# Reflection on research-by-design process



**P4 Public Condenser**
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**Introducing the studio**

Set in the Haraldsgadekvarteret, a simultaneously post-industrial and residential neighborhood in Copenhagen in the district of  Ydre-Nørrebro, this graduation studio revolves around the design of a public building, specifically a Public Condenser. Rather than a conventional brief, where a full program of requirements casts the design into a pre-determined mold, the Public Condenser assignment necessitates research into the local context to create an individual approach to the building program.
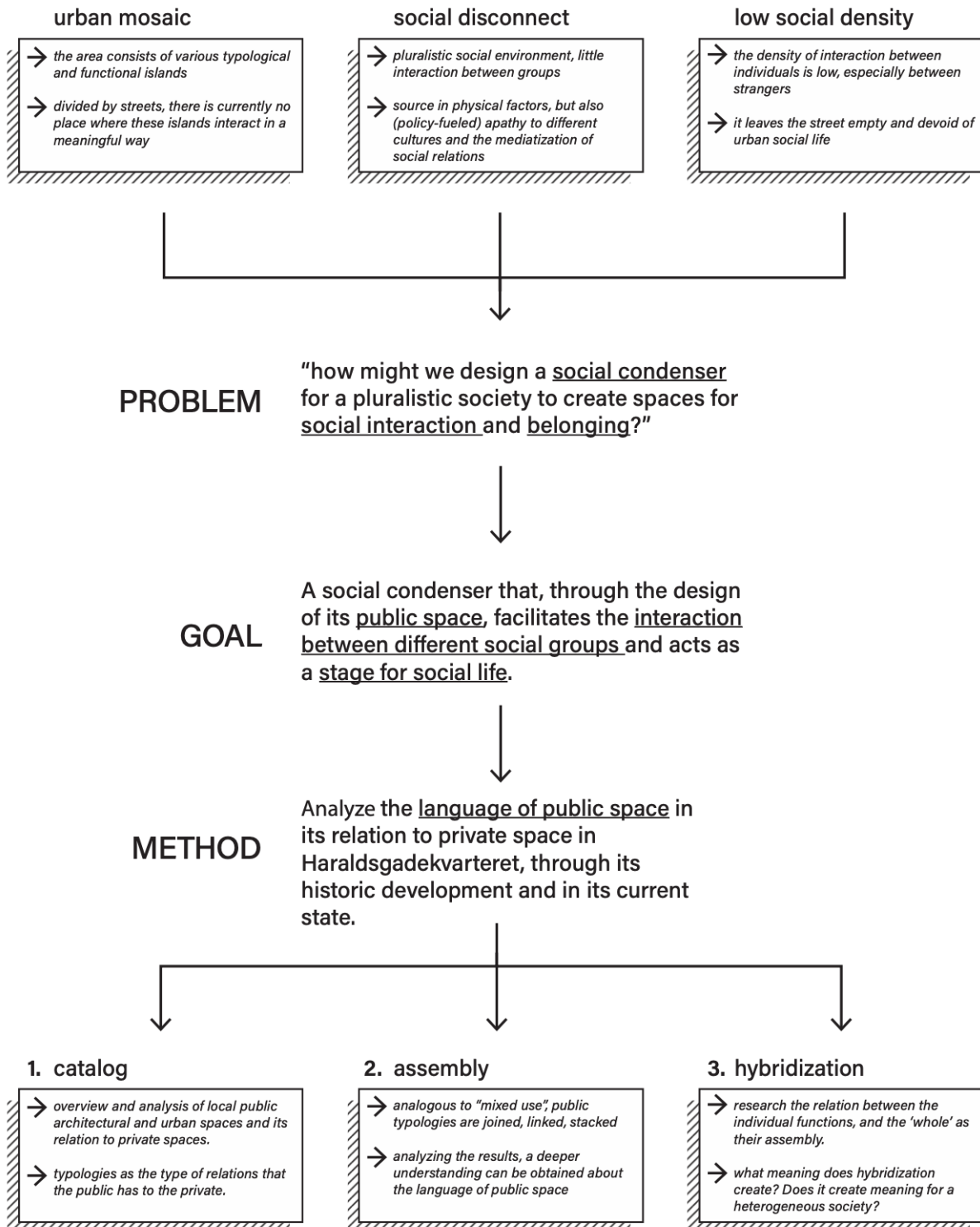
On the study trip to Copenhagen at the beginning of the first semester, we got the chance to get a feel for the local context. The Haraldsgade-kvarteret, bordered by Tagensvej, Jagtvej, and Lersø Parkallé, is a neighborhood shaped by modernist planning principles from the 1920s and '30s, where functions are rationally divided into urban islands with distinct typologies—from small-scale housing to repurposed factories.

From interviews conducted on site, residents expressed a clear need for spaces to study, socialize, or engage in sports—spaces where they could informally and meaningfully meet one another. As every building responds to a need, I concluded that what Ydre-Nørrebro needs is density. Not population density, as that is already well the case, but social density. Density of information, density of interaction, density of diversity. Social density refers not merely to the number of people in an area, but to the intensity of social moments—ranging from a conversation to a simple glance or shared presence. This kind of density has been eroded by increased urban scale, speed, and digital mediation, leading to what Koolhaas has called the 'evacuation of the public realm.' The ingredients are there, but currently there is no place where these could interact in a meaningful way. My approach for a public building was to be a dense building where unexpected encounters occur between those who normally would not meet. A public building that, instead of a Public Condenser, might be called a Social Condenser.

**Intention of research**

For my research plan, I set out to research how to "animate" public space, to increase its social density. This ambition was initially fueled by my readings of Henri Lefebvre, Jan Gehl and Richard Sennett. It fascinated me how they talk about the city as a social device, as a mediator of social relations and daily lives. This notion of Sennett's civility, the apolitical public realm as described by him translated to a public building, was something that I wanted to see in my design for the Public Condenser.

What I set out to do, as described in my research plan, was to make an index of various 'social topographies', a sort of catalog where social urban typologies (like streets, squares, parks) are described and their effect on the social density researched. My plan was to conduct this research in a three-step manner: (1) catalog (2) assemble (3) hybridize. I would make the catalog by researching the context; I would re-contextualize these typologies or urban fragments and combine them into something new and finally I would research the effect of these hybrid forms and programs. A diagram showing the research plan is visible on the next page.

### urban mosaic

→ the area consists of various typological and functional islands

→ divided by streets, there is currently no place where these islands interact in a meaningful way

### social disconnect

→ pluralistic social environment, little interaction between groups

→ source in physical factors, but also (policy-fueled) apathy to different cultures and the mediatization of social relations

### low social density

→ the density of interaction between individuals is low, especially between strangers

→ it leaves the street empty and devoid of urban social life

**PROBLEM**

"how might we design a social condenser for a pluralistic society to create spaces for social interaction and belonging?"

**GOAL**

A social condenser that, through the design of its public space, facilitates the interaction between different social groups and acts as a stage for social life.

**METHOD**

Analyze the language of public space in its relation to private space in Haraldsgadekvarteret, through its historic development and in its current state.

### 1. catalog

→ overview and analysis of local public architectural and urban spaces and its relation to private spaces.

→ typologies as the type of relations that the public has to the private.

### 2. assembly

→ analogous to "mixed use", public typologies are joined, linked, stacked

→ analyzing the results, a deeper understanding can be obtained about the language of public space

### 3. hybridization

→ research the relation between the individual functions, and the 'whole' as their assembly.

→ what meaning does hybridization create? Does it create meaning for a heterogeneous society?

**research by design process**

In the time after P1, I spent quite some time further researching what the public realm means to me, how it works in generating social density and how this might be translated into an approach for my public building. Something that kept returning in my readings was the idea of the urban street as the typology where movement is combined with destination, where necessity creates an environment which has the potential to transform physical human density into social density. For P2, this idea resulted in the concept of the vertical street, both circulation and destination at the same time.

In the meantime, I was researching the functional and spatial structure of high-tech architecture from the 1980s, especially works by Richard Rogers and Renzo Piano. The reason for this was twofold. First, 'inverting' a building moves the building systems and the movement of people towards the exterior. The traditional façade ceases to exist and is replaced by different manifolds or interfaces that mediate between nature, human and machine. This might reduce the barrier between building and city, since the building's functionality is projected towards the exterior and thereby extends an invitation to explore. Elements like an external vertical street, or transparent elevator, have the potential to animate the surroundings by their movement and visibility of social interaction. Secondly, the approach of inside-out architecture lends itself to designing more transparent floorplans and sections, creating the possibility for unexpected encounters between users and the mixture of different activities and target groups.

I had imagined the steps of (1) catalog (2) assemble (3) hybridize as pure research steps, culminating in a body of research that could be an input to my actual building design. However, it turned out to be both the structure of my research, and my design. First, I made a (1) catalog of users and their needs. (figure 1). I did not plan for this in my research plan, but it was a crucial part in determining the functional program for my design. Secondly, I made a catalog of 'nuclear' functions, that could answer to these user needs (figure. 2), and researched their needs.
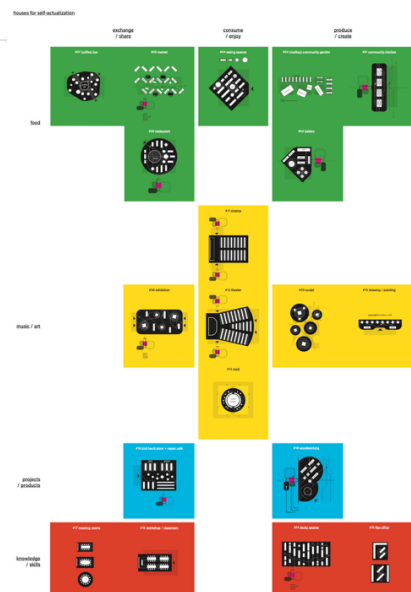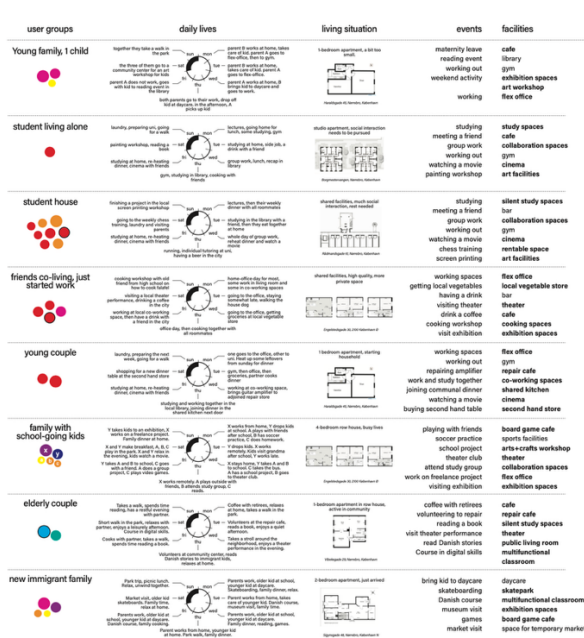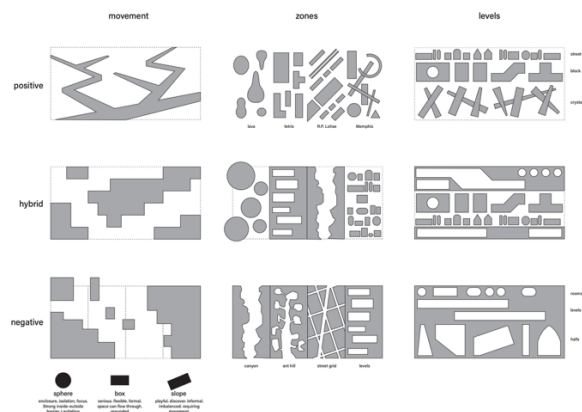


*Figure 1. user atlas*

*figure 2. Functional atlas*

Figure 3. datasheet of functional element

The (2) assemble step similarly was, instead of 'dry' research, an active research-by-design process. By researching sections and different ways of bringing various functions together, I made a collection of schematic sections, as well as finally a dynamic section. (figure 4 And 5)

Figure 4. schematic sections

fig. 5: one iteration of building section

Finally, for the final step of (3) hybridize, I looked at what the final building can do, how it can perform. By analyzing scenarios, thinking of different ways it can be used, I was gradually changing the point from Hybridization to Multiplicity.

## Reflection and evaluation

As already described, the research plan outlined the plan for an ambitious, time-consuming, yet at the same time somewhat vague body of research. While initially being frustrated that I could not make it work while also designing a public building, I managed to redirect my research plan into an approach for my research-by-design process. By using the three stages of research that I outlined in my research plan, I structured my research-by-design process in a manageable way, while yielding a design that in a way responds to the initial problem statement and design question.

As a point of self-criticism, It would have been better to devise a research plan that is more executable and straight-forward. It would have spared me quite some frustration and tangents. I found it quite challenging to mentally divide researching and designing, therefore making the process at times a bit unclear. It would have been more beneficial to structure beforehand what a research-by-design process could look like. However, by taking time to reflect on what I've been doing, as well as by receiving useful feedback every Thursday, I have been able to stay on track and keep my initial direction. As an illustration, below is a diagram I made for P1, and next to it my current section for the upcoming P4 presentation.

The project's relevance to the larger social, professional and scientific framework is a continuation of the used design methodology, where the public building is a collection of smaller nuclei, generating an 'inside' and 'outside' where different amounts of deteminacy generate a potential for multiplicity and self-determination in the building's use. Additionally, by revising the high-tech movement as a potential for sustainable and social buildings, I think my project can be a way to celebrate these various ways of making the built environment less polluting and less invasive.
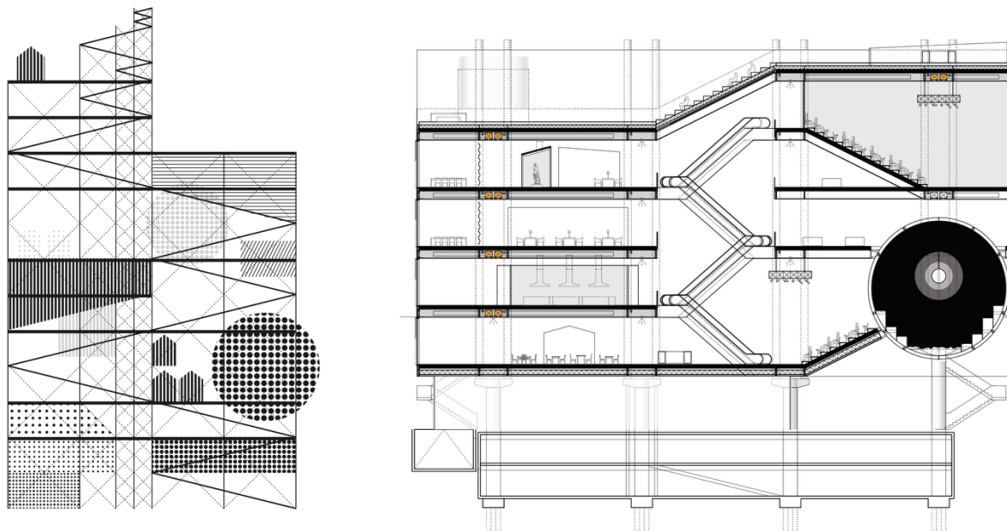


## Ambitions until P5

The final part of this process is undoubtably making a scale model that brings my project to life, and to add finishing touches to all drawings. It is important to bring the project to life, and show that it is a valuable addition to the lives of the people living, working and passing through the Haraldsgadekvarteret.