



POLITECNICO
DI TORINO

Honors thesis

COURSE OF ARCHITETTURA COSTRUZIONE CITTA'

Abstract

Designing with autonomous relationship properties of complex systems: a parametric approach to achieve building sustainability.

Nowadays it's evidently more than ever that buildings are a lot more than only a design and construction process, but a system of relations occurring through them. Because of this, they have been started to be studied as a complex system, in order to try to understand the influences that occur between the different design, construction and management process.

While the biggest amount of literature explores by a downstream point of view this topic to make analyses and studies about the structure of the complex system, this work tries to manage by an upstream approach the issue, by reversing the process and use the autonomous relationships properties of building seen as a complex system as a design tool. The work relies on the concept of sustainability in the social, economic and environmental fields, while, since the wideness of this subject, only some aspects are developed. The objective is to create a methodology in which relationships typical of a complex system are taken in account during the design process in order to control them since the very beginning and so, trying to solve issues that aren't typical of the single elements, but that depends on the relationships between them.

The work concludes with an overview of both potential and critical points that have been met during the design process and reflects about the feasibility in the daily use of this methodology with common projecting tools.

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