



FACTORY



RESIDENTIAL

We provide the  
**Complete**  
**MEP**  
**Solution**



HOSPITALS

**CONSULTING**



EDUCATIONAL



JEWELLERY



WORSHIP



RETAIL



RESTAURANTS



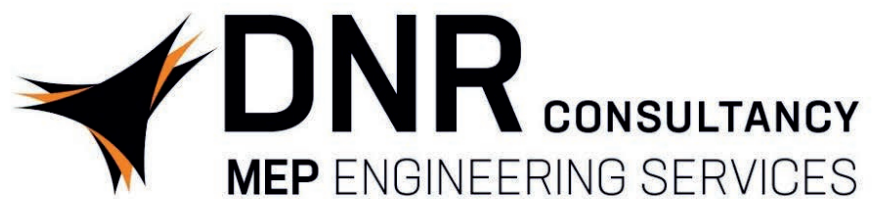
HOSPITALITY



MALLS

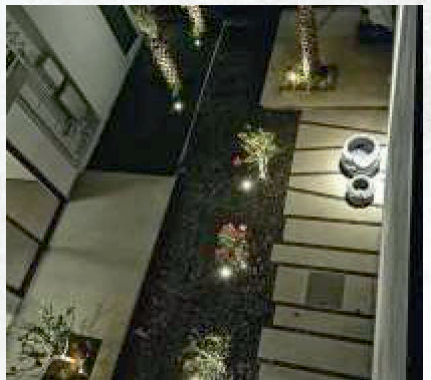
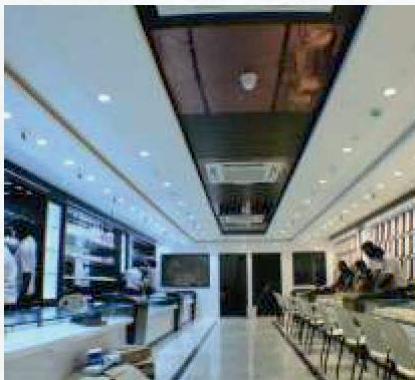


APARTMENTS



Innovation / Sustainability / Excellence







## We have **17+ years** of Serving Experience with **1000+** Happy Clients

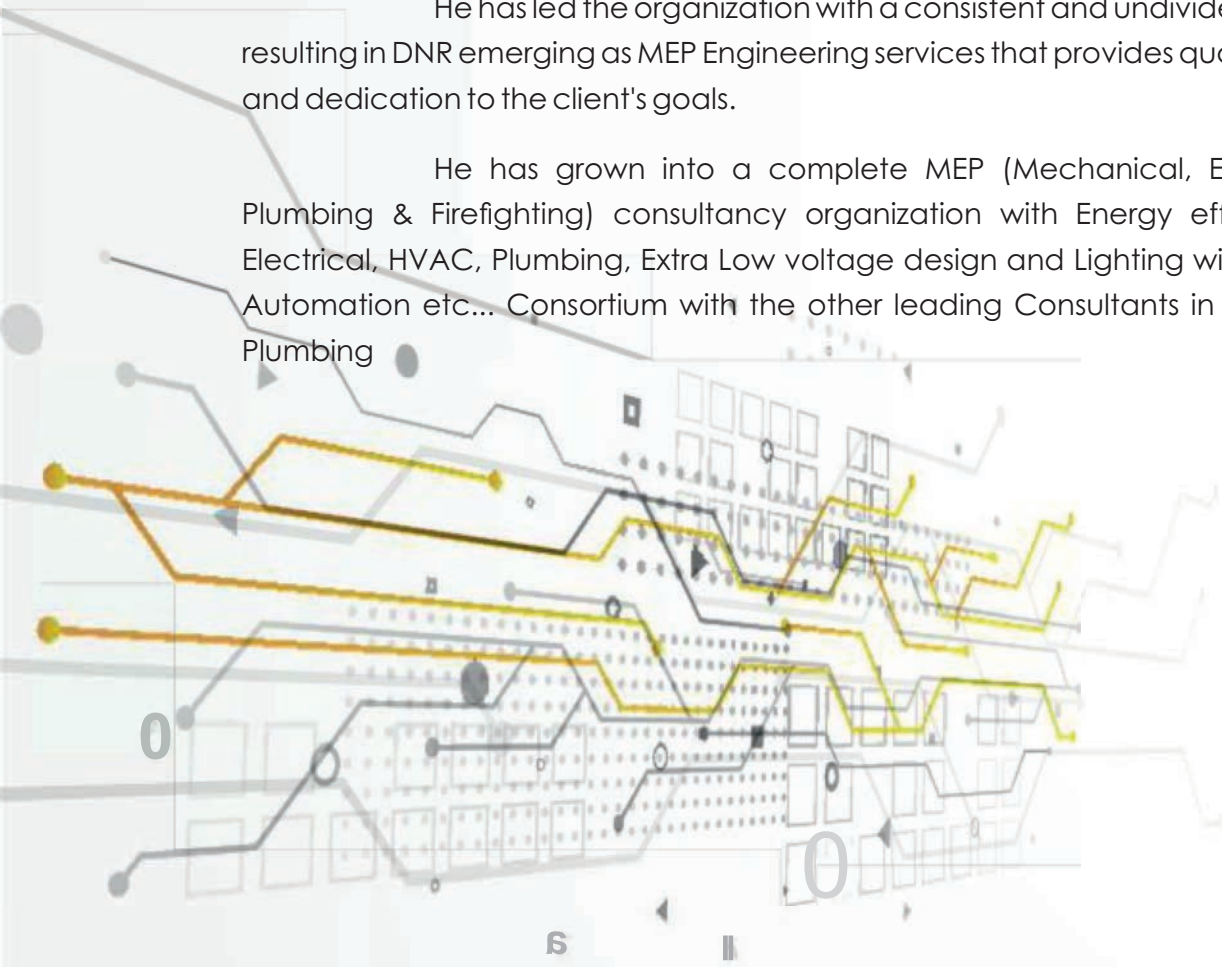
**We have 17+ years of serving experience with 1000+ happy clients**

D. Nagarajan is an Electrical Engineer, possesses over 17 years of experience in Electrical consultancy, who is the founder of DNR Consultancy, that is uniquely positioned as a young, dynamic firm with flexibility to work on a variety of projects and available to continue offering many years of quality engineering services to our clients.

He accomplish these successful outcomes through continuous communications with the clients to insure that we are knowledgeable in their needs and priorities and that they are aware of the status of their project at all times.

He has led the organization with a consistent and undivided focus, resulting in DNR emerging as MEP Engineering services that provides quality work and dedication to the client's goals.

He has grown into a complete MEP (Mechanical, Electrical, Plumbing & Firefighting) consultancy organization with Energy efficient in Electrical, HVAC, Plumbing, Extra Low voltage design and Lighting with Home Automation etc... Consortium with the other leading Consultants in HVAC & Plumbing



DNR Consultancy founded in 2005 by our tough grind and inventiveness we have grown as a leading consultant in MEP Engineering Services in India. As a designer of Mechanical, Electrical and Plumbing Equipment (MEP), we maintain professionalism, expertise, and technical brilliance in the field. Over the past few years, India with excellence has built a reputation as a premier name in MEP consulting and engineering by building a portfolio of ambition, successful, and flawless projects at all stages of the development of projects. We are offering a cost – effective, pragmatic design. We develop through our knowledge of best practices and our openness to innovation.

In addition to our knowledge of best practices, our innovative team encourages creative thinking at every stage of a projects development, resulting in cost effective and practical design solution. We support our clients to start of a project all the way and we supported like a backbone of the projects. Many clients of ours have successfully completed their project with invincible and incredible upshot.

Our company started as a typical MEP consulting company in India, growing with experience and providing consultant quality and commitment to all our projects, whether in the southern states or throughout India.



## Our Vision

To be an outstanding organization

Exceptional people

Irresistible workplace



## Our Mission

Creating a great future together

Inspiring leadership

Outstanding Service

## Design Philosophy

A cost effective design that is appealing to business partners, Environmental friendly, Easy access to Client for the wide range of support and guidance with Honest and transparency.

## Core Values

### Service :

We strive for excellence, continuous improvement and value for Clients.

### Teamwork :

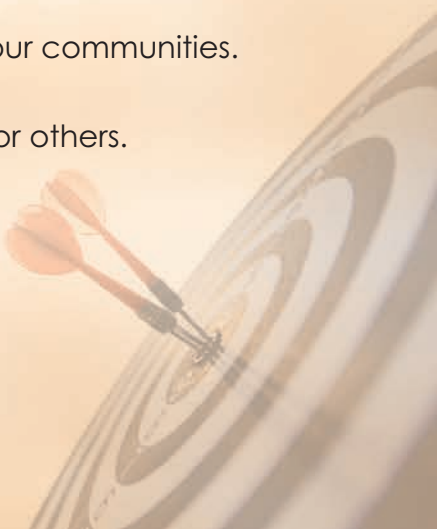
We communicate and co-operate with each other and with our communities.

### Integrity :

We act with commitment honesty transparency and respect for others.

### Satisfaction :

We take pride in our work and we have fun together.



## Our Team

Considering our experienced team of technocrats, talented employees, design expertise, project management expertise, and global footprint, we are the best and clear choice for MEP projects.

Our Team working under the guidance and support of our Executive Officer

## Our Team



**Dr. R. Manohar .PHD.,**  
Executive Officer - Strategy & Business Development

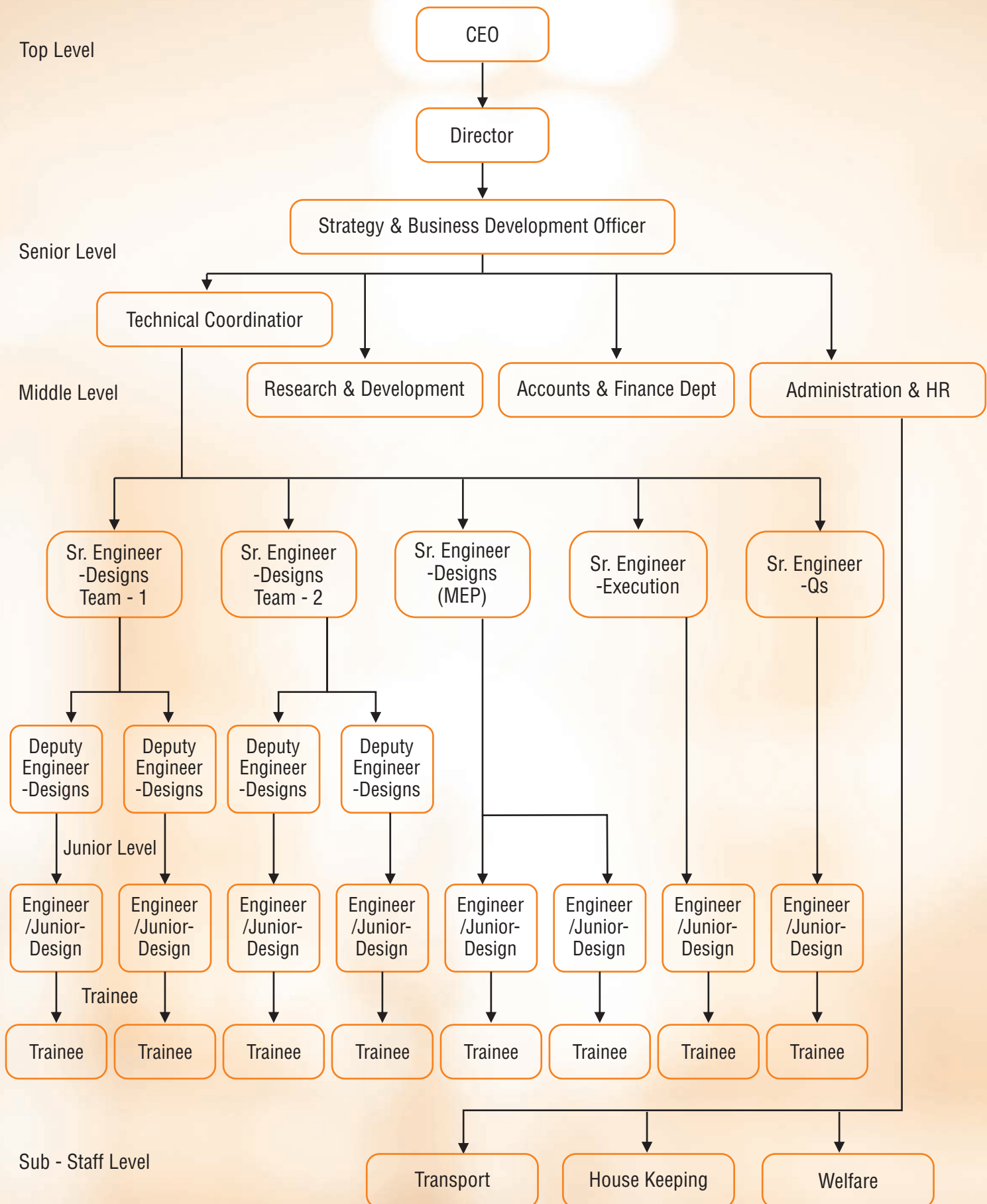
Manohar covering all gamuts of HR & business as a whole. He has been playing the role of a Change Agent throughout his career. He has worked in various industry verticals covering, Manufacturing, Engineering, Discrete Manufacturing industries. He holds PhD in Management; MBA in HR and MSW.

He, with his extensive experience, has been into result and Rol-based business consulting and has turned- around non-performing/ sick-business units with scientific methodologies.

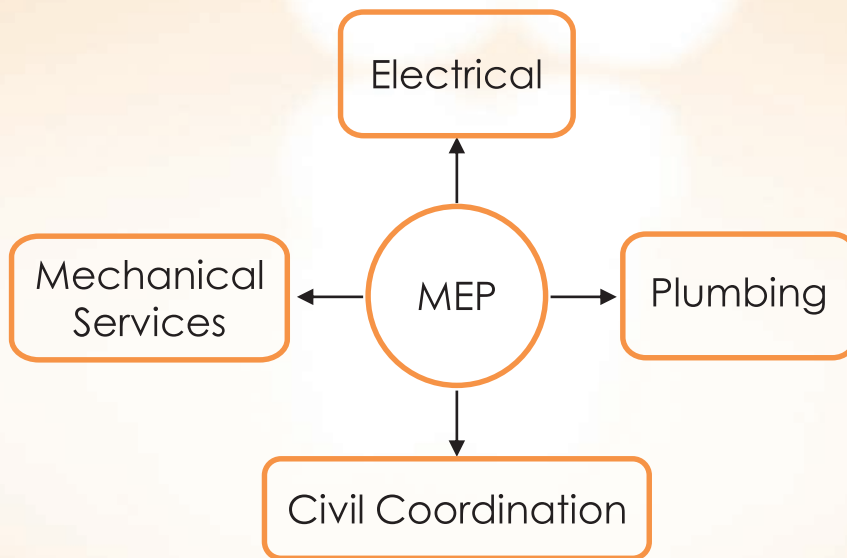
He is an expert in the areas of inventory management, cost reduction/ optimization, waste elimination, performance improvement through processes and people, HR Handbook preparation, labor relations, handling IR and statutory compliance-related activities.

His employers include NTTF, CRI Pumps, Suba Plastics & Servalakshmi Paper Ltd. He works closely with Surya in formulating strategies; working with clients in their turn-around process, providing business solutions to ensure success.

# DNR Consultancy



## Our Service



### Mechanical

“M” Engineering is one part of MEP Engineering. Engineers in Mechanical Discipline are responsible for designing heat, air conditioning and ventilation system for building

### Electrical

“E” Electrical Engineering is another part of MEP Engineering. Building power systems are designed by electrical engineers in MEP Engineering

### Plumbing

“P” Plumbing is one of the in MEP Engineering. Water-based systems are designed by plumbing engineers for sinks, showers, and toilets. In addition, they work on design systems like ventilation systems and water purification systems.



## Our Design

### **Schematic Design:**

Prepare the schematic design for MEP Services.

Prepare the Single Line Diagrams

Firm up the space requirements

Prepare the block diagram and cost estimates for each of the MEP Services.

Indicate approximate capacities of equipment related to each MEP service.

Identification of long lead procurement items. Firm up shafts for services and area requirements for all the components.

Estimation of Budgetary cost based on the approved concept drawing.

Design Basis report comprising :

List codes and standards used for each MEP Service

Schematic drawings for MEP

Estimated project cost with Broad break up for equipment.

### **Design Development:**

Firm up all equipment capacities and ratings of MEP Services.

Selection of type of equipment.

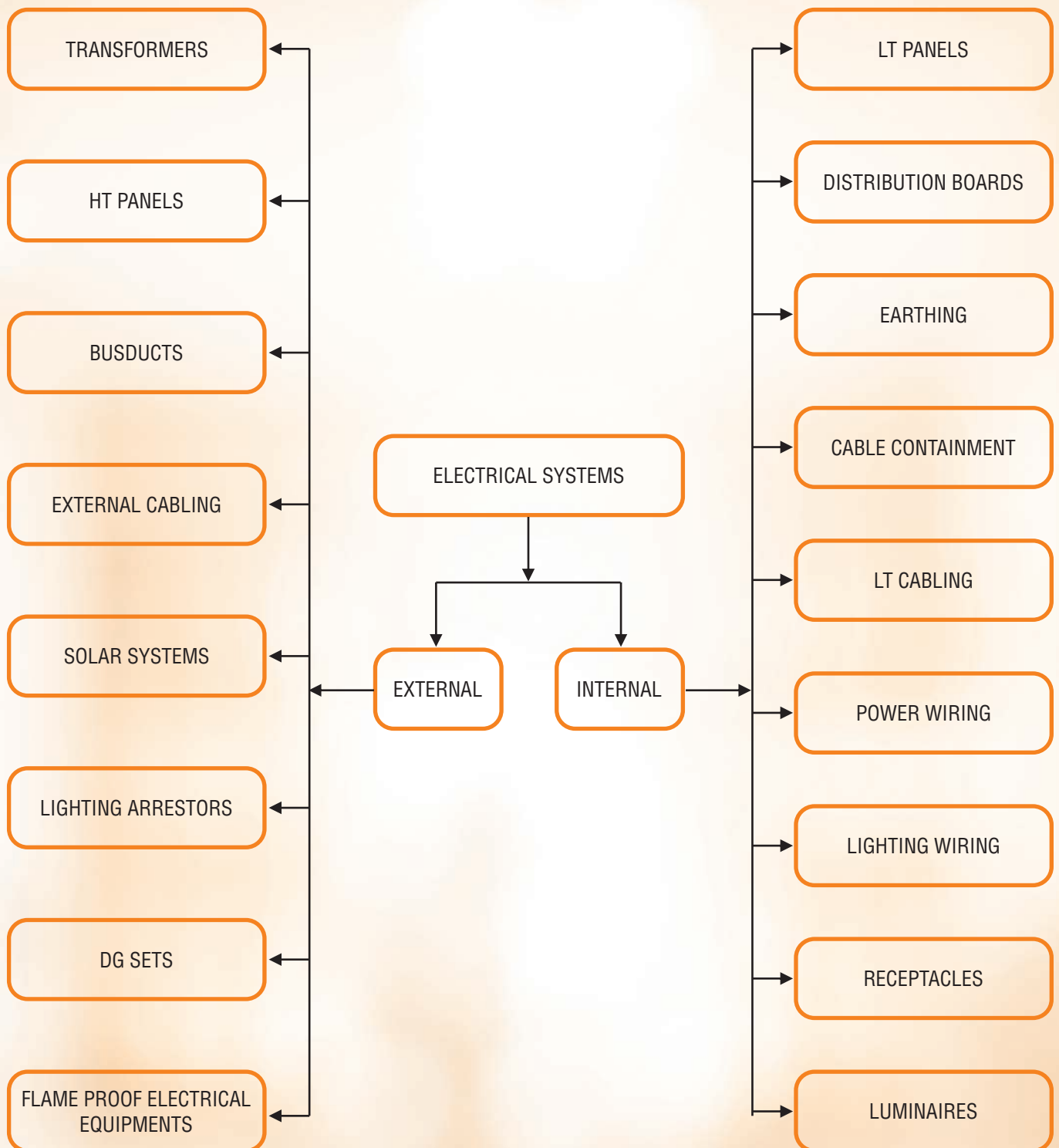
Coordination with Architectural and other servicing drawings. Final Design drawings :

Prepare design drawings based on the schematic designs.

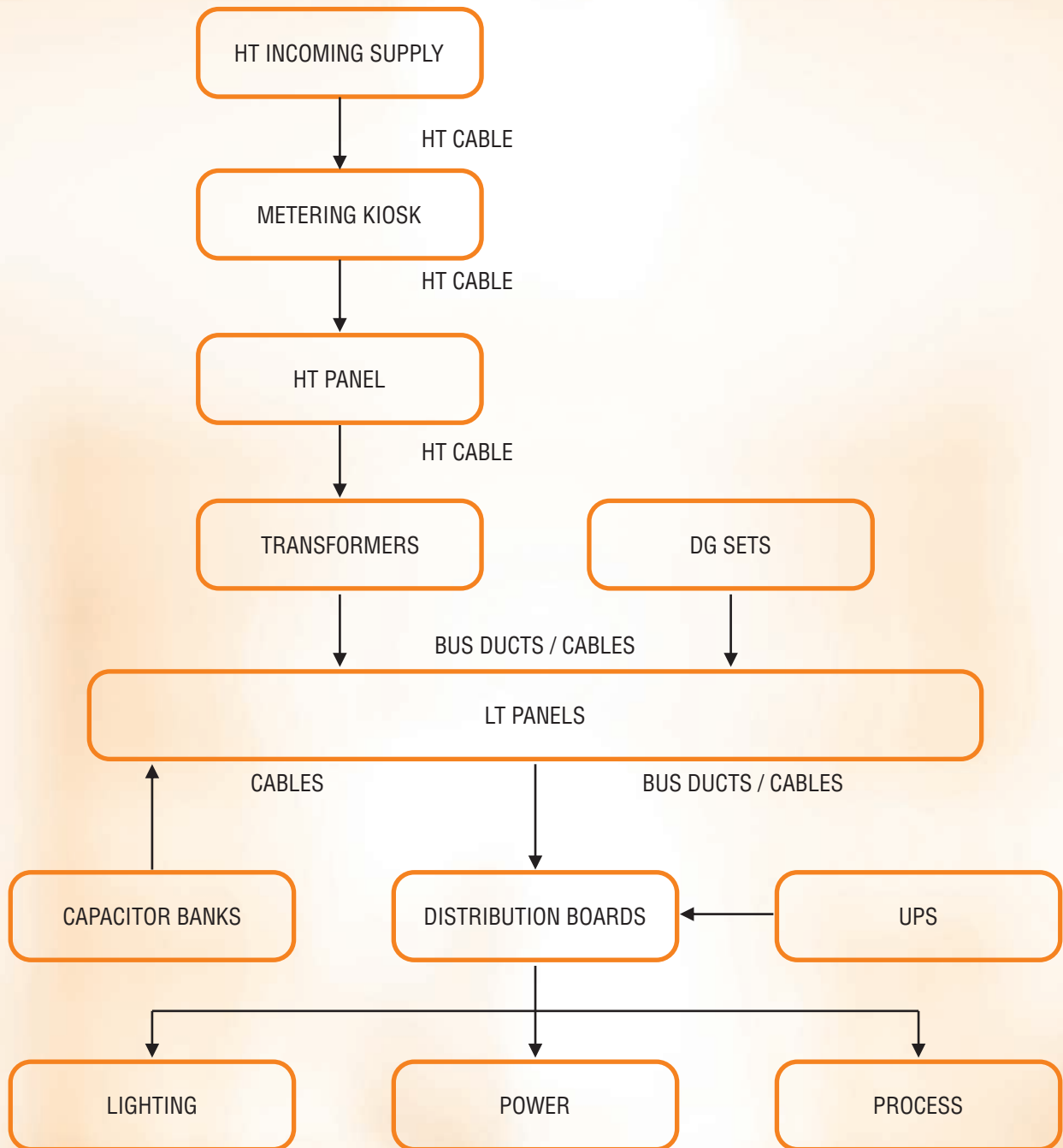
The Main task during this stages are,

Prepare and issue design drawings and details for proper execution of works for construction in coordination with the services and specifications.

# Classification Of Electrical Systems



# Typical Electrical Schematic System



## Extra Low Voltage System

Fire Detection & Alarm System

Public Address System

Access Control System

CCTV System & Monitoring System

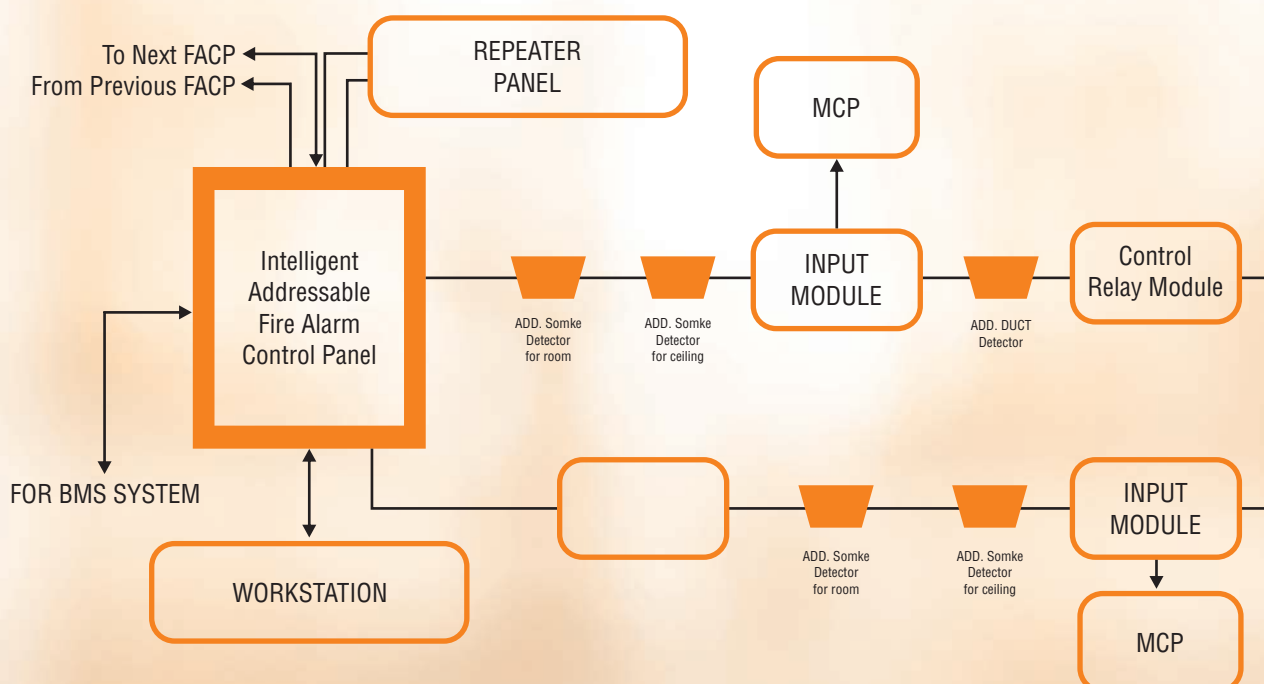
Building Security System

Building Management System

## Fire Detection System

A Fire Alarm System: Is number of devices working together to detect and warn people through visual and audio appliances when Smoke, Fire, Carbon, Monoxide or other emergencies are present. These alarms may be activated from smoke detectors, and heat detectors.

A Public Address System (PA System) : Is an electronic sound amplification and distribution system with a microphone, amplifier and loud speakers, used to allow a person to address a large public, for example for announcements of movements at large and noisy air and rail terminals or at a sports stadium.





## **Extra Low Voltage System**

Controlling the access to any premises is the most basic and important requirement of a well-designed security system. Access Control System provides the valuable information about the personnel accessed in / out.

Our Access Control Systems is an excellent security system for small applications such as an office or big applications such as Airport terminal or a University Campus that requires a large number of entry control points. Our most advanced access control solutions can integrate with Time and Attendance Systems as well and support even your payrolls..

## **Access Control System Features :**

Multi - site - Client / Server - LAN/WAN configuration.

Integrated Maps & Badging.

Dial-up, TCP/ IP Multi controller architecture.

Global one-card migration paths.

Quality, confidence and consistency.

Configurable Database

There are many design fields for engineers in this world but MEP Engineering is a unique field. The challenge for engineers is to apply their skills and proficiency to design unique solutions for every project. We design a comfortable and functional MEP Engineering Services partner not only that we also assist in the design of buildings by collaborating with other disciplines.

All varieties of mechanical, electrical and plumbing systems can be found in schools, offices, commercial complexes, institutions, residential buildings, stadiums, auditoriums, hotels, and healthcare facilities are projects done by us with low cost and unique style. The design of one system influences the design of another. It is critical that these three disciplines work together when designing large commercial buildings. But it is not easy to find consulting firms like ours who provide all three engineering services.

Balance between traditional and modernity, conventional and sustainable – it is in the heart of us. The more we worked, the more we came to know that the world is moving towards different climate changes and it has become a hazard. It should be addressed before it is too late. As a result of this insight, we have shifted our focus on traditional MEP design to more sustainable alternatives.

# MEP Consortium

## **Schematic Design :**

- Prepare the schematic design for MEP Services.
- Prepare the Single Line Diagrams
- Firm up the space requirements
- Prepare the block diagram and cost estimates for each of the MEP Services.
- Indicate approximate capacities of equipment related to each MEP service.
- Identification of long lead procurement items. Firm up shafts for services and area requirements for all the components.
- Estimation of Budgetary cost based on the approved concept drawing.
- Design Basis report comprising :
  - List codes and standards used for each MEP Service
  - Schematic drawings for MEP
  - Estimated project cost with Broad break up for equipments.

## **Design Development :**

- Firm up all equipments capacities and ratings of MEP Services.
  - Selection of type of equipment.
  - Coordination with Architectural and other servicing drawings.
- Final Design drawings :
- Prepare design drawings based on the schematic designs.
  - The Main task during this stages are,
  - Prepare and issue design drawings and details for proper execution of works for construction in coordination with the services and specifications.

### **Mechanical Services**

- HVAC – Heating Ventilation & Air Conditioning
- Refrigeration
- Fire Protection

### **Electrical Services**

- Electrical HT & LT Power Distribution
- Lighting
- Earthing & Lightning Protection
- Fire Detection & Alarm System
- Public Addressing System
- Access Control System
- CCTV System & Monitoring System
- Building Security System
- Building Management System

### **Plumbing Services**

- Domestic Water System
- Flushing Water System
- Sewage Water System
- Rain Water System
- Sewage Treatment Plant
- Water Treatment Plant
- All Piping & Sanitary Fixtures that provide Water



## Extra Low Voltage Systems

FIRE DETECTION & ALARM SYSTEM

PUBLIC ADDRESS SYSTEM

ACCESS CONTROL SYSTEM

CCTV SYSTEM & MONITORING SYSTEM

BUILDING SECURITY SYSTEM

BUILDING MANAGEMENT SYSTEM

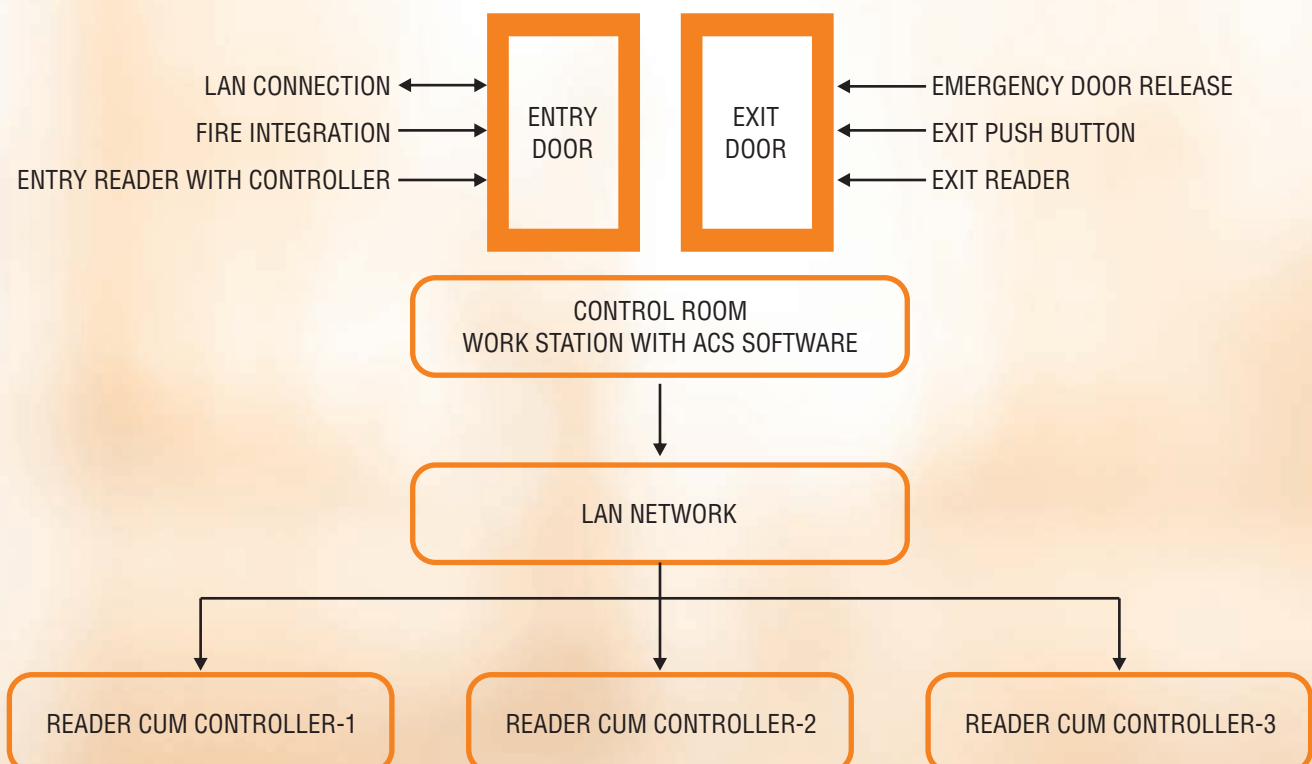
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A Public Address System (PA System) : Is an electronic sound amplification and distribution system with a microphone, amplifier and loud speakers, used to allow a person to address a large public, for example for announcements of movements at large and noisy air and rail terminals or at a sports stadium.

## Schematic - Access Control System

### ELECTROMAGNETIC DOOR LOCK



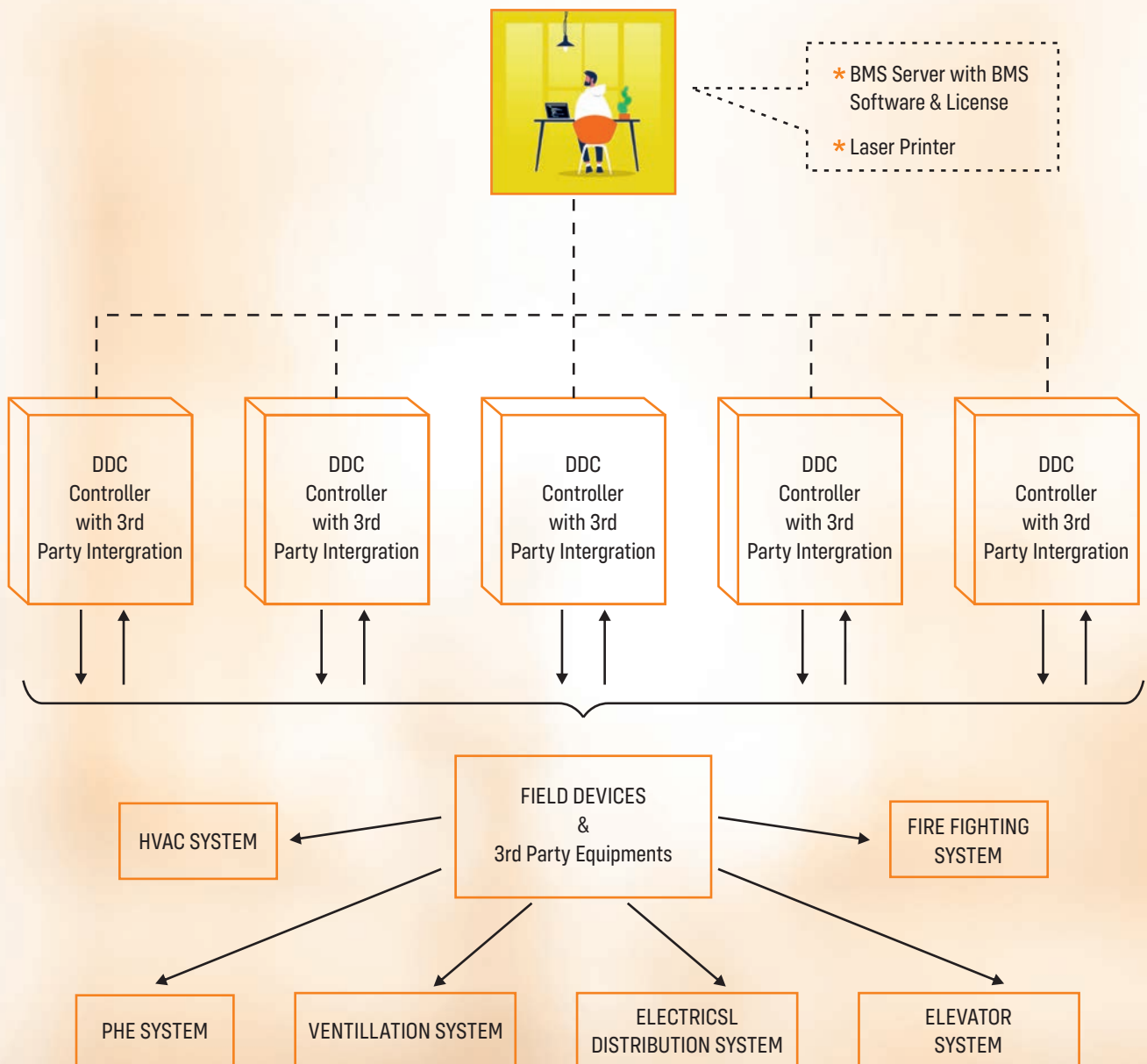
# IBMS System

A Building Management System (BMS) or Building Automation System (BAS) is a computer-based control system installed in buildings that controls and monitors the building's mechanical and electrical equipment

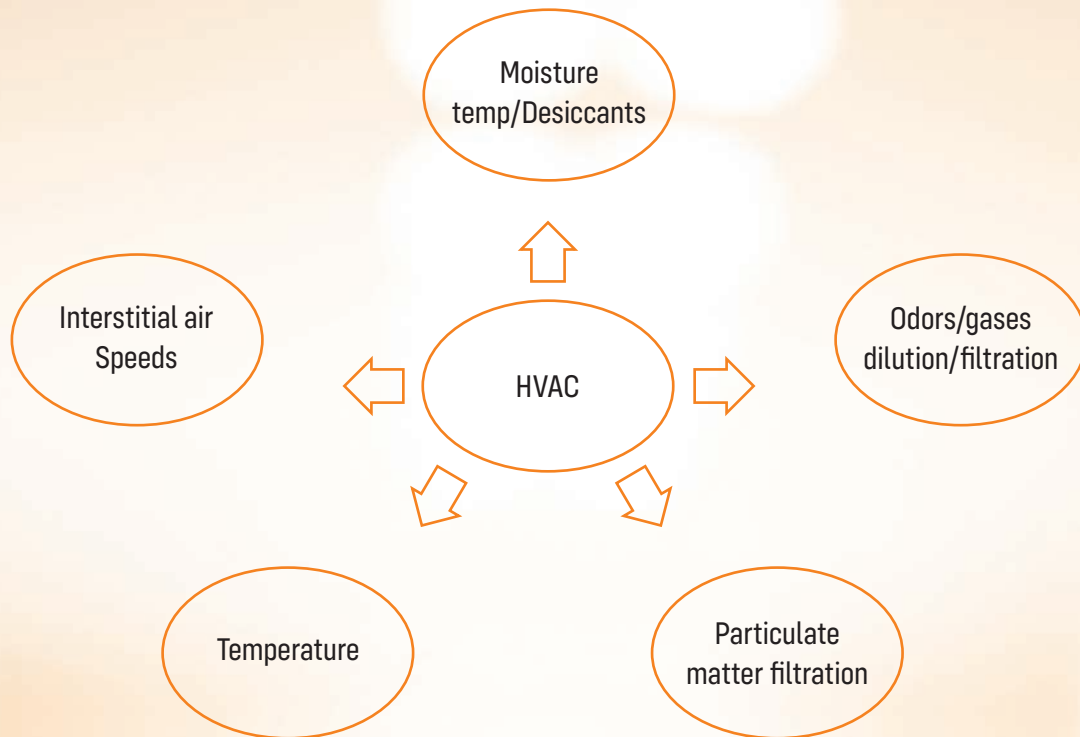
They help you plan operations and assess performance; make operation easier; improve building comfort, enhance safety, improve efficiency, save energy, and protect your assets.

Their function is to control, monitor and optimize building services, such as heating, ventilation, air conditioning, lighting, alarm systems and certain electrical appliances.

## Central Workstation



# HVAC- Heating Ventilation & Air Conditioning



## WHAT IS TR -TON OF REFRIGERATION

1 TR IS AMOUNT OF HEAT EXTRACTED FROM ATMOSPHERE FOR MELTING 1 METRIC TONNE OF ICE IN 24 HOURS.

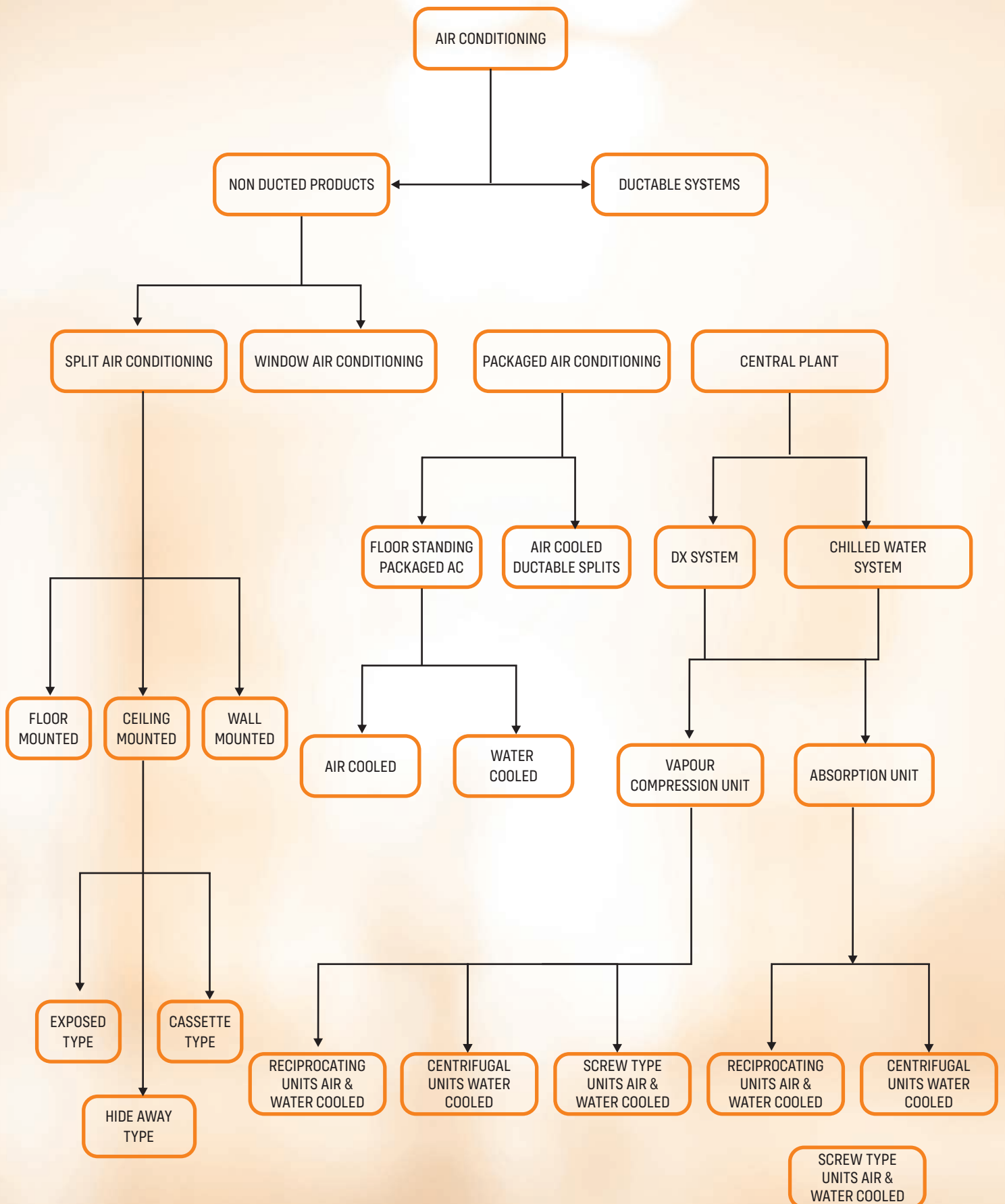
1 TR = BTU/HR

1 TR = 3025 KCAL/HR

## Functions Of HVAC

- CONTROL OF AIR TEMPERATURE
- CONTROL OF MOISTURE CONTENT IN THE AIR
- PROPER AIR MOVEMENT
- TO HOLD AIR CONTAMINATION WITHIN
- ACCEPTABLE LIMITS

# Functions Of HVAC





## What Is Fire ?

- An exothermic reaction resulting from combination of heat fuel and oxygen.
- Fire involves rapid oxidation at high temperatures accompanied by the evolution of highly heated gaseous products of combustion and emission of visible and invisible radiation.
- Initiation of fire requires combustible materials, oxygen and an energy source (heat) to provide ignition. Three components -fuel , oxygen & heat are referred as the fire triangle far

## Classification Of Fire

- **Class-A** - Fires involving ordinary combustible materials like wood, paper, textiles, rubber etc.
- **Class-B** - Fires involving flammable liquids or liquefiable solids, such as oils, solvents, petroleum products, paints, varnishes etc.
- **Class-C** - Fire involving gases or liquefied gases under pressure for eg. LPG, Hydrogen etc.
- **Class-D** - Fire involving combustible metal such as Magnesium, sodium Zinc, Titanium etc.

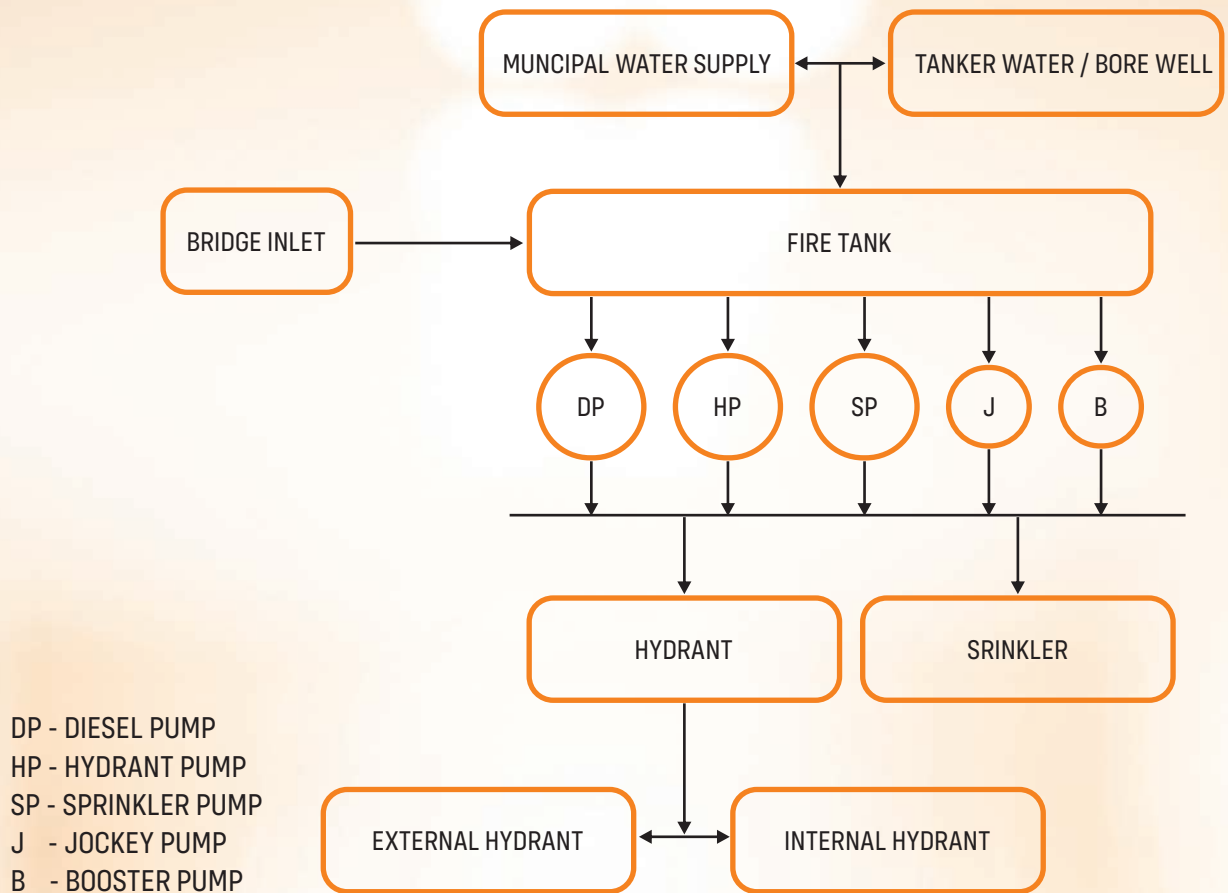
## Principle Of Fire Extinction

- Starvation - Removing or blanketing the fuel
- Smothering - Cutting off the oxygen supply
- Cooling - Removing heat from the fire.

## Fire Fighting System

- FIRE WATER RESERVOIR
- PUMPING UNITS
- FIRE WATER NETWORK
- FIRE FIGHTING HYDRANT SYSTEM
- FIRE FIGHTING SPRINKLER SYSTEM
- FIRE PROTECTION EQUIPMENT

## Typical Fire Protection System Schematic



## Different Areas Of PHE

- SANITARY AND CP FITTINGS • HOT & COLD WATER SUPPLY SYSTEM
- DRAINAGE & SEWAGE SYSTEM
- EXTERNAL WATER SUPPLY
- SEWAGE TREATMENT PLANT
- EXTERNAL SEWER NETWORK AND CONNECTION TO SEWAGE TREATMENT PLANT/  
MUNICIPAL NETWORK

## What Is A Plumbing System

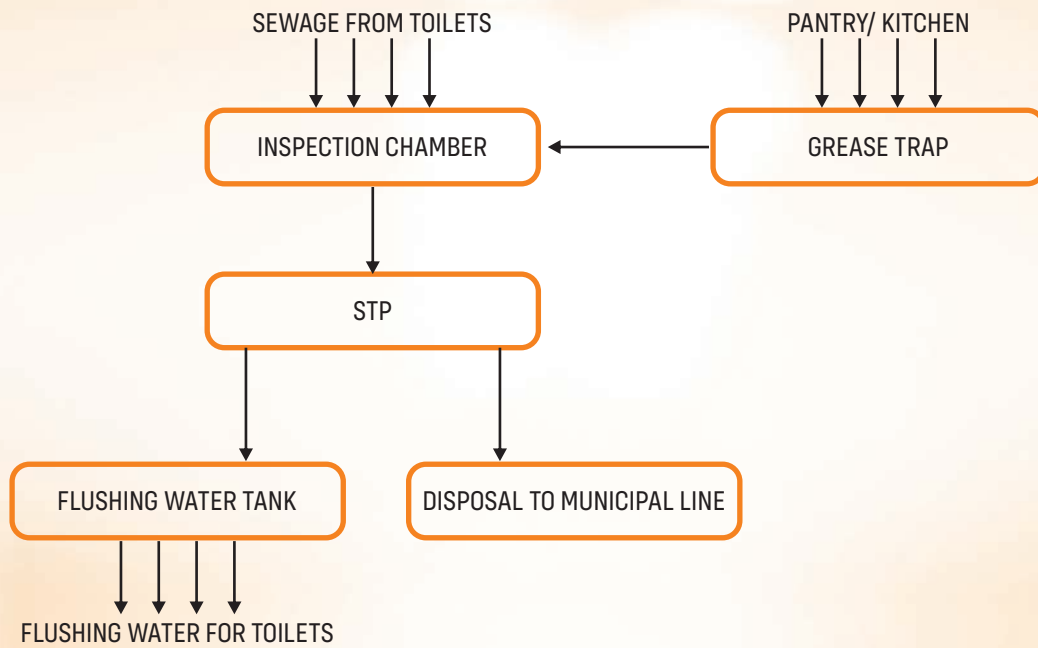
THE PLUMBING SYSTEM IS REALLY MADE UP OF TWO SYSTEMS:

- The supply system that brings in fresh water
- The drain-waste-vent system that takes out used water and sewage
- THE DRAIN-WASTE-VENT SYSTEM ALSO LETS AIR IN AND WASTE GASES OUT.
- BETWEEN THESE TWO SYSTEMS ARE THE FIXTURES (SINKS, TUBS, TOILETS, AND SO ON).

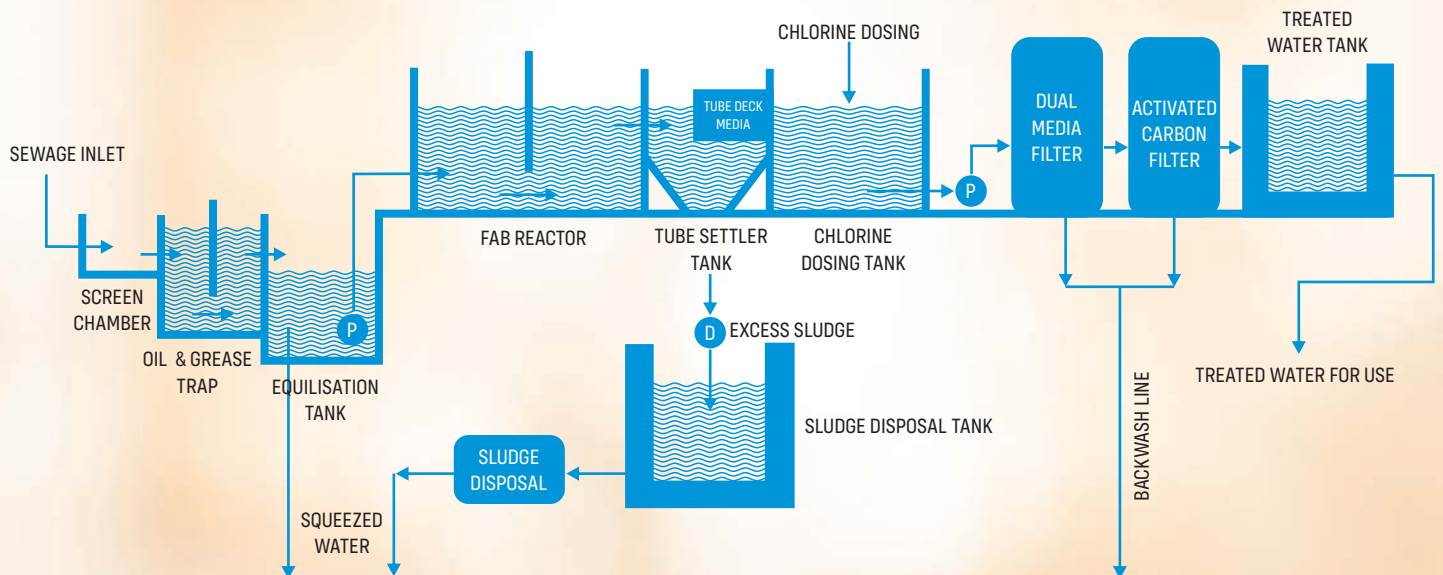
## What Is A Plumbing System



## Schematic - PHE (sewage & Flushing Water)



## Schematic - STP (MBBR)

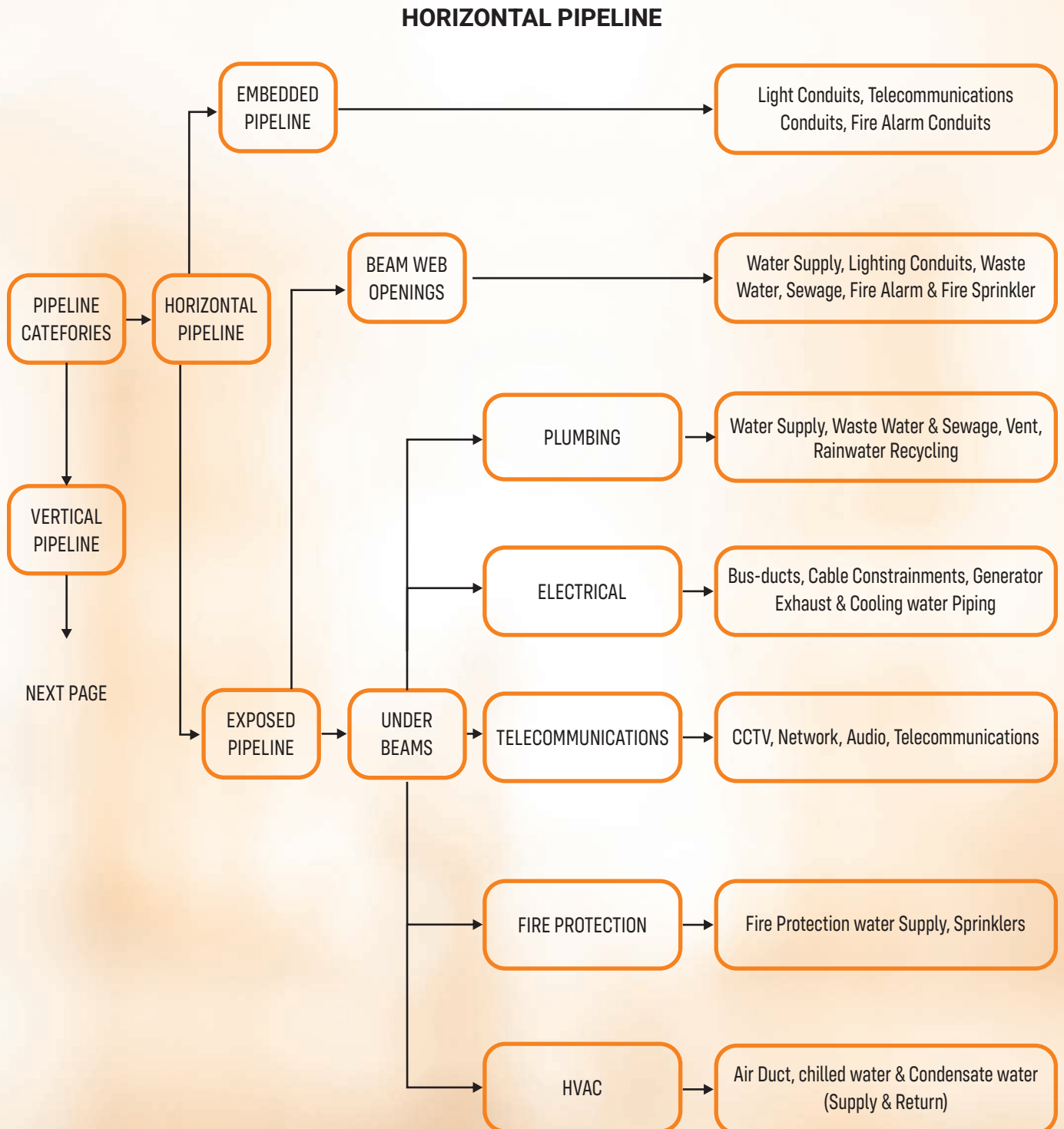


# MEP Service Lines - Categorised

## PIPING/ CONTAINMENT CATEGORISED

- HORIZONTAL PIPELINE
- VERTICAL PIPELINE

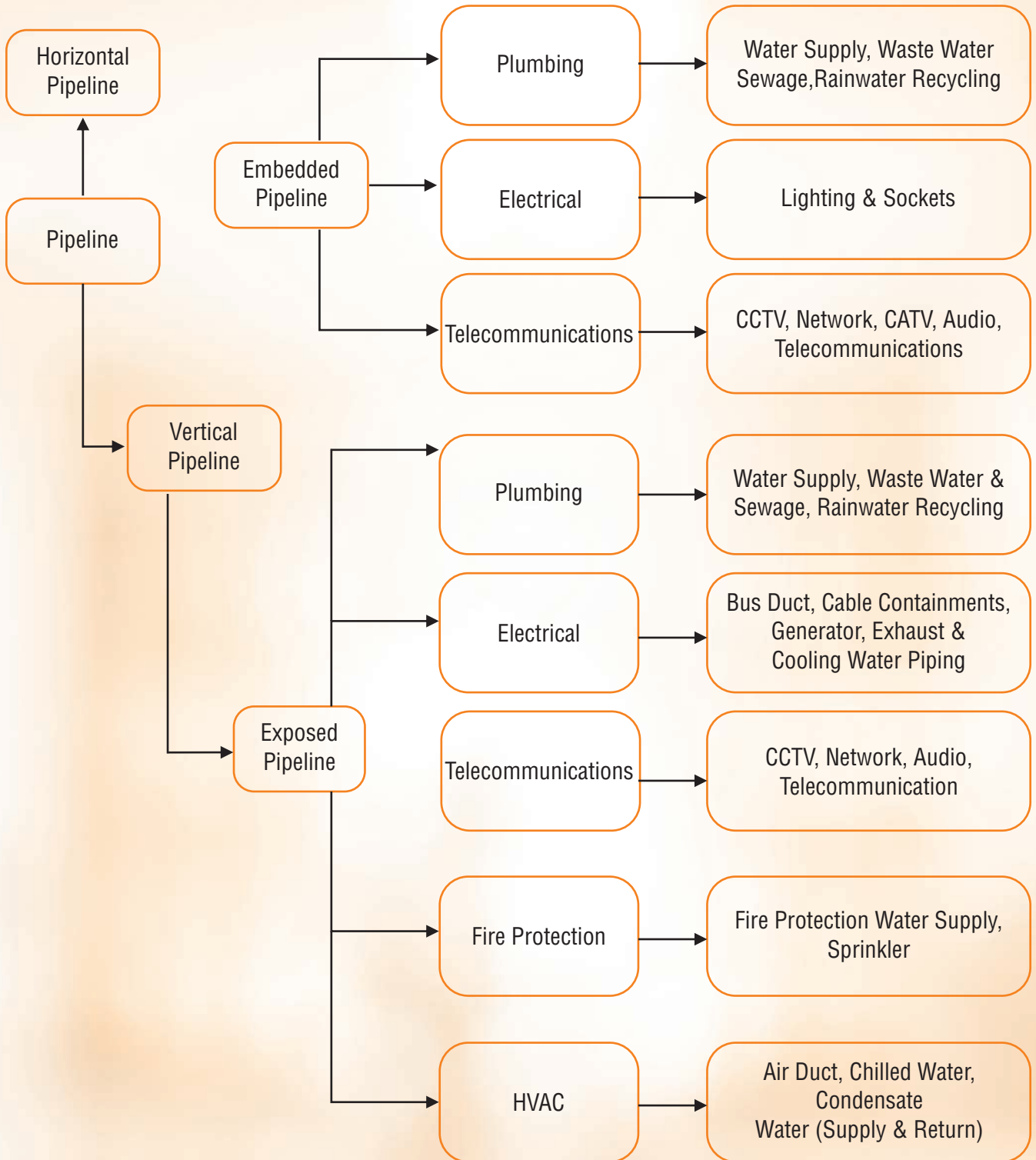
## Pipeline Layout Categories Of MEP System





# Pipeline Layout Categories Of MEP System

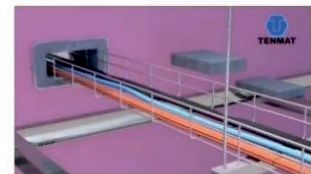
## VERTICAL PIPELINE



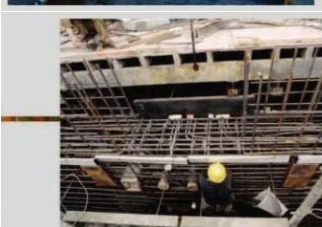
# Civil - MEP Coordination



Cable trench in transformer room  
Service-runs within sub-structure of building



Service-runs inside walls



Service-runs inside floor slab



Provision of opening and pipe-run for bathroom in residential building



Ceiling services before the laying of false ceiling







Provision of opening and pipe-run for bathroom in residential building



## MEP Interfacing - Problems Associated

According to the characteristics of the problem, integration requirements, and construction necessities, the Interface Problems is divided in following eight classifications.

- Coordination with civil structure
- Economy
- Safety aspects
- Efficiency
- Functionality
- Expandability
- Constructability
- Maintainability



## **D. Nagarajan – Chief Consultant**

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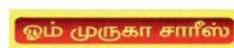
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# Gist of Clients

## Retails





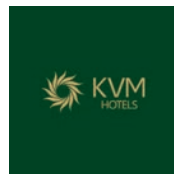
## Gist of Clients

### Builders



## Gist of Clients

### Hotels



## Gist of Clients

### Hospitals



### Educational Institutions



## Gist of Clients

### Educational Institutions



### Jewellery Stores



## Gist of Clients

### Super Markets



### Malls



### Warehouses





# Gist of Clients

## Restaurants



kalluppu

BREAD & SPREAD

## Factories



MELVIN  
FACTORY



MABARA



FIRST  
GARMENT

## House of Worships



## Gist of Clients

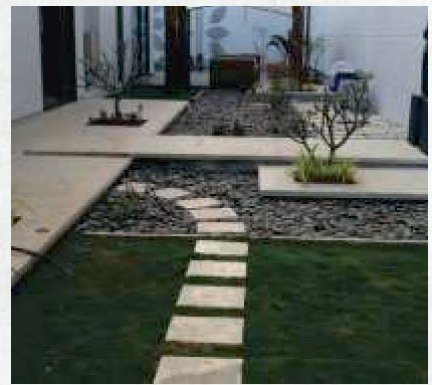
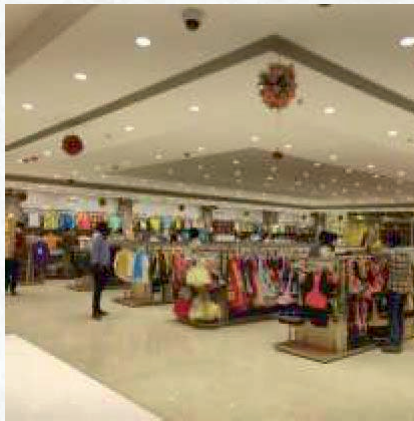
### Bungalows

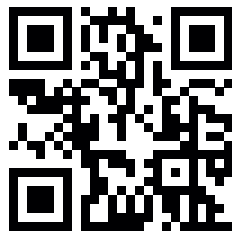
Mrs. Premalatha Bungalow @ Porur (captain)	Mr. Jayam Ravi Bungalow @ ECR	Mr. Sabarisan Bungalow @ ECR
Mr. Ali Bungalow @ Chennai (SIS)	M/s. GRT Bungalow @ Chennai	Mr.Ravi Bungalow @ Tirupur (Shiva Textiles)
Dr. Manivannan Bungalow @ Tirchy (Kauvery MD)	Mr. Doulat Jain Bungalow @ Chennai (Deccan Plaza Hotel)	Mr. JKR Senthil Bungalow @ Tanjore
The Beach House @ Chennai	Mrs. Gowri illam @ Trichy	Dr.Senthil Bungalow @ Coimbatore

# MEP Installations









**Head Office**

No.6, Ground Floor, 7th Cross, N.M.K. Colony,  
T.V.S.Tollgate, Tiruchirappalli - 620 020  
Tamilnadu, India,  
0431 - 231 34 59

**Branch Office**

No: 30/68, 1st Floor, 5th Main Road East,  
CIT Nagar, Nandanam, Chennai - 600 035,  
Tamilnadu, India,  
044 - 35000 564, 35000 565

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