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# CE 3267: Building Service II: Plumbing

## Lecture 14: Plumbing for Fire Safety

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# Components of Plumbing for Fire Safety

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- **Water Supply & Storage Components:** Fire Hydrant, Fire Pump
- **Distribution Piping Network:** Riser, Feed Main
- **Active Fire Suppression Devices:** Sprinkler Head
- **Control & Activation Valves:** Fire Alarm, Check Valve

# Water Supply & Storage

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**Fire Service Connection:** Inlet for fire department hoses (Siamese connection).

**Fire Hydrants:** External water outlets for firefighting access.

**Fire Pumps:** Electric or diesel-powered pumps that boost water pressure for sprinklers and standpipes.

**Fire Water Tanks:** Dedicated storage tanks (overhead or underground) holding a water reserve solely for firefighting.



**Fire Hydrants**

# Distribution Piping

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**Risers:** Main vertical pipes that carry water up through the building.

**Feed Mains:** Large pipes that distribute water from the source to the risers.

**Cross Mains:** Pipes that connect sprinklers to the branch lines.



**Riser**



# Active Fire Suppression

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**Sprinkler Heads:** Heat-activated devices that discharge water when a specific temperature is reached.

## **Standpipes & Hose**

**Stations:** Pipes and pre-connected hoses installed in stairwells or corridors for manual firefighting by occupants or firefighters.



**Sprinkler Head**

# Control and Activation

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**Alarm Valve:** Triggers the fire alarm when water flows in the sprinkler system.

**Check Valves:** Prevent water from flowing back into the main supply.

**Control Valves:** Isolate sections of the system for maintenance or in case of a fault.



**Manual Fire Alarm**