



ENGINEERING DRAWING TYPES

LIFE SAFETY OR BUILDING PLAN (BP)

The purpose of the BP drawings is to outline the building with regards to fire safety and declare systems that are going to be used for protection in the building. A list of important features is provided below:

1. Means of Egress (Exits, escape strategies and occupant loads).
2. Compartmentalization (Subdivisions of Bldg. Spaces, Fire Barriers, etc)
3. Structural Fire Protection
4. Provisions for fire department access, firefighting and rescue.
5. Summary of all fire safety provisions (Identifying the needed protection features including alarm, extinguishing, and smoke control requirements.)

A detailed cover page is an important part of the submission, and a list of necessary cover page information is provided below:

1. Project and Scope description
2. Area table
3. Occupant load / egress capacity calculations
4. Summary of the Fire safety provisions
5. Legends and symbols
6. Openings schedule



FIRE FIGHTING

The purpose of the FF drawings is to study the layout of the extinguishing systems in the building. The systems necessary in a building are identified in the BP approval and the FF drawings provided the location, layout and details of the system components. A list of important features of the FF drawings are provided below:

1. Type and location of the Portable Fire Extinguishers.
2. Location of the Fire Hose Reel.
3. Location of Breeching inlet, fire pump room and water tank, Hard-standing in the site plan
4. Design criteria of the sprinklers system.
5. Pump and Fire Water Tank specifications and details.
6. Sprinkler piping layout and sprinkler location.
7. Details of clean agent extinguishing systems within the building
8. Location of dry or wet Landing Valves.

A detailed cover page is an important part of the submission, and a list of necessary cover page information is provided below:

1. Project and Scope Description
2. Area Table
3. Design Criteria
 - a. Other occupancy
 - i. Design area and Density
 - ii. Max. And Min. Distance between sprinklers
 - iii. Max. And Min. Distance from Sprinkler to wall and Sprinkler to Ceiling
 - iv. k-factor
 - v. Sprinkler Area of Operation
 - vi. Inside and Outside Hose Allowance
 - b. Storage occupancy
 - i. Type of storage and classification of commodity in details (what exactly is stored there)
 - ii. Type of sprinkler
 - iii. k-factor
 - iv. Which table of NFPA 13 the design is Based on



- v. Storage Height and Storage Ceiling Height for Storage Application
4. Pump Schedule
 - a. Pump Type
 - b. Pump Flow
 - c. Pump Head
5. Pump Pressure Cut In an Off Setting
6. Tank Schedule
 - a. Tank total capacity and each compartment capacity
 - b. Type of tank material

FIRE ALARM

The purpose of the FA drawings is to study the layout of the fire alarm system. This includes the initiating and notification devices that are connected to the fire alarm system and the logic used to initiate and control certain features in the building. A list of important features of the FA drawings are provided below:

1. Type(stand alone, conventional, or addressable) and location (on site plan) of the alarm control panel
2. Location of initiating and notification devices and their types
3. Location and purpose of interface modules used within the building
4. Location and specification of emergency lighting
5. Location of emergency communication system and fire telephone devices
6. Providing the logic behind the design
7. System battery calculations

A detailed cover page is an important part of the submission, and a list of necessary cover page information is provided below:

1. Project description
 2. Area table
 3. Design criteria
 4. Summary of material specification
 5. Type of alarm system
 6. I/O matrix
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SMOKE CONTROL AND MECHANICAL VENTILATION

The purpose of the MV drawings is to study the MV system applied in the building in general. This includes Air Conditioning (AC) system and the Emergency Ventilation systems (EV) used in the building. A list of important MV topics are provided below:

1. Details of the AC system used in the building (type and system details)
2. Design criteria of the EV system used in the building
 - a. Smoke Containment
 - i. Staircase pressurization
 - ii. Smoke stop lobby
 - iii. Firefighting lobby
 - b. Smoke Management
 - i. Atrium ventilation (mechanical/ neutral)
 1. Rate of exhaust, and exhaust & fresh intake points locations (Mechanical)
 2. Location and size of smoke vents (Natural)
 - ii. Factory ventilation
 1. Rate of exhaust, location of exhaust points with respect to fresh intake points (Mechanical)
 2. Mechanical ventilation initiating devices
 3. Location and size of smoke vents (Natural)
 4. Natural ventilation Initiating device
 - iii. Storages ventilation
 1. Rate of exhaust, location of exhaust points with respect to fresh intake points
 2. Mechanical ventilation initiating devices
 3. Natural ventilation Initiating device
 - iv. Car parking ventilation
 1. Enclosed parking (Under Ground)
 - a. Mechanical ventilation using ducting system (No CFD report to be submitted)
 - b. Mechanical ventilation using Jet Fans (CFD report is to be submitted)
 - c. Natural ventilation (opening size and opening)
 - d. Initiating device (for mechanical ventilation)



A detailed cover page is an important part of the submission, and a list of necessary cover page information is provided below:

1. Project description
2. Area table
3. Sequence of operation of smoke control system
4. Smoke control specifications
5. Fans & Ducts fire rating
6. Types of smoke systems required for the building
7. Design criteria of each smoke control system applied in the building