Chengdu Hualin Elementary School

Chengdu, China

Architect	Shigeru Ban Architects Tokyo, Japan
Client	The Education Department of Cheng Hua District in Chengdu City
Commission	2008
Design	2008 - 2008
Construction	2008 - 2008
Occupancy	2008
Site	1'260 m^2
Ground Floor	614 m^2
Total Floor	614 m^2
Costs	US$ 192'000
Programme	The programme called for the construction of nine 6 x 9-metre temporary classrooms in a two-month period for an elementary school damaged by the 2008 earthquake. The architect further constrained the project by resolving to use only locally available construction materials and to reduce both the number and variety of the parts. Paper tubes and wooden joints were employed to assemble the base structure for three 6 x 30-metre buildings in long, row-house style on the foundation of the destroyed structures. The pitched roofing is polycarbonate with plywood panels, while a post-and-beam structure provides awnings. Each structure accommodates three classrooms.

Building Type	Schools
2013 Award Cycle	4246.CHI

Interior view


Aerial view

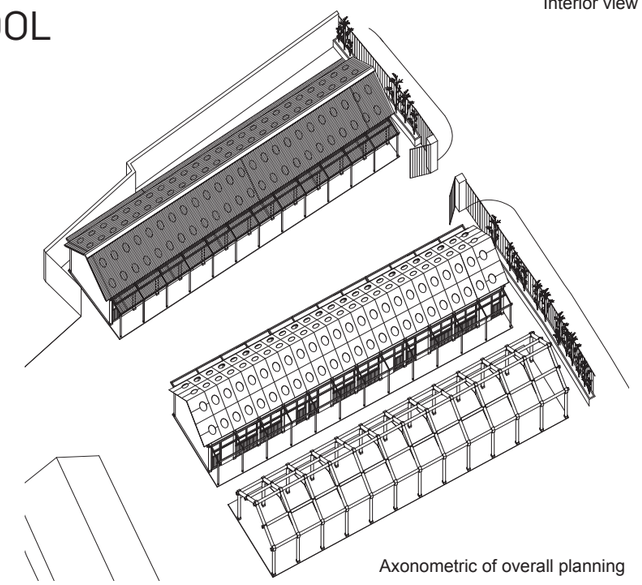

Exterior view of three buildings

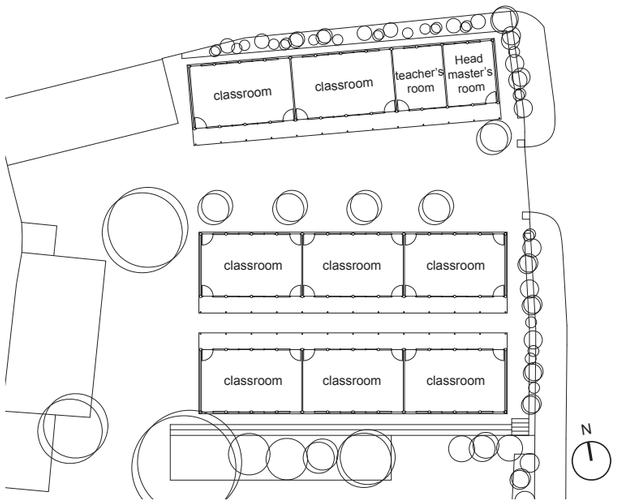
CHENGDU HUALIN ELEMENTARY SCHOOL

On May 12 2008, the day of the Sichuan earthquake, Shigeru Ban immediately contacted Hironori Matsubara, fellow professor at Keio University, Japan and Beijing based Architect, and proposed a collaborative post-disaster project involving both their students. One month later, the team proposed a newly designed temporary house system in Chengdu. However, the Chinese government had scaled back it's interest in mass construction of temporary housing and Ban's team lost the contract.

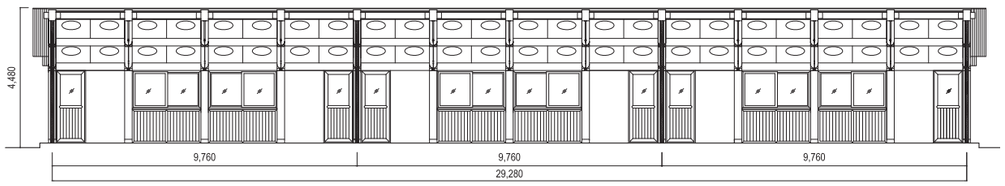
A local NGO remained interested in the team's proposal and asked to design a temporary elementary school building in Chengdu's Hualin District.
The School asked for nine classrooms and hoped for completion in August. Having only 2 months to design and build, Ban's idea was to use only local and easily obtainable construction materials, minimize the number and variety of individual parts. Using locally manufactured paper tubes and wooden joints, three buildings in a long row house style was designed. Shigeru Ban has developed methods for paper tube structured architecture for more than 20 years, a material which is manufactured almost anywhere around the world.

Construction was by Japanese students of Keio university, Students from Chengdu's Southwest Jiaotong University, and local volunteers made up of teachers.Using the foundation of the former classroom, the first paper tube arch was raised on August 8. Overcoming the lack of common languages and values, students from two countries worked equally side by side in great effort to complete the school on September 11, in 40days.
The original duration for the use of the school was 2 years, however with no major repair work, it is still being used as the classrooms for the children and teachers of Chengdu.

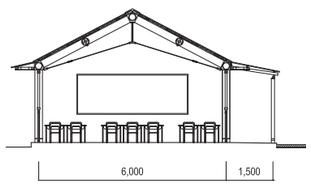

Axonometric of overall planning



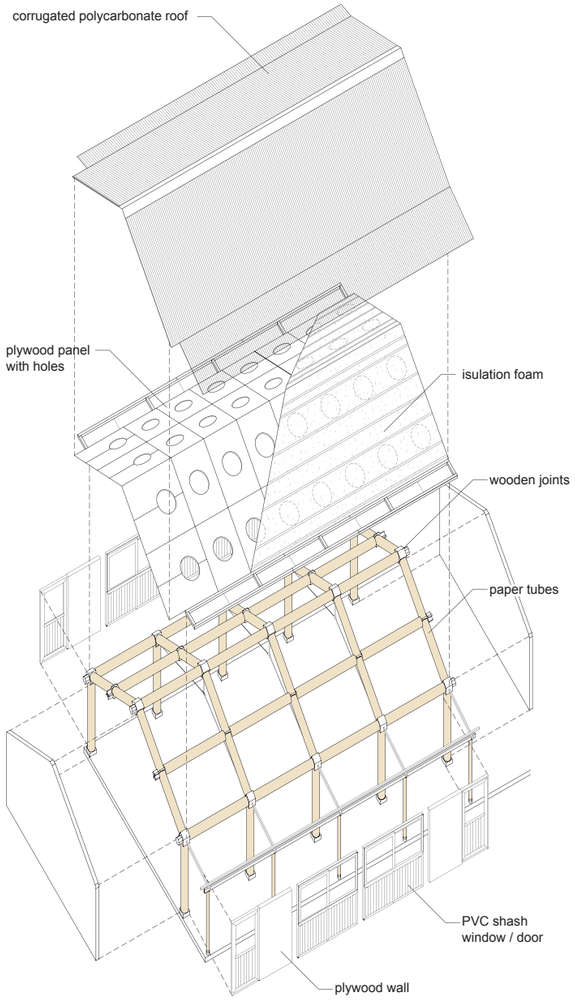
Site Plan 1:600



Long Section 1:200



Short Section 1:200



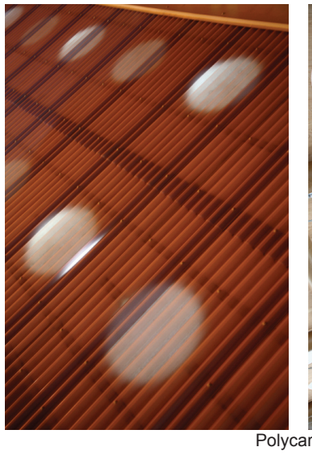
Axonometric

Construction of the Paper tube Arch

Paper tubes and Wood joints

Completion of the Strucural Arch

Exterior view, Children playing in the Corridor



Polycarbonate Roofing and Plywood Panels

Plywood Panel for Roof

Corrugated Polycarbonate Roofing