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## Interfaces. Urban design education facing green transition, demographic shift, and environmental crisis

Francesca Frassoldati, Nadia Caruso

### Abstract

Le misure post-crisi sono percepite e attese come opportunità significative per la ripresa e la rivitalizzazione di città e regioni. Tali opportunità di cambiamento mobilitano gli sforzi di progettazione nel territorio abitato, anche se i loro effetti reali in contesti che vivono complesse sfide demografiche ed economiche sono tuttora ampiamente dibattuti. Con il nostro contributo, basato su un design studio che da tre anni si svolge presso il Politecnico di Torino, vorremmo riflettere sul modo in cui la didattica nelle scuole di architettura affronta le nozioni di marginalità e i luoghi che sono fuori fuoco, interrogandoci su come l'esplorazione delle transizioni ecologiche nella formazione possa dotarci di professionisti più consapevoli per il futuro. Nel processo pedagogico, insediamenti ordinari intersecano gli interessi di una comunità accademica internazionale; quegli stessi insediamenti esemplificano la transizione 'in pratica' - mettendo in discussione l'agricoltura convenzionale e i vecchi processi di industrializzazione. Attraverso l'esperienza del design studio gli studenti internazionali sono esposti a pratiche che ampliano il pensiero critico.

The post-crisis measures are perceived and anticipated as significant opportunities for the recovery and revitalization of cities and regions. Such opportunities for change mobilize spatial design efforts, even if their actual effects in regions that experience complex demographic and economic challenges remain open for debate. With our contribution, based on a three-year design studio at Politecnico di Torino, we would like to reflect on how education in architectural schools addresses notions of marginality, places that are out of focus, and whether exploring ecological transitions in education may provide more conscious practitioners for the future. In the pedagogical process, ordinary villages intersect the interests of an international academic community; those same villages exemplify transition in context - questioning conventional agriculture and old industrialization processes, and through the experience, international students are exposed to practices that broaden critical thinking.

**Parole Chiave:** didattica del progetto urbano; transizione verde; marginalità territoriale.

**Keywords:** urban design education; ecological transition; spatial marginality.

### Introduction

The transformative effects of architecture education are not necessarily limited to the opportunity to provoke spatial

forms and radical alternatives. Reflecting on the frameworks of reference within which design projects are implemented, technological solutions are adopted, or buildings' performances are assessed, we believe it is crucial for aspiring professionals to comprehend the circumstances in which innovation occurs, and decisions are made.

With these principles in mind, over the past three years, we have been instructing international students in the master programme "Architecture for Sustainability" at the Politecnico di Torino. The theme revolves around engaging in a discourse on ecology and the future, using an approach that is not just critical but also, to some extent, transformative and able to reconsider norms.

Indeed, if climate and ecology experts often provide factual information, elucidate scientific concepts and caution about future events, for architectural students, a sense of anxiety easily emerges when they measure the inability or inadequacy to make sense of contradictions and contestations to complex issues (Ghosn and Jazairy, 2023). Architectural students are expected to confirm narrative ideals of futurity that ensure some sort of continuity and a prospective career, yet are also requested to be 'inventive' or 'disruptive'. Once graduated, current students will eventually be the ones advocating for specific decisions, conforming to rules or petitioning for their modification, in the capacity of professional practitioners or as active members of their communities.

Such inherent tensions in spatial design education are not new. Intervening in the debate on the scopes of education hosted by the *Journal for Architectural Education* almost ten years ago, Jeremy Till launched an appeal for urban and architectural design to engage in an age in which «scarcity opens up new fields in which design may operate. [...] Design becomes concerned with the temporal life of objects, with what comes before and after the instant of completion» (Till, 2014: 10). In his view, «design agency does not presume to solve problems in relation to scarcity; it only aspires to make the best possible sense of the prevailing and often competing conditions» (Ivi, 11). Exploring the friction that exists between the actual world and possible 'other' worlds makes space for design studio experiments.

## **Training future designers to see through the world they are learning**

Urban political ecology entered our design studio in various ways. To start with, the framework of a master programme titled “Architecture for Sustainability” may convince future architects that instructions on what they should be doing are defined elsewhere rather than by means of their work, following De Graaf’s statement (2023). Similar ‘postures of virtue’ are held accountable by disciplines with a strong body of evidence to support their claims, yet rather indulgent towards the utilitarian logic of international certifications of sustainability and their implicit trade-off where higher investment costs are offset by improved market positioning and differentiation of the constructed ‘product’. Jeremy Till (2023) further problematizes the founding principle of perpetrating current economic and cultural norms, which is implicit in sustainability. Till also highlights the importance of considering buildings’ embodied energy rather than their individual performances and recognizing the ‘complicity’ of architecture with the causes of climate crisis rather than its ‘solution’ functions, calling for a renovated understanding of spatial design as climate.

If all these considerations already align with our concerns regarding the exploration of spatial design and its potential civic roles, the commitment to explore ways to reframe our work by considering current environmental concerns, ongoing changes in the places we live in, and our attitudes towards time, memories, and legacies of the past introduces other lines of thoughts that reconnect urban political ecology with the design studio. Indeed, the reduced emphasis on buildings frequently results in an interest in ‘nature’ seen as the counterpart of growing cities or a reaction to urbanization (Angelo, 2021). In the words of Hillary Angelo, in fact, an increasing number of scholars is bridging «the material and social relationship between cities and the natural world to urban scholarship and practice» (Angelo, 2021: 8), with authors like Angelo herself, and Gandy, Goh, Kaika, Swyngedouw and others who account for environmental histories of the inhabited space that incorporate human-animal relationships, human-infrastructures connections, green materiality, and imaginaries.

The significance of nature and the passage of time in shaping

human settlements is evident when considering how cities or villages are often described in terms of their interaction with, exploitation of, or defence against specific environmental conditions. In the new millennium, the discussion surrounding the Anthropocene has highlighted its inherent ecological aspect. Buildings and infrastructures, whether viewed as separate entities or as interconnected systems, undergo intricate changes and intricate definitions during their entire lifespan. Simultaneously, the current environmental crisis is revealing the growing significance of plants, water, and soil in many forms, such as droughts and extreme rainfall events. These natural elements transcend their conventional role as mere resources for human use.

The challenge lies in the difficulty of establishing a common standard for ecological awareness, particularly in technical fields. On the one hand, there are recognized efforts to improve efficiency and minimize resource consumption within current systems. On the other hand, more radical approaches face opposition due to the existing structure of industrial systems and cultural resistance.

With the overarching name "Interfaces", our design studio experience introduces these broad themes by means of site-based reasoning to gather students' observations, identify together recurring elements, and contingent aspects that vary from case to case. Our role in guiding students involves conveying information about current trends, explaining their significance, reporting on the actions of others, in the same site or in similar conditions, always highlighting how our work intersects the more or less explicit concerns, and potentially becoming part of ongoing public conversations.

It proved rather challenging to maintain an attitude that does not describe problems-to-be-solved. The selection of villages and small towns as sites for our training certainly clarifies to students that operational conditions have to be considered when discussing priorities such as the ecological transition on which there is allegedly universal consensus. We believe it is crucial to discuss how territorial marginality can exacerbate inequalities and shape future expectations. At the same time, approaching complex themes through contexts that students can visit and have the possibility to engage with, makes it more likely to

establish a shared foundation for envisioning future lifestyles and practices. Additionally, simplistic technical or technological 'solutions' offer no easy fixes for intricate problems.

When the transformations' effects in those low-density urban systems reflect the goals of green transition, rather than solely relying on technical and technological innovation, the importance of accessibility and mobility, as well as the potential for services and energy-related reorganizations, emerge more clearly. Complementary to that, in situations where spatial marginalities exacerbate inequality and restrict future opportunities, traditional methods of revitalization and urban growth pose a challenge to the objectives of long-term change. Particularly, aspects related to the ability of regeneration projects to generate real or arbitrary excess value, compared to investments, in such a context can be radically contested.

### **The experience of a design studio in a marginalized region**

In early 2020, amidst ongoing debates over the neglect of marginalized regions, indications of growing discontentment emerged in those places that resulted in unexpected electoral results, hostile political confrontations, and requests for being acknowledged as relevant in public life considering their relevance in terms of demographics and – at least in Europe – economic importance in some sectors (Rodriguez-Pose, 2018). It is worth noting that frequently similar regions are the ones for which centralized authorities recommend measures that benefit urban populations (such as intervening on artificial water reservoirs or basins to prevent floods, encouraging the processes of forestation when agriculture is not economically viable, or allocating relevant infrastructure projects). Even more so during the pandemic, villages and towns in rural Britain, France and Italy had many ways to remind large cities that they were relevant to provide vital flows of agricultural production and other important supplies, which, however, originated from locations that are typically concealed from view. Hence, forgotten.

In 2019, the Lombardia Region's legislation regarding urban and territorial regeneration that for a decade guided Milan's transformation was modified to become more inclusive. The inspiring principle was to promote the idea that enhancing

property value could be applicable and beneficial in various locations, whether major cities or small rural villages. Many municipalities were rather sceptical about the opportunities of starting complex projects of vacant lots when they had priorities that were less relevant in terms of the real estate market yet enabling more structural change. Local implementations of transnational measures, such as “Next Generation EU”, further emphasized the urgency of addressing the ongoing environmental crisis, which is already causing noticeable impacts on these regions, particularly in terms of unstable water systems and high temperatures and drought during summer months, interrupted by extreme weather events. Despite the need for systemic measures, the availability of funding after years of scarce resources for public works has compelled local governments to revive also many projects that were previously deemed unimportant due to limited resources. Strict timing for implementation and needs of transversal support (for project financing, administrative processes, and assessment) clarified the difficulties of sharing and formalizing the lexicon of ecological transition in the different nodes of the regional administrative network.

With the studio, the focus on the forms of transition in Alta Brianza, a hilly location bordering the industrial plain and the Milanese region, caused an emphasis on a comprehensive rediscovery of family farming combined with ecological networks and processes of renaturalization. These processes did not initiate as part of an overall plan but as the result of individual initiatives or networking, shedding new light on the frictions with the development directions at the origin of the so-called *città diffusa* and revealing the trans-scalar and trans-disciplinary complexity of ecological issues in urbanized territories.

An essential aspect of urban design education involves examining the different ways in which systemic ecological transitions take place within the ecologies and economies they are a part of. It also entails assessing the effects of these transitions on urban environments and comprehending the role of urban design in lessening and adjusting to these changes.

Urban design education can equip future designers with the necessary skills to tackle the difficulties presented by the combination of priorities such as the green transition, climate

change, contingencies such as the demographic shift in marginal regions, and environmental crises. This necessitates an interdisciplinary methodology that integrates expertise from diverse domains, including spatial design and planning, social sciences, and environmental sciences, in order to devise inventive and comprehensive solutions. Moreover, it is crucial for architectural and urban design education to cultivate the ability to think critically and identify issues creatively, equipping designers to negotiate the intricacies of a swiftly evolving environment where species coexistence and the demarcation between urbanized and natural regions are permanently under question.

Till (2023) argues that architecture should shift its focus towards regenerative design and prioritize the well-being of both humans and the environment. This entails the value systems within the architectural practice and architectural education, embracing more holistic approaches and integrating intangible qualities such as cultural significance, social equity, and empathy into design practices. By doing so, architecture can play a crucial role in addressing the urgent challenges posed by the climate crisis while creating meaningful spaces for future generations of practitioners.

### **Transcending the spatialized representations of growth**

This design studio targets international students who may see obvious connections between economic prospects and urban development, considering their background experience in cities and countries where massive urban growth is still the norm. The design studio's objective is to connect the divide between natural and artificial elements, promoting their incorporation while contemplating the notion of 'transition' in a particular environment. Engaging in discussions with local government bodies and local initiatives offers avenues to tackle the distinct challenges faced in these urban settings. These interactions also facilitate the examination of how local issues and concerns can be linked to wider viewpoints, especially with reference to global crises, by repositioning spatial contingencies and future prospect deliberations. Claiming that these inputs uniformly cause all students to conceptualize the ramifications of a changing political environment in the socio-technical imagery

that informs spatial practices would then be inaccurate. Yet, we believe that spatial design education should not just focus on compliance with regulatory frameworks and technical solutions to meet these difficulties, but it also emphasizes the importance of critical thinking and multidisciplinary methods.

Cultivating spatial designers who are introspective and capable of addressing the challenges of the Anthropocene makes them experts in 'transitions' beyond the binary dynamics of centre/periphery and urban/rural on which conventional methods of urban regeneration and established systems of property rent valorization rely when assessing the impacts of public choices. Conversations continue on how welfare infrastructures, such as schools, hospitals, public transport, urban parks, and public gardens, were conceived in the last century based on a shared notion of public expenditure. Therefore, despite occasional observers may have the belief that the differences of the students' deliverables in this design studio are easily observable, for instance, through the perseverance for planting trees or caring for flowerbeds, our interactions with urban ecology go beyond mere forms and visualizations.

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