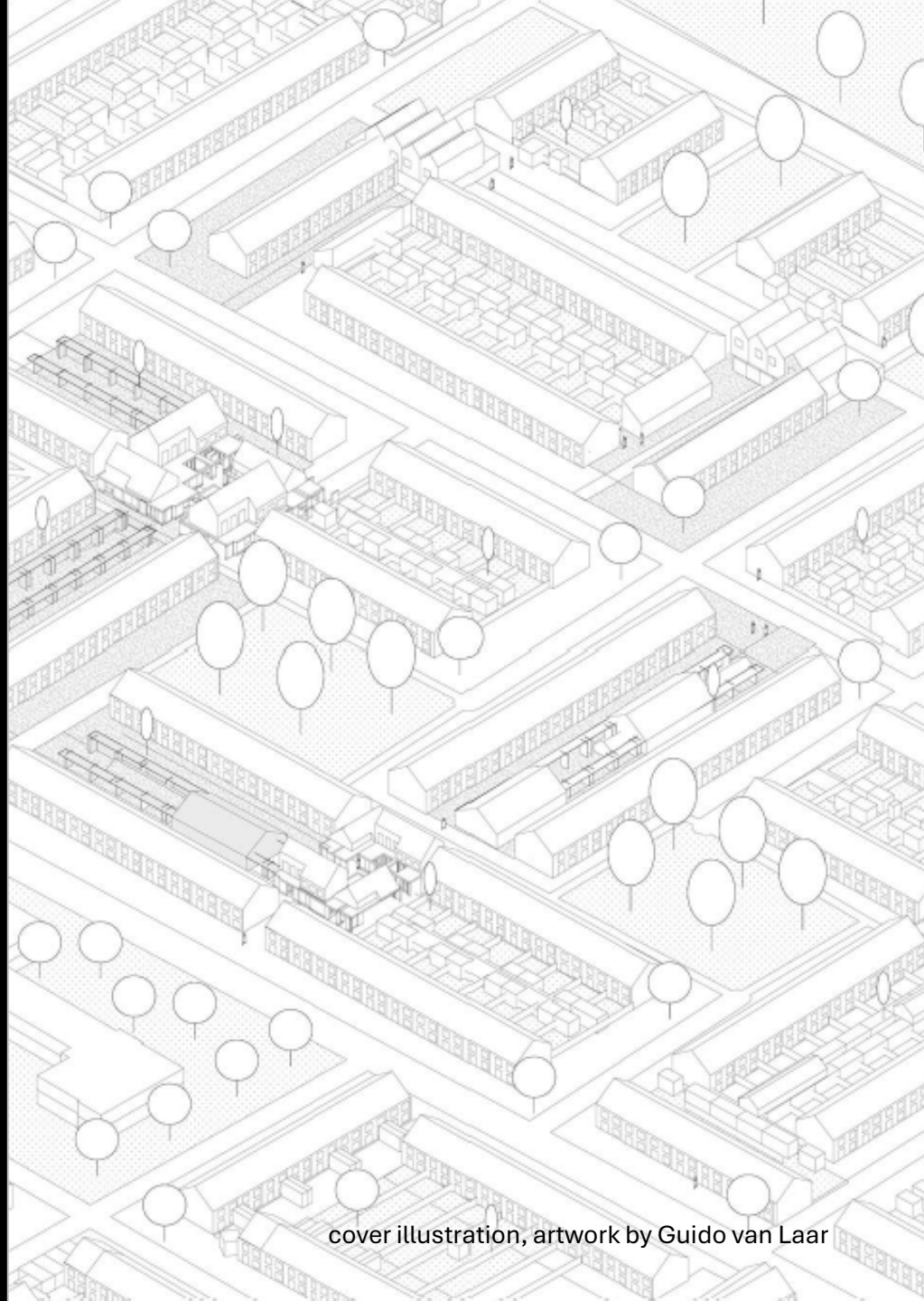




# Carousel presentation

## Architecture & Urbanism

Prof Ir. Juliette Bekkering



cover illustration, artwork by Guido van Laar

Welcome!

# Presentations (7 minutes)

## Graduation Studios Architecture

1. ***The Gender of Architecture*** (Q3, ADE01/TA/AHT)

dr. Jacob Voorthuis, ir. arch. Barbara Kuit, ir. Ruurd Roorda  
J.C.T.Voorthuis@tue.nl, B.C.I.M.Kuit@tue.nl, r.p.j.roorda@tue.nl

2. ***Sufficiency Consultancy*** (Q3+Q4, AHT01)

prof. dr. Daniel A. Barber, [d.a.barber@tue.nl](mailto:d.a.barber@tue.nl)

3. ***Intermediate Architecture and the Culture of Dwelling: A Tale of Two Cities*** (Q3, RA01)

drs. ir. Like Bijlsma, ir. Jochem Groenland, ir. Wouter Hilhorst  
e.bijlsma@tue.nl, J.Groenland@tue.nl, w.hilhorst@tue.nl

## Graduation Studios Urbanism

4. ***Density and other Matters*** (Q3+Q4, UUA01)

dr.ir. Dena Kasraian, Aroosha Zahid MSc  
d.kasraian@tue.nl, a.Zahid@tue.nl, p.j.v.v.wesemael@tue.nl

## Graduation Studios Architecture & Urbanism

5. ***Unbuilt ANTWERPEN*** (Q3+Q4, RA02/UUA)

dipl. ing. Haike Apelt, MA B.arch. Daryl Mulvihill  
h.apelt@tue.nl, d.m.mulvihill@tue.nl

>>[Link](#)<< to the  
brochure SEM-B  
2024/2025

For Graduation  
Studios,  
motivation  
letters should  
be uploaded in  
CANVAS for first  
and second  
choice  
(ultimately 5  
January 2025)

# Agenda

<b>13.00</b>	Welcome/introduction	Juliette Bekkering
<b>13.10</b>	The Gender of Architecture	Jacob Voorthuis, Barbara Kuit, Ruurd Roorda
<b>13.17</b>	Sufficiency Consultancy	Daniel Barber
<b>13.24</b>	Intermediate Architecture and the Culture of Dwelling: A Tale of Two Cities	Like Bijlsma, Jochem Groenland, Wouter Hilhorst
<b>13.31</b>	Density and other matters	Dena Kasraian, Aroosha Zahid, Pieter van Wesemael
<b>13.38</b>	Unbuilt ANTWERPEN	Haike Apelt, Daryl Mulvihill
<b>13.45</b>	Questions & Answers	

## ***The Gender of Architecture***

*dr. Jacob Voorthuis, ir. arch. Barbara Kuit, ir. Ruurd Roorda*  
*[j.c.t.voorthuis@tue.nl](mailto:j.c.t.voorthuis@tue.nl)*, *[b.c.i.m.kuit@tue.nl](mailto:b.c.i.m.kuit@tue.nl)*, *[r.p.j.roorda@tue.nl](mailto:r.p.j.roorda@tue.nl)*



# The Gender of Architecture

Adolf Loos, bedroom for Lina, Vienna, 1903, reconstruction by Hubmann Vass Architekten, 2014

1. gender definition

2. the body metaphor

3. gender: some personal observations    masculine  
feminine  
pairs  
non-binary

4. assignment                                    research  
analysis  
urban design  
architecture

content

## sex

/sɛks/

*noun*

1. (chiefly with reference to people) sexual activity, including specifically sexual intercourse.  
"they enjoyed talking about sex"
2. either of the two main categories (male and female) into which humans and most other living things are divided on the basis of their reproductive functions.  
"adults of both sexes"

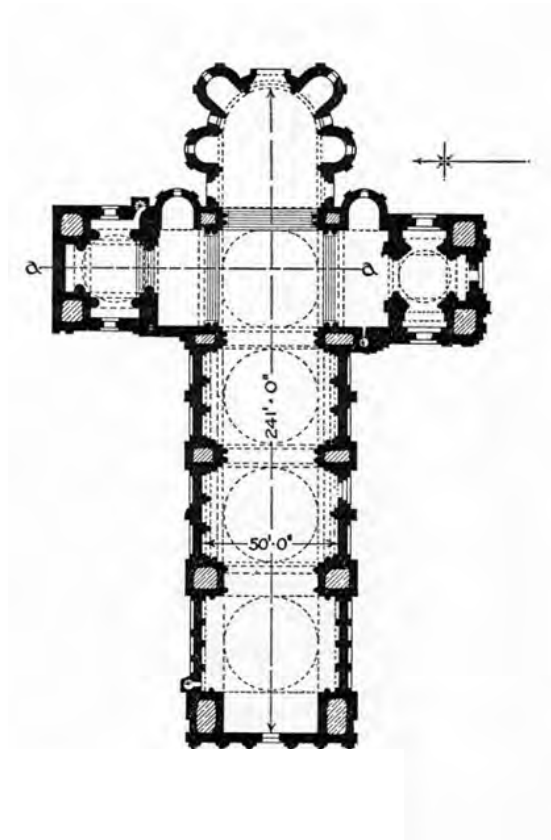
## gender

/ˈdʒɛndə/

*noun*

1. either of the two sexes (male and female), especially when considered with reference to social and cultural differences rather than biological ones. The term is also used more broadly to denote a range of identities that do not correspond to established ideas of male and female.  
"a condition that affects people of both genders"





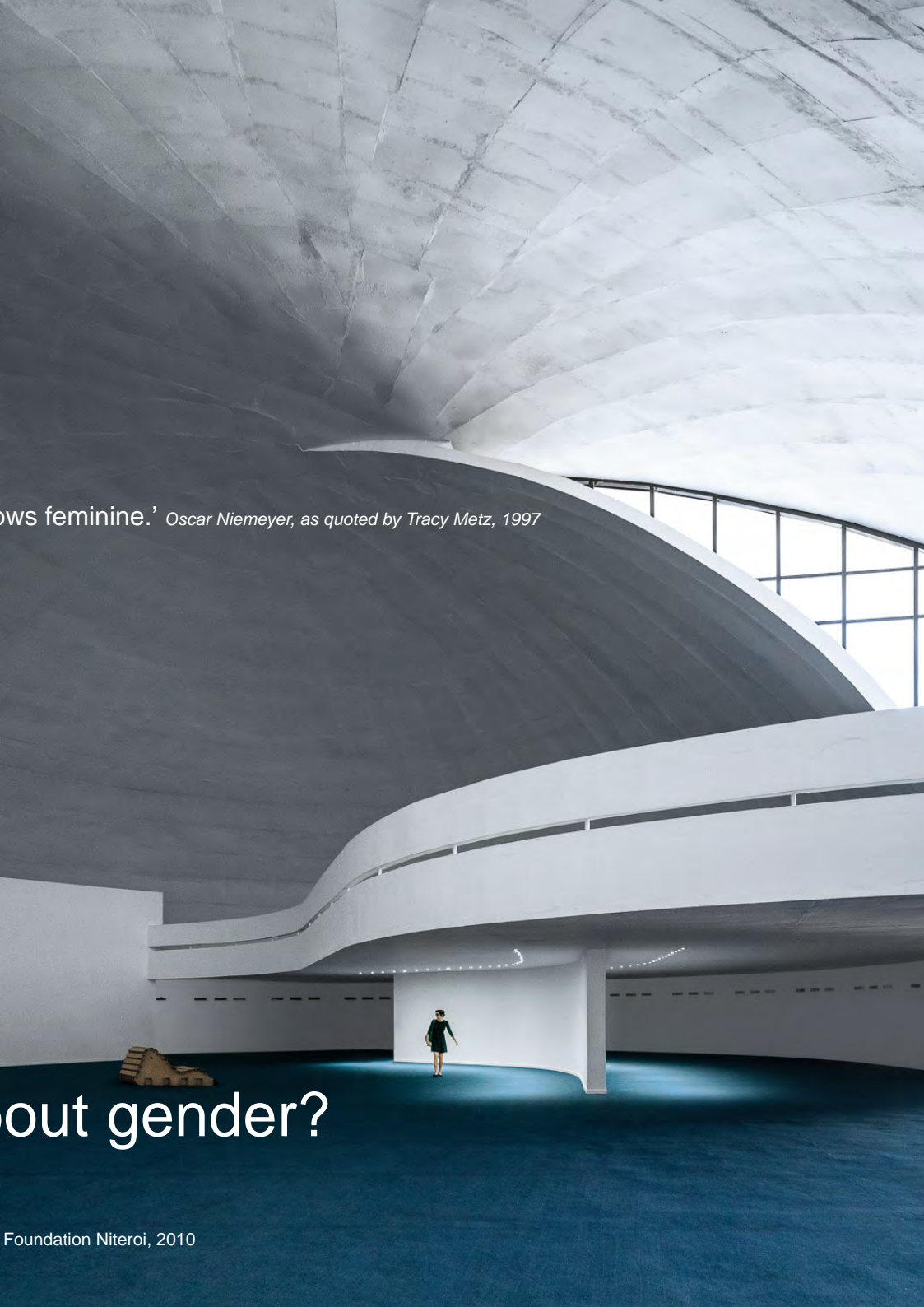
## the body metaphor



“Form follows beauty, or even better, form follows feminine.” *Oscar Niemeyer, as quoted by Tracy Metz, 1997*

but what about gender?

Oscar Niemeyer, Niemeyer Foundation Niterói, 2010





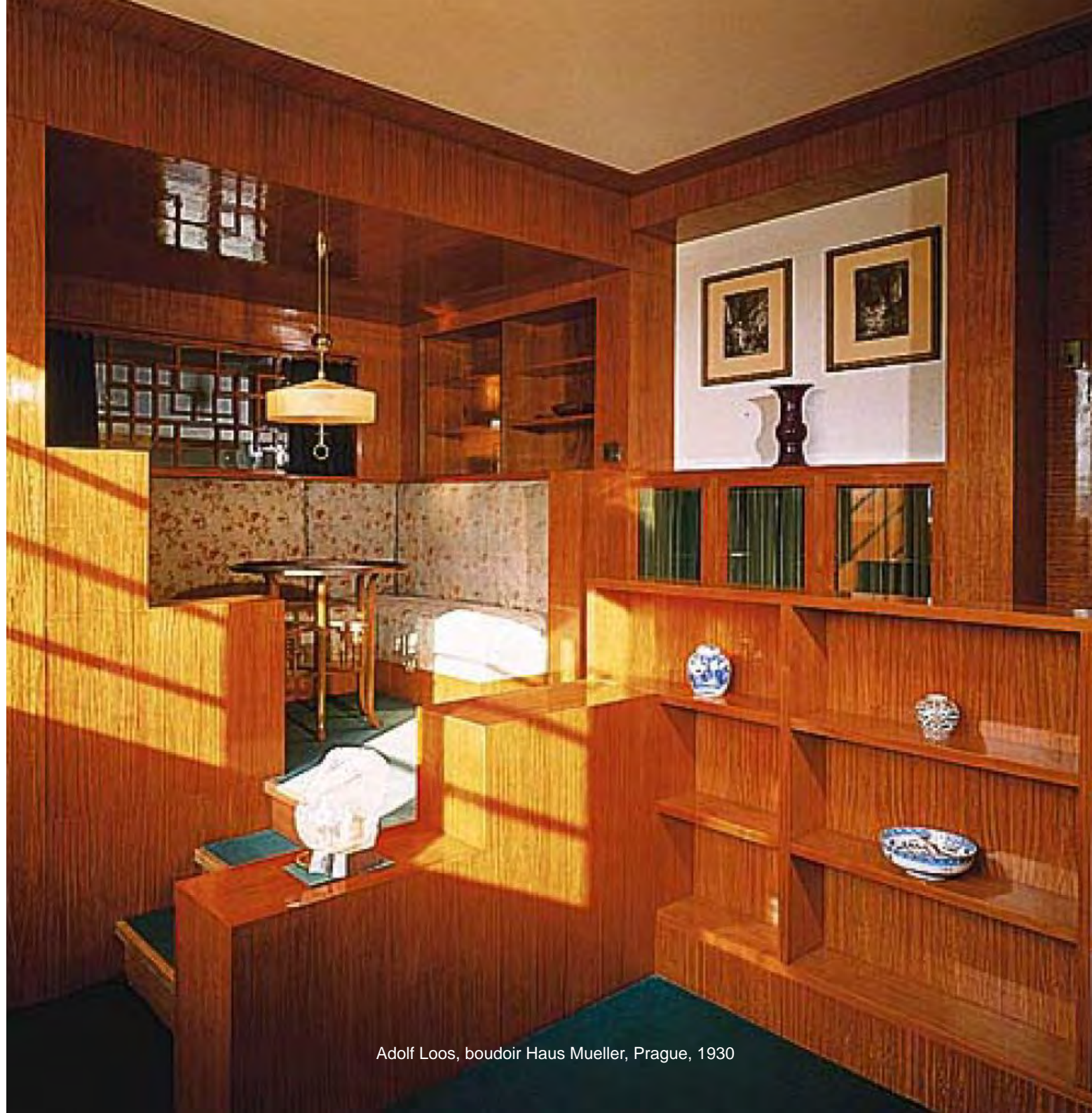
the masculine interior



Giuseppe Terragni, main conference room Casa del Fascio, Como, 1936



the feminine interior



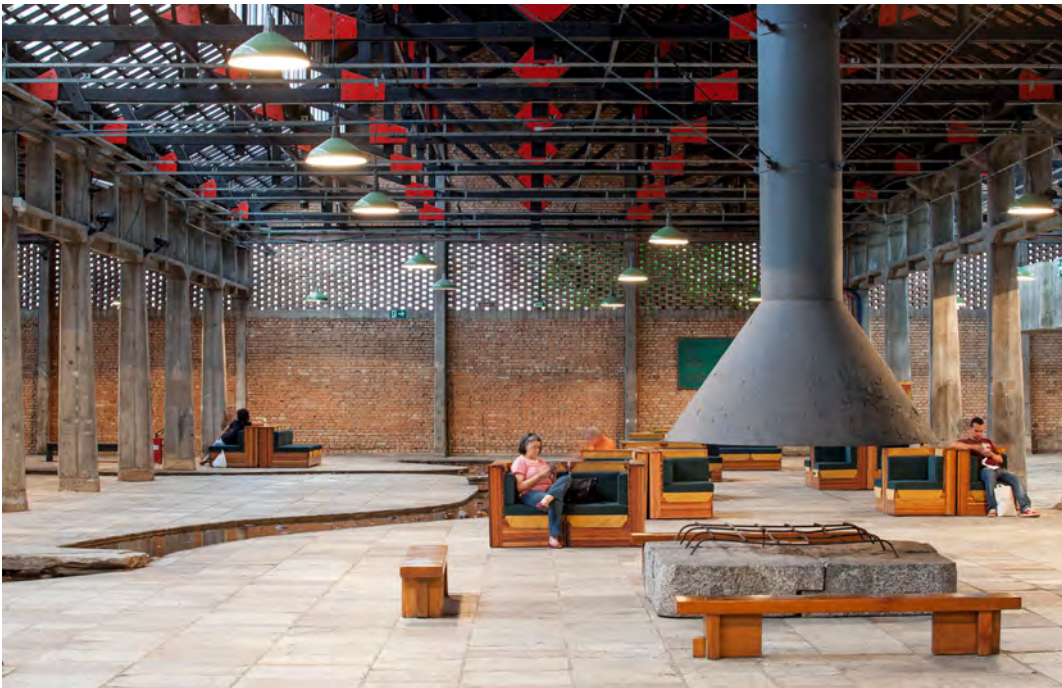
Adolf Loos, boudoir Haus Mueller, Prague, 1930



M. Breuer, Whitney Museum of American Art, New York, 1966

Marcel Breuer





Lina Bo Bardi





Alison and Peter Smithson



Ray and Charles Eames



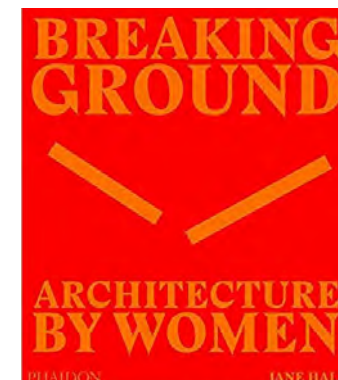
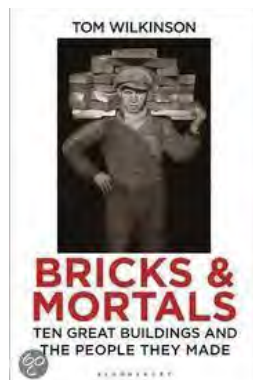
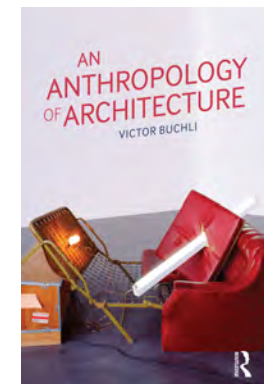
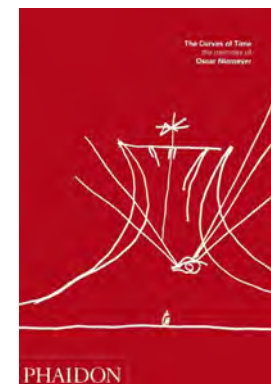
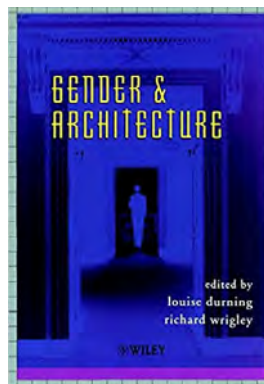
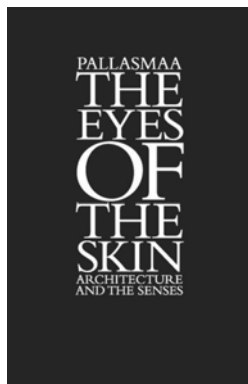
Le Corbusier and Eileen Gray

male + female



can the non-binary be identified to architecture?





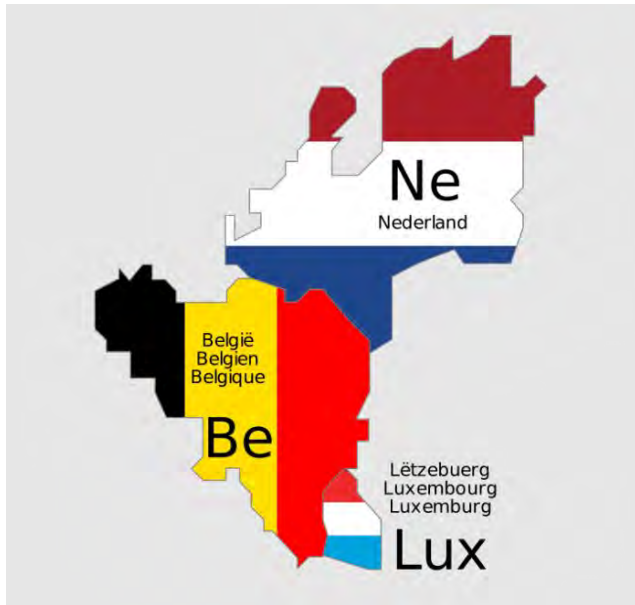
## research: essay

To broaden the mind in the world of gender and design, and to achieve further knowledge and a conceptual framework...



# architectural analysis

In order to get acquainted and be at ease with gender and design we will analyse several reference projects....



## urban design - architecture

...make an architectural design for an embassy in which a personal approach to gender may be established, or a politically correct (or corrective) stance is chosen.



Kenzo Tange, Kuwait embassy, Tokio, 1970

# ***Sufficiency Consultancy***

*prof. dr. Daniel A. Barber*

[\*d.a.barber@tue.nl\*](mailto:d.a.barber@tue.nl)

# Sufficiency Consultancy

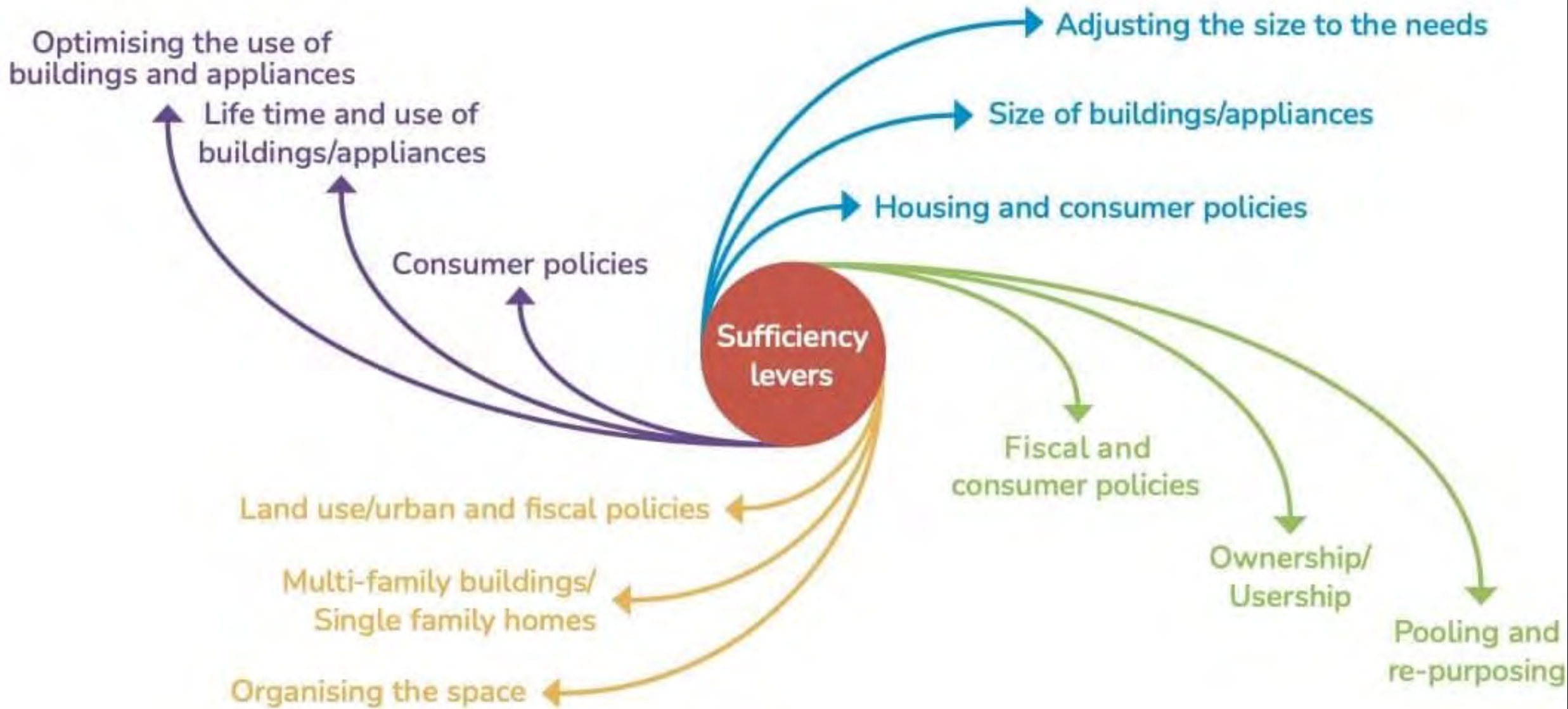


Sufficiency is a set of policy measures and daily practices which avoid the demand for energy, materials, land, water, and other natural resources, while delivering wellbeing for all within planetary boundaries.

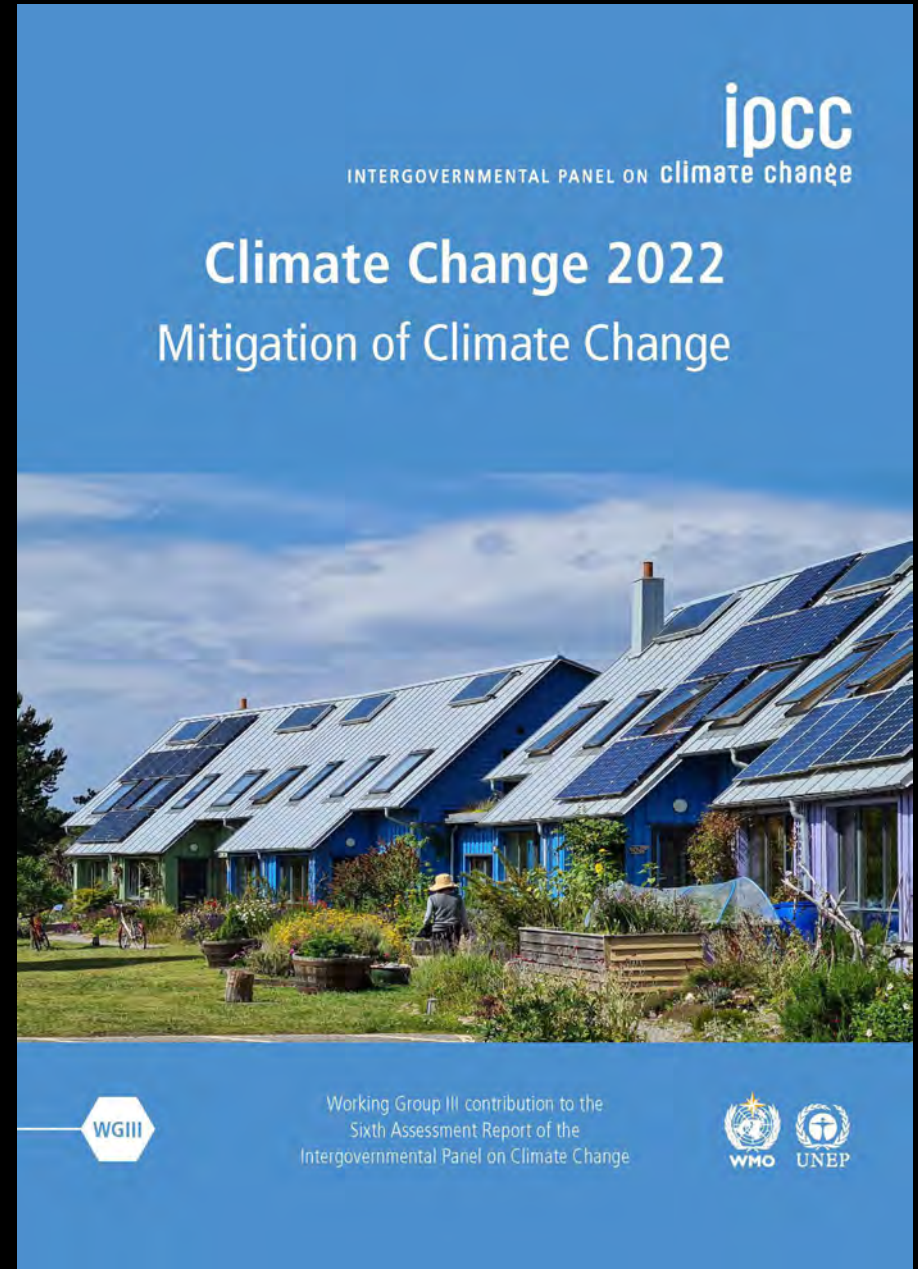
Yamina Saheb

As a policy strategy, sufficiency focuses on **optimising the use of existing buildings** to create a built environment that is attractive, affordable, and aligned with the actual space and accessibility needs of occupants, all while **respecting planetary boundaries**.

Buildings Performance Institute Europe







Cover of the UN IPCC AR6 Mitigation Report. April 4 2022  
John Gilbert Architects East Whins Ecovillage Findhorn, Scotland 2010

## 1. Lock-in Buildings...

Still reliant on carbon and the violence of extraction

## 2. Sufficiency v. Efficiency...

Long-term actions driven by non-technological solutions

## 3. Upskill...

The critical role of this decade in removing feasibility constraints

Projected global GHG emissions from NDCs announced prior to COP26 would make it *likely* that warming will exceed 1.5°C and also make it harder after 2030 to limit warming to below 2°C.

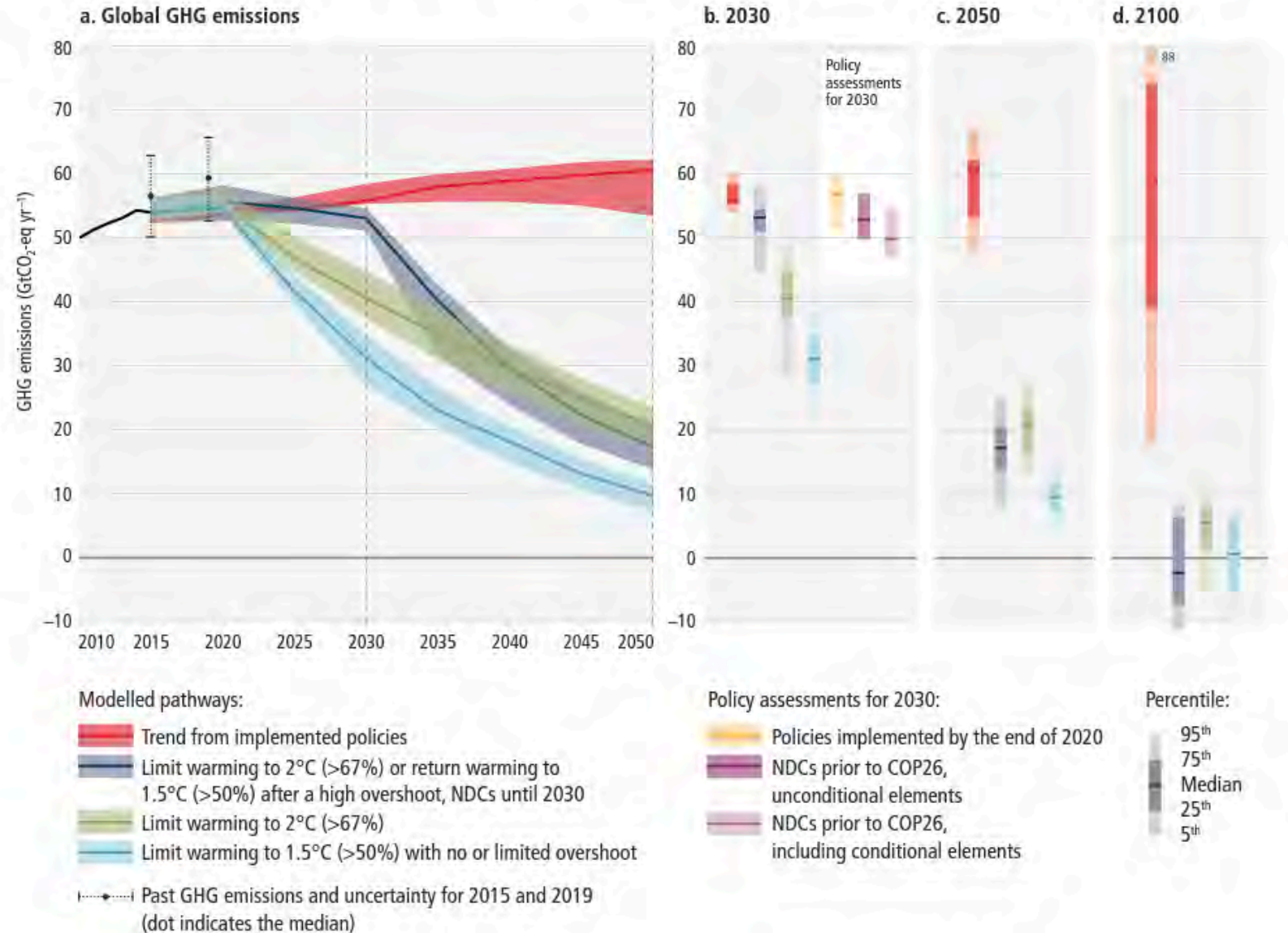





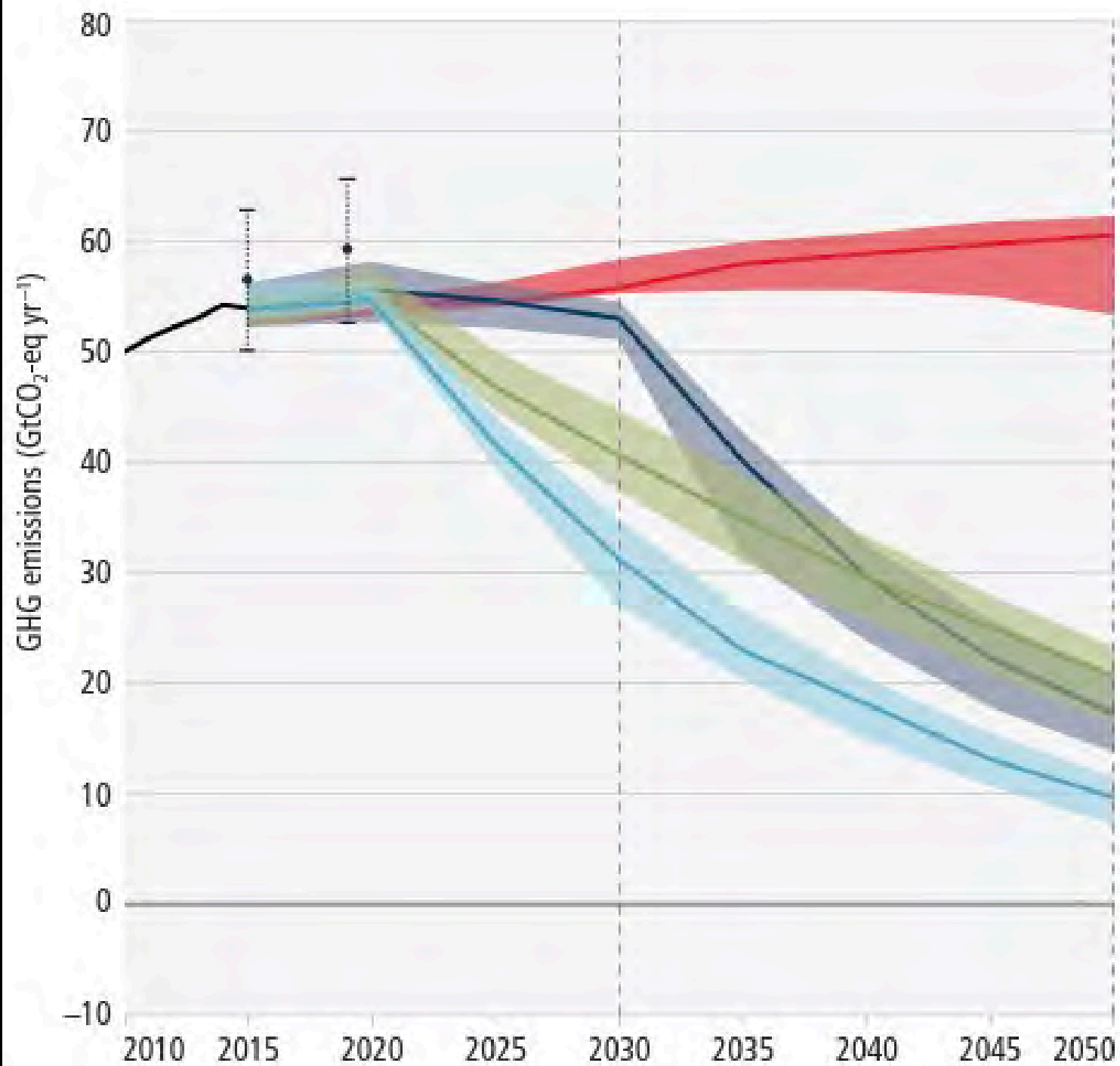
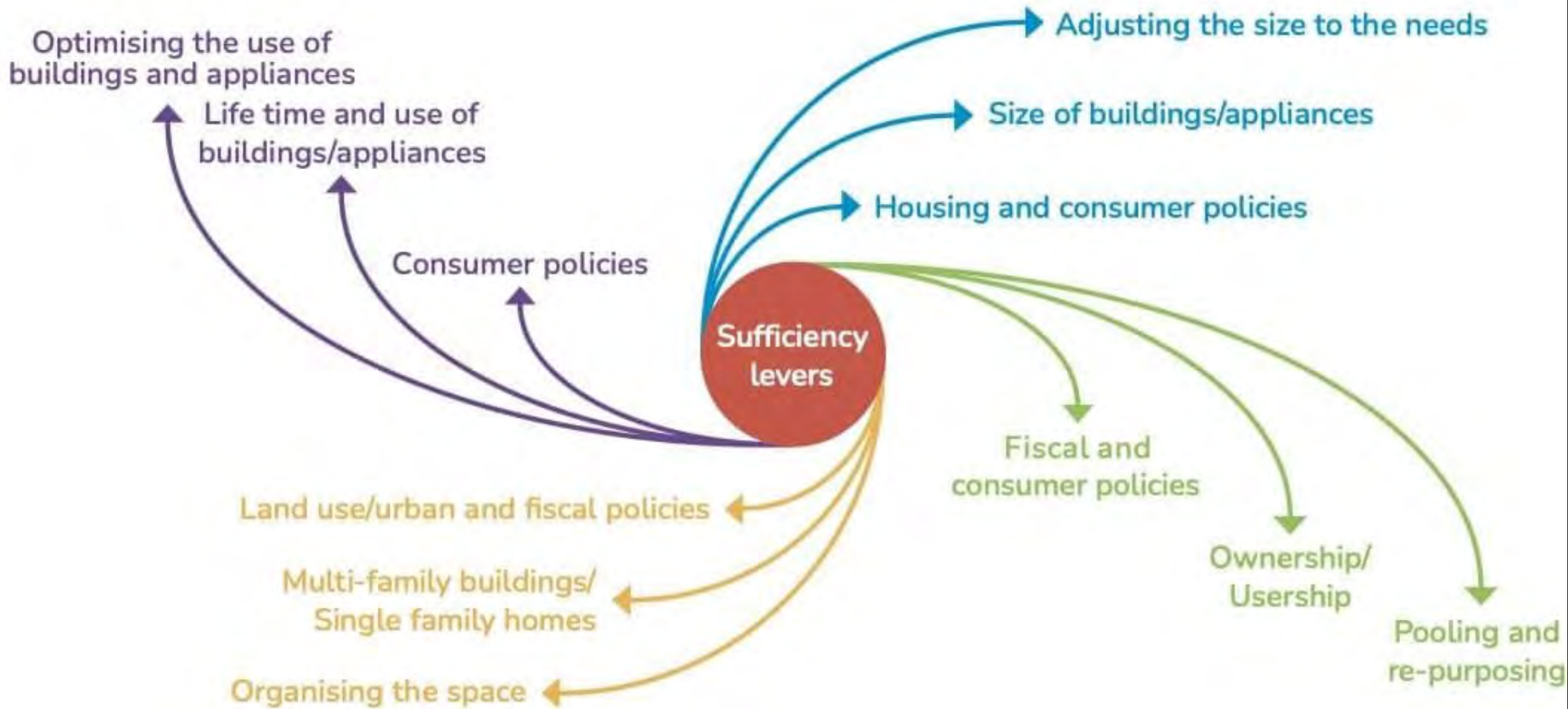


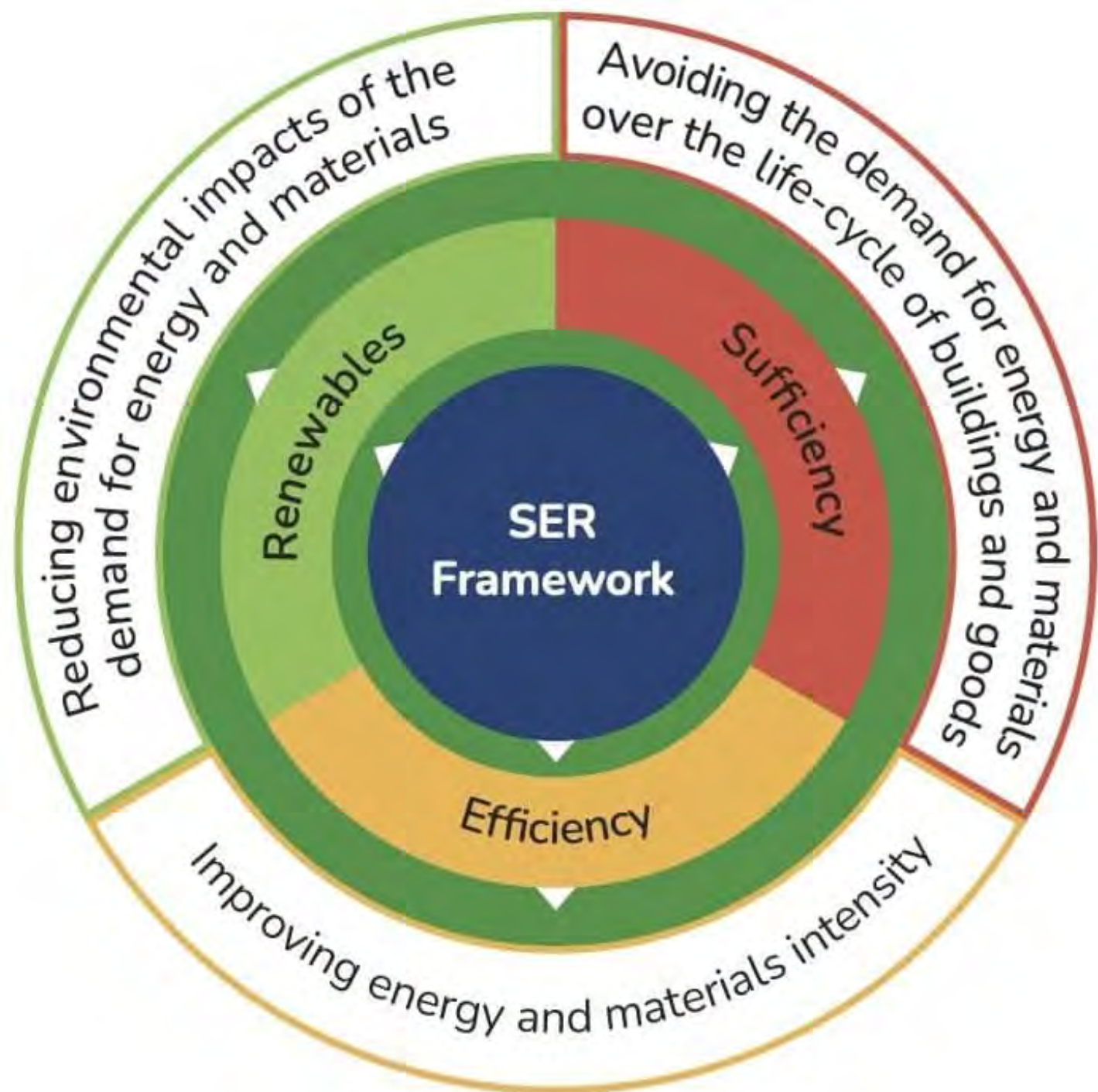
Figure SPM.4 | Global GHG emissions of modelled pathways (funnels in Panel a, and associated bars in Panels b, c, d) and projected emission outcomes from near-term policy assessments for 2030 (Panel b).

Modelled pathways:

-  Trend from implemented policies
-  Limit warming to 2°C (>67%) or return warming to 1.5°C (>50%) after a high overshoot, NDCs until 2030
-  Limit warming to 2°C (>67%)
-  Limit warming to 1.5°C (>50%) with no or limited overshoot
-  Past GHG emissions and uncertainty for 2015 and 2019 (dot indicates the median)









MUSEUM OF MODERN ART  
DEPARTMENT OF INDUSTRIAL DESIGN



# TOMORROW'S SMALL HOUSE

THE MUSEUM OF MODERN ART



## TOMORROW'S SMALL HOUSE

DESIGNED FOR BETTER LIVING

EACH HOUSE COULD BE BUILT NOW IN CONVENTIONAL CONSTRUCTION, BUT ALL ARE PLANNED TO EXPLOIT THE POTENTIAL ECONOMIES OF MASS-PRODUCTION

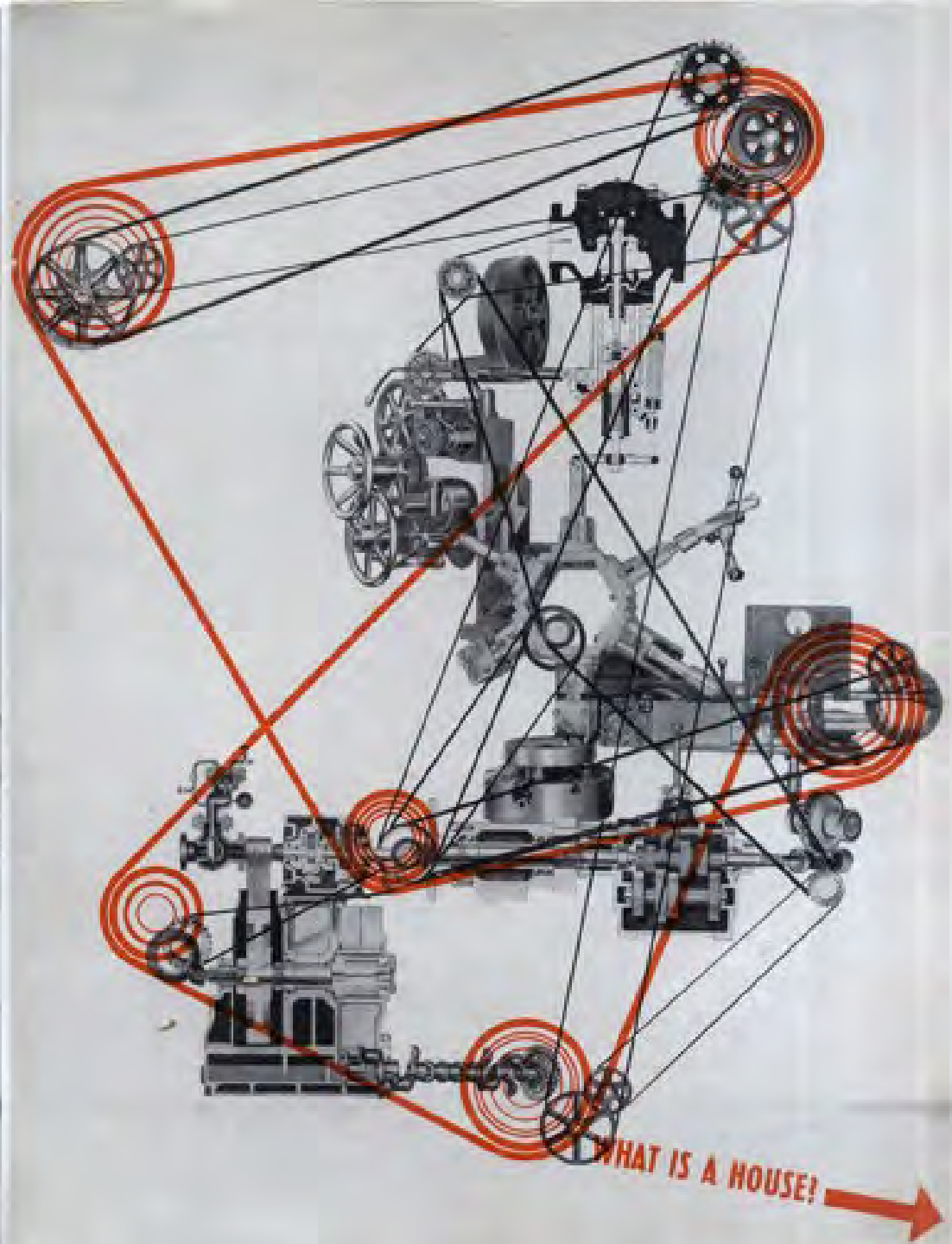
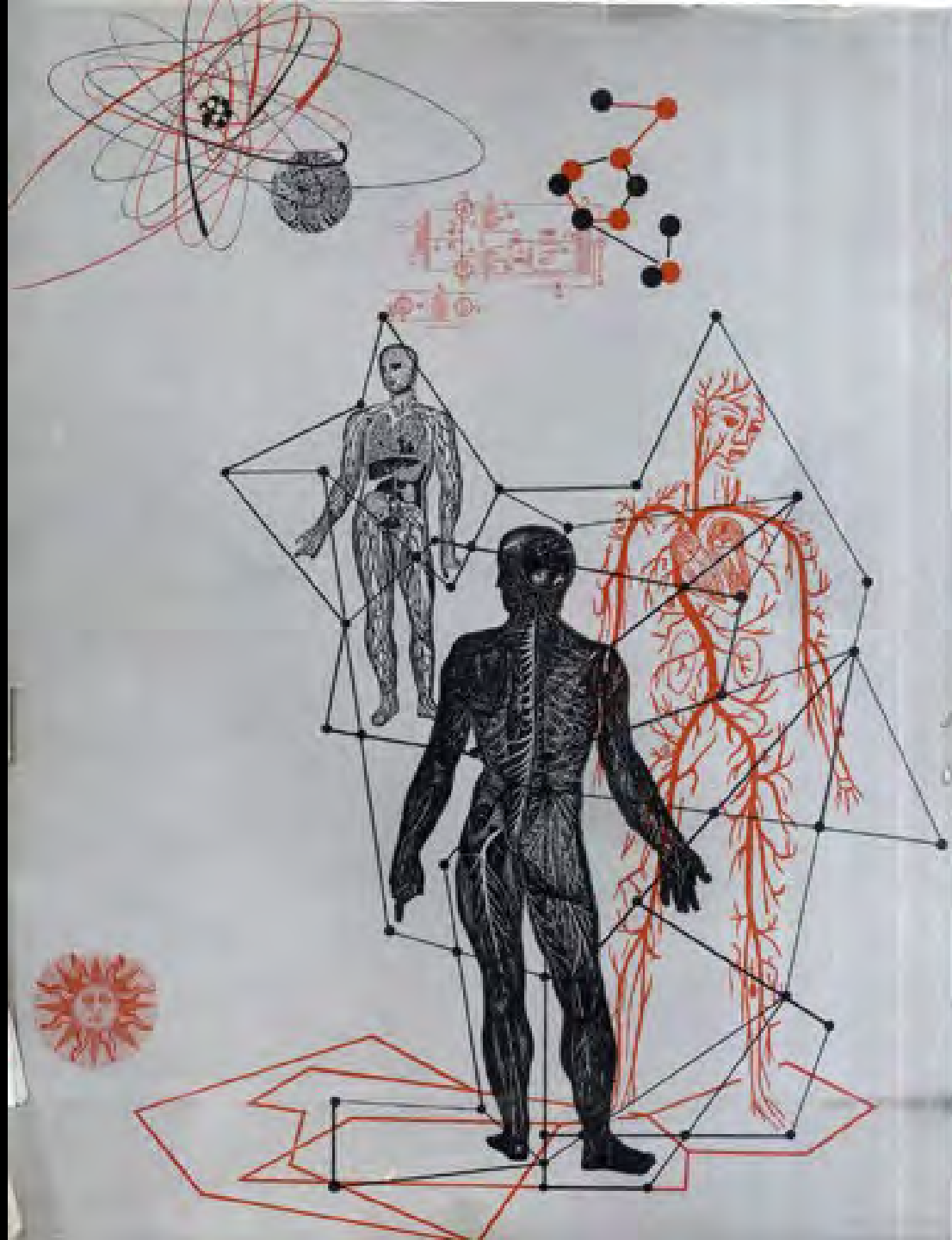
MASS-PRODUCTION OF WALLS AND ROOF AS STANDARD FACTORY-MADE PANELS

MASS-PRODUCTION OF KITCHENS, BATHROOMS AND FIREPLACES AS PREFABRICATED UNITS

### COST?

DEPENDENT UPON THE EXTENT TO WHICH WE REVITALIZE OUR HOME BUILDING INDUSTRY THROUGH THE KIND OF COORDINATION AND RESEARCH WHICH IS WINNING THE WAR





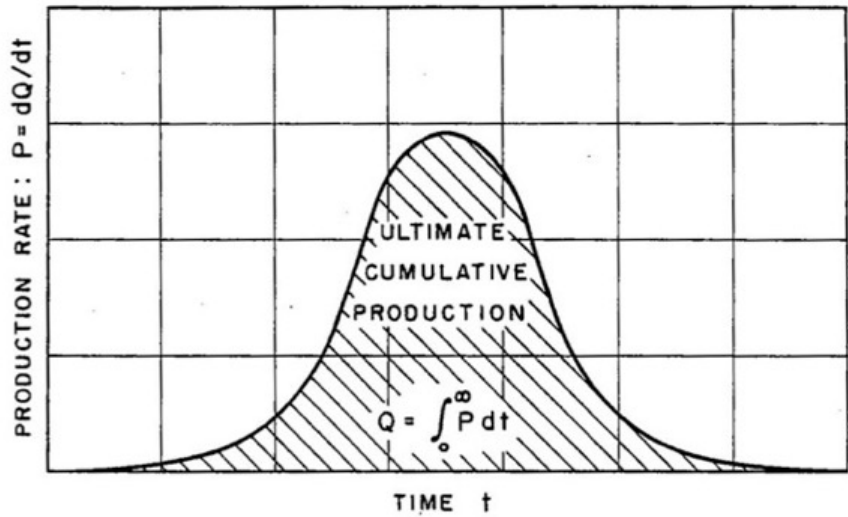
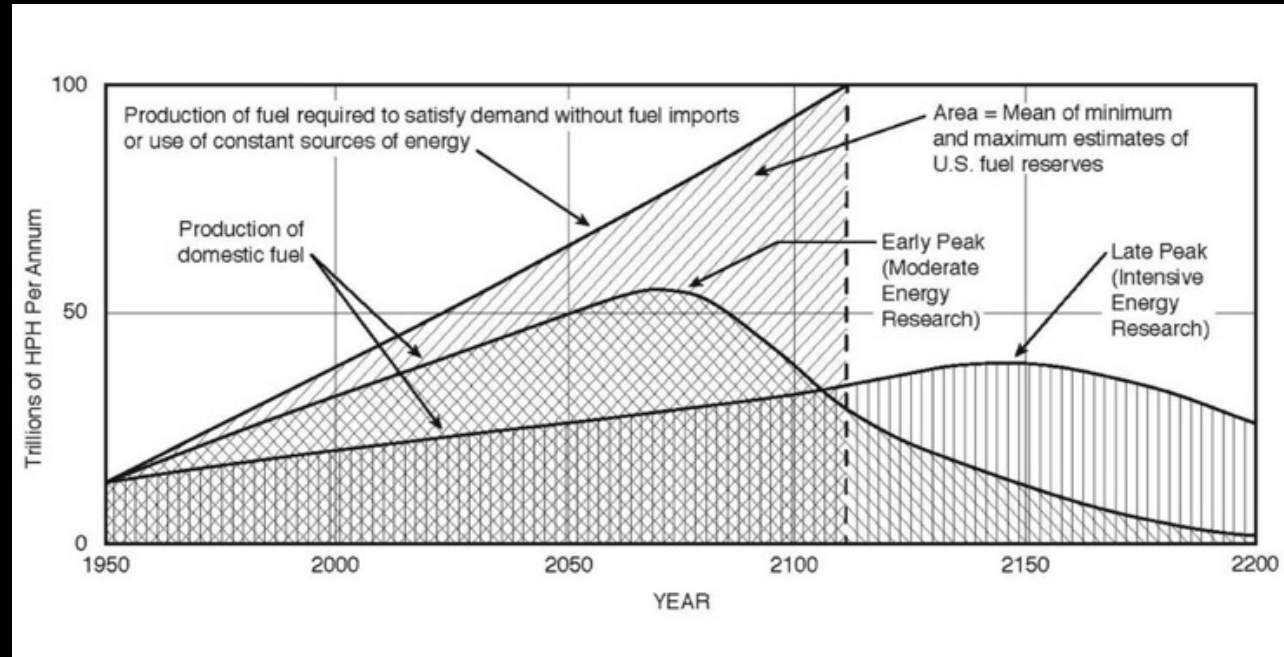
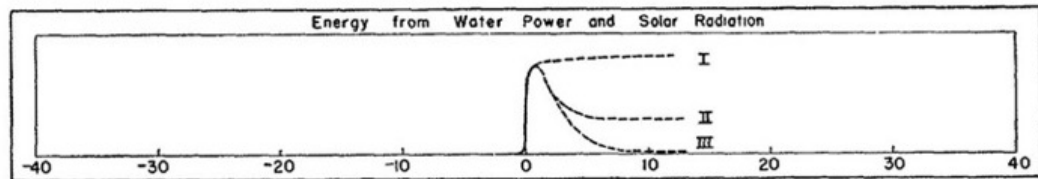
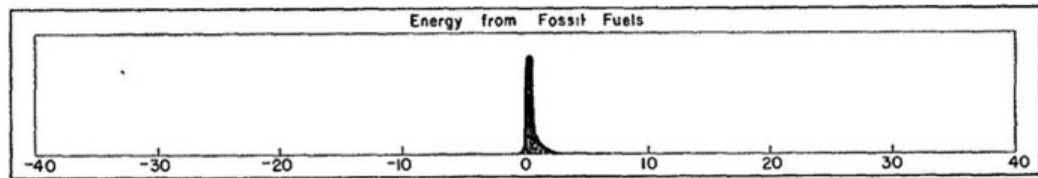
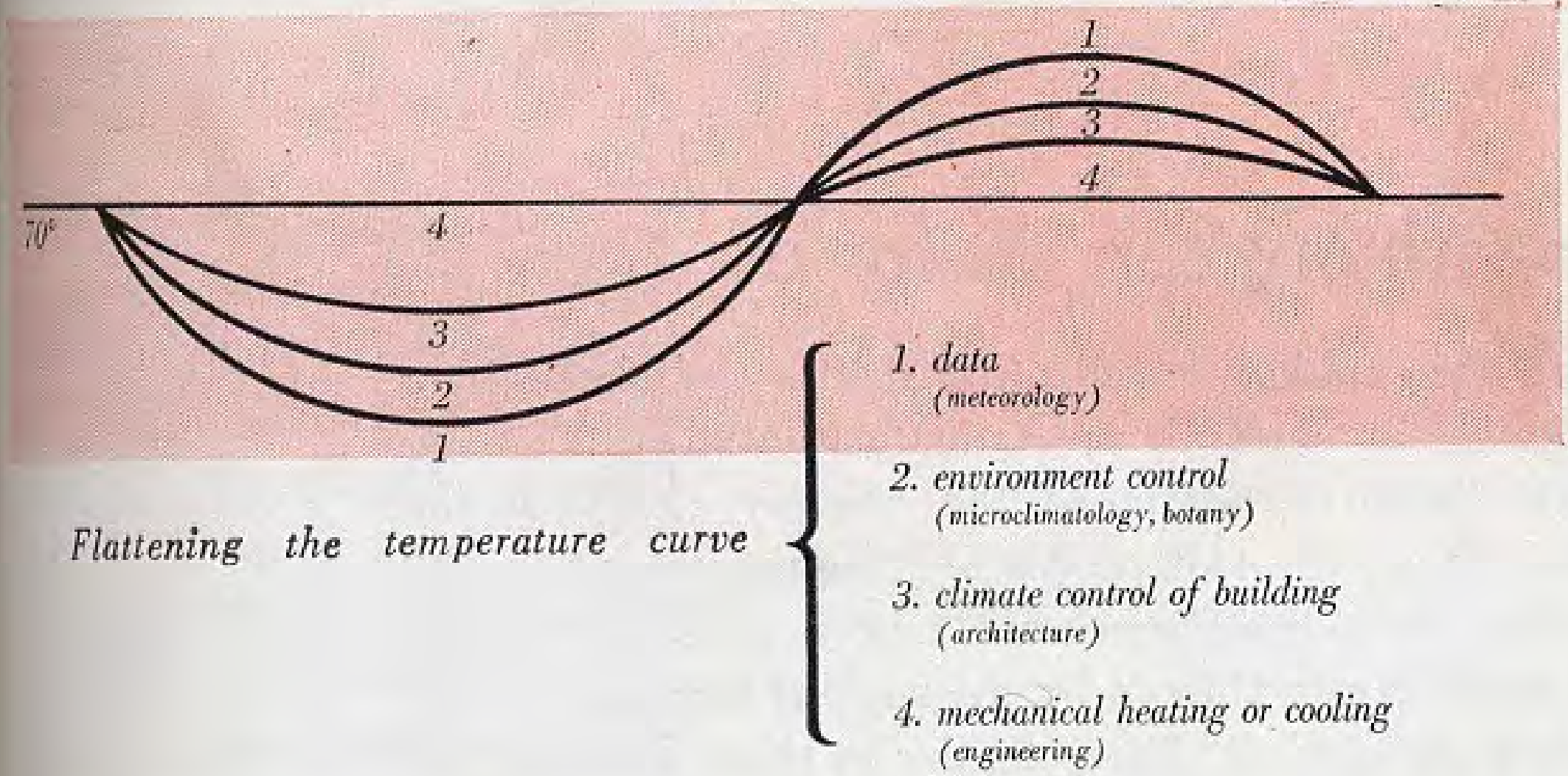


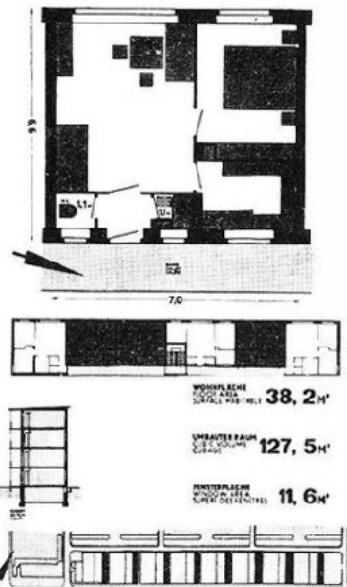
Figure 11 - Mathematical relations involved in the complete cycle of production of any exhaustible resource.



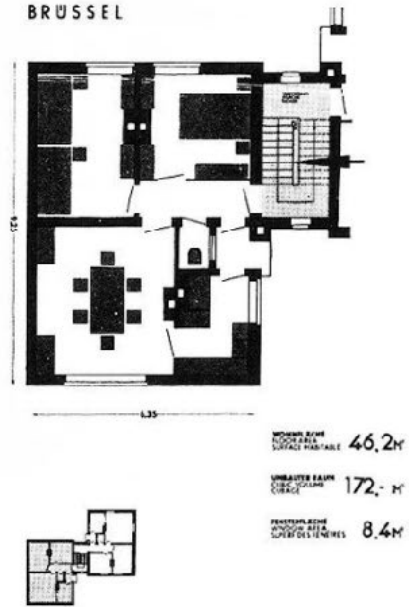


Victor Olgyay, from *The Temperate House* in *Architectural Forum* 1951  
reprinted in *Solar Control and Shading Devices*, 1957

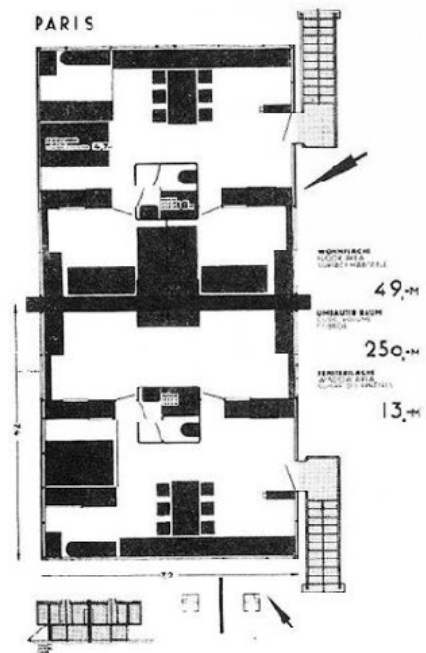
FRANKFURT A. M.



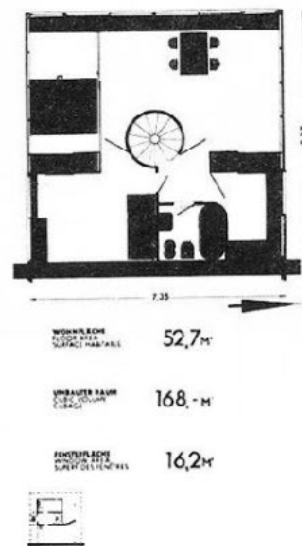
BRUSSEL



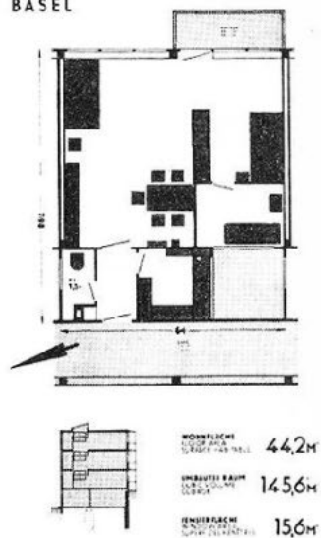
PARIS



PARIS



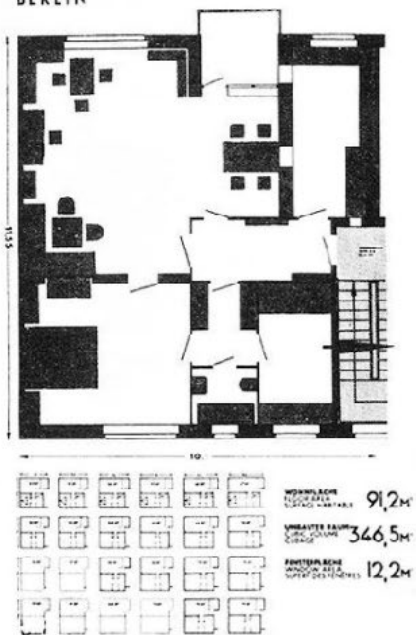
BASEL



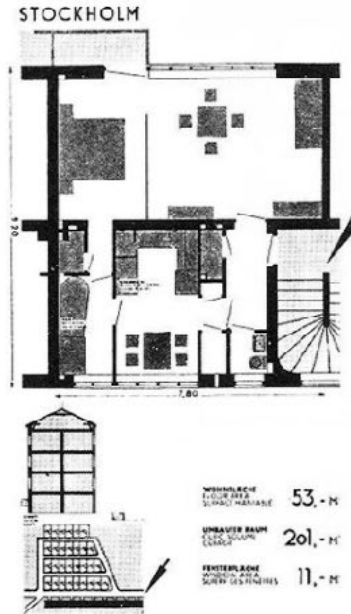
BRESLAU



BERLIN



STOCKHOLM



Existenzminimum dwelling  
From II CIAM (Frankfurt, 1929)  
exhibition panels



HUGH STUBBINS, JR., Architect

# EASY TO LIVE IN

By Richard Pratt  
Architectural Editor of the Journal



Glass walls make possible and practical such charming features as the indoor-outdoor garden shown here for the terrace and dining rooms and in the plan below you can follow the listing convenience made possible by the simple and flexible method of construction.



I SHALL first explain the unusual roof, in case you are curious. As you see, the lines slope downward from the sides to the center—but not just to be different. For one thing, this treatment does away with all gutters and downspouts, which clog, overflow and freeze, causing upkeep and concern. Here, instead, all water runs to the middle and is carried off through inside drainpipes near each end of the house. Then, too, this type of inward-sloping roof is easier and cheaper to build than any other system—giving greater strength at less expense. In fact, “easier” is the premise that houses like this make to you from roof to foundation, and easier, in this case, means cheaper as well. That premise, of course, can be realized only if the new building methods, on which houses like this are based, become furnished to sufficiently mass production in both manufacture and erection; which in turn can happen only if and when the building industry can count on consumer acceptance. Nothing like this house is available now. But when the time comes, houses will be easier to build, because they can be put together with comparatively few parts, all finished at the factory. They will be easier to buy, because the mass production of these parts, and the fast simplicity of their erection, will greatly cut the cost of building. They will be easier to own, because they will be more economical to heat; they will require much less cleaning than you have been accustomed to; a half-down door and window

screens will do, and there will be no storm sash to clean, put up, take down and store away. The planning, as you will notice, gives first priority to the ease of child care, food preparation and serving. Notice, too, how the pleasure of family living is promoted. For what is actually a space of moderate size has been so arranged that it provides separated areas for dining, study and relaxation, but without creating a cluster of little rooms. By using glass instead of small-windowed walls on the sunny sheltered side, the whole living space gets full vision to out-of-doors, with abundant indoor daylight, eyestrain is finally eliminated, and winter warmth in daytime is provided free of charge by the sun. And not only will glass walls make a house easier to heat but there will be new types of heating plants which, regardless of the kind of fuel they use, will occupy no more space than a trunk and will be fully automatic. The heat will rise evenly from the whole floor—radiators, draftless, draftless. The one-piece combination kitchen units will come ready to set into place, likewise the one-piece bathrooms; all designed for savings in manufacture and for labor-saving at the site. Where a house this size would have been composed of fifty thousand individual parts and pieces, the parts for one like this will be numbered in the hundreds, all ready to fit and fasten into place. And the more you like the houses that are made this way, the sooner you will have them.

Hugh Stubbins, Jr.  
Easy to Live In  
Ladies Home Journal  
(January 1945).

# Most House For the Least Money

By Richard Pratt  
Architectural Editor of the Journal



The protected terrace adds pleasant living space.

HERE is a house which can really turn our standard of living from fiction into fact. For this can be the truly average house for the truly average family—a house that can be bought without worry of truly average income. It contains all the amenities, in space, comfort and convenience, that the average family could wish for: three bedrooms, two baths, ample living and dining space, a large, light, labor-saving kitchen, protected terrace to enlarge the livability, abundant indoor daylight, and plenty of places to put things away. And if, in the future, this country goes in for houses with anything like the spirit and method which has made possible our wonderful war-winning output of ships and planes, then millions of families making around \$60 a week can look forward to living places like this at prices they can safely afford to pay. Though it is truly business in times like those to speak of cost, it can be said with reasonable certainty that when the specially designed building parts with

which a house like this is put together are mass-produced in quantity, such a house, with its plot of ground, should come to about \$4000. Figure, say, on \$400 down, and about \$32 a month. But first let us figure how houses like this can happen. Notice, to begin with, the complete simplicity of its plan and appearance; for therein lies the secret not only of the way it works inside, and the secret of its clean-cut style, but of why it can be so much house for so little money. For this simplicity makes possible a new kind of low-cost manufacture and construction; and nothing could be simpler than the way a house like this is made and put together.



The floor plan simplifies housekeeping and child care, as you can see, and creates a pleasant and convenient living arrangement for a family of five or six, while from outside, simplicity of construction creates its own special beauty of line and proportion, plus the utmost in light, livability and pursuit of happiness.

We believe it is high time that low-cost adequate living places be made available to average American families making around \$2000 a year. We believe that modern techniques, materials and methods can produce such homes, and that the Federal, State, local, finance and Government get together on the job, the time has come when we will have them. . . . How much home can you afford? Add two dollars to your average weekly income: \$10-100, for example, make a \$800 investment cost only at \$8 a week.

You decide on the number of rooms you need, and select a floor plan that fits your family. This will determine just how many prebuilt parts your house will require: just how many special lightweight steel framing sections to support the walls and roof; just how many wall and window panels, ceiling, floor and partition panels; just how many prebuilt closets of certain sizes for certain purposes; how many prebuilt bathroom units, and how many prebuilt units for the kitchen and for the various utilities. This will all add up to about one hundredth the number of separate items which would ordinarily go into a house of this size, and the

house would go up in one tenth the time it takes to build the old-fashioned way. Each part would come completely finished, ready to fit into place, and would be just the type or color of your choice.

But here is what makes this new building method so vitally important to you. Not merely that it's new, simpler, faster—it's important to you, and all of us, because it means more house for less money. Each part takes the place of as many as one hundred previous separate building items and operations; each part, because of standardized dimensions, fits perfectly into the place for which it was planned, and each part can be mass-produced in enormous quantities. In other words, here is a house designed to take full advantage of modern techniques and materials, of modern mass-production methods, all of which together can improve the quality of the house at the same time that they lower the cost. Which is why you can be hopeful of a future home like this for \$4000—a home that formerly would have cost half again as much.

**WINS Headquarters**  
Washington, D.C.  
Could you give a morning's work a vital war service? The OPA needs you to help your neighbor observe ceiling prices! You will wear a price-control assistant's badge, and will visit food and clothing stores, restaurants, laundries, bookstores today! See your local War Price and Rationing Board.

A. LAWRENCE KOCHER, Architect



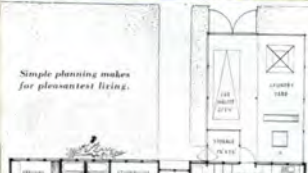
A. Lawrence Kocher  
Most House for the Least Money  
Ladies Home Journal  
(November 1944).



# As Simple as That

PHILIP JOHNSON, ARCHITECT. (See article, below, by A. LAWRENCE KOCHER, ARCHITECT, and PHILIP JOHNSON, ARCHITECT.) Flood glass panels alternate with glass-panel doors across the whole private sheltered side.

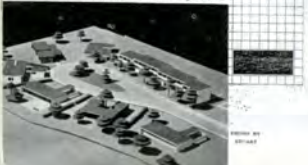
By Richard Pratt  
Architectural Editor of the Journal



Simple planning makes for pleasantest living.



The first house in good community planning features the complete simplicity that serves as a cluster of houses, all of which face away from green and park-like outlook. The first and third houses from the right in front are the houses shown above. All the others have previously appeared in the JOURNAL.



Philip Johnson  
As Simple as That  
Ladies Home Journal  
(July 1945).

It is my guess that the Greeks would have liked this house. They believed in the beauty of simplicity, the beauty that came to life through the process of fine proportions. But for us today the simplicity of this house, both in plan and appearance, opens up possibilities of another very practical nature which couldn't have concerned the Greeks of old, who had no housing problem. We have—and its solution is vital to us all. We need better, less expensive houses, by the million. So let's see how a house like this can help the situation.

But first the floor plan, which, thanks to its part to modern uncluttered design and construction, fits a new high for livability through simplicity. See for yourself. Down the path, into the front door and an entry with closet room. (Or in through the kitchen from either path or car shelter.) Look how the kitchen and laundry work together, with accessible dining club by at the farway end of the living room. Then back off from the entry, three bedrooms in line, with a dressing room, study or guest room to spare; two baths, and a large daylight storage room at the handiest location in the house. And note with what directness the architect has crusted this most livable layout, easy to manage and pleasant to occupy; not an inch of wasted space; not a chance for wasted work.

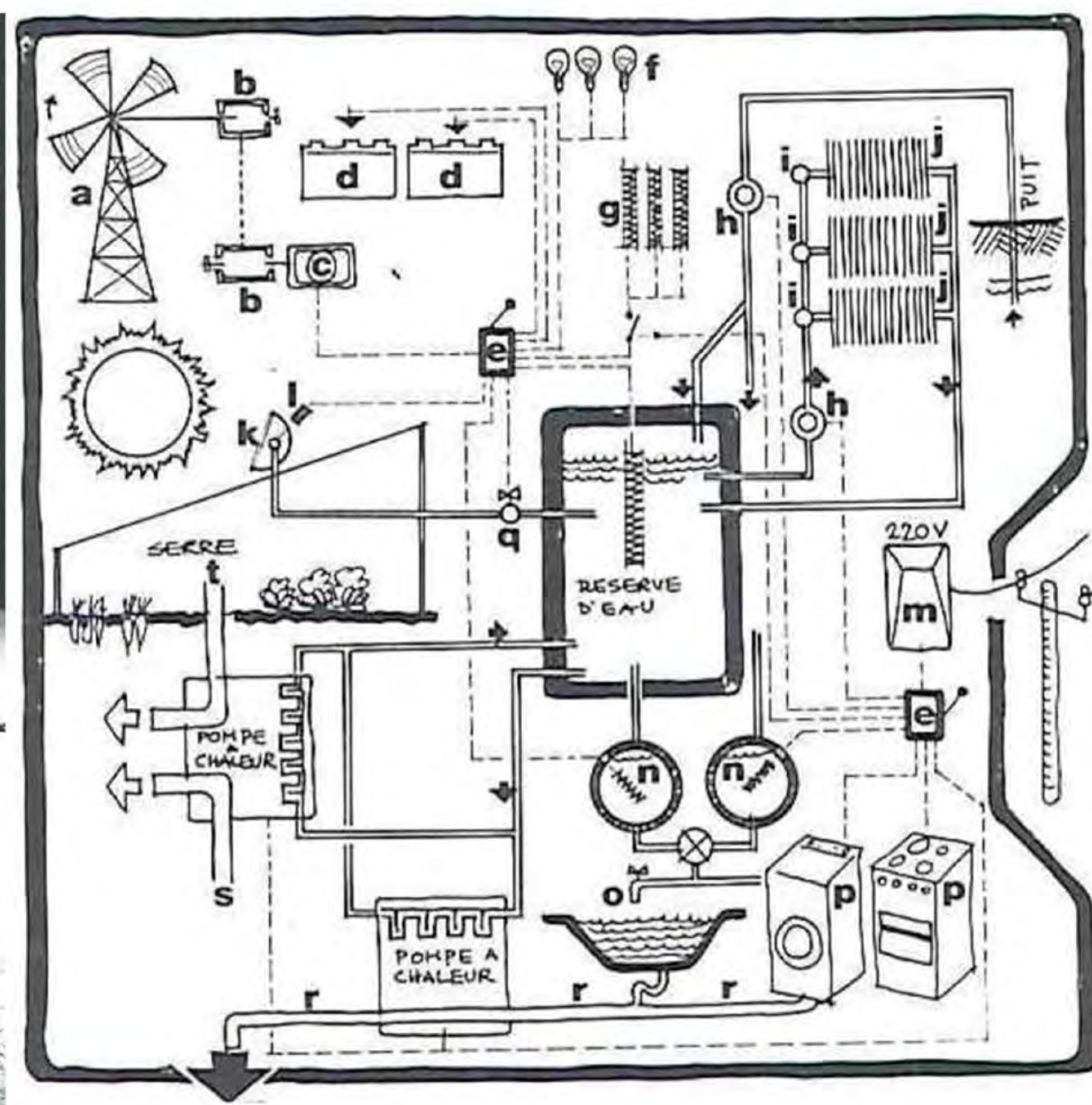
And now, instead of being put together, piece by piece, with fifty thousand separate parts, like the average house, this house could be assembled in a single day with a mere few hundred fully finished panels, parts and units. Floor, roof, walls, windows, doors would come as properly sized panels, complete, from the factory, ready for fastening into place. Bathrooms, kitchen, laundry, closets, cupboards and fireplace would come as packaged units, ready for instant installation.

You can see what savings this would effect in time and labor at the site. But even better savings would have been effected before the panels, parts

and units arrived on the ground. These would be the savings effected by fully organized mass production, the benefits of which have been unavailable up to now. Unavailable because the home-building industry, vast as it is, has never been really coordinated. Also, the possibilities of greatly improved materials and much less expensive methods have never been fully explored. Or, if they have, as a result, is frankly high in price, low in quality, when compared with what it could be if it were given a chance. And as this is primarily your personal problem, here is what you can do about it.

You can urge your congressman to get behind Federal legislation which would initiate and stimulate public and private research into materials, methods, industrial co-ordination, financing, and community planning—all designed to make homes better, less expensive and more secure. For it is only fair that the fruits of victory should be ripened by the same kind of research which helped to hasten victory. If half a billion dollars' worth of research for military aviation has given us an supremacy in war, just think what a fraction of that would do for home improvement in peace.

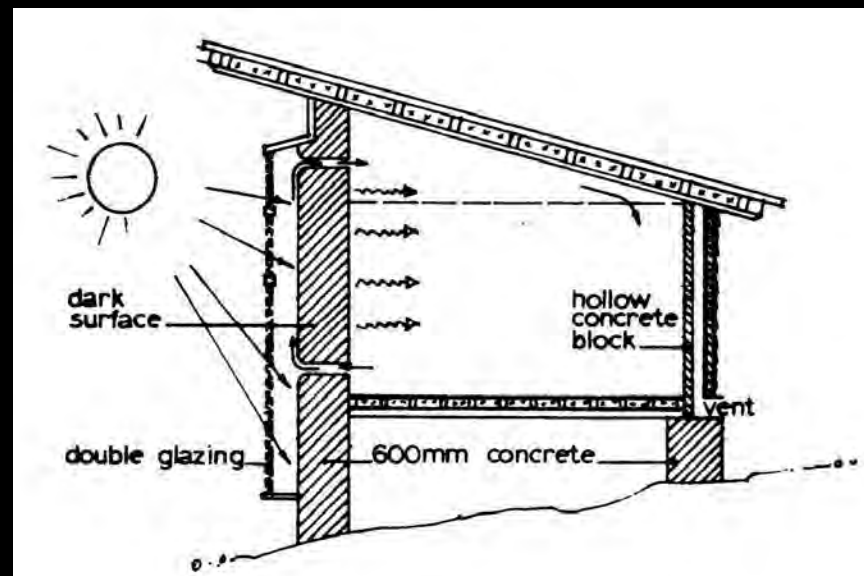
There is something further you can do about better, less expensive living. You can help promote the well-planned community in which you want to live, whether city, town or countryside. This is more than a matter of civic pride; it is a matter of your own security. For no home is better than its neighborhood. Good neighborhoods, however, don't happen of their own accord, any more than good houses. But there is a simple pattern for the planning of both homes and communities which you can understand, if you will only try. So every month from now on, with every new house we show, we shall show how a good neighborhood grows—how life in a well-planned community can be happier, healthier, safer and less expensive—and how you can help make all this happen.



Damir Perinic Autonomous House *Domus*, 1978



John Yellott Casablanca Solar House U.S. Department of Commerce International Trade Fair, Casablanca, 1957.



Felix Trombe and Patric Michel Trombe House near Odeillo, France, 1967







[back to selection](#)

[next Expertise](#)

Have a look at our sufficiency projects in more detail:

[The Rubber House, Almere](#)

[ecovillage - Tiny Living, Hanover](#)

[ecovillage, Hanover](#)

[Framework plan Hafensand+, Flensburg](#)

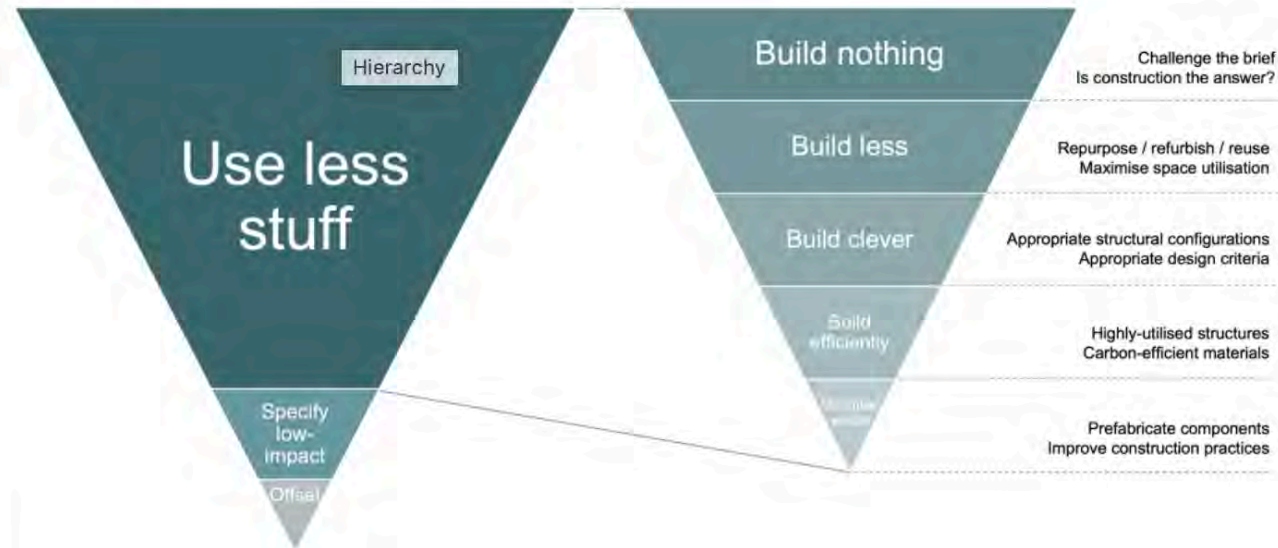
[Green Zipper Heidelberg, Heidelberg](#)

## Designing for Sufficiency

Large parts of our society strive for more, for bigger and better. Without consistency, however, the necessary climate targets will be missed by a wide margin, despite every effort. In reality, we experience so-called rebound effects. The constant increase in demands for quality of life and energy requirements cannot be compensated for by advances in efficiency. For example, the growing need for living space per person, with actually falling heat demand per living space, leads to an overall stagnating or even increasing per capita heat consumption. Sufficiency, i.e. the reduction of demand, is, therefore, an important, consistent continuation of the idea of sustainability and plays a decisive role in our planning right from the start. We at CITYFÖRSTER ask ourselves "How is less better than more?" and find solutions to support sustainable ways of life through our designs in architecture and urban planning. We are expanding the reduction in private living space to an average of 28 m<sup>2</sup> instead of the 47 m<sup>2</sup> that is usual in Germany, for example through shared rooms in the building, in the neighborhood or the district. We see the immense opportunity to create added value for everyone, promote synergies and guarantee a sustainable quality of life. Due to the savings in space, energy and material, the new way of life is not only an answer for affordable living space but also easier to maintain and take responsibility for.



## Hierarchy of Net Zero Design



© Institution of Structural Engineers 2021  
Adapted from PAS 2080

### Sufficiency at COP

There are hopeful signs. Sufficiency was introduced as a buildings-sector strategy in the most recent [UN Climate Champions Breakthrough Agenda Report](#). The [UNEP Buildings and Climate Global Forum](#) in Paris in March included a [session on sufficiency](#), planned by Architecture 2030 and others.

Two events at COP29 will discuss a new report by the [Sufficiency Action Hub](#) – *[Sufficiency and the Built Environment: Reducing Demand for Land, Floor Area, Materials and Energy as the First Step Towards Sustainable Buildings](#)* – authored in collaboration with Architecture 2030 and others.

- [The Sufficiency Revolution: Ensuring a Just Transition Through Indigenous Wisdom, Resilience and Human Rights](#)  
November 19, Baku, Azerbaijan, 9:30am AZT / 12:30am EST
- [Sufficiency in the Building Sector: Report Findings and Future Perspectives](#)  
November 19 Online 3pm AZT / 6am EST [Register here](#)





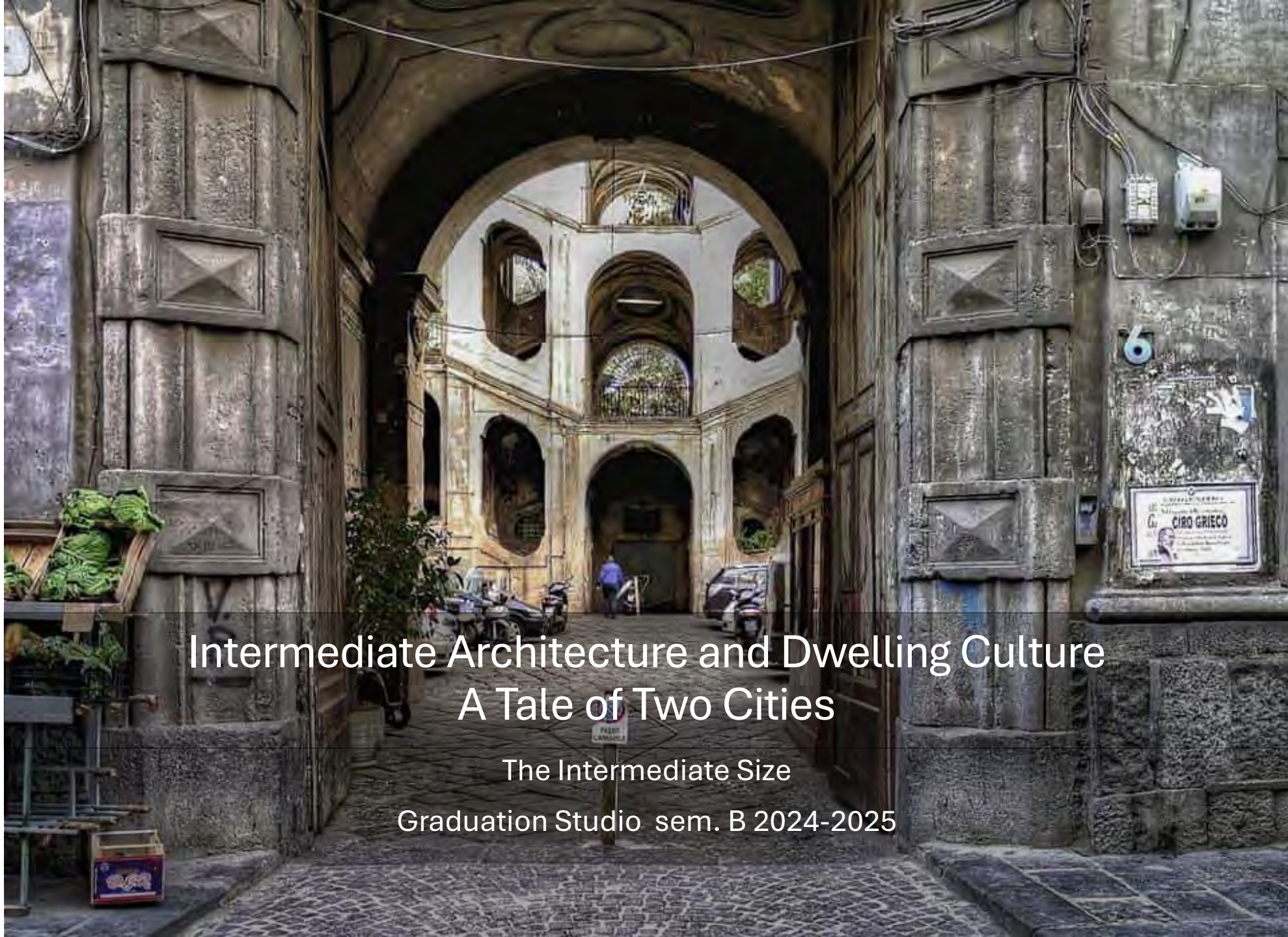
Bestor Architecture, *Blackbird Housing*, Los Angeles, CA. *Density by Stealth*, 2016



Saha Architects, *Bondi Apartment*, Sydney. Art Deco Building Extension, 2022

# ***Intermediate Architecture and Dwelling Culture: A Tale of Two Cities***

*drs. ir. Like Bijlsma, ir. Jochem Groenland, ir. Wouter Hilhorst*  
[e.bijlsma@tue.nl](mailto:e.bijlsma@tue.nl), [j.groenland@tue.nl](mailto:j.groenland@tue.nl), [w.hilhorst@tue.nl](mailto:w.hilhorst@tue.nl)



# Intermediate Architecture and Dwelling Culture A Tale of Two Cities

The Intermediate Size

Graduation Studio sem. B 2024-2025



## Mediating elements

Intermediate architecture – robust typologies for diverse urban living conditions

Dwelling culture – urban realm and private sphere

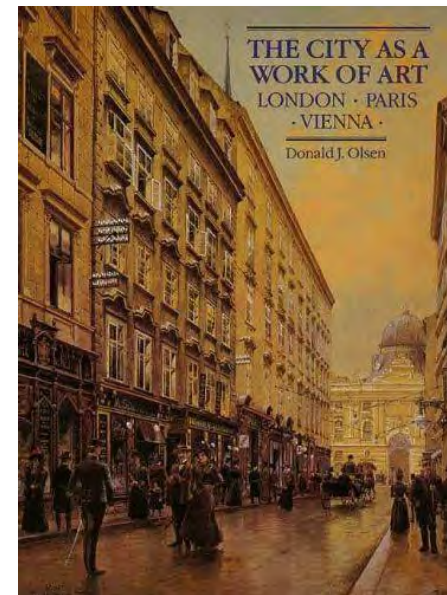
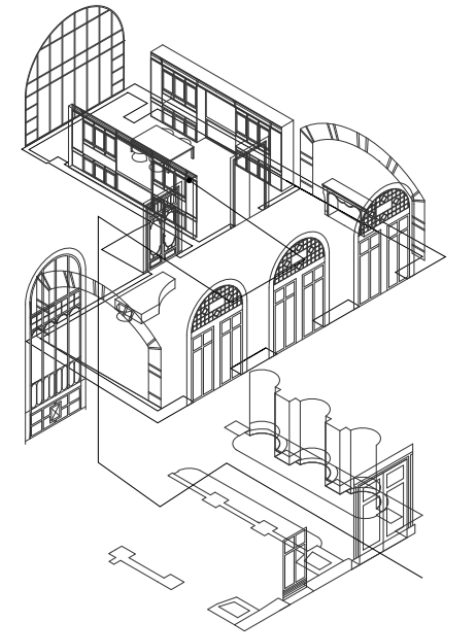
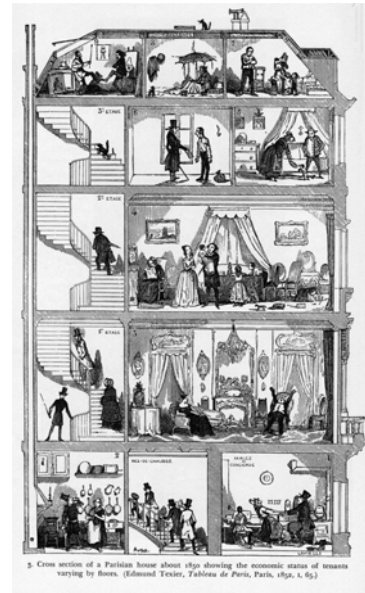
Local language – political and pragmatic aspects



# Intermediate architecture - robust typologies for diverse urban living conditions

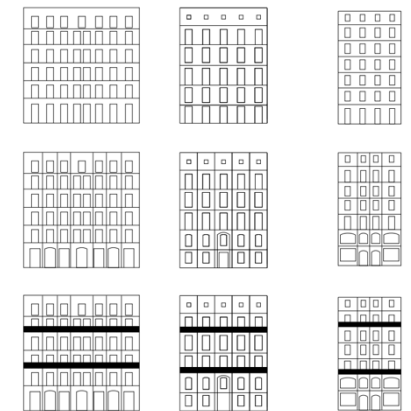
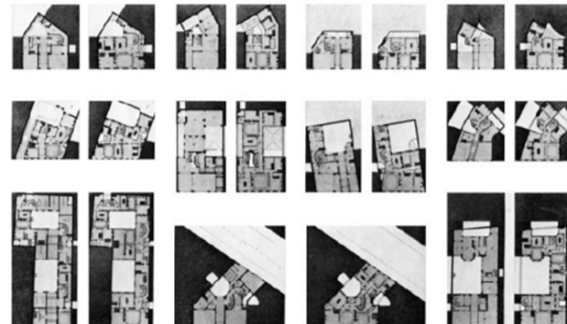
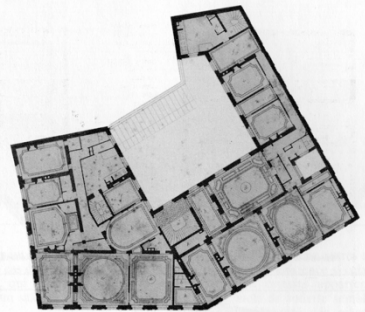
# Dwelling culture

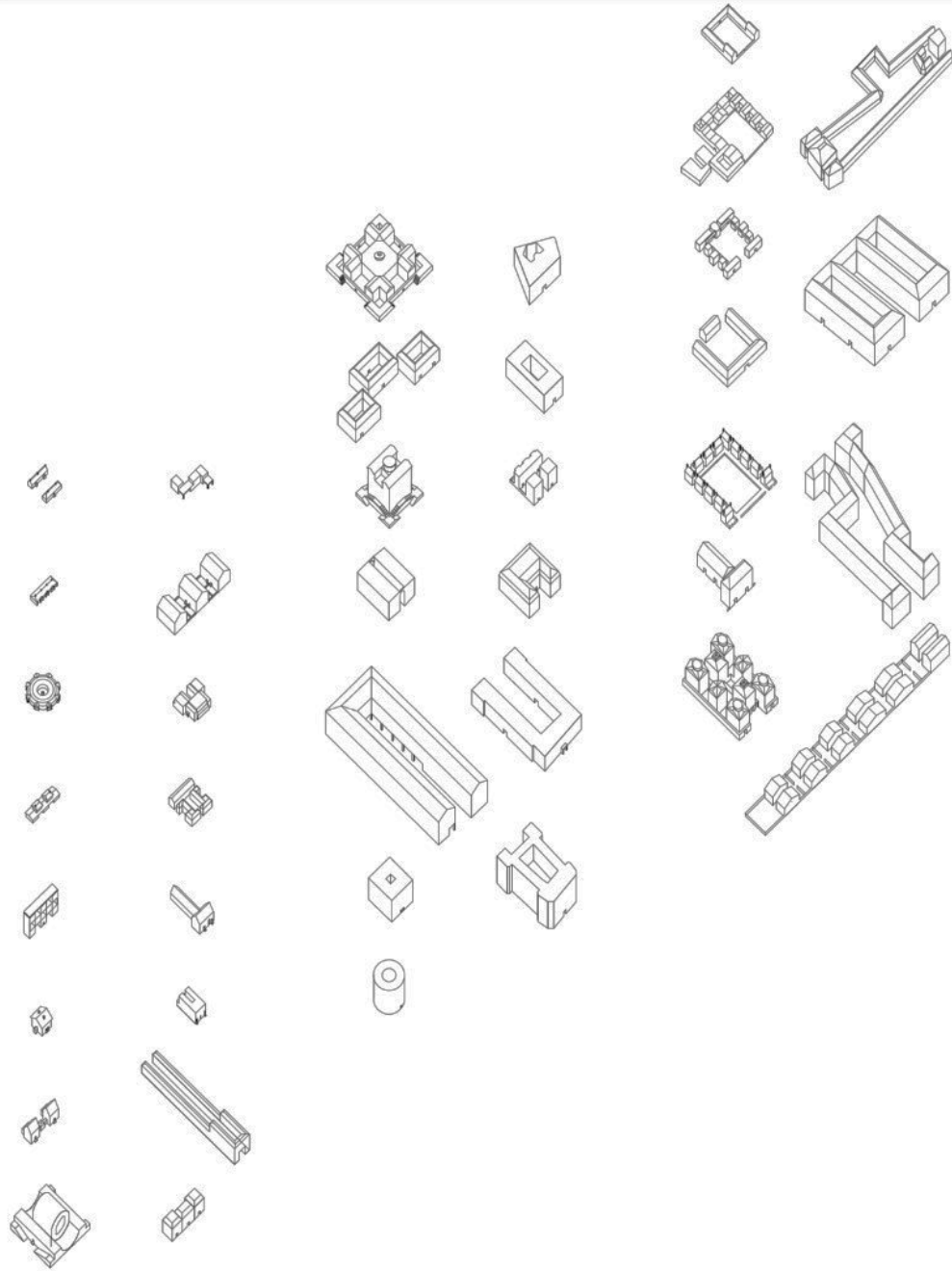
# Local language



- a grand escalier
- b antichambre
- c salon
- d salle à manger
- e office
- f office des domestiques
- g cuisine
- h garde-manger
- i chambre à coucher
- k cabinet de toilette
- l water-closet
- m cheminée de ventilation
- n couloir et dégagement
- o escalier de service
- p cour de service
- q grand balcon

Maison à loyer (première classe), avenue de l'Impératrice, plan des étages, Edme Raban, arch<sup>e</sup> (s.d., 1850-1864).





# GRADUATION YEAR

## general structure

research phase

design phase



## our studio structure

**research**

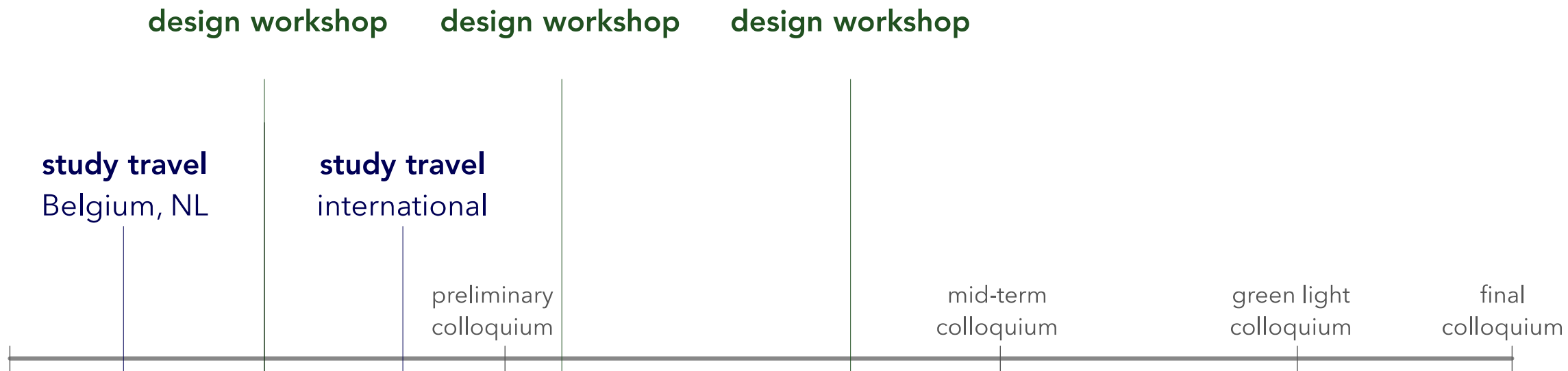
. literature & analysis

. **research by design;**

design as iterative process

design through experimentation → design as a proposal

**project design**



**model**

design principles  
for  
transformation  
and  
typology

**project  
definition**

individual  
design brief;  
location &  
program

**transformative  
concept**

typology  
arch. language  
detailing

**architectural  
position**

project from  
urban intervention  
to detail

# Reading Two Cities

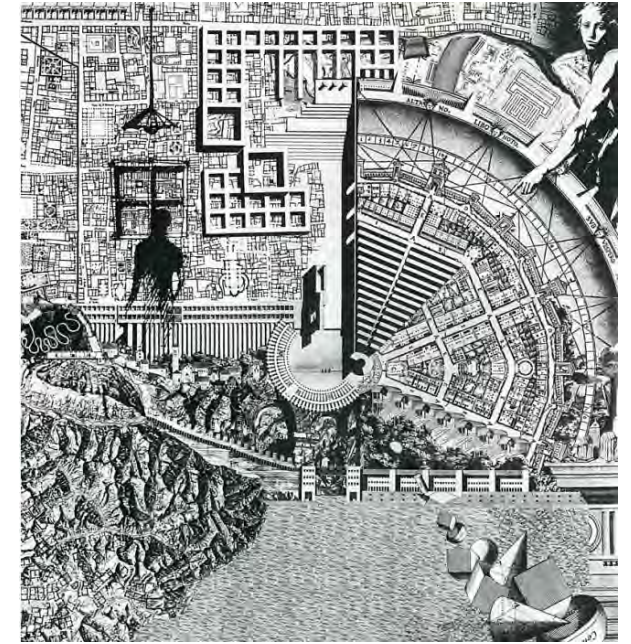
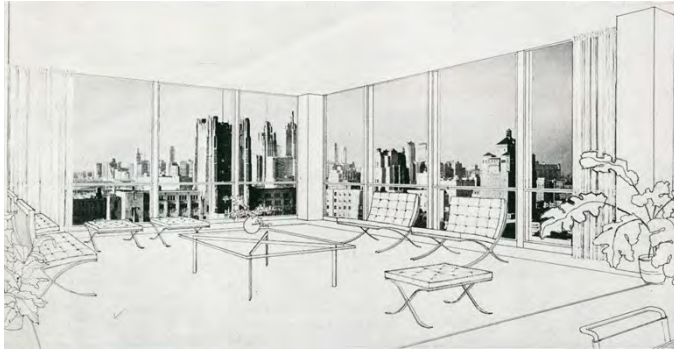
Visiting partner universities

- Intermediate typologies
  - Dwelling cultures
  - Local language



# Reading two cities

Analysis and design – exploring techniques

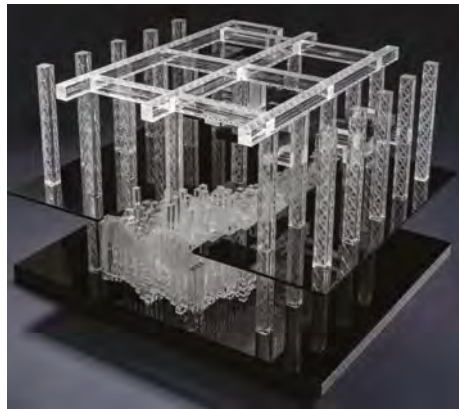


# learning perspectives

- Modelmaking
- Drawing
- Photography / Film making
- Design brief: typology, program and social interaction
  - Language and Detailing
  - New Housing typologies: taking position

# learning perspectives

Modelmaking



Çağla Bulut



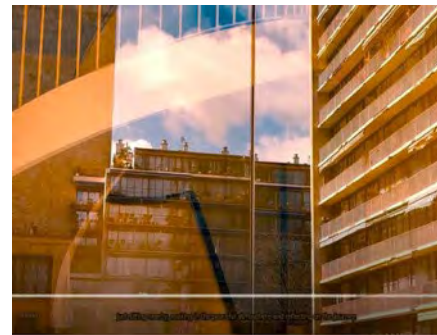
Britt Kusters

Drawing



Justin Agyin

Photography  
&  
Film making



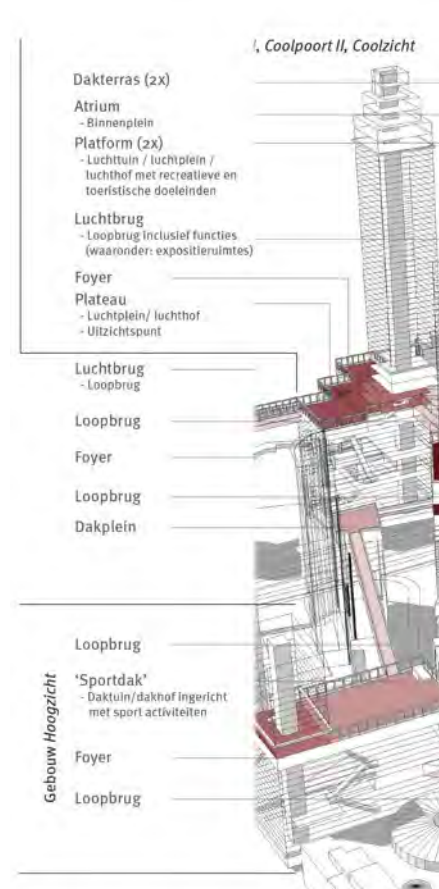
Saanya Parmar, Lucy Gestro,  
Jenny Huang, Nour Espiro



*It is without a doubt that I have committed myself to an intimate urbanity for this reason." - Pouillon*

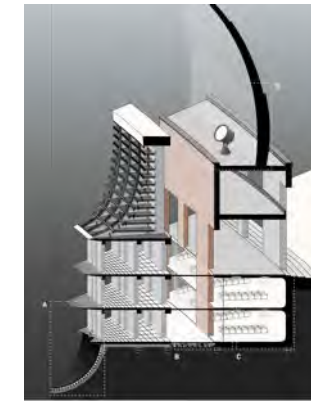
M. Spanjers, Bas Veldman,  
Mürvet Dogan, Hannah Koldijk

Design brief:  
Typology, program,  
Social interaction



Jolien Hermans

Language  
&  
Detailing



Karim Jaspers

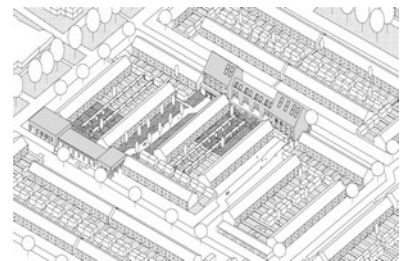
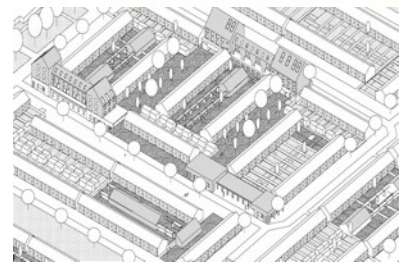
Housing  
typologies;  
taking position

## DESIGN PRINCIPLES

**Design conclusions the reproductive suburb**  
Offer spaces for domestic activity beyond the private realm of the home: the privatization of domestic activities has created very introverted homes. This is not always an issue but there is no possibility if one wants something else. With the increase of young single dwellers, the border should be softer as to create overlap between different domestic zones. The neutral plinth forms these zones for the new residents.

**Dissolving the border between public and private by creating places to say good morning:** intermediate zones in the edges of urban blocks that facilitate both superficial interactions as well as more structural social dependencies. In this case, garage boxes are usually located inside the daily route between the private domestic space and the public domain, making fit the intervention location.

**Offer quality back to the existing neighbourhood:** the useful can be made nice. Right now bikes are stored away behind the house in the shed. Offering new generous bike parking or washing facilities with a high finish quality makes that people not only use these spaces as utility space, but as part of a pleasant environment to be together.



Guido van Laar



Like Bijlsma

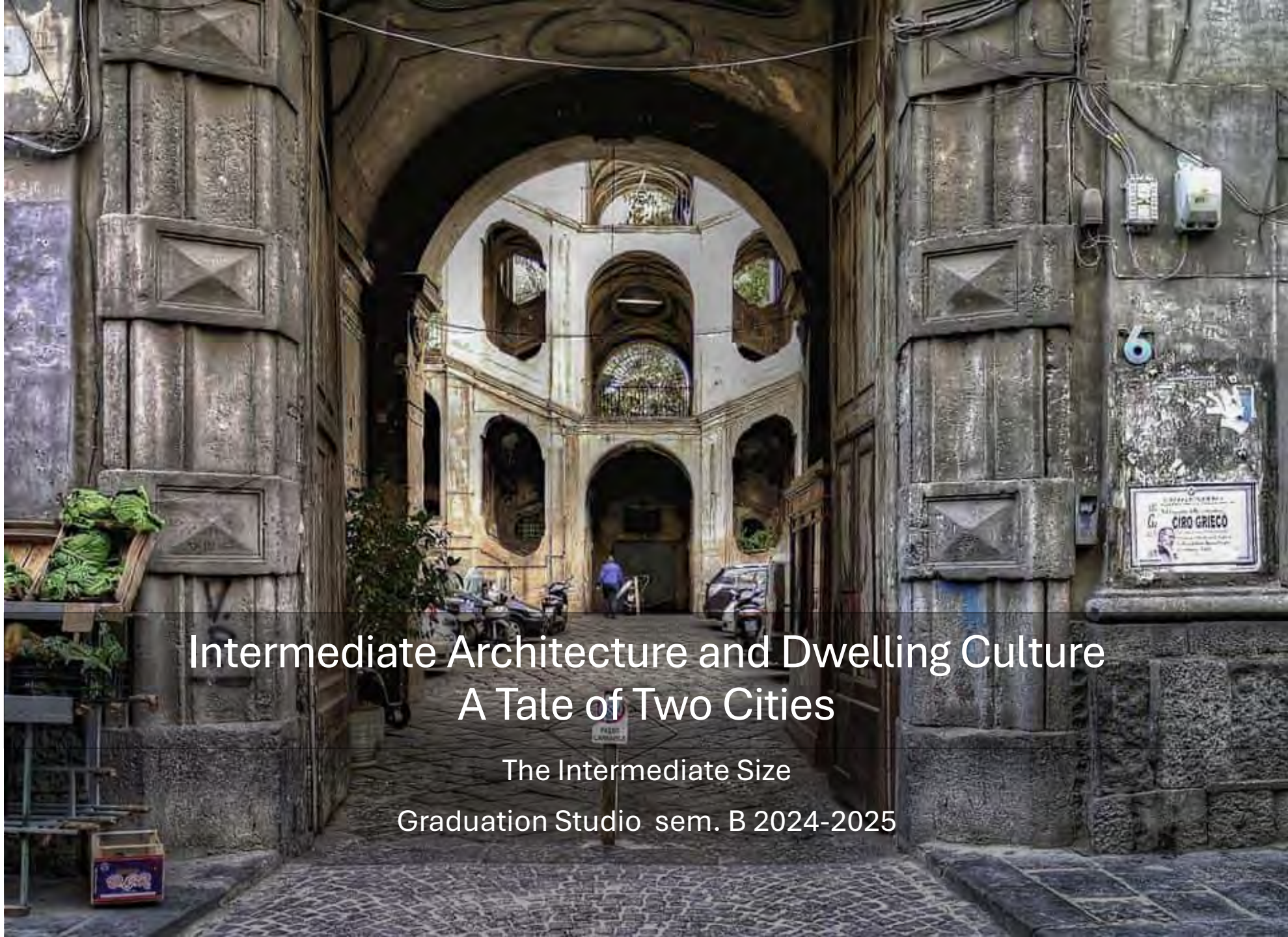


Jochem Groenland



Wouter Hilhorst





# Intermediate Architecture and Dwelling Culture A Tale of Two Cities

The Intermediate Size

Graduation Studio sem. B 2024-2025

## ***Density and other Matters***

*dr. ir. Dena Kasraian, Aroosha Zahid MSc, prof. dr. ir. Pieter van  
Wesemael*

*[d.kasraian@tue.nl](mailto:d.kasraian@tue.nl), [a.zahid@tue.nl](mailto:a.zahid@tue.nl), [p.j.v.v.wesemael@tue.nl](mailto:p.j.v.v.wesemael@tue.nl)*

A wide-angle, slightly elevated view of a busy street in a European city. The street is paved with cobblestones and lined with multi-story brick buildings. On the left, there are shops like 'doppio' and 'go'. On the right, there are more shops, including 'Cavallaro' and 'LaeVries'. The street is filled with people walking, many bicycles parked along the sides, and a few cars, including a black van with 'WASSALON SMID' on it. The sky is overcast, and the overall atmosphere is one of a vibrant, densely populated urban environment.

# Density & other matters

**Dr. ir. Dena Kasraian**  
**Aroosha Zahid, MSc**  
**Prof. dr. ir. Pieter van Wesemael**



Credit: BlowUp Media

Kræmer  
Op. og  
nødg?  
extraBox  
self storage



# Steps

1. Conceptual model
2. Literature review
3. Spatial analysis
4. City strategy / toolbox
5. Neighborhood Design

# Methodological steps

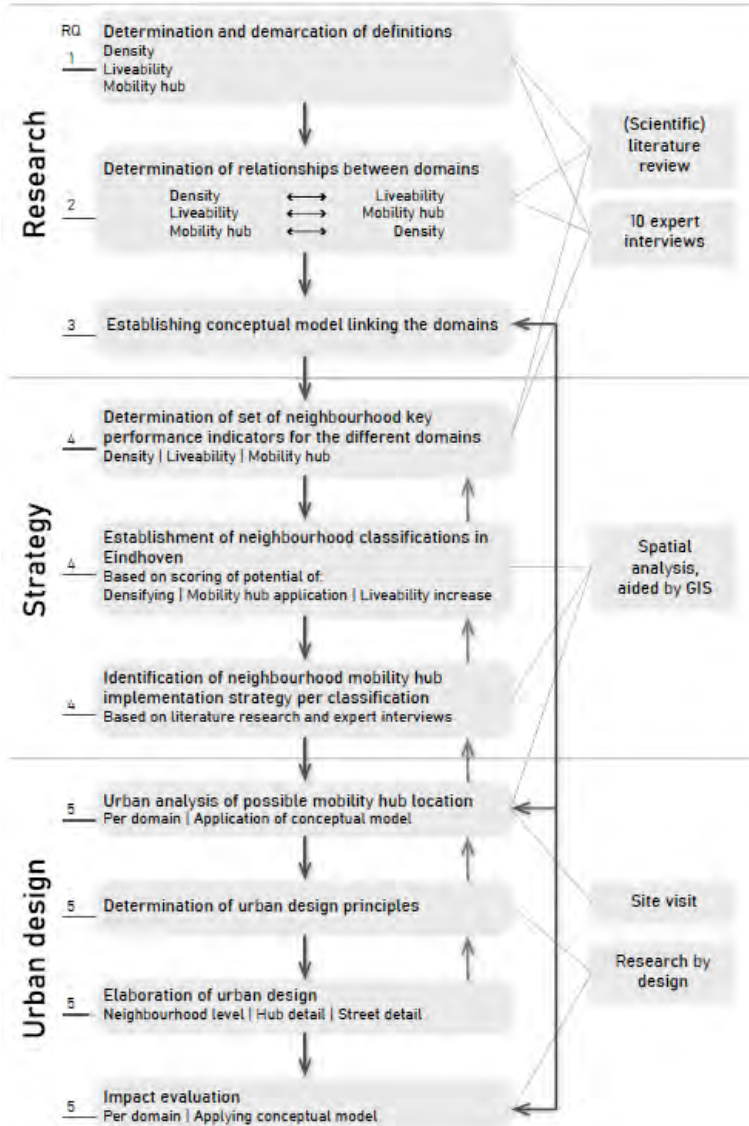


Figure 1, Methodological steps.

Emiel Groenhagen (2022)



Reflection on the impact of public participation on urban design and planning projects

Figure 1.1 Simplified overview of the project

Ilke Klasen (2022)

# Conceptualisation





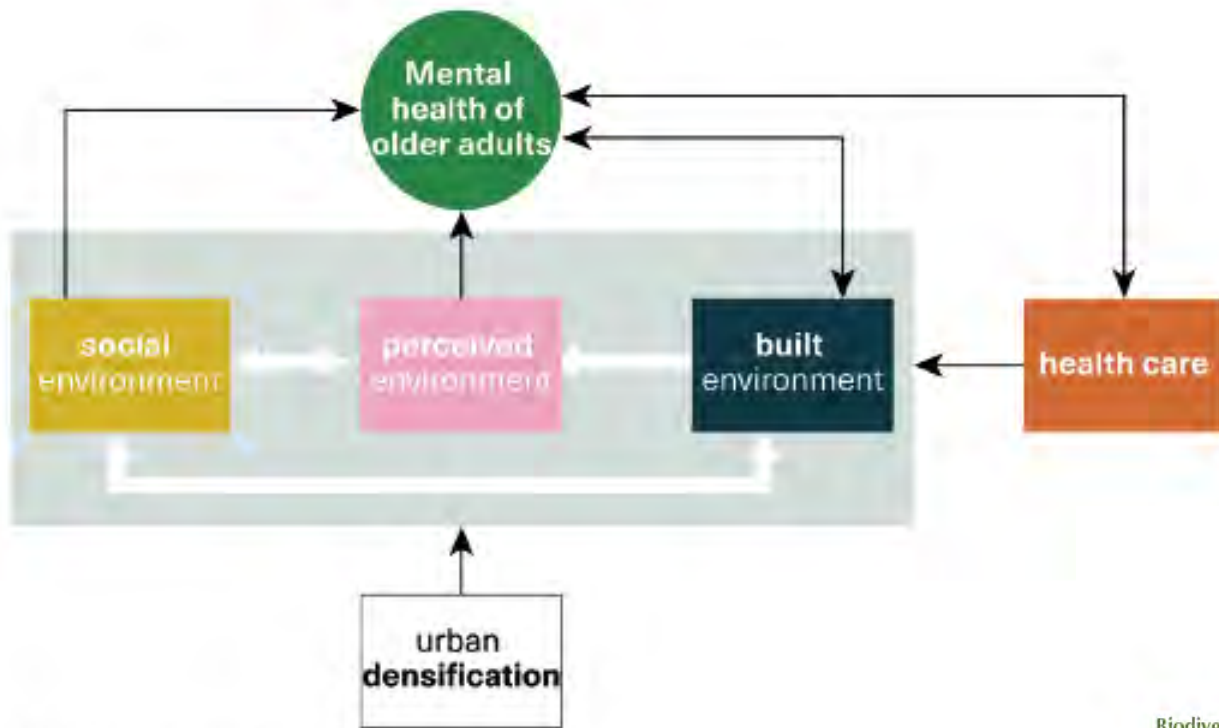


Figure 4 Adapted theoretical framework

Sarah Selanno (2023)

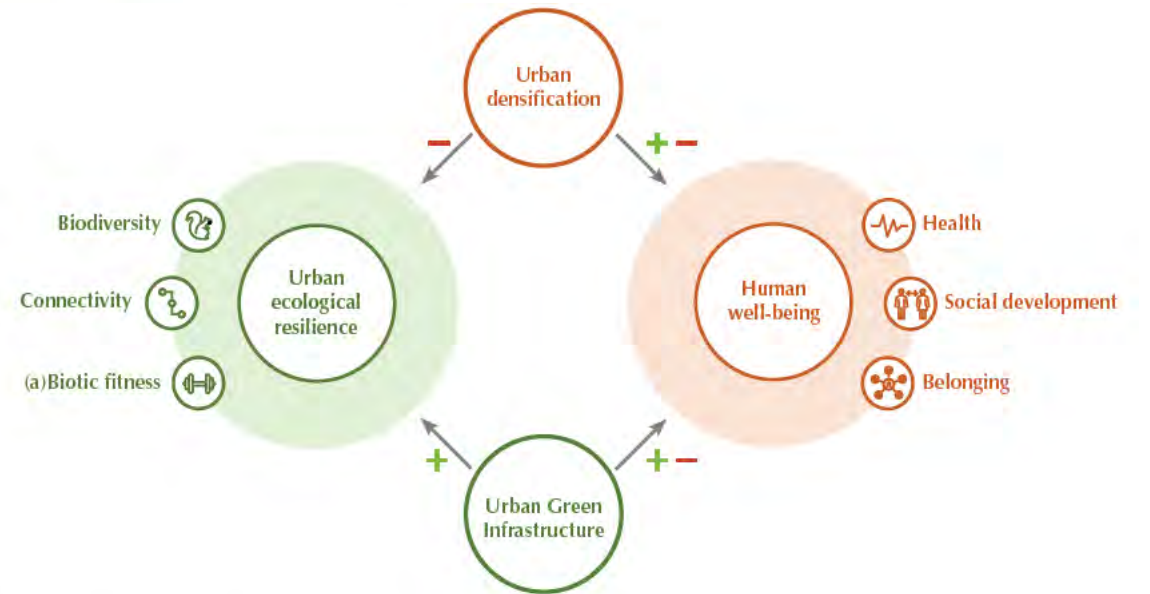


Figure 11 Conceptual model of the relationships between the key concepts

Merijn van der Does (2024)

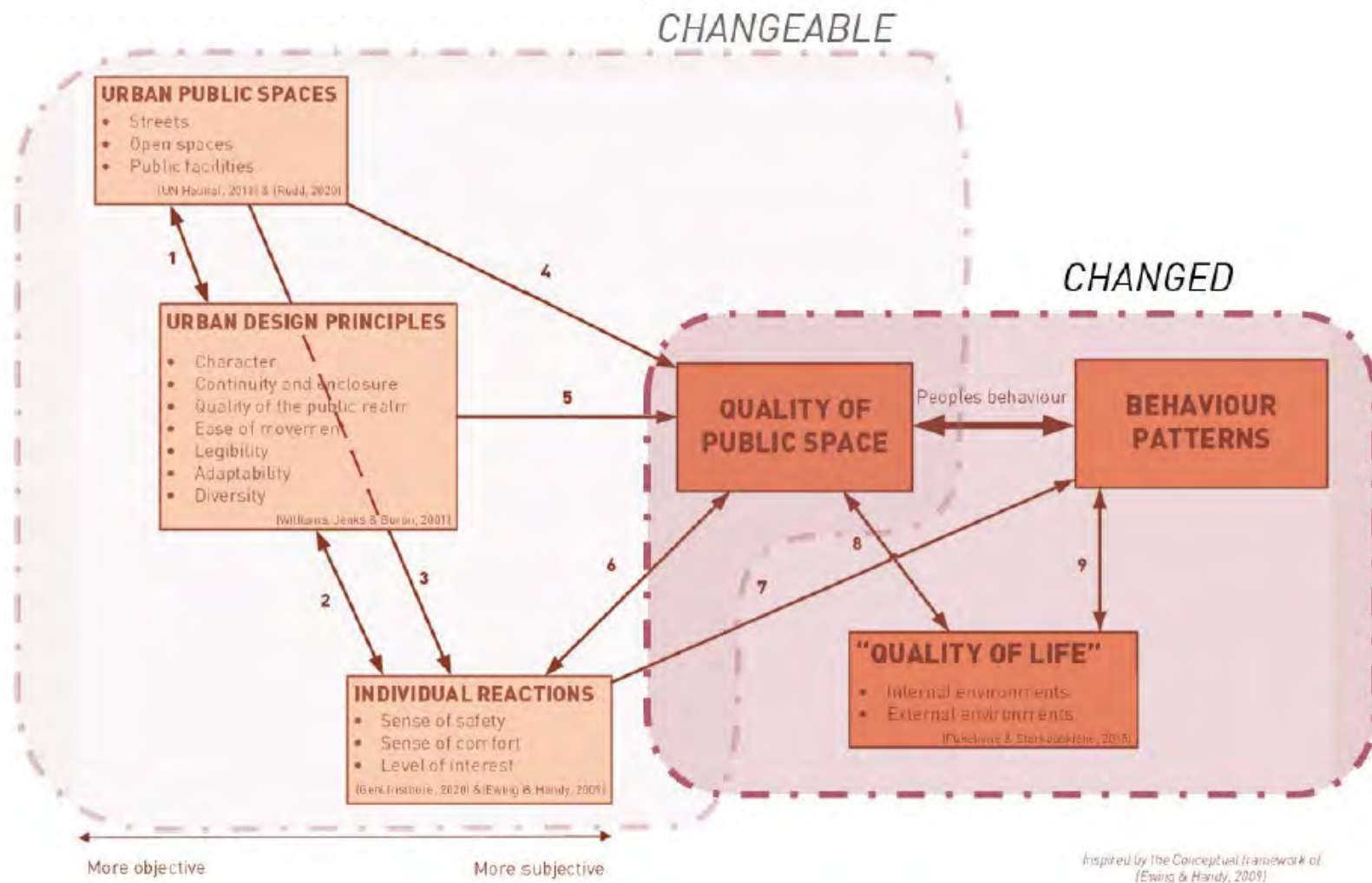
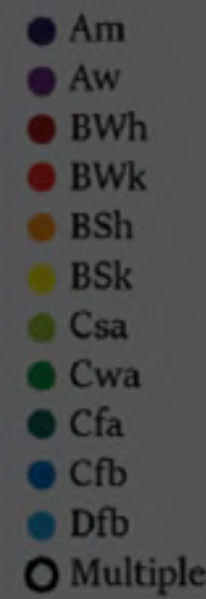


Figure 3.2: Theoretical framework + influences urban designer

# literature review

1. Academic literature
2. Policies
3. Handbooks
4. Use cases



3 All t  
15 Euro  
25 Indi

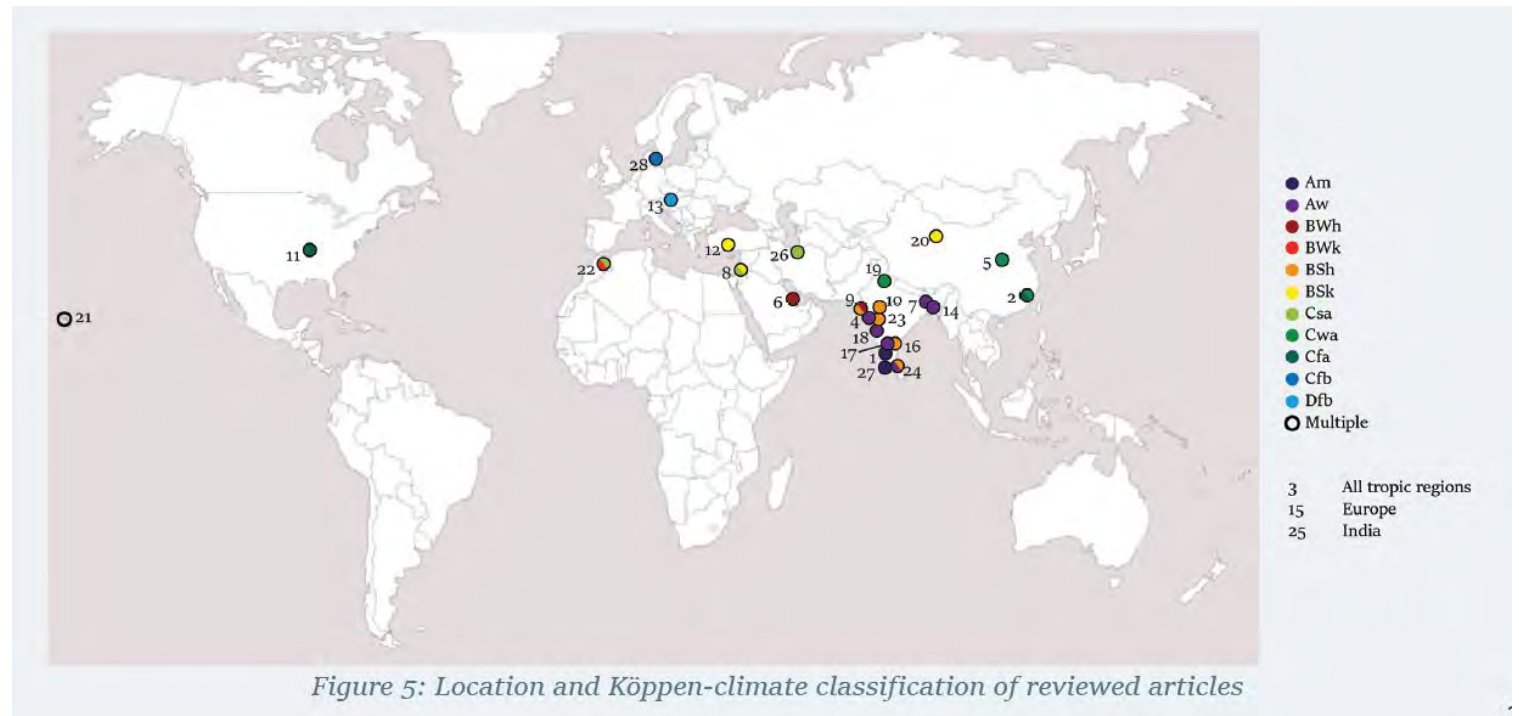
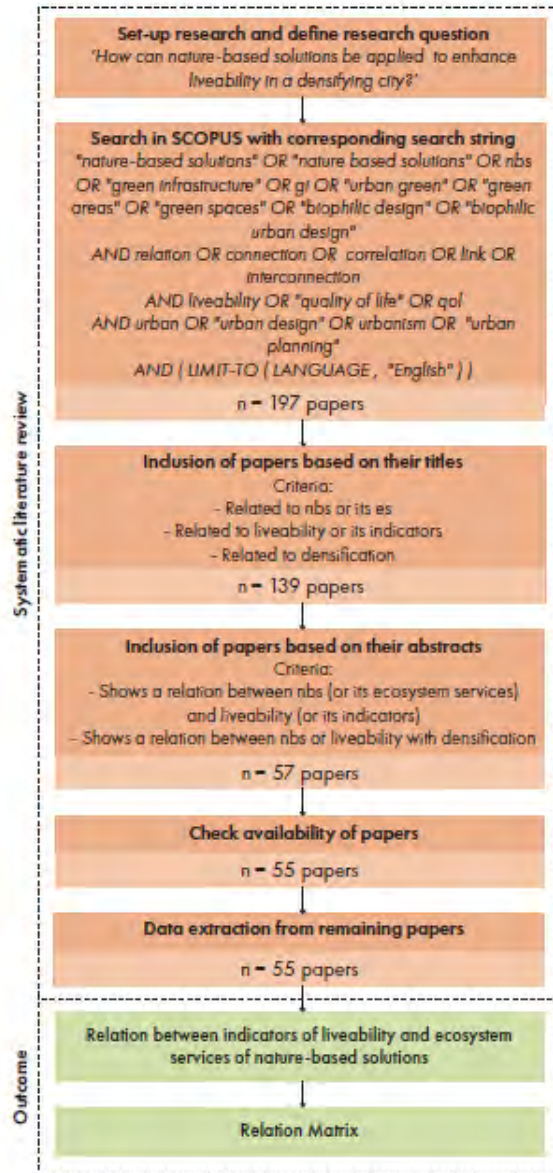


Figure 2. Methodology systematic literature review

Isabel Conti (2023)

Wilco Verpoorten (2024)

Table 3 Relationship matrix for the environments and their corresponding indicators in relation to mental health of older adults

		built environment											social environment					perceived environment								
		Land-use mix	Proximity to green space	Accessibility	Walkability	Proximity to public space	Street network density	Street interface density	Wind penetration	Facility features	Water	Activities	Physical activity	Recreational services	Social Cohesion	Social interaction	Sense of Community	Sense of place	Air quality	Noise levels	Crowdedness	Light	Privacy	Temperature	Aesthetics	Safety and security
ID	Scale	6	15	13	16	4	1	-3	1	7	-1	17	9	14	13	14	11	7	10	-13	-10	4	7	-4	11	14
1																										
2	S		1										1						1	1					1	1
3	S		1	1	1					1		1	1					1	1					1	1	
4	S		1			1				1	-1	1	1	-1		1		1	1			1	1	1	1	1
5	S		1			1				1		1		1	1		1		1	1		1	1	1	1	1
6	S		1	1	1					1								1	1				1	1		
7	S	0	1										1		1											
8	S/M	1	1	1	1					1		1	1	1	1	1	1	1	1	1	1		1		1	1
9	S/M		1							1		1	1	1	1	1	1	1	1	1	1		1		1	1
10	S/M		1			1				1		1		1	1	1	1	1	1	1	1		1		1	1
11	S/M	1	1	1	1					1		1		1	1	1	1	1	1	1	1		1		1	1
12	S/M	0	1	1	1	1	1			*		1		1	1	1	1	1	1	1	1		1		1	1
13	M	1	1	1	1		1					1	1	1	1	1	1	1	1	1	1		1		1	1
14	M							1		1		1		1	1	1	1	1	1	1	1		1		1	1
16	M						1							1	1	1	1	1	1	1	1		1		1	1
17	M	1		1	1	1	0					1		1												1
18	M	0	1	1	1	1						1	1	1	1	1	1	1	1	1	1		1		1	1
19	M	1		1	1					1	1	1		1	1	1	1	1	1	1	1		1		1	1
20	M	0	1	1	1		1	-1		1		1		1			1	1	1	1	1		1		1	1
21	M	0		1	1	1						1				1				0					1	1
22	M	1	1	1	1	1	1					1	1	1	1	1	1	1	1	1	1		1		1	1
23	M/I						0							1	1	1	1	1	1	1	1		1		1	1
24	I			1	1	1	1					1		1												1

1	Positive relation
0	Mixed results
*	result found, not significant
-1	Negative relation

**social environment**

**built environment**

**perceived environment**

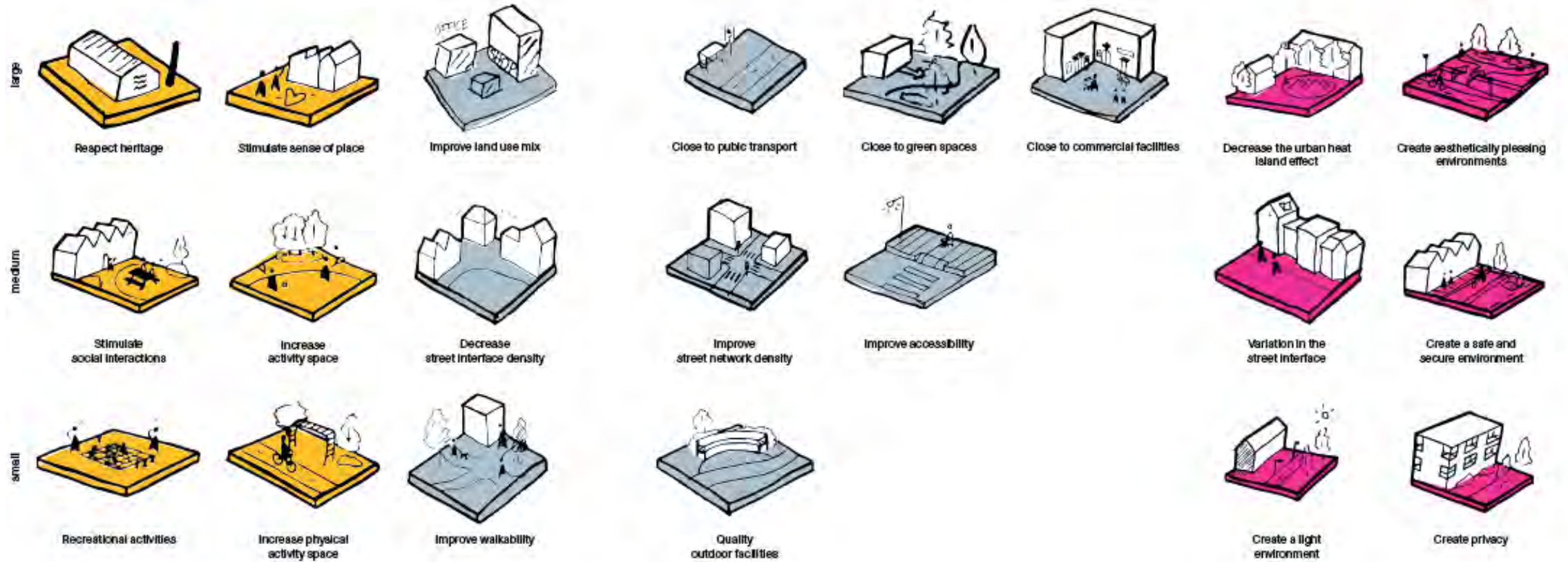
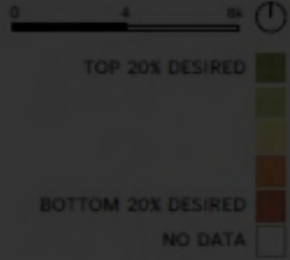


Figure 14. Design principles for healthy aging in the city



CONTACT WITH FRIENDS,  
FAMILY AND NEIGHBOURS



PARTICIPATION AND  
ACCOUNTABILITY



OFTEN FEEL SAFE IN THE  
NEIGHBOURHOOD

# Spatial analysis



LAND NATURE MANAGMENT



NITROGEN DEPOSITION AND  
TERRESTRIAL NATURE



URBAN EXPOSURE TO FINE  
PARTICLES



ENVIRONMENTAL PROBLEMS

**Health**

**Social development**

**Belonging**

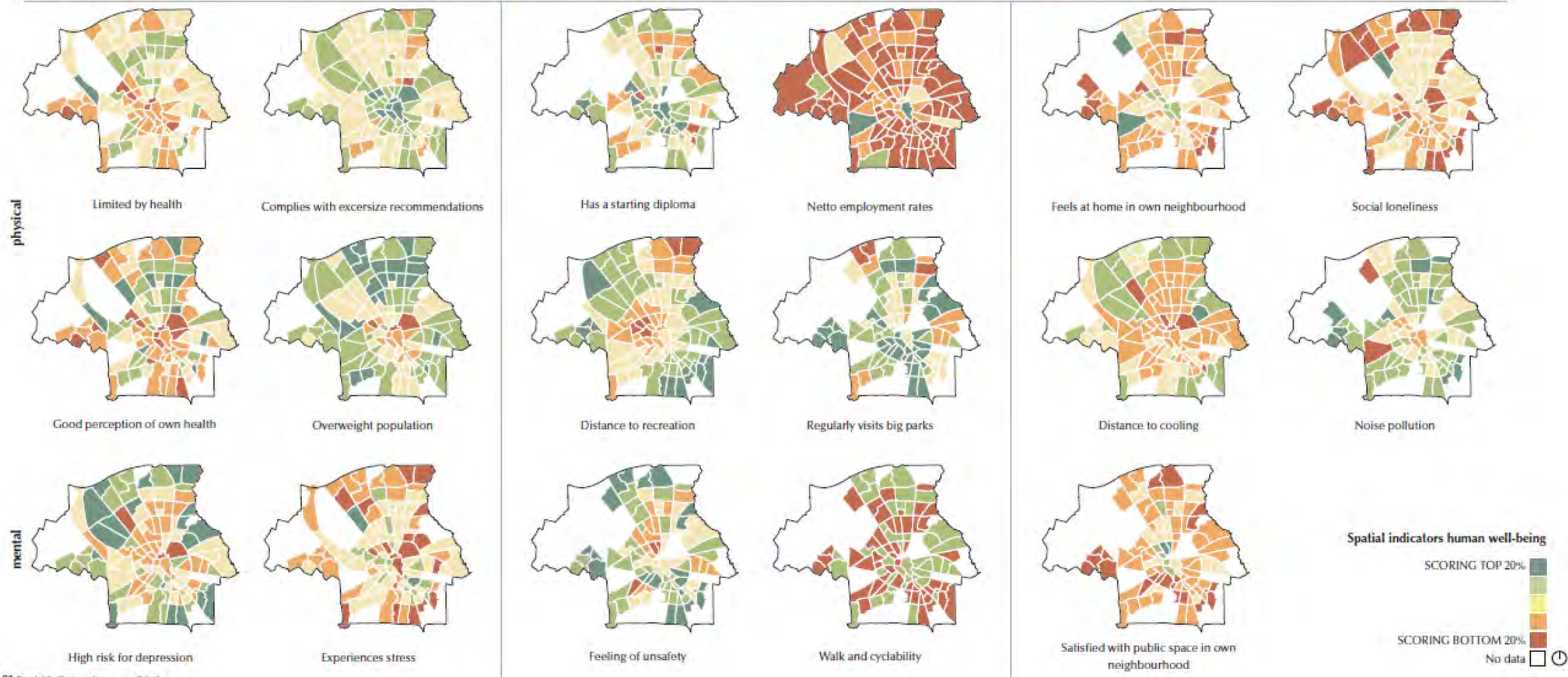


Figure 21 Spatial indicators human well-being



# Eindhoven City Strategy 2040

1:70.000

- Densification and mobility strategy**
- Urbanized area
  - Max: FSI 5,08
  - High: FSI 4
  - Average: FSI 3
  - Low: FSI 1,34
  - Direction of densification development
- Potential densification zones:**
- Larger locations
  - Smaller locations
  - Groenstedelijk
  - Existing train station
  - Proposed train station
  - Existing HOV bus line 500m buffer
  - Proposed extension of HOV bus line

- Urban Ecological Resilience**
- Urbanized area
  - Strengthening Dommeldal
  - Greening blue corridors
  - Re-introducing Gender
  - Regenerating agriculture: climate buffers
  - Strengthening 'Groene Wiggen'
  - City parks
  - Radial and concentric green corridors

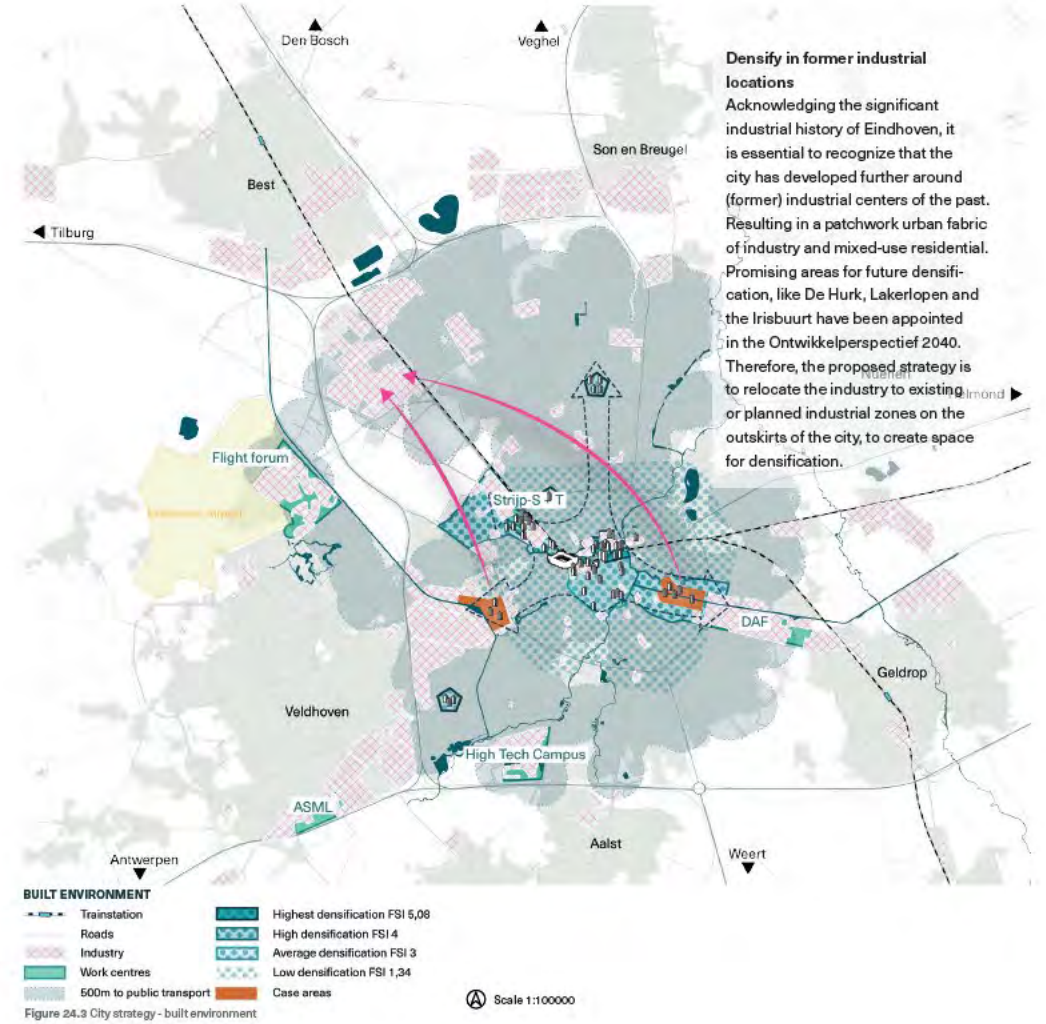
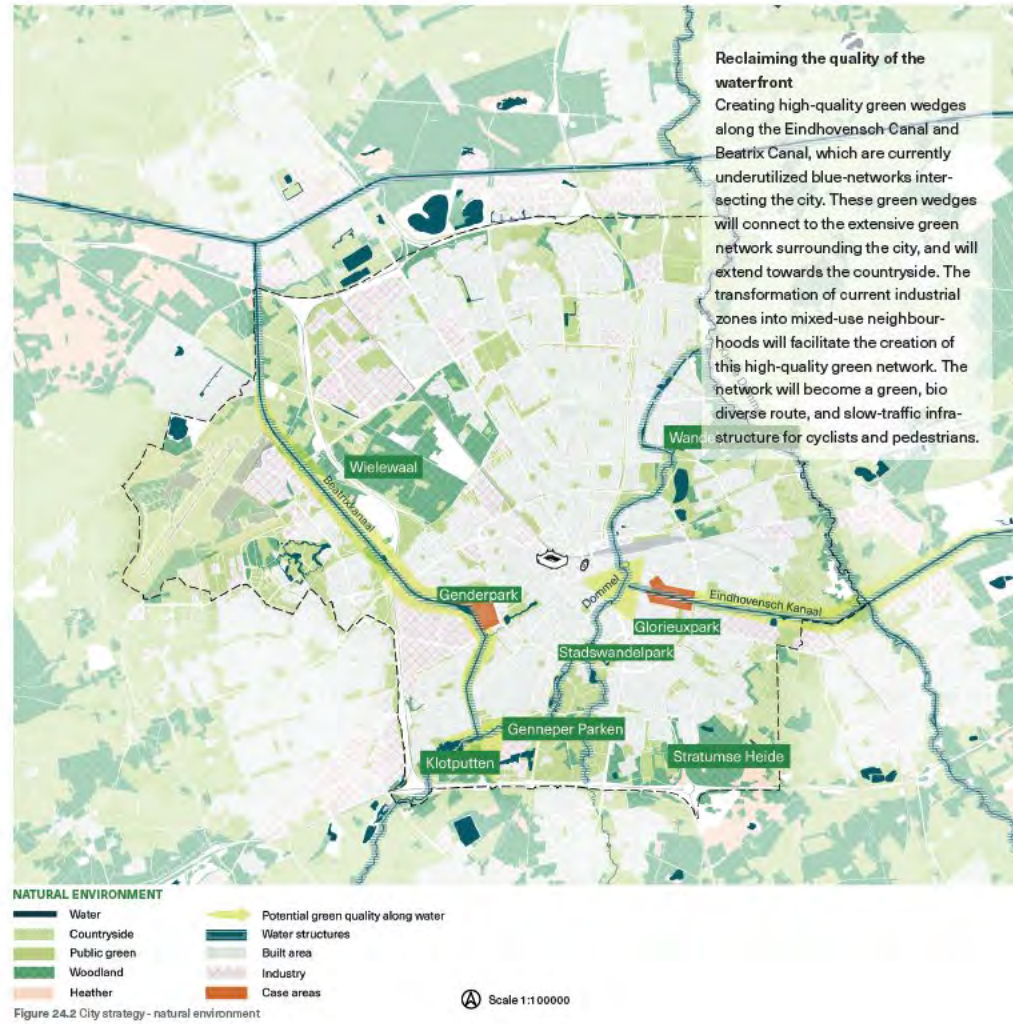
- Human well-being**
- Urbanized area
  - Reducing risk scapes
  - Greenspace of significant recreational value
  - Fast cycling lanes
  - Proposed fast cycling lanes
  - Proposed fine-grain recreational network
  - Strengthening human UGBS connections

# City strategy

Figure 37 City strategy for Eindhoven 2040



Figure XIII. City scale strategy map. Principles and descriptions of colours are mentioned in figures XI and XII.



City scale strategy






























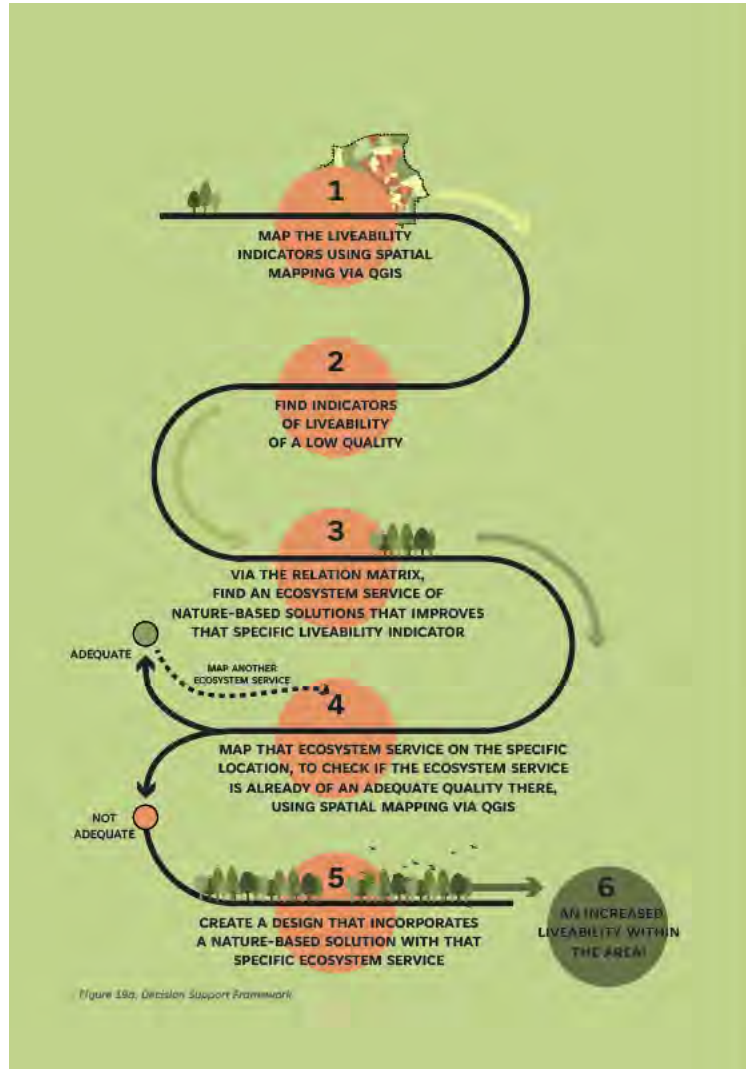
-  Railway
-  High priority bicycle network
-  HOV public transport line
-  Car infrastructure
-  Water infrastructure
-  City centre built area
-  Inner city built area
-  Outer city built area
-  Airport
-  Central train station
-  Small train station
-  Proposed new train station
-  Regional hub
-  City edge hub
-  Local hub zone
-  Ring road crossing altered
-  Large road presence reduction
-  Old village structure
-  State-protected city structure
-  Very highly-valued urban structure
-  Highly-valued urban structure
-  Very high parking area percentage
-  High parking area percentage
-  Moderate parking area percentage
-  City Hotspot
-  Densification tier 1
-  Densification tier 2
-  Densification tier 3
-  Parking lot



Figure 48 City-scale strategy



## DECISION SUPPORT FRAMEWORK

### Step 1 MAP

For the first step, the indicators of liveability are mapped on the scale level which is appropriate for the research or design. This is done by spatial mapping in QGIS.

### Step 2 FIND

After all indicators are mapped, the indicators of low quality can be defined and found. The definition of 'low quality' can vary per situation and therefore need to be critically defined project specific.

### Step 3 RELATION MATRIX

Now that indicators of low quality are found, the ecosystem services that enhance these liveability problems need to be subtracted from the Relation Matrix. For this, ecosystem services that have desired relations with the indicators of low quality are used.

### Step 4 CHECK

After ecosystem services are found that will enhance the liveability problems, it needs to be checked if those ecosystem services are not already of adequate quality. The definition of 'adequate quality' can again vary per situation and therefore need to be critically defined project specific. This check is done by mapping the ecosystem services within the project area in QGIS. If the ecosystem services are already of adequate quality, improving them will not enhance the liveability problems. So, another ecosystem service needs to be mapped. This process is repeated until an ecosystem service of inadequate quality is found, which will enhance the specific liveability problems.

### Step 5 SOLUTIONS

Now that ecosystem services of inadequate quality are found, nature-based solutions need to be defined that will provide those ecosystem services. Here, the nature-based solutions implementation research is used. From that table, nature-based solutions implementations that provide specific ecosystem services are subtracted. The table also allows to filter on the type of city, the level of density, and the scale of the project. This makes sure that the nature-based solutions are better tailored to the situation.

### Step 6 DESIGN

A strategy or design that implements the found nature-based solutions is created, that will enhance the specific liveability problems in a project, thereby thus increasing the liveability there.

A photograph of a busy city street at dusk. In the foreground, several people are walking across a crosswalk. On the left, a man in a grey puffer jacket pushes a stroller. Next to him, a woman in a brown hat and dark coat is looking at her phone. Further right, another man in a dark jacket with a fur-lined hood is pushing a stroller. To the right of the strollers, a man in a dark jacket is riding a bicycle. In the background, a purple tram is visible with the text "broederschapen binnen minuten" and "ge" on its side. A black and white striped utility pole stands in the center of the frame. The overall scene is dimly lit, suggesting the time is either early morning or late evening.

# Neighborhood design



3. CONCEPT

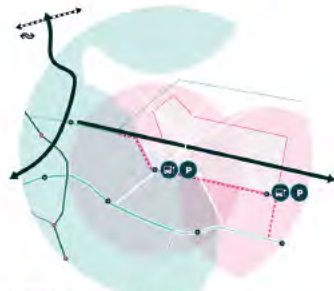


Figure 33 Conceptual diagrams.  
 Top left: social environment  
 Middle: natural environment  
 Bottom: built environment  
 Right: combined diagrams

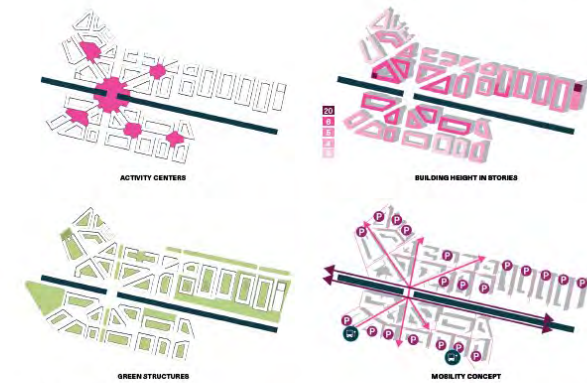


Figure 37 Thematic elaboration of the masterplan

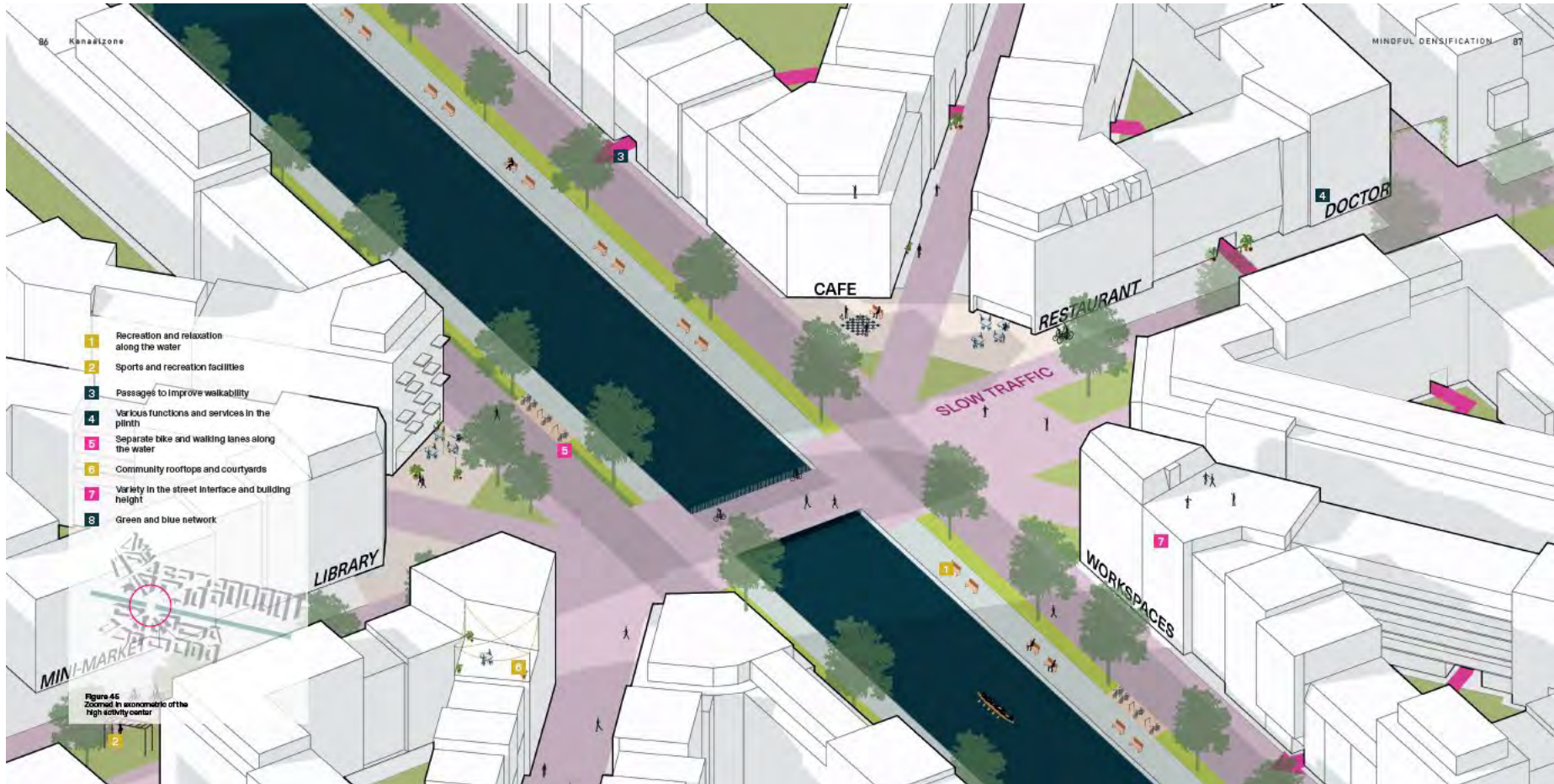
- Building blocks
- Cycle and pedestrian zone
- Bridge over the canal
- Green courtyard
- Public park
- Neighbourhood square

Figure 36 Urban masterplan for the Kanaalzone. SCALE: 1:5000

5. MASTERPLAN

The masterplan shows the proposal for the mixed-use high-density development for the Kanaalzone. The human scale forms the basis of the design, by focusing on the pedestrian and cyclist perspective. The high land-use mix creates a small-scale local center that will cater to the needs of the 65-74 year old demographic, as well as the families, starters and singles. The activity center in the middle is situated at the crossing of the large boulevard and the diagonals. Two height accents will be located at the north-side, along the canal and

along the Ring Road. Moreover, parking will be realized (semi-)underground under the building blocks. The (semi-)private courtyards will form the green heart of the building block, where people can come together.



Sarah Selanno (2023)



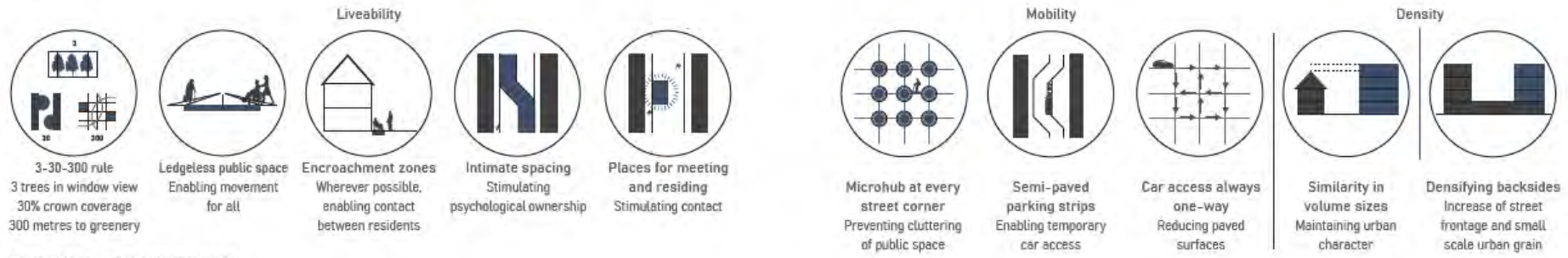


Figure XX. Urban design principles applied

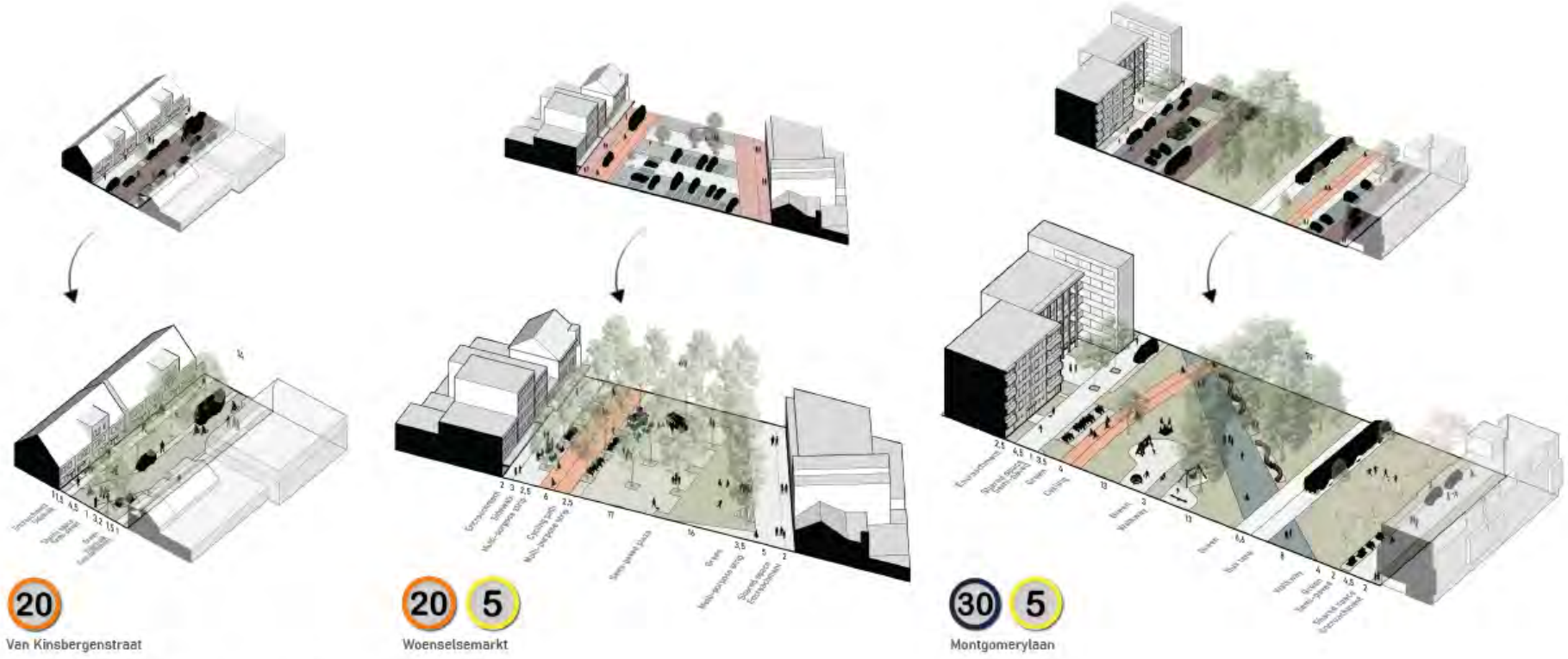
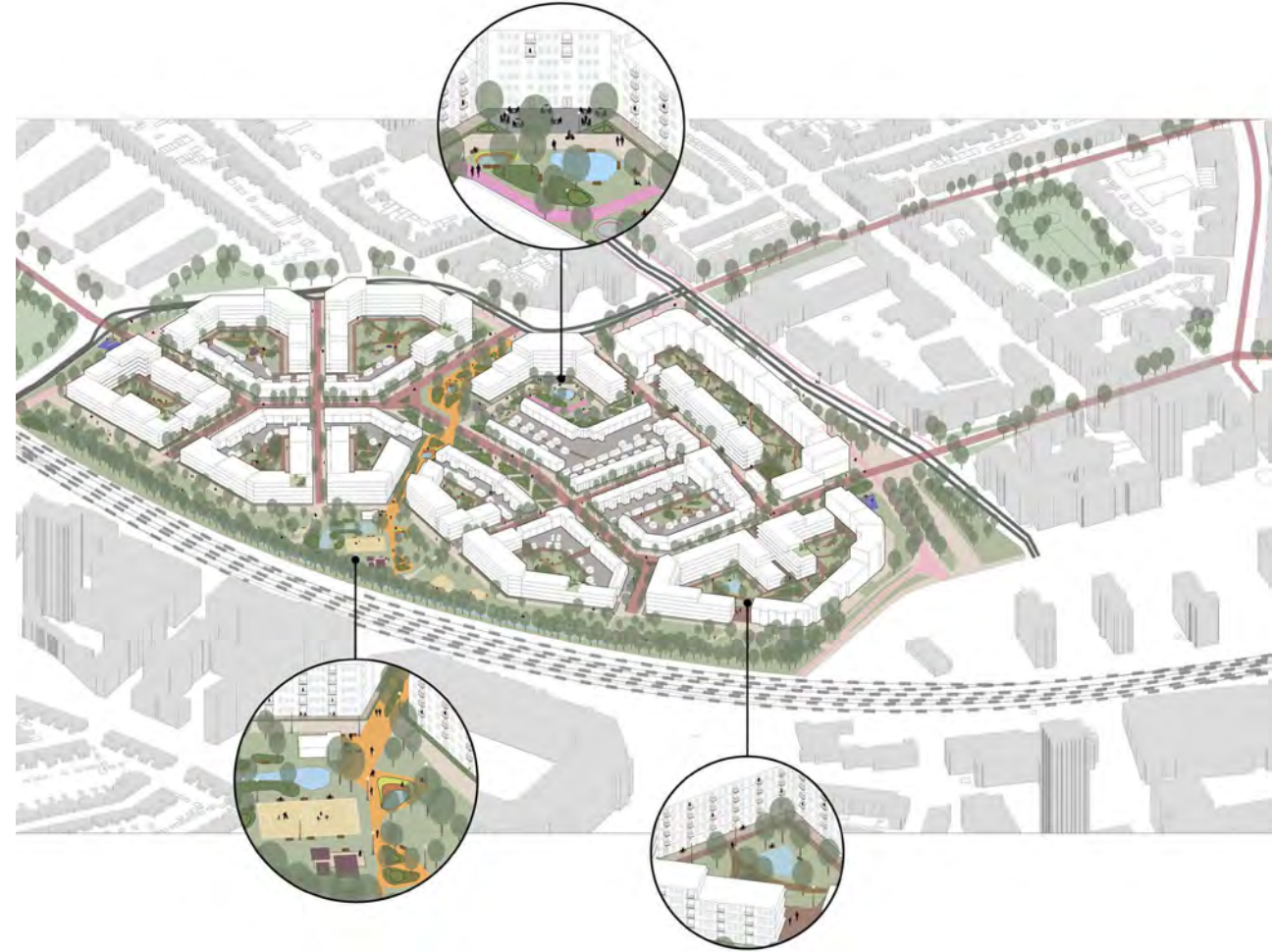


Figure XXI. Street sections showing the difference in PS usage of three locations



### Framework plan

- Retail and horeca
- Education
- Community
- healthcare
- Office
- Industry
- Residential
- No public function
- Dense green space
- Green space
- Existing function
- Added function
- Heritage
- Horeca
- Wandelpark
- Playing area
- Urban park
- Recreation
- Flower garden
- Park
- Existing tree
- Added tree
- Main roads
- Neighbourhood roads
- Cycling paths
- Slow traffic oriented roads
- - - One-way roads
- HOV 4



9.12 Urban sections

Section A and B in Figure 76 show longitudinal sections through the proposed Sectie-C development. Section A shows the large to be redeveloped buildings in which ateliers, the communal workshop and the main exposition building are situated. Furthermore, it shows how these existing buildings are topped up by residential towers, providing buffer from the railway. At the most western side, the mobility hub in front of the station is visualized and the entrance to Sectie-C is marked with a height accent. The most eastern side shows the connection to the region.

Section B shows the section through the line of Cityplots, showcasing a more diverse and mixed typology. On the most eastern edge, the scouts have remained their activity garden, which connects to the courtyard of the adjacent Cityplot. Along the Connector park, a height accent is placed, marking the edge of the site. Within the neighbourhood park,

a park pavilion is introduced. Finally, another height accent is placed at the edge of the Cityplot along the road and 't Karregat.

Section C shows a green corridor street from the main activity zone to the Spoorpark.

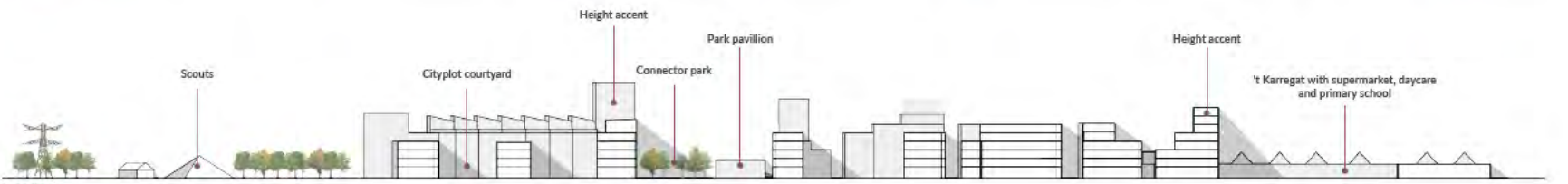
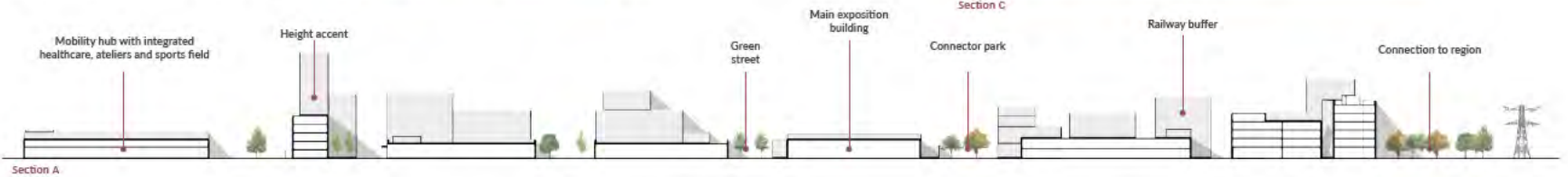


Figure 76 Longitudinal urban Section A and B Sectie-C, scale 1:3000, and green corridor street section, scale 1:300





Judith van der Struijk (2022)



Sarah Selanno (2023)



Jamilla Broersma (2024)



Jamilla Broersma (2024)

## ***Unbuilt ANTWERPEN***

*dipl-ing. Haike Apelt, iMA B. Arch. Daryl Mulvihill*  
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# UNBUILT ANTWERP

COMBINED GRADUATION PROJECT ARCHITECTURE & URBANISM 2024-2025

60 ects

Dipl.-Ing. Haike Apelt, MA B.Arch. Daryl Mulvihill  
Faculty of the Built Environment  
University of Technology Eindhoven

## RATIONAL ARCHITECTURE

chair

research

teaching

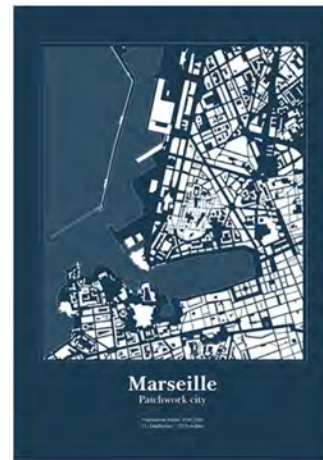
contact

### european city studios

firenze, a room with a view  
napoli, viaggio in italia II  
napoli, viaggio in italia I  
marseille, patchwork city  
madrid, topography of power  
milano centrale  
antwerpen, de getekende stad  
la città di roma  
gran torino  
münchen rekonstruiert  
potsdam unraveled  
berlin als modell  
de rede van amsterdam  
amsterdam langsdoorsnede  
amsterdam dwarsdoorsnede



In the European City Studios, typomorphological analysis is used as a didactic method to teach students how to analyze the city and its characteristics in a structured and organized way. The analysis is done in groups of collaborating students, which means that each individual student carries out part of a greater research. These 'parts' can for example be periods in time or different parts of the city. The synthesis of the knowledge acquired through individual research is of great importance in order to understand, for example, the full history of a city (as opposed to just a single time period) or the city as a whole (as opposed to just a part of the city). A strong collaboration within the group will thus eventually lead to a better understanding of the city for each individual member of that group. The result of the group work is a book or 'atlas' in which all the collaborative research and analysis is combined.



Unbuilt  
Amsterdam



La Città Ideale di Baltimore, 1480-1484 (Fra Comevale, after design by Giuliano di Sangallo)



La Città Ideale di Urbino (formerly attr. to Piero della Francesca)



La Città Ideale di Berlino, 1490-1500 (Francesco di Giorgio Martini (attr.), veduta architettonica ideale)



Capriccio con edifici palladiani, 1756-59 (Canaletto)



RATIONAL ARCHITECTURE

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teaching

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european city studios

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napoli, viaggio in italia II  
napoli, viaggio in italia I  
marseille, patchwork city  
madrid, topography of power  
milano centrale  
antwerpen, de getekende stad  
la città di roma  
gran torino  
münchen rekonstruiert  
potsdam unraveled  
berlin als modell  
de rede van amsterdam  
atlas  
morphological series  
fragment analysis  
individual buildings  
graduation projects  
martijn schlatmann  
amsterdam langsdoorsnede  
amsterdam dwarsdoorsnede



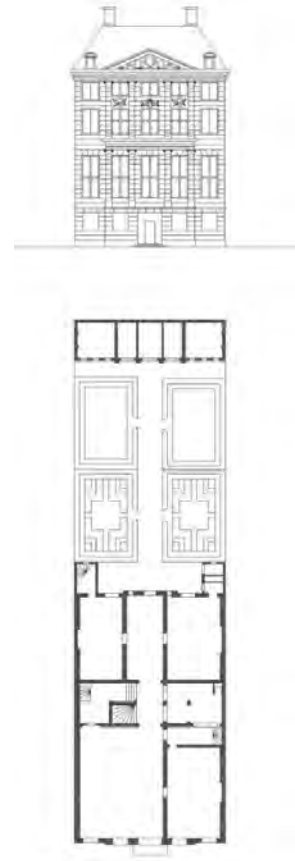
Deze atlas van Amsterdam omvat een analyse van de ontwikkeling van de gebieden langs de Amstel en het IJ door de eeuwen heen. De atlas het ontstaan en de transformatie van het gebied op verschillende schaalniveaus, van regio tot kavel. Daarnaast gaat de atlas in op de relatie tussen de stad en het water.



I  
City Scale

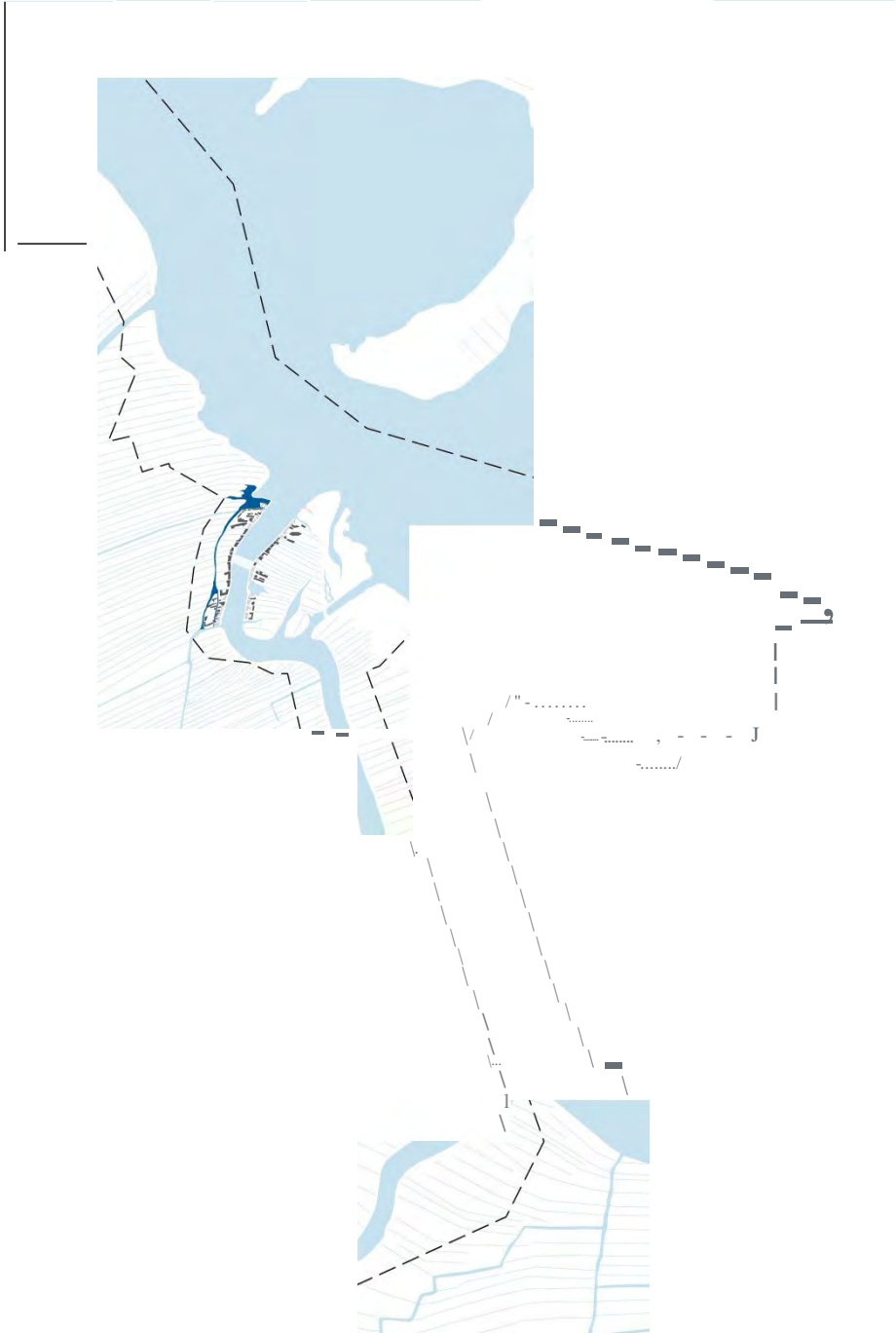


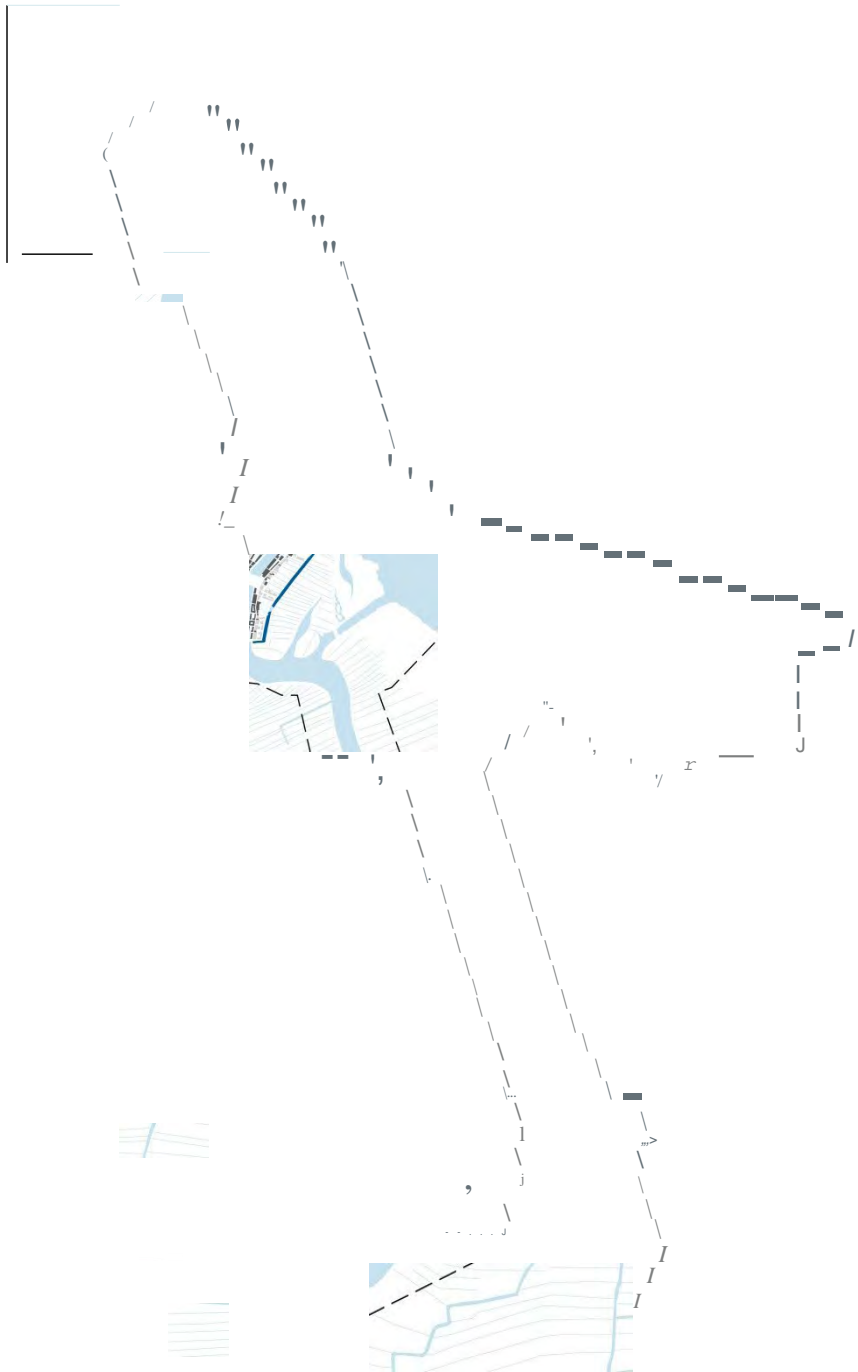
II  
Fragment  
Scale

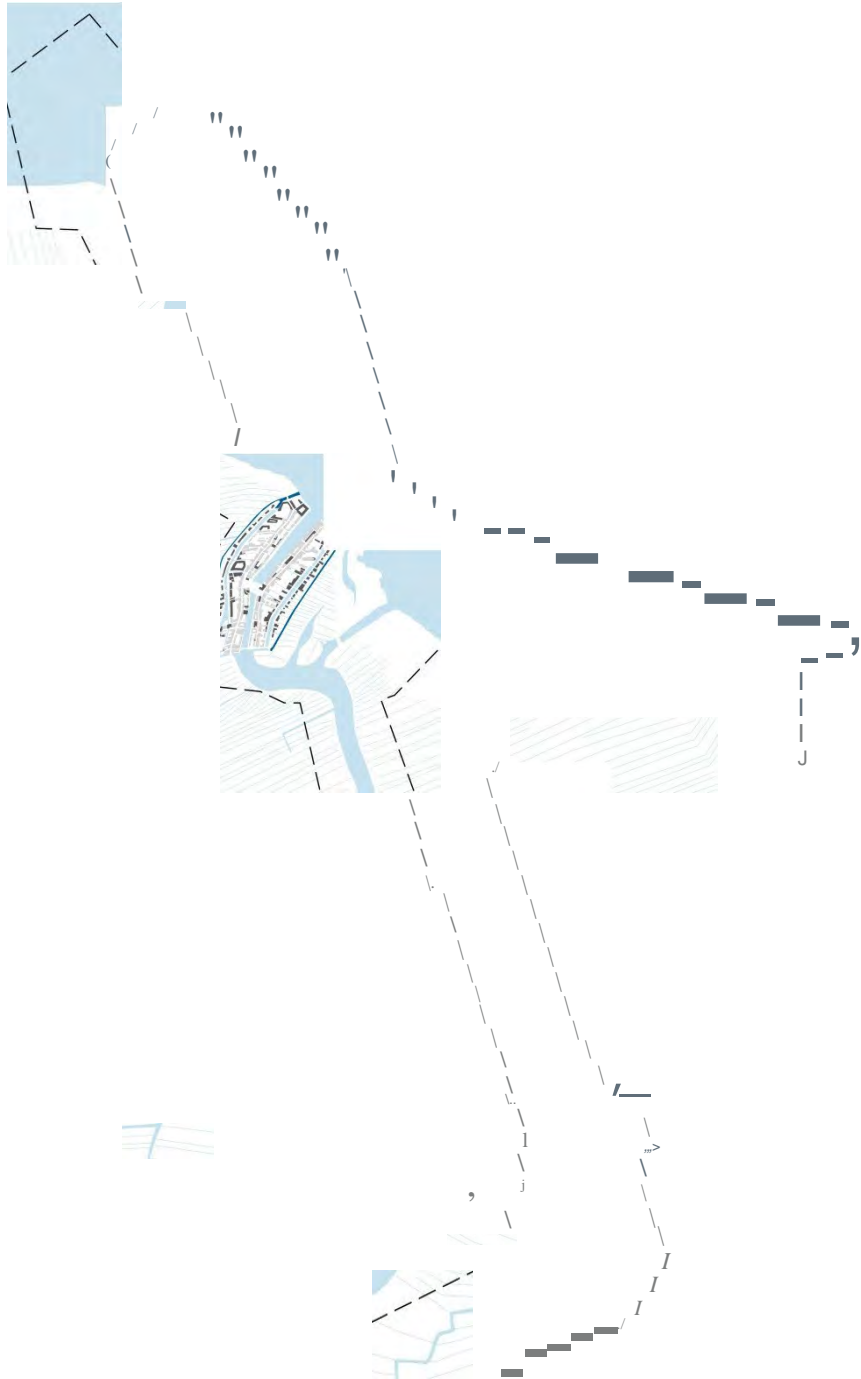


III  
Building  
Scale

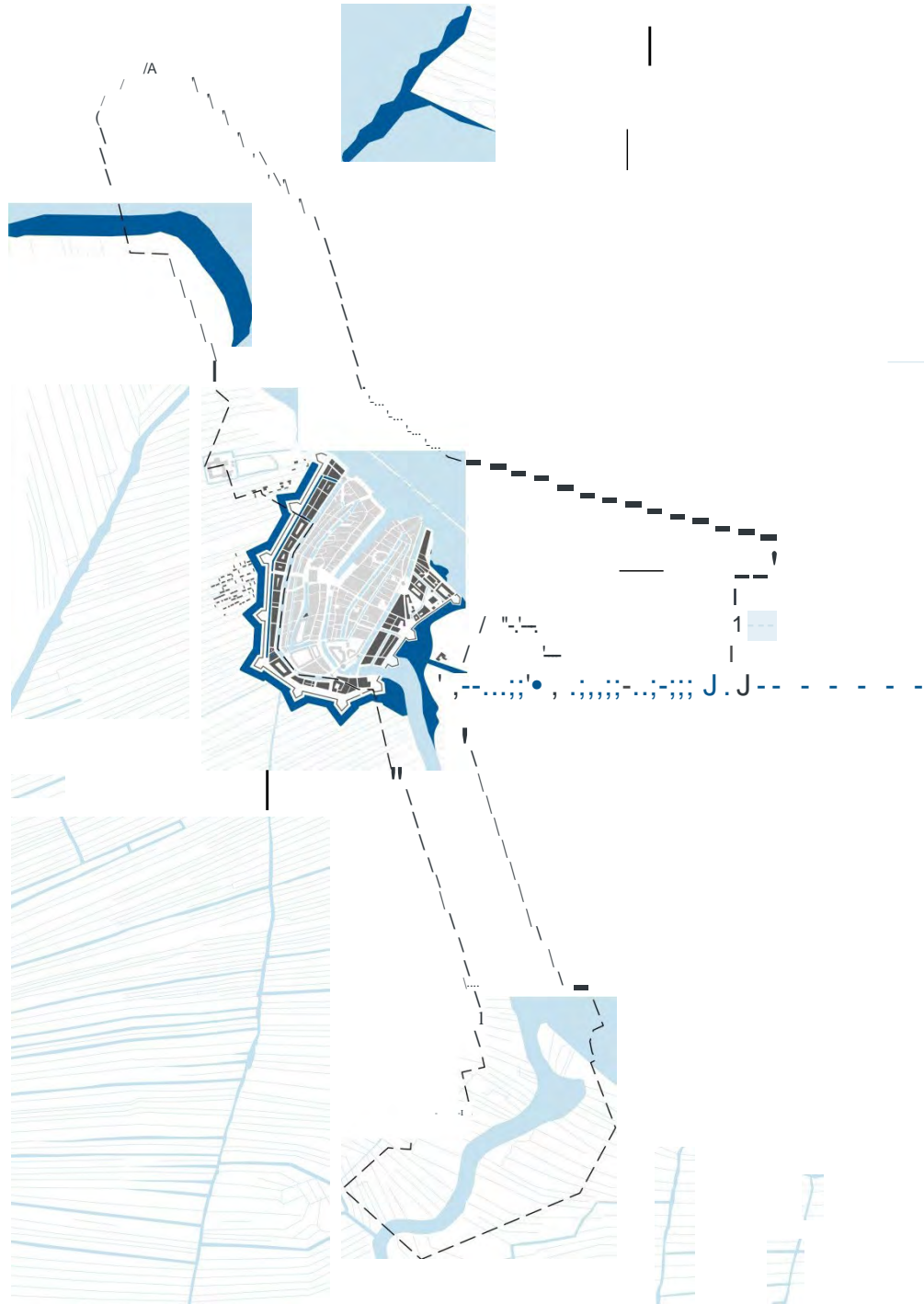




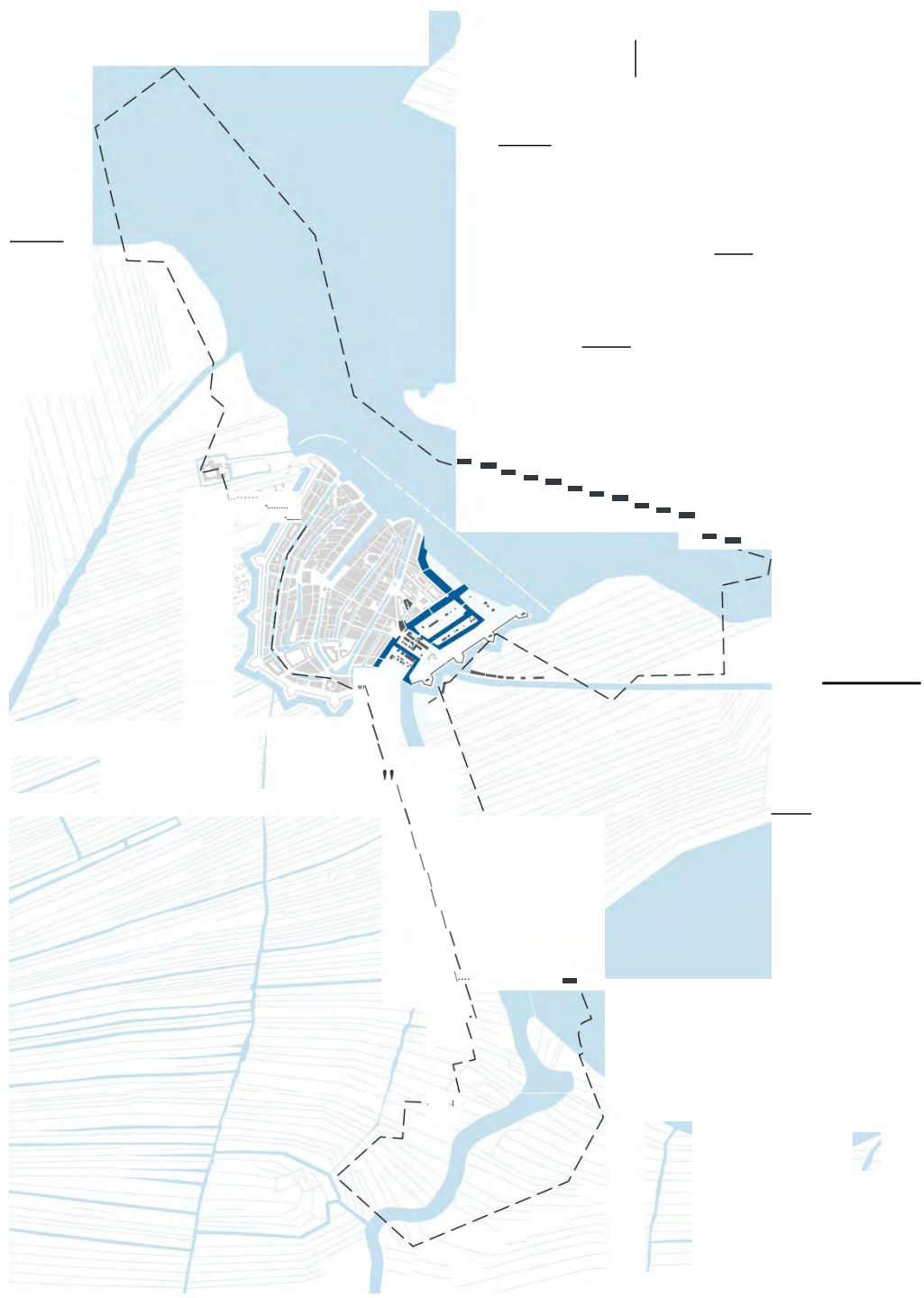




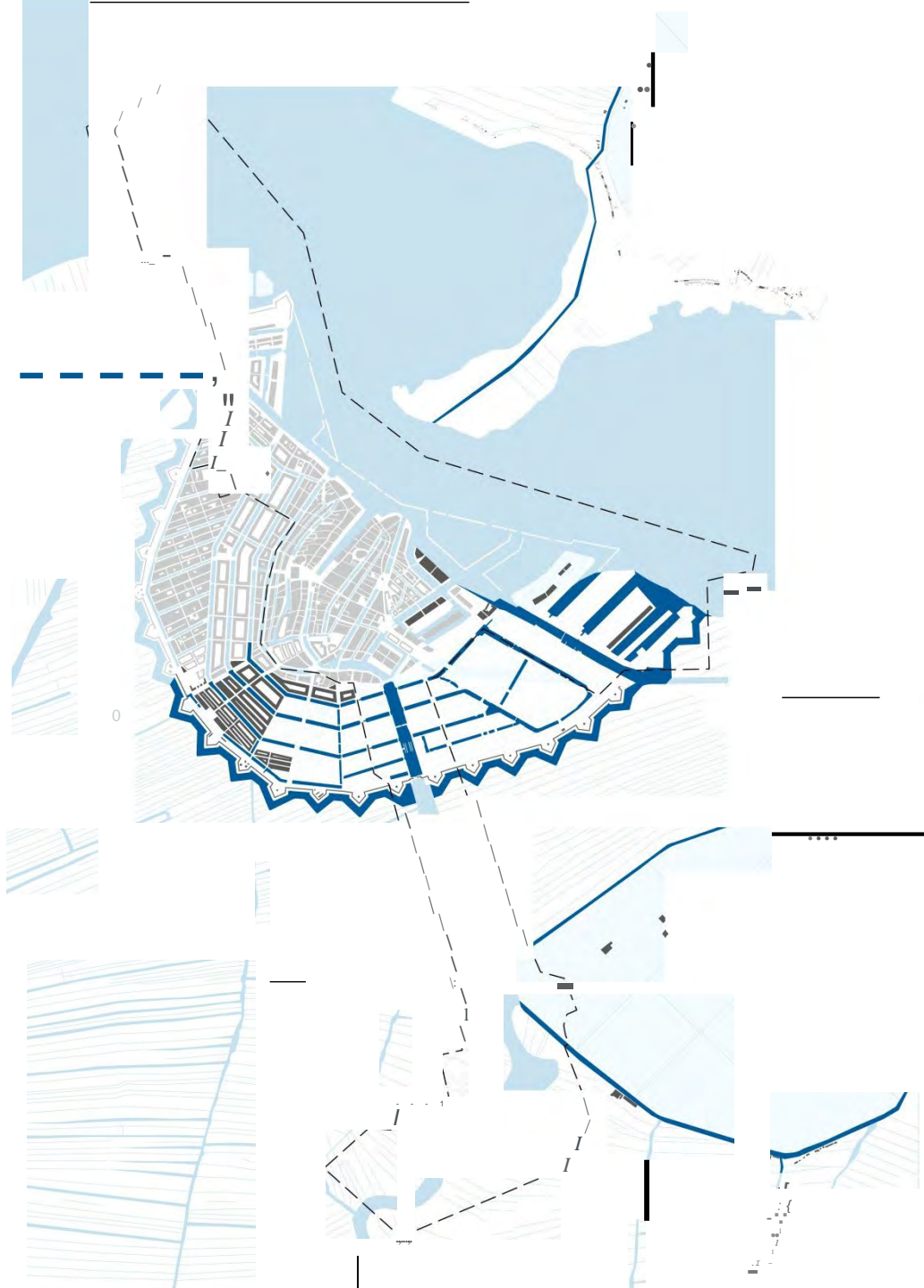






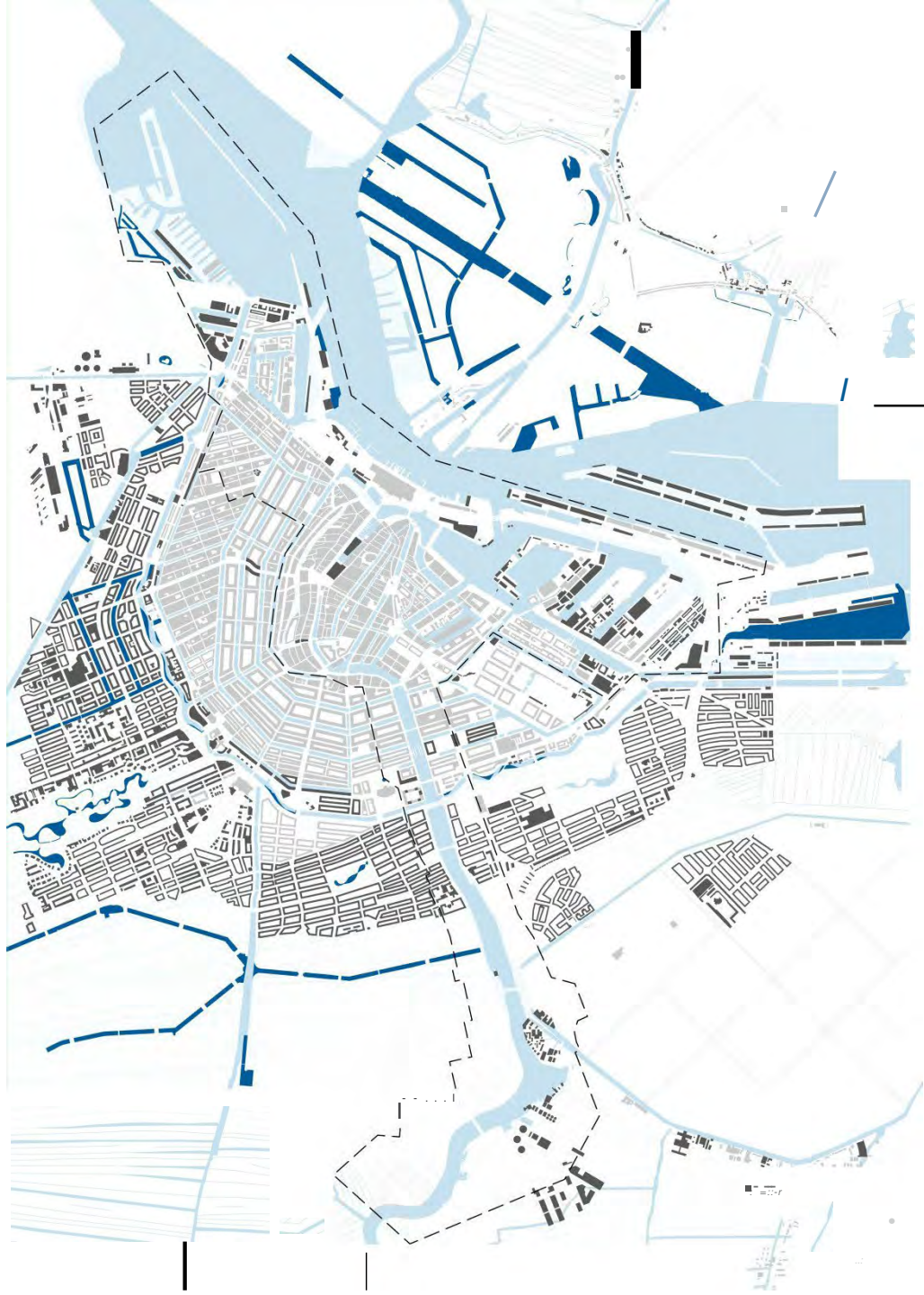


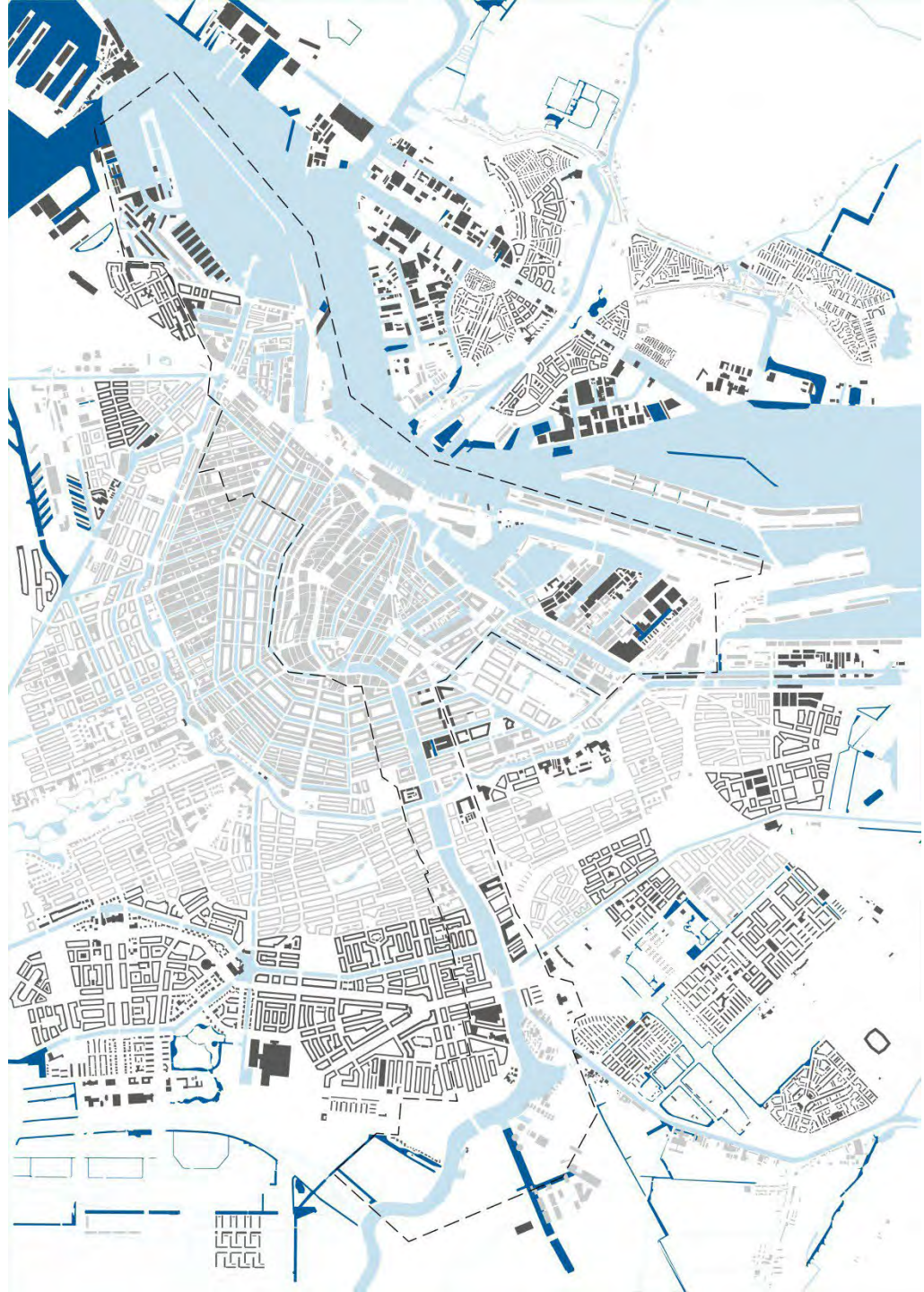


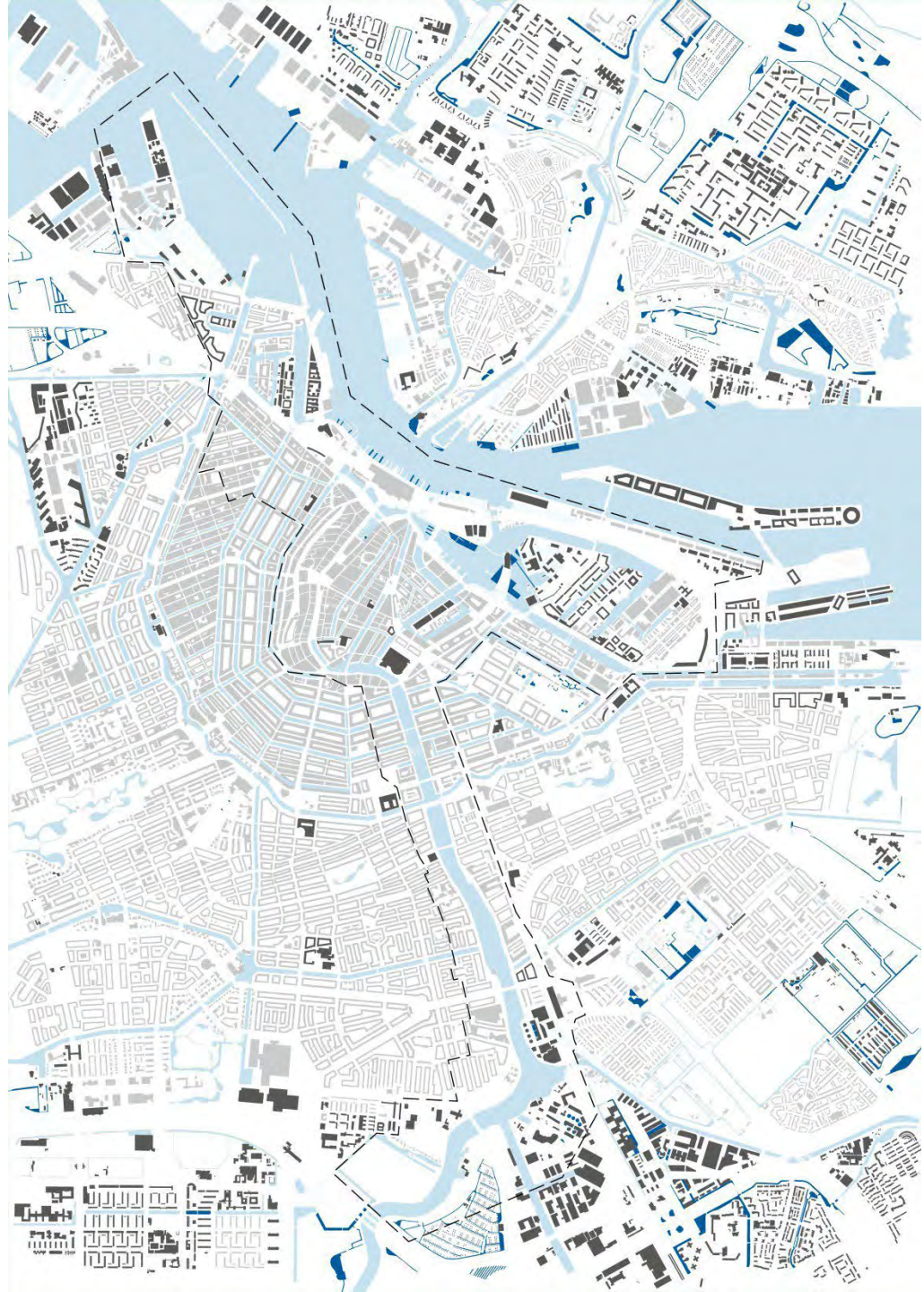














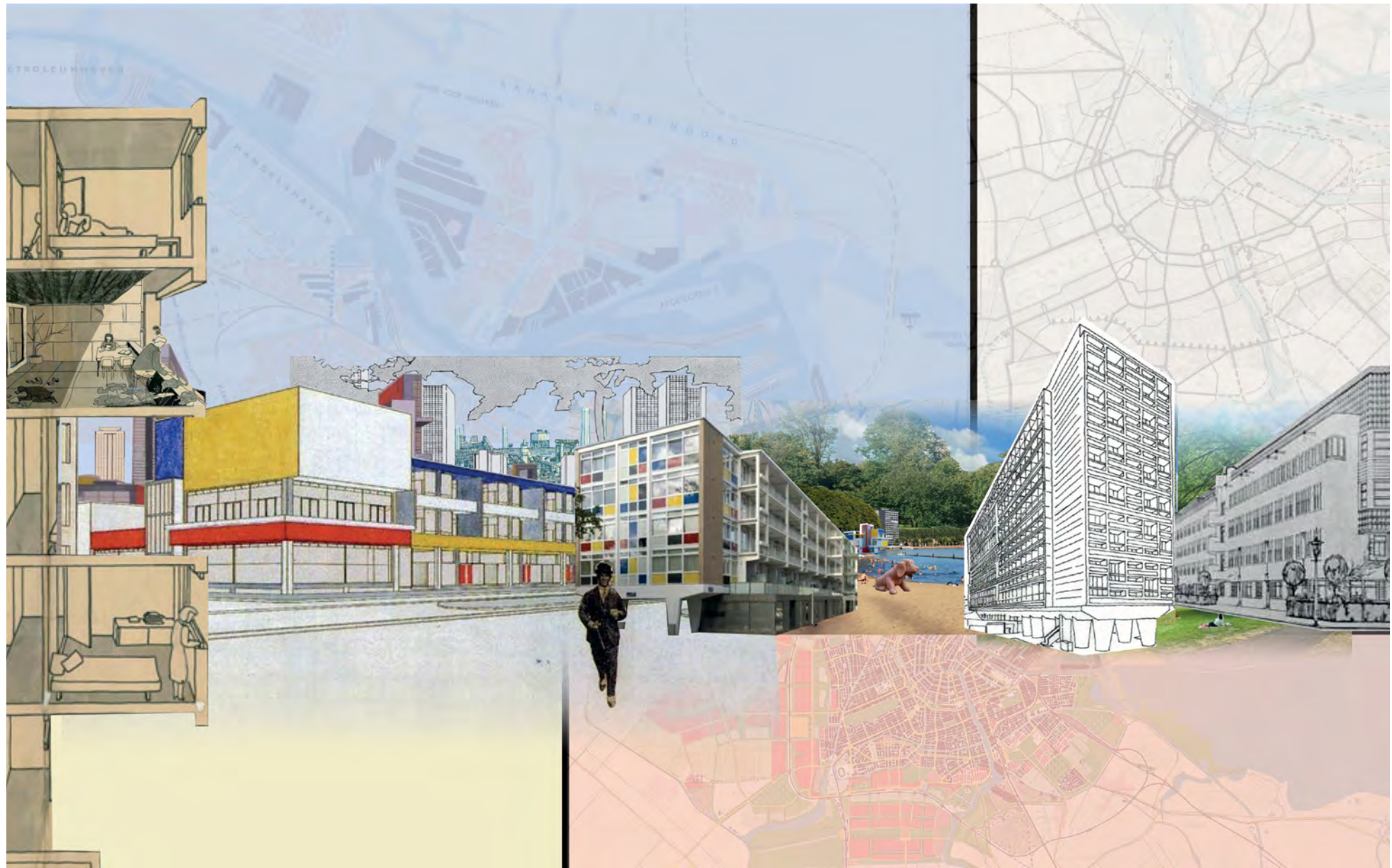


1:60000 N 0 1.5 3 km

collage of (ideal) plans



the picturesque city



the functional city

Unbuilt  
Antwerp

## RATIONAL ARCHITECTURE

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### european city studios

firenze, a room with a view

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marseille, patchwork city

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milano centrale

**antwerpen, de getekende stad**

atlas

morphological series

fragment analysis

individual buildings

graduation projects

jan konings

jasper van ultert

la città di roma

gran torino

münchen rekonstruiert

potsdam unraveled

berlin als modell

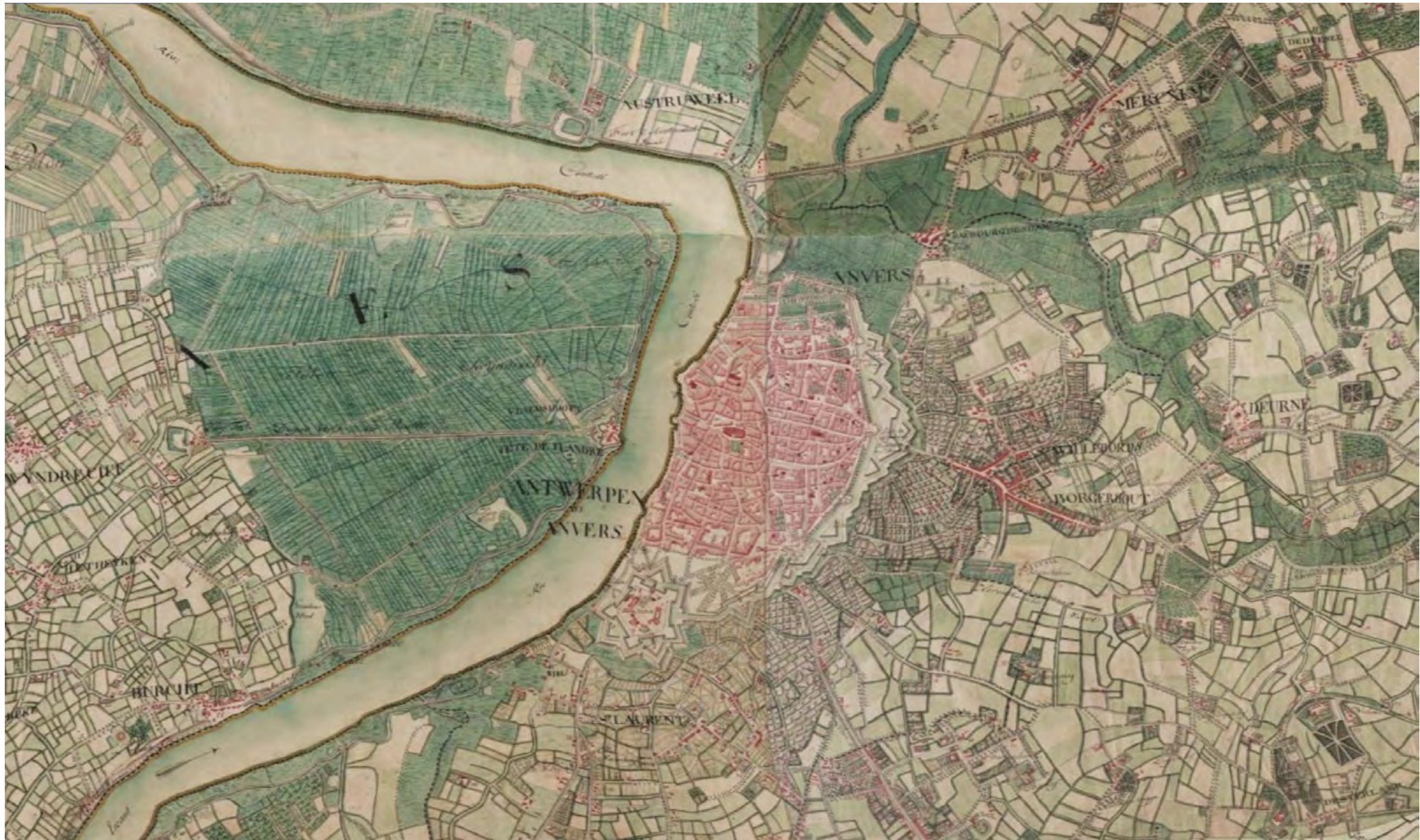
de rede van amsterdam

amsterdam langsdoorsnede

amsterdam dwarsdoorsnede



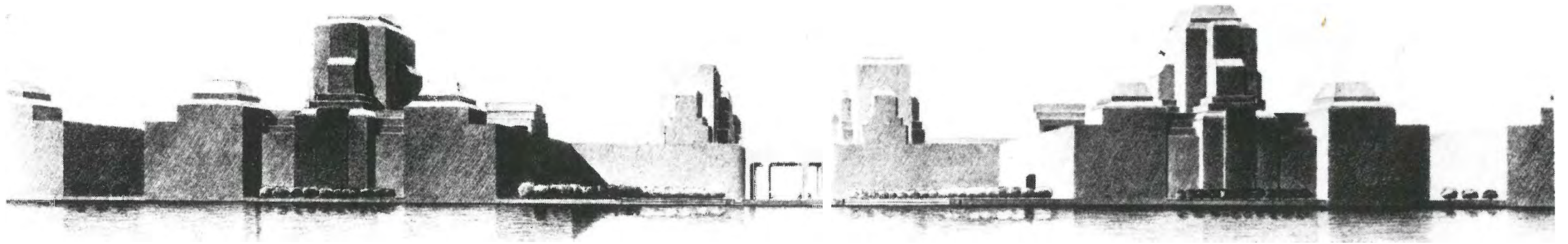
Het onderzoek naar Antwerpen heeft zich geconcentreerd op de morfologische en stedenbouwkundige ontwikkelingen van de stad. De belangrijkste vraag die is onderzocht is hoe Antwerpen zich in de loop der tijd stedenbouwkundig en architectonisch heeft ontwikkeld en welke politieke, economische en religieuze achtergronden hieraan ten grondslag hebben gelegen. De analyse omvat de ontwikkeling van Antwerpen van keizerlijk nederzetting tot moderne metropool. Om deze tijdsperiode te analyseren is de atlas opgedeeld in tien hoofdstukken die betrekking hebben op de belangrijkste ontwikkelingen van de stad.



Ferrariskaart, 1771-1778

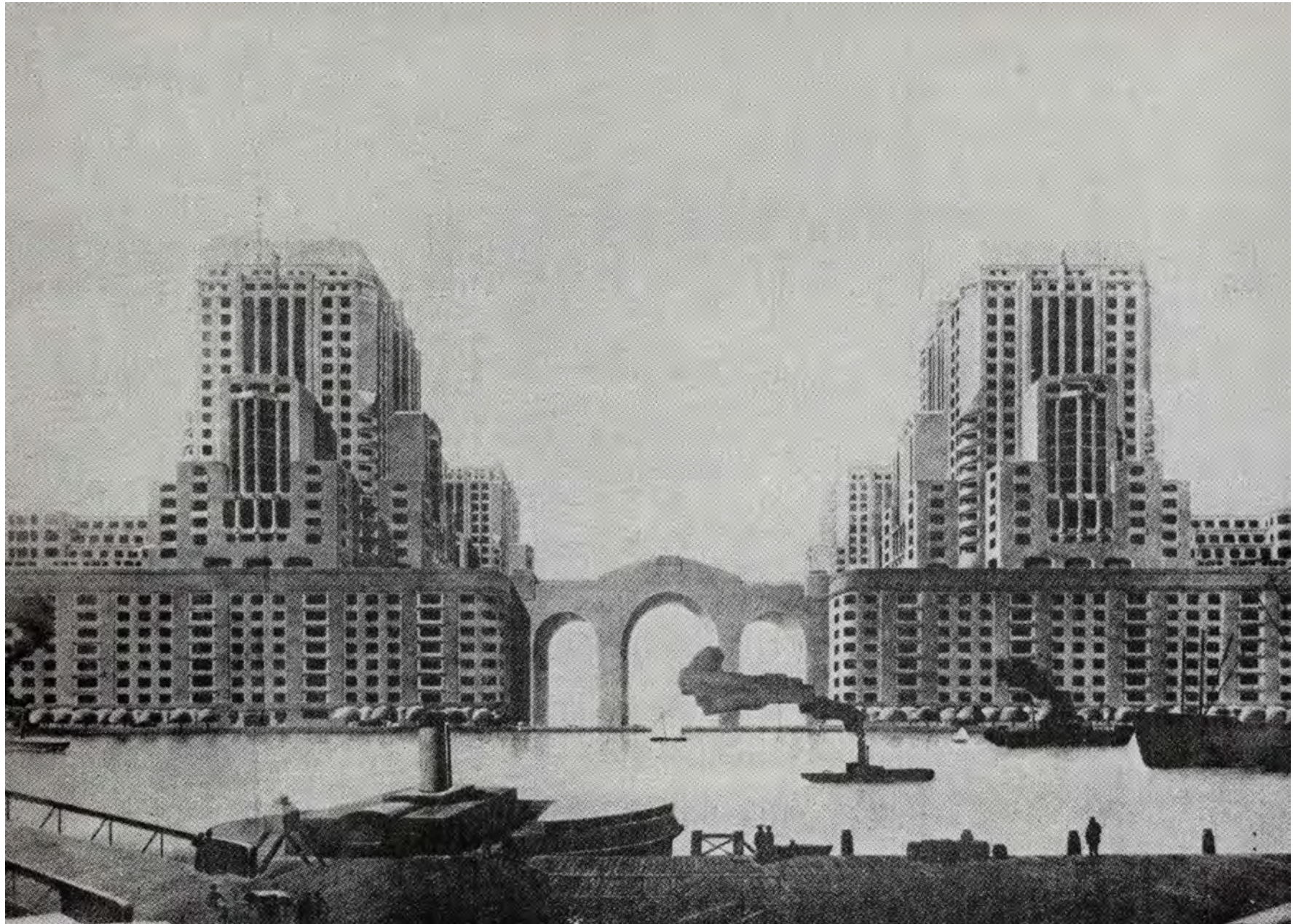


View on Antwerp seen from the Left Bank, 1729 (Friedrich Bernhard Werner)



Ontwerp *Poort van Vlaanderen* Van de Velde voor Linkeroever (1926)





Henry van de Velde, Poort van Vlaanderen, 1926



Le Corbusier, plan for the Left Bank, ca. 1926



Emiel van Averbek, plan for the Left bank, ca. 1930



Boerentoren Antwerpen, 1929-32 (Jan Vanhoenacker, Émile Van Averbeké and Jos Smolderen)



# UNBUILT ANTWERP

7X45MO. Graduation Studio. 2024 Semester B

### **Sufficiency Consultancy**

Daniel A. Barber, Chair AHT TU/e  
and others as below

#### **Summary**

What comes after sustainability? This studio considers how increasing climate instability, and the inequities in intensifies, are transforming both the means and ends of design practice. We frame our investigations in relationship to vibrant economic, urban, and material science discussions around *sufficiency*, to consider how architecture not only interacts with technological refinement of complex energy systems, but also allows for behavioral and cultural changes focused on reducing energy demand.

Again, what comes after sustainability? Architecture, as part of the broader UN sustainability framework, has heretofore focused on *efficiency measures* to both mitigate carbon emissions and to integrate environmental concerns into the design process. Solar panels, insulated glass facades, and carefully engineered mechanical systems allow designers and collaborators to provide a recognizable social service (a building), but one that operates more efficiently.

Efficiency measures have been inadequate, for three reasons: first, the embodied energy costs of efficiency technologies compromise carbon savings; second, sustainability-as-efficiency has, much like net-zero parameters more broadly, operated as a *permission structure* allowing the building sector to continue with business-as-usual design and construction practices; third, while we have been building more efficiently, we have also simply been building *more*. Again the challenge of demand management.

So, what comes after efficiency? The different projects of the studio will reflect a focus on *sufficiency measures*. As IPCC author Yamina Saheb defines it, “*sufficiency* is a set of policy measures and daily practices which *avoid the demand* for energy, materials, land, water, and other natural resources, while delivering wellbeing for all within planetary boundaries.” *Avoid the demand* is the challenge, finding ways to engage the built environment that, rather than using energy more efficiently, uses *less* in a way that still feels comfortable, healthy, and sustainable as a way of life.

The *Sufficiency Consultancy* speculates at the scale of the discipline, both in drawing on historical and adjacent formations for practice, and in considering the changing role of architectural services amidst a deepening polycrisis. In addition to specific design and material challenges of a given site, students will be expected to frame an expanded design practice appropriate to these new imperatives.

## **Schedule**

### **Research Phase**

**Q3** Collective Research in reference to reuse and sufficiency case studies, research will be around Realms of Expertise including but not limited to:

- socio-economics of sufficiency and de-growth
- energy retrofit design and technology
- use patterns and behaviours
- theories of practice
- relationship of traditional practices to future needs
- design, materials, and equity
- representational strategies specific to demand management

Aspects of this research will develop on collaboration with 7QX5M0 Seminar: Before and After Air Conditioning.

Travel by train to Marseille c. March 3-8 and early in Q1 - involving site visits and engagement with parallel studios at local schools and also ENSA Versailles and TU Wien.

**Q4** will continue the Collective Research and begin to focus on specific sites in Marseille, as below, including future climate modeling and analysis. At the launch colloquium students will have an understanding of the site and approach identified.

### **Design Phase**

**Q1-Q2** Students will choose from three sites near the Vieux Port in Marseille: (1) the stretch of Rue Neuve Sainte-Catherine, small shops, offices, and houses; (2) the Palais de Pharo, an 1858 villa with extensive grounds; (3) the Caserne Audéoud, former military barracks surrounded by surface parking.

The program is the retrofit/reuse/redesign towards a Sufficiency Consultancy: studios, office, and spaces for collective work, workshops and maker-spaces; capacity for events and discussions; Other programs specific to selected Realms of Expertise.

In the design and organisation of the Sufficiency Consultancy we also anticipate a re-imagination of social roles for architecture and re-scripting of practice as policy, advocacy, and activism, focused around energy demand management.

### **Tutors**

There will be two main tutors, Prof. Barber and a regional architect to be confirmed. We will draw on a group of colleagues as third tutors, with feedback through desk crits and in the colloquia. We also anticipate a number of external guests and experts over course of the studio, including policy makers, designers, manufacturers, architects, etc.