WQC Institute of MEP

(A Division of Limra Institutions Pvt. Ltd.)

Arjun Tower, CUSAT Road, CUSAT P.O, Kalamassery, Kochi 682022, Kerala, INDIA.
Tel: +91 484-6009992 , +91 9645 761407
E-Mail: info@wqcmepinstitute.com Web: www.wqcmepinstitute.com

Redesigning Future

WQC Institute of MEP

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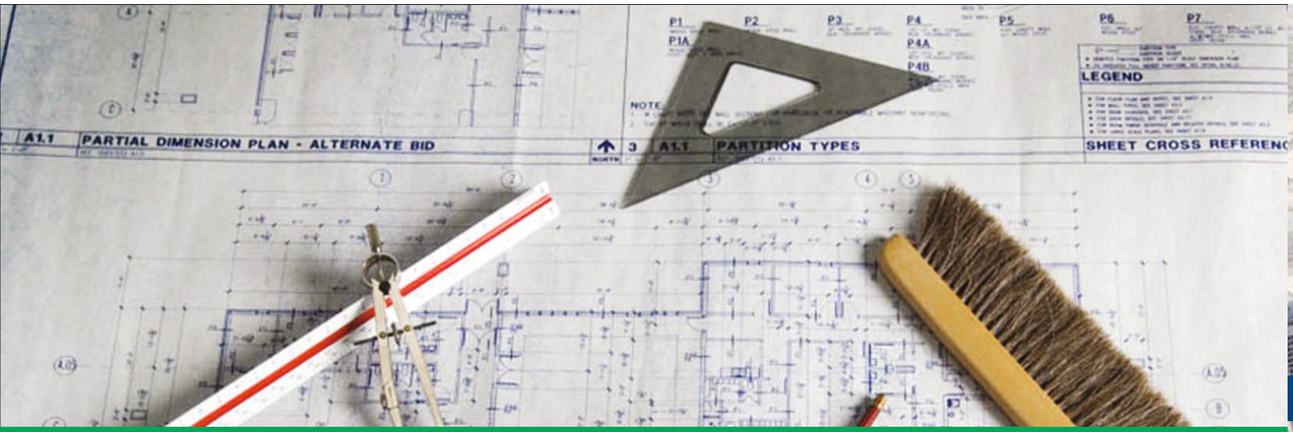
Affiliated Members :

FSAI · Indian Green Building Council · ISHRAE Indian Society of Heating Refrigerating and Air Conditioning Engineers



INTRODUCTION TO WQC MEP INSTITUTE

Today in the world of architecture and building where complex buildings are being erected day by day. Taller structures have become the icon of development for a country. There is a great importance given to construction related works and huge demands for efficient and experienced engineers in the field. In most developed and fast growing countries there are huge demands for experienced Mechanical, Electrical and Plumbing (MEP) workers on Mega Scale Projects such as the construction of airports, hospitals, schools, shopping malls and such where central air conditioning system is applied.

It is very important to be highly skilled in dealing with the modern technologies in the Mechanical, Electrical and Plumbing works of building services since the building systems have become more integrated and the industry embraces sustainable and environmental concepts into design. Besides having the most updated and authentic information, the onsite experience is also vital to build up quality craftsmanship. WQC Institute of MEP thus earns to provide the best training under this area. Here is the importance of WQC Institute of MEP that is a strong presence in the field for years with many numbers of brilliant projects to count in their portfolio.

MISSION

To bridge the gap between academy and industry by moulding student industry compatible. Provides high quality Industry oriented training to our students by giving more importance to hands-on training.

VISION

Embed youth with core MEP knowledge and mould a centre of excellence in the field of Building services Designs.

FUTURE OF MEP INDUSTRY WITH EMERGENCE OF GREEN BUILDING

It seems the era of "Green Building" has brought with it a trend in HVAC, Electrical and Plumping Design, where the new technologies and strategies are adopted to achieve higher energy performance. Our definition of green buildings inevitably extends beyond the concerns of HVAC designers alone since the very concept places an emphasis on the integration of mechanical, electrical architectural, public health engineering, and other systems. Green building is one that achieves high performance, over the full life cycle, in the following areas:

- Minimal consumption of energy.
- To reduce atmospheric emissions.
- Minimal discharge of harmful liquid effluents and solid wastes.
- Minimal negative impacts on site ecosystems.
- Maximum quality of indoor environment, including air quality, thermal regime, illumination, acoustics / noise, and visual aspects.
- Minimal discharge of harmful liquid effluents and solid wastes.
- MEP designer plays an important role in the functionality of a green building. The HVAC system for green building shall be designed to reduce energy consumption while maintaining the interior conditions at a comfortable level to keep occupants

OUR TRAINING PROGRAMS

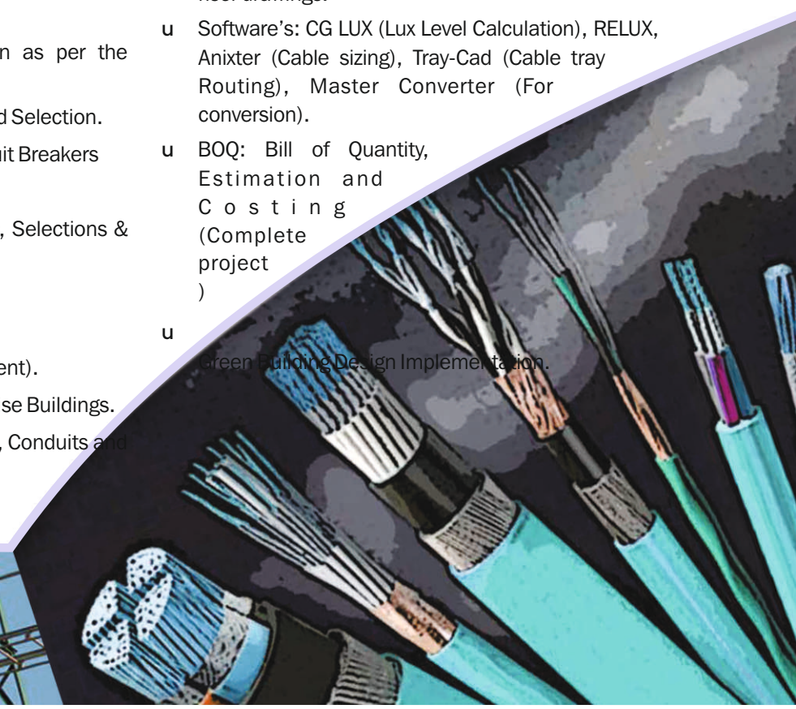
- **HVAC (Heating, Ventilating and Air Conditioning) Designing & Drafting**
- **Electrical Designing and Drafting**
- **Plumbing (Water Supply/Drainage) Designing & Drafting**
- **Fire Fighting Designing & Drafting**

HVAC DESIGNING & DRAFTING

- Introduction to HVAC
- Psychrometric Chart (York / Carrier Psych Analyser)
- Ventilation Basics (Natural and forced ventilation)
- Kitchen Ventilation (Hood Design)
- Car Parking Ventilation (Jet Vent Fan Selection)
- Toilet Ventilation (Residential & Commercial)
- Heat Load Calculation (Manual / E-20 & Software Carrier HAP)
- Duct Designing Basics (types, gauge selection, low medium & high velocity systems)
- Duct Designing Methods (Equal Friction, Velocity Reduction, Static Regain)
- Duct Designing Software (McQuay Duct Sizer, FDuctulator)
- Duct Comparison and Fabrication Procedures
- External Static Pressure (ESP) Calculation
- Air Terminal Selection (Manual & Software-Beta Performance Data)
- Reducer Selection
- Refrigerant Pipe Sizing (Graphical method & Software)
- VRV/VRF system designing (Manual & Software)
- Coil Selection
- Chilled Water Systems and Vapour Absorption Systems (VAMs)
- Chiller Selection
- Hydraulic Calculations (Manual & Software)
- Primary & Secondary Pump Selection
- Chilled Water Pipe Sizing (Manual & Software-McQuay Pipe Sizer)
- Cooling Tower Selection
- Stair Well Pressurization System
- District Cooling System
- Air Curtain Selection
- Basic Concepts of Green Building Designing

ELECTRICAL DESIGNING AND DRAFTING

- Scope of Electrical Designing & Drafting.
- Duties and Role of an Electrical Design Engineer and Draughtsman
- Electrical Generation, Transmission and Distribution general concept.
- Utilization of Solar Energy for various buildings.
- Selection of Solar Panels, Solar Regulators, Solar Battery and Inverters and their functioning.
- House Wiring Concepts.
- Different Electrical Services: Lighting, Power, Fire Alarm, Emergency lighting Etc.
- Different types of Equipments and their load as per standard specifications.
- Symbols and Legends: Lamps, Fan, Exhaust Fan, A/C, Sockets, etc
- Abbreviations for all type of services.
- Lux Level Calculation & Different types of lamps like GLS, FTL, CFL, LED, MVL, etc.
- Load Scheduling (Single house, Apartment, High Rise buildings) common area, open area and load calculations.
- Cables: Selection, Conductor, strands, cores and Insulation
- Armored and unarmored cables.
- Voltage Drop Calculation.
- Cable Schedule and Conduit selection as per the standards.
- Switch Gears (Circuit Breakers) Types and Selection.
- Internal Mechanism and Working of Circuit Breakers
- Panel Boards (MDB, SMDB, SDB, etc.).
- Transformer: Type, Internal connections, Selections & losses.
- Fault level calculations for Transformers.
- Short Circuit calculations in a building
- Capacitor Bank (Power Factor Improvement).
- BUSBAR details and Selection for High Rise Buildings.
- Cable Tray (Tray cad), Raceway, Trucking, Conduits and Routing.
- Cable Tray Selection
- Emergency Lighting: Backup power from UPS & Diesel Generator.
- Emergency Sign Lighting.
- Selection of UPS and Generators.
- Single line Diagram (SLD): Individual, Residential, Commercial, Industrial, hospitalized Buildings
- Types of Earthing according to the requirements.
- Introduction to Lightning Arresters.
- Design Calculations to adopt Lightening Protection system.
- Close Circuit Television (CCTV): Types of Cameras and Circuiting
- Public Addressable System (Speakers Selection).
- Fire Alarm system and load calculation.
- Electrical Engineers work with HVAC profession (MCC).
- Communication: TV, Telephone, Intercom & Internet Networking, Types of cables.
- Types of Drawings: Design Drawing & Shop Drawing
- Drawing Details: Lighting Layout, Power Layout, Single line drawing (SLD), Emergency Lighting Layout, CCTV Layout, Public Addressable
- Layout, Fire Alarm System Layout, Communication Layout, Cable Tray Layout, BUSBAR Layout, Bus duct riser drawings.
- Software's: CG LUX (Lux Level Calculation), RELUX, Anixter (Cable sizing), Tray-Cad (Cable tray Routing), Master Converter (For conversion).
- BOQ: Bill of Quantity, Estimation and Costing (Complete project)
- Green Building Design Implementation.



PLUMBING DESIGNING & DRAFTING

- Introduction to Plumbing
- Detailing and layout of common sanitary fixtures
- Plumbing formulas
- Water supply in buildings (gravity systems and pumped systems)
- Tank/Reservoir sizing (Terrace tank & ground level tank)
- Pump selection
- Auto pneumatic system, pressure tank sizing
- Water supply pipe sizing (plumbers chart, direct discharge methods)
- Foul water drainage systems (stack system)
- Septic Tank, Soak away pit, dispersion trench sizing
- Storm water drainage systems
- Manhole sizing

- External water supply in buildings
- Fountain system designing
- Garden water irrigation system designing
- Hot water system designing, Tank sizing etc
- Designing of common appurtenances, Inspection chambers and Junction manholes
- Detailing of plumbing layouts and sanitary fixtures

FIRE FIGHTING DESIGNING & DRAFTING

- Introduction
- Classification of Fire.
- Fire extinguishers – Types, Using Procedure & General Maintenance Instructions.
- Active & Passive Fire Protection System.
- Stair well pressurization System.
- Fire Water Sump Sizing,
- Over Head Tank, Ground level tank Sizing.
- Sprinklers – Types, Selection, Designing, Pipe sizing.
- Fire Hose Cabinets & Fire Hydrants Selection.
- Fire Fighting Hydraulic Calculation, Head Loss & Pump head Calculations for High Rise Buildings.
- Fire Water Pump – [Main Pump, Jockey Pump & Diesel Pump] Classification, Types & Selection.
- NFPA, NBC &FSAI Codes for Fire Fighting System Designing.
- FM200 System Designing – [Water Less Fire Protection system] Capacity, Pipe Sizing, Nozzle selection.
- Fire Alarm System Designing.
- Smoke Detector (Ionization Type, Optical).
- Heat Detector, Linear Heat Detection Cable.

SCOPE OF MEP IN CURRENT INDUSTRY

Green architecture, a key to architectural sustainability, is the need of the hour for Kochi as the city needs to bridge the gap between current building practices and true sustainability. More and more people are now going the green way as they think it to be a necessity because of rising pollution, improper waste management and efficient for energy conservation.

Though a lot of buildings have been constructed with this concept, most of them are yet to get green certification. The certification is given by Leed India and Greha. The criteria for getting a certification includes smart land use, conserving energy and water, saving materials, reducing toxic chemicals and creating better air quality. There are platinum, gold and silver certificates in respect of green buildings, he added.

MEP business has dynamically changed due to events that have taken place over the past years. Added energy regulations, greater requirements, booming construction industry, consumer awareness and a wide product range are different factors that has added to the ambiguity and doubt in the minds of customers and clients. With rising energy cost, poor MEP systems performance, and greater consumer expectations, WQC MEP Institute recognizes the need for a qualified professional, with hands on experience, to serve as MEP systems consultant to architects, developers, builders, contractors and customers.

PLACEMENT CELL

WQC MEP provides 100% job assistance / support through a dedicated career cell, namely, Corporate Interface. The corporate interface team keeps track of the best job opportunities available in the market at any given time. This allows guidance to students on the best path forward on completion of their course.