

Name Fawad Khan

ID/sec : 7875 / B

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Subject: Architecture and Town Planning

Teacher: @ Mam Alim Baber

Q No
(A)

Architecture:-

Architecture is the art, science and profession of planning, designing and supervising the construction of new buildings, landscapes, communities and furnishing in their totality, examining their environment in accordance with the principles of utility, strength, and aesthetics.

TOWN PLANNING:-

The planning and control of the construction, growth and development of a town or other urban area.

Difference between Architecture and

Town Planning:-

Town planners decide what can be built where and how outdoor areas will be used; architects create the actual design. Town planners focus on the big picture of community needs and the impact on surrounding areas while architects are primarily concerned with their clients needs.

(B)

FRAME STRUCTURE:-

The frame structure usually consist of a skeleton of beams and columns, the load is transferred from beams to the columns and column intern transfer the load directly to the sub soil through footing.

Framed structures are often used for multistory building subjected to variety of other load like compressive, variety of tensil torsion, shear along with moment there are often blank spaces in the section which are to be filled with brick walls or glass panels.

LOAD BEARING STRUCTURE-

These type of structure takes load from roof slab or trusses and floors and transmit them through wall to the firm soil below the ground.

Which one is least expensive and more suitable for a 3 story building.

When the depth of foundation does not exceed more than 1m to 1.2m and the bricks used in load bearing structure are cheap as compared to concrete used in beam and column for from structure then the load bearing structure then the load bearing structure is less expensive as compared to framed structure

Question No. 2

Building Design Process:

we have seven stages
of Building design

- 1- Programming
- 2- Schematic Design
- 3- Design Development
- 4- Construction Documents
- 5- Bidding
- 6- Construction Administration
- 7- Final certificate.

1) PROGRAMING

Programing is the activity of determining the "program," or set of needs that a building needs to fulfill or project needs of the user.

1 - INITIAL DISCUSSION:-

- ↳ Client meeting.
- ↳ Building program
- ↳ Project scope. the client provides the architect with a list of what spaces are going into the building.
- ↳ selection of project team.

↳ 2) SITE ANALYSIS:-

- ↳ Suitable site based on the client's needs.

↳ Zoning permits (planning Report)

↳ Legal requirements: Building Byelaws

MESO SITE ANALYSIS:-

↳ Social Factors, Population, intensity, economic.

↳ Historic notes, Archeological sites, landmark.

↳ Heritage implications: Conserving urban heritage

↳ Land Use: Usage of site, adjacent site use.

MICRO SITE ANALYSIS:-

Geology: Geological history of the area:

Hydrology: Underground water table.

Soil Genesis:- Erosion susceptibility, moisture
organic content. etc.

3) PRE - DESIGN STUDIES:-

- ↳ Architectural Brief
- ↳ Project Budgeting
- ↳ Project Schedule
- ↳ Feasibility Report.

SCHEMATIC DESIGN:-

PRELIMINARY DESIGN:-

After establishing the program for a project, the focus in the architectural design process shift from what the problems are to how to solve those problems. During schematic design, the focus is on the 'scheme' or overall high-level design. Here, minor details are ignored to focus on

on creating a coherent solution that encompasses the project as a whole.

↳ Proposing spatial relationships and diagram.

↳ Three dimensional study models are made at this stage.

↳ Approximately 80% of the decisions that influence a building's appearance and energy efficiency are made by the architect.

↳ Orientation, volumetric composition

DESIGN DEVELOPMENT:-

During this phase schematic Design is refined into the final design. In previous phases, the focus has been on the project as a whole. During Design Development, it becomes important to

individual attention to each aspect, each space and each detail of the Project.

↳ Detail plans with furniture and fixtures

↳ Outline compliance with the building and planning regulation.

↳ At the conclusion of the detailed Design

CONSTRUCTION DOCUMENTS-

At this stage, the focus shifts from design to communicating the design and providing all information necessary for construction.

Multiple drawing sets are produced for final approvals from the Building Authorities.

Separate drawings are made for each work type, e.g. the electrician gets his own drawings that only show the electric work.

↳ This includes general arrangement drawing

↳ Environmental calculations as well as the thermal performance of the building is defined.

5) BIDDING:-

TENDERING & NEGOTIATION:-

At this time the owner prepares to select the contractor and sign contracts to proceed with construction. Multiple construction submit bids or the client can directly hire a contractor without getting competitive bids. The architect

role here will be to assist the client, answer contractors question provide any additional documentation if requested by or needed by the contractor.

g) CONSTRUCTION ADMINISTRATION:-

SITE SUPERVISION:-

↳ This is the construction stage of the project.

↳ On typical objects the architect does NOT supervise construction.

↳ The architects perform multiple progress inspections and special inspections during construction and submit Technical Reports to the authority.

7) FINAL CERTIFICATE,-

The architects stay on the project until the building is completed.

↳ With the completion of the construction works, the calculation of the final statement of costs is undertaken, As-built drawings incorporating any modifications to the original project are prepared.

↳ Cyclical maintenance and Building Use manuals should be read and understood by all building owners. Maintenance with in the specified period will avoid increased energy consumption, blocked drains leaking roofs and creaking timber.

Question No (03) Part (A)

STEP 01,-

Given Data,-

Lot area = 10,000 sft

F.A.R = 1:0:1

Suppose I have to design a style
Building with the given ratio

The building having 01+2 Floors

Each Floor area of Building = ?

All floor area = ?

So As we know

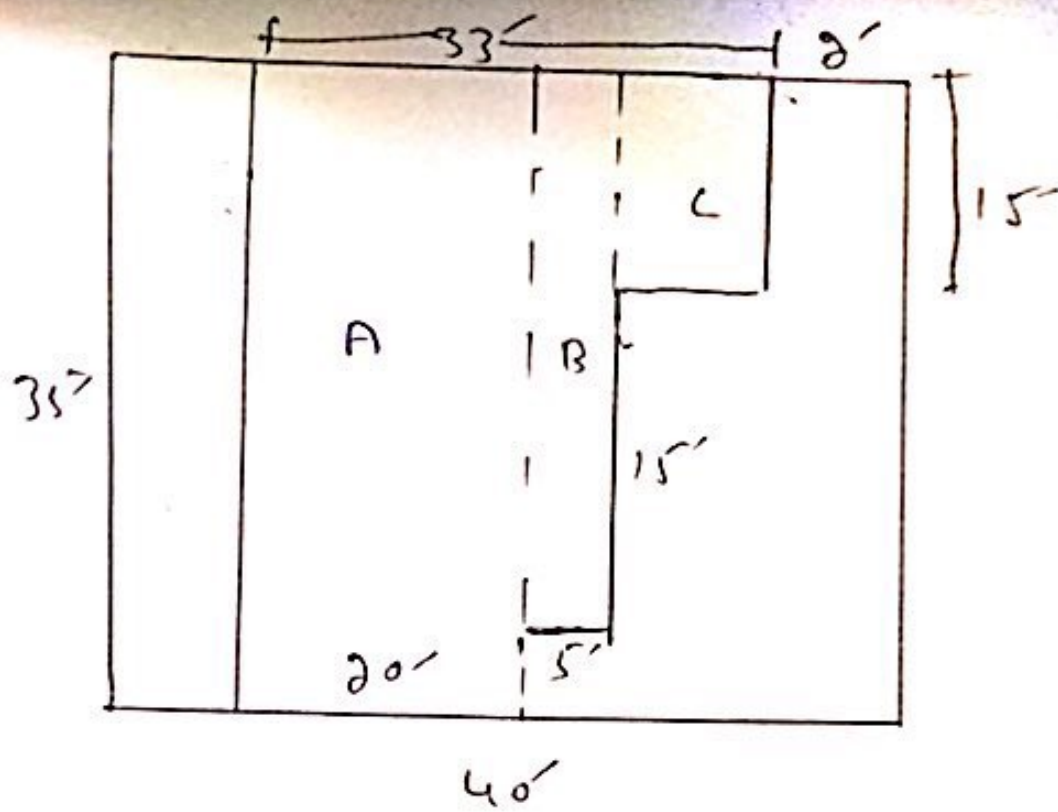
$$\frac{\text{Floor area}}{\text{Lot area}} = F.A.R$$

First we find floor area = x

$$\text{So } \frac{x}{10,000} = x \cdot 0.1 \text{ F.A.R}$$

$$= x = 10,000 \times 0.1 = 1,000 \text{ sft}$$

$$\text{or for each floor } \frac{1,000}{2} = 333.3 \text{ sft}$$



First we find our area for A
which rectangle

as we know the area of
rectangle is length \times width

$$\text{Area of A} = \text{Length} \times \text{width}$$

$$A = 33' \times 20' = 700 \text{ sft}$$

$$\text{Area for B} = 30' \times 5' = 150 \text{ sft}$$

$$\text{Area for C} = 15' \times 8' = 120 \text{ sft}$$

Add $A+B+C$ which will be

The total Foot point
of Building

$$= 700 \text{ sft} + 150 \text{ sft} + 120 \text{ sft}$$

$$= 970 \text{ sft}$$