



POLITECNICO
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Honors thesis

ARCHITECTURE FOR RESTORATION AND
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Abstract

Design for Survival.

**Architectural and technological models
for an approach to survival,
guidelines and prototype of housing unit.**

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The topic from which this research has started is the concept of *survival*, defined as the ability to stay alive following crisis or emergency situations, through actions, tools and special notions, adaptability and self-sufficiency principles.

To define the different aspects that characterize the theme, reference was made to the model introduced by *the Survival movement*, on the basis of which a structure or model of reference is elaborated.

By making a *comparison between primitive and modern ages*, an ideal path of human evolution is summarily developed, with the ultimate aim of focusing attention on the *current context* and on *the emergence and critical factors* that impose a reflection on the concept of survival.

The possible "*survival strategies*" are then defined, analyzing in particular the concepts of *basic needs and requirements*, which mainly consist of water, food, shelter, health, fire and energy, the actions related to orientation, organization and movements, the theme of equipment and that of *survival techniques* and relative devices.

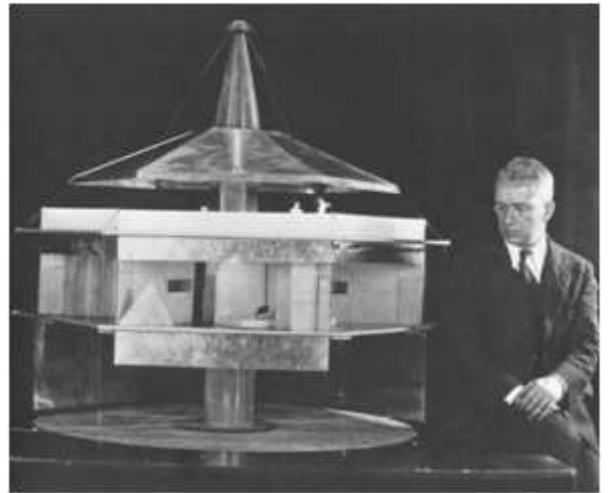


SURVIVAL

The role of architecture and the relationship that links this discipline with the theme of survival are enshrined in the concept of *shelter*, defined as one of the fundamental pillars (or needs) to survive.

The archetype of the shelter can be identified in the primitive hut, a simple structure formed by intertwined trunks and branches, from which the transitory dwellings of the nomadic peoples evolve, further archetypes for the evolution of a shelter or *shelter architecture*, which found a new field of application in the modern era, in the design of *emergency housing structures, temporary dwellings, minimal living spaces, different cells and modules*.

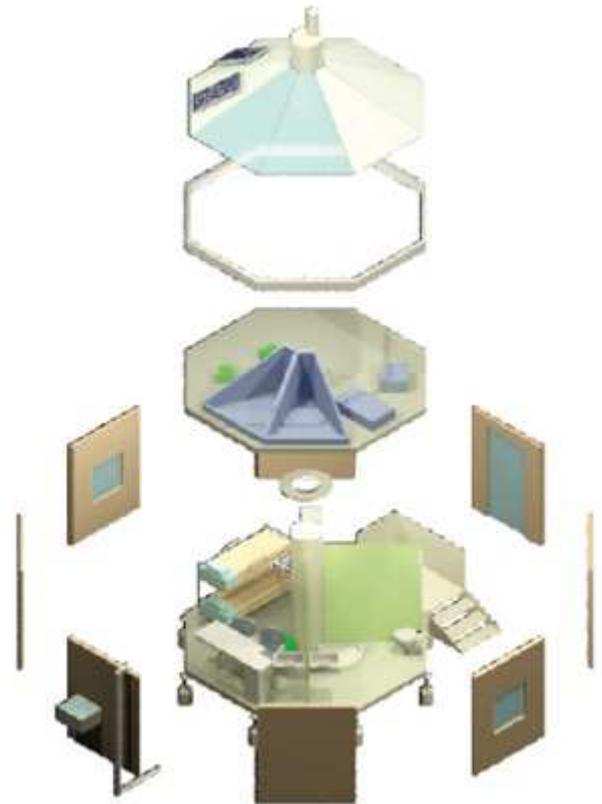
The path ends with the definition of the possible *requirements and guidelines* for the design of a product intended for critical contexts, with particular attention to the possible methods of *integration of the survival devices* within the same, in its various technological components.



On the basis of these principles the proposal for a *prototype of a minimum survival unit* of about 14 square meters is developed, designed to accommodate 2 - 3 people, in which some survival devices are used and can be used in response to needs and different conditions.

The module has an octagonal shape and uses an experimental construction system based on the reuse of sewer pipes in concrete coupled with sandwich panels like SIP (insulating core between two OSB panels).

The principle is to use a *central core* - consisting of a column created by the overlap of circular channels in concrete - which serves both the main structural function, and as a connecting and passage space for the pipelines of the various systems / technological systems.



The unit is equipped with a system for the *collection of rainwater*, a *solar distiller* for water purification, *storage tanks* for drinking and sanitary water; the minimum energy self-sufficiency is instead obtained with a system of 300 W *photovoltaic panels*; as far as feeding is concerned, there is not an aggregate production method, but an *external greenhouse module*, while the *food cooking system* uses a solar panel placed on the external wall as well as the possibility of inserting a stove connecting it to the chimney.

Architecture and survival are interconnected terms of which I tried to trace an ideal path or model, which allows us to identify the requirements, the possible techniques and their applications to the housing organism, which becomes an active tool for dealing with the crisis and emergency situations that characterize the current context and which could intensify in the near future.