



Paper Church and Paper Log House

The architect Shigeru Ban has developed both a new architectural language and a radical engineering technique through **his** use of large tubes made of recycled paper as a primary construction material. Initially he used them internally, as in his installation for an Alvar Aalto exhibition. He then developed the technique further, using the tubes structurally for temporary buildings and then to construct permanent buildings.

With his experience of providing emergency shelter, Ban visited the site of the Kobe earthquake in January 1995. Amongst the destruction, he found a community of Catholic Koreans and Vietnamese **whose** homes and church had been destroyed. He offered his help in replacing the church.

The construction comprises an oval formed of 58 industrial-grade paper tubes, 330mm in diameter, supporting a stressed membrane roof of Teflon-coated fabric. This is contained within a rectangular box measuring 150 square metres, made up of hinged louvre panels in clear plastic on a lightweight steel frame. The resulting single-room structure has an innate grace and buoyancy – serving its purpose most effectively as a community hall and temporary place of prayer.

The architect found himself responsible for funding the project, designing **it** and constructing it. Funding was the most exacting task, with the bulk of the money coming from individual donations. There were also donations in kind for the construction. The building was erected, in the main, by architectural students over a period of five weeks. It opened exactly eight months after the disaster. As well as the church, Shigeru Ban was responsible for constructing a number of emergency homes after the earthquake. **These** use a generic plan and are designed to be erected quickly, without specialist skills and with minimum resources. At Kobe, each of these paper log houses is square in plan, measuring 4x 4 metres. The floors, walls and roof trusses are all constructed from 108mm diameter paper tubes. The base of each building comprises sand-filled beer crates, to **which** the superstructure of the building is tied. The roof comprises a double layer of Teflon-coated fabric, and incorporates a ventilation flap at one of its gable ends.

The use of paper tubes originated as an aesthetic response to a particular requirement, but developed into an expression of both social and ecological concern without losing its distinctive stylistic attributes. This is a notable example of the use of standard, low-energy components, not intended for building purposes, being adapted to pressing social and ecological needs.

A. Answer the following questions using the text:

1. When did Shigeru Ban visit the site of the Kobe earthquake?
2. What did the architect use as a primary construction material?
3. How many paper tubes formed the church and what was their diameter?
4. Give the dimensions of one of the paper log houses.
5. When was the church opened?
6. How long did the construction of the church take?
7. Apart from the church, what other buildings was Shigeru Ban responsible for after the disaster?
8. How did the architect fund the project?
9. How is ventilation provided in the paper log house?
10. What forms the base of each paper log house?

B. Write True or False next to each of the following statements:

- 1 Architectural students built the church.
- 2 The shape of the paper church is triangular.
- 3 The architect used paper tubes to construct emergency homes.
- 4 Funding the project for the church was the responsibility of the Catholic community.
- 5 The architect Shigeru Ban uses large tubes made of recycled paper for his constructions.

C. What or who do the following words refer to?

- 1 these (line 20).....
- 2 whose (line 8).....
- 3 it (line 15)
- 4 his (line 2).....
- 5 which (line 23).....

D. Find a word or words in the text with similar meaning:

1. in a short time.....(1)
2. at first(1)
3. built(1)
4. substituting.....(2)
5. most of.....(3)