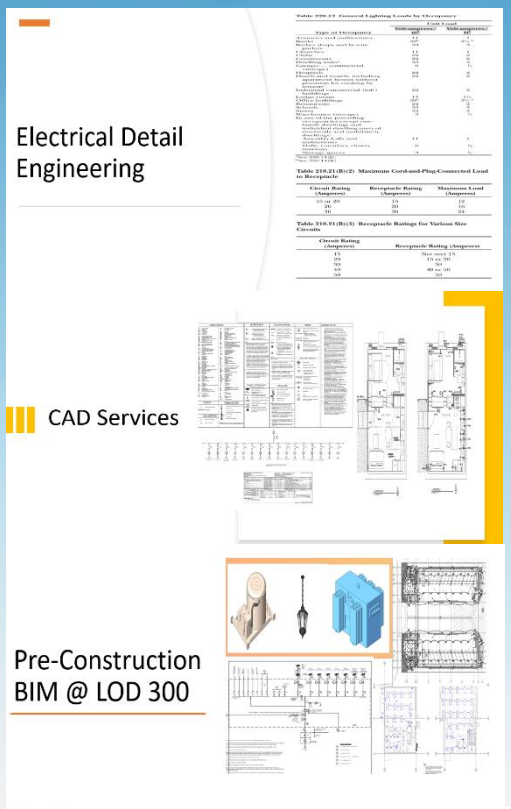
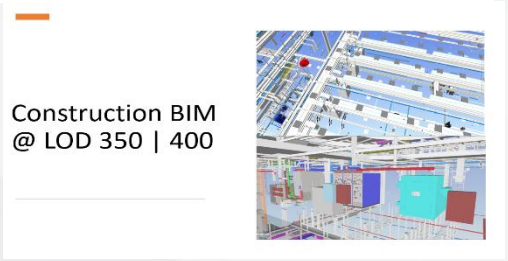
Year 2025-26

# 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, NFPA 70, NEC.

We are currently providing our electrical design and construction services globally and specially all over the USA from EST to PST zones 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

## Detail Engineering

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

## CAD Services

- Design Drawing
- Construction Drawing

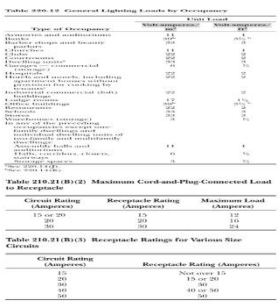
## Pre-Construction BIM

- 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



## CAD Services

**General Points**

Supply voltage

Single Phase 120 v

Three Phase 240 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 provide as required and standard practice and samples.

**Electrical Circuit Design & 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 receptacle locations as provided by the interior architect and samples and standard requirement, demand load will be calculated to calculate breaker and cable sizes.

**Table 220.12 General Lighting Loads by Occupancy**

| Type of Occupancy | Unit Load: Volt-amperes/ $m^2$ | Unit Load: Volt-amperes/ $ft^2$ |
|---|---|---|
| Armories and auditoriums | 11 | 1 |
| Banks | 39[a] | 3½ [b] |
| Barber shops and beauty parlors | 33 | 3 |
| Churches | 11 | 1 |
| Clubs | 22 | 2 |
| Courtrooms | 22 | 2 |
| Dwelling units[a] | 33 | 3 |
| Garages — commercial (storage) | 6 | ½ |
| Hospitals | 22 | 2 |
| Hotels and motels, including apartment houses without provision for cooking by tenants[a] | 22 | 2 |
| Industrial commercial (loft) buildings | 22 | 2 |
| Lodge rooms | 17 | 1½ |
| Office buildings | 39[b] | 3½ [b] |
| Restaurants | 22 | 2 |
| Schools | 33 | 3 |
| Stores | 33 | 3 |
| Warehouses (storage) | 3 | ¼ |
| In any of the preceding occupancies except one-family dwellings and individual dwelling units of two-family and multifamily dwellings: | | |
| Assembly halls and auditoriums | 11 | 1 |
| Halls, corridors, closets, stairways | 6 | ½ |
| Storage spaces | 3 | ¼ |

[a] See 220.14(J).
[b] See 220.14(K).

**Table 210.21(B)(2) Maximum Cord-and-Plug-Connected Load to Receptacle**

| Circuit Rating (Amperes) | Receptacle Rating (Amperes) | Maximum Load (Amperes) |
|---|---|---|
| 15 or 20 | 15 | 12 |
| 20 | 20 | 16 |
| 30 | 30 | 24 |

**Table 210.21(B)(3) Receptacle Ratings for Various Size Circuits**

| Circuit Rating (Amperes) | Receptacle Rating (Amperes) |
|---|---|
| 15 | Not over 15 |
| 20 | 15 or 20 |
| 30 | 30 |
| 40 | 40 or 50 |
| 50 | 50 |

**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

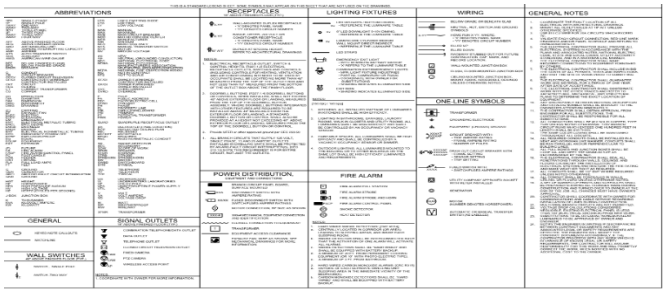
Lighting Plans

Power Plans

Containment Plans

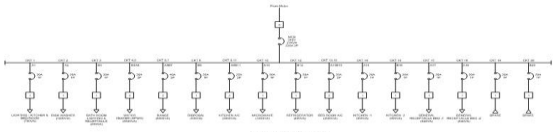
Schematic

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.





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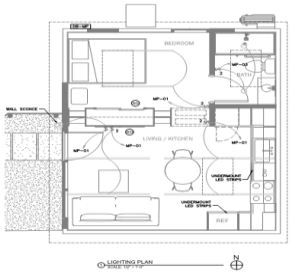
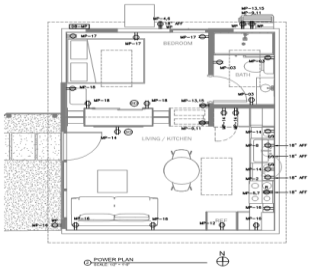
## As Built Drawings

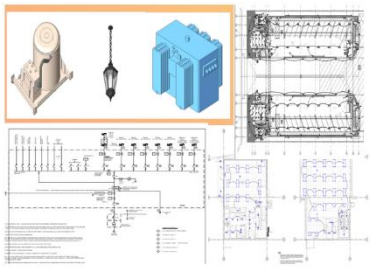
After completion all installation of Electrical systems, site team use to change or modify few items in the systems as required by actual conditions.

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.





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.

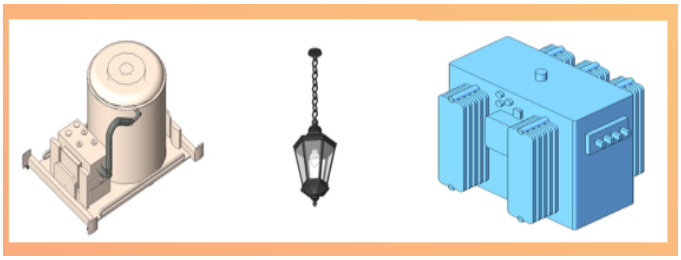
LOD included all from LOD 300 to 500.

## 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.

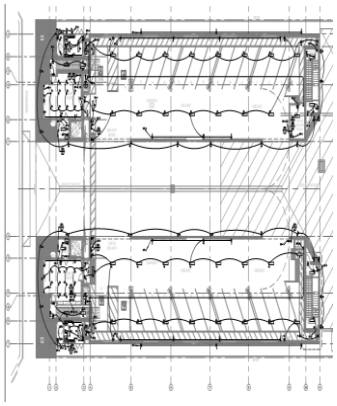
## Design | Tender | Contract Drawings

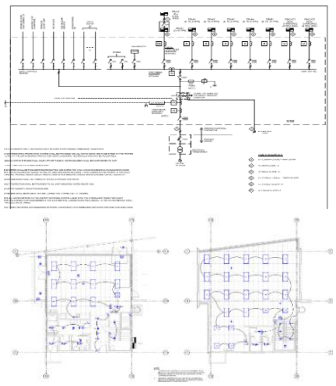
After completion of 3D design model, we produce design drawing based on controls, looped will be provided to produce lighting design and as per the final circuit design, power layouts to be produced and ELV layouts layout like Telephone Data, Security drawings will be produced based on the reference designs and standard requirement with proper annotation.



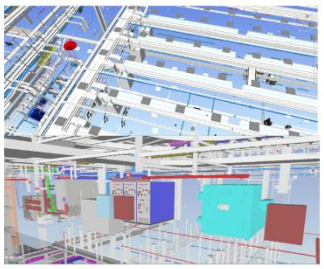
Following drawings included a part of detail design Package.

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





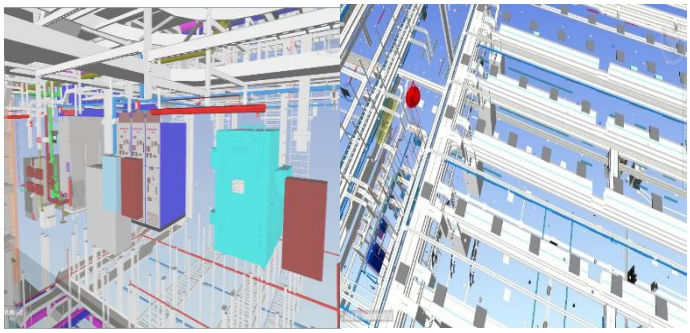
Construction BIM @ LOD 350 | 400



## 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 & 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**

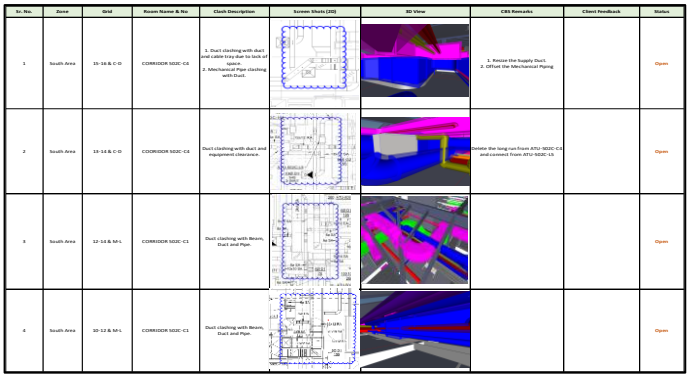
**BIM Coordination covers-**

1. Clash Coordination
2. Generation of Report
3. Resolution

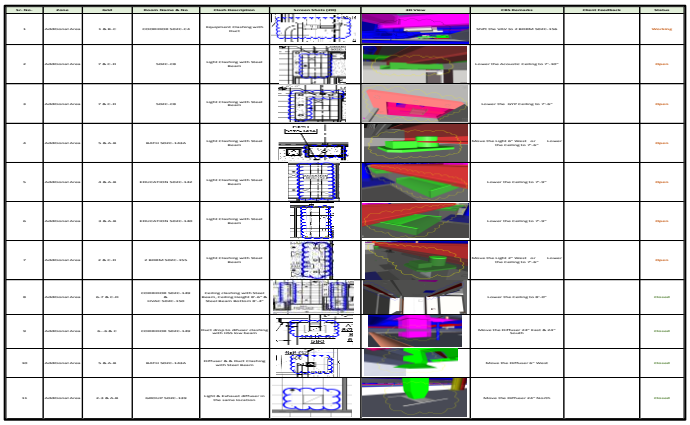
We generate a coordinated BIM model after resolving the clashes among all disciplines – Architectural, Structural, Concrete, Mechanical, Electrical, Plumbing, Fire Protection, etc.

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



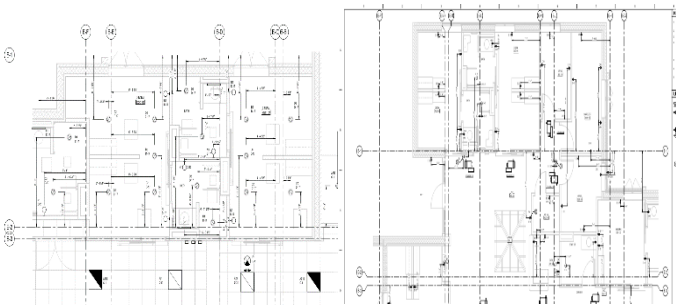
We have produced the clash report through Navisworks and provide the alternative optimize solutions to make clash free model.



**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**

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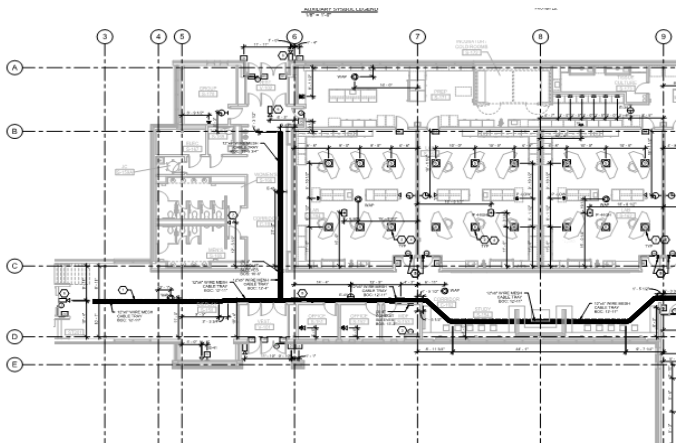
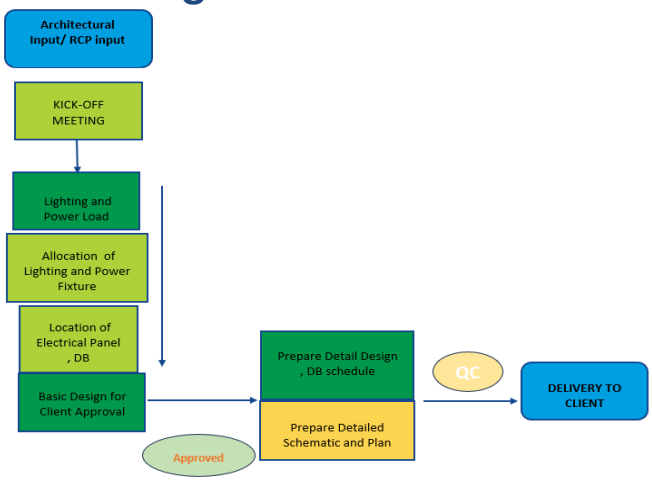
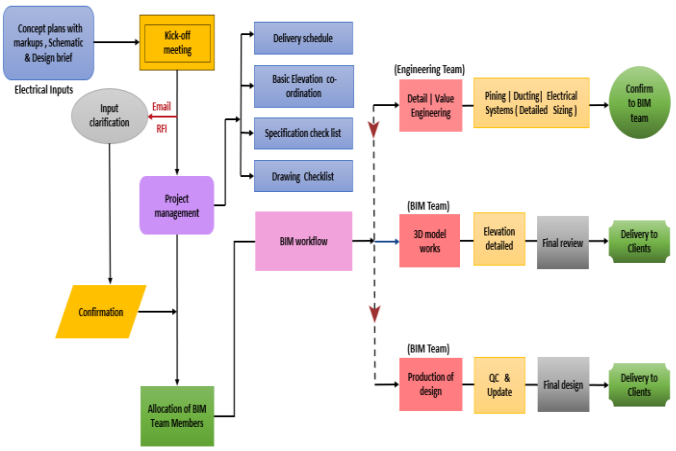


# Execution Process

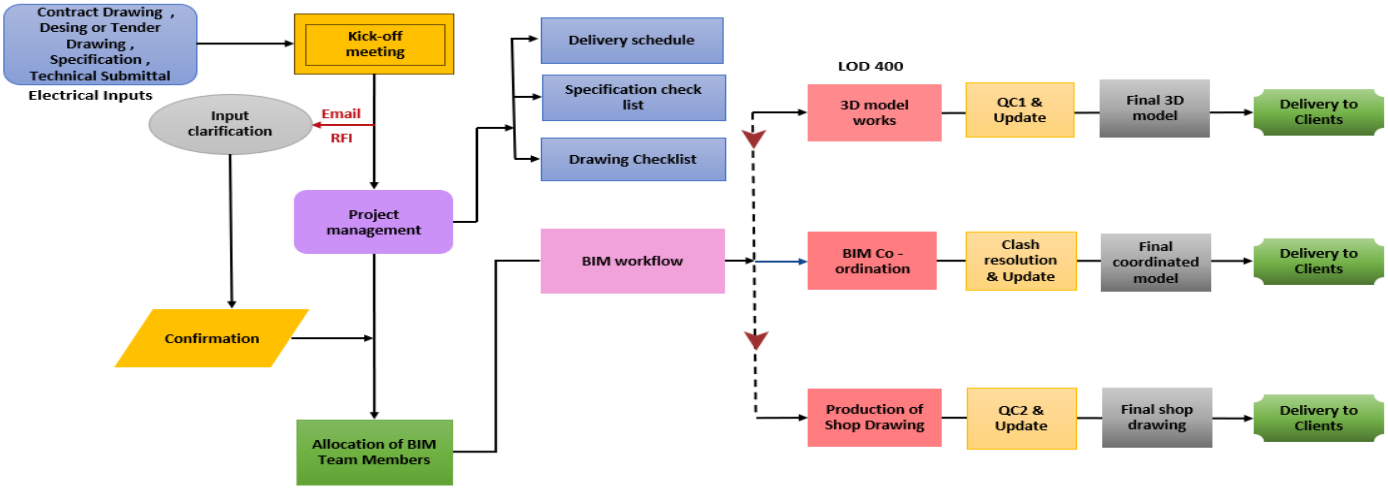
## CAD Design Execution Process




## Pre-Construction Execution BIM Process




## Construction Execution BIM Process




## QC CHECKLIST

| Common Checklist | |
|---|---|
| **Title Block** | |
| 1 | Key Plan |
| 2 | Revision Check |
| 3 | Date |
| 4 | Scale |
| 5 | Title |
| 6 | Consulting Details |
| 7 | Client Details |
| 8 | Sheet Key Notes |
| **B** | **General Notes and Sheet Key Notes** |
| 1 | General Notes |
| 2 | Sheet Key Notes |
| **C** | **Aesthetic Review / Grid Review** |
| 1 | Drawing Presentation |
| 2 | Grid Check |
| **D** | **Project Specific** |
| 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**
**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.

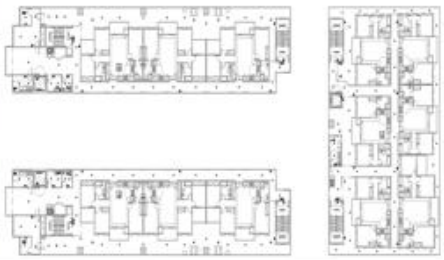
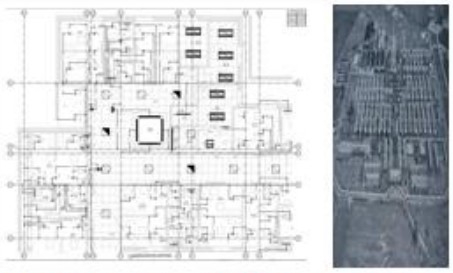
**Rupam Mondal**
**Production Manager**

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 Work Sample | | |
|---|---|---|
|  |  |  |
| Four Season | Bana at Palmdale | Gate way MXD |
| Minneapolis | Palmdale | Minneapolis |
| Minnesota | California | Minnesota |
| Hotel | Apartment Building | Hotel |
|  |  |  |
| 22 Sierra Vista | 2404 Apartment | MARTINSBURG VA MEDICAL CENTER |
| RANCHO MIRAGE | Miami Beach | Martinsburg |
| California | Florida | West Virginia |
| Bunglow | Apartment | Healthcare Facility |

# Contact US


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

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