



POLITECNICO
DI TORINO

Honors thesis

MSc ARCHITECTURE CONSTRUCTION CITY

Abstract

**Switch – a web-based tool for preliminary choices in
building reuse**

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by

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The thesis illustrates the design and implementation of a web-based software whose purpose is to optimize – within the limits imposed by a simulation model – the preliminary architectural choices. In particular, focusing the choice of the functions to be inserted during a reuse intervention, providing suggestions on the type of intervention to be addressed.

The software, called Switch, does not pretend to be a substitute for decision makers and does not return a correct answer in absolute terms, but limits itself to analyze a site's strengths and weaknesses, aiming to light up - hence the idea of name - a recovery intervention, pointing decisors towards a suitable solution.

The tool looks at the past, analyzing a collection of virtuous cases, to define a pattern of characteristics that have influenced them, used to calculate and return a set of functions compatible with the abandoned building in analysis subjected to a possible intervention.

The tool, designed to be as interactive and dynamic as possible, is able to adapt and learn from every building added to its database, in order to provide a collection of possible choices that is always appropriate to the always-changing context.

The discussion starts from a study of the context, both theoretical - regarding the issues of urban abandonment and the reuse theme - and of the existing software in this area.

The technical methods and criteria used to manage the data, useful for the application to develop the simulation, and the applied mathematical model are then outlined.

Lastly, the practical software test phase, applied to the city of Turin is presented, with the creation of a sample of buildings - both abandoned and already refurbished - on which the test analyses were carried out and on which conclusions are drawn. On the same basis, the potential, improvements and future developments of the software are analyzed.

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