

An aerial photograph of Rotterdam, Netherlands, taken at sunset. The sky is filled with soft, orange and yellow clouds. The city's dense urban landscape is visible, with numerous buildings and a prominent canal. A large white circular graphic is superimposed over the center of the image, containing the title text. In the foreground, several modern buildings are illuminated, and the Erasmus Bridge is visible on the right side.

DESIGNING LIVABLE ARCHITECTURE IN AN EVER DENSIFYING URBAN ROTTERDAM

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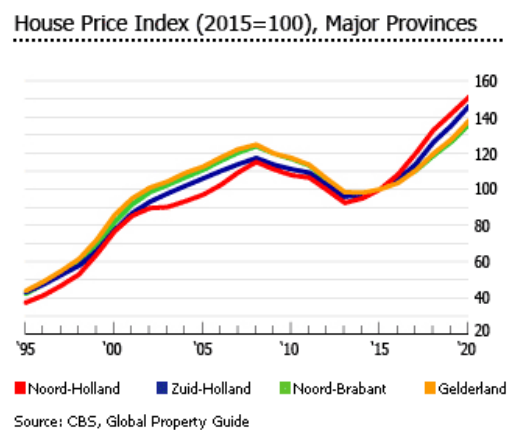
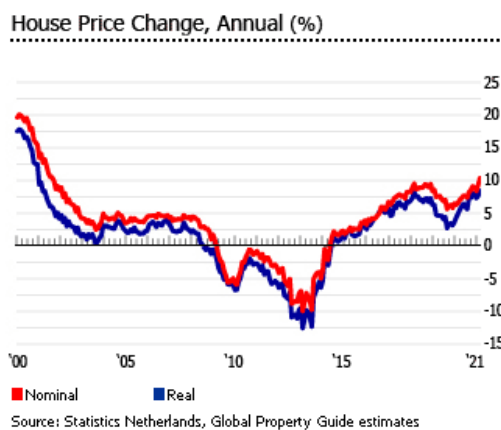
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Since the beginning of my studies, I was fascinated by architecture aimed towards housing. The ability an architect possesses to think about, predict and design for the dwellers' needs is something I always found almost magical. As a soon-to-be young professional, I was also observing the housing market. Prices kept going up, something that in the beginning, I found logical; We live in an era of overpopulation and mass global densification. Countries and cities around the world are going through massive housing crises, where demand drastically overcomes the supply for adequate housing, driving the housing market prices to extremes. At the same time, especially in Europe, land is scarce. That means that plot prices are also rising dramatically. Then I saw the raw consequence of this seemingly never-ending price increase; people forced to move because they were unable to afford the ever-rising rent prices.

After graduating from my masters' degree in Greece and dabbling into the professional world, I realized that in many cases, architecture is in fact part of the problem; I realized that architecture is separated into two main categories, one being theory, and the other being practice. When architects theorize about architecture, they talk about values, they hold a critical view towards architectural creation. However, when it comes to practice, where an architect's design is held accountable to a client-be it a private party, a developer or others- there seems to be a switch of incentive. Values and theories give way to profit margins and capital gains. The theorist becomes the economist, trying to fit a design within a tight budget. These news are as old as the financialization of property in the 18th century, however the effect of capital in architectural design has been rapidly increasing since the late 20th century.¹

This "Form follows finance"² train of thought, leads to gentrification and placeless architecture; One great example being the shiny, luxury high-rise towers. Marketed towards overseas investors and housing corporations, these towers drive local market prices sky high, pushing the existing communities away from the center of the metropolis. "... blocks of generic could-be-anywhere towers designed with no sensitivity to climatic or cultural context, with stacks of mono-tenure apartments and barely any affordable housing."³

Rotterdam is no exception to the rule, where, despite the existence of housing regulations specifically in place to keep the housing market prices under some control, "existing home prices rose strongly by 8.6% during 2020 (7.4% inflation-adjusted), to an average of €307,358 (US\$367,599), following a y-o-y rise of 10.2% in 2019."⁴



1 Cheng, L. (2019, April 2). *How money shapes architecture: Oliver Wainwright*. Architecture Now. Retrieved November 3, 2021, from <https://architecturennow.co.nz/articles/how-money-shapes-architecture-oliver-wainwright/>

2 Willis, C. (1995). *Form Follows Finance: Skyscrapers and Skylines in New York and Chicago*. Princeton Architectural Press.

3 Cheng, L. (2019, April 2). *How money shapes architecture: Oliver Wainwright*. Architecture Now. Retrieved November 3, 2021, from <https://architecturennow.co.nz/articles/how-money-shapes-architecture-oliver-wainwright/>

4 Delmendo, L. C. (2021, May 18). *The Netherlands: Pandemic not enough to cool down its red-hot housing market*. Global Property Guide. Retrieved October 13, 2021, from <https://www.globalpropertyguide.com/Europe/Netherlands/Price-History>.

Through the advanced housing graduation studio, I try and seek answers to a question that had-unknowingly- arisen; *How can architecture work against gentrification, while at the same time solving the ever- increasing housing crisis?*

A possible solution that was proposed within the wings of the studio was collective housing, a term I was not familiar with. Collective housing is something that drew my attention early on during our tutors' lectures, and that is why I decided to implement its values and ethics in my graduation design. But in order for me to design a resilient collective housing module, I need to first understand what they are.

Collective housing is a form of house ownership. Interested buyers purchase a stake of the co-operative and then pay a monthly fee, also referred to as "cost rent"⁵. In a collective housing scheme, housing prices are guaranteed to not increase. This is ensured by the government, with politicians passing regulations specified for non-profit housing. This lack of housing price speculation means that dwelling units cannot be seen as a commodity. This in turn allows architects to freely experiment, detached from capital that restrains them and forces them to profit- making oriented design decisions. Architectural discourse within a collective housing scheme is allowed to go from research and theory, organically into practice. *The idea of collective housing is highly democratic.*



Kalkbreite housing complex, Müller Sigrist Architekten
<https://www.archdaily.com/903384/kalkbreite-muller-sigrist-architekten>

5 Jones, E. L. (2020, July 22). *How housing co-operatives built a city*. Architectural Review. <https://www.architectural-review.com/archive/how-housing-co-operatives-built-a-city>

While fascinated by this new to me form of housing, new questions arose; **How do we design livable collectives in an ever densifying urban Rotterdam?** What's the minimum "architectural standard" for a livable space? How does this standard compare to the European legislation on minimal room requirements? How does the in-between space affect life quality within a collective living model?

Gap between theory and applied design

By observing and comparing theorists' opinions on collective housing, and architectural creations designed for collective housing owned by developers (capital), we see that the two have very different approaches to living.

Frei Otto, "The Baumhauser"

The Baumhauser, also known as "the Eco house", was designed as part of the IBA initiative in 1987. The main idea was unifying building and nature. It was built according to social housing standards and costs, therefore it was initially deemed affordable, while still being in the center of Berlin. The design was based on Otto's "tree house" idea, initially born in a form of a housing tower in New York.

While Otto Frei was the idea initiator, he willingly stepped down from the final design process of each individual apartment and let the future dwellers design their homes the way they wanted with almost complete freedom. This eventually led to a building looking essentially like a mosaic, composed of multiple smaller "buildings" within a larger structure. When the project came to its building stage, a billboard was placed outside the construction site to attract customers through an application form. The idea was to get families to co-build the site, and that is why a building collective was created. The process of meeting and collaborating to reach a finalized design, almost automatically dubbed the Baumhauser as a building with a communal identity.⁶



Baumhauser, Otto Frei
<https://mapio.net/expose/7053560/>

⁶ X.M. (2015, October 24). *Der Traum vom Baumhaus/Dreaming of a treehouse- Frei Otto's ecological building project in Berlin* [Video]. Vimeo. <https://vimeo.com/ondemand/freiotto>

“Conscious co living”

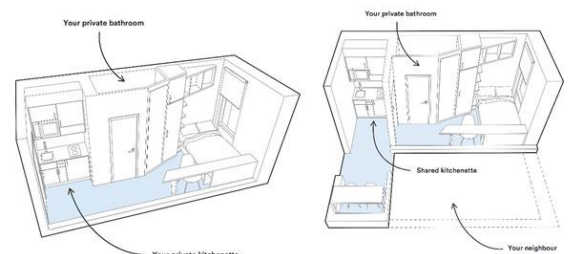
“The Conscious Co living initiative” is a prime example of collective architecture working to serve the capital, ready to profit on “the trend of co-living”⁷. It is led by the Stockholm-based real estate venture TechFarm and the Stockholm-based architecture office CoDesign. The project proposed is deemed to become a “Flagship building”, and includes a ‘conscious living’ initiative. The so-called ‘micro-apartments’ designed for long- stay are between 10 and 30 m², while short-stay capsules, described as cells, even drop to sizes ranging between 4 to 26 m². The short term apartments are separated by a ‘border’ wellness floor, above which the floors are only accessible with the right keycards, corresponding only to long-term stay apartment residents.⁸



Conscious co living initiative
<https://codesign.se/en/techfarm/>

2.1/ Minimums of livable space

Even though it is clear that, in extreme cases, what is currently being sold as “collective living”, -i.e. a living capsule bordered by forced and segregating communal areas- is highly unlivable, European legislation seems to be following the business part of architecture, that sells space as a product, a commodity. Except for Italy, Europe seems to be heading towards deregulation when it comes to minimum usable and livable spaces. *“...This trend has been curbed to some extent, but only because of the introduction of accessibility regulations. Minimum standards, when present, vary to a large extent from one country to another. For example, in Italy, the minimum area for a room defined as habitable is 9 square meters; in France, it drops to 7 square meters (and until 2006 it was 6 square meters), while in the Netherlands it goes as low as 5 square meters.”*⁹



Old Oak, England, PLP Architects // DH Liberty

7 Mairs, J. (2021, May 25). *Millennials want experiences not possessions, say co-living entrepreneurs*. Dezeen. <https://www.dezeen.com/2016/04/05/co-living-shared-collective-accommodation-housing-millennials-trend-common-wework/>

8 Frichot, H., Gabriellsson, C., & Runting, H. (2017). *Architecture and Feminisms: Ecologies, Economies, Technologies (Critiques)* (1st ed.). Routledge. Pp. 143

9 Rigolon, A. (2009). *European Housing Concepts 1990-2010*

Taking into account the driving trend of ever-expanding densification in Rotterdam, and in fact all over the world, I find it vital to find a balance between profit maximization and high quality of life within a collective living context. For that, I plan on studying the works of theorists such as Herman Hertzberger on living space and comparing that to the modern precedent. It is vital that architects hold a critical view towards this deregulation, that only leads to unlivable, cramped spaces that force people to a confined, capsularised life.

There seems to be a driving trend in newly built, profit driven collective initiatives; Communal areas are a selling point, almost in an effort to reconcile for the lack of private space. Even in the densest forms of living, be them collective or not, we find liminal spaces, spaces that exist between two others. These spaces can come in the form of a balcony, a corridor or, in the case of collective living, a shared public space. Why do modern collectives upsell these spaces so intensively? How do these liminal spaces act upon their users?

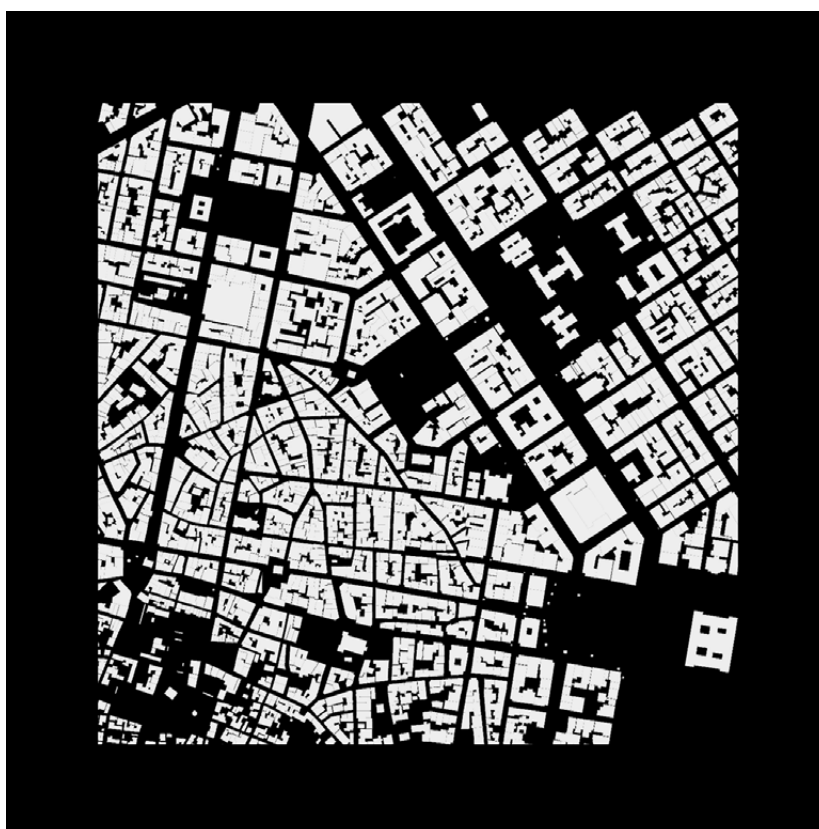
2.2/ In- between spaces in collective housing

ABSTRACT

Many theorists have talked about liminal spaces. Elizabeth Grosz¹⁰ describes them as paradoxical since they can acquire meaning, a position, in relation to something that is not and can never exactly be, that is, the two spaces surrounding the in-between. And the in-between spaces are always differentiated from them since they are the Intermediate, the third space. These spaces, she claims, are strange, as they are always placed in relation to two other spaces, one inside and one outside, one here and one there, one closed and one open, one covered and one not, one public and one private and so on.

The in-between spaces are a third space, an area of dialogue and interaction between two other spaces, without hierarchy. A place outside of both, a space that exists or does not exist.

Doreen Massey¹¹ mentions that the in-between is the space we consider to depict, amid all these modern flows of movement and communication, the desperate seek of peace and quiet.



The inbetween space within a city's context
Personal work

10 Grosz, E. (2001). *Architecture from the Outside / Essays on Virtual and Real space.*

11 Massey, D. (1994). *A Global Sense of Place (from Space, Place, and Gender).* Minneapolis: University of Minnesota Press.

Before I jump to the definition of the word itself, it is of value to underline that the in-between space, its size, form and use depends entirely on its context. On a **city scale**, it consists of all the roads, pavements, and bicycle lanes, all the spaces that help us get from point A to point B. It is highly permeable and ever-changing, much like the city itself. As it is a place of interaction, it is highly affected by its inhabitants. It is formed through a series of social interactions, that met and coexisted in said given place. In a **public building** context, the in-between space consists of all the corridors, escalators, and common areas. It also is affected and in fact formed by its users, although it is a bit less permeable, as it's intended for in-building use. In a **housing context**, the in-between space is the buffer between the inside and outside, the social and the private.

It is, therefore, in its original sense, the space that each time "borrows" its character (public / private / semi-private / semi-public) but also its size and form (boundary / skin / strip of land / large area etc.) depending on:

- its position
- its use and
- its historical, social and spatial significance.

DEFINITION

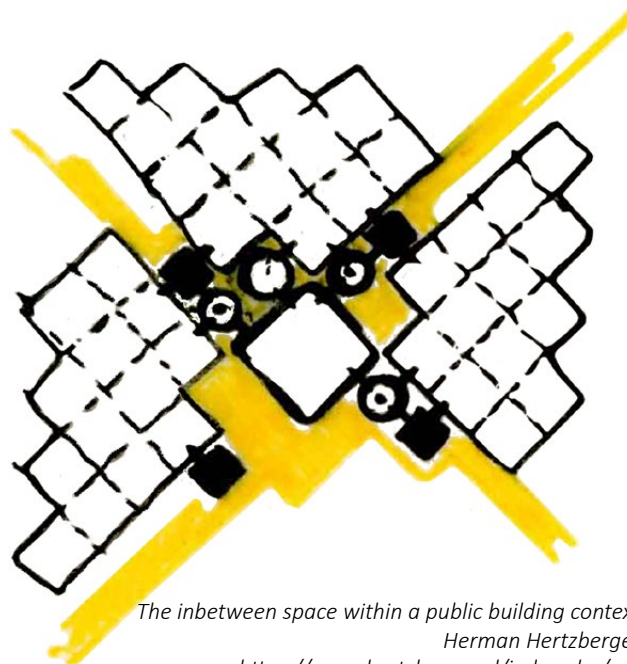
As I understand it, the in-between space is highly affected by its context. It acts as a buffer between two distinct spaces, both in terms of limit and use. To try and densify the meaning of this space, we could use Herman Herzberger's definition. So, the in-between could be identified as

"An intermediate space between opposite elements, such as a whole and parts, inside and outside, open and close, central and decentral". A space that is defined by its position, its use, and its historic, social, and spatial importance.

CONTEXT OF RESEARCH

Taking into consideration my design context (a fully urban, dense neighborhood near the center of Rotterdam), the studio's main focus (densification of housing), and to further narrow down the term of an in-between space to help my research, I will be focusing on the "public building" and "housing" contexts I aforementioned. Therefore, I can try to form a definition of the in-between space, within the context of my research as:

An intermediate space between a private area -room/apartment- and the outside urban environment. A space characterized by its orientation towards collective use, its inclusivity, permeability, and versatility.



The inbetween space within a public building context
Herman Hertzberger
<https://www.hertzberger.nl/index.php/en/>

My main goal through this research is to design resilient, high quality collective housing within a dense urban context such as the Blijdorp area. Key aspects of my design goal are “verticalizing” the Dutch row typology. By placing this traditional typology of living within a dense high rise building context, I intend to create a diverse design, both in plan and facade. The collective housing unit I intend to design will be aimed towards elderly and student occupants. To help with the research and to see how architects have tried to solve or express the aforementioned goals through their designs, I have selected an initial pool of case studies;

“Cube houses”, Rotterdam, Piet Blom, 1977¹²

Due to the peculiar shape of the cube houses, the shared shaded-in between- space has an unmatched dynamic. Every step dramatically changes the perception imposed to the visitor from the surrounding built envelope. All of the individual homes’ windows are placed at an angle, letting passersby take a glimpse into the residents’ home. This relation between inside and outside, public and private, is what led me to choosing this building as part of my case studies.



*Cube houses, Piet Blom, 1977
Personal capture*

12 *Kubuswoningen, the Cube Houses of Rotterdam.* (2015). MyBestPlace. <https://www.mybestplace.com/en/article/kubuswoningen-the-cube-houses-of-rotterdam>

“Abtswoude Bloeit!”, Delft¹³

Abtswoude Bloeit is selected to be part of the case studies, both because it is a form of collective housing, but also because it contains the exact mix of user groups I want to incorporate in my graduation design-i.e. Students sharing communal spaces with elderly-



Abtswoude Bloeit!, Delft
<https://abtswoudebloeit.nl/verhalen/samen-genieten-van-stamppot>

“Het Schetsblok”, Amsterdam, ANA architecten, 2018¹⁴

The Sketchblock was chosen to be part of the case studies due to its collective housing nature, the inclusion of the future dwellers within the design, but also the flexibility of the housing typologies incorporated within a dense high rise structure.



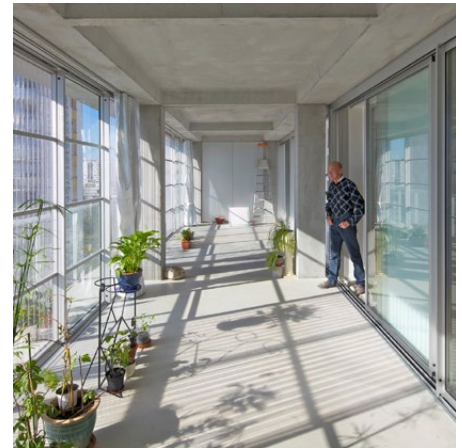
Het Schetsblok, ANA Architecten
<https://www.archdaily.com>

13 *Abtswoude bloeit!* (2021). Abtswoude bloeit! <https://abtswoudebloeit.nl>

14 ANA Architecten. (2021, April 26). *Flexibel casco met maatwerkappartementen in Het Schetsblok*. <https://www.ana.nl/portfolio-item/het-schetsblok/>

“Transformation of 530 Dwellings”, Lacaton- Vassal Architectes, Frédéric Druot Architecture, Bordeaux, 2019

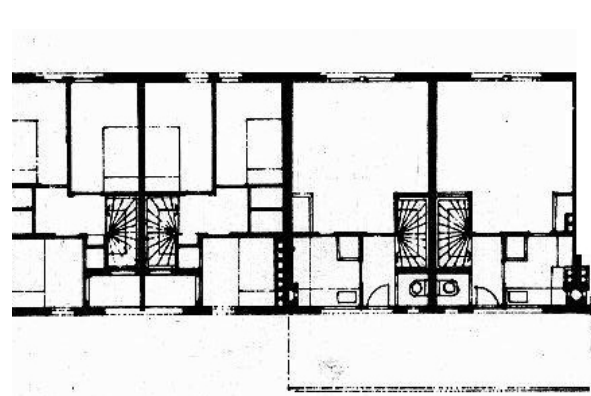
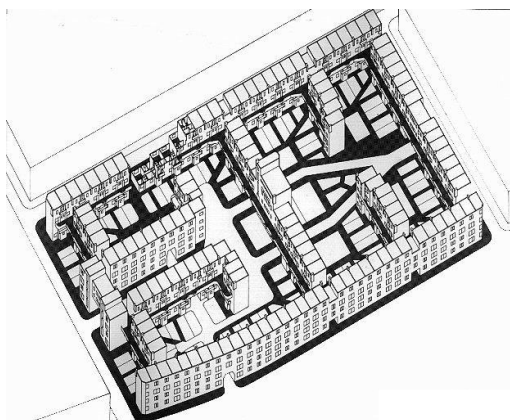
The project is selected as part of the case studies as it is a renovation/ repurposing of an existing structure, something that is also part of my graduation design, and due to the addition of a flexible in- between space-balcony- to each apartment.



Transformation of 530 dwellings
Lacaton Vassal architectes, Frédéric Druot Architecture
<https://arquitecturaviva.com/articles/lacaton-vassal-in-bordeaux>

“Spangen social housing”, Michiel Brinkman, Rotterdam, 1919¹⁵

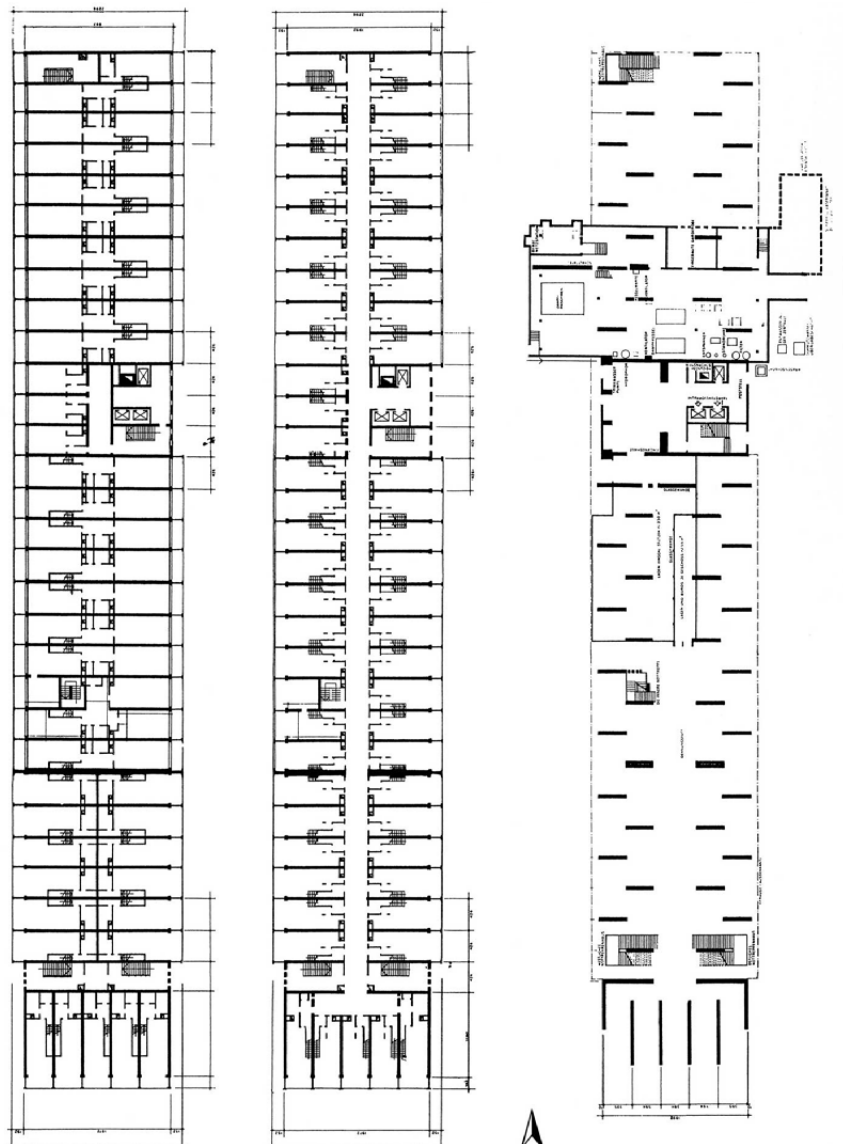
Spangen Quarter is part of the selected case studies as it provides vital insights to the history of the Dutch gallery housing typology (something that will be part of my graduation design), but also to the transition between the public and the private area within a dense housing model.



Spangen social housing, Michiel Brinkman
<http://hiddenarchitecture.net/spangen-quarter-housing/>

“Unite d’ habitation”, Le Corbusier, Marseille, 1952¹⁶

L’ Unite d’ habitation is chosen as part of the selected case studies due to its innovative apartment layout and the liberal use of communal spaces within a dense built block.



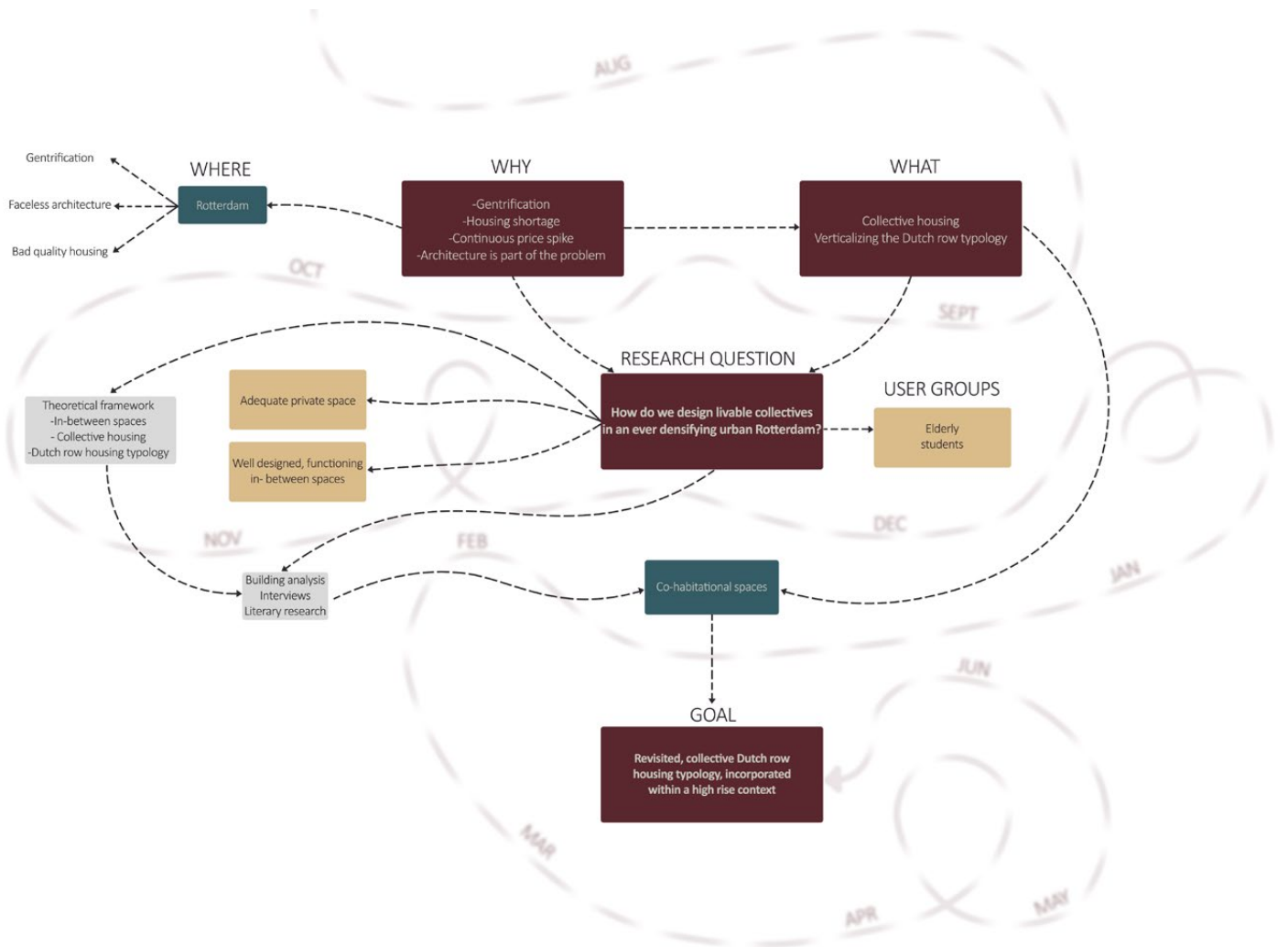
*Unite D’habitation
Le Corbusier
<https://hansaviertel.berlin/en/bauwerke/flatowallee-16-unite-dhabitation-typ-berlinle-corbusier/>*

16 Kroll, A. (2020, February 3). *AD Classics: Unite d’ Habitation / Le Corbusier*. ArchDaily. <https://www.archdaily.com/85971/ad-classics-unite-d-habitation-le-corbusier>

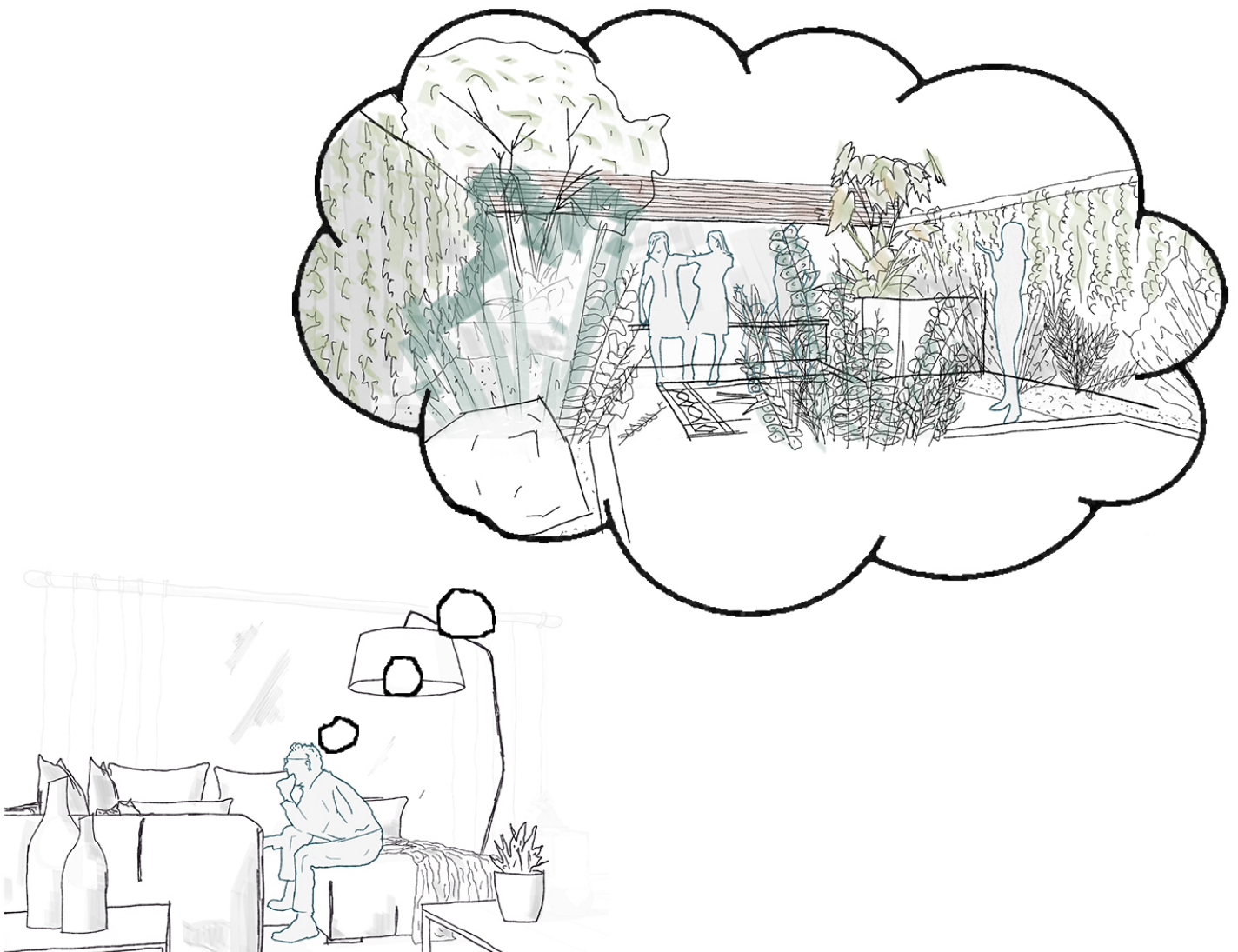
4/ Research methodology

- i) Analysis of selected buildings; study the buildings and the theory behind them, in order to draw certain qualities to incorporate into my final graduation design, such as apartment size, existence and sizing of communal spaces etc.
- ii) Qualitative research interviews with user groups of the “Cube houses” and “Abtswoude Bloeit!”; Through a series of interviews, I plan to draw conclusions based on the user groups experiences. Possible questions are;
 - For **“Cube houses”**:
 - *“how satisfied are you with the provided PRIVATE space in the settlement?”*
 - *“What would you change in terms of room size, configuration, connection to common areas, what could be improved?”*
 - For **“Abtswoude Bloeit!”**:
 - “how satisfied are you with the provided PRIVATE space in the settlement?”*
 - “what are the positives of sharing communal spaces?”*
 - “what’s it like sharing communal spaces with a different age group?”*
- iii) Literary research





For the graphic novel, my chosen target user is an elderly person. The novel evolves through 3 chapters; In the first chapter, we see the character alone in his family home, after his kids left for university. Feelings of loneliness start creeping in, and our character starts dreaming of human contact, **dreaming of community**. In the second chapter, we see him move in a new collective (my design), where he meets new people (both his age and students), exchanges ideas and experiences, creating friendly bonds. In the third and last chapter, we see a new character taking over the room, filled with our previous hero's essence, ready to be re-habitated and re-transformed according to the needs of the new user.



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