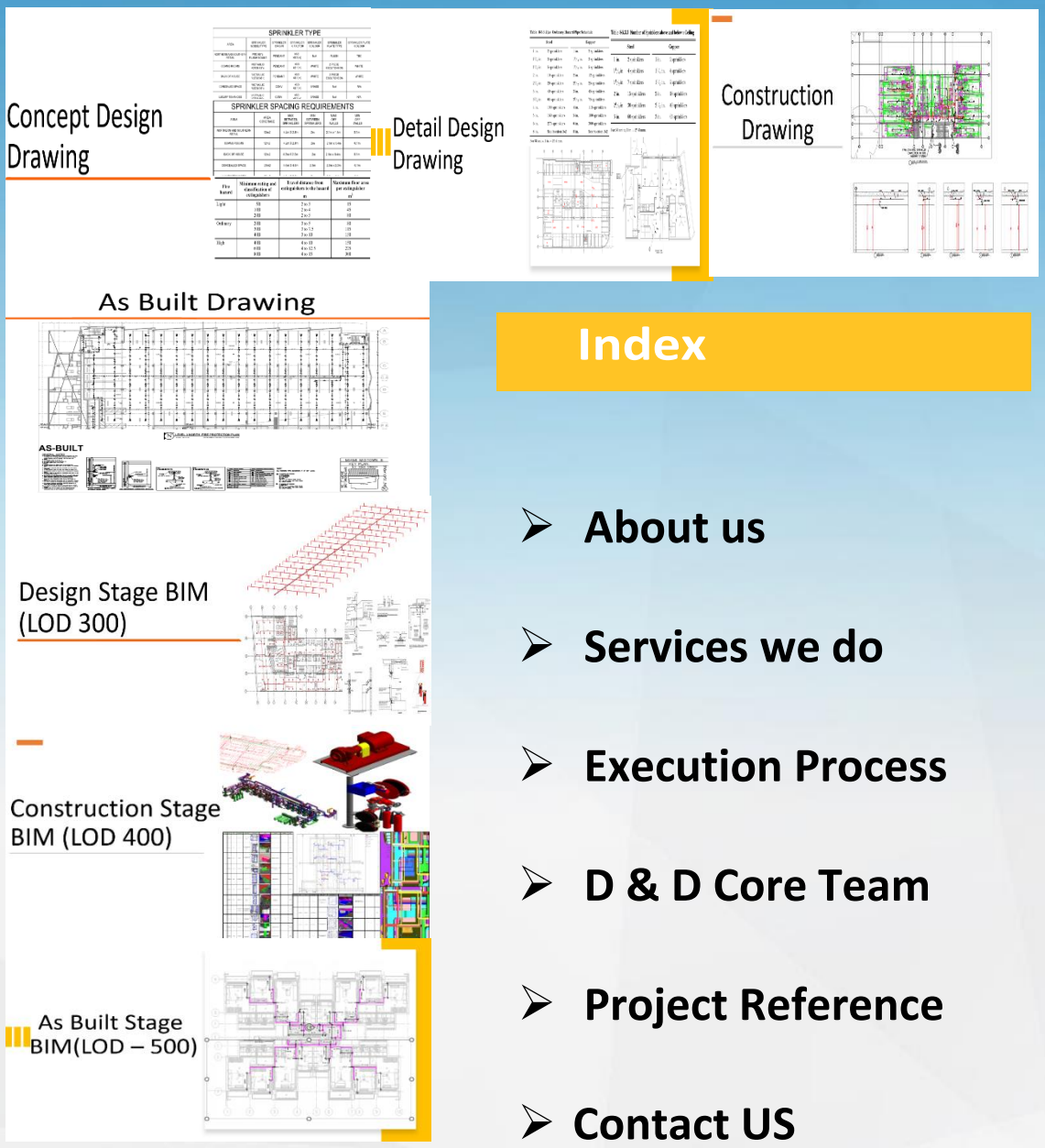
Year 2025-26

Design & BIM Services for Fire Protection Systems



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About us

Design and Drawing Solution offers design and construction services for fire systems to owners, fire consultant, general contractor, MEP and Fire contractors.

Our team is efficient in all modern fire design and drawing tools and technology.

We are familiar with all latest international codes and guidelines for fire systems such as,
Fire Design code:
International Codes: NFPA 13, 14.
AU-NZ Codes AS 2118, AS 1841, AS 1603
UK-Ire Codes BS 9251, BS 9990

We are currently providing services throughout the world specially all over the USA from EST to PST zones. Even AU, NZ & UK including all other part of world and seamlessly working with our existing clients like fire engineering consultant & contractors.
Using our design and BIM construction outsourcing services, our clients have numerous advantages i.e.

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

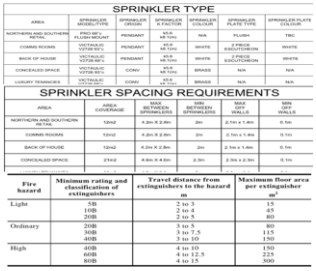
Design CAD Services

- Concept Design Drawing
- Detail Design Drawing
- Construction Drawing
- As Built Drawing

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
  - Shop Drawing
- As Built Stage BIM (LOD 500)
  - As Built Model & Drawing

Concept Design Drawing



SPRINKLER TYPE

AREA	SPRINKLER MODEL/TYPE	SPRINKLER ORIGIN	SPRINKLER K FACTOR	SPRINKLER COLOUR	SPRINKLER PLATE TYPE	SPRINKLER PLATE COLOUR
NORTHERN AND SOUTHERN RETAIL	PRO 68°c FLUSH MOUNT	PENDANT	K5.6 k8.1(m)	N/A	FLUSH	TBC
COMMS ROOMS	VICTAULIC V2728 93°c	PENDANT	K5.6 k8.1(m)	WHITE	2 PIECE ESCUTCHEON	WHITE
BACK OF HOUSE	VICTAULIC V2728 68°c	PENDANT	K5.6 k8.1(m)	WHITE	2 PIECE ESCUTCHEON	WHITE
CONCEALED SPACE	VICTAULIC V2726 93°c	CONV	K5.6 k8.1(m)	BRASS	N/A	N/A
LUXURY TENANCIES	VICTAULIC V2726 68°c	CONV	K5.6 k8.1(m)	BRASS	N/A	N/A

SPRINKLER SPACING REQUIREMENTS

AREA	AREA COVERAGE	MAX BETWEEN SPRINKLERS	MIN BETWEEN SPRINKLERS	MAX OFF WALLS	MIN OFF WALLS
NORTHERN AND SOUTHERN RETAIL	12m2	4.2m X 2.8m	2m	2.1m x 1.4m	0.1m
COMMS ROOMS	12m2	4.2m X 2.8m	2m	2.1m x 1.4m	0.1m
BACK OF HOUSE	12m2	4.2m X 2.8m	2m	2.1m x 1.4m	0.1m
CONCEALED SPACE	21m2	4.6m X 4.6m	2.3m	2.3m x 2.3m	0.1m
LUXURY TENANCIES	12m2	4.2m X 2.8m	2m	2.1m x 1.4m	0.1m

Fire hazard	Minimum rating and classification of extinguishers	Travel distance from extinguishers to the hazard m	Maximum floor area per extinguisher m^2
Light	5B 10B 20B	2 to 3 2 to 4 2 to 5	15 45 80
Ordinary	20B 30B 40B	3 to 5 3 to 7.5 3 to 10	80 115 150
High	40B 60B 80B	4 to 10 4 to 12.5 4 to 15	150 225 300

Concept Design:

At this stage our Fire designer starts the works with basic consideration of fire protections systems like as follows.

Fire Protection

- Sprinkler Type & location
- Riser Location
- Extinguisher Location

Fire Alarm

- Allocation of Fire Alarm Panel, Smoke Detector.
- Allocation of Strobe / Speaker and Manual call point.

Input

We use to received mark-ups from client for location of sprinkle or we use to follow previous reference projects to start the allocation of sprinkler and alarm services.

And our Engineering team use to follow the below type of sprinkler and coverage spaces as per the code as follows a based.

Detail Design Drawing

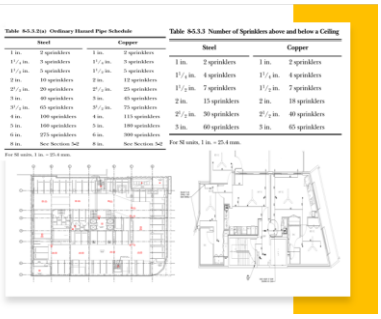


Table 8-5.3.2(a) Ordinary Hazard Pipe Schedule

Steel		Copper	
1 in.	2 sprinklers	1 in.	2 sprinklers
$1^1/_4$ in.	3 sprinklers	$1^1/_4$ in.	3 sprinklers
$1^1/_2$ in.	5 sprinklers	$1^1/_2$ in.	5 sprinklers
2 in.	10 sprinklers	2 in.	12 sprinklers
$2^1/_2$ in.	20 sprinklers	$2^1/_2$ in.	25 sprinklers
3 in.	40 sprinklers	3 in.	45 sprinklers
$3^1/_2$ in.	65 sprinklers	$3^1/_2$ in.	75 sprinklers
4 in.	100 sprinklers	4 in.	115 sprinklers
5 in.	160 sprinklers	5 in.	180 sprinklers
6 in.	275 sprinklers	6 in.	300 sprinklers
8 in.	See Section 5-2	8 in.	See Section 5-2

For SI units, 1 in. = 25.4 mm.

Table 8-5.3.3 Number of Sprinklers above and below a Ceiling

Steel		Copper	
1 in.	2 sprinklers	1 in.	2 sprinklers
$1^1/_4$ in.	4 sprinklers	$1^1/_4$ in.	4 sprinklers
$1^1/_2$ in.	7 sprinklers	$1^1/_2$ in.	7 sprinklers
2 in.	15 sprinklers	2 in.	18 sprinklers
$2^1/_2$ in.	30 sprinklers	$2^1/_2$ in.	40 sprinklers
3 in.	60 sprinklers	3 in.	65 sprinklers

For SI units, 1 in. = 25.4 mm.

Once's we receive the approval on the concept design we detailed the networks piping and networking of sprinkler systems .

Following we are MEP detailed use to covered :

- Sprinkler Hear and branch network
- Riser and sprinkler header route
- Detail Pipe Sizing
- Proper Annotation of Fire Alarm

Sprinkler & Extinguisher Drawing

After confirmation of sprinkler location, we use to detailed the drawing with piping networks with pipe sizing for Fire Sprinkler system.

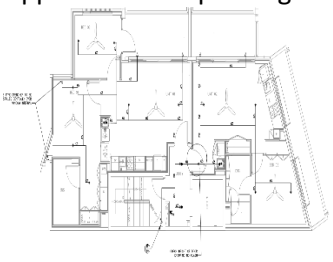
Based on the hazards class , piping sizes as per standard table.

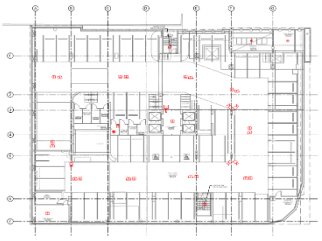
Fire Alarm Drawing

Once all the location has been finalizes, we use to produce the detail drawings with proper annotation and designs to complete fire alarm drawings.

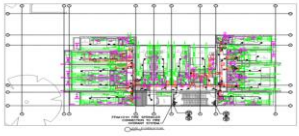
Input

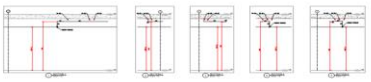
Approved concept design or reference project drawings.





Construction Drawing





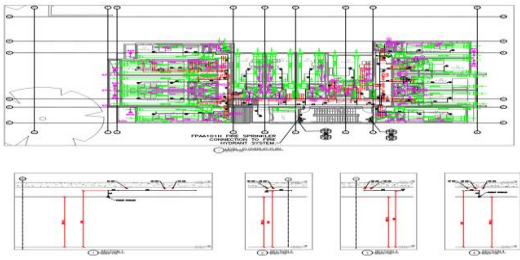
After completion of design or tender drawing, co-ordination with other services use to complete to proceed with construction drawings.

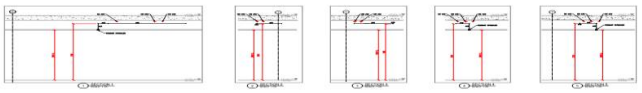
Our team use to co-ordinate with other services to work out the sections of services and verify the final elevations to complete.

Accordingly, we put the dimensions of dimensions of sprinkler, extinguisher, piping networks, fire alarm devised for to make ready of construction drawings.

Input

Tender drawings, architectural sections and other services drawing for Overlay co-ordinations.





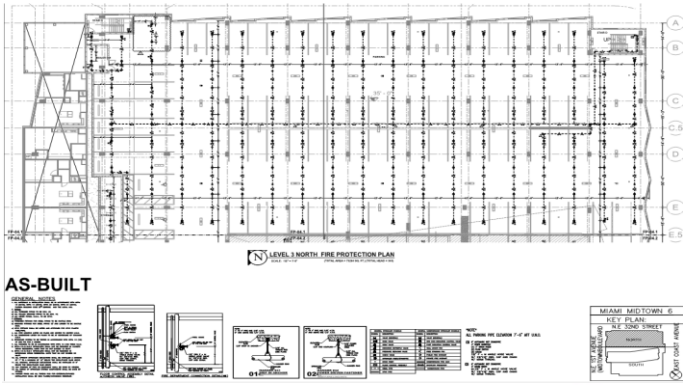
As Built Drawing

After completion of Construction, site team use to mark-ups the changes made in site based on the actual execution.

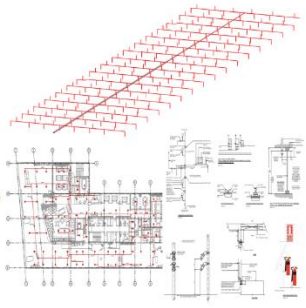
Based on the mark-ups, we produce the as built drawings.

Input

Mark-ups from site team.



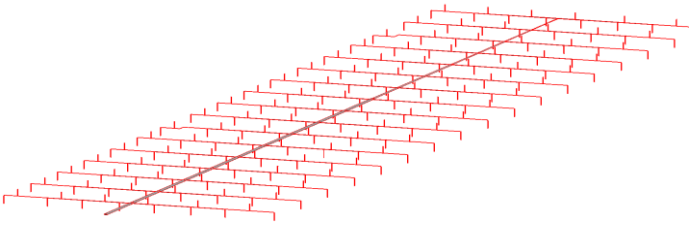
Design Stage BIM (LOD 300)



3D Model (LOD 300)

We have a team fire 3D modeler works on 3D models i.e. Fire Hydrant, sprinkler, extinguishers, fire alarm, detection systems fixtures, piping, fitting with all accessories & associated equipment's.

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

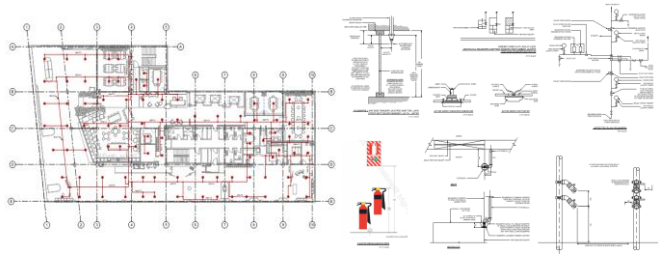


Design / Tender Drawing

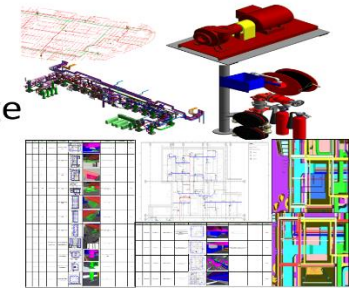
After completion of 3D model, we create sheet template with proper title block and start working on the production of design drawing with proper annotation and dimensions.

Design drawing set will have following list of drawing

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



Construction Stage BIM (LOD 400)

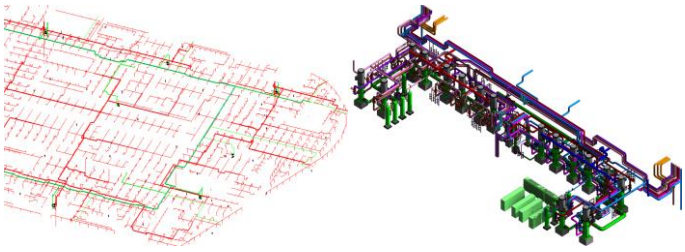


3D Model (LOD 400)

We specialize in the virtual construction of 3D BIM model of Fire protection and fire alarm systems @ LOD 400.

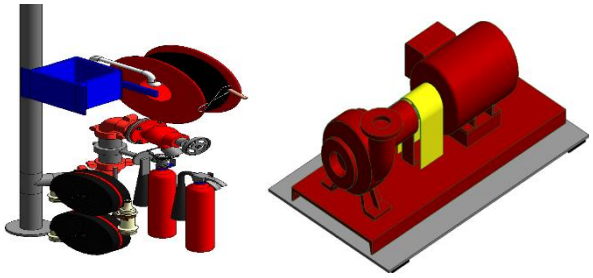
Based on the tender drawing & specifications, we use to produce the model for fire fighting networks, sprinklers, Extinguishers, hydrants for fire protections systems.

For fire alarm, we use to produce the model for fire alarm fixtures based on the approved fire fixtures.



Equipment Modeling

From the manufacturer's 2D drawings, and in line with project specifications, we create a 3D model of all fire networks equipment's like pump, extinguisher, hydrant box, fire alarm panel.



BIM co-ordination covers –

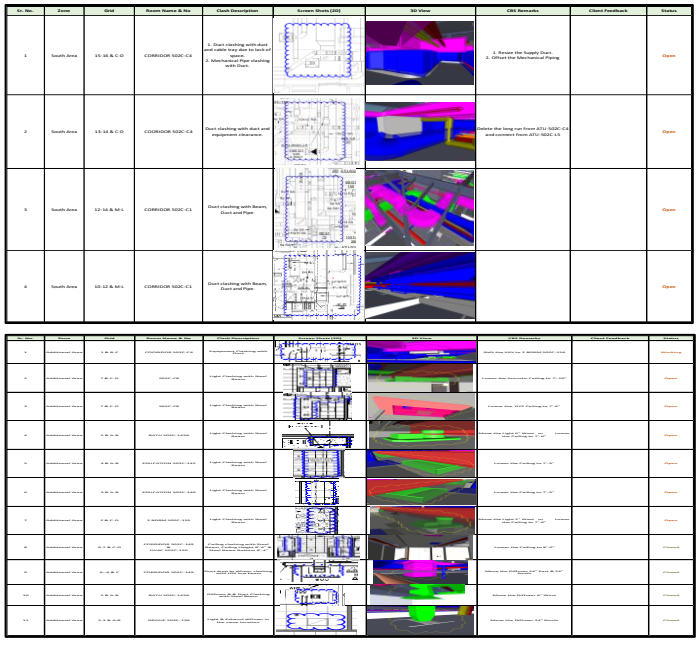
1. Clash co-ordination
2. Generation of Report
3. Resolution
4. Clash co-ordination

We generate a coordinated BIM model after resolving the clashes among all disciplines – Architectural, Structural, Concrete, Mechanical, Electrical, Plumbing, Fire Protection, etc.

Clashes are resolved through video conference discussion 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.

1. Generation of Report
2. Resolution

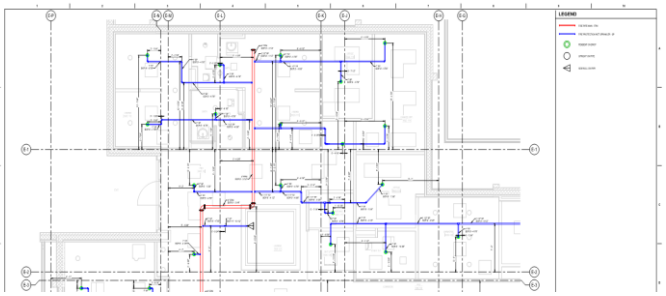
We have produced the clash report through Navisworks and provide the alternative optimize solutions to make clash free model.

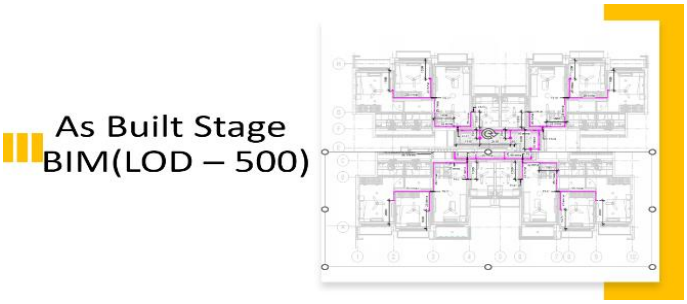


Shop Drawing

BIM is highly useful for contractors, fabricators, suppliers, and manufacturers during construction of any irregular or complex project to generate accurate shop drawings.

Utilizing a coordinated project BIM model, we generate accurate shop drawings that are detailed enough for workshop fabrication and/or on-site construction of items such as sleeves and penetration and hanger locations.

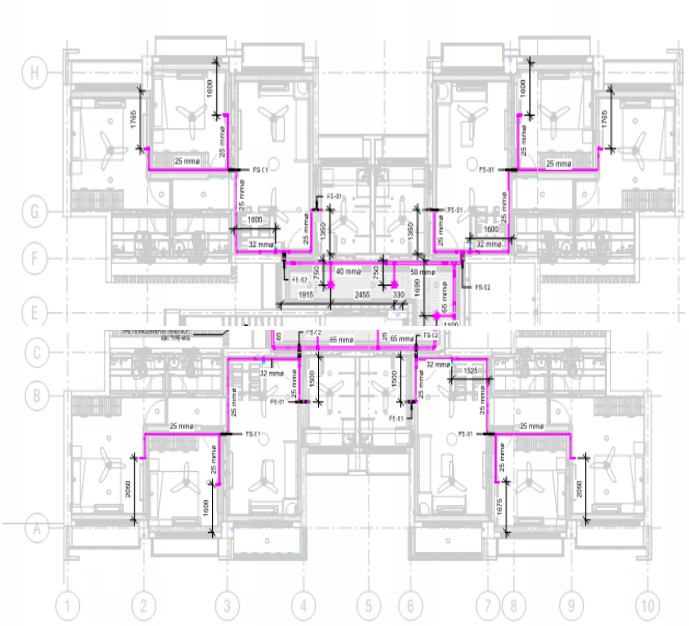




As built Drawing

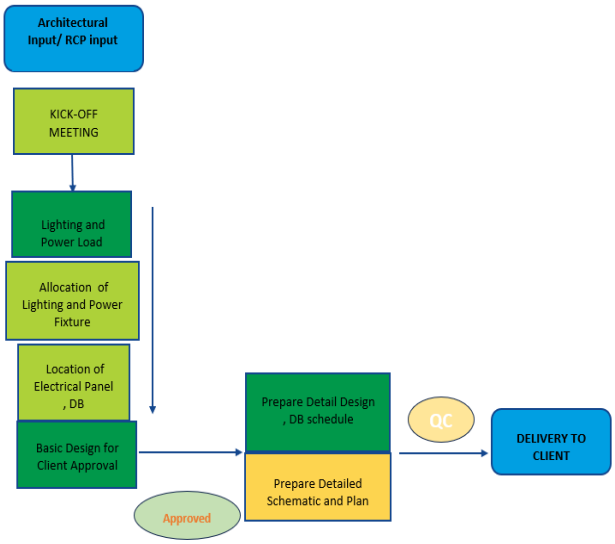
After completion all installation of Fire Protection systems, site team use to change or modify few items in the systems as required by actual conditions.

And site team use to mark-ups on the shop drawing which use to supply to design team to produce as built model and drawings for final hand over of the project.

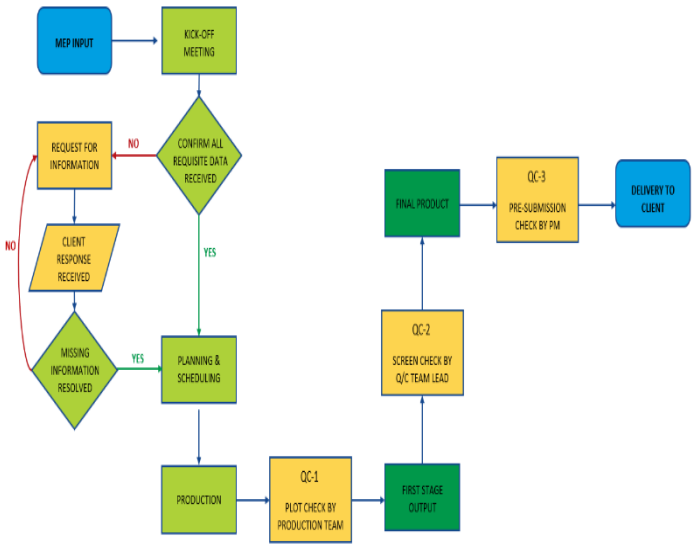


Execution Process

Design Execution Process



BIM Execution Process



We use to implement our standard BIM/CAD execution process to deliver each and every project.

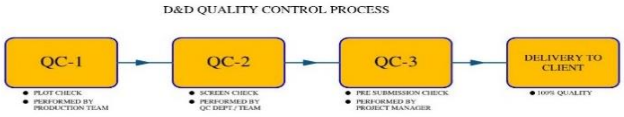
Stage 1: - We do kickoff meeting with our client for better understanding of the project to start.

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.

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.

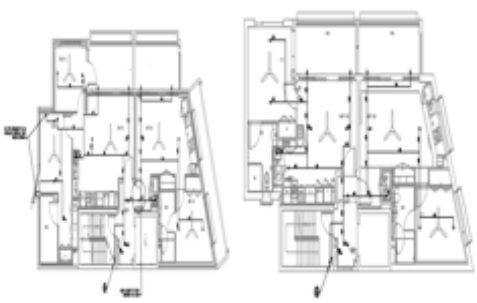
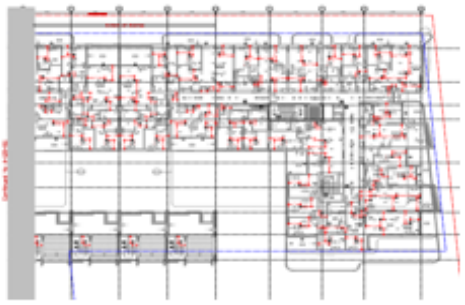
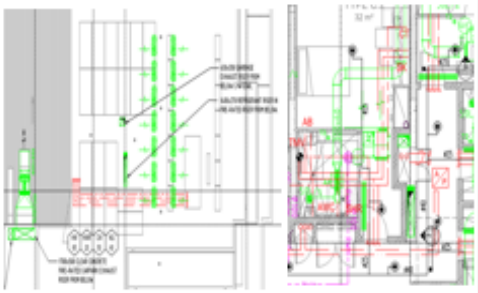
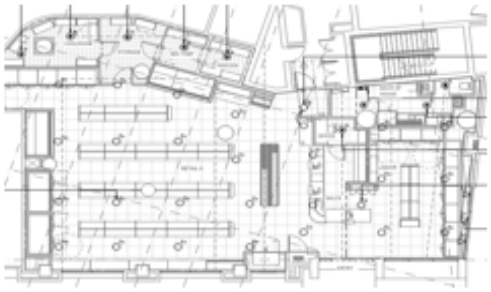
Rupam Mondal
Production Manager

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

Fire		
		
Missenden Rd	Canterbury Road	Chilangos Internal Fitout
Camperdown	Roselands	Melbourne
Australia	Australia	Australia
Apartment		Fitout
		
Brunswick and Co	Kirrawee	IGA Swanston Street
Fortitude Valley	Kirrawee	Carlton
Australia	Australia	Australia
Apartment	Residential	Retail store

Contact US

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

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