



POLITECNICO
DI TORINO

Honors thesis

COURSE OF ARCHITECTURE FOR SUSTAINABLE
DESIGN

Abstract

**H.E.L.P. - Housing in Emergency for Life and People. A
temporary structure for Accumoli**

Tutor

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by

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My Master thesis is based on the description of my experience during the Workshop “H.E.L.P. - Housing in Emergency for Life and People”. This laboratory was the occasion to develop and practice my architecture knowledge and to learn new constructive methods and technics. The purpose of the thesis is to explain my experience and, through the analysis of the drawing and technological processes, to describe the evolution which brought to build the temporary structure in Accumoli village. This building would be an innovative solution to help and promote the rebirth of communities destroyed by catastrophes.

The volume is divided into four main parts. The first one analyses the general topic of emergency and earthquake. It has been performed a comparison between some Italian cases and foreign ones. After that, I looked at various cases studies with focus onto architectures realized after disaster; due to their structure and technology, they were the starting point for HELP’s project. The second part of the dissertation developed and studied the Digital Fabrication and the plywood as structural material, with a short description of wood, in particular poplar and okumè. At the end of this part I made a comparison between those two materials and the reason why we chose one instead of the other. The third part is dedicated to the Project, from the concept I had analysed what we’d done to prepare the construction site and its realization, with a detailed study about architectural, technological and structural aspects. The fourth part, the last one, is like an appendix of the volume. It is a construction manual which describes, through simple images, all the passages to build the structure of the building in Accumoli.

H.E.L.P. is a student group of Politecnico di Torino, which works in collaboration with different international universities. The group was born after the earthquake that on August 24th 2016 damaged areas in the centre of Italy, in particular the villages of Accumoli and Amatrice. The group was created with the support of the architect Carola Novara that shared her experience and her thesis’ work: “Veneer House Project, a prototype construction in Nepal: develop and construction in a humanitarian project of a house after disaster in Nepal”. The idea was to suggest a temporary solution for collective and residential space made of traditional materials with innovative and experimental technics.

The aim of H.E.L.P. is double: educative aspect, that would grow students involved for professional points of view, and social aspect with look for the drawing and realization of collective/aggregative spaces which could help and satisfy needs and requests of community hit by earthquake. The aim is to spread solidarity and responsibility on population in trouble.

The developed project was born from the request of the mayor of Accumoli village to have an aggregative place flexible for the community. H.E.L.P. team, in collaboration with Keio University and Hiroto Kobayashi Lab, had developed a temporary structure with constructive system made by plywood. This technology uses Digital Fabrication to cut the wood and realize the elements that joined together, can create a rigid and solid structure. The experimentation of this constructive technics allowed us to develop an economic, increasable, repeatable and modular project, linking values of prefabrication with personalization of digital drawings.

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