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	**Tjalling Schippers**
Student number	4465377

Studio		
Name / Theme	**Public Building – Graduation Studio** **Public Condenser Berlin, Germany**	
Main mentor	Henk Bultstra	Architecture
Second mentor	Florian Eckardt	Technical Building Design
Third mentor	Stefano Corbo	Theory & Delineation
Argumentation of choice of the studio	The importance of public buildings lies in the way they shape our society. Without them a whole part of societal interaction cannot take place. By creating meeting places, people can come together, express themselves and find common identities and similarities. Through sharing our interests and working together on things we like, boundaries can be broken down. To facilitate this environment, public buildings are necessary. It is important for every designer to understand how their design impacts societal life. Architects especially bear this responsibility, since the permanent character of their designs impacts cities and neighbourhoods for a long time. With the right functions and a resilient design, a public building facilitates cross-communal interactions. The Public Building studio brings the opportunity to specialise in this interaction and work on solutions for topical issues.	

Graduation project	
Title of the graduation project	**Turning Public Green Outside In** Designing an urban green condenser for Andreasviertel, Friedrichshain, Berlin
Goal	
Location	Andreasviertel, Friedrichshain, Berlin
Problem	Contemporary cities are often characterized by lack of greenspaces or their inaccessibility. One of the causes to this shortcoming is privatization. Common green areas around dwellings are maintained by housing companies and home

	owner associations. They put up fences to lower the maintenance costs or sometimes even sell these grounds to private parties so these spaces will get filled in by new buildings. This motion limits accessibility for all citizens. The problem with greenspace in the neighbourhood of Andreasviertel in Berlin particularly, can be subdivided in three problems. The first is the general problem of privatization. Too much designed public green from the DDR Period has been privatized since the fall of the Berlin wall. This results in little interaction between people and the public green and between people in the public space. This leaves too few opportunities for cross-communal interaction in Andreasviertel. The second problem is that in Andreasviertel there is only 4,1m^2 greenspace per person, where it should be 9m^2. New insights posed by the World Health Organisation (WHO) state that more public greenspaces are needed close to living areas. To increase the availability to green, there is not enough public space available to make it 9m^2 per person. The third problem is the climate in Berlin. This causes problems with the availability to public green and the usability of community gardens. In winter the usage of community gardens is very low, which makes it hard to create opportunities for cross communal interaction in those places in that time of year.
Research Questions	The lack of greenspace in the neighbourhood and the privatization of green areas bring up the need for a green intervention in Andreasviertel. Because new standards are out of reach, the new greenspace must be condensed. This brings opportunities for increasing public interaction opportunities all year through. The challenge is to facilitate these green meeting places in the winter season, since the climate does not allow outdoor activities in this time of year. The main question these problems lead to is: 'Which design principles can be created for designing a public building with an integrated community garden for the commons in Andreasviertel in Berlin?' To answer this question, it can be subdivided in different subjects and sub-questions. Most of the design principles needed are focused on indoor greenspaces. This leads to the subquestion 'how can architecture embed indoor greenspaces in its interiors?'. This question will be answered through the drawing up of a catalogue of indoor green typologies. By making this catalogue, the subquestion 'what typologies need to be

	explored to accommodate greenery?' is answered. With this catalogue different greenspaces can be linked to the building functions. The typologies of the different building functions are necessary to make spatial configurations and floorplans/sections, as well. When adding different types of greenspace in a building, the question 'how can different types of greenspace coexist in the same building?' arises. To answer this, parameters need to be added to the different combinations of green types and functions. The parameters will have to include technical and spatial solutions for including indoor green. This leads to the subquestion 'what technical and spatial solutions need to be implemented to achieve a green condenser?'. The found parameters will rule out any contradictions in the configuration of (green)spaces.
Design Assignment	The design assignment for the Public Building Graduation studio is to design a Public Condenser. The goal of this specific project is to enhance social and health qualities by adding public indoor greenspace in Andreasviertel. The building will host an indoor community garden and other functions related to gardening. Because public green will be condensed in this specific design, it will be an Urban Green Condenser. The outside image of the building will reflect the green indoors and represents a circular way of building. This indoor community garden is going to be a prototype for other green condensers in Berlin. To create a resilient design, an interchangeable system will be designed to attach different gardening related functions to the neighbourhood garden. As a result, the building will not only be literally, but also figuratively and technically green. A catalogue of indoor green typologies will be made to help designing this Urban Green Condenser. For the design, each function will be combined with an indoor green type from the catalogue. The building program will contain functions that are related to urban gardening. For example, there will be a library with information about gardening, communal kitchens that use fresh picked vegetables and herbs, a flexible office space for green start-ups and workshop spaces to learn skills for gardening and arts and crafts. These functions and the combination with a great variety of indoor green, will give the users a green experience that compensates and exceeds the lack of green in the city.

Process

Method description

The general method of this graduation project is 'research by design'. The research steps alternate with the design iterations. These research steps will provide design principles to support this iterative process. To grasp the scale of the problems around greenspace in Berlin, a quantitative research will be done. By the use of geodata and maps, the lack of greenspace in Andreasviertel, Berlin, is determined. This provides an area in square metres that needs to be condensed.

Specifically on the subject of indoor gardening, different indoor greenspaces will be analysed. This results in a catalogue of typologies of indoor urban greenspaces and their relation to other gardening related functions. The design of the building will be a case study/experiment for the combination of a community garden and indoor greenspaces.

References/case studies

-Big green condenser: Central Park, Manhattan, New York City

The Editors of Encyclopaedia Britannica. (1999, May 27). *Central Park | Description, History, Attractions, & Facts*. Encyclopedia Britannica. https://www.britannica.com/place/Central-Park-New-York-City

-Medium green condenser: Floriade, Almere

Floriade Expo 2022 is officieel gesloten. (n.d.). https://floriade.com/

-Small green condenser: Hortus Botanicus, Delft

Kruit, E. van der. (2022, August 30). *TU Delft Hortus Botanicus.* https://www.delft.com/nl/botanische-tuin

-Prinzessinnengärten/Die Laube in Berlin

Prinzessinnengarten » Die Laube. (n.d.). https://prinzessinnengarten.net/die-laube/

-Ru Paré School in Amsterdam by PlanB architects

Transformatie Ru Paré school. (2018, June 28). Architectuur.nl. https://www.architectuur.nl/project/transformatie-ru-pare-school/

-Bosco Verticale, Milano by Stefano Boeri

Stefano Boeri Architetti. (2022, September 7). Bosco Verticale. https://www.stefanoboeriarchitetti.net/project/bosco-verticale/

-Blanc's Vertical Gardens

Welcome to Vertical Garden Patrick Blanc | Vertical Garden Patrick Blanc. (n.d.). https://www.verticalgardenpatrickblanc.com/

-Francois Roche's experiments

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-Guerrilla architecture by Santiago Cirugeda

Sousa, A. N. de. (2020, September 23). *How Spain's 'guerrilla architect' is building new hope out of financial crisis*. The Guardian. https://www.theguardian.com/cities/2014/aug/18/santiago-cirugeda-guerrilla-architect-spain-seville-financial-crisis

Literature

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Levy, A. (1999). Urban morphology and the problem of the modern urban fabric: some questions for research. *Urban Morphology*, *3*(2), 79–85. https://doi.org/10.51347/jum.v3i2.3885

Passive and Low Energy Alternatives I: The First International Plea Conference, Bermuda, September 13-15, 1982. (1982). Pergamon.

Pohl, E. B. (2017, September 14). *Waterflux / R&Sie(n)*. ArchDaily. https://www.archdaily.com/10157/waterflux-rsien

Rhoades, H. (2021, June 25). *Creating Your Own Rooftop Garden*. Gardening Know How. https://www.gardeningknowhow.com/special/urban/creating-your-own-rooftop-garden.htm

Russo, A., & Cirella, G. (2018). Modern Compact Cities: How Much Greenery Do We Need? *International Journal of Environmental Research and Public Health*, *15*(10), 2180. https://doi.org/10.3390/ijerph15102180

Sahito, N., Han, H., Thi Nguyen, T. V., Kim, I., Hwang, J., & Jameel, A. (2020). Examining the Quasi-Public Spaces in Commercial Complexes. *Sustainability*, *12*(5), 1830. https://doi.org/10.3390/su12051830

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Watson, D. (1982). WINTER GARDEN ATRIUM DESIGN: THE NEW CANAAN NATURE CENTER. *Passive and Low Energy Alternatives I*, 4–13. https://doi.org/10.1016/b978-0-08-029405-6.50021-0

Reflection

Relevance

In my past Studios, I gained experiences that lead to choosing Public Building as graduation studio. In Msc1 the assignment for Heritage was to design an addition and renovation of the Rietveld Pavilion, Zonnehof in Amersfoort. The function of this pavilion is a museum, which is also a public building.

In the second semester, the campus utopias elective was also about a public building. The campus of Brasilia, designed by Oscar Niemeyer, was a great example of how modern architecture can be combined with urban green. In the BK Launch studio in the second half of Msc2, the goal was to create a built environment related start-up. This gave the opportunity to focus on circularity and designing in a user-friendly way. This empathise-phase of the design process is something that is important for public buildings as well.

The topic of this graduation project relates to the studio topic in the sense that it is an public condenser, but then green. The graduation project's topic is an indoor neighbourhood garden and the studio topic is a 'public condenser'. The result of this relation is an 'Urban Green Condenser', where the public green is condensed within the building/project.

The neighbourhood garden aspect applies to the subject of commons. Gardening enhances cross-communal interactions and forms the core of a community centre, where other communal activities can be connected to. Cross-communal interaction is a topic within the literature about public buildings. By combining this topic with that of 'Green Architecture', the studio topic is connected to broader explorations within the master track of Architecture.

Green Building Design is a topic that has kept architects busy for centuries and throughout different cultures. There are many examples available, but few of them are an actual indoor neighbourhood garden. This project experiments with that concept and aims to create new openings in the debate about integrating green within buildings.

The Urban Green Condenser is a prototype that can be applied all around the world and adjusted to specific climates and communal needs. It serves as a counter-movement against the privatisation and hardening of the urban environment. In a social context, this graduation project gives hope for bringing new life and meaning to neglected public greenspaces and communities in a world of increasing urbanization and privatization. On a professional level this translates into creating new possibilities for designing indoor interactive greenspaces. Other architects and students can take inspiration from the outcomes and use this knowledge in their designs.

Time planning

First semester, completed
The first semester was mostly focused on the research and site analysis. Prior design explorations are completed with situation sketches and volume studies. The first research stage is concluded with an indoor green type catalogue. For the design, a floorplan and sections are presented as a preliminary/sketch design.

Semester 2, Period 3, February 13 – April 21
In the third period the research and explorations will be transformed to plans and drawings on concept design level. In this process the feedback and reflections of the P2 presentation will be taken into account. New research will give a more detailed insight in the parameters necessary in the positioning and growing of specific plant species. The scale of drawing will be brought from 1:500 down to 1:50. Materiality and main construction methods will be explored.

Semester 2, Period 4, April 24 – June 30
In the fourth period, the plans for the building will be revised and specified. Research will provide the necessary details for determining the parameters included in the design. The details of the construction and architectural features will be based on calculations of weight, sunlight exposure and other parameters that are specified during this process. In choice of materials, circularity will always be a main consideration. At the end of P4, the completed final design will be presented. A concluding reflection on the overall process will provide insights for future research on the given subjects.