

**COVENANT UNIVERSITY
NIGERIA**

*TUTORIAL KIT
OMEGA SEMESTER*

**PROGRAMME: BUILDING
TECHNOLOGY**

COURSE: BLD 222

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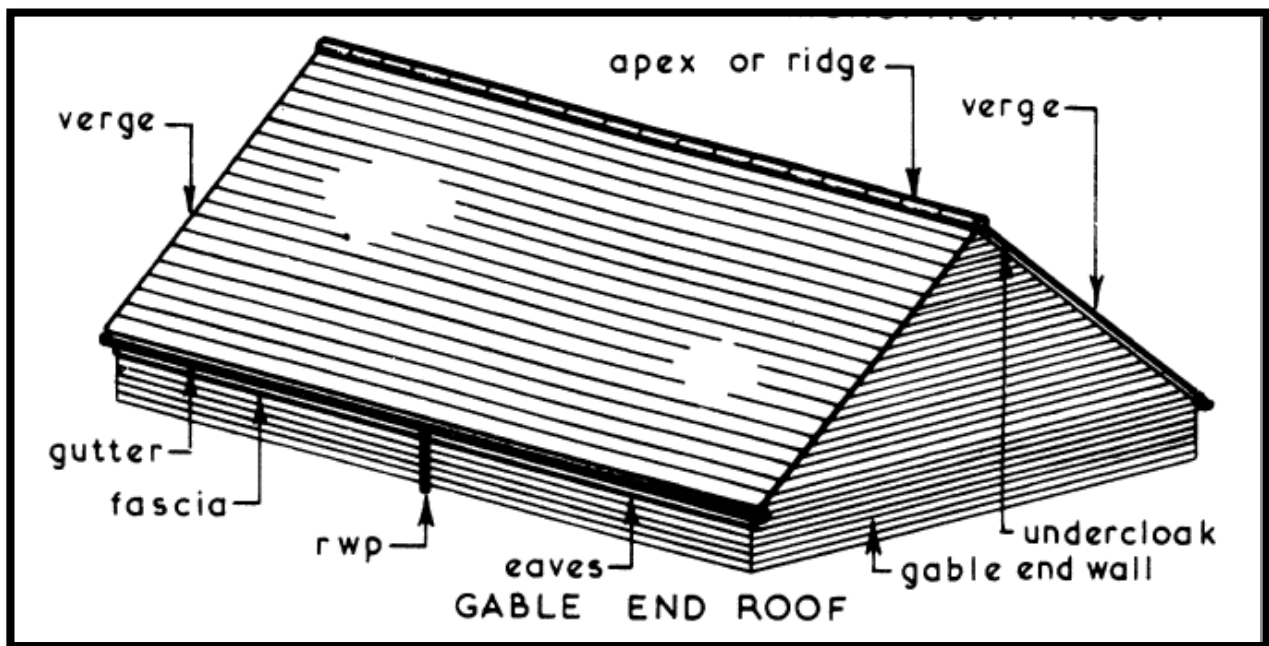
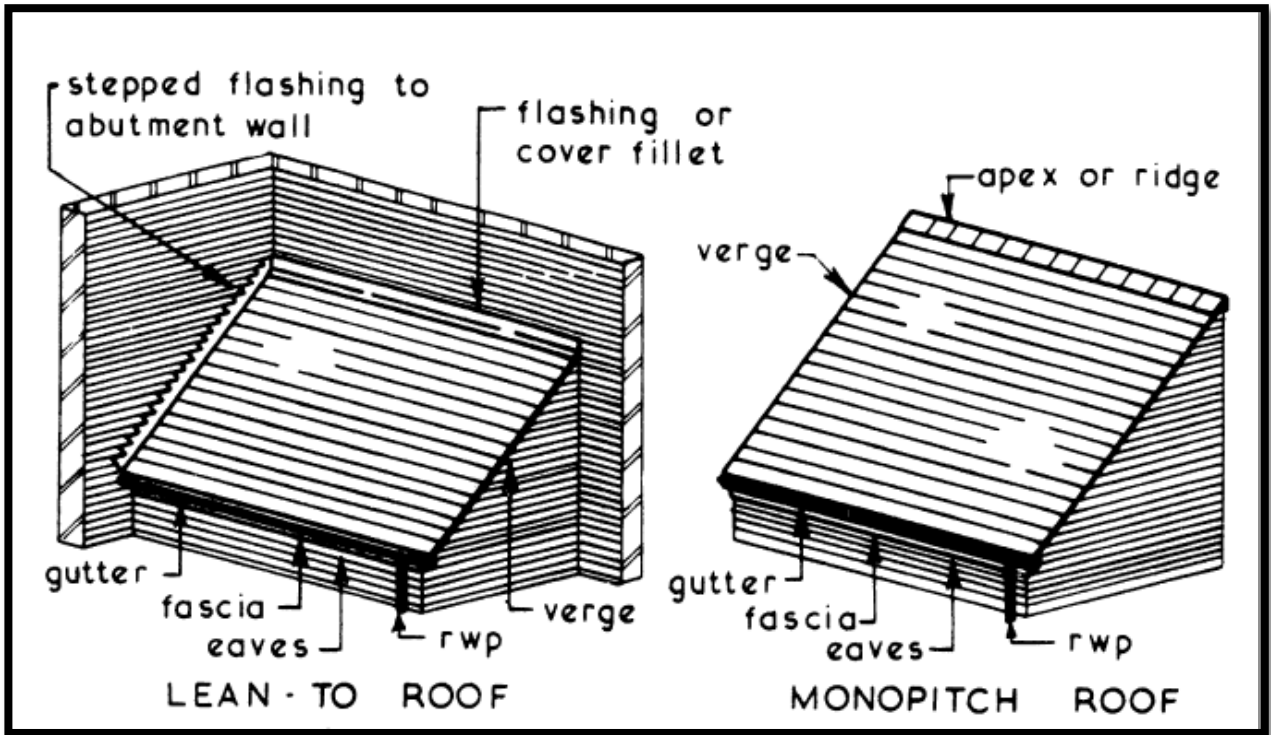
BLD 222: Building Construction Practice II

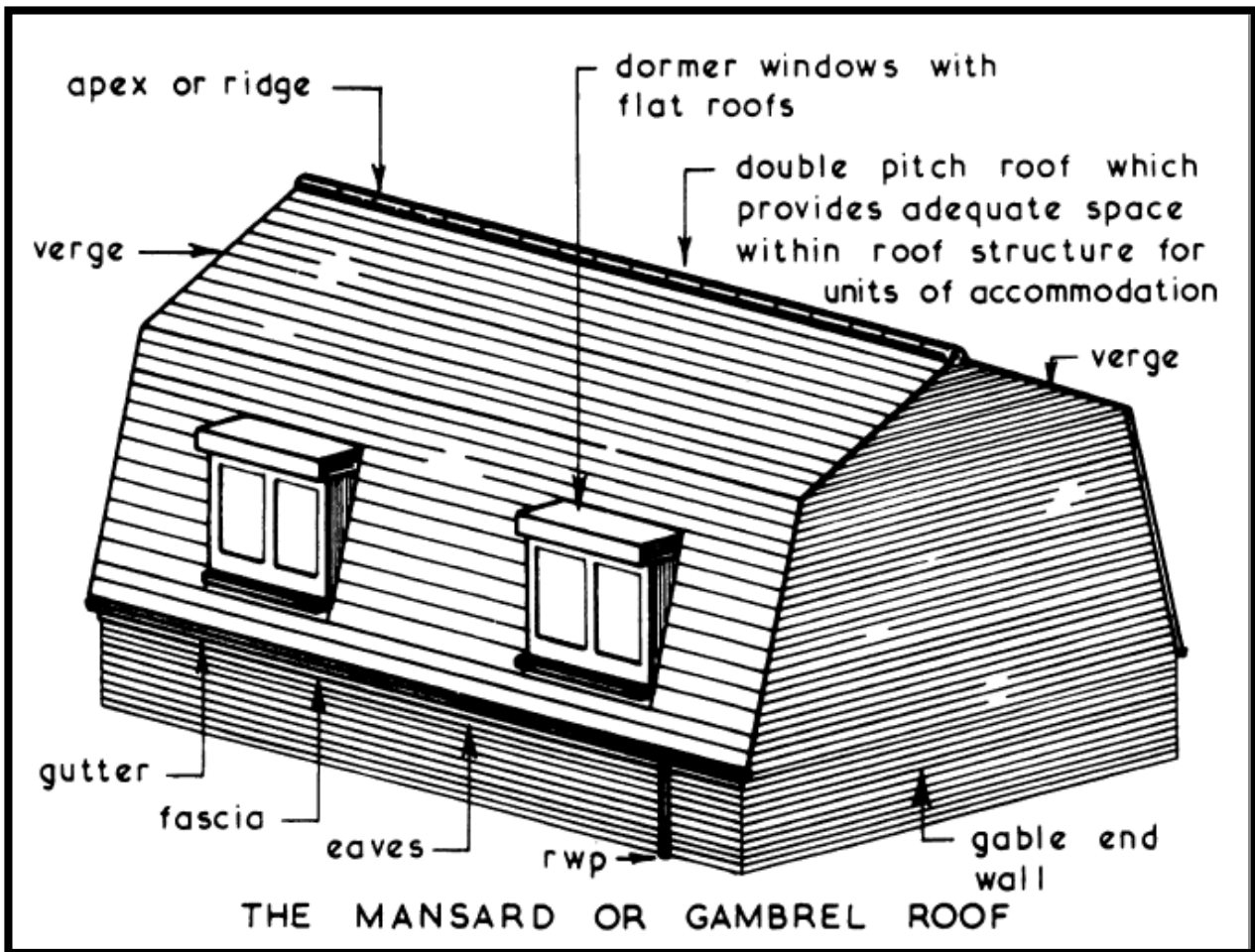
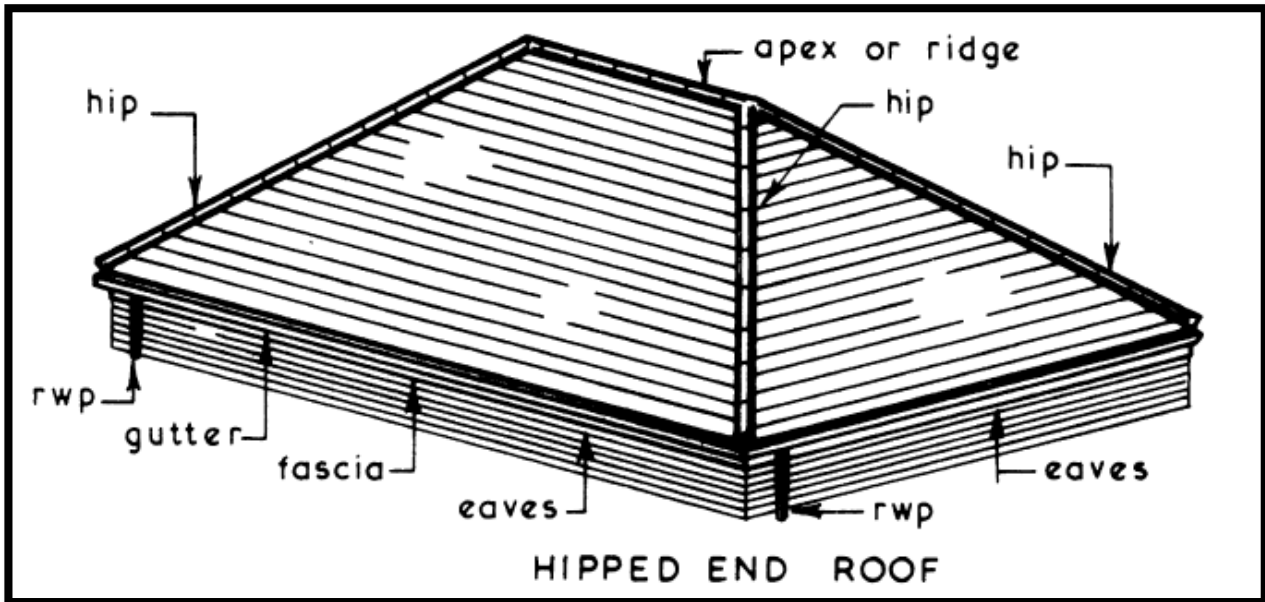
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1. What is a roof?
2. Differentiate between a low slope roof and steep slope roof.
3. With neat diagrams, explain four (4) types of roofs
4. Explain five (5) components in a roof structure.
5. Differentiate between a soak away pit and a septic tank.
6. What is the importance of access road to a construction site?
7. With neat diagrams, explain four (4) types of caissons.
8. What are caissons and cofferdams?
9. With neat diagrams, state two (2) types of foundations that can be used in deep waters.
10. State five (5) ways construction is contributing to environmental pollution.
11. Differentiate between Green construction and Sustainable construction.
12. What is Building collapse?
13. Identify five (5) factors responsible for Building collapse.
14. Differentiate between a drain and a sewer.
15. What is tunneling? State four (4) uses of tunnels.
16. State five (5) solutions to Building collapse.
17. Briefly explain the concept of lean construction.
18. State five (5) elements in a building structure.
19. State six (6) qualities a good roof should have.
20. Identify five (5) finishes that can be applied to roofs.

Answers

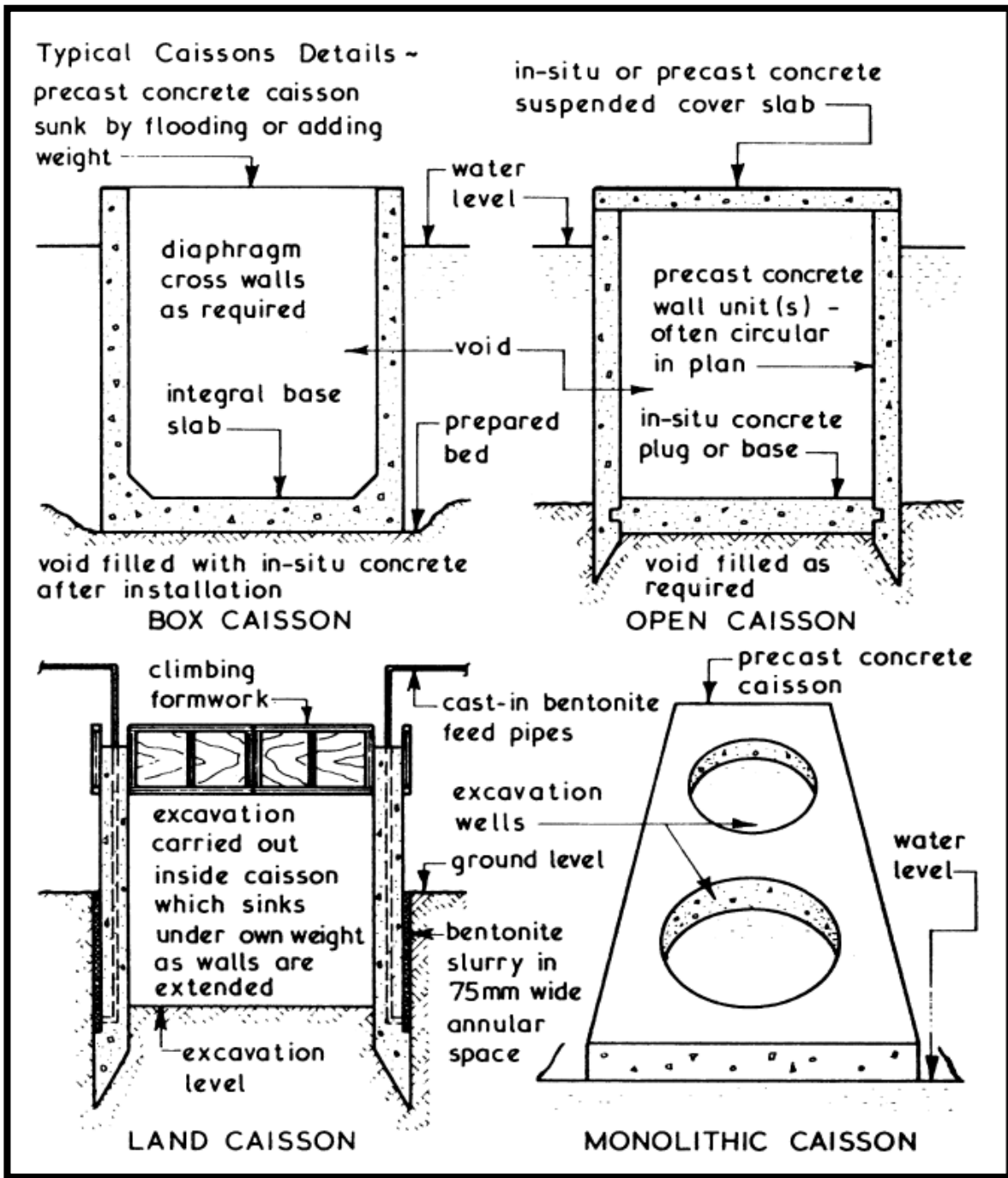
1. A roof of a building envelope is the covering on the uppermost part of a building or shelter which provides protection from animals and weather, notably rain, but also heat, wind and sunlight; and the framing or structure which supports the covering.

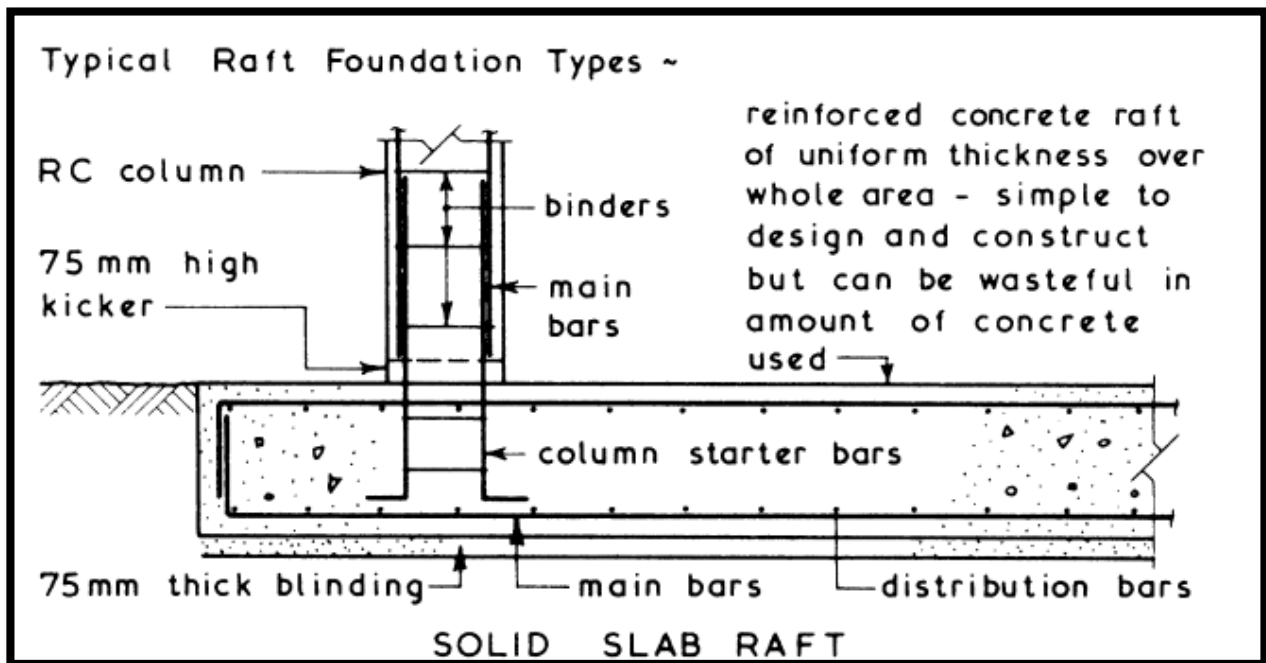
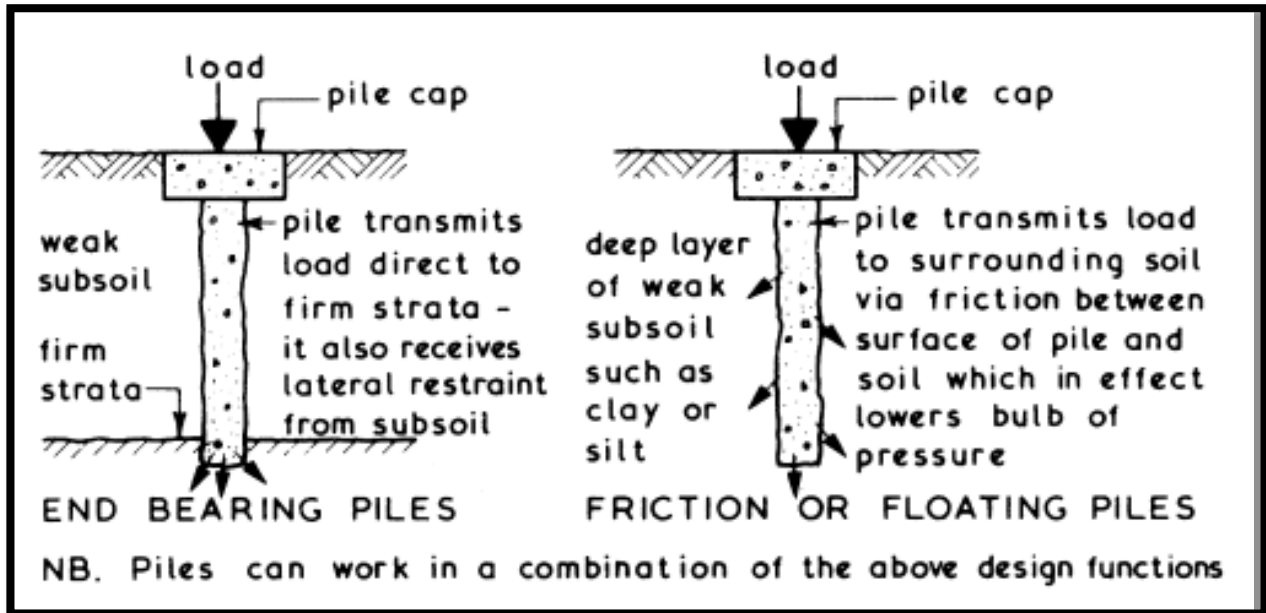




5. A Soak Pit, also known as a soakaway or leach pit, is a covered, porous-walled chamber that allows water to slowly soak into the ground. Pre-settled effluent from a Collection and Storage/Treatment or (Semi-) Centralized Treatment technology is discharged to the underground chamber from where it infiltrates into the surrounding soil. While a Septic tank is basically a vessel buried underground, the purpose of which is the collection, storage, and to some limited extent, treatment of sewage.

7.





11. Green Construction: This refers to a structure and using a process that is environmentally responsible and resource efficient throughout a building's life cycle: from siting to design, construction, operation, maintenance, renovation and demolition; whereas Sustainable Construction explains the process of construction that involves meeting the needs of present generations without compromising the ability of future generations to meet their needs.

13. The factors responsible for building collapse are considered such as:

- use of sub-standard materials
- use of non competent professionals
- poor supervision
- contractor trying to cut corners poor workmanship.

15. Tunneling can be described as a technique of subsurface excavation for the purpose of:

- Mining ores
- Water supply and sewage
- Transportation
- Human being (Hiding place)
- Roads, trains, subways
- Canals
- Power installation
- Gaining access to the heart of a crowded city.

17. Lean Construction: This is a production management based approach to project delivery. Lean construction is a way to design production system to minimize waste of materials, time and effort in order to generate the maximum possible amount of value. **Lean Construction** is a combination of operational research and practical development in design and construction with an adaptation of lean manufacturing principles and practices to the end-to-end design and construction process. Unlike manufacturing, construction is a project based-production process. Lean construction is concerned with the alignment and holistic pursuit of concurrent and continuous improvements in all dimensions of the built and natural environment: design, construction, activation, maintenance, salvaging, and recycling. This approach tries to manage and improve construction processes with minimum cost and maximum value by considering customer needs.

Some fundamental principles of Lean are:

- Define value from the customer's perspective
 - Understand the value stream of all steps in the process used to create the end product
 - Reduce waste
 - Ensure a smooth flow of value added activities
 - Prefabricate and modularize building systems
 - Utilize collaborative pull scheduling to provide each internal and external customer what they want, when they request it
- Seek perfection by committing to continual improvement in all areas of the process.

19.

- A roof must be weather resistant to rain, snow, wind and sun.
- The durability of a roof should be equal to or in excess of those materials used in the remainder of the building.
- A roof should have good thermal insulation properties.
- A roof should require very little maintenance.
- A roof should be constructed in such a way as to retain structural stability when dead and imposed loads are applied to it (dead loads is the weight of materials used to make the roof, imposed loads are loads created by wind, snow, etc.)
- A roof should provide adequate drainage for roof covering.