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# Design, technologies and innovation in cultural heritage enhancement

edited by  
Elena Mussinelli



Environmental issues are critical all over Europe, but especially in Italy, where valuable natural resources are closely integrated with an equally important cultural heritage.

As a fact, environment, landscape and cultural heritage are part of a indivisible dynamic system continuously subjected to human actions that compromise the precarious equilibrium between nature and built environment. But the territorial quality is a crucial factor of the global competitiveness, to attract resources and to support the socio economic growth.

In the Architectural Technology approach, the environmental project aims to develop a territory and to build the future heritage with the consciousness that every action is part of a broader scenario which combines local identity (cultural and landscape values), environmental qualities (ecological and ecosystem values) and socio economic factors. So, the cultural heritage enhancement is: management of usability, design of territorial networks, reuse of abandoned buildings, construction of new social opportunities, access to new services and experiences.

Because of the inseparable link between its cultural, environmental and landscape heritage, the town of Mantova - Unesco site since 2008 and Italian Capital of Culture 2016 - represents a perfect site to experiment a multiscale and transdisciplinary design approach for the cultural heritage enhancement.



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# **Design, technologies and innovation in cultural heritage enhancement**

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## A MULTI-SCALAR SCENARIO FOR MANTOVA

*Giusi Leali, Silvia Mirandola<sup>1</sup>*

The projects carried out in the town of *Mantova*, whose details are provided in this publication, allowed for the development of a multidisciplinary reflection on the themes of both environmental design and social housing. The objective was to define several actions aimed to add value to the territory, starting from the requalification of the new ‘South Gate’ of *Mantova*.

The project area was divided into territorial adjacent sections, each of them having their own importance, but not interconnected in a structural way: the residential neighbourhood *Valletta Valsecchi*, that attests to a particular organization and evolution of political, social and economic trends of the town, the residential area of *Te Brunetti*, characterized by discontinuous, uncoordinated settlement dynamics; the railway line *Mantova-Monselice*, a barrier between the historical city and the more recent residential expansion; rural and environmental areas, peri-urban zones of *Mantova*.

Environmental design is the key element around which the projects proposed have been built and developed synergically in a master plan, which has connected the different territorial sections and also identified strategies able to cause wider effects on the whole area. Starting from the analysis of the strengths and weaknesses of the areas requiring action, multi-scale, interdisciplinary strategies of enhancement and requalification have been conceived, with positive consequences on the city of *Mantova* as a whole.

The strategies identified for the neighbourhood *Valletta Valsecchi* were aimed to find new relations between the different spaces

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<sup>1</sup> Giusi Leali and Silvia Mirandola are PhD in *Design and Technologies for Cultural Heritage* at *Politecnico di Milano*.

characterizing the urban context, with particular reference to the relationship between urban areas and neighbouring environmental zones (connection with the system of *Parco del Mincio*), and between the neighbourhood and the town (the axis *Valletta Valsecchi-Palazzo Te*). A second project was defined, prefiguring several levels of transformation, from both a technological and urban point of view. The proposition dealt with the theme of social housing, through the recovery of degraded buildings, but still important from the point of view of history and culture.

Similar plans have been developed for the requalification and completion of the neighbourhood *Te Brunetti*. In this case, strategies included, on the one hand, the physical and concrete reconstruction of urban boundary, and on the other hand, the activation of intangible drivers, such as the promotion of local identity, the support to social and cultural activities, and the development of local businesses, as factors necessary to a sustainable development of the area.

For these mainly residential zones, strategies have been based on urban regeneration, through the involvement and dynamism of the social fabric, where culture and local identity become the engine of the economic and social development of both neighbourhood and town.

The subject of requalification and enhancement of the railway line allowed for the development of remarks concerning the relationship between infrastructures and landscape. Infrastructures, thanks to their particular conformation, represent both the tangible connection with the project sections, and the intangible connection with the strategic lines proposed in different contexts. The project strategies were based on a long-term transformation perspective that took into consideration a possible dismantling, but at the same time a series of interventions and functional actions for the requalification of the remaining spaces, the mitigation of its impact, and the qualification of existing crossings.

In the peri-urban context, the design and enhancement of the natural and environmental system brought about the development of a panel of proposals and strategies aimed at the morphological, functional and practical qualification of both cultural and environmental resources, and at their implementation with existing sports equipment. Such strategic lines are connected to the enhancement of the environmental system of adjacent sections.

The strategies referred to every territorial area foresee specific positive effects on the town, that can be summarized in four main themes resulting from the synergies generated by the union of the

single plans. The implementation of these projects has social and concrete consequences for the city in terms of recovery and requalification of the existing heritage (building, neighbourhood, or park); improvement of the degree of accessibility through the carrying out of cycle tracks and pedestrian crossings; creation of new activities and services to complete the ones already existing, with clear effects also on a social level, and acknowledgement of the neighbourhood identity with the use of public spaces by the local community.

The coordinated management of the interventions herein summarized for the enhancement of South Gate of *Mantova*, confirms the potentials of a systemic and multi-scalar design approach, which characterizes the Architectural Technology.

This allows for the development of the knowledge that represents the innovating aspect of the project, with its many themes and levels of research: interventions on buildings, urban projects, environmental issues, infrastructures of the territory and the cultural aspect of development (Schiaffonati, 2009).