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Section "A"

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Q NO 1: What are the various components of plumbing system of a building?

Answer: Plumbing System:-

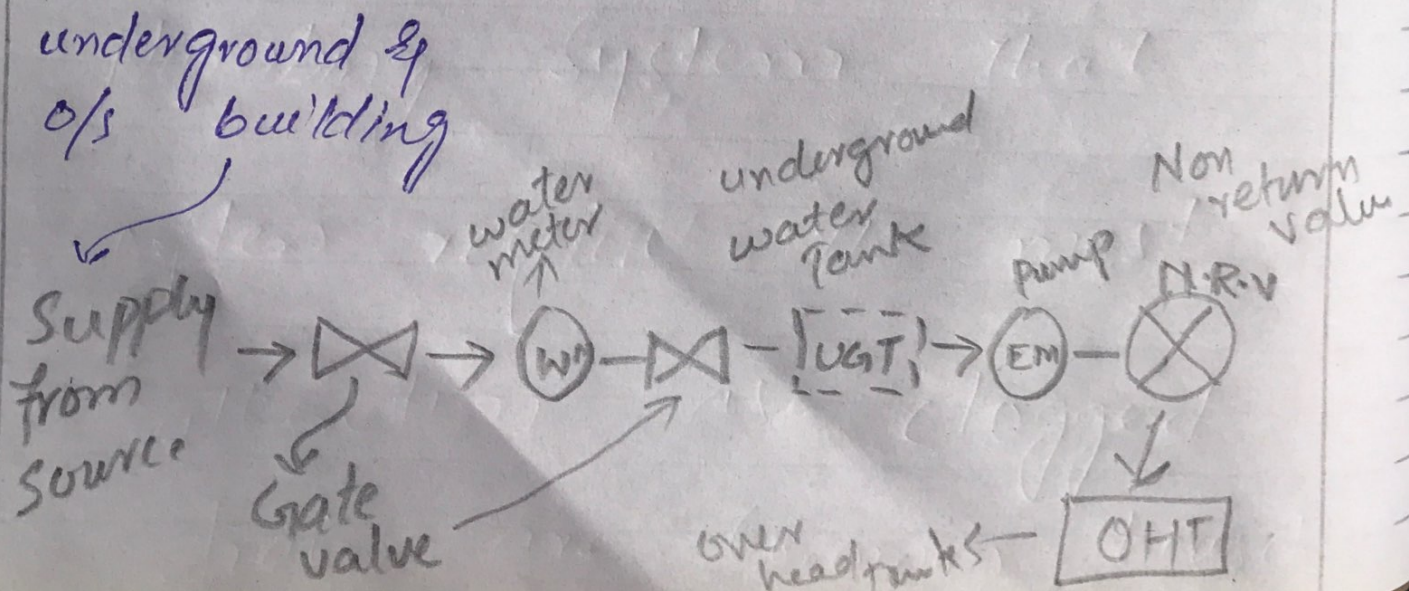
plumbing is system of pipes, drains fittings valves, valve assemblies and devices installed in a building for the distribution of water for drinking, heating and washing.

• Plumbing is usually distinguished from water supply system in that

a plumbing system serves a group of buildings.

1) Entire system is based on gravity flow and augmented by lift pumps and ensures no air locking in the entire pipe layout

2) Development of flow Diagram:



• Just as pipes connect the fixtures to the main water supplies, drainage systems are the components of basic plumbing system that connect ~~the~~ the various fixtures to the waste removal lines and eventually, the sewage systems

The drainage system is also the component of basic plumbing system that

often require the most attention as clogged drains are common household

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occurrences. Because of this,
⇒ Special care should always
be taken to ensure no material
are being allowed to entire
into the drainage system. That
are too large or bulky for
~~blockage~~ particular drain to
handle and pass freely.

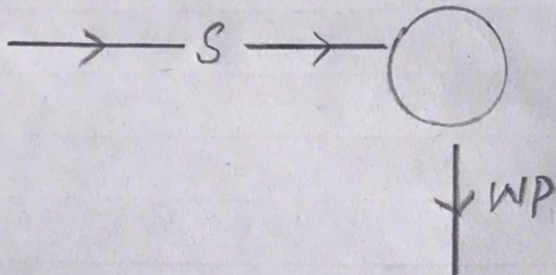
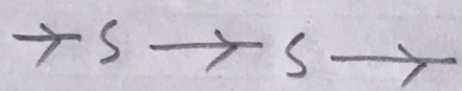
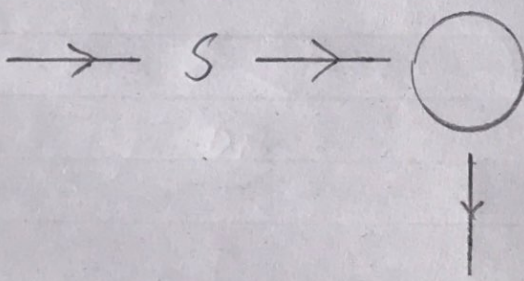
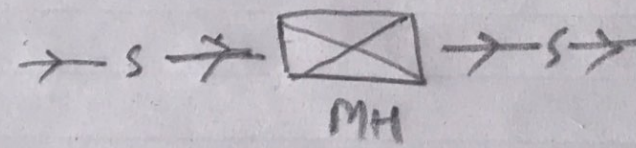
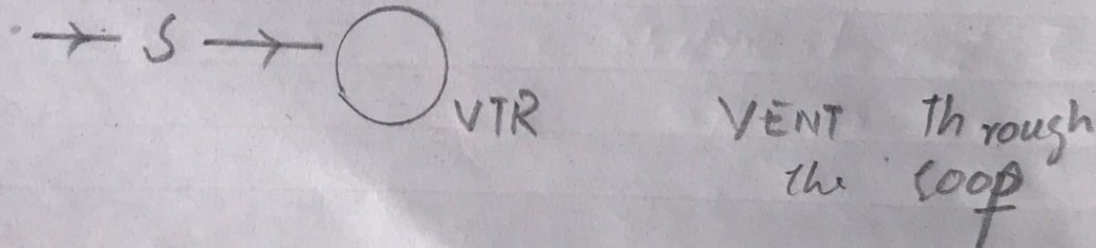
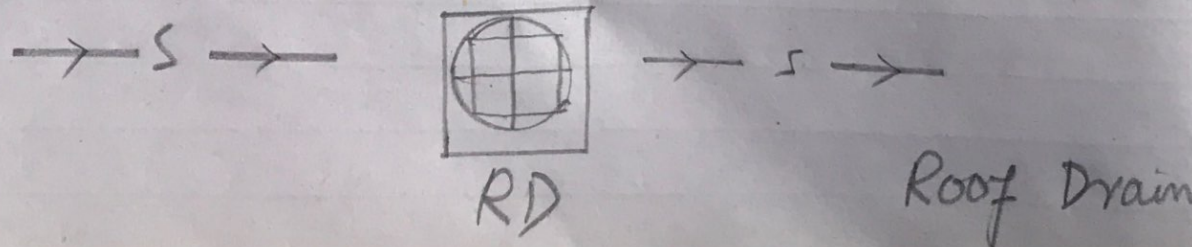
Question No 2: What is importance of using symbols in drawing. Draw the various connection symbol for Sewage and electrical system used in buildings.

Ans: Just as in chemistry we used symbols to represent in architectural floor plans we use symbols to represent electrical, plumbing, sanitary, gas, HVAC etc.

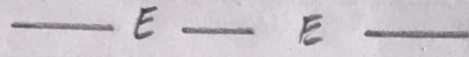

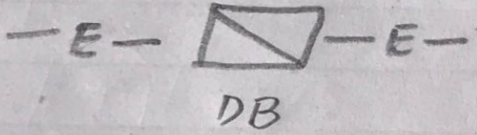
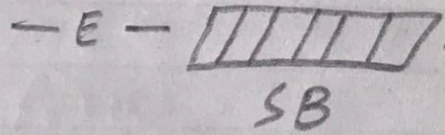
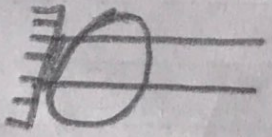
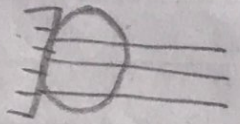
These are symbols only and they do not represent the shape, size, color/texture of actual items.

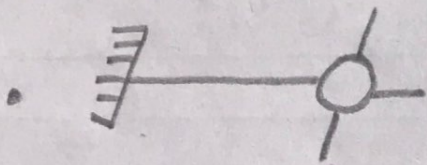
The description of specific items is covered in specification documents which form an integral part of the working drawings.

Symbols connections for Sewrage:

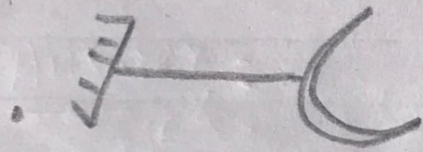
-  Waste pipe
-  Main Sewrage line
-  Soil pipe
-  Manhole
-  VENT Through the roof
-  Roof Drain

Symbol Connection for ELECTRICAL :

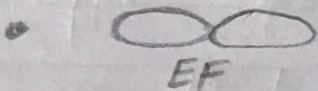
-  Main Supply Line
-  Main Control Board
-  Distribution Board
-  Switch board
-  Electrical outlet
5 Amps
-  Electrical outlet
15 Amps



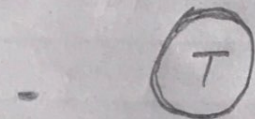
Gate light



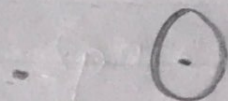
Security light



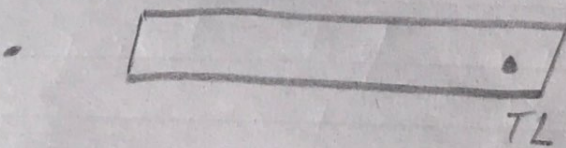
Exhaust Fan



Telephone Socket



Bell push



Tube light
4ft long



Call Bell



Mirror light

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QNO 03: Briefly describe various components of ~~Frame~~ FRAM Structure along the diagram?

Answer:-

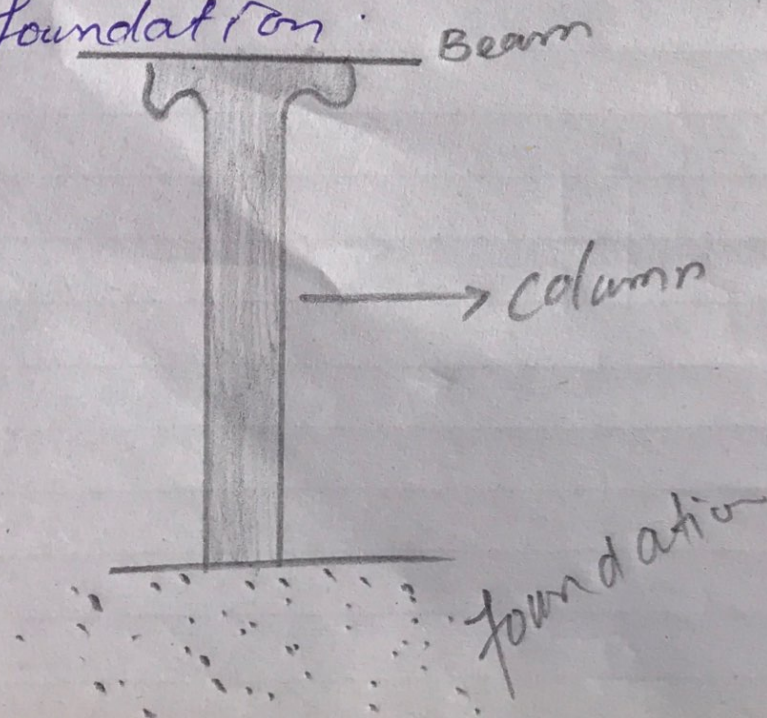
FRAM Structure:- A FRAM Structure is a structure having the combination of beams, columns and slab to resist the lateral and gravity loads.

These structure are usually used to overcome the large moments developing due to the applied loadings.

Components of FRAM Structure.

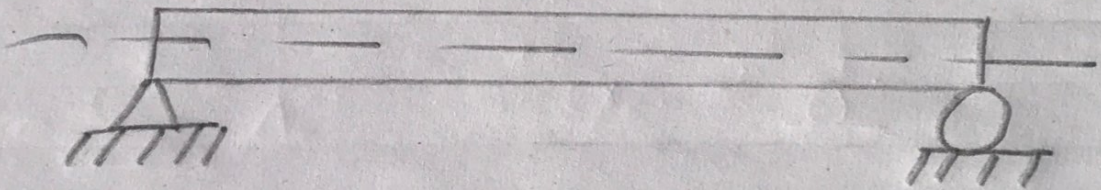
1) Column: A Column or pillar in architecture and structural engineering is structure element that transmits through compression, the weight of the structure above to other structural elements below.

• vertical structure member which transmits load from beam to the foundation.



2: Beam: A Beam is a structure element which transmit load from slab to the column.

• A Beam is horizontal structure element and also primarily resists loads applied laterally to the beam beam's axis.

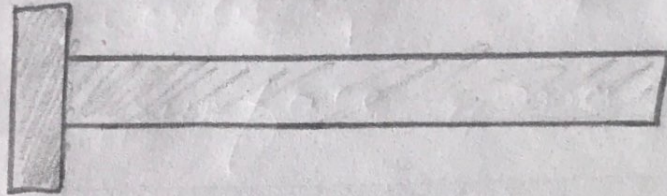


Types of Beam:

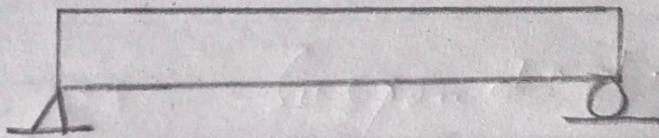
- * ~~Simply~~ simply supported beam →
- * fixed beam →
- * continuous beam →
- * cantilever
- * over hanging

Shapes

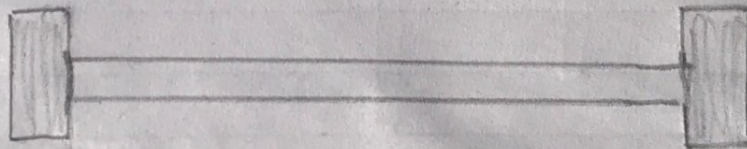
1) Cantilever Beam:



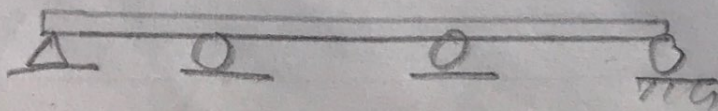
2) Simply Supported:



3) Fixed beam:

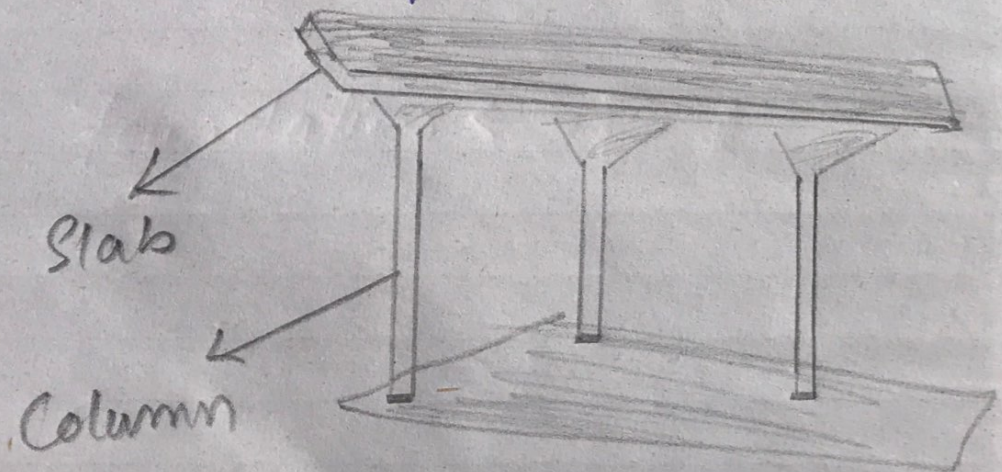


4) Continuous Beam:



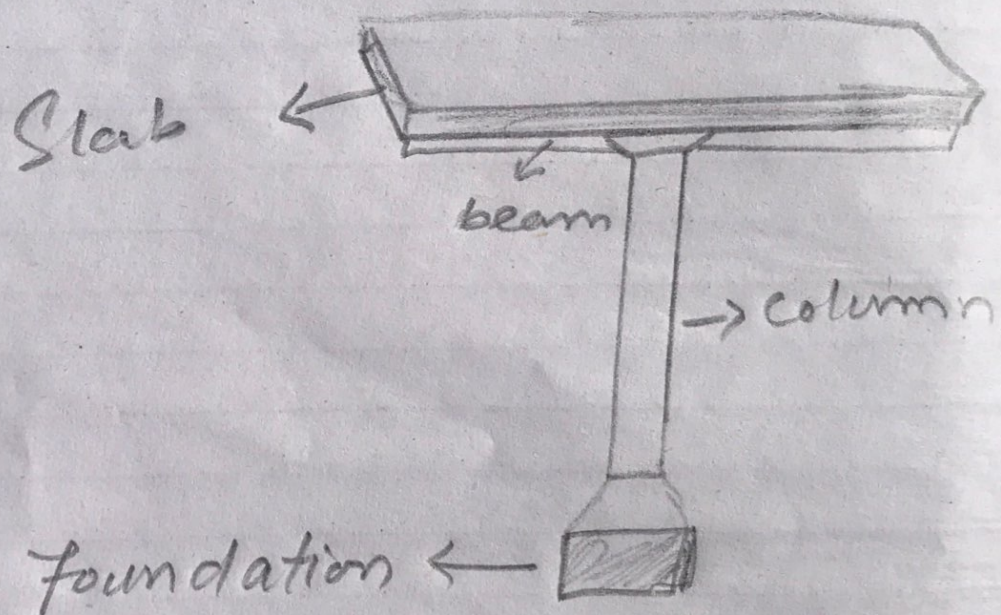
3) Slab: A concrete slab is common structural element of modern buildings consisting of a flat horizontal surface made of cast concrete.

A slab is ground bearing if rests directly on foundation other wise the slab is suspended.



4) Foundation :-

These are the load transmitting members. The loads from the columns and walls are transmitted to the solid ground through the foundation.



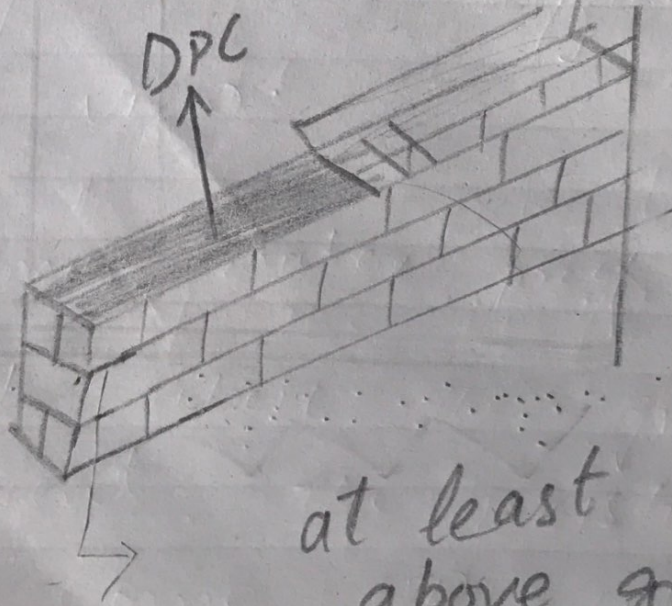
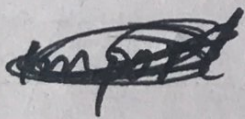
- 5) Shear walls.
- 6) Elevator shafts.

7)

QNO 4: What is the importance & characteristics of DPC?



Answer: **Damp proof Course**: is the type of moisture control applied to building walls and floors to prevent moisture from passing into the interior spaces.



at least 150mm above ground.

Importance & Characteristics:

~~DPC~~ to be provided in
wall

- Bricks have a porous structure and pores are interconnected to form capillaries.
- Mortar and concrete deteriorate reducing the strength of and are not good from hygienic point of view.
- A continuous water proof layers is provided above the ground level prevent the moisture to ~~come~~ come up which

called damp proof course
or simply DPC.

- DPC to be provided in walls consists of 1-inch to 3 inch thick layer of pcc. (1:2:4) over which two coats of hot bitumen are applied.
- The top of DPC is made in level with the ground floor top of the building.