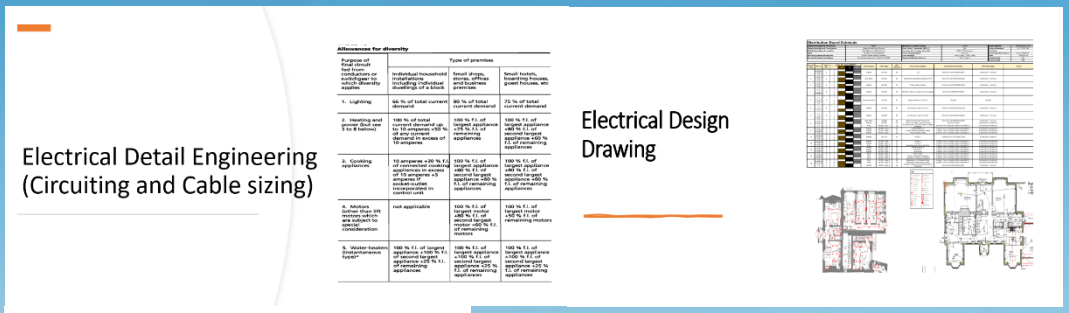
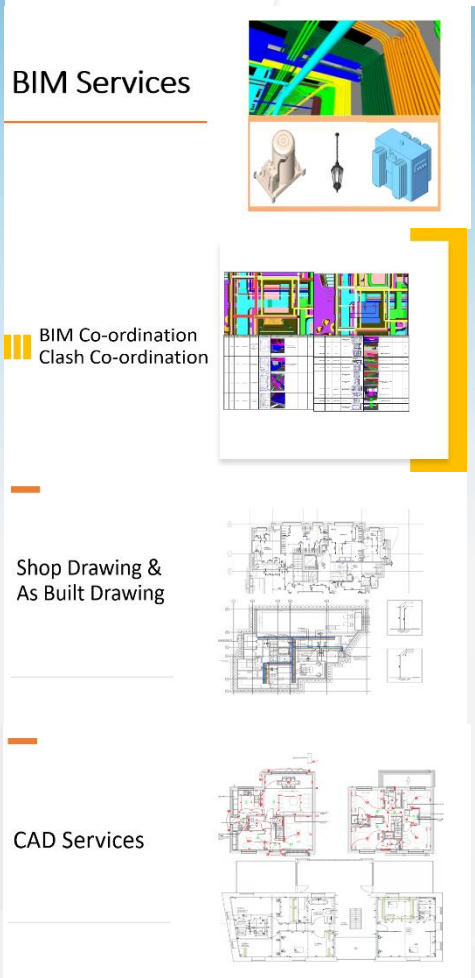
Year 2024-25

Design & Construction Services for Electrical System





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About us

Design and Drawing Solution offers design and construction services for Electrical systems to owners, electrical consultant, general contractor, MEP and electrical contractors. Our team is efficient in all modern electrical design and drawing tools and technology.

We are familiar with all latest international codes and guidelines for electrical systems such as,
Electrical Design Code.
UK building regulation
BS EN 1264-1, BS 7671

We are currently providing our electrical design and construction services globally and specially UK, Ireland and European countries and seamlessly working with our existing clients like electrical engineering consultant & contractors.
Using our design and BIM construction outsourcing services, our clients have numerous advantages i.e. including time and cost savings during the design & construction stages of projects.

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 Engineering Services

- **Electrical Detail Engineering (Circuiting, Cable Sizing)**
- **Electrical design drawings**
  - Lighting layout
  - Power Layout
  - Fire alarm / CCTV / IT Security

Construction BIM Services

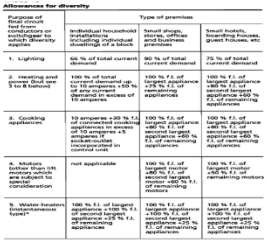
- 3D Modelling
- Cable tray and conduit Modelling
- Equipment Modeling
- BIM Co-ordination
- Shop Drawing
- As built drawing

CAD Services

- As built drawing

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

Electrical Detail Engineering (Circuiting and Cable sizing)



Allowances for diversity

Purpose of final circuit fed from conductors or switchgear to which diversity applies	Type of premises		
	Individual household installations including individual dwellings of a block	Small shops, stores, offices and business premises	Small hotels, boarding houses, guest houses, etc
1. Lighting	66 % of total current demand	90 % of total current demand	75 % of total current demand
2. Heating and power (but see 3 to 8 below)	100 % of total current demand up to 10 amperes +50 % of any current demand in excess of 10 amperes	100 % f.l. of largest appliance +75 % f.l. of remaining appliances	100 % f.l. of largest appliance +80 % f.l. of second largest appliance +60 % f.l. of remaining appliances
3. Cooking appliances	10 amperes +30 % f.l. of connected cooking appliances in excess of 10 amperes +5 amperes if socket-outlet incorporated in control unit	100 % f.l. of largest appliance +80 % f.l. of second largest appliance +60 % f.l. of remaining appliances	100 % f.l. of largest appliance +80 % f.l. of second largest appliance +60 % f.l. of remaining appliances
4. Motors (other than lift motors which are subject to special consideration	not applicable	100 % f.l. of largest motor +80 % f.l. of second largest motor +60 % f.l. of remaining motors	100 % f.l. of largest motor +50 % f.l. of remaining motors
5. Water-heaters (instantaneous type)*	100 % f.l. of largest appliance +100 % f.l. of second largest appliance +25 % f.l. of remaining appliances	100 % f.l. of largest appliance +100 % f.l. of second largest appliance +25 % f.l. of remaining appliances	100 % f.l. of largest appliance +100 % f.l. of second largest appliance +25 % f.l. of remaining appliances

General Points

Supply voltage

Single Phase 240 v

Three Phase 400 v

Lighting & Power Loads

Based on the standard practice, electrical load can be worked out the main loads are as follows.

- Lighting
- General Power
- Other small Power like IT, and small power
- Equipment load like HVAC, Plumbing and Fire.

Lighting Drawing and Control

We provide lighting points based on the lux required or as per samples or interior requirement.

Control switch will provided as required and standard practice and samples.

Electrical Circuit Desing & Cable Sizing

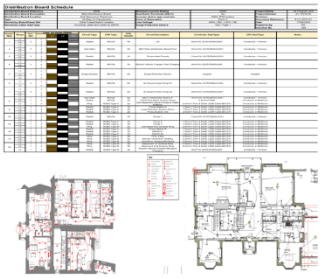
Lighting Circuit

Based on the demand factor, electrical demand load will be calculated to worked out the breaker sizes and cable size as required and standard practice.

Power Circuit

Based on the available sockets locations as provided by the interior architect and samples and standard requirement , demand load will be calculated to calculate breaker and cable sizes.

Electrical Design Drawing



Based on controls, looped will be provided to produce lighting design and as per the final circuit design, power layouts to be produced and other layout like CCTV, Fire alarm drawings will be produced based on the reference designs and standard requirement.

Following drawings included a part of detail design Package

Lighting Plans

Power Plans

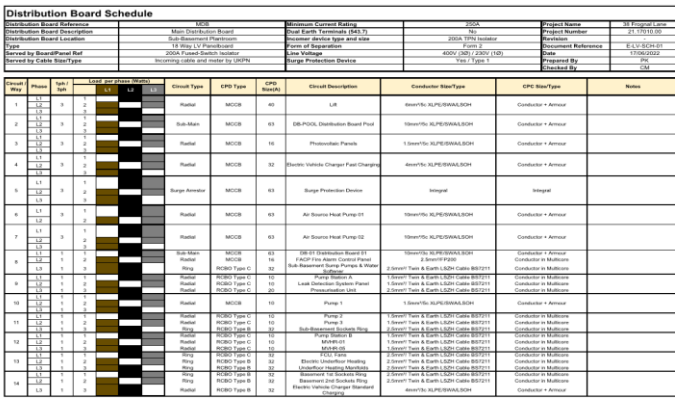
Containment Plans

Schematic

DB schedule and details as require

DB Schedule and Cable Sizing

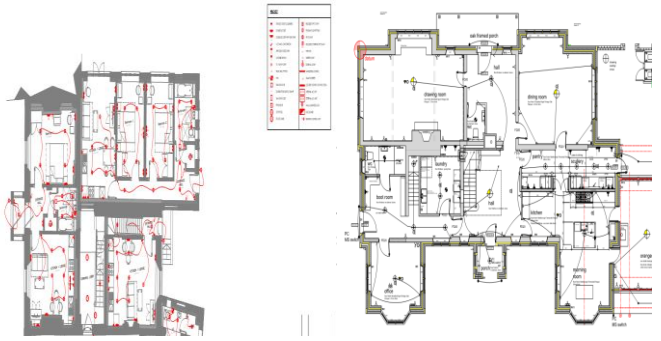
Based on the final circuits distribution and loads , DB schedule to produce with detailed CKT no which will be followed in the detailed schematic and Power Plans.



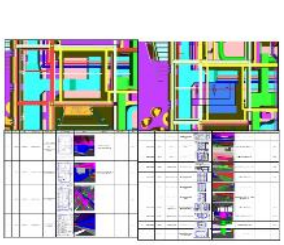
Distribution Board Schedule

Distribution Board Reference	MDB	Minimum Current Rating	200A	Project Name	38 Frognal Lane
Distribution Board Description	Main Distribution Board	Dual Earth Terminals (543.7)	No	Project Number	21.170/10.06
Distribution Board Location	Sub-Basement Plantroom	Incomer device type and size	200A TPN Isolator	Revision	
Type	18 Way LV Panelboard	Form of Separation	Form 2	Document Reference	E-LV-SCH-01
Served by Board/Panel Ref	200A Fused-Switch Isolator	Line Voltage	400V (3Ø) / 230V (1Ø)	Date	17/06/2022
Served by Cable Size/Type	Incoming cable and meter by UKPN	Surge Protection Device	Yes / type 1	Prepared By	PK
				Checked By	CM

Circuit No	Phase	1ph / 3ph	Load per phase (Watts) L1	L2	L3	Circuit Type	CPD Type	CPD Size(A)	Circuit Description	Conductor Size/Type	CPC Size/Type	Notes
1	L1	3	2			Radial	MCCB	40	Lift	4mm²/6c XLPE/SWA/LSOH	Conductor + Armour	
2	L2			2								
3	L3				2							
3	L1	3	2			Sub-Main	MCCB	63	DB-POOL Distribution Board Pool	16mm²/6c XLPE/SWA/LSOH	Conductor + Armour	
4	L2			2								
5	L3				2							
5	L1	3	2			Radial	MCCB	16	Photovoltaic Panels	1.5mm²/6c XLPE/SWA/LSOH	Conductor + Armour	
6	L2			2								
7	L3				2							
7	L1	3	2			Radial	MCCB	32	Electric Vehicle Charger Fast Charging	4mm²/6c XLPE/SWA/LSOH	Conductor + Armour	
8	L2			2								
9	L3				2							
9	L1	3	2			Surge Arrestor	MCCB	63	Surge Protection Device	Integral	Integral	
10	L2			2								
11	L3				2							
11	L1	3	2			Radial	MCCB	63	Air Source Heat Pump 01	16mm²/6c XLPE/SWA/LSOH	Conductor + Armour	
12	L2			2								
13	L3				2							
13	L1	3	2			Radial	MCCB	63	Air Source Heat Pump 02	16mm²/6c XLPE/SWA/LSOH	Conductor + Armour	
14	L2			2								
15	L3				2							
15	L1	1	1			Sub-Main	MCCB	63	DB-01 Distribution Board 01	16mm²/6c XLPE/SWA/LSOH	Conductor + Armour	
16	L2			1		Radial	MCCB	16	FADP Fire Alarm Control Panel	2.5mm²/ FP200	Conductor in Multicore	
17	L3				1				Sub-Basement Sump Pumps & Water Boilers			
17	L1	1	1			Ring	RCBO Type C	32		2.5mm²/ Twin & Earth LSZH Cable BS7211	Conductor in Multicore	
18	L2	1		1		Radial	RCBO Type C	10	Pump Station A	1.5mm²/ Twin & Earth LSZH Cable BS7211	Conductor in Multicore	
19	L3	1			1	Radial	RCBO Type C	10	Leak Detection System Panel	1.5mm²/ Twin & Earth LSZH Cable BS7211	Conductor in Multicore	
19	L1	1	1			Radial	RCBO Type C	20	Pressurisation Unit	2.5mm²/ Twin & Earth LSZH Cable BS7211	Conductor in Multicore	
20	L2	1		1								
21	L3	1			1							
21	L1	1	1			Radial	MCCB	10	Pump 1	1.5mm²/6c XLPE/SWA/LSOH	Conductor + Armour	
22	L2	1		1								
23	L3	1			1							
23	L1	1	1			Radial	RCBO Type C	10	Pump 2	1.5mm²/ Twin & Earth LSZH Cable BS7211	Conductor in Multicore	
24	L2	1		1		Radial	RCBO Type C	10	Pump 3	1.5mm²/ Twin & Earth LSZH Cable BS7211	Conductor in Multicore	
25	L3	1			1	Ring	RCBO Type C	32	Sub-Basement Sockets Ring	2.5mm²/ Twin & Earth LSZH Cable BS7211	Conductor in Multicore	
25	L1	1	1			Radial	RCBO Type C	10	Pump Station B	1.5mm²/ Twin & Earth LSZH Cable BS7211	Conductor in Multicore	
26	L2	1		1		Radial	RCBO Type C	10	MVHR-01	1.5mm²/ Twin & Earth LSZH Cable BS7211	Conductor in Multicore	
27	L3	1			1	Radial	RCBO Type C	10	MVHR-05	1.5mm²/ Twin & Earth LSZH Cable BS7211	Conductor in Multicore	
27	L1	1	1			Ring	RCBO Type B	32	FSU Fans	2.5mm²/ Twin & Earth LSZH Cable BS7211	Conductor in Multicore	
28	L2	1		1		Ring	RCBO Type B	32	Electric Underfloor Heating	2.5mm²/ Twin & Earth LSZH Cable BS7211	Conductor in Multicore	
29	L3	1			1	Ring	RCBO Type B	32	Underfloor Heating Manifolds	2.5mm²/ Twin & Earth LSZH Cable BS7211	Conductor in Multicore	
29	L1	1	1			Ring	RCBO Type B	32	Basement 1st Sockets Ring	2.5mm²/ Twin & Earth LSZH Cable BS7211	Conductor in Multicore	
30	L2	1		1		Ring	RCBO Type B	32	Basement 2nd Sockets Ring	2.5mm²/ Twin & Earth LSZH Cable BS7211	Conductor in Multicore	
31	L3	1			1	Radial	RCBO Type B	32	Electric Vehicle Charger Standard Charging	4mm²/6c XLPE/SWA/LSOH	Conductor + Armour	



BIM Co-ordination
Clash Co-ordination

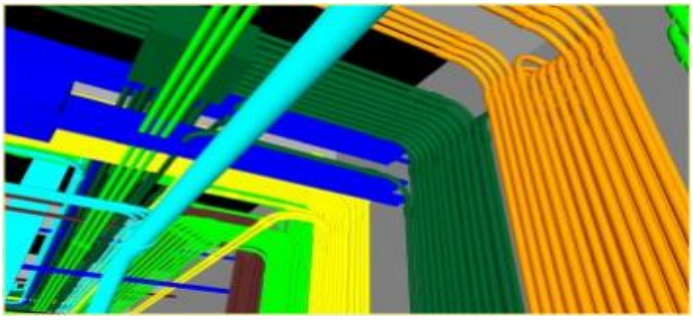


3D Modeling

We specialize in the virtual construction of 3D BIM model of Electrical systems i.e. lighting , power , CCTV , fire alarm IT , Security systems fixtures , accessories , with all conduit and all major items like Transformer , HT panel , LT panel , DB , DG , inverter and solar items as well .
LOD included all from LOD 300 to 500

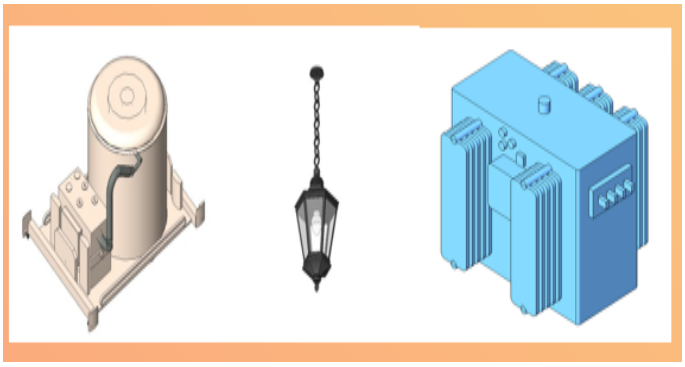
Conduit & Cable Tray

We create virtual model of conduits, Cable tray arranged in a rack system based on the contract and installation information. Optimization of conduit layout reduces time, site conflict and cost, thus increasing the efficiency of the project.



Equipment Modeling

From the manufacturer's 2D drawings, and in line with project specifications, we create a 3D model of all the electrical light, power fixture, DG, panels, DB etc.

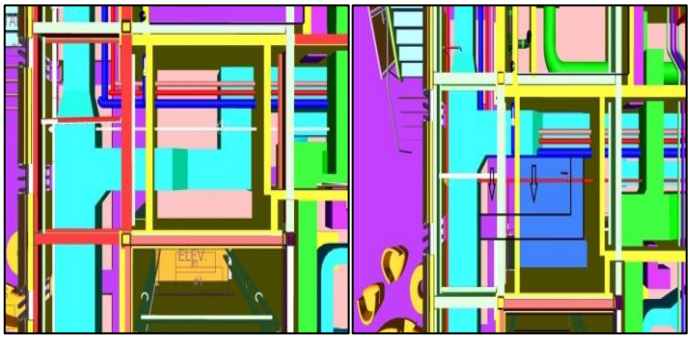


BIM co-ordination covers –

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

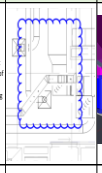
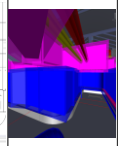
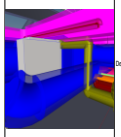
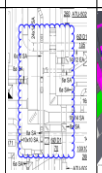
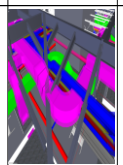
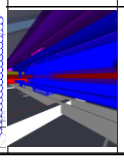
Clash co-ordination

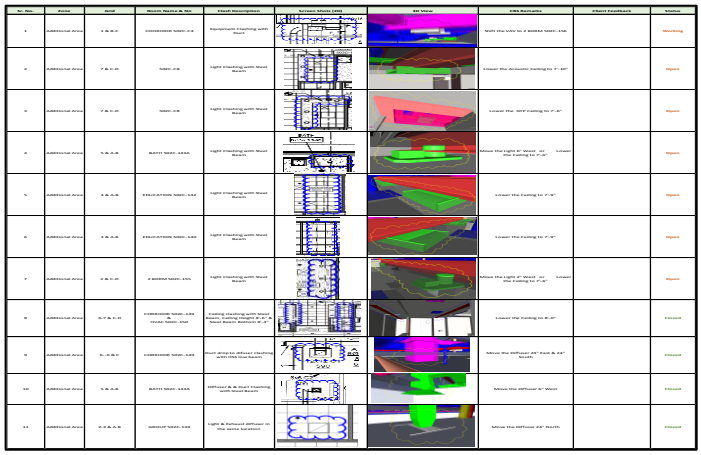
We generate a coordinated BIM model after resolving the clashes among all disciplines – Architectural, Structural, Concrete, Mechanical, Electrical, Plumbing, Fire Protection, etc.
Clashes are resolved through video conference discussion regarding the 3D clash snapshot and multiple fix options such as 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.

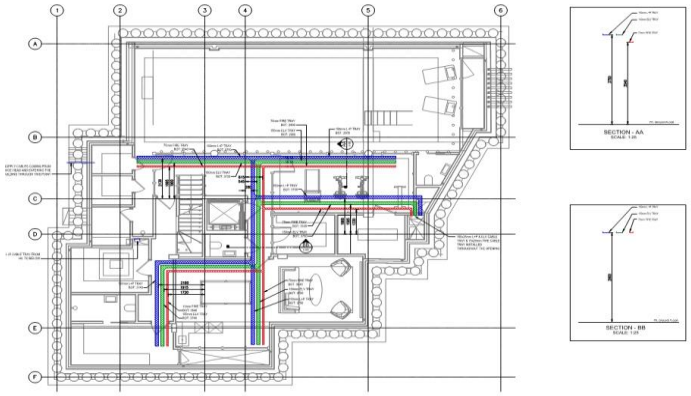


1. Generation of Report
2. Resolution

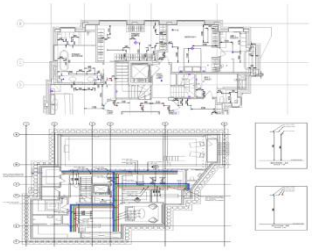
We have produced the clash report through Navisworks and provide the alternative optimize solutions to make clash free model.

Sr. No.	Zone	Grid	Room Name & No	Clash Description	Screen Shots (2D)	3D View	CBS Remarks	Client Feedback	Status
1	South Area	15-16 & C-D	CORRIDOR 502C-C4	1. Duct clashing with duct and cable tray due to lack of space. 2. Mechanical Pipe clashing with Duct.			1. Resize the Supply Duct. 2. Offset the Mechanical Piping		Open
2	South Area	13-14 & C-D	CORRIDOR 502C-C4	Duct clashing with duct and equipment clearance.			Delete the long run from ATU-502C-C4 and connect from ATU-502C-L5		Open
3	South Area	13-14 & M-L	CORRIDOR 502C-C1	Duct clashing with Beam, Duct and Pipe.					Open
4	South Area	10-12 & M-L	CORRIDOR 502C-C1	Duct clashing with Beam, Duct and Pipe.					Open

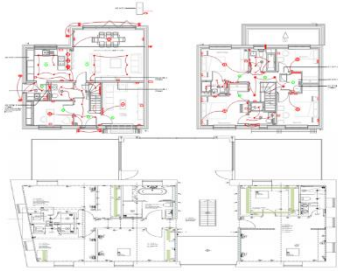




Shop Drawing & As Built Drawing



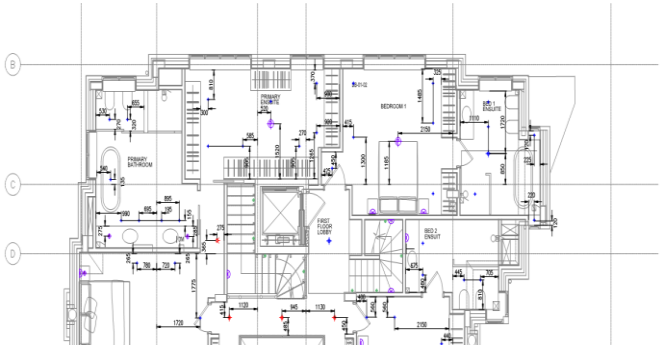
CAD Services



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

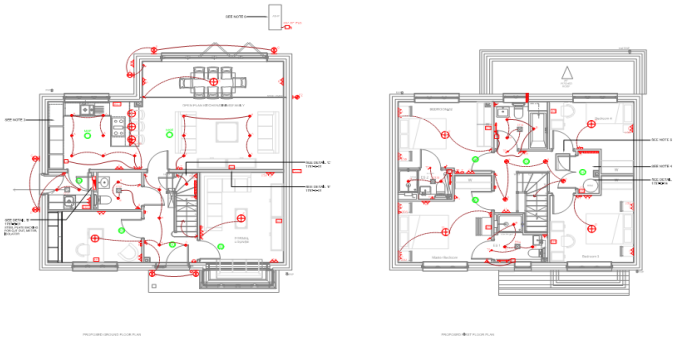
After completion all installation of Electrical systems , site team use to change or modify few items in the systems as required by actual conditions .

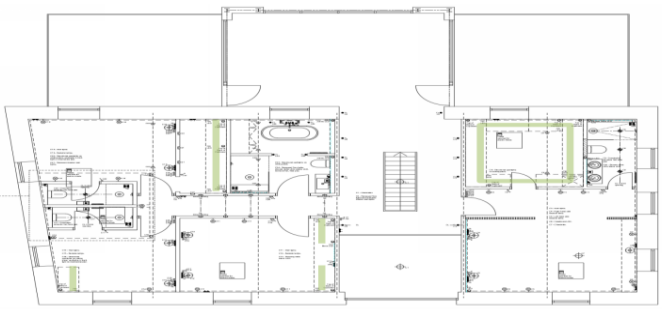
And site team use to mark-ups on the shop drawing which use to supply to design team to produce as built model and drawings for final hand over of the project .

As built Drawing

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

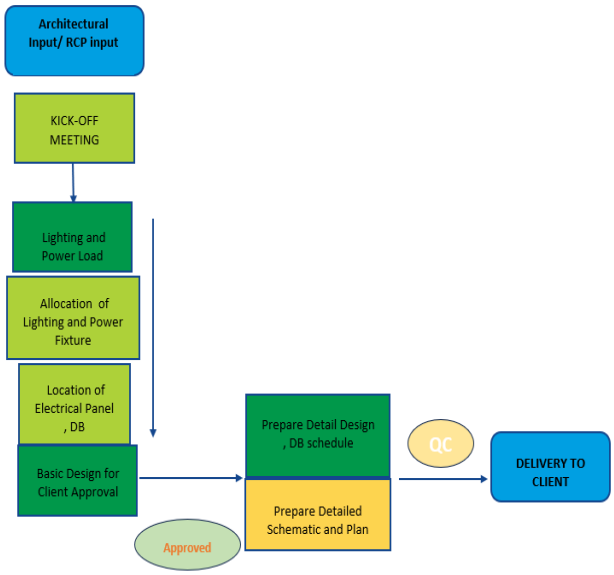
And site team use to mark-ups on the shop drawing which use to supply to design team to produce as built model and drawings for final hand over of the project.



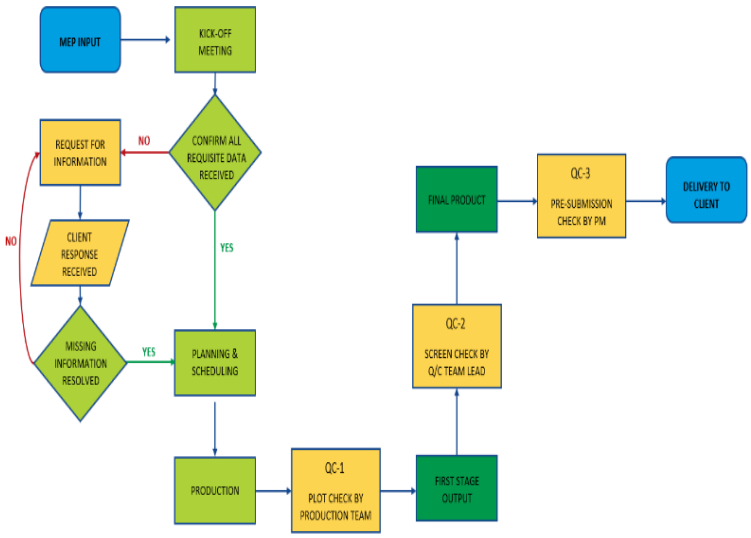


Execution Process

Design Execution Process



BIM/CAD Execution Process



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

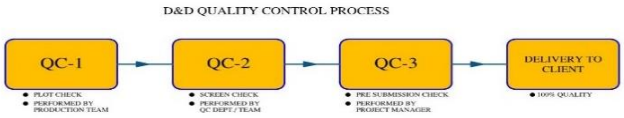
Stage 1: - We do kickoff meeting with our client for better understanding of the project to start.

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.

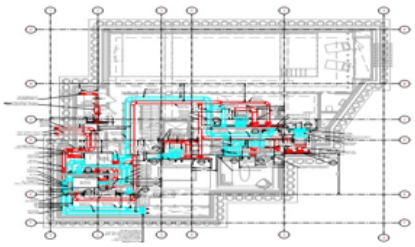
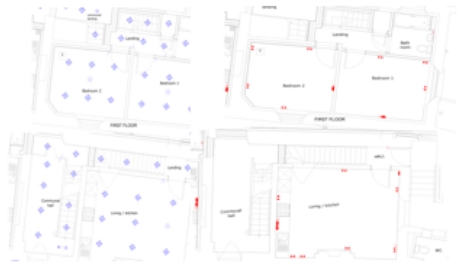
Rupam Mondal
Production Manager

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

Electrical Project		
		
38 Frognal Lane	**Marrylands Farmhouse**	**Little Canneys, Stow Road**
London - Camden, UK	Merrylands, Galhampton	Chelmsford
Residential	Residential	Residential
		
GLENTHORNE HOUSE	**OAK DRIVE HOUSE**	**RIDGE VIEW**
Yeovil	WILTSHIRE	Yeovil
Residential	Residential	Residential

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