

ARCHITECTURE. HISTORY AND PROJECT

Ateneo/DAD - Integrating Environmental Approaches into Urban and Building Regulations: Tools and Methods for Transforming Urban Settlements.

Funded By	DAD - Funzionamento DAD - Progetti Politecnico di TORINO [P.iva/CF:00518460019]
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Context of the research activity	<p>The doctoral research will investigate the implications and potential of integrating environmental approaches into regulatory instruments at the urban and building scales within the built environment. The aim is to develop tools and methods for transforming urban settlements. This research is framed within the partnership between the EST - Energy Security and Transition Lab at the Energy Center and the DAD - Department of Architecture and Design, and builds upon the results of the Climate City Contract developed for the City of Turin.</p>
	<p>The doctoral position within SCUDO's "Architecture, History and Design" programme (DASP) will explore how environmental approaches can be integrated into the urban transformation regulatory systems of European cities. The candidate will examine historical and international cases marked by the transition from urban expansion to significant urban transformation of the existing built environment.</p> <p>In these transformations, planning and building codes hold substantial potential to guide the built environment's evolution by embedding environmental approaches into a set of urban rules. These rules often originate from other societal and political concerns but remain relevant through integration with environmental objectives.</p> <p>The proposed research will evaluate experiences that incorporate environmental concerns into urban regulatory systems, assessing how national and international regulations have developed tools and mechanisms to address environmental issues. This includes analyzing how environmental demands—such as the expansion of green infrastructure, energy issues related to the regeneration of existing buildings, and soil treatment—have been incorporated into the regulatory systems of large metropolises. The</p>

Objectives

research will identify strategies to test within the existing regulatory framework.

The test will focus particularly on the City of Turin, which is part of the EU NetZero Cities programme and has unique conditions regarding its building stock and territorial characteristics. Turin experienced significant urban expansion after World War II, resulting in a substantial stock of buildings with poor environmental performance. This issue is compounded by demographic decline, challenging the management of public urban infrastructure, and an orographic condition that promotes pollutant stagnation and heat concentration.

In this context, the reuse and rethinking of existing spaces within a sustainable framework is crucial for facilitating the ecological transition of the city. This transition requires a comprehensive reconfiguration of the normative framework regulating urban space. Turin's PRGC, currently under revision by the Municipality and subject to several past collaborations with the Politecnico, serves as the primary operational test bed. The proposed doctoral research will investigate new considerations to incorporate into the PRGC revision, aiming to simplify the existing overloaded normative framework and implement environmental strategies in building and urban transformation.

This research continues and deepens an ongoing collaboration between the Department of Architecture and Design (DAD), the Department of Energy (DENERG), and the Department of Environment, Land and Infrastructure Engineering (DIATI), coordinated by the Energy Security Transition (EST) group, for drafting the Climate City Contract for the City of Turin.

The intersection between environmental regulation and urban space is a critical issue in the context of recent European guidelines for sustainable development and climate crisis. The formalisation of the collaboration between the Energy Security Transition Lab and the Department of Architecture and Design through the co-funding of a PhD scholarship aims to explore the environmental approach to urban transformation, combining quantitative and qualitative methods, and bridging hard sciences and humanities.

Within this collaboration, the EST Lab provides a technical and science-based backbone, equipped with operational tools and academic expertise to support the quantitative aspects of the research. EST commits to actively cooperate with the Department of Architecture and Design, providing the selected candidate with necessary support for the duration of the doctoral studies. The details of participation and joint work plan will be established to maximize added value for both sides.

Simultaneously, a partnership with the Turin Municipality, as a governance institution and key interlocutor in decision-making systems and bureaucratic-administrative procedures, will be established through this research activity.

The doctoral scholarship includes a period of at least six months of research abroad. This period offers an opportunity to establish effective partnerships with other municipalities or universities (prospective collaborations include the Atelier Parisien d'Urbanisme), thereby strengthening an international network of scientific research and policy-making implementation.

Skills and competencies for the development of the activity

The requirements for conducting doctoral research include:

Extensive knowledge of the literature related to urban transformation and its environmental aspects.

Solid understanding of the administrative and bureaucratic procedures, urban planning rules, building codes, and the dynamics between private investors, developers, and public administration, in Italy and preferably in international contexts.

Basic knowledge of the technical-scientific aspects related to environmental issues in the built environment.

Familiarity with the regulatory framework of the City of Turin, including the Piano Regolatore and Regolamento Edilizio.

Adequate background in urban studies and urban history.