



Temporary Multi-storey Container House after Earthquake and Tsunami Disaster on March 11, 2011

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Summary

The project was the design development and construction of multi-storey temporary housing units as part of the disaster relief effort following the 2011 Tohoku earthquake and tsunami. Our objective of the project was to find and commission an affordable temporary housing solution that could be constructed rapidly to accommodate the residents who lost their houses due to the earthquake and tsunami. The flatlands located above the tsunami height were limited in the town area; thus, a viable multi-storey solution was required.

Conventional temporary housing units are a single storey in Japan due to limited logistics and technical ability in the disaster area. Our challenge was to propose multi-storey houses using stacked shipping containers that would have the benefit of offsite prefabrication and logistics, using shipping and container trailers at the site to create a multi-storey house with minimum on-site work. The container solution achieved our objectives perfectly.

Keywords: temporary housing; container; seismic; disaster; prefabrication; multi-storey; sustainability.



Figure 1 Original model by Shigeru Ban

1. Introduction

The project was the design development and construction of multi-storey temporary housing units as part of the disaster relief effort following the 2011 Tohoku earthquake and tsunami. The objective was to quickly provide cost effective and comfortable temporary houses for the people who suffered the enormous disaster.

2. Back ground information of the seismic event and tsunami

On March 11, 2011, a 9.0-magnitude earthquake and tsunami struck the Pacific coast of Tohoku, Japan. Onagawa-Cho, the centre of the town was completely swept away by a 15 metre tsunami.



Figure 2 2011 Tohoku earthquake and tsunami