



POLITECNICO  
DI TORINO

# Honors thesis

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COURSE OF DEGREE IN SUSTAINABILITY DESIGN

*Abstract*

**MULTIDISCIPLINARY URBAN REGENERATION: Evaluation of the urban quality and economic sustainability of cases based on the transformation of the area ex-Thyssenkrupp-Ilva**

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Alla fine del testo inserire i dati per i contatti.

The regeneration of brownfields comes from the need to restore to the city, those portions of land, that are part of the urban territory, but over time, have lost their original use. Therefore, these may be potentially convertible for the purposes of a future development, serving not only the circumscribed area, but the entire city as well, through achieving a functional mixité, in direct contrast with the typical monofunctionality of ex-industrial sites. The presence of abandoned industrial buildings, the morphological complexity of the polluted territory and the strategic location, as a link between the center and periphery, contributed in establishing the site of the ex-Thyssenkrupp, as a suitable model for the application of a multidisciplinary urban regeneration. In fact, through an in-depth analysis of the strengths and weaknesses of the area, we can determine the problems and the probable future potentialities of the territory in question; accordingly, these may be taken as reference points, in order to inspire various designing solutions, each of which aimed at solving a different aspect of sustainability. Therefore, each proposed project is treated as a multidimensional system in which the elements that combine it, the environmental, the economic, the social and the cultural-historical, are significant, both as individuals and as linked aspects. Once having defined the project scenarios, arises the need for a decision making tool, that allows taking into consideration the environmental and economic aspects at the same time. To this end, we propose a decision support system, based on the two fundamental pillars of sustainability, the environmental and the economic. To evaluate the alternatives we should, therefore, adopt models scientifically valid, that have the ability to consider the diversity of the goals, the systems of preference, the values and interests. It thus aims to develop an evaluation process, based on already existing models, that is adaptable to the needs and requests of a certain territory, and is focused on large-scale urban projects. The decision problem can be described through the synthesis of the three different macro areas that compose it. This system is designed to express qualitative parameters in quantitative ways, in order to make possible the comparison among them. For the assessment of the environmental quality, the protocol GBC Quartieri, an instrument created precisely in order to certify the environmental and urban quality, has been adapted to the needs of our area of interest and particularly to the scale of the project, while the economic assessment tool more suitable to our research is the cost-benefit analysis. For the issues of the area in exam, not covered by GBC or the cost-benefit analysis, it is necessary to give an evaluation to the urban planning by ourselves, as urban designers. Through this process, we created an empirical methodology that allowed us to evaluate the two principles of sustainability, thus the environmental and economic aspect, with particular attention to the problems of the territory under consideration. In conclusion, we would like to observe, that this research does not aim to arrive at a true winning project but to define a method of identification of the scenarios ranking, as it is considered essential in defining a winning scenario, the use of participatory tools, as participation processes are crucial to urban scaled projects. Unfortunately, for reasons related to timing and complexity in managing such a process, it was not possible to involve such tools at this phase.

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