# Chapter 5
# Design Workshop:
## Outcomes Models and Prototypes

## ABSTRACT

*Although the expert system is vital for the research project Re-Coding Homes, it mainly deals with the layout, density, and relations of modules and represents them only as raw cubic geometries. Parallel to the studies of the expert system, during the Design Workshop, the design team worked on developing the components of the modular system. All modules fit in the 3D grid defined in the expert system and have similar codes so that they can come together within different configurations. Throughout the Design Workshop all these interior modules are concretized using a laser cut and real materials in the ITU Model Lab. The main objective of this chapter is to exemplify a design process run in relation with an expert system that generates solutions related to user needs.*

## INTRODUCTION

In Istanbul and other big cities of Turkey, people moving to slum transformation housing units and social housing sites from their informal settlements, have different household typologies. Each family has different daily activity patterns, spatial habits and needs. Because of all these, there is a need for multifunctional reorganization of residential interior spaces both for different needs and different household types. In recent applications like the Basıbuyuk Mass Housing Settlement, previous gecekondu inhabitants try to create their own solutions in order to adapt spaces to their specific requirements. As the space, which is designed as living room is regarded as the mirror of the house, it is commonly well organized. On the other

hand other rooms used for sleeping, studying and other activities are overloaded with the belongings and furniture that they had brought from their previous houses. We can observe that they tend to use every corner and gap in order to deposit their belongings and this leads to a chaotic situation. The main problem resulting from the interior organization created by the inhabitants themselves is the dominance of objects most of which are not even used. This leads to lack of enough free space and limits the effective use of interiors.

While considering the issue of mass housing units through the perspective of interior architectural design, of course it is not enough to criticize their uniformity. However, it is important to understand the gap between the existing living environments and the inhabitant's different ways of living. Although mass housing units are uniform in their architectural layout, they still have their potentials to be revealed. The question would be how these potentials can be revealed by interior design solutions in order to adapt them to different needs. The problem of adaptation involves different dimensions such as physical, social, economical, cultural, psychological and political dimensions. While regarding the role of interior architecture among other design disciplines involved in built environments, it has considerable power because of its close relevance to user needs and ways of living. In this sense, the response of interior architecture can even be more powerful while concerning people's domestic lives.

The research project Re-coding Homes emerges from the idea that interior spaces of mass housing units can be differentiated according to user needs and future inhabitants of these housing settlements can be provided with customized and ready-to-live interior environments.

The Design Workshop is the most intensive phase of the research project Re-Coding Homes. This chapter discusses the concretization of design principles that have been outlined in the previous chapters of this book and exemplifies the design process of the project Re-Coding Homes from sketches to concrete solutions including drawings, models and prototypes. The workshop focuses on defining modular interior components through the concretization of abstract design solutions generated by an expert system based on modular design principles. In this way, it will be possible to create innumerable spatial solutions composed of modular elements that correspond to all the probable activity sets that can take place in housing units. The spatial variations will embrace different interior modules answering to different activity sets. Although the modules will be standard, their combinations will define innumerable spatial solutions. In this sense the design model will act as a mass customization tool that will generate different solutions for every family living in mass housing units. Therefore the design model will put forward a set of design rules that is in relation to a range of product solutions (Saglar Onay, Garip, Belek Fialho Teixeira, 2016). According to a research conducted by Sarıyar and Pakdil

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