

Keep Pace with Industry Trends !

**Learn**

# Revit-MEP

(With NAVISWORK)

FROM THE TREND-SETTERS IN

## MEP Training

With Designing, Drafting &  
Modelling of

**HVAC, Electrical,  
Plumbing, Fire Fighting.**

**Green Building Designing,  
IGBC-AP Exam Training &  
Energy Simulation Training.**

100% Job Oriented

Genuine & Exhaustive Syllabus

Highly Qualified Gulf Exp. Faculty

Job Placement Assistance

Real Time Projects

**Taiba Engineering Consultants®**



**TEC**

MEP Institute

*The Ultimate in MEP training*

- TRAINING
- PLACEMENTS
- PROJECTS



ISO 9001 : 2015  
**MSME**  
TS 006 22 00513

## ABOUT US :

Taiba Engineering Consultants' (TEC) is an organization having rich expertise in training fresh & practicing Engineers to become "Design Engineer" and non-engineers to become "MEP Draughtsmen and Modellers" in HVAC, Electrical, Plumbing, Fire-fighting with Revit MEP & Green Building Designing in the field of Building Services. We provide a career based training program which aims to develop quality MEP professionals. The course is designed to bridge the gap between academics and industry. The training program aims to harness your skills and enhance your chances for a successful career with HVAC, Electrical, Plumbing, Fire-Fighting, Green Building Designing, Draughting and Modelling BIM (Building Information Modelling in 3D) using the latest tool developed by Autodesk to speed-up the co-ordination work and to prepare precise plans using 'Revit MEP'. Also designing Energy Efficient buildings as per the Green Building norms and Building Energy Modeling using softwares like eQuest, EnergyPlus and IES(Integrated Environmental Solutions) to achieve Energy efficiency.

Construction industry is booming and is at its zenith. There is a consistent increase in the demand for Engineering Professionals who are expert in MEP (Mechanical, Electrical, Plumbing, Fire Fighting) Services. With the changing trends in the construction industry where sky high buildings with innovative and challenging designs are being built, it becomes hard for any engineer fresh out of college, to start a career without proper training in the advanced techniques being used in Industry for Designing these ultra modern buildings. We at TEC help to bridge the gap between academics and the real professional world. We train our students with the most advanced tools to make them expert to face the contemporary technological challenges in building industry. We are Authorised Training Partner for IES.

### Benefits :

These are 100% job oriented courses to join industry as trained professional to handle any project from day one. These courses can also be done as 'Major Project' by B.E., B.Tech., M.Tech. students to be industry ready when they comes out of colleges. It provides you with the process specific domain skills, which is not covered in the syllabus of any University or Technical Education Board. Lack of these skills renders 90% of AP's technical graduates unemployable [as per GORT No.499(July, 2010) and NASSCOM - Deccan Chronicle - 13th Oct. 2010].

### Faculty :

Mr. Syed Moazzam Ali, M.Tech., having 16 years of experience in MEP field, working & training, in India and abroad as well, who have formerly worked as a faculty in engineering college, and worked as Project Leader and Manager with a MNC at Hyderabad. He holds lifetime membership of ISHRAE - (Indian Society of Heating, Refrigeration and Air Conditioning Engineers), FSAI – (Fire & Security Association of India) and is a certified IGBC-AP [Indian Green Building Council - Accredited Professional]. He is currently pursuing Ph.D. in HVAC from JNT University and handles projects which TEC undertakes from India and abroad as Chief MEP & Green Building Consultant, to impart professional training. He has also conducted corporate training seminars for ISHRAE (Mumbai Chapter) and various construction, consulting companies' designing professionals at Mumbai, Bangalore and Jeddah-KSA besides Hyderabad.

**Mr. Abdul Majeed**, having more than 6 years of broad experience & knowledge in MEP Designing and Revit Modeling, formerly worked as MEP Project Engineer in Dubai & Saudi Arabia, handles projects as technical head and is master trainer at TEC. An expert hand at Revit MEP modelling.

### Placement Assistance :

We follow Indian and International standards & codes like ASHRAE, SMACNA, NEC (National Electrical Code), BS, DEWA, ADEWA, IEC NEMA, NFPA, NBC which led us to become authorised man-power vendors (campus selection and placement assistance) for providing suitable candidates in the field of engineering to various well known companies, like M/s. Altech Star Solutions Pvt. Ltd. Chennai, for ETA - Dubai, M/s.Voltas-IOBG (International Operations Business Group)-Dubai, Voltas - Hyderabad and APEX Knowledge Technologies Pvt. Ltd.

### OUR COURSES :

*Designing & Drafting of*  
HVAC (Heating, Ventilation and Air-Conditioning)  
Electrical  
Plumbing  
Fire Fighting  
Revit MEP  
Green Building Energy Simulation  
IGBC-AP Exam Training

### For Whom ?

Mechanical, EEE, ECE, EIT Engineers  
to become "MEP Design Engineer, MEP Site Engineer, MEP Applications Engineer, MEP QA/QC, MEP Procurer etc.

Diploma holders and non-Engineers to become  
"MEP Designer, MEP Draughtsmen, Revit Modellers etc."

# HVAC (Heating, Ventilation & Air-Conditioning) Designing & Draughting

## A. FUNDAMENTALS

Introduction to Building Construction (Civil & MEP Services)

Introduction to Heating Ventilation and Air conditioning

**Basics of Heat Transfer** : Modes of Heat Transfer in a building (Conduction, Convection and Radiation), Forms of Heat (Sensible & Latent Heat), Temperature TON of Refrigeration & Unit Conversion (Manually Conversion Software).

**Standards and codes used in HVAC**

**Study on Psychrometric Charts (Manual and ASHRAE Analysis software).**

Properties of Air (Altitude, DBT, WBT, %RH, DPT, Humidity Ratio & Enthalpy).

**Study on Refrigerants.:** Types of refrigerants, Evaporating & condensing properties of refrigerants.

**Types of Refrigeration cycles & its Components:** Vapor Absorption refrigeration system, Vapor Compression refrigeration system, Types of Compressors, Condenser, Expansion Valve & Evaporator Coil, Vulcan Lockring (Copper Pipe joining method)

**Types of Air Conditioning systems.:** Non-Central AC, Package AC System, VRV/VRF System, Chilled Water System

**Types of Fans & its Application, Fan Laws**

**Types of Pumps, Pump Laws, Pump in series and parallel**

## B. HVAC DESIGN CALCULATIONS

**Cooling & Heating Load Calculation** : General & E-20 manual calculation, Ventilation and Infiltration Load Calculation, Winter load calculation Ventilation System Designing, Fresh Air Handling Unit Designing as per ASHRAE 62.1., Restaurant/Residence kitchen ventilation system designing as per ASHRAE 90.1, Non Central and Central Toilet Exhaust Calculations as per ASHRAE 62.1., Car Parking Ventilation system Designing(Impulse & Induction Fan System), Design of Stairwell Pressurization System, Design of Smoke Management System, Transformer Room and Generator Room ventilation requirements.

**Study on Air Distribution systems (SMACNA & DW-142) :**

Types of Ducts, Duct fittings, Dampers, Flexible ducts, Classification of Duct(Low, Medium & High pressure), Duct gauge selection, Comparison between different shapes of duct, Duct Fabrication, Insulation & Installation procedure, Vanes location & number of vanes required, Type of Duct Materials, Calculation of total sheet required for Duct Fabrication & estimating duct weight in kgs, Selection of Duct Gauges & thickness, Hanger Spacing, Hanger Rod Diameter and Angle support Size, Types of Air Terminal Device, Selection and Sizing of Air Terminal Device (Manually).

**Duct Designing methods (Manual calculations) :** Equal friction method, Velocity reduction method, Static regain method

**Pipe Sizing methods** : Refrigerant Pipe sizing, Chilled water pipe sizing, Study on Chilled Water Systems, Types & Application of Chillers, AHU's, FCU's & FAHU's, Chilled Water Pipe Sizing by ASHRAE standards, Types of Valves & Its Connection, Valve Authority, Open loop & Closed loop system, Primary and Secondary pump system, Common Header Pipe Sizing, Hydraulic Calculation for Pump Selection, Expansion Tank Sizing, Air Separator, Pump Cavitations, Pump Curves , NPSH Calculation for Pumps, Advance Psychrometric Analysis, Determine Mix Air

Temperature, Calculate the Flow of Air, ESHF, Ton of Refrigeration, Design of CAV & VAV System

- Air Balancing system and Pressurization of Space.
- Desert Cooler Selection
- District Cooling System
- Cooling Tower Selection, Evaporation losses, Drift losses calculation, Pump Head Calculation
- Coil Selection
- ESP Calculation
- Variable Refrigerant Volume (VRV) System Designing
- Dehumidifier Selection (silica gel & Desiccant DH)
- HRW-Heat Recovery System (Rotor Wheel, Heat Pipe, Run around Coil & Plate Heat Exchanger)
- Estimation and Costing
- Cold Storage Designing
- Silencer- Sound Attenuator Designing
- BMS (Understanding Sequence of Operation for HVAC System)
- Energy Conservation Measures(ECM): Under Floor Air Distribution System(UFAD), Chilled Beam System, Radiant Cooling, Geothermal Cooling, Thermal Energy Storage System(TES) or ICE on Pipe System, Demand Control Ventilation(DCV), EAT- Earth Air Tunnel System, Cooling without Air-Conditioning & Passive Cooling System Designing
- Green in HVAC system Designing - Energy Modeling Concept.

## C. EQUIPMENT SELECTION

Selection of cooling tower, Selection of Chillers, AHU and FCU classification and selection, Package unit selection DX unit selection, Selection of Dehumidifier, Pump Selection, Fan Selection.

## D. SOFTWARE DESIGNING

Cooling and heating load calculation using Hourly Analysis Programme (HAP) & Elite Software, Calculation of duct sizes by McQuay Duct sizer and Duct Checker Software, Calculation of Chilled water pipe sizes by McQuay pipe sizer Software, Air terminal (Grills, Diffusers, Registers, LBG-Linear Bar Grills, SLSD-Supply Linear Slot Diffuser) selection by using BETA Programme, HVAC Equipment (Package AC, Chiller, AHU, FCU etc.)Selection by Zamil Software, VRV Equipment Selection by TOSHIBA Software.

## E. ESTIMATION AND COSTING OF PROJECT

Understanding the tendering requirements, Quantity take off, Preparing Inquiry for Suppliers & Finalizing the suppliers, Final Billing & Quotations finalization

## F. PROJECT PROCUREMENT WORK

Preparation of purchase orders, Quotation Evaluation Sheet

## G. HVAC DRAFTING

Representation of Concepts Design Drawing, Design Drawing & Shop Drawing, Preparation of Detail Shop Drawing of Air-Conditioning & Ventilation Ducts, Chilled Water Pipes & Duct Fittings-Elbows, TEE's, WYE, Dampers- Volume Control Dampers(VCD), Splitter Damper(SD), Smoke Dampers, Fire Dampers(FD) etc. & Duct Support, Representation of Duct Pipe Levels, Slope, flow direction, BOD's, BOP's, Typical detail of Chillers, AHU's, FCU's, Pumps, Valves- Isolating, Regulating, NRV, Strainer etc., Representation of Section Drawings.

**This syllabus will followed by a live project and a 3 Days Workshop on project implementation**



# Electrical Designing & Draughting

## A. FUNDAMENTALS

Introduction to MEP and Scope of Electrical Designing and Drafting, Duties and Roles of a Electrical Design Engineer & Draftsman, General concepts of electrical generation, Transmission and Distribution, Brief Description of Resistive, Inductive & Capacitive loads, Different Types of Equipments and their loads as per standard specifications, Practical Exposure to Lighting, Power, Fire Alarm, Emergency lighting Electrical services, House Wiring Concepts.

## B. ELECTRICAL DESIGN CALCUALTION

### LOW POWER

Lighting, Types of light (GLS,FTL, CFL, LED, MVL etc.) and application, Light selection by manual method, CGLux Software, Relux Software, DIALux Software for Calculation of number of light fixtures based on LUX Level.

### FANS

Types and selection of Ceiling fans in a space as per Standards, Types and selection of Exhaust Fans Based on Air Changes per Hour, SOCKET DESIGNAS PER NEC CODE, Air Curtain Selection.

### POWER SERVICES

Power Socket Selection, Selection of Motors for Pump House, Selection & applications of Motors for Fire Fighting Pumps, Load Scheduling for (Single House, Apartment, High Rise, Industrial, Commercial Buildings) Common Area, open Area and load Calculations, Air Conditioners System, Calculation of Tonnage & Load for Different HVAC System.

### CABLES

Brief Description of Conductors, Strands, Cores and insulation of a Cable, Description of Armoured& Un-Armoured Cables, Selection of cables Using BRITISH Standards, Selection of cables Using INDIAN Standards, Selection of Cable Trays. According to US National Electrical Code, Sizing of Conduits, Trunking, Raceways and Trenches. Voltage Drop Calculations Using a) Indian Standards. b) NEC Standards c) British Standards. Short Circuit calculations in a Building, Bending Radius of Cables.

### SWITCH GEARS (Circuit Breakers)

A Brief description of Fuse, MCB's, MCCB's, Air , Vacuumed, Oil and SF6 Circuit Breakers, Selection of Circuit Breakers based on International Electro Technical Commission (IEC) & European Standards, Selection of ELCB, Short Circuit Calculation for High Rise Buildings, Short Circuit Calculation for Motors, & Types of Circuit Breaker – SP, DP, TP, TPN, 4P.

### PANEL BOARDS

Description of different types of Panel Boards (MDB, SMDB, SDB..., etc.), Panel Board Internal Connection & Distribution Board Panel no, of ways.

### CAPACITOR BANK

Capacitor Bank Cable Sizing. Circuit Breaker, Fuse, Relay Selection for Capacitor Bank. Annual Saving & Payback period before PF correction & after PF correction. Types of Capacitor Configuration of Capacitor Bank.

### GENERATOR

Type, Sizing of Generator, Generator Cable Sizing & Generator Room Sizing.

### TRANSFORMERS

Type, Inter connections and Selection of transformers Depending on Load & losses, Transformer room sizing, Transformer Cooling& Transformer Dimensions.

## SINGLE LINE DIAGRAM

Description of Single line Diagram for Individual, Residential, Commercial, Industrial and Hospitalized Buildings.

## EARTHING

Earthing Calculations According to IS 3043, IEEE-80 Concept of Earthing, Selection of Earth Electrode, Pipe, Plate, Rod, Sizing of Earth Strip, Earth Pit Dimensions & Selection of Earthing according to the requirement of buildings.

## LIGHTNING ARRESTERS

Introduction to Lightning Arresters and design calculations to adopt Lightning Protection System

## SOLAR PANELS

Brief Description about the Solar Panel and their Devices Calculations for the Selection of 1) Solar panel. 2) Solar Regulars. 3) Solar Battery and 4) Solar Inverters. Cable Sizing for Solar Panel.

## UPS Selection :

Calculations for the Selection of UPS to Emergency Lighting Services, Calculations for the Selection of UPS to Lifts/ Elevators.

## LOW CURRENT SYSTEM

Close Circuit Television (CCTV) : Description about the Types of Cameras and Placing of cameras at required Locations, Sizing of SMPS for CCTV, Public Addressable Systems : Calculations for the selection of Number of Speakers in a space, Fire Fighting services: Load calculations and Cable Sizing for Fire Alarm system (i.e. Smoke Detector, Heat Detector, and horns), Communication : TV, Telephone , Intercom, & Internet Networking and selection of Types of Cable for them, Electrical Engineers Work With HVAC Professionals (MCC), Open Area Calculations (power and lighting).

## IP RATING

IP Rating for Electrical Enclosure

## C. SOFTWARE DESIGNING

RELUX, CG LUX DIALux (Lux level Calculations), Anixter (Cable Sizing), Tray Cad (Cable tray Routing), Master Converter (for Conversion).

## D. ESTIMATION AND COSTING OF PROJECT

Understanding the tendering requirements, Quantity take off, Preparing Inquiry for Suppliers & Finalizing the suppliers. Final Billing & Quotations finalization

## E. PROJECT PROCUREMENT WORK

Preparation of purchase orders, Quotation Evaluation Sheet.

## F. ELECTRICAL DRAUGHTING

Representation of Concepts Design Drawing, Design Drawing & Shop Drawing, Symbols and Legends : Lamps, Fans Sockets, Exhaust Fans, A/C, Geyser etc.,

Drawing Details : Single Line Drawing (SLD), Lighting Layout, Power Layout, Earthing Layout, Emergency Lighting Layout, CCTV Layout, Public Addressable Layout, Fire Alarm Layout, Communication, Cable Tray , Bus Bar Layouts, Bus Duct Riser Drawing.

## GREEN BUILDING DESIGN IMPLEMENTATION

Occupancy Sensor, Daylight Sensors, PV-Panels, Concept of Solar Chillers(VAM).

## STANDARDS :

Designing as per Electrical Standards: **NEC, BS, DEWA, ADEWA, IEC, NEMA, NFPA** etc.

**This syllabus will followed by a live project and a 2 Days Workshop on project implementation.**

# Plumbing Designing & Draughting

## A. FUNDAMENTALS

### Introduction to Building Construction (Civil & MEP Services)

#### Introduction to Plumbing System

Cold Water, Gray Water System, Sewage System, Hot Water Circulating System, Irrigation System, Storm Water System

#### Common Sanitary Fixture Details

Lavatories, Water Closet, Showers, Sinks, Bathtubs, Bidets, Urinals, Floor drains, Layout of Sanitary fixtures in toilets

#### Formula for flow through pipes

Darcy formula, Chezy's formula, Manning's formula, Hazen formula, Reynolds number (Laminar and Turbulent Flow)

#### Drainage System

Soil Pipe System, Waste Pipe System, Vent Pipe System, Types of Pumps, Pump Laws, Pump in series and parallel

## B. PLUMBING DESIGN CALCULATION

#### Cold Water System

Domestic Water Tank (or) Underground reservoir Sizing, Elevated Roof Tank (storage cistern) or Overhead tank Sizing, Cold Water Pipe Sizing in Building as per flow rate and fixture Unit Method(WFU), Minimum number of smaller diameter water pipes that can be connected to bigger pipes. Plumbers Chart for Pipe Sizing, Box Formula, Booster pump sizing & transfer, Pump Sizing (HP & Watts), Auto Pneumatic, System & Pressure Tank Sizing, External Water Supply, Pipe Sizing, Pump Room Design with valve connection detail, Design of External Water System

#### Gray Water System

Grey water cycle, Water Tank Sizing, Booster Pump Calculation, Grey water pipe sizing, Flush Water, Potable and non potable loop pipe sizing (Software).

#### Hot Water System

Hot Water System Designing, Estimating Hot Water Demand, Calculating the Capacity of Non-Central & Central Water Heaters, Hot Water Pipe Sizing, Hot Water Circulating Pump Design, Up feed System, Down feed System & Combination of Up feed and Down Feed System, Solar Water heater (Energy Saving Calculation).

#### Irrigation System

Garden Water Supply and Fountain, Garden Water

Supply and Fountain pipe sizing, Calculation of storage tank, Garden water fountain designing & pump selection

#### Drainage System

Soil and Waste water drain calculation in building vertical stack, Branch drain / Discharge pipe, horizontal drain, Fixture unit rating, Maximum number of discharge unit allowed in stack, Design of horizontal drains by discharge unit method(DFU), Invert level & Slope calculation, Sump Pit Sizing, Submersible Sump Pump Sizing, Design of Septic tank, Soak away pits, Dispersion trenches, Oil and Grease Interceptor Designing, Designing of common appurtenances, Inspection Chambers and Junction manholes, External foul water drainage for building.

#### Storm water System

Designing of Storm water Drainage system in building, Sizing of Rain Water Gutters, External Storm water drainage system Designing.

**Water Balancing Calculation. WTP(Water Treatment Plant), STP(Sewage Treatment Plant), Green Building (Water Saving Calculation), Plumbing Designing for High Rise Building, PRV Calculations**

## D. ESTIMATION AND COSTING OF PROJECT

Understanding the tendering requirements, Quantity take off, Preparing Inquiry for Suppliers & Finalizing the suppliers, Final Billing & Quotations finalization.

## D. PROJECT PROCUREMENT WORK

Preparation of purchase orders, Quotation Evaluation Sheet.

## E. PLUMBING DRAFTING

a. Representation of Concepts Design Drawing, Design Drawing & Shop Drawing. b. Location maps. c. Site Plan. d. Plan of Roof. e. Floor plan of the building. f. Enlarge floor plan of toilet kitchen, Plan elevation & cross section of structures including reinforcement details. g. Detailing of Plumbing services and preparing plumbing drawing, Isometric Drawings. h. Riser Diagram.

Site Installation Procedure :

Testing, Adjusting, Balancing Concept & Process. Installation & Inspection. Safety Measures. Pressure Testing. Testing & Commissioning. Tracking List.

## REFERENCE STANDARDS

NBC, NSPC, NPC, IPC & ASPE standards

**This syllabus will followed by a live project and a 2 Days Workshop on project implementation.**

## Autodesk REVIT MEP (with Naviswork)

Autodesk Revit is Building information modeling (BIM) software for architects, structural engineers, MEP engineers, designers and contractors.

It allows users to design a building and structure and its components in 3D, annotate the model with 2D drafting elements and access building information from the building models database.

**Understanding the Basics** - Understanding the Concepts, Using the Revit MEP User , Interface, Parts of the Revit Interface, Modifying the View, Performing Common Tasks .

**Getting Started with MEP Projects.** - Creating an MEP Project, Linking Projects, Creating and Applying a View Template, Modifying System Settings, Modifying General System Options, Specifying File Locations, Specifying Spelling Options, Modifying Snap Settings, Creating a Mechanical System.

**Planning Mechanical Systems** - Preparing Spaces, Placing Spaces, Placing a Space in an Open Area, Placing a Multi-Level Space, Viewing Zones in the System Browser, Creating Zones on a Single Level, Creating Zones on Multiple Levels, Working with the Analytical Model, Analyzing Heating and Cooling Loads, Creating a Zone Color Scheme, Creating an Airflow Schedule.

**Designing Mechanical Air Systems** - Placing Hosted Air Terminals, Placing Non-Hosted Air Terminals, Creating Secondary Supply Air Systems, Creating Ductwork for Secondary Supply Air Systems, Manually Creating Ductwork

**Designing a Mechanical Piping System** - Adding Mechanical Equipment, Creating a Piping System, Adding Pipe Using Auto Layout, Adding Pipe Using Manual Layout, Adding Valves, Sizing Pipe, Inspecting the System, Checking Piping Systems, Creating a Mechanical System.

**Planning an Electrical System** - Specifying Electrical Settings , Defining Required Lighting, Creating Color Fills and Schedules.

**Designing an Electrical System** - Adding Lighting Fixtures Using Schedules and Color Fills, Modifying the IES Data of Lighting Fixtures, Placing Switches, Junction Boxes, and Receptacles, Creating Lighting Circuits with Wire, Creating Lighting Circuits without Wire, Creating a Switch System, Creating Power Loads, Balancing Wire Size and Breaker Service, Creating a Panel Schedule, Checking Your Design, Creating a Electrical System.

**Planning a Plumbing System** - Configuring a Plumbing and Piping System

**Designing a Plumbing System** - Adding Sanitary Plumbing Fixtures, Creating a Sanitary System, Adding Sinks to the Sanitary System, Refining the Sanitary Stack, Creating the Cold Water System, Creating the Hot Water System, Creating a Plumbing System.

**Planning a Fire Protection System** - Specifying Pipe Settings, Determining Zone Requirements, Creating a Sprinkler Design Schedule.

**Designing a Fire Protection System** - Adding Sprinklers, Creating a Piping System, Completing the Fire Protection Wet System, Adding Vertical Supply Piping, Modifying Pipe Diameters, Documenting a Project

**Creating Documentation Views** - Duplicating Plan Views, Creating Dependent Views, Creating a Plumbing Isometric Riser, Creating Callout Views.

**Working with Annotations and Dimensions** - Creating Annotations, Creating Dimensions, Creating a Legend.

**Detailing** – Creating a Model-Based Electrical Riser Diagram Detail, Creating Detail Wiring, Creating a Model-Based Isometric Detail, Drafting Detail Components, Importing and Exporting a CAD Drawing.

## Navisworks :

Autodesk® Navisworks® Manage software is a comprehensive project review solution that supports coordination, analysis, and communication of design intent and constructability.

Interference management tools help design and construction professionals anticipate and avoid potential problems before construction begins, minimizing expensive delays and rework.

## NAVISWORKS SYLLABUS

### A. User Interface

NAVISWORKS files formats, Opening And Appending Files In NAVIS WORK, Saving Files, Merging Projects, Refreshing And Deleting File, Publishing Files, Navigation Tools, Selecting Objects

### B. Commonly Used Tools In NAVISWORKS

Hiding Object, Object Properties, Moving Object, Selection Set, Viewpoints, Redline Tools, Recording Animations, Sectioning The Model, Adding Links, Comparing Models, Switchback.

### C. Clash Test

Conducting A Clash Test, Clash Test Rules, Clash Test Results, Clash Test Reports, Import And Export Clash Tests

### D. Navigation Tools

Walking, Orbit, Look, Gravity, Cube, View Point, Styles, Background, Sectioning.

## Fire Fighting System Designing

- o Introduction to Fire System
- o Classification of fire
- o Manual hand held fire Extinguishers - Types, classification, Selection, Using Procedure & General maintenance instructions
- o Hazard Classification: Light Hazard, Ordinary Hazard(Group1&2), Extra Hazard(Group1&2)
- o Active and Passive Fire Protection System.
- o Fire Strategy Planning.
- o Stair Well Pressurization System concept.
- o Fire Water Sump Sizing, Over Head Tank Sizing.
- o Sprinklers - Types of Sprinklers, Pendant, Upright, Sidewall, Concealed, SIN Number Identification, Sprinkler System Types: Wet pipe, Dry pipe, Pre Action, Deluge, Anti Freeze, Combined Dry Pipe and Pre Action System. Sprinkler System Designing, Sprinkler Pipe Sizing.
- o Dry Riser, Wet Riser, Down Comer Selection.
- o Fire Stand Pipe System, Fire Hose Cabinets & Fire Hydrants Selection.
- o Fire Fighting Hydraulic Calculation, Head Loss & Pump Head Calculations For High Rise Buildings.
- o Zone Control Valve.
- o Elite Software For Fire Sprinkler Hydraulic Calculation.
- o Fire Water Pump - [Main Pump, Jockey Pump, & Diesel Pump] Classification, Types & Selection.
- o Diesel Tank capacity Calculation for Diesel engine driven pump.
- o FM200 System Designing - [Water less Fire Protection System ] Capacity, Pipe Sizing, Nozzle Selection.
- o Foam System Designing.
- o Fire Alarm System Designing.
- o Smoke Detector (Ionization, Optical, Duct, Beam)
- o Heat Detector: Fixed Temperature, Rate of Rise , Linear Heat Detection Cable.
- o Flame Detector
- o VESDA Aspirating System.
- o Reference Standards: **NFPA10, NFPA13, NFPA14, NFPA24, NFPA20, NFPA2001, NFPA11, NFPA01, TAC, NBC Codes, NBC Table No: 23 & 24**



*For further details contact or walk in at :*

## Taiba Engineering Consultants

### **Head Branch ;**

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(Metro Rail Station), Paltan Road,  
**Malakpet**, Hyderabad-36.  
Phone : +9140 6460 4442 / +91 99637 59411

### **Mehdipatnam Branch :**

2nd Floor, Ansar Complex,  
Near Sarvi Hotel,  
**Mehdipatnam 'X' Road**, Hyderabad. - 28.  
Phone : +91 92463 44314 / 98852 87207

### **Excellence Campus :**

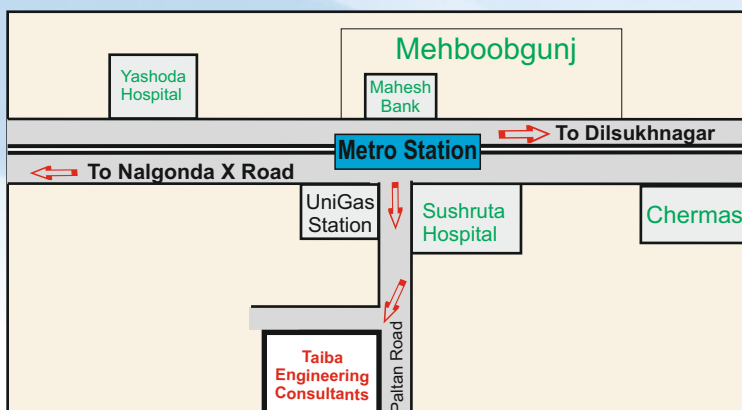
2nd Floor, Above Orient Eye Hospital,  
Opp. PVNR Expressway Pillar No. 46,  
Rethi Bowli, Mehdiapatnam, Hyderabad - 28.

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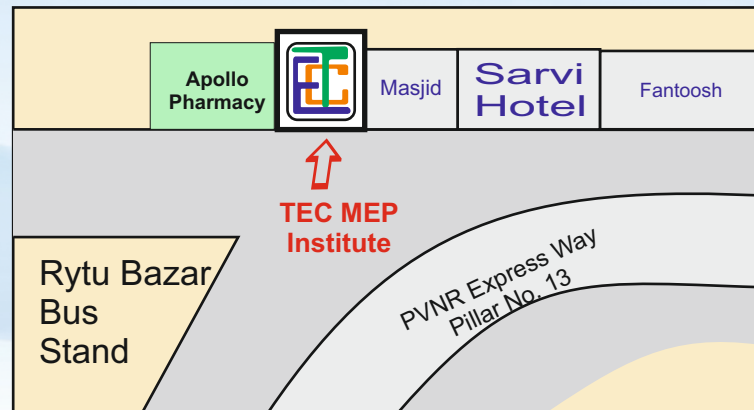
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**Other Branches @ Bangalore - Kochi - Calicut.**

**Route Map of Malakpet Branch**



**Route Map of Mehdiapatnam Branch**



**Route Map of Excellence Campus**

