

# 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](mailto: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	Linda Kronmüller
Student number	4939697

Studio		
Name / Theme	Positions in Practice	
Main mentor	Jorge Mejía Hernández Aleksandar Staničić	Architecture Research
Second mentor	Pierre Jennen	Building Technology
Argumentation of choice of the studio	My interest to learn from other disciplines and to transform such knowledge into architecture.	

Graduation project	
Title of the graduation project	Apiarium. A garden for bees and humans in the fortress of Belgrade

Goal	
Location:	Belgrade Zoo: Mali Kalemegdan 8, Belgrade 11000, Serbia.
The posed problem,	<p>Belgrade is a city in the Balkan peninsula and has hosted different Empires through the centuries which formed a vivid cultural heritage. When thinking about a possible future identity, the city must cope with its complex history, present memories alive in the city and a range of different narratives that interweave with selfsame.</p> <p>Nevertheless, looking for a physical presence of Belgrade's vivid past, the Kalemegdan fortress, on the confluence of the river Sava and Danube, embodies such agglomeration. It was for centuries that Belgrade's population was concentrated only within the fortress walls. Thus, until most recent times, the fortress's history reflects on the history of Belgrade itself. Located in Belgrade's municipality of <i>Stari Grad</i>, it is the oldest section in the urban tissue and symbolic its core. Nowadays the fortress enfolds several parts with new programs. However, next to the old citadel with the Upper- and Lower- Town, further use such as the <i>Kalemegdan park</i>, public sports facilities and Belgrade Zoo (<i>Garden of Good Hope</i>) evolved.</p> <p>Besides these city-specific attributes, Belgrade's artificial environment has- as for every big city- grown to an enormous extent. Therefore, the boundary between natural and artificial,</p>

	<p>these contradictions, has grown ever-expanding. However, as every large city witnesses climate change and its aftermaths, they can no longer afford to antagonise and keep nature out.</p> <p>Zoos have always reflected the current relation of humans with flora and fauna. In doing so, the Belgrade Zoo needs a rethinking of its initial function. Partly situated in the fortress's heritage, it can become a prime example in the city for a multi-species encounter: At this point, one between humans and bees.</p>
<p>Research questions and</p>	<p>The following research questions defined our group-research were (Having in mind the goals offered by the studio- <i>meaningfulness, appropriation, inclusion</i>):</p> <ul style="list-style-type: none"> <li>- What way affect the New Cemetery, a walled presence in the urban fabric, and Belgrade each other when reconsidering their relation as a given dichotomy of 'the living' (city) and 'the world of the dead' (cemetery)?</li> <li>- What are the material conditions that allow a collective frame for the performance of individual actions of care (gestures) and visitors' interaction with the world of the dead?</li> <li>- How do memories and narratives participate in the process of forming a city's identity? Is there a tangible presence of memories and narratives about the city, represented on a small scale?</li> </ul> <p>During our precedent- study (Kalemegdan fortress, precisely the moats), the research questions were:</p> <ul style="list-style-type: none"> <li>- Considering the moats' ongoing transformation process from their initial function as a defence mechanism to public space: What relevance have the wall and the moat for the fortress nowadays?</li> <li>- When reconsidering the commonly used architectural language and tools: What kind of materials and conditions are needed to initiate a sensitive typological transformation of the historic moats?</li> <li>- When studying the new program (here, basketball): What are the formal and informal affordances to create a public space of encounter?</li> <li>- Which new typological function have single elements since the reprogramming? What kind of materialised patterns are visible, and how do they adapt to the historical context?</li> </ul> <p>For the design of the apiary in the moats of Belgrade zoo, precisely a garden for bees and humans, the following questions arise:</p> <ul style="list-style-type: none"> <li>- Over the centuries the moats faced an ongoing transformation from a space of defence to encounter: Which architectural and non-architectural elements in the fortress and closeby nurture nature are significant for the design?</li> </ul>

	<ul style="list-style-type: none"> <li>- Reading the fortress as an embodied environment of the city, it reflects selfsame through the ages: Which forecasts can we assume from changes in the fortress for Belgrade's future?</li> <li>- What kind of new image of architecture evolves when we expand the canon of scales in architecture? Does such an extension of the architectural canon also approach a multi-species encounter, where the visitor (humans) is neither superior nor inferior to other organisms or life forms (bees)?</li> </ul>
<p>Design assignment in which these result.</p>	<p>The new pollinator area in Belgrade Zoo, specifically a bee-apiary, aims to introduce new nuances to the visitors: To shift the human-centred perspective by highlighting overlooked species from the earth and a yet neglected scale a more comprehensible way. Therefore, the design enhances the spatial intersections between humans and bees- beyond synanthropic conditions. Furthermore, the design proposal aims to prove possible, small-scale scenarios for multi-species design in the city altogether. Thus, to stimulate envisioning possible future scenarios for Belgrade and fulfil the upcoming agenda of an inclusive, sustainable environment.</p>
<p><b>Process</b></p>	
<p><b>Method description</b></p>	
<p>The main methods of research used during our group work aimed to depict the narratives and memories present in the city:</p> <ul style="list-style-type: none"> <li>- Conceptual analysis: Semiology, praxeology</li> <li>- Contextural analysis: Ontology, phenomenology, typology</li> <li>- Disciplinary analysis: Material ecology, typology</li> </ul> <p>The research methods of the precedent (disciplinary) analysis were:</p> <ul style="list-style-type: none"> <li>- Typology, semiology, material culture, phenomenology</li> </ul> <p>The design methods for the project will be the following:</p> <ul style="list-style-type: none"> <li>- The project-specific research aims to address the affordances for spaces of human-animal encounter (praxeology).</li> <li>- Besides, it studies both groups' field experience (ecology) when they come into contact (phenomenology).</li> <li>- Another topic is the transversion and emergence of different scales and hence, to develop a new typological "vocabulary" for such trans-human architecture (material culture, morphology).</li> </ul>	
<p><b>Literature and general practical preference</b></p>	
<ul style="list-style-type: none"> <li>- Antonelli, P./ Oxman, N./ Fletcher, J. D./ Ito, J. / Davis, H. <i>Neri Oxman: Mediated Matter</i>. New York: Museum of Modern Art Press, 2020.</li> </ul>	

- Descola, P., & Sahlins, M. (2014). *Beyond Nature and Culture*. Chicago: University of Chicago Press, 2014.
- Gallese, V., Pallasmaa, J., Mallgrave, H., & Robinson, S. (2015). *Architecture and Empathy*. Helsinki: TheTapyo Wirkkala-Rut Bryk Foundation, 2015.
- Ishigami, Junya. *Another Scale of Architecture*. Kyoto: Seigensha Art Publishing, 2010.
- Pérez-Gómez, Alberto. *Built upon Love: Architectural Longing after Ethics and Aesthetics*. Cambridge, MA: The MIT Press, 2008.
- Kulić, Vladimir, Timothy Parker and Monica Penick. *Sanctioning Modernism: Architecture and the Making of Postwar Identities*. Texas: University of Texas Press, 2014.
- Malgrave, Francis H., Robinson, Michael. *Gottfried Semper: Style in the Technical and Tectonic Arts; Or, Practical Aesthetics*. Los Angeles: Getty Trust Publications, 2006.
- Von Uexküll, Jakob. *A stroll through the worlds of animals and men: A picture book of invisible worlds*. Semiotica, 89(4). Berlin: De Gruyter Mouton, 1969.

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

1. The master programme (architecture track) gains me a deeper understanding and teaches me many extraordinary examples of how architecture can contribute new approaches beyond the idea of the "architect as a technical artist". Indeed, we were encouraged to find precise and practical solutions for an abstract and wide range of topics.

2. Architecture reacts to ongoing changes and needs in society. Indeed, it can bring different groups together and create spaces of encounter, especially for the unrepresented and overseen ones. One aim of the Graduation Studio in the Chair of Methods of Analysis and imagination is present in its title indeed: *Transdisciplinary Encounters. Towards Inclusive Built Environments in Belgrade*. Architecture reacts to ongoing changes and needs in society.

As mentioned earlier, the project proposal finds itself situated in a meaningful area for Belgrade's identity-making. There is the bees' unknown scale- and which is not related to Belgrade in the first hand. Nevertheless, to make such design of encounter particular to the given context; Belgrade.

Summing up, I hope to develop an architectonic vocabulary to facilitate multi-species encounter. In doing so, I aim to make use of it in my future professional career. Likewise, the project contributes to the ongoing discussion about the complex interdependencies between nature for the city and *vice versa*: As architects, we can build such a scientific framework. As architect Junya Ishigami formulated it accurately when saying in the introduction of his book, *Another scale of architecture*: "To see architecture no longer as a shelter (only), but as the embodied environment itself."

(Source: cf. Literature reference)