

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	Bas Jonker	
Student number	4858506	

Studio		
Name / Theme	AR3AP100 2024-25 Public Building Graduation Studio "Public Condenser, Copenhagen"	
Main mentor	Henk Bultsra	Architecture – Project Design
Second mentor	Florian Eckardt	Technical – Building Design
Third mentor	Sien van Dam	Research – Theory & Delineation
Argumentation of choice of the studio	The public building studio invites for a complete building design. A public building combines architecture, program and its urban network to an extend that should relate to all the city dwellers. The typology of the Public Condenser moreover invites to think differently about the urban environment as the aim is to combine and morph many public attributes. The elements of designing for all kinds of people and designing in a larger urban environment create an attractive challenge.	

Graduation project	
Title of the graduation project	Two public faces

Goal	
Location:	Sundholm, Copenhagen
The posed problem,	[Problem Statement]
research questions and	[Research Question]
design assignment in which these result.	[Design Assignment]

Problem Statement	
<p>[Interaction] Public life in the city has often been reduced to forms of social interaction that do not reflect the modern society (Bodnar, 2015). Social interaction between strangers has become uncommon, the public realm of the city has been replaced by the urban living room (Sennett, 1976). More and more people participate</p>	

in this private form of social life: in intimate environments and familiar circumstances (Sennett, 1976). Architect Jan Gehl offers a solution to this modern problem. To Gehl the solution to reclaiming public life is not to redesign pre-modern cities but rather to create modern tools and solutions for the formation of public life (Gehl & Svarre, 2013).

[Public Condenser] This study proposes to replace the urban living room, as it replaced the urban fabric of the city, with a modern tool: the Public Condenser. The Public Condenser is a building that morphs the urban public realm into one building project: streets, squares, ally's, café's, shops etc. are replaced within it. To understand how the Public Condenser can facilitate all the elements of public life, a well-functioning public life needs to be studied. Additionally, the possibilities in architecture to reflect and facilitate public life need to be understood to ensure a respectable public design. In the program of the public condenser a distinction between two groups of public roles might be made. The distinction ultimately ranges between refuge and self-actualization (Maslow, 1943).

[Hybrid] The public program is related to the building design which facilitates the demands that are acquired in the program. The demand for refuge and self-actualization could be found in the layers of transparency of the design. In their research Erkartal and Uzunkaya frame transparency in three degrees: literal, phenomenal and experiential (Erkartal & Uzunkaya, 2019)(Mertins, 1996). The use of these three forms of transparency result in different forms of interaction between the building and its urban environment such as an ongoing visual program or the fusing between building and public square. The Public Condenser can be designed according to these three degrees to fuse between the urban environment and the building. Moreover the interior functions and the needs for public life as described by Maslow and Sennett could likewise be fused (Erkartal & Uzunkaya, 2019)(Maslow, 1943)(Sennett, 1976).

[Two Faces] This study aims to further explore the possibilities of the Public Condenser to reflect an inclusive modern public life. The design of the public condenser aims to unify two public faces, that of refuge and expression, into one building. By creating a design that is based on literal, phenomenal and experiential transparency the spaces within the Public Condenser might create an inclusive, safe and self-actualizing social atmosphere reflecting a well-functioning, accessible public life. Ultimately, the combination of multiple social admirations morphed within one building helps to develop an understanding of creating diverse, mixed urban neighborhoods reflected in architectural thought.

Research Questions

Main question:

How could the Public Condenser be designed to establish an atmosphere of an inclusive, modern public life?

Sub questions:

1. How could the Public Condenser be designed so that it meets current social needs as well as being flexible for possible other future use?
2. How can literal, phenomenal and experiential transparency be used to morph and combine spaces and functions within the design of the public condenser?
3. How could sustainable measures be incorporated in the design for the Public Condenser and its surrounding urban fabric, to create an inclusive public network?

Design Assignment

The research goal is to formulate a design strategy for a new Public Condenser in the Sundholm neighborhood of Copenhagen, guided by the conceptual pillars of multiplicity, hybridity, resilience, sustainability, and health.

By integrating sliding scales of publicness ranging from public to private and active to passive the project aims to foster diverse forms of social interaction and publicness within a physically and socially fragmented urban context. Through diverse architectural interventions and hybrid programmatic solutions, this approach will illustrate how a Public Condenser can serve as a vibrant community catalyst, bridging neighborhood while promoting inclusivity, ecological responsibility, and overall well-being. By balancing these pillars and through research-by-design the project will explore how adaptable spaces can stimulate meaningful encounters, cultivate a sense of shared identity, and contribute to a more cohesive, resilient, and healthy urban fabric of Copenhagen.

Process

Method description

[Research by design, design by research] This study integrates research and design in a continuous process, where each reflects and informs the other. The research is focused at laying the groundwork for the design assignment and design choices that need to be made during the process, such as the relation between public space and inclusion in public life. Additionally the design process informs where further research might be applicable and which building elements are essential to the Public Condenser.

[Interviews] A fundamental understanding of the site area and design assignment has been gathered by conducting interviews with local stakeholders. There have been talks with a former city architect, a municipal worker, local residents and a voluntary

worker (Andersen, 2024)(Rasmussen, 2024)(Saaby, 2024) . These interviews have led to the understanding of the specific needs and challenges of the design site.

[Precedents] Examples of building projects are used to understand the architectural language of the urban network. Although unrealized The Brick House by Mies van der Rohe is used as a tool for understanding modernist phenomenal transparency in architecture (CGarchitect Digital Media Corporation, z.d.). Projects by Kengo Kuma serve as an understanding of architectural thought focus at creating a sense of place in an urban environment. Lastly projects such as the Värtan Bioenergy CHP-plant and the Substrate Factory Ayase serve for an understanding of a building serving an urban network (Värtan Bioenergy CHP-Plant - Arquitecturas Cerámicas, 2021)(Sagredo, 2021).

[Literature studies] This study will serve as a basis for the design of a public condenser in Sundholm. The research has been conducted primarily on the hand of literary sources on social life, public life and public architecture. The literature sources that are used range between argumentations and descriptions for a well-functioning public life such as The fall of public man by Sennett and Reclaiming public space by Bodnar (Sennett, 1976)(Bodnar, 2015). These literary sources are combined with a description of social needs, by Maslow, and a translation into expression of art and architecture by Mertins, Gehl and Houben (Maslow, 1943)(Mertins, 1996)(Gehl & Svarre, 2013)(Houben, 2021). Finally this is related to the possibilities of transparency and public life for accessibility and inclusion (Erkartal & Uzunkaya, 2019)(Marquadt et al., 2015).

Literature and general practical references

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Reflection

[REFLECTION P2]

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)?

This study aims to clarify the possibilities of design between two social needs of public life. The challenge of integrating multiple stakeholder groups often arises from their differing demands and expectations of public life. A lack of mutual understanding among stakeholders could result in conflicts or avoidance behaviours. The Public Condenser must find a balance between morphing and separating between both these need. By finding this balance modern public life and the reflective abilities of the Public Condenser might be better understood.

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

This study highlights the explicit connection between architecture and social inclusion by incorporating three layers of transparency: literal, phenomenal, and experiential. In modern cities, the urban environment increasingly excludes certain groups from public life. The design of the public condenser seeks to address this issue by creating spaces that accommodate diverse groups within society. This approach demonstrates how architecture can respond to the social needs of stakeholders by morphing and combining spaces for similarities and differences without imposing personalized boundaries for each group. The Public Condenser represents a hybrid solution, integrating social inclusivity, sustainability objectives, contemporary demands, and potential future uses.

[REFLECTION P4]

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

The assignment of the graduation project is the design of a public condenser. My ambition is to make a design that is inclusive and accessible. An inclusive and accessible public life could be framed into two public faces: the need for social inclusion and the need for social attraction. As the public condenser intends to be a public hybrid building, the design and program of the building should reflect the duality of public life. On the one hand does the public condenser entertain the possibility of improving the (physical) social structure of an existing local, public climate. On the other hand does this improvement involve welcoming more people into the neighbourhood while preserving the elements that are essential to the character of the area.

The design of the public condenser focuses on creating spaces where local residents can meet, while also inviting the wider public into the neighbourhood. This approach aims to establish both a public building and an urban fabric that reflect this two faced public character.

This track builds on previous efforts at TU Delft, which have primarily focused on heritage reuse (MSc 1: Redesign The Hague Embassy) or large-scale urban design (MSc 2: redevelopment of Zoetermeer). The public condenser marks an initial step in the revitalization of an existing area facing social challenges. It brings together different approaches, whether designing for or avoiding design for autonomous social groups, reusing heritage, or developing solutions aimed at broader urban networks into one integrated concept

2. How did your research influence your design/recommendations and how did the design/recommendations influence your research?

The initial research helped steer the design in two key directions: the relationship between social attraction and social inclusion, and the transformation of a physical boundary within the built environment. It also shaped how the design deals with interaction: how different functions and spaces should be open, closed off, or connected, and how the overall design can reflect those choices.

The balance between inclusion and attraction is explored through the ideas of Sennett and Maslow. Maslow describes a hierarchy of human needs, from basic physical requirements to mental well-being and self-actualization, highlighting the importance of public life as a space for fulfilment. Sennett, on the other hand, talks about how public life in cities has retreated into the privacy of the home, leading to a loss of encounters with strangers, which are essential to vibrant urban life. The public condenser aims to serve both needs: creating a space that supports personal and social development, while also encouraging spontaneous meetings between people who might not otherwise connect.

To make these ideas work in the context of Sundholm, the design responds to the area's specific social and spatial character. The neighbourhood lacks both physical places to meet and a social identity as a welcoming, shared space. The design tries to shift the perception of boundaries in the area and create spaces where people naturally come together. This is expressed in the building's layout: a layered structure with a cross-shaped core and open gaps between floors that promote continuity and flow.

In the end, the design creates a new kind of urban island positioned between an existing municipal building and the new public condenser that opens itself up to both sides of the neighbourhood. It challenges the area's current status quo, which has been shaped by avoidance and separation, and replaces it with an architecture that invites people in and encourages connection.

3. How do you assess the value of your way of working (your approach, your used methods, used methodology)?

Since the research phase, the design process has moved back and forth between proposals that respond to local challenges and those that aim to create a public building capable of supporting the full spectrum of public life. This dual ambition often led to moments where the conceptual ideas, drawn from the work of Maslow and Sennett, needed to be carefully integrated into the specific context of Sundholm.

At the same time, the site itself had a strong influence on many design decisions, resulting in numerous iterations and adjustments of the original building concept.

While the building has evolved significantly since the P2 and P3 phases, it still builds on the same core principles. In retrospect, some of the decisions made during those presentations may have seemed ambiguous or arbitrary. However, they were largely driven by the attempt to find a balance between theoretical insights and the real, site-specific needs of Sundholm.

At times, the intended impact or function of the building may not have been communicated as clearly as possible, partly due to a deliberate hesitation to make rushed or premature decisions. The design process might have benefited from more freedom to explore loosely framed design directions before committing to a defined approach within the structure of the graduation plan.

4. How do you assess the academic and societal value, scope and implication of your graduation project, including ethical aspects?

Both the design and research are rooted in the recognition of social inequalities that still shape our society. Public life, at its core, depends on creating spaces where people can encounter one another beyond these predetermined roles and barriers. The public condenser aspires to offer such a space where visitors might, even briefly, set aside not only their assumptions about others but also those they hold about themselves.

This vision calls for a program and design that foster an atmosphere of openness, spaces that make it easier to connect with others. While openness can't be strictly planned or designed, it can be encouraged through careful attention to how spaces are arranged, how transitions between programs are experienced, and how the architecture supports informal encounters.

The first step in creating a space that truly reflects public life was to consider what elements are most relevant to Sundholm's context. The site carries a heavy legacy of exclusion and control. Historically, Sundholm's architecture and institutions were built to 'correct' or rehabilitate people by denying them freedom and self-determination, directly opposing Maslow's idea of self-actualization as essential to public life.

Though the original structures of control no longer define the area, their legacy still lingers. On one hand, the municipality is actively involved in the neighbourhood, and the municipal office at Sundholm is a recognizable public institution for the wider Amager area. On the other hand, the site continues to be designated for services like homeless shelters and youth detention centres, functions that, while necessary, have turned the neighbourhood into a repository for social issues.

Raising the standard for inclusion and more importantly, integration. Integration with the rest of Amager and Copenhagen means recognizing this part of the city as a

meaningful contributor to public life. The public condenser, placed alongside the existing municipal building, is first and foremost a space designed for the local community ensuring that the public realm it creates is not taken over solely by outsiders, but remains grounded in local use. Second, the project responds to the existing role of the municipal office as a regional hub. Although it draws people from across the city, it lacks the capacity to fully serve them. The public condenser adds much-needed space to support that broader public engagement. Third, the project seeks to change Sundholm's image. Located at the edge of the neighbourhood, the building becomes a symbol of a new approach, both architecturally and socially, replacing the outdated and stigmatized aesthetics of existing buildings, particularly the gatehouse, with something more inclusive and forward-looking.

Many of the design choices reflect a broader attempt to rethink both the historical treatment and current perception of the area. The public condenser is not only shaped to foster specific kinds of social interactions within its walls, but also to help shift Sundholm's reputation, recasting it as a place of opportunity, openness, and belonging.

5. What were the considerations regarding sustainable design?

Designing a futureproof, climate-adaptive, and sustainable building is no longer optional, it's a necessary standard. The public condenser must align with the goals of an energy-neutral city and comply with the Copenhagen 2030 regulations. While the design could have more directly addressed some of the pressing issues in today's construction industry, such as the overuse of rare minerals, steel, and concrete, the scale and functional demands of the project required some compromise on these fronts.

The primary structure is made from timber, chosen for its demountability and potential for on-site assembly using prefabricated joints. These joints, however, require steel reinforcements to ensure structural stability. A secondary skin has been added to the building to create a layered architectural expression, transforming what was once a closed boundary into one that can open up and interact with its surroundings. The materials used for this skin are predominantly sustainable and sourced locally, especially from within Scandinavia.

Although sustainability wasn't the sole driver in the design of the layered facade, the second skin does enable natural ventilation and passive heating strategies, contributing to the building's environmental performance.