

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	Nicole Filippoli
Student number	5632633

Studio		
Name / Theme	Flowscapes - Circular Water Stories Lab	
Main mentor	Inge Bobbink	Landscape Architecture
Second mentor	Marco Lub	Urbanism
Argumentation of choice of the studio	Understanding the direct and collateral relationships between the water and the landscape and their influence in the traditional social sphere.	

Graduation project	
Title of the graduation project	The Navigli System as a landscape connection and social link: The emerging urban quality introduced by the restoring of the historical canal system in and around Milan
Subtitle	

Goal	
Location:	Milan, Italy
The posed problem,	<p>Water in Milan has always been a founding element for civilization and urban, working, cultural and artistic development as this geographical area is mainly characterized by the presence of rivers, water springs and artificial canals known as Navigli. Therefore, the covering of the Navigli system in 1929 in lieu of large contemporary infrastructures led to the loss of sociability at both the urban and neighbourhood scale.</p> <p>This change has also led to the loss of a commercial route that could connect the Alpine area with the Adriatic Coast, and that gave the city the title of Italy's third largest harbor. Thus, covering the Navigli coincides with the deprivation of most of the traditional features that</p>

	<p>added value to urban quality and functioned as a place of transit and flow in a larger and more complex context. In addition to the Navigli phenomenon, modernization has led to covering the major waterways that run through the city. This choice, together with high levels of cementing and river pollution, has resulted in an urban fabric that is discontinuous from that of the water related Roman matrix and increasingly affected by the urgencies of climate change.</p> <p>Moreover, the contemporary role of the remaining Navigli is often undervalued and reduced to a mere picturesque scenery without coherency and continuity with the past and the present needs.</p>
<p>research questions and</p>	<p>In which way the Navigli re-establishment can contribute to the enhancement of the inhabitants' sense of community in the public space and be a strong water link in the north of Italy?</p> <p>[Sub Questions]</p> <p>How does a water element interrelate the urban and the multi-regional scale by creating a landscape continuum?</p> <p>Which water-based activities can be restored or introduced to raise awareness and enhance the potentialities of Milan as a water city?</p> <p>In which way does the blue system integrate ecological features in the urban space by raising awareness on the problematic modern development and offering a more genuine vision about nature and culture interrelationship?</p>
<p>design assignment in which these result.</p>	<p>This project aims to restore the Navigli system as a replacement for some of the modern infrastructures to rehabilitate the water city identity of</p>

Milan through the branched system - thus widespread- of canals. The new Navigli system should increase urban quality by emphasizing sociability on a local scale. Attention will turn to participatory activities capable of attracting citizens to water-related spaces to create a sense of community and belonging to the place. Through the reinterpretation of the connection between past Milanese society and water, different traditional rituals can be reinvented, or new ones introduced by virtue of a community that has profoundly changed in needs and interests. It is essential to create a program tailored to the city, dynamic and run by groups already active in the urban environment. For instance, schools, social projects and religious communities could integrate an increasingly multiethnic society in a broad range of activities.

At the multi-regional scale, Navigli take part in a far more complex system capable of connecting broad distances and completely different landscapes and taking on commercial, artistic, and social significance. In a larger context, Milan would be part of a whole as a river harbour, but it would also be a nucleus as a city renewed in its character. The concept of the historic trade route would be reinterpreted in a modern way not only as a viable tourist route but also as a way to develop a water trade route by sustainable means, slow and concerned with the exchange of goods with small local businesses along the blue route.

The project also focuses on a new balance between nature and culture through an unconventional urban aesthetic to interact more healthily with the environment. The ecological network results as a system interrupted by the infrastructure: roads define the shape of often marginalized green areas, so different ecosystems are

fragmented. Thus, the linear element of waterways lends itself as a possible corridor that connects different ecological realities in the urban context. Moreover, not dealing with a single straight line but a branched system with intersections lends itself to acting diffusely. In addition, the impermeamentation of the city has led to various livability inconveniences such as floods and the strong presence of pollutants. Due to climate change, these phenomena are set to worsen; it is crucial to focus on the ecological sphere because it is the most genuine and effective way to reclaim the land. By taking advantage of draining and impermeable soils and the natural presence of water in the different levels of the lithosphere, the Navigli are no longer a mere anthropic product but a suture system between nature and culture. Moreover, several ecological events already occur spontaneously within these waterways: large-scale connectivity has led species from rivers and lakes to converge in the canals to escape predators. This, together with the improved water quality and the absence of other threats in a poorly naturalized urban context, has meant that the city has spontaneously become a "safe harbor". Flora and fauna often deterred in their development by more invasive local and alien species are now free to spread.

Process

Method description

My method refers to a direct visual approach due to the use of photos and schematic representations such as drawings and diagrams. At different stages of the research, the outcomes of a specific sub-question become part of the method for approaching the next sub-question. Redrawing takes on an analytical role in the strict sense, as it allows me to divide the landscape "piece by piece", reassemble, and interpret in a synthetic way only the technical aspects and fundamental links. The matrix condensed into icons and diagrams is equally useful to summarise the interrelated concepts and (thanks to the distribution in rows and columns) it allows continuous thematic, chronological and prioritized re-organizations.

Research Question	Sub-Questions	Methods	Expected outcome
In which way the Navigli re-establishment can contribute to the enhancement of the inhabitants' sense of community in the public space and be a strong water link in the north of Italy?	How does a water element interrelate the urban and the multi-regional scale by creating a landscape continuum?	<p><i>(Objective expression of the landscape)</i></p> <ul style="list-style-type: none"> - Analysis of the traditional water system: compositional form, transformation, technological innovation, maximum development, historical link with the city features, interrelationship with existing hydrography. - Comparison between the past and the modern urban fabric: potentialities, current and past urgencies, infrastructure hegemony. - Analysis of the larger trading system: the Navigli system as a fragment of a multiregional blue infrastructure, Milan as a harbour, landscape transition from the Alps to the Venetian Lagoon, landmarks. - Collecting formal data from surveys, interviews, and referendums. <p><i>(Subjective expression of the landscape)</i></p> <ul style="list-style-type: none"> - Living and studying experience in Milan. - First investigations through the site visit. - Research through paintings, literature, and photos depicting both the local and larger scale. - Interviews about today's perception of the Navigli system. 	<ul style="list-style-type: none"> - maps depicting the complex relationship between built environment and water - express the Navigli gradual process - representing the relationship between the Navigli system and the arrangement of modern infrastructures through QGis mapping - understanding via diagrams the correlation man infrastructure and man water -matrix representing urban issues related to the modern development (first input for the problem statement) - sketches of the water landscape elements and waterworks - technical sections of the soil and the underground water layers - technical sections of water management devices - diagrams on water circularity in nature (intricate complex system) and culture (fruitful trading infrastructure) - representing an atmosphere through colouring images - expressing a collective imagery through interviews
	Which water-based activities can be restored or introduced to raise awareness and enhance the potentialities of the Navigli system?	<p><i>(Urban fabric)</i></p> <ul style="list-style-type: none"> - Analysis on the past stories and habits related to water. - Analysis of the waterworks. - Research on the reasons of the neglect of the Navigli. - List of the current urgencies connected to the modern development. - Analysis of today's public spaces in Milan. - Precedents: designs based on the daylighting of covered canals, the reinvention of semantics of past features, the recovery of water systems. 	<ul style="list-style-type: none"> - depicting though narrative, diagrams, and photos the attachment to water and its central role for the correct functioning of the waterworks - portray the modern vision and argumentations for the neglect and disappearing of the Navigli system - mapping the green spaces in location and quality and first intuition of a new public system different in composition

		<p>(Society)</p> <ul style="list-style-type: none"> - Understanding the needs and habits of the modern society. - Research of the different forms of participation through precedents both in the Italian context and abroad ((e.g. Dora Park, Duisburg Landscape Park). - Identify participatory communities both in the urban and multiregional scale. - Analysis of the manifesto of the communities and groups involved in city programme. 	<ul style="list-style-type: none"> - matrix of fundamentals based on the precedents triad of categories - program of functions based on participation - showing through a masterplan the areas of intervention of the communities - mapping and define a multiregional circular system based on water mobility, water production and social interaction - sketching for a reinterpretation of the past waterworks - defining which community takes part to the program to enhance the site's multiethnicity, dynamics, history and natural environment
	In which way does the blue system integrate ecological features in the urban space by raising awareness and offering a more genuine vision about nature and culture interrelationship?	<ul style="list-style-type: none"> - Analysis on the existing green elements in Milan based on the infrastructure's composition. - Analysis on the parks and natural reserves along the large trading system (potential precedents): ecosystems, flora and fauna species, distribution in space, enhancement of view lines. - Interpretation of the programme of communities involved in planting trees in the province of Milan (e.g. Forestami.org): main tasks, organization, inhabitants participation. - Research of the properties of the underground water: differences in aquifers according to their depths, interaction with fresh and sulphurous water and benefits in cultivation - Literature review, student-led lectures on water pollution, phyto-depuration systems, and underground water. - Group presentation and debate on Part V of Theory in Landscape Architecture, by S. Swaffield 	<ul style="list-style-type: none"> - understanding via diagrams the inefficient functioning of the green areas in the modern urban fabric - matrix with landscapes features that can be introduced in urban design to give a scale continuum - involvement of local communities through interviews as an input for inverting the top-down trend - impressions and sketches of the landscape transition - technical drawings on phyto-depuration - expression of the site's intangible ecosystem through drawings and collages - personal critique on student-led lectures

Literature and general practical reference

Books

- Augé, M. (2009). *Non-Places: An Introduction to Supermodernity*
- Baselli, G. (1939). *Il collegamento per via acqua di Milano*
- Boatti, A. & Prusicki, M. (2018). *I nuovi navigli milanesi. Storia per il futuro*, 23-34, 63-70, 83-94
- Clement, G. (2020) *Gardens, Landscape, and Nature's Genius*
- Fantoni, G. (1990) *L'acqua a Milano. Uso e gestione del basso medioevo*
- Lanza, A., Sommaré, M. (1996) *Milano ed i suoi navigli*
- Monti, A. (1945) *Nostalgia di Milano*
- Romussi, C. (1913), *Milano che sfugge*
- Sala, G. (2014), *Milano sull'acqua. Ieri, oggi, domani*
- Valera, P. (1999) *Milano sconosciuta*

Articles

- Burton P. (2003). *Community Involvement in Neighbourhood Regeneration: Stairway to Heaven or Road to Nowhere?*, paper n. 13
- Clary, E.G. (2002). *Community Involvement: Opportunities and Challenges in Socializing Adults to Participate in Society*, in *Journal of Social Issue*, vol 3, 581-592

Websites

- Bianchino, F. (2017) *Navigli Reloading* <https://naviglireloading.eu/>
- Nicolodi F., Scioscia T. (2012) *La risorsa acqua. Portale di informazione sulle acque sotterranee e non solo* <https://www.risorsa-acqua.it/>
- Rosti, G. (2013) *Milano Città d'acque* <https://www.milanocittadacque.it>
- (2015) *Geoportale Milano* <https://geoportale.comune.milano.it/sit/>
- (2015) *Geoportale Regione Lombardia.* <https://www.geoportale.regione.lombardia.it/>
- (2015) *Riaprire i Navigli. I Navigli di Milano dal 1179 ai giorni nostri* <https://www.riaprireinavigli.it/navigli-milano-1179.html>
- (2018) *Comune di Milano. Il Naviglio e la sua storia* <https://progettonavigli.comune.milano.it/milano-e-i-suoi-navigli/il-naviglio-e-la-sua-storia/>

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)?

Daylighting the Navigli system seems to take issue with both the vision of Flowscapes, where infrastructure shapes the landscape and vice versa, and the theme of water in Circular Water Stories interpreted as a crucial element in the history of a specific site. In fact, in the past, water has defined a complex system on a large scale characterized by the trade of goods, the interaction between people in the social sphere, the artistic connection with the construction of the Duomo, and technological innovation through the design of navigation locks, dams, and docks. The 'flow' is not meant to be a purely pragmatic circulation of goods but also in terms of relationality. At the local scale, the Naviglio develops a complex web of domestic, playful and celebratory stories oriented on the uses and celebration of water key to a city.

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

With the daylighting of the Navigli, a historic trading route that connects Switzerland to the Adriatic can be restored by enhancing and linking multiple cities

in northern Italy. Thus, Milan would once again become an emerging river harbor. Furthermore, by taking the technology of the past as an example and reworking it in a modern key, water management in the city of Milan can be investigated and navigability developed with a specific and resilient approach. An alternative symbiosis between nature and culture would be experienced in the city by developing the ecological aspect and introducing green elements by detaching from the conventional urban composition. This vision could coincide with a green city model capable of facing with the climate crisis and resulting complications in the urban environment. A different anthropological model could develop on the local scale together with a greater civic sense led by traditional and inclusive identities and values.