

AR3AP100 | Public Condenser, Copenhagen

Two public faces Sundholm association centre

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Public building graduation studio



Introduction

The public building studio invites for a complete building design. A public building combines architecture, program and its urban network to an extent 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.

The graduation studio focuses on the area of Sønderbro in the city part of Amager in Copenhagen. Copenhagen stands as a model of progressive urbanism, where sustainability, design, and social equity intersect. In Sønderbro however much of these themes are lacking which results in an underdeveloped public life. The public condenser must shape a new narrative for public life between the south and centre of Copenhagen. The design that forms the public condenser should reflect the balance between local identity and public appeal to the rest of the city.

The Public Condenser marks a pivotal step in challenging the negative narrative surrounding social life in Sundholm. Known for its history of marginalized groups facing barriers to public participation, the neighborhood calls for an architectural intervention that actively encourages social interaction among strangers. This project introduces a public program and design that foster spontaneous encounters and community engagement.

The Public Condenser also aims to shift both the perception and behavior associated with Sundholm. At the heart of the design is the transformation of a former boundary, once defined by fences, barriers, and both physical and ideological separations between people and the institutional fabric of the area. By reimagining the entrance around a former gatehouse, the project makes the neighborhood more open and inviting to passersby, dismantling previous divisions.

Crucially, the Public Condenser is conceived as an extension of the existing Sundholm House 8. Currently used by NGOs and the municipality as a meeting and workspace bridging municipal functions and the southern part of Copenhagen, the addition brings new spatial capacity and renewed public identity to the site. Through its scale and civic character, the extension elevates the status of these important functions.

The interior design is grounded in the principles of both literal and phenomenal transparency. Promoting a visual and spatial continuity between interior and exterior environments. Constructed with timber cross-beams and Y-shaped columns, the architecture supports a fluid spatial experience. Staircases double as social meeting points, allowing different spaces to connect without requiring formal circulation. In doing so, the project unifies two aims: enabling genuine social inclusion while also creating moments of social attraction, together forming the singular purpose of the Public Condenser.

Special thanks to Henk, Sien & Florian for tutoring this graduation project.



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The public condenser

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 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).

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).

The public space of a city: café's, theatre, allies, squares and streets. Meant for meeting peers with the possibility of meeting strangers.



In the private living room public roles dissapear as people act and meet those that are often likeminded.



Public life in the city. The space for meeting others in the city has moved from the street to the private, urban living room. The public condenser aims to take this place again (Sennett, 1977).

The public condenser combines spaces and functions among themselves to purposely force meeting among people. The building mimics the works of allies and squares by creating an interior cityscape to shape a concealed public realm.



Functions range between social inclusion to social expression or from intimate to anonymous spaces. The building helps shape the public roles and purpose people feel when participating in it's programme.

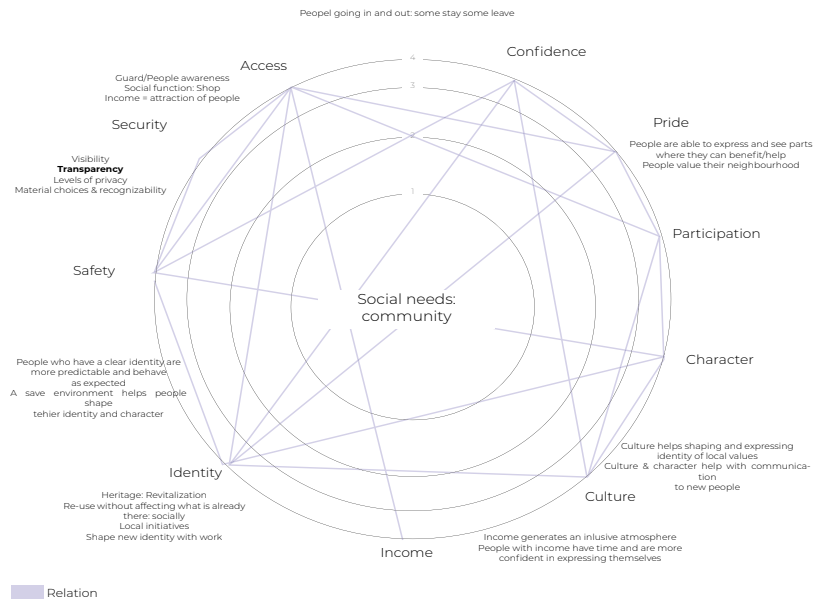
The public condenser. Sketch explaining the hybrid nature of the public condenser, the program and spaces are always connected and share character of interior and exterior.

"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 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)."

Social inclusion & social expression

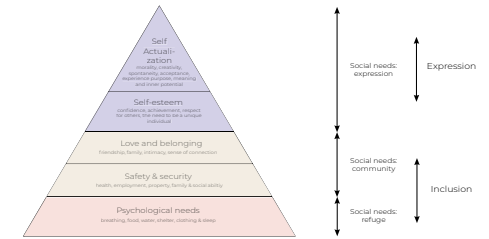
The public program is related to the building design which facilitates the demands that are acquired in the program. The demand for refuge and self-actualization could be found in the layers of transparency of the design. In their research Erkartal and Uzunkaya frame transparency in three degrees: literal, 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).

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.

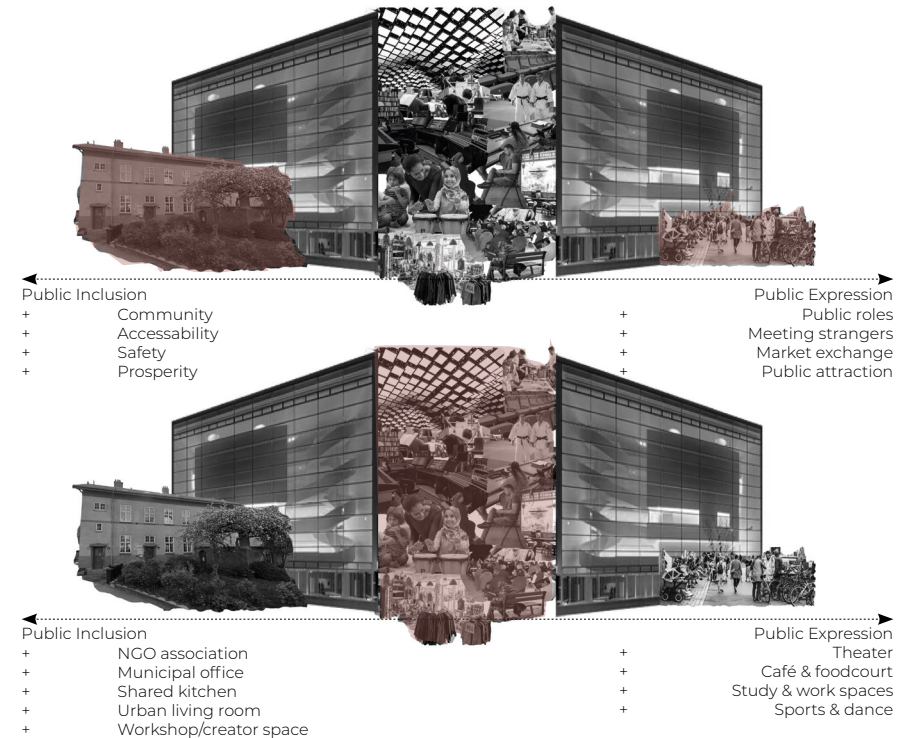


Social inclusion, attributes of community. The attributes that contribute to a well-functioning community. Community being a pillar for social inclusive environments and a desired outcome for the public condenser (Erkartal et al. 2019).

The public condenser provides the climate for a well-functioning public life and community. The attributes the condenser needs to obtain is the ability to provide for the entire public needs described by Maslow. People often need similar social functions for different reasons, yet the safety and attraction of all can not be guaranteed by a combination of all functions. The design of a public building greatly determines the usability and attractiveness of its functions. The public condenser aims to combine for both public faces, in order to meet strangers unlike in the private living room, in a hybrid manner. Combining spaces where possible. In the drawings underneath the distinction between inclusion and expression is made and the functions that might be combined are shown.

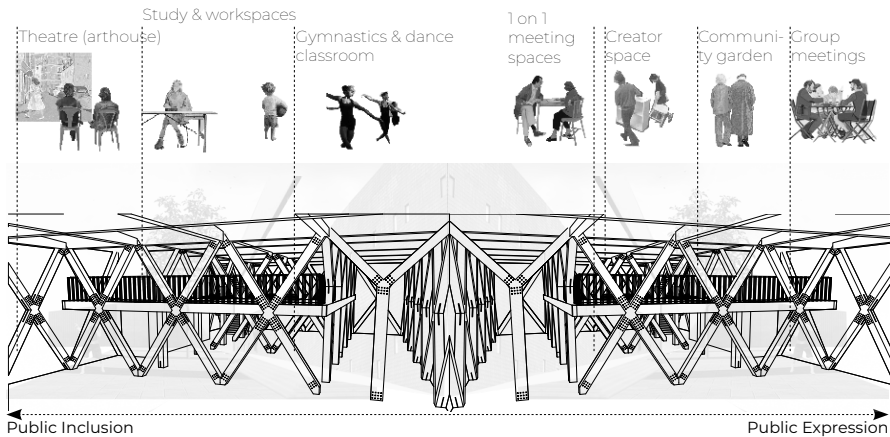
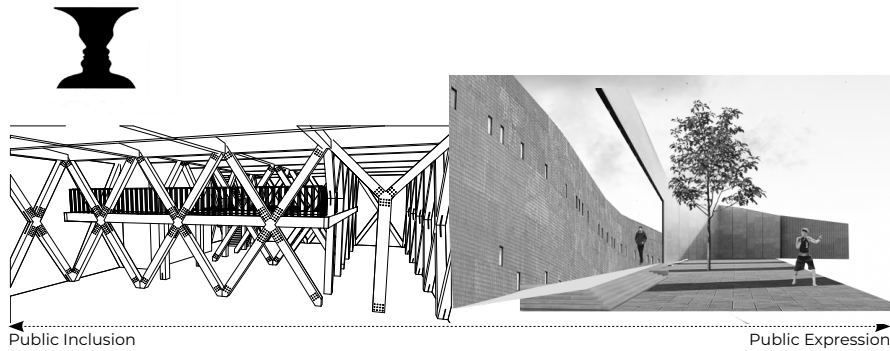


Pyramid of social needs. The pyramid of social needs as described by Maslow, ranging from physical needs to egotistical development (Maslow, 1943).



Public condenser between social inclusion & social expression. The public condenser takes the place as a provider in the public realm.

Research & Transparency



Transparency operates across a spectrum, from the literal to the phenomenal, each offering distinct spatial and social potentials. Literal transparency involves physical clarity, typically through glass or open sightlines, allowing users to see and be seen across space. This direct visual access fosters awareness and can subtly invite spontaneous interactions through sheer visibility. In contrast, phenomenal transparency refers to a deeper layering of space, program, and perception. It blurs boundaries, overlapping functions and circulations to create ambiguous zones where multiple readings and uses coexist. Here, encounters between strangers arise not from being visibly exposed, but from being drawn into shared complexity, spaces that suggest rather than prescribe interaction.

When considering a structural system composed of cross-shaped and Y-shaped columns, the interstitial spaces between these supports become uniquely suited for hosting such ambiguous, interaction-rich environments. These zones are neither full-

ly open nor entirely enclosed, neither purely circulation nor fully programmatic, making them ideal for fostering informal social moments. Placing functions such as shared seating, café extensions, informal work zones, or hybrid gallery-lounges in these spaces can activate them as thresholds, edges between movement and pause, private and public.

Under literal transparency, such spaces benefit from clear sightlines framed by the structure, encouraging casual recognition and spontaneous engagement. Under phenomenal transparency, the same structural rhythm can organize layered, overlapping uses where people might overhear a conversation, browse a shared surface, or momentarily linger, creating opportunities for the unplanned meeting of strangers. The geometry of the columns becomes not only a physical framework, but also a spatial invitation, modulating degrees of openness and complexity to support both visibility and ambiguity.

In this way, the gradient of transparency, from literal to phenomenal, can be purposefully deployed within the columnar field to shape how strangers might encounter one another: sometimes through direct visibility, and at other times, through shared spatial tension, curiosity, or overlap.

Questions & methodology

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.

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?

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.

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).

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 argu-

mentations 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).



Copenhagen. The area of Sønderbro and Sundholm (highlighted) in Copenhagen.

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Sønderbro, Copenhagen

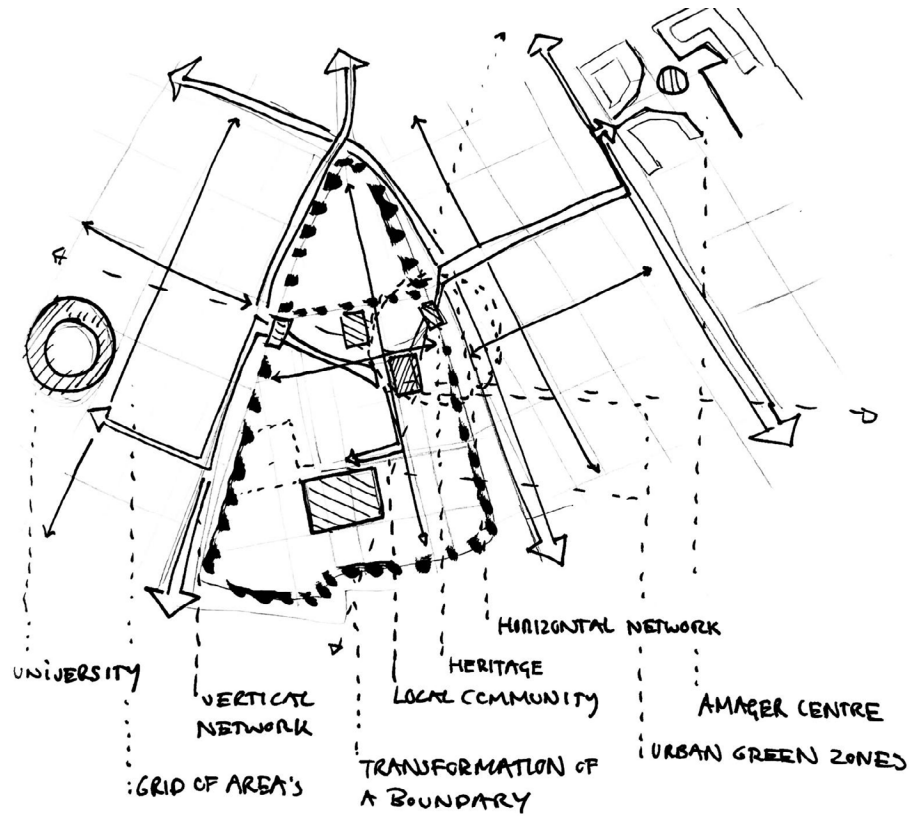
Central on Amager lies the neighbourhood of Sønderbro, surrounded by Amagerbrogade, Amagerfælledvej, Peder Lykkes Vej, Englandsvej and Sundholmsvej. A combination of state and municipal institutions, local schools, a church, unused squares, abandoned factory buildings and housing areas provide a host of opportunities for developing creative activities which promote a common identity for residents and users of all ages.

Between Amagerbrogade's pulse, the common green expanses and the crashing waves of Amager Strand are located in the neighbourhood of Sønderbro. Sønderbro is a very special pocket in the city but also a neighbourhood, which has often been overlooked. That is too bad, because here is potential for a green and living urban environment with strong local community.

Humanly, Sønderbro has a lot to offer. Amarkans through several generations and new Copenhageners with diverse backgrounds go to communal dining together, and families with children live side by side with some of Copenhagen's most vulnerable citizens on Sundholm. Care, spaciousness and diversity characterizes the neighbourhood. Diversity is not the same as that accept that people's opportunities to realizing potentials and dreams depends on where in the city you live. Sønderbro's buildings and urban spaces are run down. Locals say that there lacking meeting places and safe connections through the neighbourhood. It creates a feeling being disconnected from the rest of the city and from each other (Public Graduation Syllabus, 2024).



Sundholm in Sønderbro. Map of Sønderbro and Sundholm (highlighted). Sundholm lies inbetween the central axis of Amager, to the right, and the Technical university of Copenhagen to the left. People however avoid the area of Sundholm in travelling through the neighbourhood and especially in staying there.



Relations surrounding Sundholm. Sketch of Sundholm, the central routes to Copenhagen centre and the possibility of a horizontal network.

In two interviews with a local NGO: Teddy Rasmussen and a local municipal worker: Rasmus Andersen the situation of Sundholm became evident. Sundholm is an island within the city of Copenhagen because of social and physical barriers that are experienced. The physical barriers are partly an outcome of the lack of social relations but are also a remainder of the previous function of Sundholm: an enclosed institutions. Additionally are the connections in the city between the centre and the south, Amager, vertically orientated. This is not a problem despite the fact that the horizontal routes and network are lacking. The social barriers that are experienced are due to the reputation of Sundholm which still lingers in its past as an enclosed institution. The current use has obviously changed and altered from forced labour but still focuses on institutions and people with a distance to social, public life (Rasmussen, 2024)(Andersen, 2024).



Sundholm institutions



Sundholm institution. Picture of Sundholm, although the streets are green the area of Sundholm is not a popular meeting space as the area is dominated by institutions which are shielded by barriers and gates.



Sketch of 1900's institution. The history of the area is that of a rehabilitation institution for people that, supposedly, needed to learn how to participate in Danish society. The reputation of this institutions still lingers.

As described by Rasmussen and Andersen the current social life of Sundholm still somewhat lingers in its negative past. The institution focused on rehabilitation of civilians of Copenhagen by forcing them to life in this location and work in a factory until they were deemed worthy of returning to society. In the current use of the Sundholm area the institutions buildings are used for housing homeless or are used for other institutions such as a youth-detention centre or a elderly home. These institutions are, mostly, unforced but are detained in the sence that the former gatehouses and boundaries still perform their enclosing function. To alter the identity of Sundholm to enforce a strong sence of community the relation between the municipality, Sundholm and its institutions must be touched.



Sundholm house 8



ORDER TRANSFORMATION



The two public faces surrounding Sundholm house 8. The public side of Sundholm is barred by a gatehouse which dictates the entrance to the neighbourhood. The local side is shielded from the busy vertical route to the centre of Copenhagen. Creating a shielded village like street pattern.

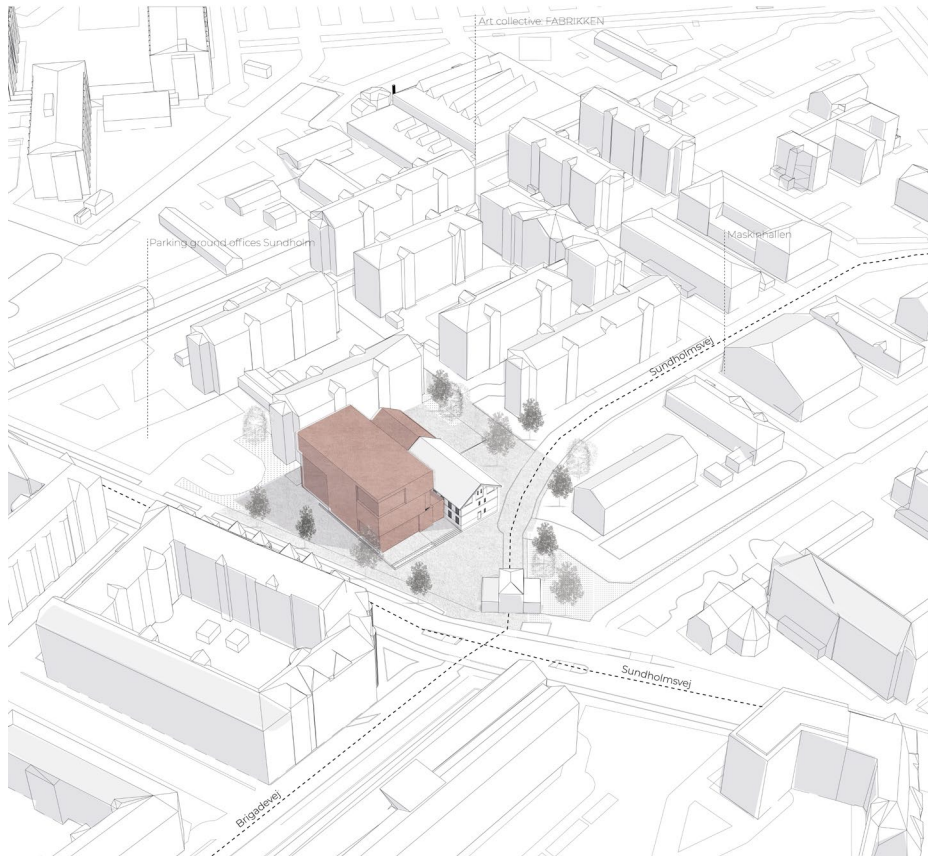
"This study aims to further explore the possibilities of the Public Condenser to reflect an inclusive modern public life. The design of the public condenser aims to unify two public faces, that of refuge and expression, into one building. By creating a design that is based on literal, phenomenal and 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."



Sundholm house 8. The former secretarial establishment of the Sundholm institution.

Sundholm house 8 shapes the public life of Sundholm. Formerly used as a directors and secretaries establishment to the institution the building is currently used as an office for the municipality and houses offices of local NGO's. These organizations use the building for 1 on 1 meetings, group meetings and as an urban living room with a garden in summer. The organizations are renowned in the entire area of Amagar, despite not being able to host much in their own building and despite the current boundaries surrounding Sundholm.

Within the public climate of Sundholm House 8 marks the first steps into the formation of a vibrant community. Together with the Maskinhallen, Byhaven and the Fabrikken the area is shifting towards a public community based on local initiatives. By exploiting the local identity, and enhancing it, the public attraction and relation to the rest of Copenhagen could be reached.



Addition to Sundholm house 8 & public entrance of Sundholm. The additional volume to Sundholm house 8 which opens up the neighbourhood and forces the formation of two urban squares.

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Boundary transformation

The relation between Sundholm and the surrounding urban fabric is hindered by the former gatehouses, fences and a busy vertical connective route. To take a first step into creating a horizontal network the public condenser might form a destination on an underdeveloped axis. By placing the public condenser next to, as an addition, to Sundholm house 8 the public identity and attraction of Sundholm could be altered. The result is that both Amager and Sundholm gain a new public face, which is placed on the edge of Sundholm: a former boundary. In the drawings to the right the transition into this new building volumes is shown in four sketches.



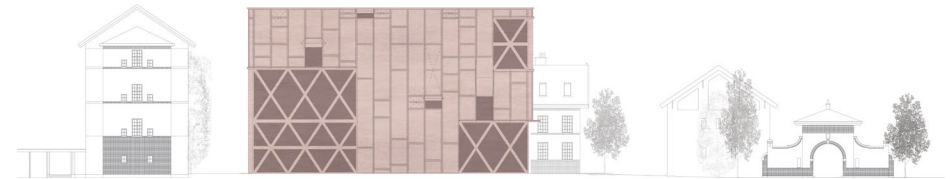
Current state of Sundholmsvej. Along the Sundholmsvej the entrance to Sundholm, and connection to the university, is possible through an alley or the former gatehouse. A direct connection is shielded by the busy road and a fenced garden in front of the Sundholm house 8.



Addition to Sundholm House 8. The first addition follows the pattern of the existing structure. It copies the form by shaping the crosses and a the polycarbonate similar. The existing openings and height of the building should be reused.

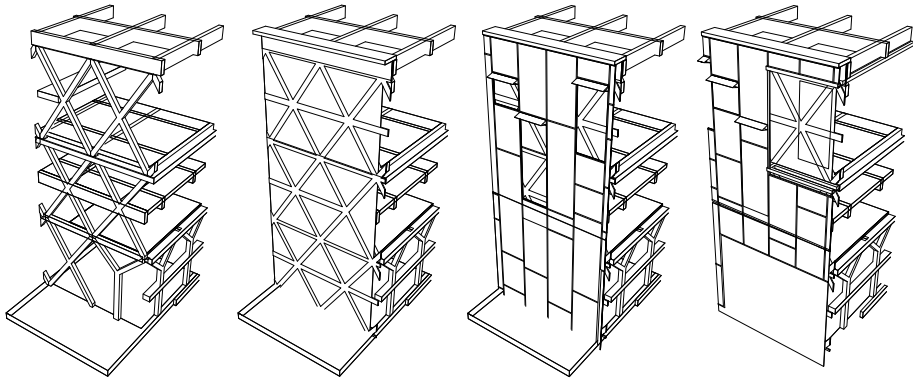


Crosses directing entrance. The public condenser is shaped out of X and Y-shaped columns. Along the Sundholmsvej the construction consists of X-shaped columns which direct focus to the two public squares aligning the public condenser. Between these columns and second façade will the degree of transparency be regulated.



Creating a public entrance. The public condenser matches the surrounding building height, covering the MV house partly. By shielding Sundholm partly the focus of passerby shifts between the literal transparent public spaces and the public squares between Amager and Sundholm. The second façade dictates the degree of transparency by using a n additional polycarbonate layer.

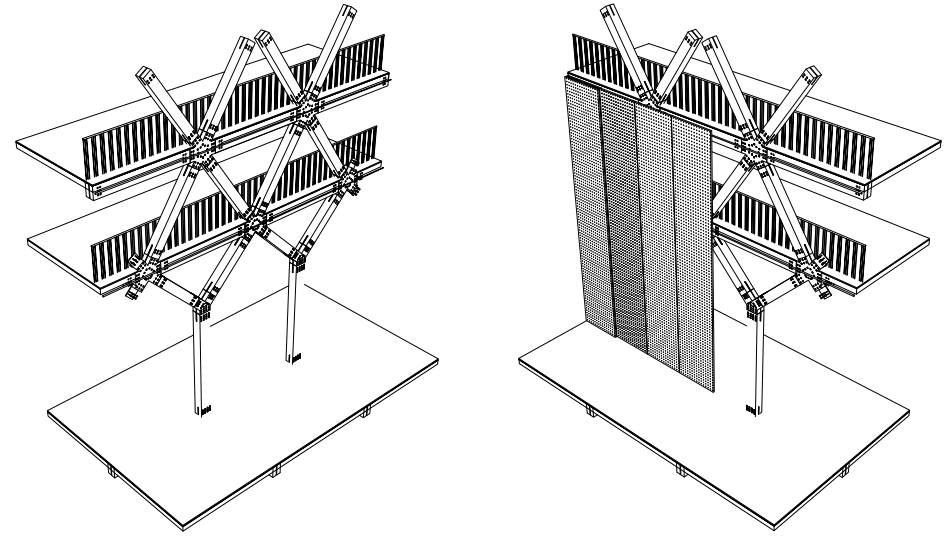
Literal & phenomenal spaces



Layers of façade. The façade of the public condenser consists of multiple layers, possibly literal, phenomenal or experientially transparent.

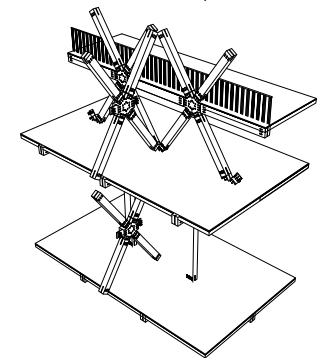
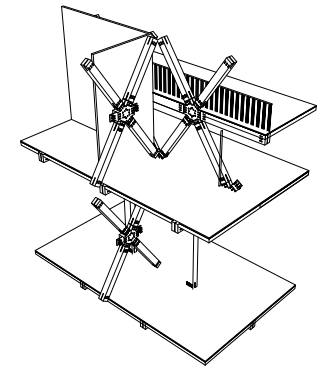
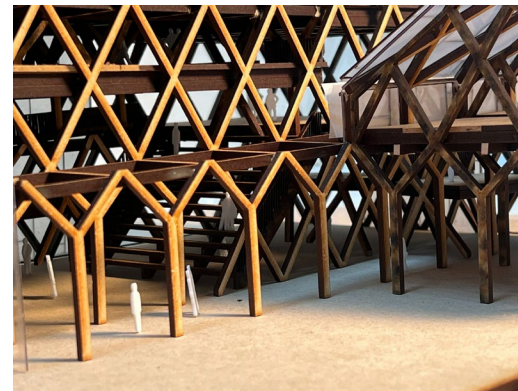


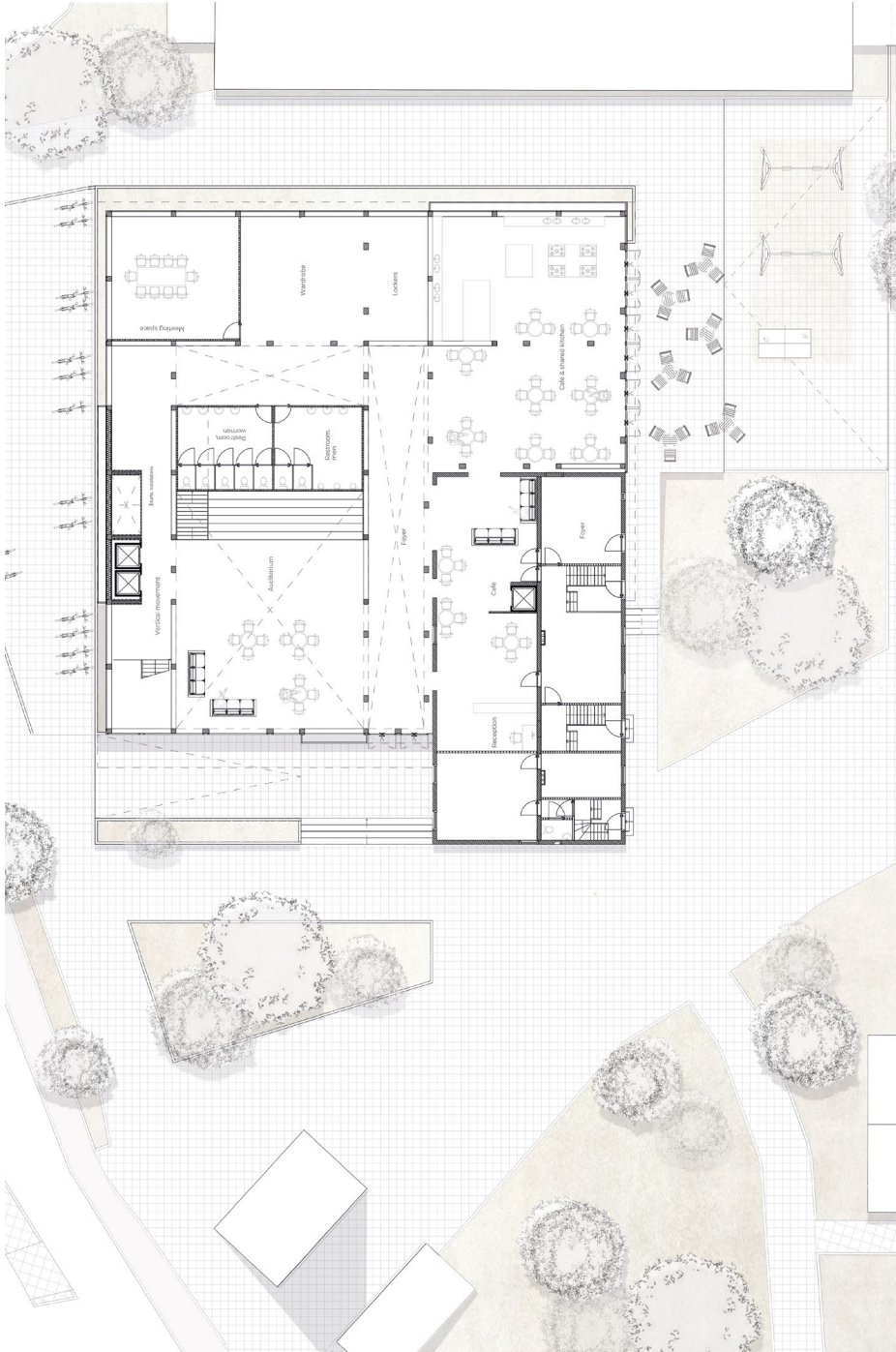
The layering of the façade transforms the borders between interior and exterior spaces, as the current status is literally unconnected the new connections both literal and phenomenal invite for a dynamic atmosphere between Sundholm and its surrounding. The façade consists of crosses and Y-shaped columns, directing the two literal entrances aligning the two public faces. The other façades are build out of cross shaped columns, which are either shown or hidden by a polycarbonate façade. The literal 'windows' show the windowframes that are placed directly on the crosses allowing the columns to shape te interaction between interior and exterior.



The interior spaces are constructed via the X & Y-shaped columns as well. These columns create spaces that are either connected literally or are connected through the gaps that become evident between the crosses. In the case of need for an enclosure the crosses are closed on the inside, meaning that the larger, continues space will be visibly connected with the cross.

In the program certain functions such as the theatre and audutoirum halls are aided by soundproof panels which can be placed in front of the crosses to create more intimate spaces. These placements are allowed for the user themselves. As well as the openable panels in the façade.

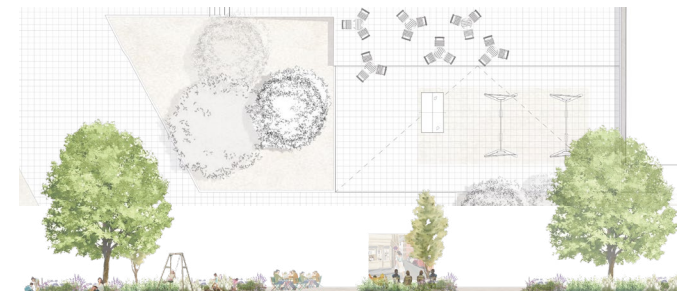




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Two public faces

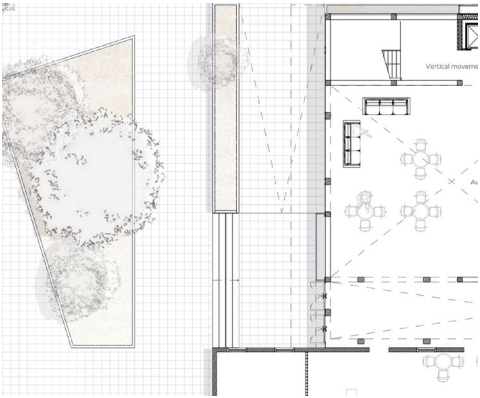
This design explores the dialogue between two interconnected public spaces, each with a distinct character but intentionally positioned to create a dynamic spatial and social relationship. The first public entrance is open and extroverted, a plaza or forecourt exposed to the city, encouraging gathering, movement, and visibility. The local face, directed to Sundholm, is intimate and introspective. A meeting garden and terrace offering



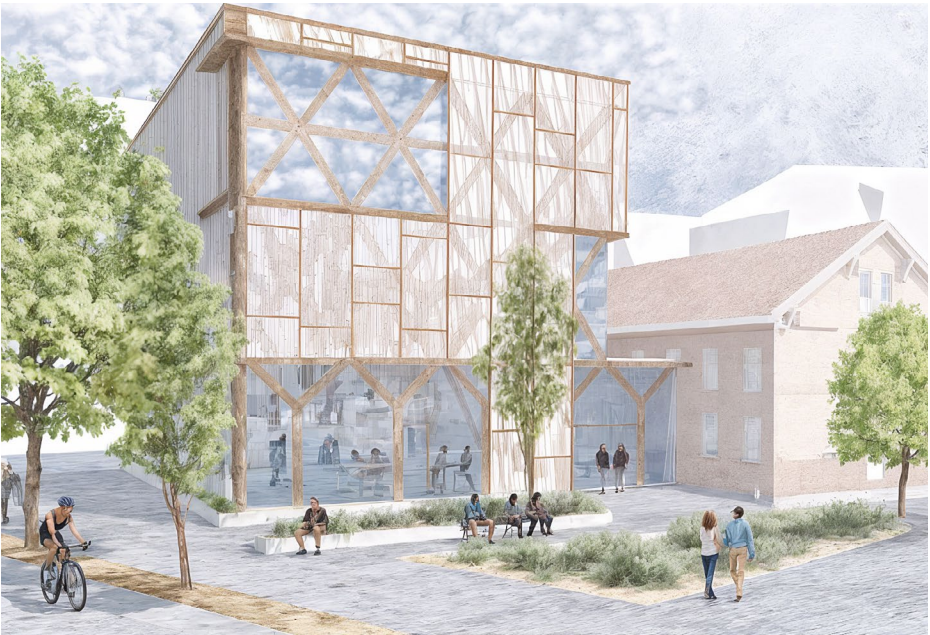
pause, reflection, or quieter interaction.

Rather than treating these as isolated zones, the design uses spatial sequencing, sightlines, and program overlap to allow the two spaces to inform one another. Movement between them is porous and suggestive, facilitated by gradients in scale, material, and transparency. The thresholds, whether framed by structure, softened by landscape, or mediated through shared functions, become sites of exchange and friction, where different rhythms of public life collide.

By placing complementary but contrasting functions across these spaces, markets and performances in the open area, reading rooms or cafés in the quieter zone, the design encourages users to traverse, linger, and cross paths. The resulting choreography supports both planned and spontaneous meetings, making the connection between the two public realms not just physical, but social and experiential.

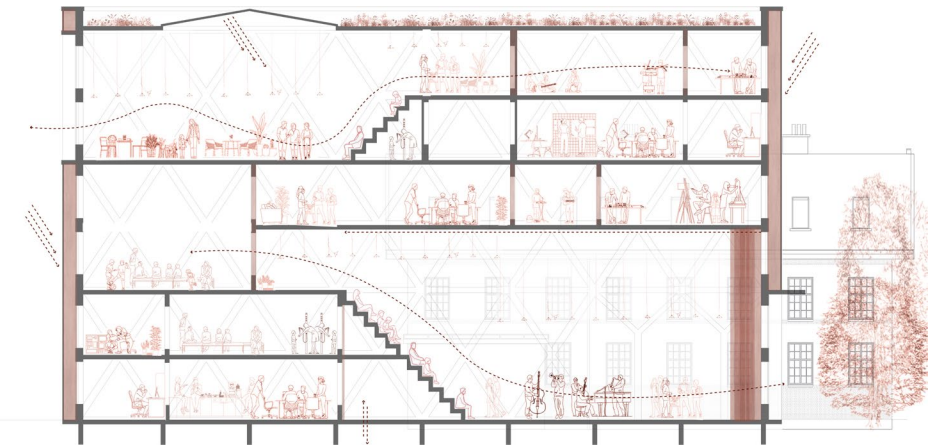


Floorplan of public entrance. The entrance to the public condenser is raised to match the height of the existing building. Additionally it adds to a distinction between the interior spaces and the exterior square for gathering.



Climate design

The climate design revolves mainly around the functioning of the Double Skin Façade. The DSF allows the building to use an air cavity to cool in summer and it can be used as a buffer in winter. Furthermore are most of the spaces connected and can heating and cooling be combined with the existing building. By use of a citynetwork central heating can be arranged. Underneath the section specs of the installations and DSF are shown.



Section & functions. The program of the condenser is dynamic and flows between spaces through the gaps of crosses and voids. The climate design is also regulated between these gaps. The second skin functions as a tool for heating and cooling in summer and winter times. In all of the spaces daylight is central or the space aligns to a void to offer grander space.

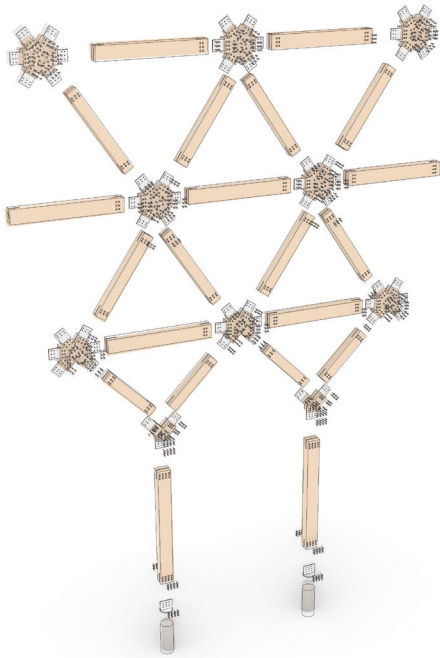
Category	Parameter	Expected Value / Range	Explanation
Ventilation	Airflow in cavity (natural)	0.5 - 1.5 m/s	Depends on solar radiation and temperature differences
	Summer air exhaust (open test)	2 - 4 ACH	Passive exhaust via stack effect
	High ventilation potential	Medium - Good	Well controllable with dampers
Heat Buffering	Sensitivity to wind pressure	Moderate	Depends on facade perforations
	Cavity temperature vs. outside (winter)	+4 to +10 °C	Solar gain and polycarbonate radiative properties
	Heat loss coefficient (polycarbonate)	20 - 30 %	Cavity acts as thermal buffer
	U value (closed cavity)	approx. 0.8 - 1.2 W/m²K	Improved insulation due to air layer + polycarbonate
Heating Effect	Thermal mass (inner facade)	Medium - High	Wood stores heat slowly, glass loses it
	Heating energy capacity (thermal)	15 - 30 %	Especially during cold months
Acoustics	Solar heat gain coefficient (polycarbonate)	0.20 - 0.50	Depends on thickness and structure
	Indoor temperature increase (pass)	+1 to +4 °C	During the day in mild season
	Overheating risk (summer shading)	Medium - High	Good control system essential
Acoustics	Sound insulation (total system, closed cavity)	35 - 50 dB	Depends on cavity width, air leakage, and material build-up
	Sound insulation (perforated sheet typical)	18 - 20 dB (depending on frequency)	Lower than glass can be combined with acoustic treatment
	Additional damping from cavity effect	+10 - 20 dB vs. single skin facade	Air layer absorbs and reflects sound energy
	Acoustic performance with ventilated cavity	25 - 40 dB (depending on opening/closing)	Lower damping with openings; additional measures needed for acoustic comfort

System Category	Installation / Component	Function / Purpose	Notes
Ventilation	Mechanical ventilation with heat recovery (BMS)	Basic ventilation + heat recovery	Essential for energy efficient ventilation in low outdoor temperatures
	Cavity ventilation (passive/mechanical)	Air exchange + temperature control in cavity	Controlled by temperature / CO ₂ mix, via mechanical dampers/regulators
	High ventilation systems	Cooling through natural air exchange	Predictably controlled by outdoor temperature and wind direction
Heating	Low temperature heating (radiator)	Comfort heating for indoor spaces	Works well with passive solar gains via DSF
	Air heating via ventilation system (optional)	Space temperature adjustment	Especially useful in transitional seasons
Cooling	Natural cooling via cavity ventilation	Passive cooling	Low investment, effective with good night ventilation
	Active cooling (chiller or cooling, if needed)	Comfort during warm periods	Rarely needed in Copenhagen, mostly for high internal heat loads
Solar Shading	Automatically controlled louvers or blinds	Reduction of solar gain + glare protection	Installed in cavity or behind inner facade (glazing based on sun position/orientation)
	Solar control coating on polycarbonate	Permanent solar gain reduction (p-value)	Low dynamic, but low maintenance
Control Systems	Building Management System (BMS)	Central control of temperature, ventilation, shading	Sensors for temperature, CO ₂ , sunlight intensity, wind, and rain
	Orientation and use based control	Adaptive climate regulation	Optimizes energy demand based on location, time, and occupancy
Acoustics	Acoustically damped perforated facade cavity	Sound control for mechanical DSF	Needed for sufficient noise insulation with open cavity sections
	Inner facade with acoustic glass / perforated wood	Internal sound absorption	Improves comfort in open-plan spaces

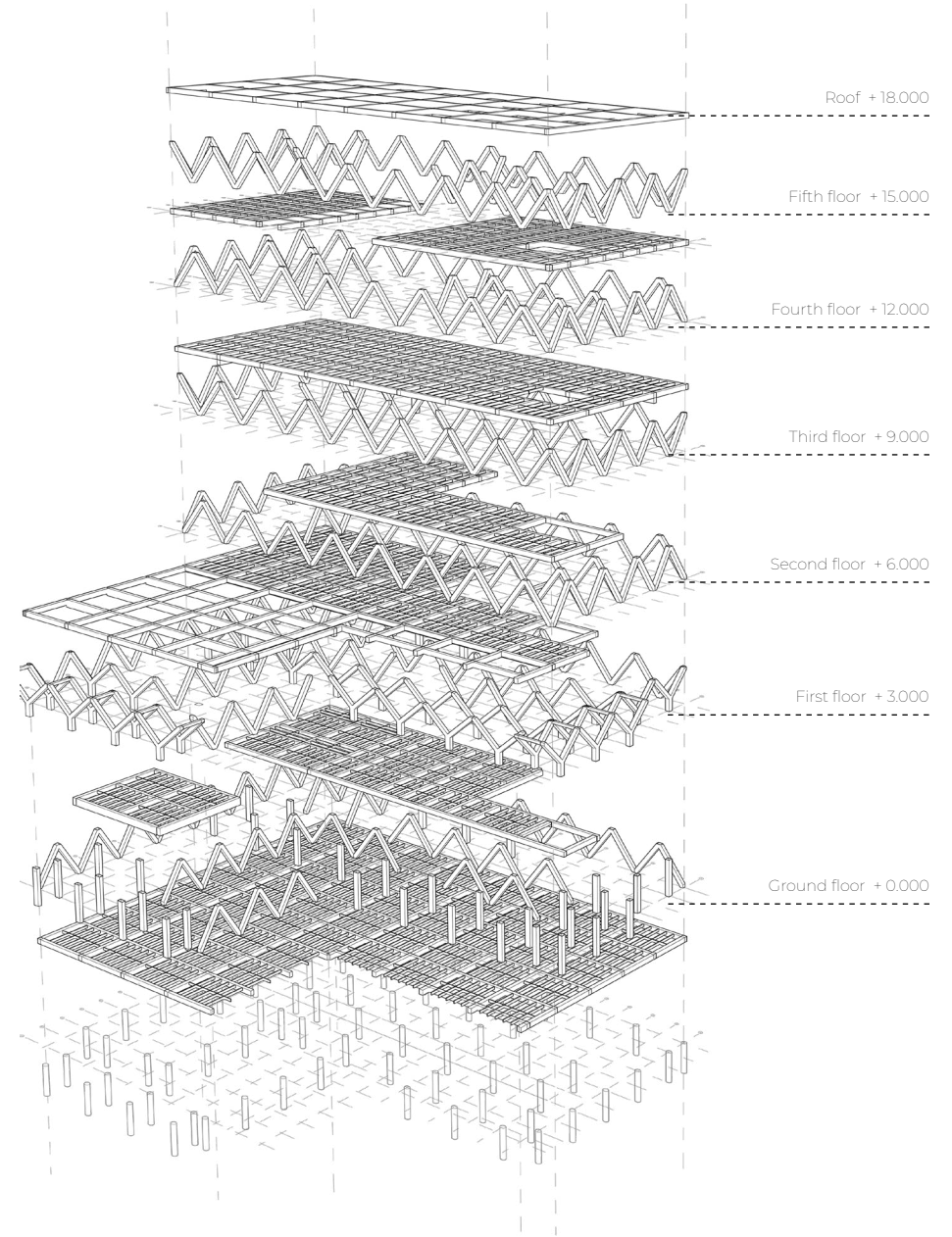
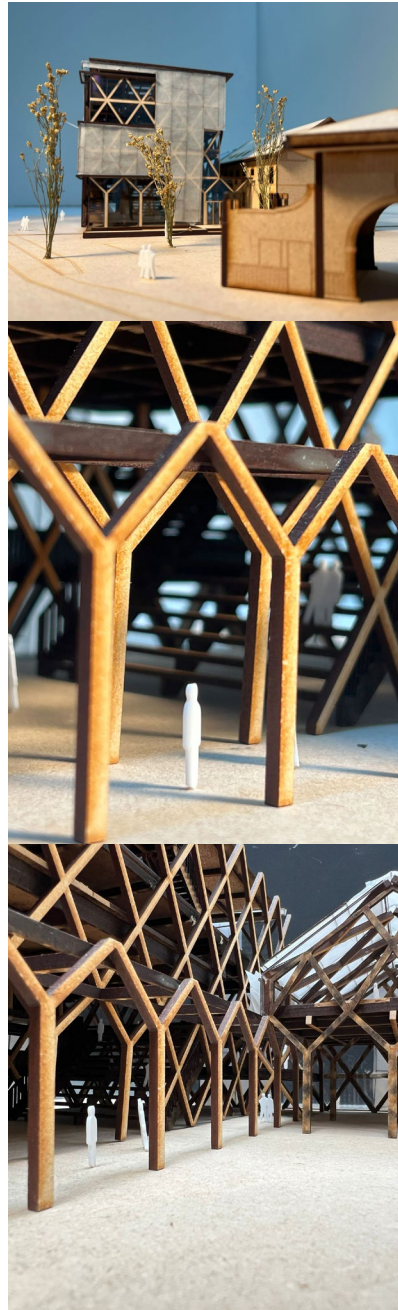
Category	Species	Scientific Name	Ecosystem Benefits
Perennials	Wild marjoram	Origanum vulgare	Attracts bees and butterflies, drought-tolerant
	Variegated	Achillea millefolium	Valuable for insects, long blooming period
Grasses	Common sedge	Scirpus cespitosus	Acoustic, beneficial for bees and butterflies
	Stard sedge	Carex acutata	Breaks wind, good for insects
Herbaceous Perennials	Red clover	Trifolium pratense	Natural ornamental grass, drought-tolerant
	Stemless	Centaurea jacea	Very attractive to butterflies
Shrubs	Cherry laurel	Laurus nobilis	Popular with wild bees
	Wild rose	Rosa canina	Food source for beneficial insects and birds
Trees	Box elder	Aquilegia vulgaris	Attracts bees and butterflies, drought-tolerant
	Small-leaved lime	Tilia cordata	Nectar source for bees, provides shade

Literal & phenomenal construction

The construction is build up out of timber elements that are connected through straight or diagonal beams and prefab joints in multiple directions. These elements together make up v-shapes (which make up X-shapes) or Y-shapes. The construction is in this way demountable and can be build up per building layer. The reusability of spaces is however not as easily done as in other cases but the construction allows for a large variety of spaces that might be reused and reinterpreted.



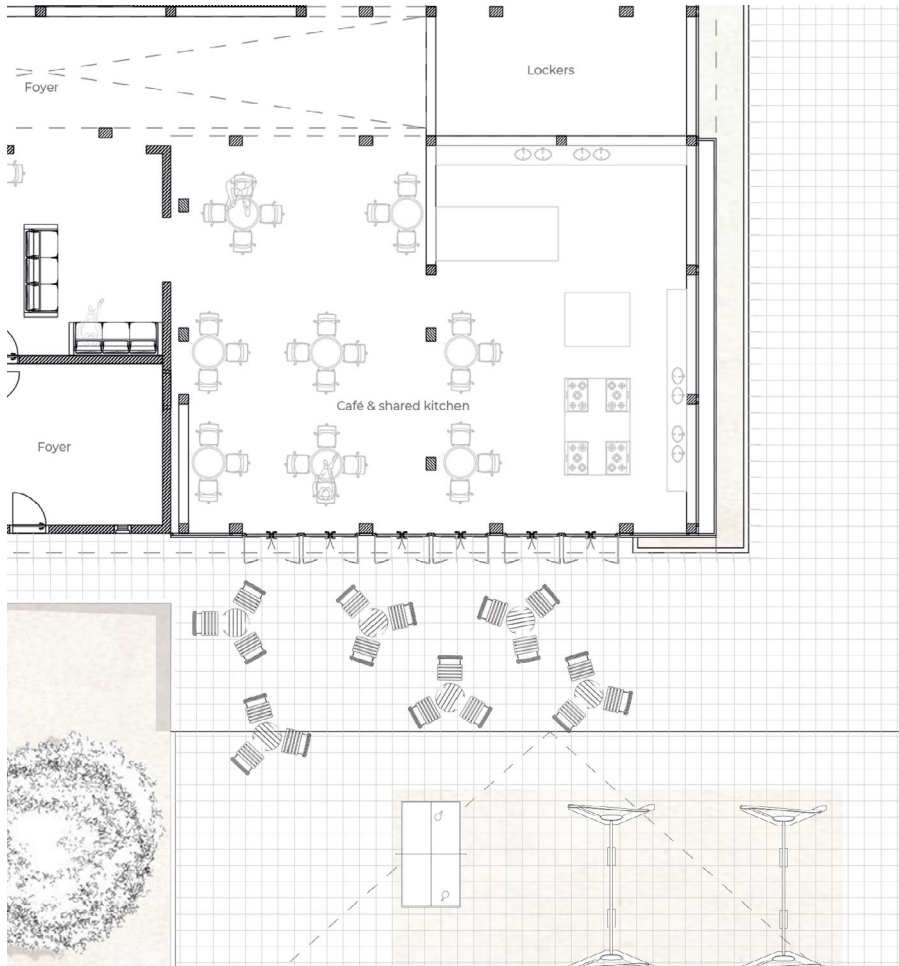
Exploded fragment. Constructional elements, timber beams that are connected through (custom) prefab timber and steel joints.



Construction axo, v-shaped layering. The construction consists of X & Y-shaped columns, by adding the possibility of prefab joints the construction can be layered per floor and the diagonal beams might be reused.



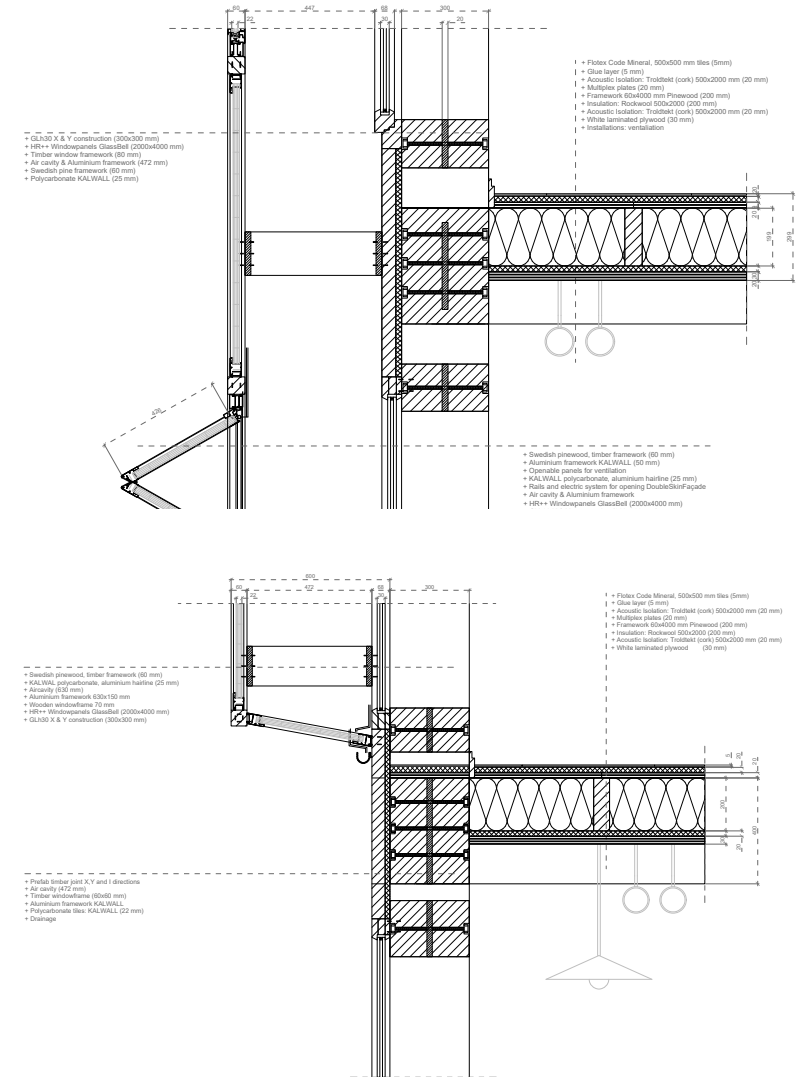
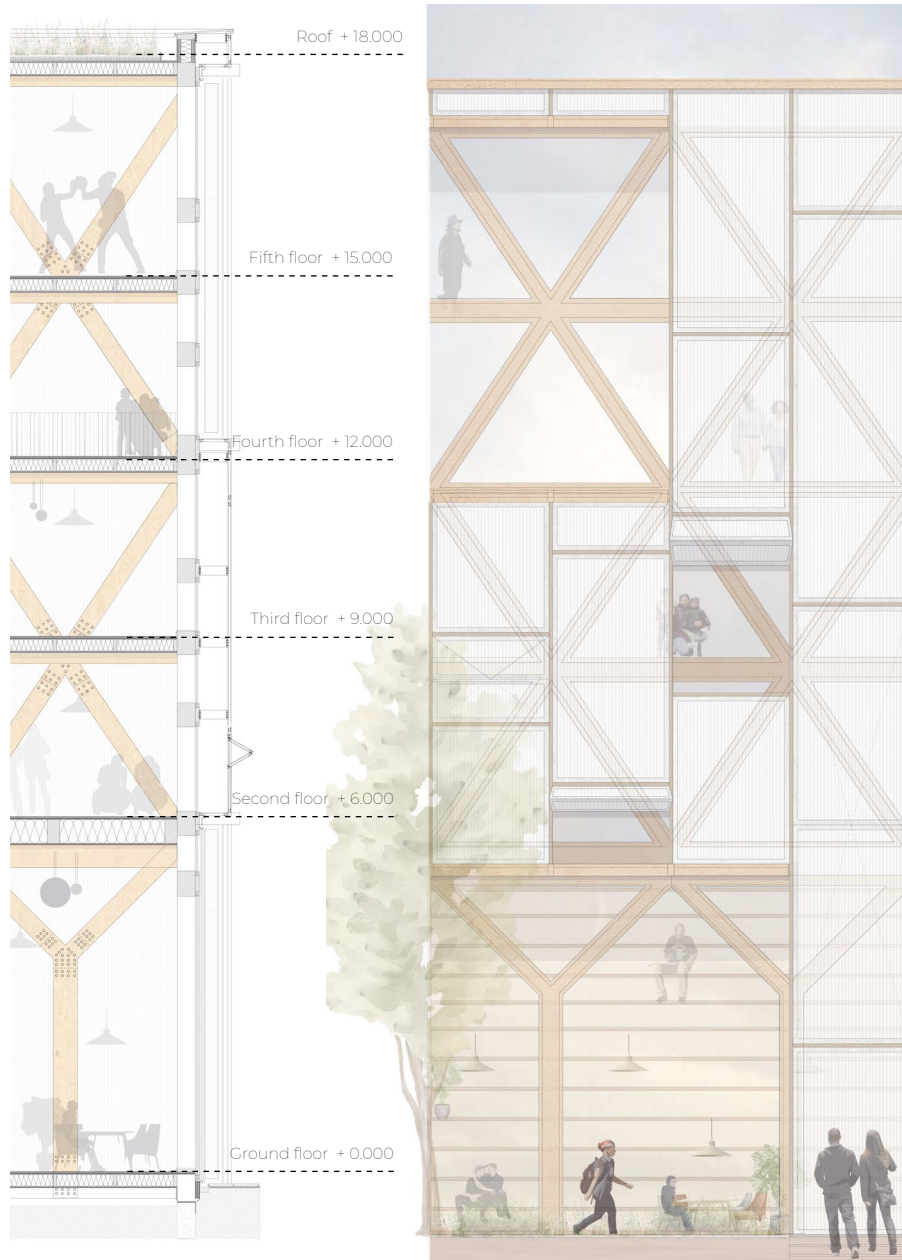
Local meeting garden & café



This local site draws from the surrounding architectural language to create a sense of recognition and continuity, carefully echoing existing forms to establish a strong, place-specific identity. The program consists of a café and a meeting garden, designed as open, social spaces that invite both regulars and passersby. The façade is composed of two layers: a solid inner shell and an outer skin of openable panels, allowing users to modulate openness, light, and visibility. The overall form mirrors the geometry of nearby buildings, ensuring the new structure feels familiar yet distinct, integrated into its context while offering a fresh, adaptable public presence.

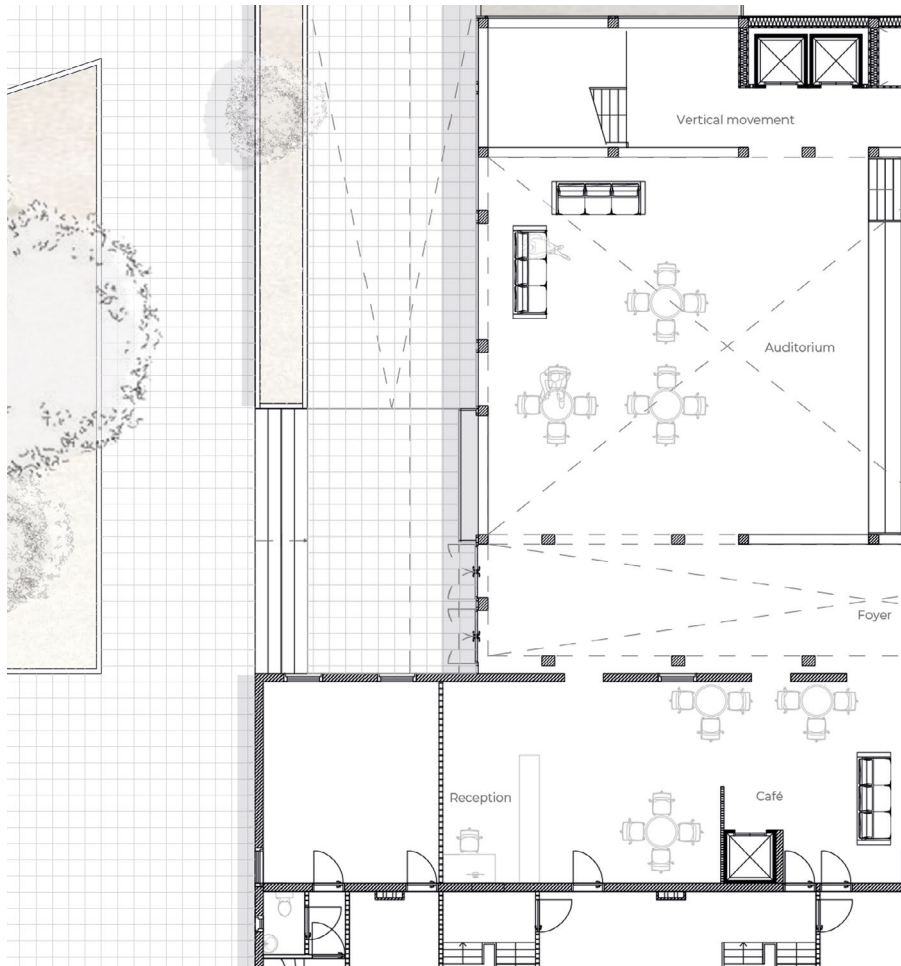


Façade fragment & details

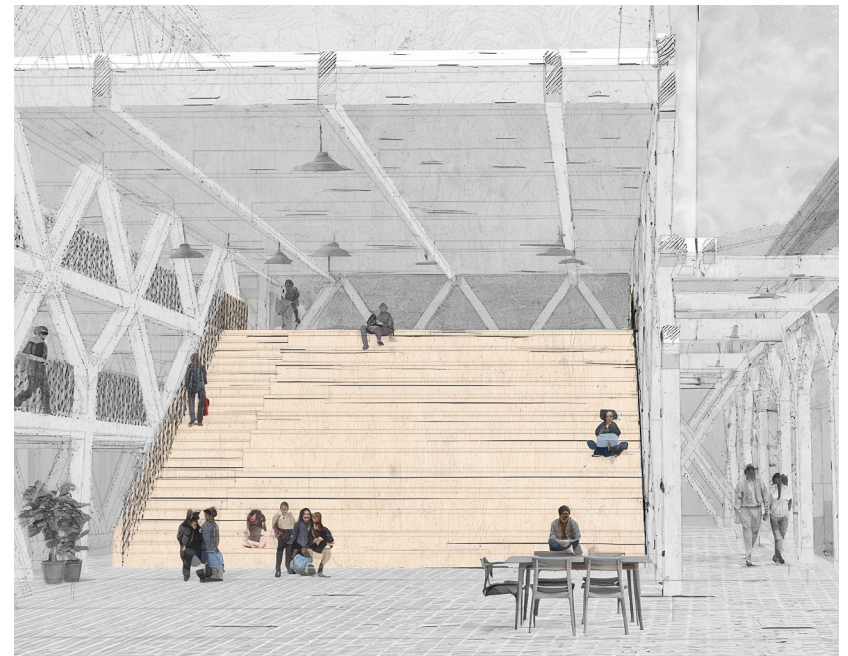
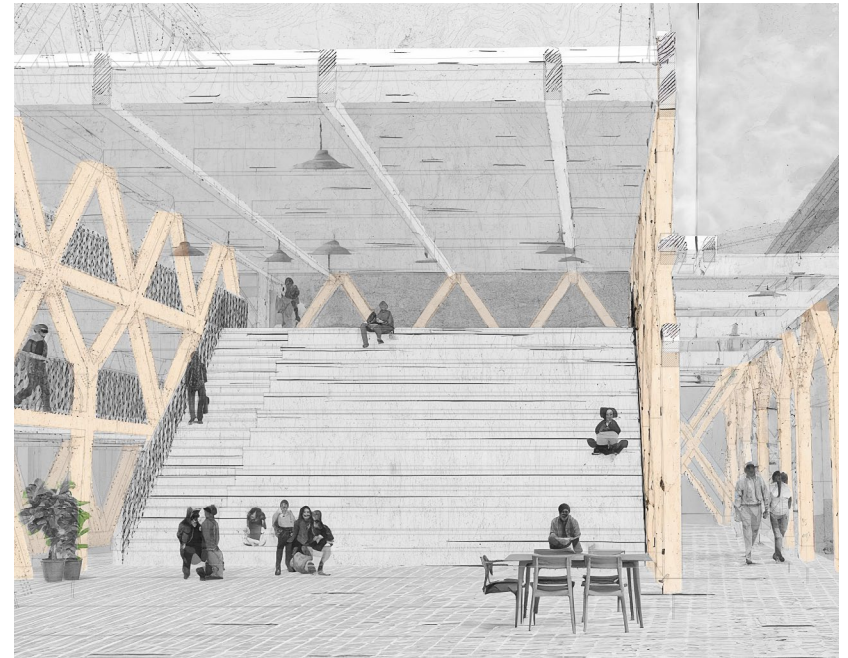


The public façade, facing the Amager public, allows for a literal connection on the ground floor. Via this literal connection the auditorium space and connective hallway to the local face is entered. The detailing shows the materials used and the connections between timber, glass frames, joints and polycarbonate.

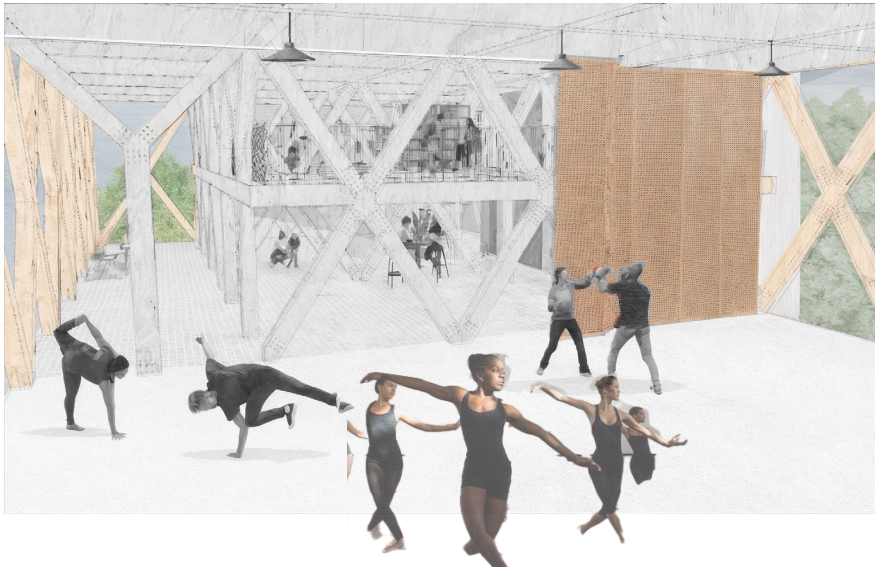
Auditorium



The auditorium sits just behind the public façade, forming a key anchor at the neighbourhood entrance. Its presence is both inviting and symbolic, framed by a series of phenomenal cross-shaped columns that blur the line between structure and spatial experience. These crosses embody a layered transparency, suggesting openness while modulating light and views, and give the entrance a strong, almost ceremonial character. As a result, the auditorium becomes more than a performance space; it acts as a civic threshold, where the identity of the neighbourhood is both expressed and encountered.

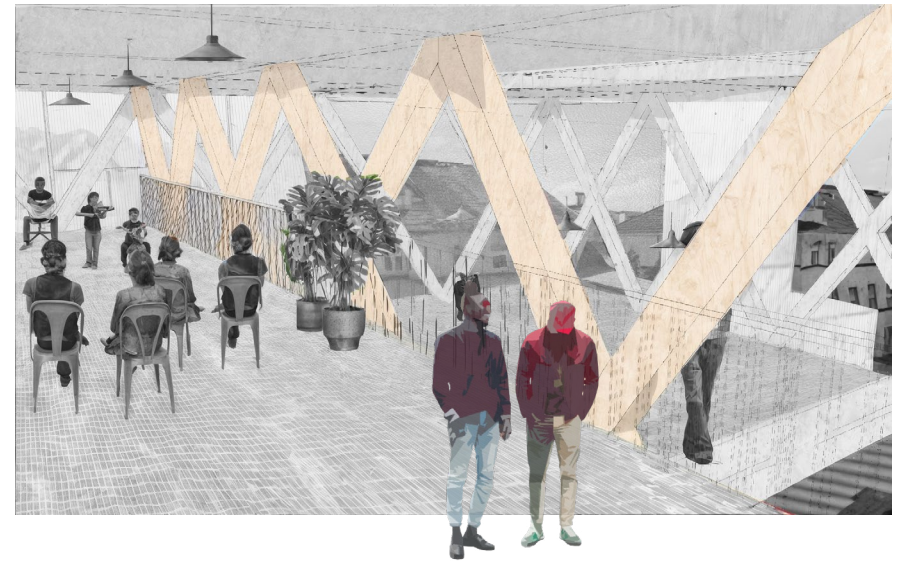


Gymnasium & study spaces



On the upper floors the program is determined by the crosses, the degree of transparency between interior and exterior, voids and demountable walls. Shaping the spaces for a wide variety of functions that focus on users between public inclusion and attraction.

Music school & meeting spaces



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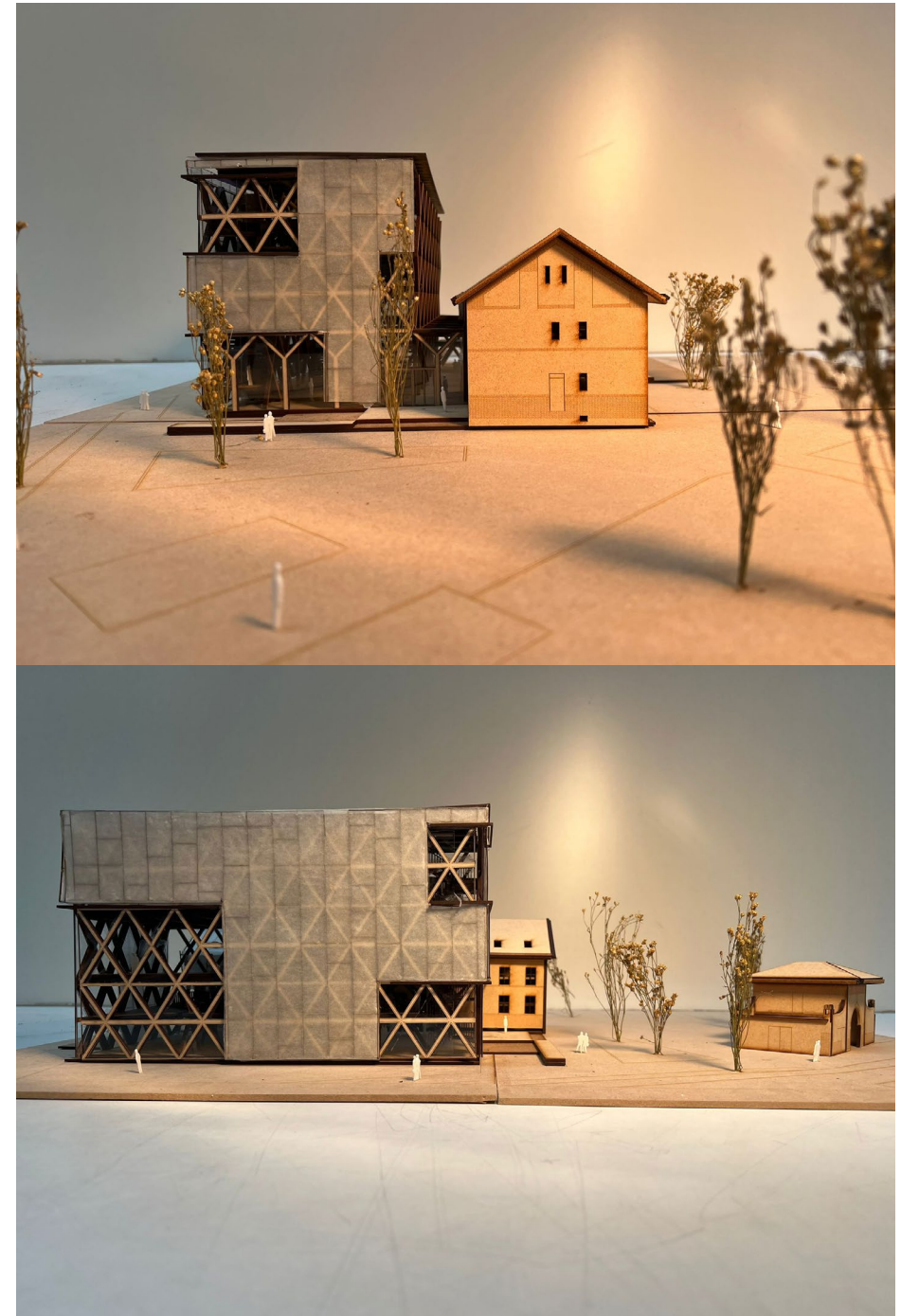
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Reflection

[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

Sundholm association centre | 45

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.