

Graduation Plan

Master of Science Architecture, Urbanism & Building Sciences



Graduation Plan: All tracks

Submit your Graduation Plan to the Board of Examiners (Examencommissie-BK@tudelft.nl), Mentors and Delegate of the Board of Examiners one week before P2 at the latest.

The graduation plan consists of at least the following data/segments:

Personal information		
Name	Zihan Xu	
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Studio		
Name / Theme	Borders & Territories	
Main mentor	Marc Schoonderbeek	Architecture
Second mentor	Mauro Parravicini	Building technology
Third mentor	Stefano Milani	Architecture
Argumentation of choice of the studio	<p>The Borders and Territories studio promotes research-driven design and interdisciplinary analytical approaches, which deeply resonate with my interests. I am particularly drawn to how the studio expands the architectural discourse by blurring the boundaries between architecture and its environment. This approach not only enriches the design process but also fosters a nuanced understanding of architecture's broader context.</p> <p>The freedom to select specific research and design methodologies allows for projects that are both complex and highly creative. I find it inspiring how theoretical frameworks can intersect and inform the design process, serving as tools for experimentation and envisioning future possibilities. This thoughtful and reflective process aligns with my aspirations to explore innovative and multifaceted architectural practices.</p>	

Graduation project	
Title of the graduation project	Urban palimpsest: Emotional sustainability in urban regeneration
Goal	
Location:	Gldani, Tbilisi, Georgia
The posed problem,	The spatial organization of Georgia, like that of many other post-Soviet countries, was profoundly shaped by the power dynamics and ideology of the

communist regime. During this historical period, urban development was driven by the Soviet agenda of rapid urbanization and industrialization, resulting in a distinctive urban phenomenon: the mass social housing district, commonly referred to as the micro-district.

As the capital of Georgia, Tbilisi experienced significant population growth and an influx of migrants during this time. To accommodate the rising population, several large-scale housing districts, such as Gldani, were constructed in the beginning of 1970s. These developments prioritized efficiency over other considerations, leading to the creation of numerous low-quality and often incomplete micro-districts. Over time, this lack of quality and attention to detail gave rise to widespread informal, self-built structures—a phenomenon observed not only in Gldani but also across other micro-districts in Tbilisi and throughout post-Soviet countries. Today, these Soviet-era communities suffer from poor construction quality, aging infrastructure, and a lack of proper maintenance. Combined with fragmented and disconnected communities, these challenges underscore the urgent need for urban regeneration. However, with decades of history and deeply rooted memories embedded in these spaces, the question arises: how can planners and decision-makers implement regeneration strategies that are both sustainable and sensitive to the cultural and emotional

	significance of these urban environments?
research questions and	<p>1. What is the mechanism of the self-initiated (bottom-up) transformations of residential blocks and the appropriation of public space in Gldani?</p> <p>2. How can the concept of urban palimpsest guide regeneration strategies in Gldani's Soviet social housing districts, preserving historical and cultural layers while fostering sustainable development?</p> <p>3. How can architectural interventions integrate emotional sustainability to foster a harmonious approach to urban renewal in Gldani?</p>
design assignment in which these result.	<p>The aim of this project is to develop cohesive regeneration strategies for the renovation of Soviet-era social housing districts, offering an alternative to the common practice of complete demolition and reconstruction. Instead, it proposes a "palimpsestic" approach—one that respects and revitalizes the emotional and cultural character of the community. By examining the motivations and processes behind self-initiated construction in Gldani, the project highlights the tension between top-down urban planning and bottom-up spatial appropriation. New architectural interventions will address and reconcile this tension, drawing on the principles of Gldani's ad-hoc architecture to form the foundation of a renewed urban environment.</p> <p>A central focus is the redevelopment of a 2.5km urban axis from Gldani's early Soviet masterplan. Originally intended as a community hub that would connect surrounding housing districts, the axis lost its functionality following the</p>

	<p>collapse of the Soviet Union and subsequent unregulated privatization. By reintroducing community-oriented programs and functions along this axis, the project aspires to reconnect the neighborhood through an integrated scheme that weaves together landscape, architecture, and infrastructure. It will also adapt existing Soviet structures and reuse abandoned infrastructure, creating a multi-layered urban palimpsest reflective of Gldani's evolving social fabric.</p> <p>Ultimately, this design project seeks to ensure the emotional sustainability of the Gldani district throughout the regeneration process, providing forward-looking strategies that can be adapted for other Soviet-era districts and historic urban areas.</p>
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Process

Method description

The research and design approaches evolved from the conceptual and theoretical framework of the Borders and Territories Studio. The process began with a collective mapping exercise focusing on identity politics and ecological relationship in Tbilisi, Georgia, which offered a deeper understanding of the socio-political context. This mapping activity uncovered abstract connections among diverse entities and identity groups, revealing the city not merely as a physical domain but also as a complex assemblage of social, cultural, political, and geological layers. A concurrent theory seminar enriched our analytical perspective and helped shape individual research interests.

Following the collective mapping was on-site research in Tbilisi, Georgia. Subsequent on-site investigations in Tbilisi called attention to the post-Soviet housing districts, where a once-utopian vision for future communal living remained unfinished or disrupted by historical circumstances. In particular, bottom-up extensions in Gldani—comprising eight micro-districts connected by an ambitious central axis—emerged as a reaction against top-down Soviet-era planning. This observation prompted an in-depth study of self-construction mechanisms and the transformation of Soviet residential blocks.

Building on these insights, a theory paper was developed to align the project's focus with ongoing social, political, and environmental discussions. It addressed the limitations of conventional urban regeneration methods and advocated for an "urban

palimpsest” approach that preserves emotional sustainability while revitalizing existing environments.

The next phrase of the process was to translate the initial research into the spatial model experiment which is called “Modi Operandi”, in which the first potential of the project was reflected through three models, namely site, assemblage, and program. The models for my project mainly reflected the formal and informal construction of the space and the dangerous as well as tension in-between.

The next stages of the design will follow an iterative process that integrates research and design. First, self-constructed add-ons will be systematically recorded and analysed, with their informal structures visualized and compared through mapping. Second, these add-ons will be distilled into structural prototypes, forming an architectural vocabulary that grows out of the original cases. Third, the project site will be studied in detail to determine its social needs, thereby shaping the eventual program. Finally, these prototypes and programs will be assembled on-site, creating a comprehensive urban regeneration strategy. This approach not only addresses the 2.5 km central axis of Gldani but also scales down to micro-level interventions, offering a replicable model for post-Soviet and other historically complex cities.

By translating localized self-construction practices into design strategies, this project proposes a palimpsestic renewal method for post-Soviet housing districts. Ultimately, it aims to generate holistic solutions that respect historical layers, accommodate emerging social requirements, and extend to other historical urban contexts.

Literature and general practical references

- Cavalieri, Chiara, and Elena Cogato Lanza. "Territories in Time: Mapping Palimpsest Horizons." *Urban Planning* 5, no. 2 (June 30, 2020): 94–98.
<https://doi.org/10.17645/up.v5i2.3385>.
- Corboz, André. "The Land as Palimpsest." *Diogenes* 31, no. 121 (March 1, 1983): 12–34.
<https://doi.org/10.1177/039219218303112102>.
- Crang, Mike. "Envisioning Urban Histories: Bristol as Palimpsest, Postcards, and Snapshots." *Environment and Planning a Economy and Space* 28, no. 3 (March 1, 1996): 429–52.
<https://doi.org/10.1068/a280429>.
- Davis, Ennis. "Five Disastrous Urban Renewal Failures," *The Jaxson*
<https://www.thejaxsonmag.com/article/five-disastrous-urban-renewal-failures-page-2/>.
- Jacobs, Jane. 1961. *The Death and Life of Great American Cities*. New York: Vintage Books.
- Khirfan, Luna. "Traces on the Palimpsest: Heritage and the Urban Forms of Athens and Alexandria." *Cities* 27, no. 5 (May 21, 2010): 315–25.
<https://doi.org/10.1016/j.cities.2010.03.009>.
- Lefebvre, Henri. *The Production of Space*. Wiley-Blackwell, 1992.
- Tan, Diwen, and Nguyen, Minh Quang. "Beyond the Palimpsest: Traditions and Modernity in Urban Villages of Shenzhen, China." *Cities* 151 (May 20, 2024): 105093.
<https://doi.org/10.1016/j.cities.2024.105093>.
- Tuan, Yi-Fu. *Space and Place: The Perspective of Experience*, 1977.

Reflection

1. What is the relation between your graduation (project) topic, the studio topic (if applicable), your master track (A,U,BT,LA,MBE), and your master programme (MSc AUBS)?

The graduation project builds on the conceptual and theoretical framework of the Borders and Territories studio. In Gldani, self-constructed spatial appropriation practices act as a "border" between private and public realms, as well as between institutional decision-makers and local communities. Consistent with the B&T studio's outlook, this project broadens the scope of architecture by examining its relationship with the broader territorial and sociopolitical environment. The studio theme, *"Transient Liquidities along the New Silk Road,"* resonates with the project's aim to explore territorial transformations and to rethink the agency of architecture in shaping evolving urban contexts.

Within the Master of Architecture track at TU Delft, the project benefits from an integrated design approach that encourages critical inquiry and interdisciplinary collaboration. This approach strongly aligns with the project's ambition to consider

both physical and social dimensions of urban renewal, ensuring that design decisions are informed by, and responsive to, local realities. Finally, the project aligns with the MSc Architecture, Urbanism & Building Sciences (AUBS) program's emphasis on contextual awareness, sustainability, and innovative design solutions. By bridging theoretical insights and real-world challenges, the project aspires to contribute a nuanced perspective on urban regeneration—grounded in architectural practice yet attuned to the cultural and social fabric of Gldani.

2. What is the relevance of your graduation work in the larger social, professional and scientific framework.

Urban regeneration remains a critical issue in contemporary architectural discourse, particularly as urban populations continue to rise—58% of people already live in cities, and this figure is projected to reach nearly 70% by 2050 (United Nations, 2018). Alongside this rapid urban growth, many regeneration efforts are driven by market forces, often resulting in homogenized developments that neglect historical, cultural, and social dimensions. Past planning policies—focused largely on efficiency—have left a legacy of imbalanced urban environments in dire need of revitalization.

In the early phases of rapid urbanization, efficiency often overshadowed other key considerations, such as accessibility, public infrastructure, social well-being, and construction quality. This oversight contributed to disorganized and imbalanced urban planning systems. Today, these legacies urgently require transformation to address both physical and social challenges. This imperative raises a central question: how can urban regeneration simultaneously preserve historical heritage, strengthen social identity, and meet contemporary needs? Achieving this goal calls for a nuanced approach—one that integrates historical narratives, community engagement, and sustainable design principles—to create vibrant, inclusive, and resilient urban environments.

This graduation project tackles the social dimension by offering a regeneration model that respects existing communities and cultural identities—particularly in post-Soviet housing districts where collective memory and grassroots social practices remain strong. By recognizing and building upon local traditions and informal spatial appropriations, the proposal aims to maintain a meaningful connection between residents and their built environment. Fostering emotional sustainability and social cohesion in the design process can contribute to healthier, more inclusive neighborhoods, thereby elevating the overall quality of urban life.

From a professional standpoint, the project provides an alternative to standard demolition-and-rebuild approaches. In many cities, architects and urban planners still rely on top-down, market-driven strategies that frequently overlook the nuanced ways people inhabit and adapt to their surroundings. By studying and incorporating self-constructed elements and bottom-up interventions, the project addresses emerging professional imperatives: designing with, rather than for, communities and acknowledging the temporal complexity—or palimpsest—of urban fabrics. This

approach can guide future architectural and planning practices towards more adaptive, community-centered solutions.

The project contributes to ongoing research into sustainable urban regeneration, expanding theoretical discourse by examining how concepts like palimpsest and emotional sustainability can shape design strategies. Grounded in empirical fieldwork, historical research, and community observation, this methodology offers new insights into how socio-cultural dynamics intersect with the physical environment. By integrating these insights into concrete design interventions, the project serves as a testbed for implementing theory in practice, thereby advancing academic knowledge on urban transformation processes.

In essence, the graduation project proposes an urban regeneration strategy that refuses to treat cities as “tabula rasa.” Instead, it regards historical and cultural layers as integral threads that should inform contemporary urban design. The resulting framework aims to foster vibrant, resilient environments where social identity, local heritage, and modern needs converge—a vision that resonates with pressing global debates in architecture, urban planning, and related disciplines.