Kurdistan Region - Iraq
University of Cihan – Sulaymaniyah
Department of Architectural Engineering

Building Elements

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CORSE BOOK – YEAR: 2ND STAGE

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Introduction of Building Elements

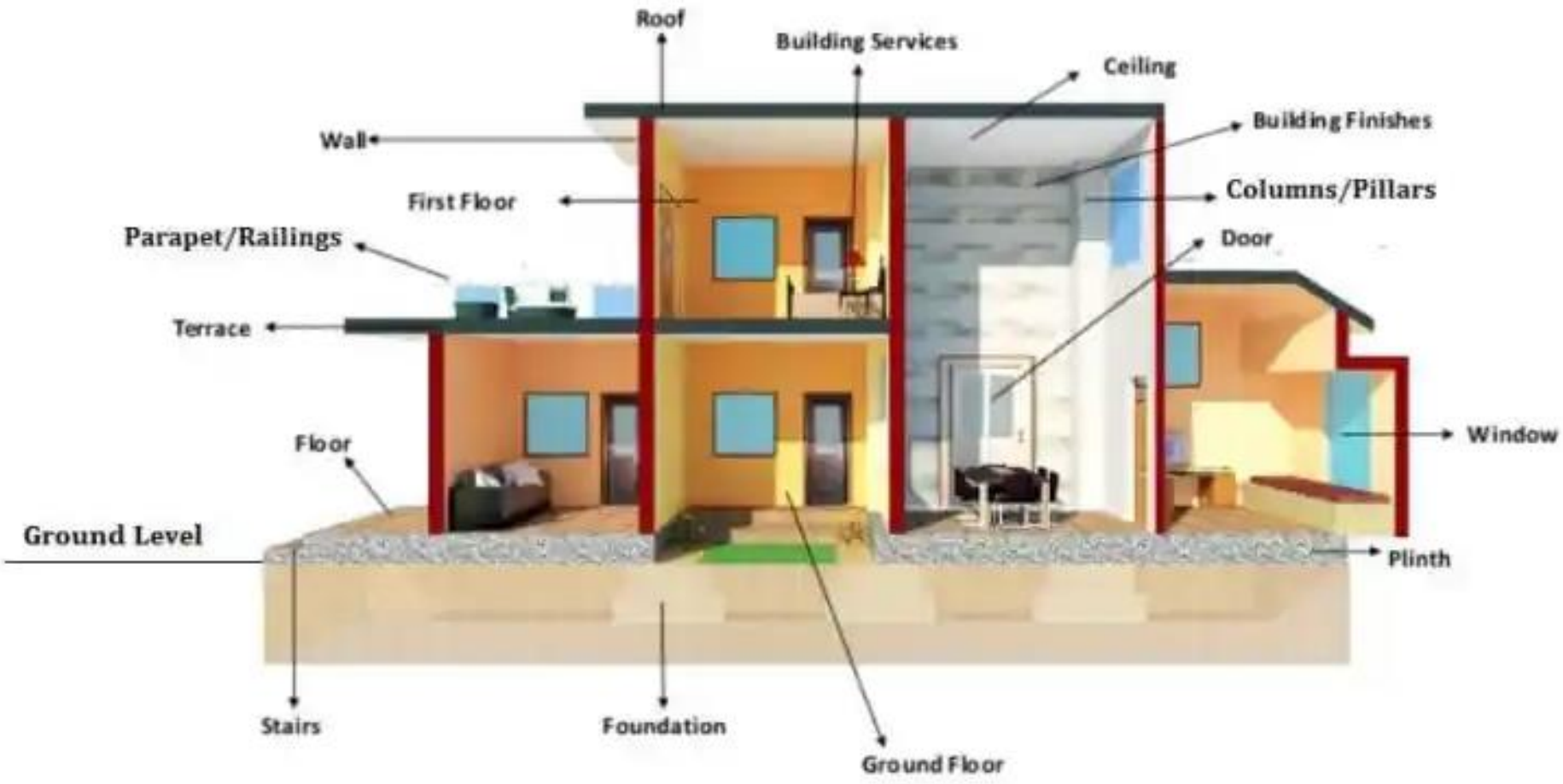


Figure.1: Basic components of building

- There Mentioned below are the 12 basic elements a building structure.

1. **Foundation**
2. **Plinth**
3. **Plinth Beam**
4. **Stairs**
5. **Floor**
6. **Walls**
7. **Damp proof course (DPC)**
8. **Columns**
9. **Beams**
10. **Lintels**
11. **Parapet**
12. Roof

11. parapet:

The **parapet** wall is one of the most important parts of our house. It acts as a **protective barrier** that is constructed at the end of the roof of the buildings and balcony. The parapet wall plays a **vital role in the safety of the occupants**.

It is an **extension of the wall** at the end of the Parapet walls are the outermost walls which are constructed at the edges of the roof of the buildings.

There are **many types of Parapet walls**, and mostly they are used **for the aesthetical purpose in the structures**. Parapet walls provide an attractive look to the structures

Why Need of Parapet Wall?

- The terrace of the buildings is used for various purposes such as **sitting, walking, and other leisure activities**. So in that case, it is very essential that the roof has a parapet wall. **Parapet walls play an important factor in the safety of the occupants**.
- It is needed **to protect the interior space of the terrace of the buildings**. It ensures the safety of the occupants using the roof. It **helps to improve the aesthetical appearance of the buildings**.

Uses of Parapet Wall:

- It helps to prevent the entry of dust particles in the roof.
- To hide the stored materials, machinery, and equipment on the rooftop.
- It helps to prevent the wind loads from coming on the rooftop.
- To provide safety to humans and prevent accidents like falling down from the rooftop.
- It gives the Aesthetical appearance to the structures.

Height of Parapet Walls:

- The height of the parapet wall is an **important factor while the construction of the Parapet walls. The minimum height of the parapet wall should be 90 cm**.

- The parapet wall should not be constructed less than 3 feet in height. At this height, the Parapet wall ensures safety. **The minimum thickness of the parapet wall is 22.8 cm**.

Types of Parapet Wall:

- Parapets walls are classified into various types on the basis of appearance or design and functions.
- **Classification of Parapet walls on the basis of design or Appearance is as follows:**

1. **Plain Parapet Walls**
2. **Embattled Parapet Walls**
3. **Perforated Parapet Walls**
4. **Paneled Parapet Walls**

- Classification of Parapet walls on the basis of shape and functionality are as follows:

a) **Sloped Parapet Walls**

b) **Stepped Parapet Walls**

c) **Flat Parapet Walls**

d) **Curved Parapet Walls**

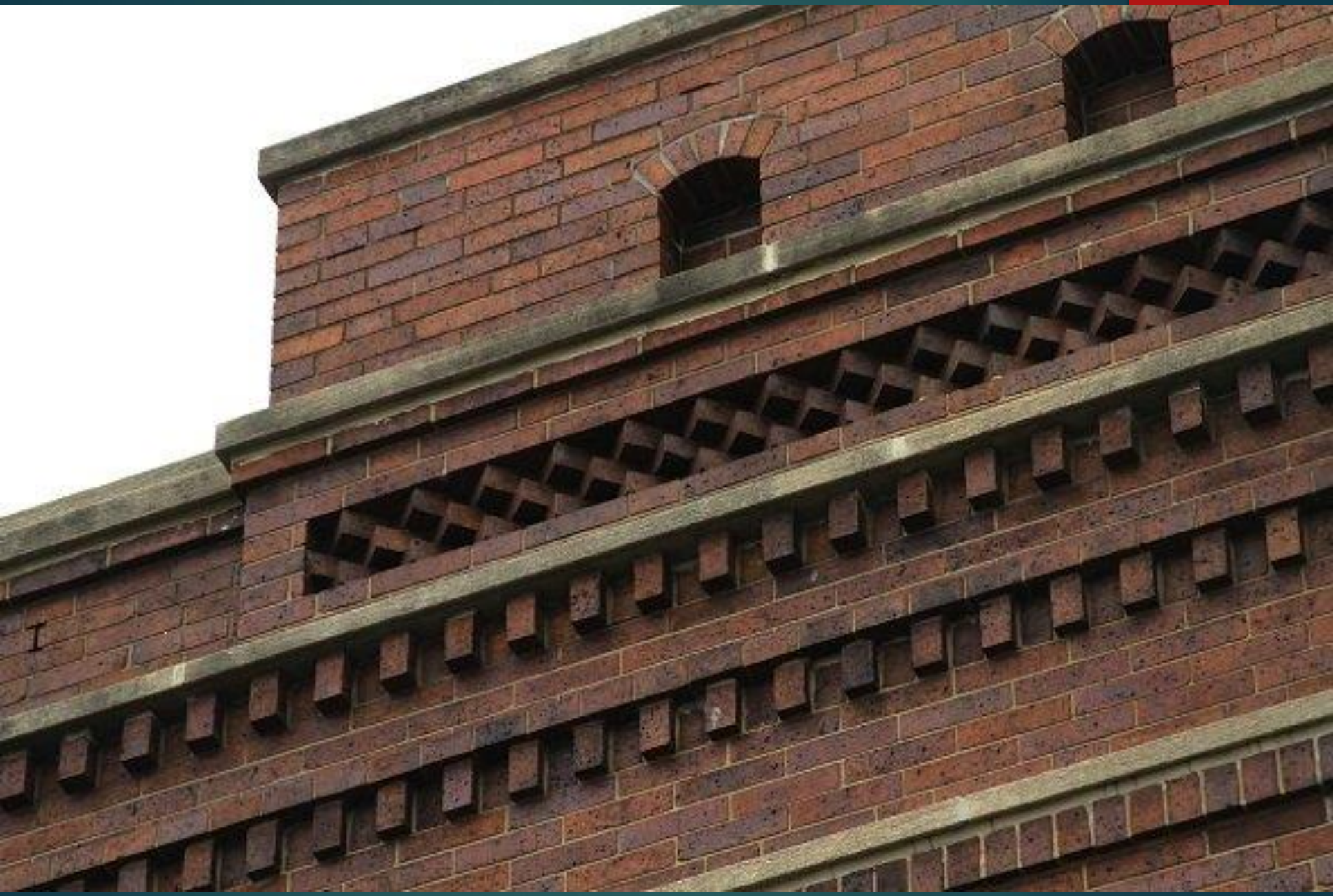
e) **Plain Parapet walls**

1. Plain Parapet walls:

- The plain parapet walls are basically a **vertical extension of the wall which is constructed at the end of the roof**. The construction of a plain parapet wall is **very easy, and it requires low maintenance**.
- Plain parapet walls are **provided for only ensuring the safety of the occupants**. The plain parapet wall is provided with the **concrete coping at the top side and corbel below it**.
- Plain parapet walls are very simple in **appearance and do not improve the beauty of the structure**.

2. Embattled Parapet Walls:

- The Embattled parapet walls were used in the olden days, generally in the forts and palaces. The embattled parapet wall is also popularly known as **Castle parapet** because it is used in the castles in the ancient time.
- This type of Parapet walls are aesthetically pleasing and **also nowadays used to improve the beauty of the structures**. In this parapet wall **alternative low and high portions are provided**. The purpose of such a kind of construction is to help to **shoot arrows through it and defend the fort**.



3. Perforated Parapet Walls:

- Perforated parapet walls are **similar to plain parapet walls**. It is an upward extension of the wall at the **end of the roof which has perforations in it**.
- The perforations in the wall are in different shapes and designs like **circles, flower shapes, and geometrical designs**. The purpose of providing **perforated parapet walls** in the building is to improve the aesthetical appearance of the structure.

4. Paneled Parapet Walls:

- This type of parapet walls is the same as **plain par walls but consists of ornamental panels from the outside**. The best part of the paneled parapet walls is that they are ornamented with a number of different panel designs on the external side of the parapet wall.
- There are no **perforations provided in the paneled parapet walls**. The construction of paneled parapet walls is **economical as compared to other types of parapet walls**.
- Panel parapet walls provide a beautiful pleasing appearance to the buildings.

a. Sloped Parapet Walls:

- Sloped parapet walls are generally provided for the sloped roof structures which are **generally constructed for the industrial and trussed buildings etc**.
- This parapet walls come with a slope which **helps to drain off the rainwater**. The main purpose of providing sloped parapet walls to the buildings is to **protect the roof from leakages**.

b. Stepped Parapet Walls:

- It is generally used for **inclined roof structures**. Stepped parapet walls is constructed like a staircase type design. Stepped parapet walls are generally used for **decorative purposes which makes the building appear larger**.
- Stepped Parapet walls provide an **attractive front elevation to the buildings**. Stepped Parapet walls helps to **improve and enhance the curb appeal of your structure**.

c. Flat Parapet Walls:

- Flat parapet walls are **very common and widely used in the buildings**. Flat parapet walls are generally used in **dwelling units and commercial buildings and flat roof structures**.

- Flat parapet walls are **provided with little or no slope**. Nowadays there are various types of innovative and modern parapet walls that are provided like **fiberglass parapet walls and glass with steel railing parapet walls**.

d. Curved Parapet walls:

- Curved parapet walls are also **known as arch parapet walls**. Curved parapet walls are **generally provided for the flat and inclined roofs**.

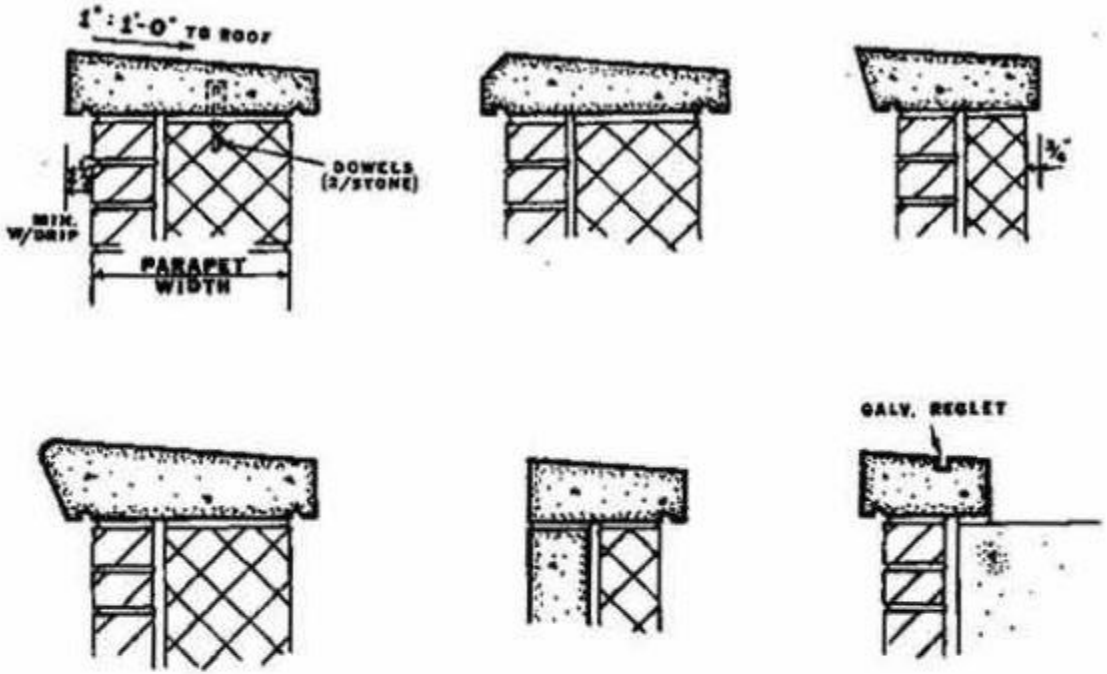
- Curved parapet walls help to appear a **building larger**. Curved parapet walls give a **stylish and attractive look to the structure**.

Wall Coping to the Parapet Wall:

- It is very essential to provide wall coping to the parapet wall in order to **prevent the entry of moisture**. It is basically a **covering at the top** of the wall to **prevent seepage of the water**.

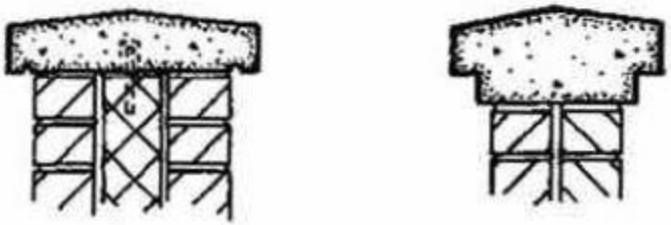
- Coping to the parapet wall acts as a **protection against the aggressive environmental conditions like rain, snow, etc**. Coping with the parapet wall helps to prevent rainwater from penetrating into it.

PARAPET COPINGS



COPING

Cheek Wall, Planter Wall, Screen Wall, Retaining Wall, and Fire Wall



Copings can be Manufactured to Any Size or Profile Desired

Factors to Be Considered While Construction of Parapet Wall:

- There are some factors which should be considered while construction of the parapet walls are as follows.
- The **minimum height** of the parapet wall should be **90cm**.
- The **thickness** of the parapet wall should be at least **22.8cm.**
- The parapet wall should be **plaster from both sides to prevent the problems of dampness**.
- The joint to the roof and the parapet wall should be **sealed properly**.
- The parapet wall should be provided with **proper coping to prevent leakages.**
- Parapet walls should be **away from the plumbing system and electrical wiring**.

Thank You