Elements of Building Construction

1 What are the elementary principles of building planning? Describe them.

~~These~~
There are main principles of building planning.

1 Aspect
2 Prospect
3 Privacy
4 Grouping
5 Rommincss
6 Flexibiltly
7 Furniture Requirements
8 Circulation
9 Lighting
10 Elegance
11 Economy
12 Sanitation

1 Aspect: Aspect refers to the planned arrangment of the doors and window of the external wall.

2 Prospect: Prospect refers to building shape of balcony, ornamental grill etc arrangment in building.

3 Privacy : Privacy is very important for residential building.

Privacy should be one to one room or neighbour building and public building.

4 Grouping : Grouping refers to easy communication and utillity of room.

Ex. Store Room and Kitchen should be close each other.

5 Roominess : Roominess refers to an arrangment of room to getting maximum advantage from space.

6 Flexibillity : The plan of building should be prepared by keeping in mind the future requirements.

7 Furniture Requirement : During building planning the size of furniture to be required for function utility of the room should be considered.

8 Circulation : Circulation refers to providing through passages between rooms in a building.

9 Lighting: Natural and artifical lighting is provided in building planning.

10 Elegance: Elegance refers the proper width, height, location of doors and windows.

11 Economy: Building Planning should be carried out in the financial limit of the client.

12 Sanitation: Sanitation refers for cleanliness, lighting and ventilation in sanitary units.

2 What are building bye-laws?

- Local authorities have defined certain rules for construstion different type of building.

Owner must consider them to purchasing the building or land.

Rules like,

Building control line should be obeyed.

Provision of water supply and sanitation should be consider.

Proper ventilation should be planned.

This are the basic bye-laws of building planning and construction.

→ Why bye-laws are required?

Bye-laws are important because to protcet any building against noise, fire, earthquakes etc.

Following bye-laws, we can protcet our construction to any type of natural problem.

3 Discuss about orientation of building.

Orientation of building is important, and it is play important role in building construction.

This are the different orientation of buiding.

1 The long walls of the building should be plased towards North and South direction

And the short walls should be placed towards east and wast direction.

2 Number of windows and ventilations of suitable level from the floor.

Ventilation or windows shall should be provided air circulation inside the building.

3 Provide Damp Proof Course at suitable levels to keep away mositure.

4 The watersheds are a box types to avoid entry of rainwater to the inside the building.

5 Projecting slab over balcony and vertical drops help in protection from sun and rain.

6 Verandah and balcony should be provides adjacent to the walls.

Adjacent wall exposed direct heating of walls of rooms.

7 The areas with high intensity of rainfall should have proper slaped roof.

This is basic orientation of building construction.

4 State the factors for selecting the site for a residential building.

This are factors for selecting the site for a residential building.

1 The land should not belong to Agricultural work. The land must be NA plot. The title must be clear.

2 The land should be in residental zone. The land should not belongs to earthquake belt.

3 Cost of land.

4 Availability of parks and playground like nature sports.

5 Connectivity through all weather road network.

6 Distance from places of work.

7 Availability of school, college, hostiple, health center etc.

8 Availability of transport facility.

9 Nature and use of adjacent area.

10 Distance from railway station, bus stati

and airport.

11 Availability of vegetable, fruit market, milk, bakery etc.

=> Short note on requirements of industrial building.

This are the basic requirements of industrial building.

1 Canteen : It is the place where refreshment and ~~te~~ lunch with hot and cold drink are available for industrial building users.

2 Cloak room : It is use for changing of cloths for the worker.

3 Office : Office building is provieded for owner and administrative staff.

4 Entrance : In industrial building maximum two entrances are provided with gates and security cabin.

5 Medical Aid : In each industrial building atleast primary treatment should be available to the users.

6 Sanitary blocks: Water closets should be provided in separate location in building for worker and users.

7 Parking: In every industrial building large ~~sho~~ parking should be provided.

8 All weather roads: Roads provided should be all weather roads. They are single or lane and connecting entry gates.

9 Security Cabin: Security purpose watchmen is hired in building. They check ~~ene~~ entry and exit of all the users.

6 Give classification of building based upon occupancy and based on structure.

=> Building based on Occupancy:

1 Residential Building:

Ex. Bunglows, Flats, hostels, chawls etc.

2 Educational Building:

Ex. schools, colleges, libraries etc.

3 Institutional Building:

Ex. Auditorium, care of orphans, abandoned women etc.

4 Assembly Building:

Ex. Theaters, halls, club, recreation spots etc.

5 Business Building:

Ex: Bank, court houses etc.

6 Mercantile Building:

Ex. Store for display and sell retail

7 Industrial Building:

Ex. Refineries, power plant, dairies, saw miles etc.

8 Storage Building:

Ex: Cold storage, godawns, Warehoues etc.

This are the basic types of building.

=> Building based on structure:

1 Load Bearing Structure:

In Load bearing structure building load is transfer to the walls.

In this type of structure the wall thickness is 20 to 40 cm.

In this structure due to thick wall carpet area is less.

2 Fremed Structure:

Frem structure building load is transfer through a fream of RCC slab, beam and column.

In this type of structure the wall thickness is 10 cm.

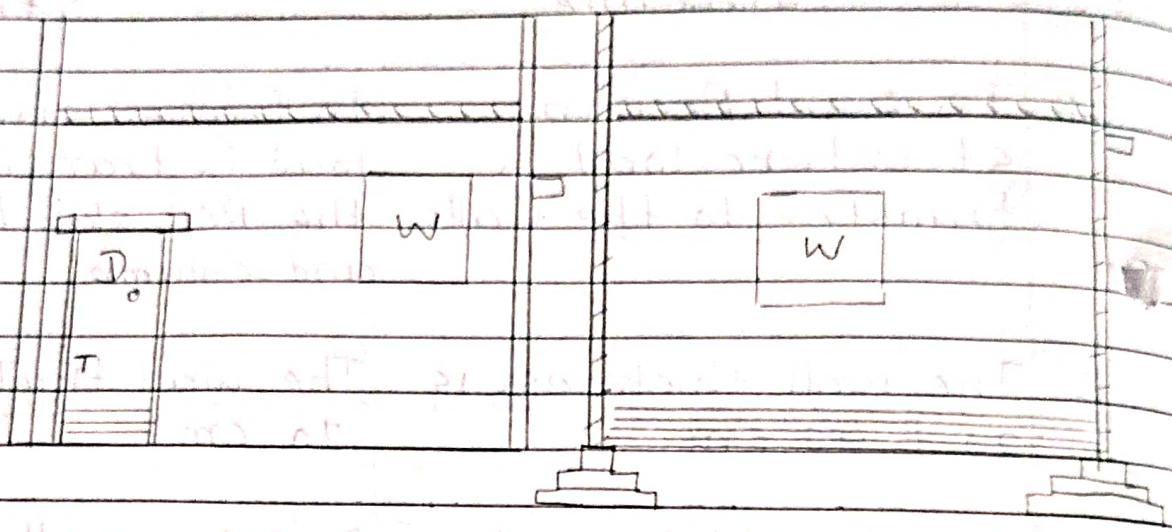
In this structure due to small wall carpet area is more.

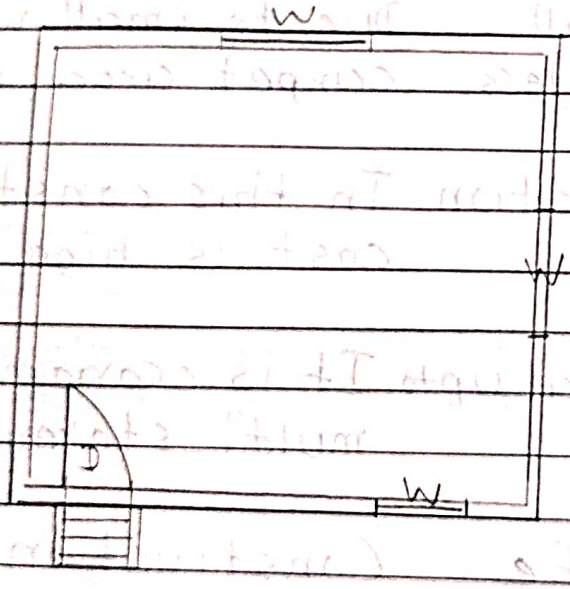
This are the basic type of Building structure.

7 Differetiate between load bearing and Framed structure.

	Load Bearing structure	Framed Structure
1	In Load Bearing structure load is transfer to the walls.	In Framed structure load is transfer to the RCC slab, beam and column.
2	The wall thickness is 20 t 40 cm.	The wall thickness is 10 cm.
3	Due to thick wall carpet area is less	Due to small wall carpet area is more.
4	In this construction, cost is law.	In this construction cost is high.
5	It is economical upto two storey.	It is economical upto multi storey.
6	Construction life is law.	Construction life is high.
7	Construction maintance is very high.	Construction maintance is very law.
8	Time of construction is more.	Time of construction is less.

5 Draw the sketch of a cross section of a wall showing the components of the building.





D = 1 X 2.1 m

W = 1.2 X 1.2 m

wall thickness = 20 cm

slab thickness = 12 cm

Floor height = 3 m

=> Explain function of any four building components.

This are the Basic building components.

1 Roof: Roof is the topmost component of a building structure.

Roof covers the top face of the building.

2 Lintels: Lintels are constructed above the wall opening like doors, windows etc.

Lintels can be either constructed from concrete or from bricks.

3 Beams and slabs: Beams and slabs are horizonatal members in a building.

In multistorey building the beam transfer the load.

4 Columns: Columns are vertical members constructed above the ground level.

Column takes the load coming from the slab above the transfer to the foundation

5 Damp Proof Course: DPC is a layer of waterprofing material applied on the basment level.

The walls are constructed over the DPC.