

History of Civil Engineering and Architecture

Anna Kalis

1. Define civil engineering.

Civil engineering is construction involving public works such as bridges, public buildings, etc.

2. Define architecture.

Architecture is the art and science behind designing buildings where people live.

3. Describe the origination of the concept of architecture?

Architecture originated as far back as 8000 BCE. Early engineering was centered around food and caves were used as homes.

4. In ancient times how were building materials chosen?

Building materials were chosen based on the climate and their availability.

5. Give two examples of vernacular architecture.

An igloo is an example of vernacular architecture because it is built using the surrounding ice and snow. Another example of vernacular architecture is an African hut which uses the nearby straw and wood.

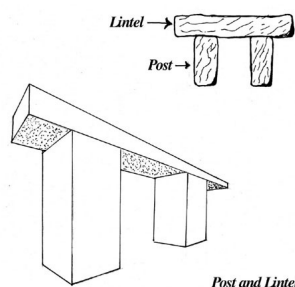
6. Name and describe the type of system used to create many early buildings.

Bearing walls were the type of system used to create many early buildings. This system involves solid walls providing support for the other walls and the roof.

7. What was the purpose of the Egyptian pyramids? Mexican pyramids?

The purpose of Egyptian pyramids was to be a monument to house the tomb of the pharaohs. The purpose of the Mexican pyramids were for religious and astronomical purposes.

8. What kind of construction method was used to build the Parthenon? Made a simple sketch to illustrate.



The Parthenon was built using post-and-lintel construction.

9. What problem in architecture led to this form of construction?

The problem in architecture that led to this form of construction was how could there be door and window openings in bearing walls without giving up the support that they provide.

10. Explain how an arch is created.

An arch is created by placing blocks in a curved form so they provide support for one another.

11. How is the vault used in civil engineering?

The vault is used in the construction of bridges, walkways and other passages.

12. Give an example of an arch and dome system.

The Roman aqueducts are an example of an arch and dome system.

13. Give an example of a modern material we have that was not available to the ancients. How did this restrict construction in ancient times?

Steel is a modern material that was not available to the ancients. This restricted construction in ancient architecture because it is a hard and tough metal which allows for taller buildings to be made.

14. What was the purpose of the Roman aqueducts?

The purpose of the Roman aqueducts was to provide Rome with fresh water.

15. Compare ancient Greek roads to ancient Roman roads.

Ancient Greek roads were usually paved while ancient Roman roads had multiple layers of stone and sand. Also, their purpose different in which Greek roads were mainly for transporting goods and Roman roads were for transporting armies.

16. Describe an ancient Roman bridge.

An ancient Roman bridge consists of stone and concrete and used the arch as part of its structure.

17. How did building materials and methods change after the Romans?

Building materials and methods didn't change much after the Romans.

Conclusion

1. Give an example of a modern pyramid not shown in the presentation. How does its function differ from that of the Egyptian pyramids? What do you think accounts for this difference?

The Pyramid of Tirana in Albania is modern pyramid whose function differs from that of the Egyptian pyramids. During the Kosovo War, it was used as a military base but before that it was used as a museum (Enver Hoxha museum). I think that the time period and availability accounts for this difference because it was the only building available to use as a military base during the time.



2. Give an example of a modern structure that uses an arch and dome system.

St. Peter's Basilica in the Vatican City is a modern structure that uses an arch and dome system.

3. What is the main purpose of modern roads? How is the cost of modern roadways defrayed?

The main purpose of modern roads is day-to-day transportation. Modern roadways are paid for using taxes.