



ENGINEERING DRAWING TYPES

LIFE SAFETY PLAN

The purpose of the Life Safety (LS) Plans is to outline the buildings' fire and life safety strategies and to indicate the minimum required provisions for life safety and protection to provide an environment for the occupants that is reasonably safe from fire. The fire safety systems (fire protection system) as redundant measures to ensure that multiple safeguards are in place to achieved the goal of life safety and property protection are also identified. The following is a list of the minimum provisions required to be shown/indicated and/or stated in a Life Safety Plan:

1. Egress System / Means of Egress ([Indicate](#) min. required provisions).
 - a. Exit/Escape Strategies
 - b. Exits, Exit Accesses and Exit Discharge
 - c. Exit Components: Doors, Stairs, Ramps, Passageways, etc.
 - d. Exit Arrangement: Exit Remoteness, Travel Distances, Common Path and Dead-ends, etc. and Number of required Exits
 - e. Exit Capacity: Occupant Load minimum Exit Width, etc.
 - f. Special and Other Means of Egress: Accessible Means of Egress (PWDs), Areas of Refuge/Refuge Floors, Rescue and Evacuation Elevators, etc.
2. Fire Rating System/Passive Fire Protection ([Indicate](#) min. required provisions).
 - a. Fire Compartmentation: Subdivisions of Building Spaces, Fire Walls, and Fire/Smoke Barriers (Walls/Partitions, Ceilings or Roof & Floors); Fire Stopping and Cavity Barriers (these provisions shall be identified as notes);
 - b. Fire Resistive Construction: Types of (Fire Resistive) Construction, Fire Protection of Structural Elements
 - c. Perimeter Fire Protection: External Walls; Curtain Walls and Joints System
 - d. Building (fire) setbacks from Property wall, public roads and adjoining properties and, Horizontal (fire safety) Separation between Buildings
3. Protection ([Indicate](#) on LS Plans min. required provisions)
 - a. Protection of Exits (Fire Doors, Stairs, etc.) and Exit/Escape Routes



- b. Protection of Vertical Openings: Shafts, Atriums, etc.
 - c. Protection from Hazards/Hazardous Areas Protection
 - d. Protection of Building Services (Waste, Gas, Electrical Rooms) and Fire Protection Equipment (Fire Pumps Room, EPSS, etc.)
4. Active Fire Protection/Fire Protection System ([Identify](#) the required FP system)
- a. Automatic Fire Sprinkler System (and Other Auto Fire Suppression System)
 - b. Fire Detection Alarm and Communicating System
 - c. Smoke Control System (Smoke Management & Containment)
5. Provisions for Fire Fighting and Rescue ([Indicate](#) min. required provisions)
- a. Fire Engine Access (Roads), Fire Engine Hardstanding
 - b. Fire Service Access Elevators/Ambulance Stretcher Accommodation Elevators
 - c. Fire (Emergency) Command Center, Firefighting and Smoke-stop Lobbies
 - d. Rescue Windows, Fireman's Access Panels

A detailed Cover Page [*hyperlink LSP Cover Page*](#) is an important part of the LS Plan submission. The Cover Page serving as a summary of the fire and life safety strategy in buildings shall provide the following information:

1. Project Scope and Brief Description:
 1. Brief Summary and/or Background of the Project (in New and Modification Projects).
 2. History of Submission or Approval with the series of revisions (in New or Modification Projects submitted in the same BPS-Baladiya Permit System application reference numbers).
 3. Description of any Rehabilitation Works (in Modification Projects).
 4. Details of the Processes or Hazard of Operation in case of Industrial Occupancies (in New and Modification Projects).
 5. The Type of Goods (raw/finished products or materials) to be stored and its Method of Storage in case of Storage Occupancy Buildings (in New and Modification Projects).
 6. Stages of Approval (DC2-Fire Services Plans): Firefighting and/or Fire Alarm or ACMV that may require re-approval due to the building rehabilitations (Modification Projects or Effect DC1).



7. Previous Fire/Life Safety Approval reference numbers.

Note: Use a separate Cover Page for Occupancies or Buildings with High Hazard Contents.

2. Building Data
 - a. Occupancy Type/Classification and Sub-classification
 - b. Building Category and Hazard Classification
 - c. Scope of Works/Project Activity (New, Modification, Fit-outs, etc.)
 3. Fire Safety/Fire Protection System
 - a. Automatic Fire Sprinkler System
 - b. Fire Detection, Alarm and Communication
 - c. Smoke Control System
 4. Occupant Load/Egress Capacity Calculations
 5. Floor Area Table
 6. Legends and Symbols (as per NFPA 170 Emergency Symbols)
 7. General Notes and Fire/Life Safety Notes
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FIREFIGHTING PLANS

The purpose of the FF drawings is to study the Design and Layout of the FIRE extinguishing systems in the building. The required FF systems necessary in a building are identified in the Life Safety Plans (LSP) approval. The FF drawings provide the type of extinguishing, location, detailed layout and standard 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 Breaching Inlet, Fire pump room and water tank, Fire Vehicle Hard-standing in the site plan
4. Design criteria of the sprinklers system.
5. Fire Pump and Fire Water Tank specifications and details.
6. Sprinkler piping layout and sprinkler location.
7. Details of different extinguishing systems within the building (FM 200, Aerosol, Ansul, etc.)
8. Location of dry or wet Landing Valves.
9. Standard Installation Details of FF System Components

A detailed FF cover page is an important part of the submission, and a list of necessary cover page information is provided but not limited to below: (Refer to the Qatar Civil Defence Standard FF Cover Page in this link(Ctrl+Click)): [Qatar Civil Defence Standard FF Cover Page](#)

NOTE: TO PROVIDE/EDIT HYPERLINK WITH AVAILABLE/UPLOADED FF COVER PAGE FROM BALADIYA SYSTEM WEBPAGE

1. Project and FF Scope OF WORK Description
2. Area Statement Tabulation
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. FIRE Pump Schedule
 - a. FIRE Pump Type
 - b. FIRE Pump Flow
 - c. FIRE Pump Head
 5. FIRE Pump Pressure Cut-In and Cut-Off Setting
 6. FIRE WATER Tank Schedule
 - a. Tank total capacity and each compartment capacity
 - b. Type of tank material
 - c. General Fire Fighting Notes
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FIRE ALARM

The purpose of the FA drawings is to study the Design and Layout of the fire alarm system and how the Initiating and notification devices are connected to it 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 fire 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 FA cover page is an important part of the submission, and a list of necessary cover page information is provided but not limited to below: (Refer to the Qatar Civil Defence Standard FA Cover Page in this link(Ctrl+Click)): [Qatar Civil Defence Standard FA Cover Page](#)

NOTE: TO PROVIDE/EDIT HYPERLINK WITH AVAILABLE/UPLOADED FA COVER PAGE FROM BALADIYA SYSTEM WEBPAGE

1. Project description
2. Area table
3. Design criteria
4. Summary of material specification
5. Type of alarm system
6. I/O matrix
7. General Fire Alarm Notes



SMOKE CONTROL AND MECHANICAL VENTILATION PLANS

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 Smoke Control/Management System 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 smoke control / management / EV system used in the building
 - a. Smoke Containment
 - i. Staircase pressurization
 - ii. Smoke stop lobby
 - iii. Firefighting lobby
 - b. Smoke Management
 - i. Atrium (mechanical/ natural)
 1. Flow rate – supply & exhaust
 2. Fan location (supply & exhaust)
 3. Location and size and number of smoke vents (Natural)
 4. Initiating device
 - ii. Factory (Manufacturing) – mechanical / natural
 1. Flow rate – supply & exhaust
 2. Fan location (supply & exhaust)
 3. Location and size and number of smoke vents (Natural)
 4. Initiating device
 - iii. Storage – mechanical / natural
 1. Flow rate – supply & exhaust
 2. Fan location (supply & exhaust)
 3. Location and size and number of smoke vents (Natural)
 4. Initiating device
 - iv. Car parking
 1. Enclosed parking (Under Ground)
 - a. Mechanical ventilation using ducting system (No CFD report to be submitted)
 - b. Mechanical ventilation using Jet Fans (CFD (which programs are accepted) report is to be submitted)



- c. Natural ventilation (opening size and location)
- d. Initiating device (for mechanical ventilation)
- c. Emergency Ventilation
 - i. Fire pump room (mechanical / natural (supply only))
 - 1. Flow rate – supply & exhaust
 - ii. Generator room (mechanical / natural (supply only))
 - 1. Flow rate – supply & exhaust

A detailed cover page is an important part of the submission and a list of necessary cover page [*hyperlink MV cover page*](#) information is provided below:

1. Project description
 2. Area table
 3. Description of AC system applied
 4. Design criteria of each smoke control system applied
 5. Sequence of operation of smoke control system
 6. I/O matrix for the smoke control and AC system only
 7. Applicable fire safety notes
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