

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	Alice, Chau Ka Yee
Student number	5327814

Studio		
Name / Theme	Urban Architecture/ Black Hill City	
Main mentor	Elsbeth Ronner	Architectural Design Tutor
Second mentor	Jos Lafeber	Building Technology Tutor
Third mentor	Leeke Reinders	Research Tutor
Argumentation of choice of the studio	I am interested in a site-related architectural design studio. It is convinced that architectural design should be able to respond and articulate the existing urban conditions. As the tutors mentioned, the site contexts are gifts to your project, and we should embrace the constraints since it adds complexities to the project.	

Graduation project	
Title of the graduation project	Contextualizing Production: Bringing people everyday activities to urban factory
Goal	
Location:	Rue de la Lèche, Liège, Belgium (On and under the bridge Pony du Bouhay)
The posed problem,	Liège is considered as a post-industrial city due to its historical past. It has been the most important place for mining and steel industry in around 1870 and a significant economic center in Belgium. However, due to globalization after the second world war, Liège lost its leading position. Many industries left the city or went bankrupt, left behind abandoned factories in the city. Deindustrialization has seen as a common phenomenon in post-industrial cities. In Liège, some of the factories are demolished or abandoned, while the remnants face challenges to thrive in the city. In the past, production was

	<p>expelled to the outskirts with cheaper land and labor, while consumption activities overwhelm the urban centers. Workers relocated to live closer to the factories, has made them disconnected with the growing urban center. At the same time, monoculture factory towns were developed to support labor housing. The segregation between production and the city, has made the industry detached from the urban condition and the everyday life.</p> <p>With the rapid growth of technology and automation as a major pervasive problem of human labor force, the mode of production has been changing over the past decades. What exactly do we mean when we speak of "industry"? The term industry derives from the Latin <i>industria</i>, meaning <i>diligence</i> and <i>hard work</i>, related to human's activity. Until the late nineteenth Century when industry referred merely to the means of production – the machines. The shifting definition results in a disappearing human scale in the mind-numbing production process.</p> <p>It strikes attention that these kinds of industrial buildings are excessively designed and built for machines instead of human. People were adjusted to fit to machines rather than the other way round. The unequal spatial division for human and non-human actor in the past and current factories has questioned the scale, the mode and the means of production.</p>
<p>research questions and</p>	<p>My research topic focuses on MAN & MACHINE, in terms of the human-machine interaction and its spatial impacts in both building and the city's scale in Droixhe.</p> <p>General Questions: What is the role of humans and the machines in an industrial setting from the past to present? Are we becoming more human by inventing the machines, or dehumanized through our own creation?</p> <p>Main Research Questions: How, and through what means, will the machines (tools for production) shape the form of urban fabric and people's living habits of today?</p> <ol style="list-style-type: none"> I. What are the machines in Droixhe today? II. How does the industry appear in urban tissue? III. By considering people's living habits as movements, how do the residents and the machines interact in the urban setting?

design assignment in which these result.

Although industrial activities have been pushed away in many post-industrial cities, it might not be the case in Bressoux and Droixhe. There are some Unidentifiable Possibly Industrial Complexes (U.P.I.C.) hidden behind the residential building blocks. These hidden structures, interweaved into the current urban fabric, are seen as new opportunities to bring industry and production back to the city.

"A good city has industry."

This design project argues that industry should be part of the city. It aims to develop a new factory type with the involvement of human scale and everyday life in the current urban setting to eliminate segregation between human and machines, and thus suggests a mixed-use program with a focus of work and production. Production will work as an urban catalyst to boost the city's economy in making and consuming, while blending into the city with the involvement of daily activities such as commute, buying and living.

How can we still "make" and "produce" in the city? What type of built environment is needed for industries to thrive in the city? As such, the project hopes to search for a site which faces with multiple conditions for a mixed-use program and being able to bring the production visible to the city.

Situated next to the current train station, the site remains empty in a well-circulated area next to the railway and under the bridge. This project will help to connect the old town's everyday living in Droixhe with the new type of industrial working practices in a mixed-use building. To respond to the context of the larger scale industrial structures nearby, the design gathers different uses into one elongated form, which stands perpendicular to an existing bridge to redirect people's circulation from the bridge level to the ground.

It provides the practical workers not only a place to apply their valuable craftsmanship in furniture repairs and making, but also a chance to involve in the design and management process by introducing theoretical professionals in the office. The combination of theoretical and practical works increases diversity of the job types which provide employment opportunities to the city.

	<p>Retails and shops are included to articulate people who are arriving or departing from the train station.</p> <p>While new development in the upcoming tram station (opposite to the chosen site) may see as a generic solution to make a new metropolis in Droixhe, this proposal provides as an alternate gateway to the city with connection to its industrial past.</p>
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[This should be formulated in such a way that the graduation project can answer these questions.
The definition of the problem has to be significant to a clearly defined area of research and design.]

Process

Method description

[A description of the methods and techniques of research and design, which are going to be utilized.]

Research Methods:

To provide background information on the notion of man-machine, this research starts with an overview on man-machine's changing relationships and the spatial impacts in the format of an exposed timeline. This part looks at man and machines' interactions in spaces as a new conceptual framework, to reconnect what has been separated: people, places and production.

- Literature review on the theme of man and machine
- Timeline on the man-machine's changing relationships
- Catalogue with the current machine objects
- People's everyday movements in relation to production and consumption
- Morphology studies on the existing industries in urban fabric
- Size and scale comparison between machines, human and the space

Analysis for Design:

- Site analysis on the existing program, access, circulation and conditions.
- Workflow in the existing manufacturing industries on site
- Case studies from other mixed-use factory in urban setting (e.g., St. Jacobs)

These studies will map the existing industrial typologies in Liège and their influence on socio-economic urban dynamics and city residents' daily life, which are helpful for the future design assignment.

Literature and general practical preference

Industrial Architecture/ Factories Type:

- Aitchison, M. (2016). *The Architecture of Industry: Changing Paradigms in Industrial Building and Planning*. Routledge.
- Hatuka, T., & Ben-Joseph, E. (2022). *New Industrial Urbanism: Designing Places for Production*. Taylor & Francis.
- Xian, S., & Chen, H. (2015). Revitalisation of industrial buildings in Hong Kong: New measures, new constraints?. *Habitat International*, 47, 298-306.
- Rappaport, N. (2020). *Vertical Urban Factory* (2nd ed.). Actar.

Man and Machine:

- Banham, R. (1960). *Theory and design in the first machine age*. MIT press.
- Benjamin, W. (1935). *The Work of Art in the Age of Mechanical Reproduction*, 1936.
- Charles Chaplin. (1936). *Modern Times – Factory Scene*.
- De La Mettrie, J. O. (1748). *L'homme machine*. Luzac.
- Fischbeck, H. (1994). *Man, machine and meaning: architecture challenging technology*.
- Le Corbusier. (1927). *Vers une architecture*. Crès.
- Nardo, M., Forino, D., & Murino, T. (2020). The evolution of man– machine interaction: The role of human in Industry 4.0 paradigm. *Production & manufacturing research*, 8(1), 20-34.
- Vartanian, A. (1953). *La mettrie's l'homme machine*.

Mixed-use:

- Arpa, J., Mozas, J., & Per, A. F. (2020). *50 Hybrid Buildings: catalogue on the art of mixing uses*.

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 theme of the Urban Architecture studio requires us to consider the built environment when having the architectural design. During the research, it is observed that the previous industrial buildings are mostly detached from context, place and community, located at the outskirts of the city. My graduation project is designing a place for both the human and machines in the city, which requires us to reconsider our role with the non-human actor in the production process within the city's-built environment.

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

In every society they are experiencing or experienced a different degree of transformation, specifically in context of our site Liege, they are gradually transforming towards a post-industrial city. We question what the next economy will be when the heavy manufacturing factories are forced to close due to the economic decline, with the rapidly changing technological innovation in the city. The shifting nature of production also has direct implications on how the citizens work, consume, commute and live together. Today's discourse will focus on the importance of manufacturing for economies as well as for the resilience of society. There is no direct answer until we test and try. Architecture, incorporate with the residents and different stake holders, is seen as an agency to help facilitating the city's development. Creating a different work environment and building type derived from the traditional factory in this project, will develop a deeper knowledge in manufacturing factors in post-industrial cities.