

Environmental Influences on Architectural History

Architectural History · Answer Key · 10 Questions

1. Which material used in the construction of the Great Stupa at Sanchi, and later in Mughal architecture, was chosen specifically because its high lime content allowed it to harden into a stone-like substance after exposure to the environment?

- A) Calcified coral debris
- B) Pulverized seashells**
- C) Silica-rich volcanic ash
- D) Clay mixed with animal fat

2. In the construction of traditional Japanese minka, which type of wood was primarily selected for its natural resistance to rot and termites due to its high concentration of hinokitiol?

- A) Japanese Cedar (Sugi)
- B) Japanese Cypress (Hinoki)**
- C) Japanese Zelkova (Keyaki)
- D) Japanese Pine (Matsu)

3. The use of 'termite mound' passive cooling systems in modern architecture is modeled after the ventilation shafts found in the mounds of which termite genus?

- A) Macrotermes**
- B) Coptotermes
- C) Reticulitermes
- D) Nasutitermes

4. During the Medieval period, 'wattle and daub' walls were commonly reinforced with animal products to improve weather resistance. Which ingredient was typically added to the clay mixture to act as a binder?

- A) Bovine blood
- B) Horse hair**
- C) Sheep wool
- D) Fish oil

5. The ancient Roman technique of 'opus caementicium' utilized pozzolanic ash. What natural biological process in the surrounding landscape was essential to the formation of these volcanic deposits?

- A) Bacterial decomposition of kelp
- B) Hydrothermal alteration of basalt**
- C) Deposition of marine calcareous organisms
- D) Anaerobic fermentation of peat

6. In Gothic architecture, the specific 'gargoyle' designs were historically functional. Beyond water diversion, what animal was most frequently stylized as a protector against 'evil spirits' in environmental masonry?

A) The Lion

- B) The Bat
- C) The Toad
- D) The Raven

7. Which architectural feature, prevalent in 19th-century colonial buildings in tropical climates, was designed to mimic the ventilation patterns of a bird's nest to utilize the Venturi effect?

- A) Jali screens
- B) Veranda louvers

C) Cupola vents

- D) Dogtrot breezeways

8. The 'Great Mosque of Djenne' is constructed from sun-dried mud bricks (adobe). What specific organic material is added to the plaster to prevent cracking under high heat and rapid environmental expansion?

- A) Rice husks
- B) Palm leaf fibers
- C) Shea butter

D) Cow manure

9. What is the primary reason the 'Beehive Houses' of Harran, Syria, were constructed with a conical shape using earth and stone?

- A) To withstand the weight of seasonal bird migrations

B) To maximize thermal mass and facilitate heat dissipation

- C) To prevent the collection of desert sand and insect nests
- D) To optimize structural integrity against subterranean termite tunnels

10. In the design of the 'Crystal Palace' of 1851, Joseph Paxton was inspired by the structural properties of which botanical species to create the iron-and-glass framework?

A) Victoria amazonica

- B) Nelumbo nucifera
- C) Amorphophallus titanum
- D) Nepenthes rajah