

INTELLIGENT ARCHITECTURE

Derek Clements-Croome

17 October 2007

Part 1

1. How long does the lecturer say that people spend inside buildings during their lives?
2. What is the definition of an intelligent building?
3. Why does the lecturer say that human skin is a very good model for how buildings should behave?

Part 2

4. What are the five main human senses that the architect must respond to?
5. Why is it important that we work in stimulating buildings?
6. What is the most important factor to take into account when designing buildings?

Part 3

7. What is meant by passive building control?
8. Why does the lecturer not want to design buildings with an active environmental control system?
9. What is the name used in Turkey for the volcanic forms lived in by the people of Cappadocia?

Part 4

10. What type of structure have the people of Quianlong in China made to control the temperature and live in comfort in their homes?
11. What example does the lecturer give of animals creating a structured and economic habitat?
12. Which insects and birds are being studied for their building techniques?

Part 5

13. What are the qualities of the goats material used to make tents in the Sahara?
14. What are the good qualities mentioned about the Mongolian *ger* or tent?
15. Why was it not possible to build the Arctic City in 1952?

Part 6

16. What is the name of the material used to make the cover for the settlement at Athbaska River in Canada?
17. Why did the new building in Riyadh, Saudi Arabia, have an air conditioned central unit whilst the outer round parts did not?
18. What does the lecturer mean when he says that you can tune a building?

Part 7

19. What point is the lecturer making when he describes the function of the wind scoop or tower that is common in Pakistan, Iran and Dubai?
20. What measure is used in the marketplace or souk in Marrakesh to make the air cooler for people working or shopping there?
21. What reasons are given for the holes in old buildings in hot countries?

Part 8

22. How did the artist Turner show light in his paintings?
23. In the research project mentioned what are the requirements for different envelopes of the buildings, i.e. windows?
24. What type of atmosphere did the Danish architect Utzon achieve in the church he designed in 1976?

Part 9

25. What is a light scoop?
26. What was the reason for putting the pipes and services on the outside of the Centre Pompidou in Paris rather than hiding them within the building?
27. Why is letting air move through the glass in windows beneficial to the building?

Part 10

28. Why have touch sensors been installed beside desks in some modern buildings?
29. What is a double facade?
30. What business goes on in the Lloyd's Building in Leaden Hall St London?

Part 11

31. Why does the museum in New Caledonia, in the Pacific, need a protective wooden frame around it?
32. What does the lecturer say is the aim of intelligent architecture?

Key

Part 1

1. 90% on average.
2. A building which responds to the needs of the people inside it.
3. Because skin protects us when it's damaged. It is self-healing.

Part 2

4. What we see, what we hear, what we smell, what we taste, and what we touch.
5. Because that makes us more productive in our work or our studies.
6. The lifestyles and behavioural patterns of individual users of the building.

Part 3

7. The design of a building and the materials used alone can have a significant effect on the interior climate control.
8. Because they use a lot of energy such as air conditioning.
9. Tufa.

Part 4

10. They have built underground cave villages.
11. He shows two different spider's webs as an example.
12. The Weaver Birds of South Africa, wasps and termites in Africa.

Part 5

13. Easily portable, waterproof, provides shade and ventilation.
14. Good insulation, good ventilation and compact space.
15. The building materials available to make a cover for the city were not strong enough to withstand snow loading and gale force winds.

Part 6

16. Chloroflourine material.
17. The central unit was created for people to work in when they needed to concentrate, the outer warmer areas were for social events.
18. The degree of light allowed into a building has a psychological effect on those inside it.

Part 7

19. That air conditioning of buildings has been a widespread feature of local buildings for centuries.
20. A simple rafter roof giving shade and some coolness.
21. To allow air to come into the building and cool it, and in some cultures where women are confined to the house, to allow them to look outside without being observed.

Part 8

22. He painted diffused light in the atmosphere to give an impression of the scene he was painting.
23. Windows that are responsive to daylight, sound, air, give protection from strong sunlight and have attractive views.
24. He achieved an atmosphere of calm and spirituality through designing a diffused natural light source.

Part 9

25. It is a way of deflecting light into a building using mirrors along a 'pathway' or light pipe.
26. It was an architectural expression.
27. Because it saves an enormous amount of energy.

Part 10

28. To monitor the worker's mood and comfort throughout the day.
29. It is a new facade covering an old facade, in the space between the facades environmental controls can be installed to improve the conditions in the old building.
30. It is the centre for insurance companies that deal with shipping incidents around the world.

Part 11

31. To protect it from strong winds and tropical storms.
32. To keep down the levels of energy and water used at the same time as meeting the requirements of people using the building.