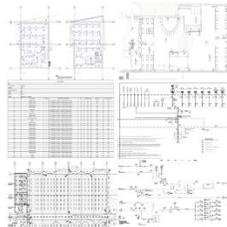


# Design & Construction Services for Electrical System

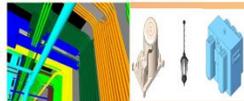
Electrical Detail  
Engineering

Item No.	Description	Unit	Quantity	Rate	Amount
1	Electrical Detailing	Sq. Ft.	100	100	10000
2	Electrical Detailing	Sq. Ft.	200	200	20000
3	Electrical Detailing	Sq. Ft.	300	300	30000
4	Electrical Detailing	Sq. Ft.	400	400	40000
5	Electrical Detailing	Sq. Ft.	500	500	50000
6	Electrical Detailing	Sq. Ft.	600	600	60000
7	Electrical Detailing	Sq. Ft.	700	700	70000
8	Electrical Detailing	Sq. Ft.	800	800	80000
9	Electrical Detailing	Sq. Ft.	900	900	90000
10	Electrical Detailing	Sq. Ft.	1000	1000	100000

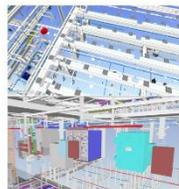
CAD Services



Pre-Construction BIM  
@LOD 300



Construction BIM  
LOD 350/ 400



## Index

- About us
- Services we do
- Execution Process
- D & D Core Team
- Project Reference
- Contact US

# 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:  
AS/NS Building regulation  
AS/NZS 3000, AS/NZS 1680

We are currently providing our electrical design and construction services globally and specially all over the AU, NZ including all other part of world 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.



**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

## Detail Engineering

- Lighting & Power Loads
- Lighting Design and control
- Electrical Circuit Design & Cable Sizing
- Lighting Circuit
- Power Circuit

## CAD Services

- Design Drawing
- Construction Drawing
- As Built Drawing
- P & ID Drawings

## Pre-Construction BIM

- 3D Modelling (LOD 300)
- Design Drawing

## Construction BIM

- Construction 3D Model (LOD 350 | 400)
- BIM Co-ordination
- Shop Drawing
- As Built Drawing

# Electrical Detail Engineering

Room/Zone Type	Recommended Average Illuminance (lux)	
	Initial	Maintained
Kitchen workbench	300	240
Kitchen	200	160
Kitchen/Living	200	160
Living/Dining	100	80
Bathroom	100	80
Bedroom	100	80
Entry/Corridor/Stairs	50	40

## 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 Design 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.

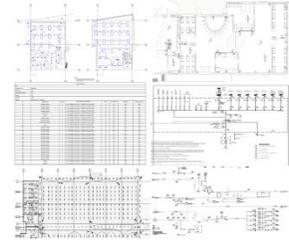
### Power Circuit :

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

Room/Zone Type	Recommended Average Illuminance (lux)	
	Initial	Maintained
Kitchen workbench	300	240
Kitchen	200	160
Kitchen/Living	200	160
Living/Dining	100	80
Bathroom	100	80
Bedroom	100	80
Entry/Corridor/Stairs	50	40

Load group	Single domestic electrical installation or individual living units per phase <sup>1</sup>		Blocks of living units <sup>2,3</sup>	
	2 to 4 living units per phase	5 to 20 living units per phase	2 to 4 living units per phase	5 to 20 living units per phase
Lighting	1.0 A per 10.22 points + 2.0 A per 10.22 points	1.0 A per 10.22 points + 2.0 A per 10.22 points	1.0 A per 10.22 points + 2.0 A per 10.22 points	1.0 A per 10.22 points + 2.0 A per 10.22 points
Power	1.0 A per 10.22 points + 2.0 A per 10.22 points	1.0 A per 10.22 points + 2.0 A per 10.22 points	1.0 A per 10.22 points + 2.0 A per 10.22 points	1.0 A per 10.22 points + 2.0 A per 10.22 points

# CAD Services



## Design Drawings

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

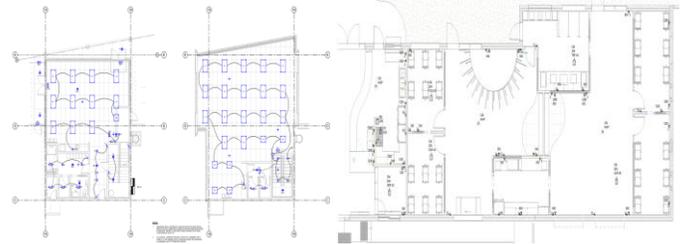
### Lighting Plans

### Power Plans

### Containment Plans

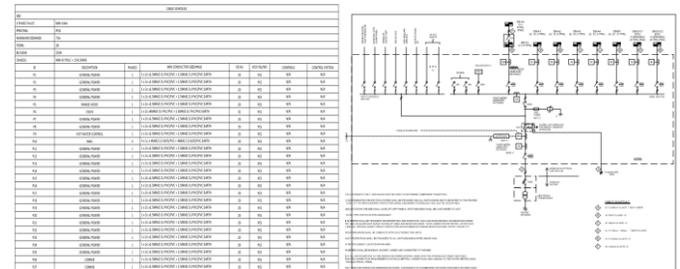
### Schematic

### DB schedule and details as require



## Construction Drawing

Based on the basic permit or contact drawing, specification and technical submittals for all elements like panels, actual conduit, cable tray details and ceiling co-ordination with other services to produce standard construction drawing sets including proper dimensions, elevation and annotation incline with standard practices and requirement.

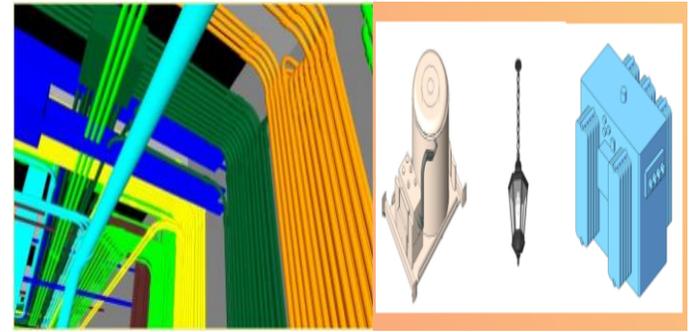
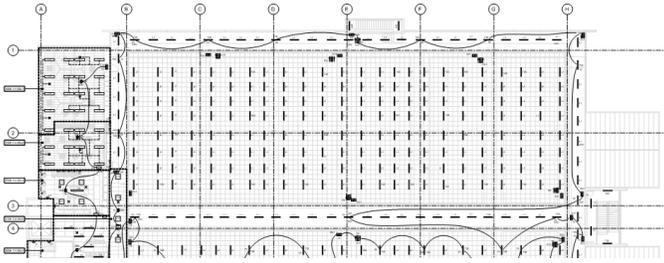


## As Built Drawings

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.

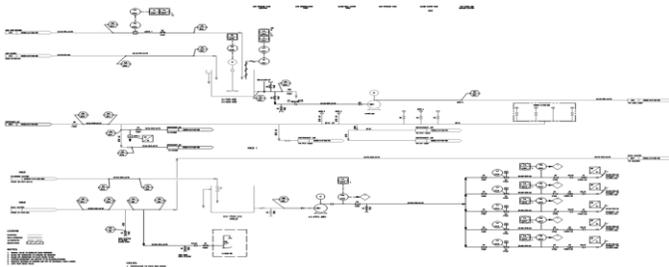
power layouts to be produced and ELV layouts layout like Telephone Data, Security drawings will be produced based on the reference designs and standard requirement with proper annotation.



### CAD P & ID drawing

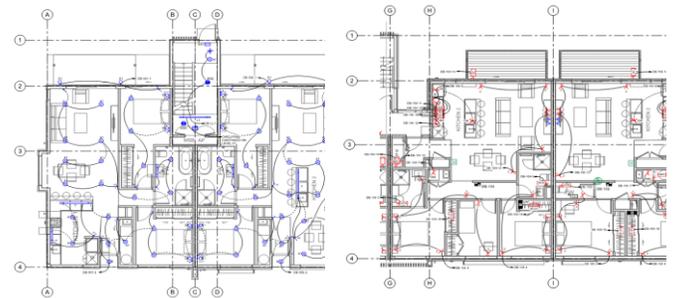
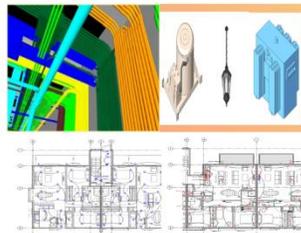
Our electrical CAD team is producing P & ID cad drawing inline with client mark-ups and sample drawing. We produce all kind of P & ID drawings.

Following drawings included a part of detail design Package.



1. Legend Notes, Specification
2. Schematic
3. DB schedule
4. Lighting Fixture Schedule
5. Standard Detail
6. Lighting, Power Plans
7. Containment Plans
8. Telephone, Data & Security plan

### Pre-Construction BIM @LOD 300

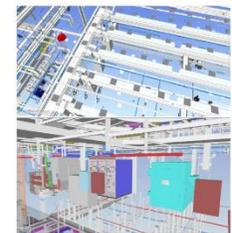


### 3D Modeling (LOD 300)

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.

### Construction BIM LOD 350/ 400



### Equipment | Conduit | Cable Tray

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.

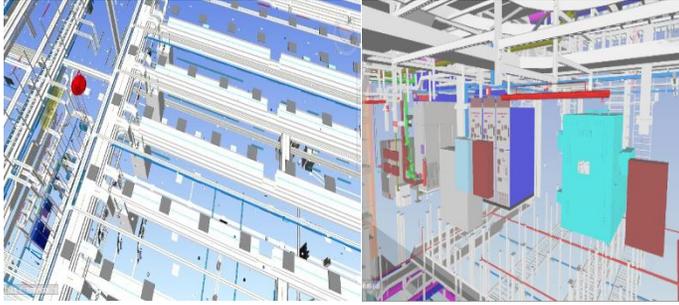
### Construction 3D Model (LOD 350 | 400)

We produce construction 3D models @ LOD 350| 400 of Electrical systems i.e. i.e. lighting, power including all ELV systems like CCTV, IT, Security fixtures, accessories, with all conduit and all major items like Transformer, HT panel, LT panel, DB, DG, UPS, inverter and solar items based on contract drawings, technical specifications, and manufacturer details &

### Design | Tender | Contract Drawings

After completion of 3D design model, we produce design drawing based on controls, looped will be provided to produce lighting design and as per the final circuit design,

client standards to complete the construction model. From the manufacturer's 2D drawings and inline with Mechanical schedules, we create a 3D model of all the electrical systems equipment such as HT panel, LT panel, Transformer, DG, breaker etc.



## BIM COORDINATION AND CLASH COORDINATION

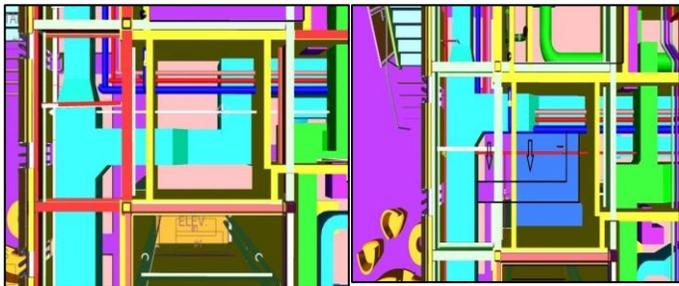
BIM co-ordination covers –

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.

No. of	Issue	Room	Room Name & No.	Clash Description	Support Details (2D)	3D View	CRS Remarks	Clash Resolution	Status
1	South Area	13.0.0 & C.0	COORDINATOR ROOM C.0	1. Clash between HT panel and 2. Clash between HT panel and 3. Clash between HT panel and 4. Clash between HT panel and	[2D Drawing]	[3D View]	1. Remove the Supply Bus 2. Remove the Distribution of Busbar		Open
2	South Area	13.0.0 & C.0	COORDINATOR ROOM C.0	Clash between HT panel and 2. Clash between HT panel and 3. Clash between HT panel and 4. Clash between HT panel and	[2D Drawing]	[3D View]	Remove the HT panel (13.0.0 C.0) and replace with HT panel (13.0.0 C.1)		Open
3	South Area	13.0.0 & M.1	COORDINATOR ROOM C.1	Clash between HT panel and 2. Clash between HT panel and 3. Clash between HT panel and 4. Clash between HT panel and	[2D Drawing]	[3D View]			Open
4	South Area	13.0.0 & M.1	COORDINATOR ROOM C.1	Clash between HT panel and 2. Clash between HT panel and 3. Clash between HT panel and 4. Clash between HT panel and	[2D Drawing]	[3D View]			Open

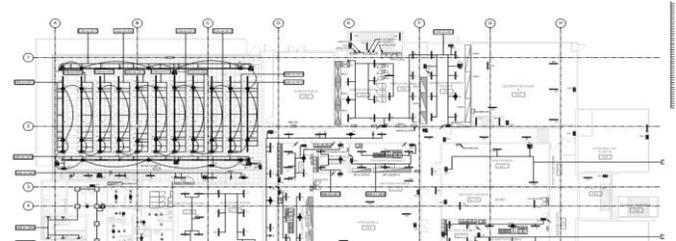
No. of	Issue	Room	Room Name & No.	Clash Description	Support Details (2D)	3D View	CRS Remarks	Clash Resolution	Status
1	South Area	13.0.0 & C.0	COORDINATOR ROOM C.0	Clash between HT panel and 2. Clash between HT panel and 3. Clash between HT panel and 4. Clash between HT panel and	[2D Drawing]	[3D View]	Remove the HT panel (13.0.0 C.0) and replace with HT panel (13.0.0 C.1)		Open
2	South Area	13.0.0 & C.0	COORDINATOR ROOM C.0	Clash between HT panel and 2. Clash between HT panel and 3. Clash between HT panel and 4. Clash between HT panel and	[2D Drawing]	[3D View]			Open
3	South Area	13.0.0 & C.0	COORDINATOR ROOM C.0	Clash between HT panel and 2. Clash between HT panel and 3. Clash between HT panel and 4. Clash between HT panel and	[2D Drawing]	[3D View]			Open
4	South Area	13.0.0 & C.0	COORDINATOR ROOM C.0	Clash between HT panel and 2. Clash between HT panel and 3. Clash between HT panel and 4. Clash between HT panel and	[2D Drawing]	[3D View]			Open
5	South Area	13.0.0 & C.0	COORDINATOR ROOM C.0	Clash between HT panel and 2. Clash between HT panel and 3. Clash between HT panel and 4. Clash between HT panel and	[2D Drawing]	[3D View]			Open
6	South Area	13.0.0 & C.0	COORDINATOR ROOM C.0	Clash between HT panel and 2. Clash between HT panel and 3. Clash between HT panel and 4. Clash between HT panel and	[2D Drawing]	[3D View]			Open
7	South Area	13.0.0 & C.0	COORDINATOR ROOM C.0	Clash between HT panel and 2. Clash between HT panel and 3. Clash between HT panel and 4. Clash between HT panel and	[2D Drawing]	[3D View]			Open
8	South Area	13.0.0 & C.0	COORDINATOR ROOM C.0	Clash between HT panel and 2. Clash between HT panel and 3. Clash between HT panel and 4. Clash between HT panel and	[2D Drawing]	[3D View]			Open
9	South Area	13.0.0 & C.0	COORDINATOR ROOM C.0	Clash between HT panel and 2. Clash between HT panel and 3. Clash between HT panel and 4. Clash between HT panel and	[2D Drawing]	[3D View]			Open
10	South Area	13.0.0 & C.0	COORDINATOR ROOM C.0	Clash between HT panel and 2. Clash between HT panel and 3. Clash between HT panel and 4. Clash between HT panel and	[2D Drawing]	[3D View]			Open
11	South Area	13.0.0 & C.0	COORDINATOR ROOM C.0	Clash between HT panel and 2. Clash between HT panel and 3. Clash between HT panel and 4. Clash between HT panel and	[2D Drawing]	[3D View]			Open
12	South Area	13.0.0 & C.0	COORDINATOR ROOM C.0	Clash between HT panel and 2. Clash between HT panel and 3. Clash between HT panel and 4. Clash between HT panel and	[2D Drawing]	[3D View]			Open
13	South Area	13.0.0 & C.0	COORDINATOR ROOM C.0	Clash between HT panel and 2. Clash between HT panel and 3. Clash between HT panel and 4. Clash between HT panel and	[2D Drawing]	[3D View]			Open
14	South Area	13.0.0 & C.0	COORDINATOR ROOM C.0	Clash between HT panel and 2. Clash between HT panel and 3. Clash between HT panel and 4. Clash between HT panel and	[2D Drawing]	[3D View]			Open
15	South Area	13.0.0 & C.0	COORDINATOR ROOM C.0	Clash between HT panel and 2. Clash between HT panel and 3. Clash between HT panel and 4. Clash between HT panel and	[2D Drawing]	[3D View]			Open

## Shop Drawing & As Built Drawing

### 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.

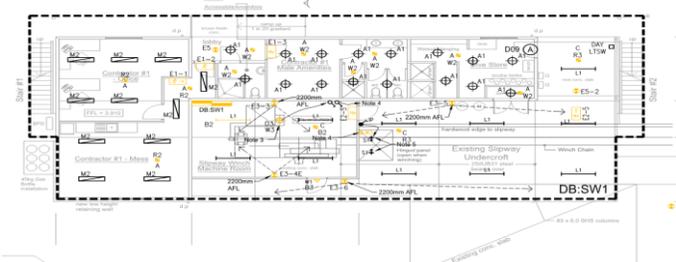
Utilizing a coordinated project BIM model, we generate accurate shop drawings that are detailed enough for workshop fabrication and/or on-site construction of items such as sleeves and penetration and hanger locations.



### As built Drawing

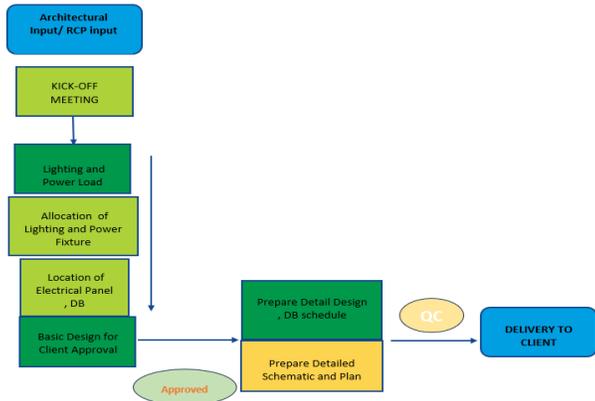
After completion all installation of Electrical systems, site team use to change or modify few items in the systems as required by actual conditions.

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.

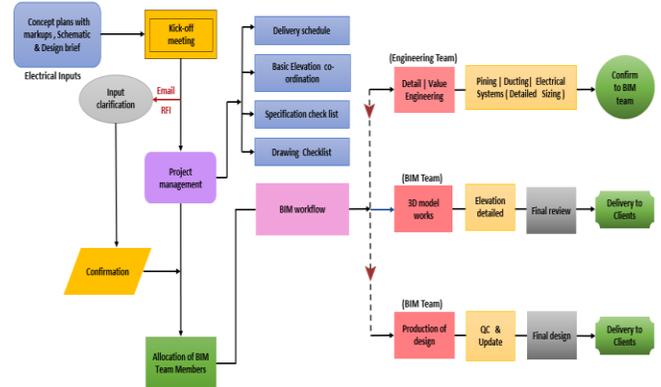


# Execution Process

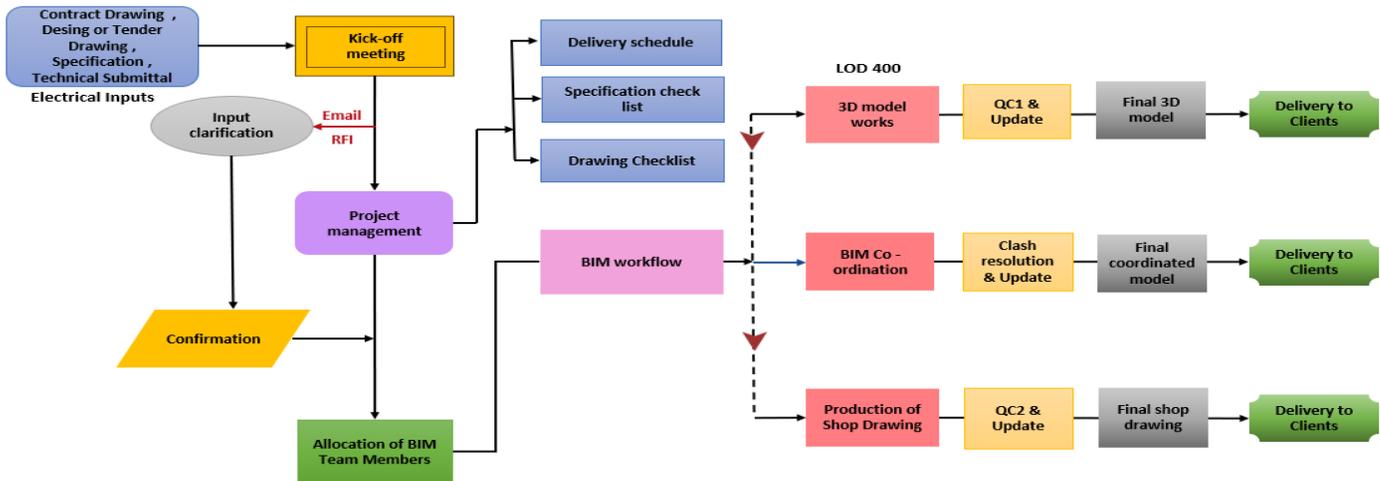
## CAD Design Execution Process



## Pre-Construction Execution BIM Process



## Construction Execution BIM Process



## QC CHECKLIST

Common Checklist	
<b>Title Block</b>	
1	Key Plan
2	Revision Check
3	Date
4	Scale
5	Title
6	Consulting Details
7	Client Details
8	Sheet Key Notes
<b>B General Notes and Sheet Key Notes</b>	
1	General Notes
2	Sheet Key Notes
<b>C Aesthetic Review / Grid Review</b>	
1	Drawing Presentation
2	Grid Check
<b>D Project Specific</b>	
1	Sheets Referenced in Appendix A Present
2	Schedules Present
3	Finishes Present
4	Elevations to Finish Schedules Proper
5	Missing Key Drawing-Specific Information
6	Proper Drawing Reference Details
7	Relevant Annotation Information

Electrical	
1	Electrical Fixtures Dimensions
2	Conduit and Cable Tray Elevations Tag (BOT)
3	Equipment & Fixture Tags & Annotation
4	Required Sections & Elevations
5	Schedule Detailed Sheet
6	Drawing Notes

# Core Team

## **Irshad Ali Shaikh** **CEO – 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.

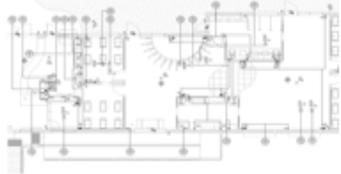
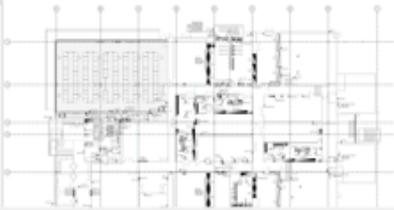
## **Rupam Mondal** **Production Manager**

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		
		
Hornsby Ku-Ring-Gai Hospital Stage 2 31-33 Sirius Road Australia Hospital	Logan Village 36-38 River St, QLD 4207 Australia School Building	Pimpama Childcare PIMPAMA QLD 4209 Australia School Building
		
Norwest Data Centre Bella Vista NSW 2153 Australia Data Centre	Oakland Way Childcare PIMPAMA QLD 4209 Australia School Building	LPC Dry Dock Christchurch New Zealand Commercial

## Contact US

**DESIGN AND DRAWING SOLUTION**  
ONE STOP BIM | CAD | MEP  
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