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Mid Term

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Q1 What is the importance of various types of drawings in Building Construction?

Ans:

Various types of drawing in Building Construction.

1) Architectural Drawings:-

⇒ These drawings provide basic idea of the building in design form with multi-dimensional virtual presentation.

⇒ Major components of house architecture drawing are room, stores, dining room, bathrooms, kitchen, TV lounge, strain etc.

⇒ These drawings are developed by Architects.

2) Structural Drawings:-

⇒ These drawings are based on final architectural drawings which mainly show internal details of the building.

⇒ These internal details may include reinforcement for RCC buildings, Flooring details, Roof details etc.

⇒ Main purpose of design building

Structurally means that the behaviour of the building under the worst of the possible loads is studied, thickness and materials of construction are specified for various components of the structure such as foundation, footing, plinth, beam, columns, roof beams, slab, stairs etc.

3. Plumbing Drawings:

These drawings are for public showing water supply system and sewerage system of the building indicating the placement of lines e.g. GI, RCC etc.

=> In water supply drawings hot water and cold water lines are shown with location of geysers, taps, showers etc.

=> In sewerage drawings lines for wastewater and sewage disposal are indicated with waste outlets heading towards manholes.

4. Electrical Drawings:

These drawings show the wiring is placed in building elements and indicating position of fittings and fixtures.

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Switches, sockets, lights fans etc.
⇒ Moreover call bell system, fire-alarm system CCTV system etc are included.

Air Conditioning (HVAC) Drawings:

⇒ These drawing are developed for the building with centrally air conditioning system.

⇒ Placement of fresh air ducts and chilled air pipes is mentioned which helps to leave provision in structural elements and wall etc.

Q2:

STRUCTURAL DRAWINGS:

Those technical drawings which mainly show the internal details of a structure or building. These internal details may be about reinforcement details for RCC structures, floor internal details stairs detailed internal details etc.

These drawings are developed by civil/structural engineer.

For Example:-

In case of reinforcement details the drawings may include the following.

- Bar number and types.
- Bend shape
- Center to center spacing b/w bars.
- Lap length.
- Joint details
- Minimum clear cover and grade of reinforcement.

Location Plan:

A location plan provides location details of the proposed development in its surrounding content. This enables the planning authority to properly identify the land on which the proposed facility will be constructed and is typically based on an up to date survey.

Site Plan:

A site plan is a diagram that shows the layout of a proposed building. A site plan may include the location and details of different components of a building and structures.

Q3

PLUMBING DRAWINGS:-

Introduction:

These drawings show water supply and sewage system of any building indicating the placement of pipe lines, eg C.I., UPVC, & PVC etc).

A complete plumbing system provides and adequate supply of water and removes waste-water properly.

Principle of plumbing system.

- 1) Water supply system.
- 2) Wastewater & waste removal system.
- 3) Plumbing fixtures.

Component:-

- E) Wastewater & Waste Removal.
- 1) Wastewater and other wastes are carried to the sanitary sewer or septic tank through the waste removal system.
 - 2) These pipes are isolated from

the water supply system and must be sized for sufficient capacity, have the proper slope and venting and have provisions for cleanouts.

3) Typically it is practical to drain as many of the fixtures as possible into a single main drain.

4) The drainage system is not under pressure and depends on gravity to carry the waste into the sewer.

A vertical drain pipe that collects waste from one or more fixtures is called a soil stack. Soil stacks that drain water closets are called main stacks.

Every house must have at least one main stack, which is generally 3" in diameter.

Each bathroom must have a main stack.

Stacks that do not drain water closets are called secondary stacks.

Secondary stacks are 1-1/2" diameter. Fixtures are connected to the stack using a branch main.

Traps:

The trap most commonly used with plumbing fixtures is P-trap.

Traps are required because they prevent sewer gases from entering a building causing bad smell and serious illness or death.

The term trap seal refers to the water being held in the bent portion of a fixture trap. The trap seal forms a seal against the passage of sewer gases through the trap and into the building.

House Trap:

Building House traps are provided in the main building sewer.

It shall be provided with a cleanout and a relief vent or fresh air intake on the inlet side of the trap.

Relief vents or fresh air intake shall be carried above grade and shall be terminated in a screened outlet located outside the building.

Soil stacks and Waste stacks:

A Soil stack is a vertical drain pipe that carries soil waste from sanitary units (i.e. toilets.)

A waste stack is any other vertical drain pipe that doesn't carry soil from a sanitary fixture.

Plumbing Cleanout:-

A plumbing cleanout is a cleanout fitting with a removable plug used in wastewater system. It is designed to help keep remove any type of debris that could cause any type of stoppage in the sewerage lines.

Cleanouts are usually placed at the connection point b/w the sewer lines and the drain lines where the base is located of a vertical stack and at all places where the pipe direction changes at 90 degree.

Plumbing Air Vents:-

Drain pipes remove water and waste from a

building the plumbing vent pipe. also known as plumbing air vent - remove gas and odors. It also allow fresh air into the plumbing system to help wastewater flow smoothly.

Riser Diagram:

used as supplementary details in order to show more clearly how the plumbing system is to be installed.

A riser diagram is not drawn to scale but should be correctly proportioned.

The proper use of symbols for the piping and fittings makes it easier to read and interpret the drawings.