Name: Muhammad Sulaiman

ID : 7925

Section : A

Sub: Engineering Drawing and Graphics Theory

Summer

Instructor: Eng Nadeem ~~ullah~~

Q#1 What ~~are~~ is the importance of various types of Drawing in Building Construction?

Answer:

Types of Drawings:

=> Architecture Drawings:

=> These drawings provide basic idea of the building in design from with multi-dimensional virtual presentation.

=> major components of house architecture drawings are rooms, stores, dining room, bathrooms kitchen. TV lounge, Stairs 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 buildings.

=> These internal details may include reinforcement for RCC buildings, flooring details, Roof details etc

=> Main purpose of design building structurally means that the behavior of building under the worst possible loads and studies the structure such as foundation, footing, plinth beam, column, roof beam, slab, stair

3) **Plumbing Drawings:**

=> These drawings are for public health 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

4) **Electrical drawing:** These drawing show how the wiring is placed in building element's and indicating the position of fittings and fixtures, switches, sockets, lights fans, etc.

=> Moreover call bell system, fire alarm system, CCTV, etc are include in electrical drawings

5) **Air-Conditioning- (HVAC) Drawings;**

=> These drawings are developed for the building with centrally air conditioning systems

=) Placement of fresh air ducts and chilled air pipes as is mentioned which helps the leave provision in structural elements and wall etc

6) **Civil Engineering drawings:**

=) A Schematic representation of a building, object or component made according to defined convention and projected to serve in the construction of fibrication

=) Engineering Drawings are frequently used to describe public works projects, such as bridges highway, and Dams.

7) Sop Drawing: It is a drawings or set of Drawings produceed by the contractor, supplier, manufacture subcontractor or fabricator.

=> Shop drawings are typically reauired for Pre-fabricated components.

8) Landscape Drawings: Garden design and Landscape planning is the art of designing and creating plans for the layout of plants, gardens and landscapes.

Q#02: How structural Drawings help in construction of multi-story Buildings?

Answer: Multi-story building building is a building that has multiple storeys and typicaly contains vertical circulation in the form of ramps stairs and lifts. The number of storeys is determined according to the diagram ~~before~~

These Technical Drawing which mainly show the internal details of a structure or building.

These internal detail mayse about reinforcement details, ~~roof internal detail stair~~ for RCC structure floor internal details, ~~roof~~ roof internal details, stair details internal details etc

=> For example, in case of reinforcement details the drawing may include the following

1 => Bar Number and types

2 => Bend shape

3) Center to center spacing b/w bars

4) Lap length

5) Joint length

6) Minimum clear cover and grade of reinforcement

There are different types of structural systems which are used in construction of multistory buildings

These system for multi story building can provided resistance to

Earth Quake forces.

Structural System for construction Multi story Buildings:

1) Moment resistance frame
2) Shear wall system
3) frame wall or Dual system
4) flat slab combined with shear wall and frames
5) Tube system
6) mega core system.

1) Moment resisting frame : As it may be noticed from moment resisting frame consists of planes frames configured in two direction perpendicular to each other

2) Shear wall system.

Due to that fact that the wall takes most of shear base when wall s and columns are used in moment resisting buildings that is why its named as shear wall system.

Shear wall is another type of structural systems used in the construction of multi-story building for the same cross-section

3) frame wall or Dual system

Generally, frames are placed around the perimeter of the building and shear wall are placed at the center of the structure around stair cases or lifts.

4) flat slabs combined with shear wall and frame.

It is composed of two way flat slab, resting on columns, shearwall at the perimeter or core of the buildings, and moment resisting frame at the perimeter of the structure. such system is suitable for up 10 story structu

5) Tube system: It is developed version of moment resisting frames which is described as three dimensional rigids frames that able to ~~with~~ with stand lateral loads due to earthquake or it is a strong can ~~ta~~ licantilever place perpendicular on the Ground

The structure rigidity of tube system can be improved by decreasing the spacing b/w perimeter columns, increase spandrel beam depth. and combining more than on tube

b) Mega Core system. : Mega Core System consists of reinforcement concrete or composite shear wall with much cross-sectional that conventional shear wall extended continously throughout the full height of structure.

Mega Core structure system is able to withstand both lateral loads due to earthquackes and wind. and vertical loads and suitable for structure with 50 storeys.

Q#3 What are the various components of plumbing drawings? Briefly describe each components?

Ans: A basic plumbing system consists of three parts: Pipes and fitting, fixtures and drainage. Together they combine to creat a functional plumbing system that serves a variety of uses in the home. Bathrooms, kitchen and even garage are all common placed where you can find complete plumbing systeme.

Three main basic components work to gether, you not only gain a better in sight of the entire system but also make ~~future~~ future diagnostics much easier.

→ Pipe and ~~fitting~~ are the backbone on which all plumbing system are built's.

This components of the plumbing system consists of all the Pipe's that connect the ~~the~~ home to the main water supply lines. It is also to include and fitting required to connect the various pipe plumbing

at various intersection and to create varying angles for the pipes when needed Most plumbing system will have a combination of both hot water and cold water pipe. Pipes can also be mode from a variety of materials, including copper, lead PVC, or CPVC

⇒ The drainage system is also the component of a basic plumbing system that often the requires the most ~~attention~~ attention as clogged drain are common household occurrence.

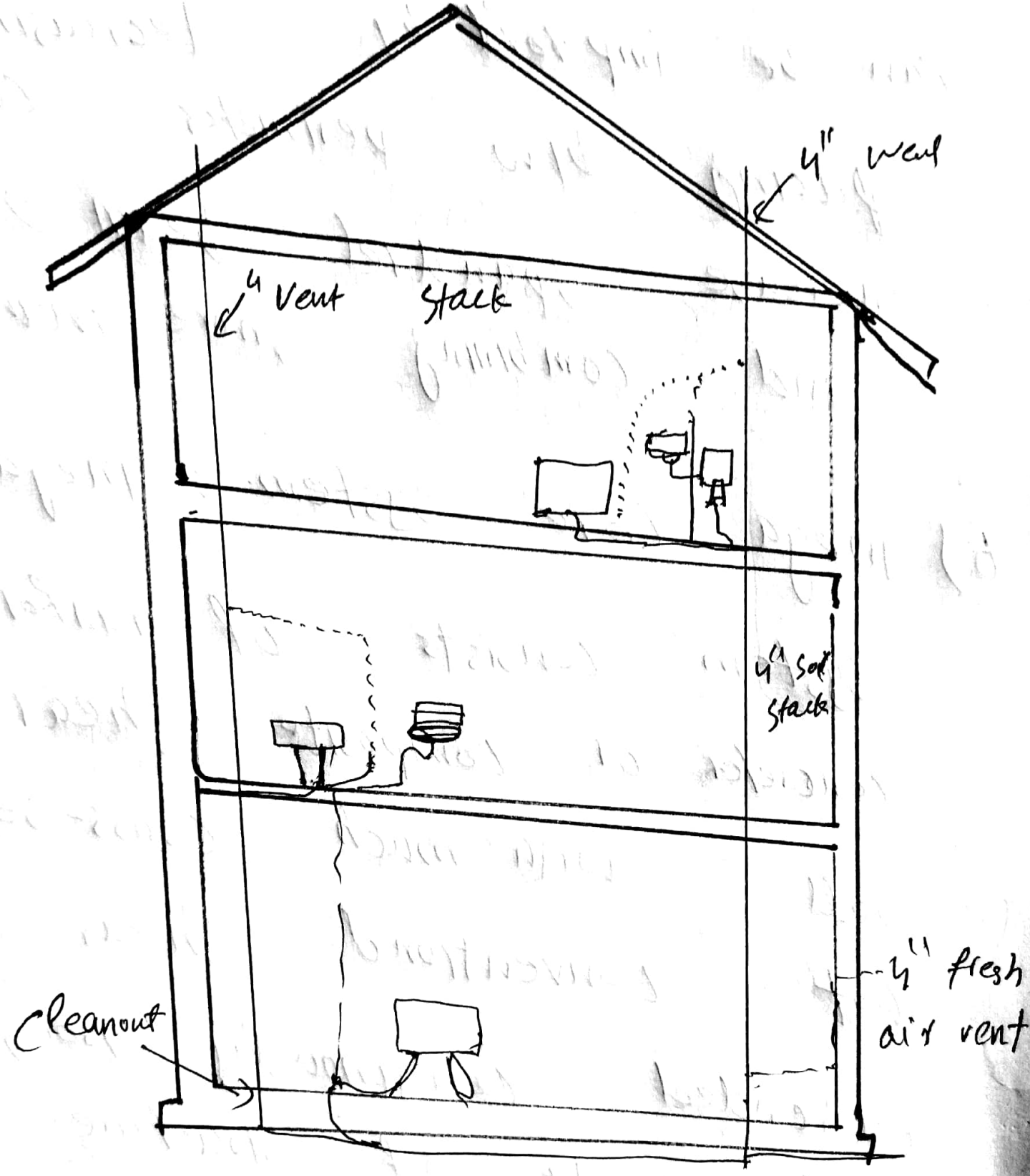
Because of this special care should always be taken ensure no material are being to allowed to ~~entire~~ enter ~~to~~ into the drainage system that are too large or bulky for the particular drain to handle and pass freely if a blockage does occur, plungers, augers and various household chemical drain cleaners can be used to help break of the clog and restore proper drainage to the individual fixture.

There are three principle parts of a plumbing system

1) water supply System

2) waste water and waste wat removel system

3) plumbing fixture



wastewater and waste removal :

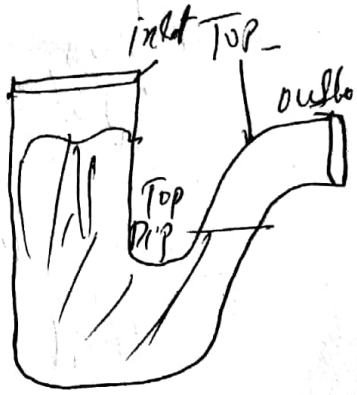
=> waste water and other wastes are carried to the sanitary sewer or septic tank through the waste removal system.

-> These pipes are isolated from the water supply system and must be sized for the sufficient capacity, have the proper slope and venting, and have provisions for clean outs.

-> The drainage system is not under pressure and depends on gravity to carry the waste in into the sewer

Soil stack that drain water closets are called main stacks

Traps : The trap most commonly use d with plumbing fixture is the P- trap.



Soil stacks and west stacks

A soil stack is a vertical drain pipe that carries soil waste from sanitary usits (i-e, toilets.)

A waste stack is any other vertical drain pipe that does not carry soil from a sanitary fixture.

plumbing clean out:

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

plumbing symbols

1) Soil stock

Gate valve

90° Elbow

45° "

Elbow turned up

" " Down

Meter

Hose bib (Elevation)

Hose bib plan view