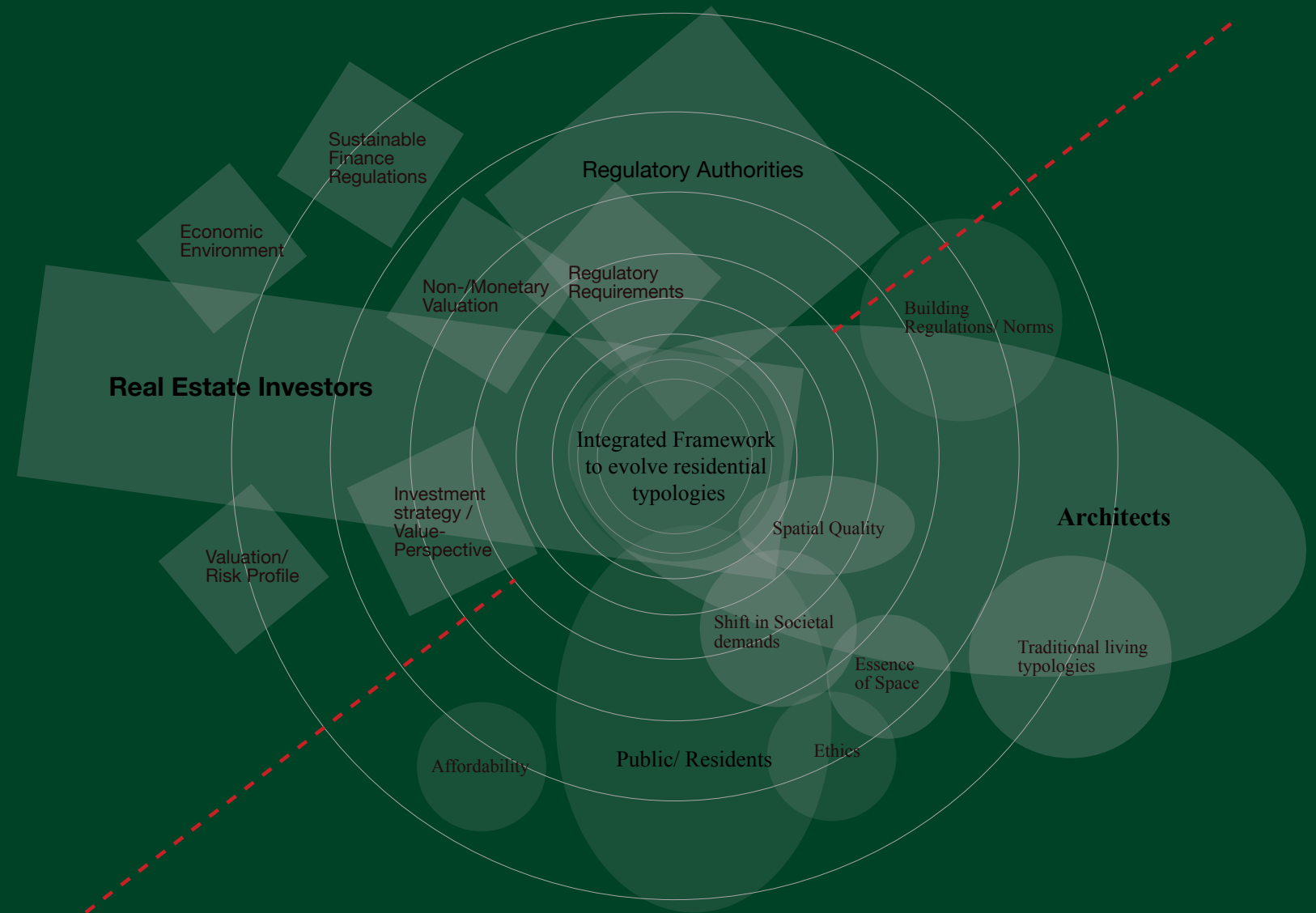


Gordian Graf Strachwitz

Bridging the Knowledge Gap in Typological Supply between Real Estate Investor and Architects within the Urban Residential Investment Practice

MSc Architecture Thesis
A4 Presentation - 19th June 2026

6143768 - Gordian B. C. J. M. Graf Strachwitz
AR4CFA010 Cross Domain City of the Future
Graduation Studio (2025/26 Q2)
1st Supervisor – Joran Kuijper
2nd Supervisor – Michaël Peeters
3rd Supervisor – Mauro Parravicini
Delegate – Thomas Verbeek



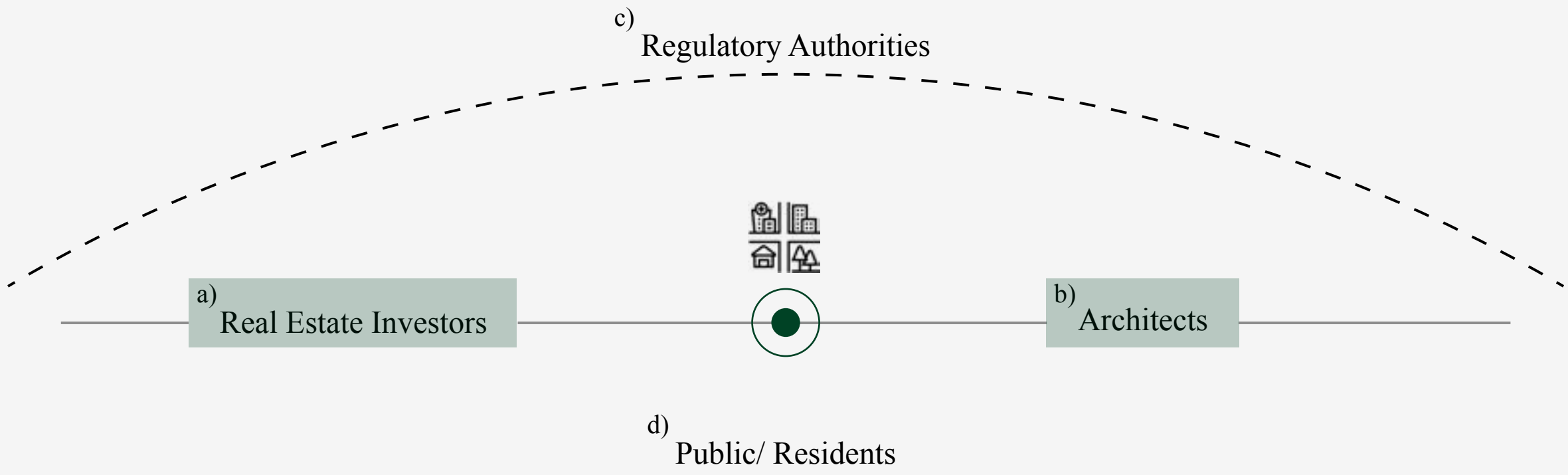
INTRODUCTION

Generic

“What is the problem?”

“How are we approaching it?”

Who are the key actors in the Built Environment?



What are the key elements of the residential pressure in European cities?

The European Housing Crisis



**Population
Growth**



**Household
Composition**

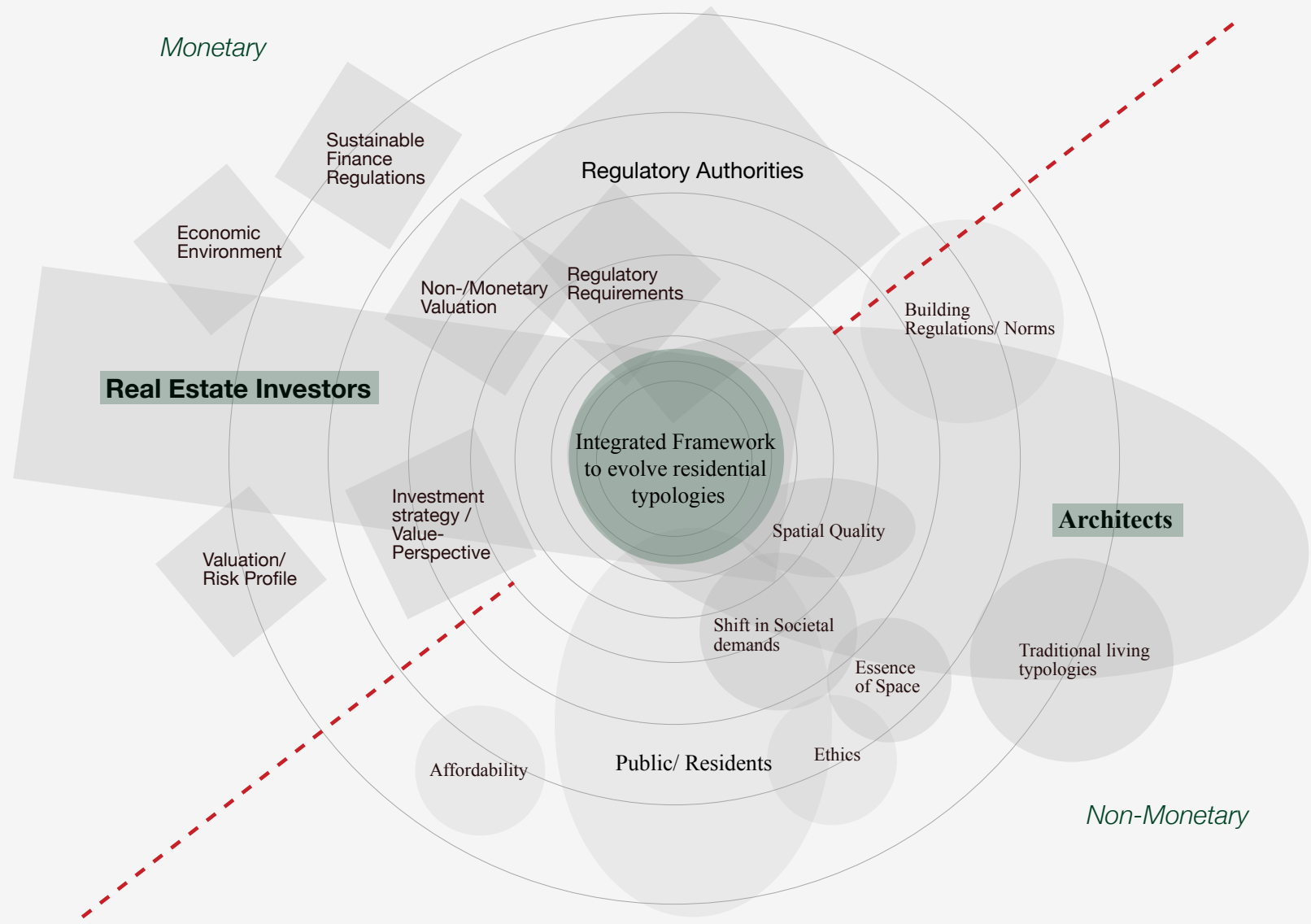


**Typological
Supply**



**Vacancy
Rate**

Who can change the Built Environment?



The Knowledge Gap

- different Processes
- different Tools
- different Language
- different Understanding
- different Ambitions

- shared Aim
- shared Responsibility

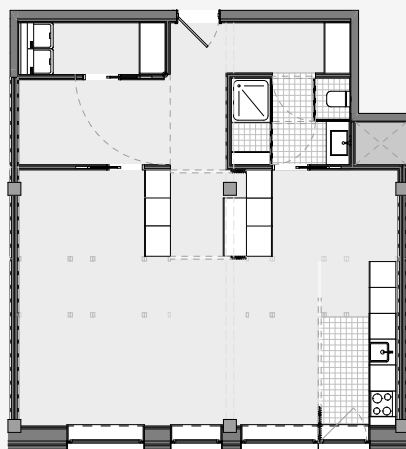
“Non-monetary value in real estate refers to a property’s subjective, lifestyle, and structural benefits that cannot be easily quantified with a price tag.”

NON-MONETARY VS. MONETARY VALUE

Monetary

Livable Size

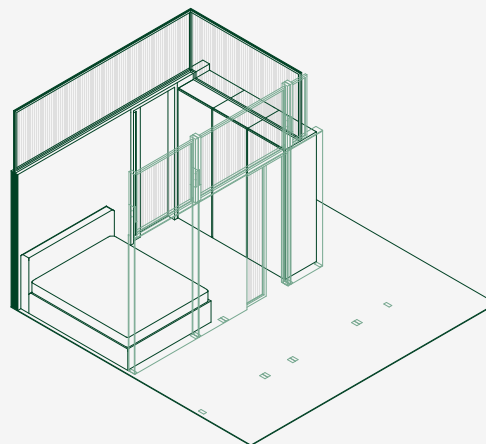
Unit: m²



Non-Monetary

Adaptable Wall

Unit: ??



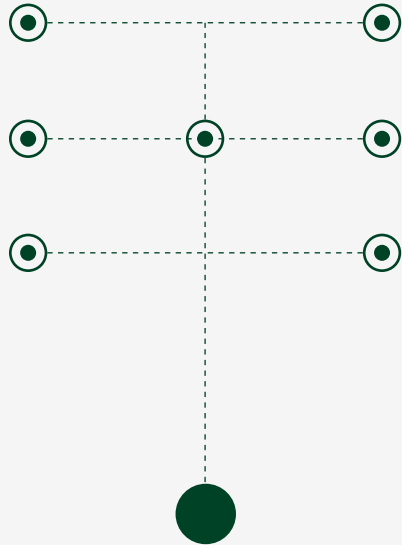
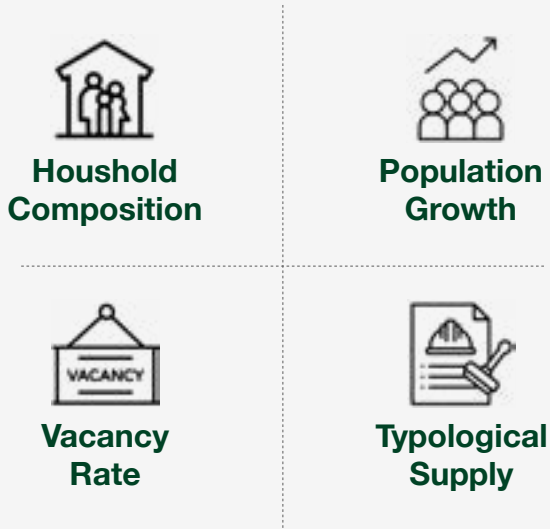
Non-Monetary Value
Not yet Monetary Value

Non Monetary Value can only become mon-
etar once the whole market can measure
and compare it.

No Comparables in the Market, nor do certi-
fications exist.

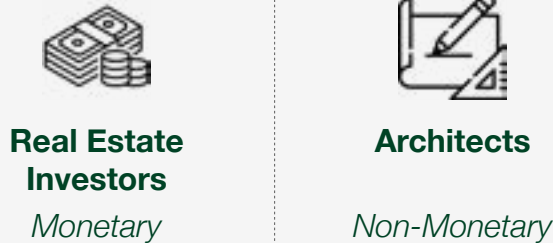
THE PROBLEM

European Housing Crisis



Typological Supply-Demand Mismatch

Knowledge Gap



Typological Supply-Demand Mismatch?

*“One size does fit all,
only in a pressured housing market”*

Typological Mismatch

Competing Segments



**2 Adults
1-2 Children**

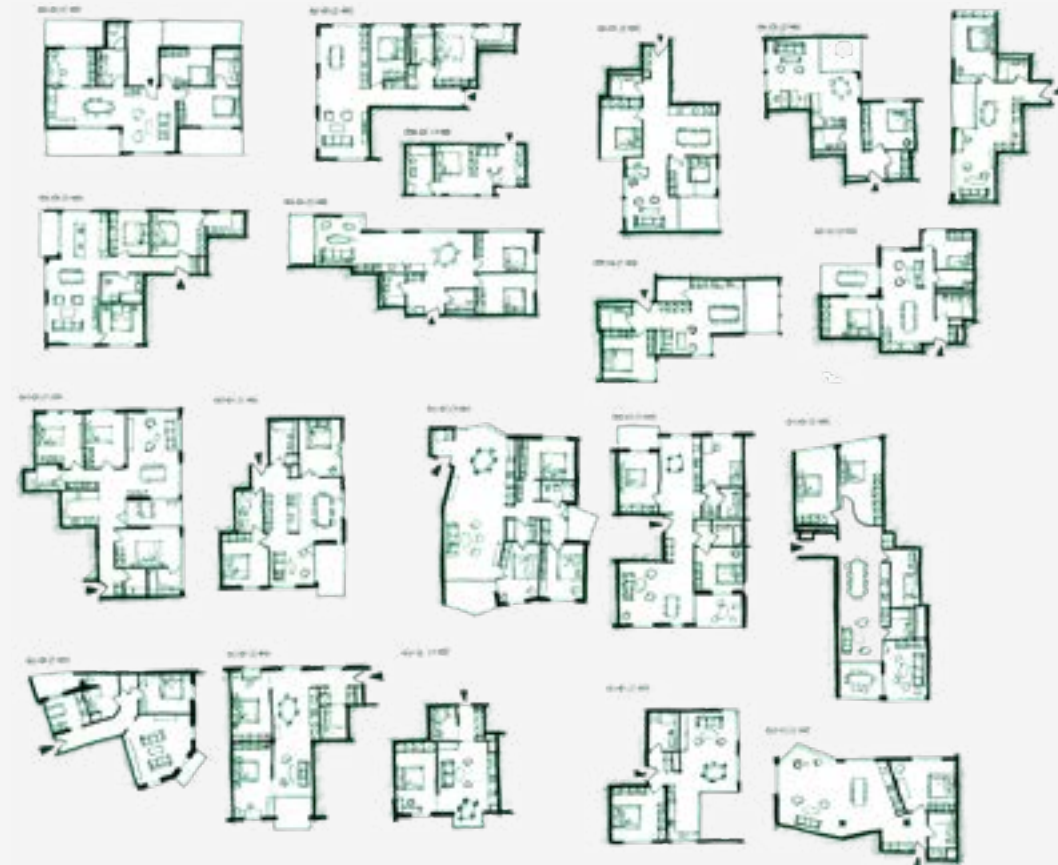
- \$\$
- space needed
- spatial adequate



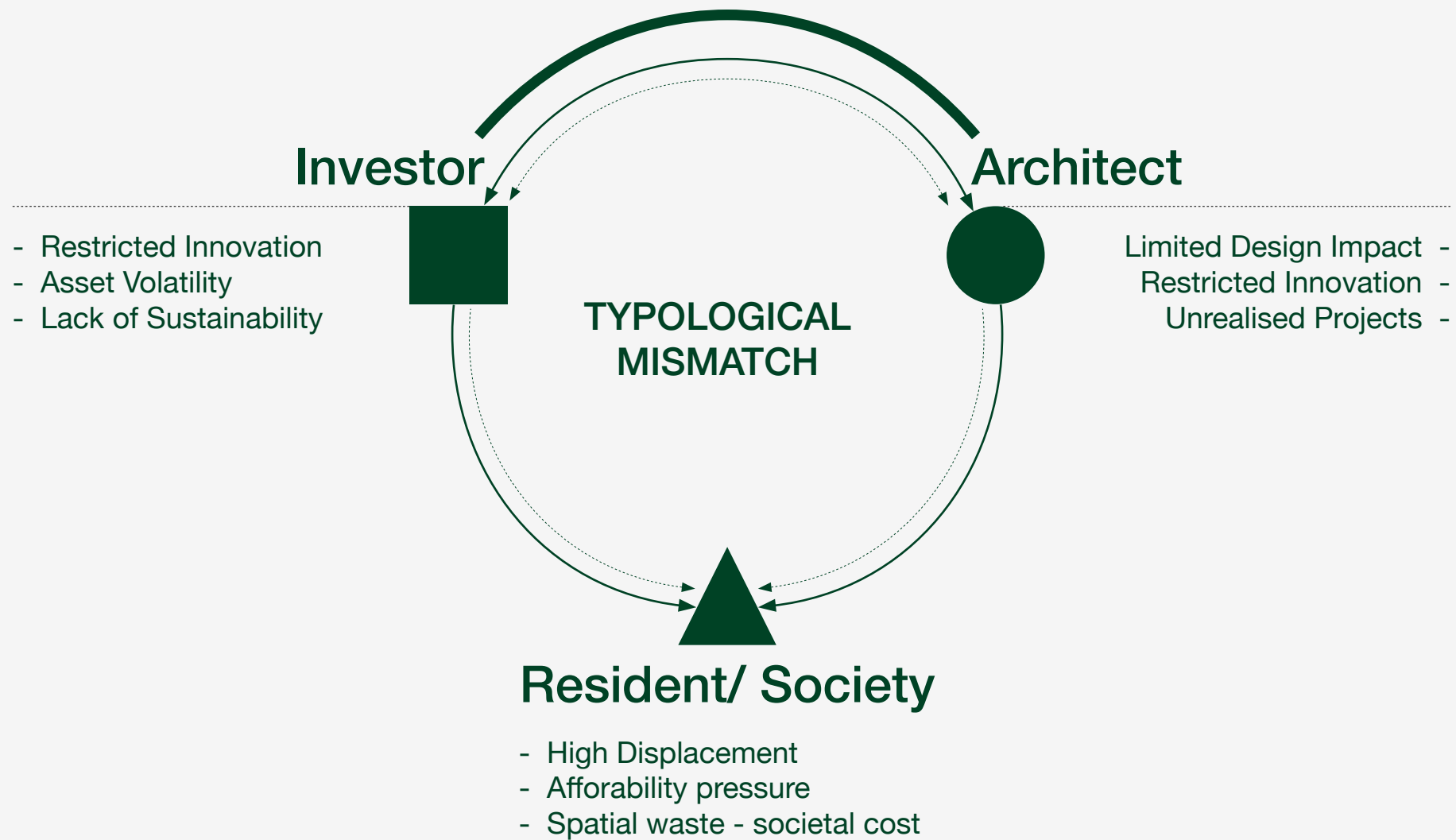
1-2 Adults

- \$\$\$\$
- space not needed
- spatial inadequate

Zurich's typological supply



THE CONSEQUENCE



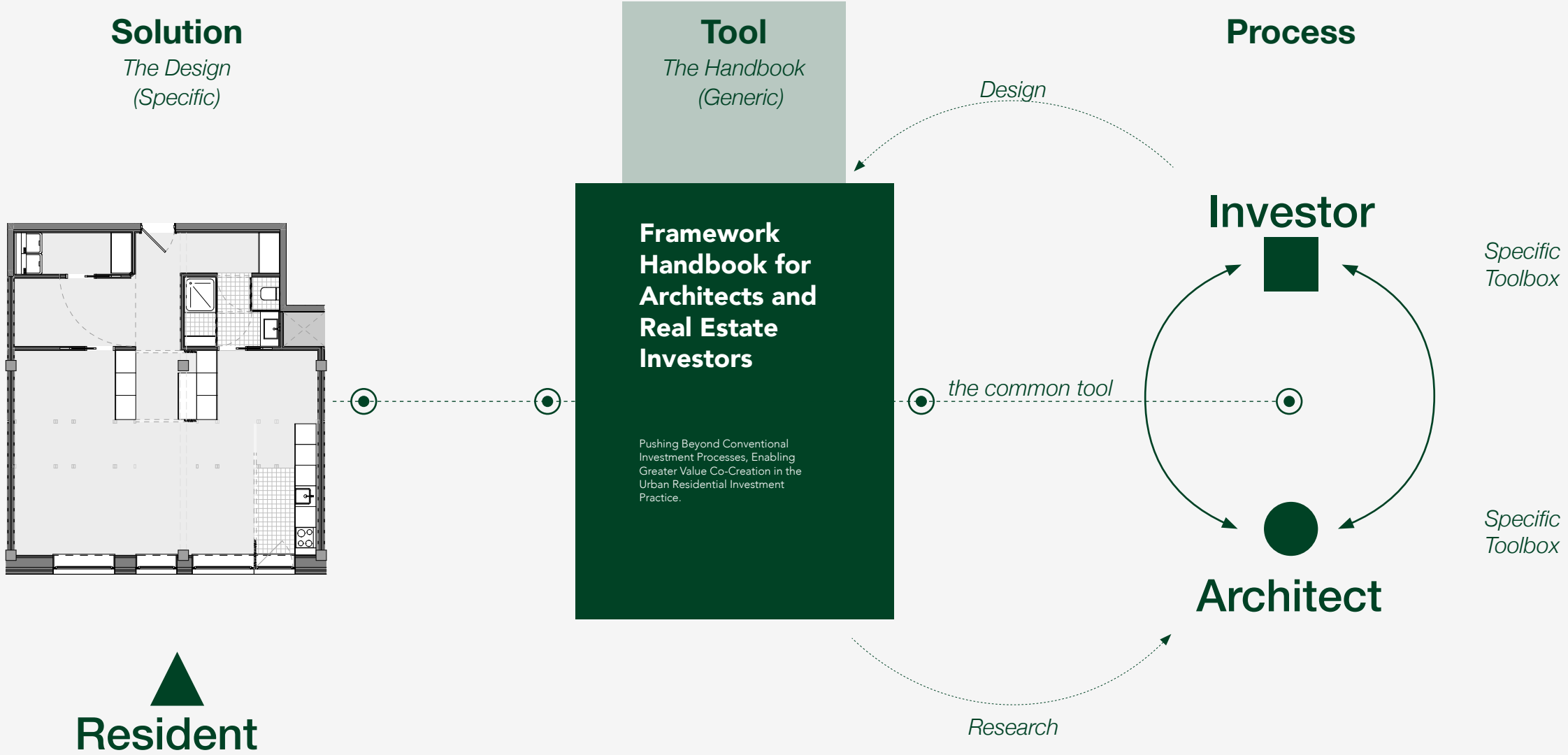
The Approach to the Problem?

Closing the Gap with a Common Tool

Framework Handbook for Architects and Real Estate Investors

Pushing Beyond Conventional
Investment Processes, Enabling
Greater Value Co-Creation in the
Urban Residential Investment
Practice.

THE APPROACH TO THE PROBLEM



THE HANDBOOK

Generic

“the ultimate tool”

“the common ground”

A.1



**Investors
Value-Perspective**

A.2



**Architects
Design Strategy**

A.3



**Architect-Investor
Collaboration**

The Handbook

Methodes of Input:

Experience

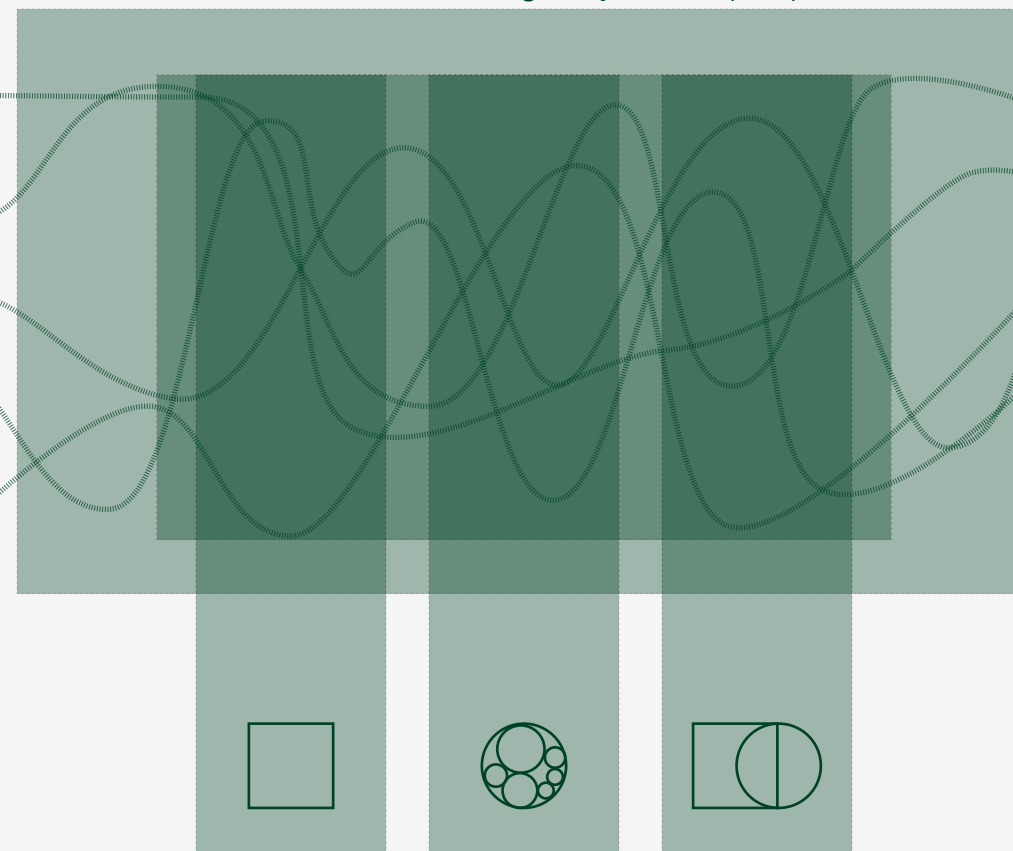
Literature/ Theory

Expert Discussions

Fieldwork

Quantitative & Qualitative Analysis

The ideal framework, challenged by various perspectives:



THE HANDBOOK

15

expert discussions

Broad

spectrum of perspectives

38

literature pieces

>800

minutes of discussion

05

days of field study

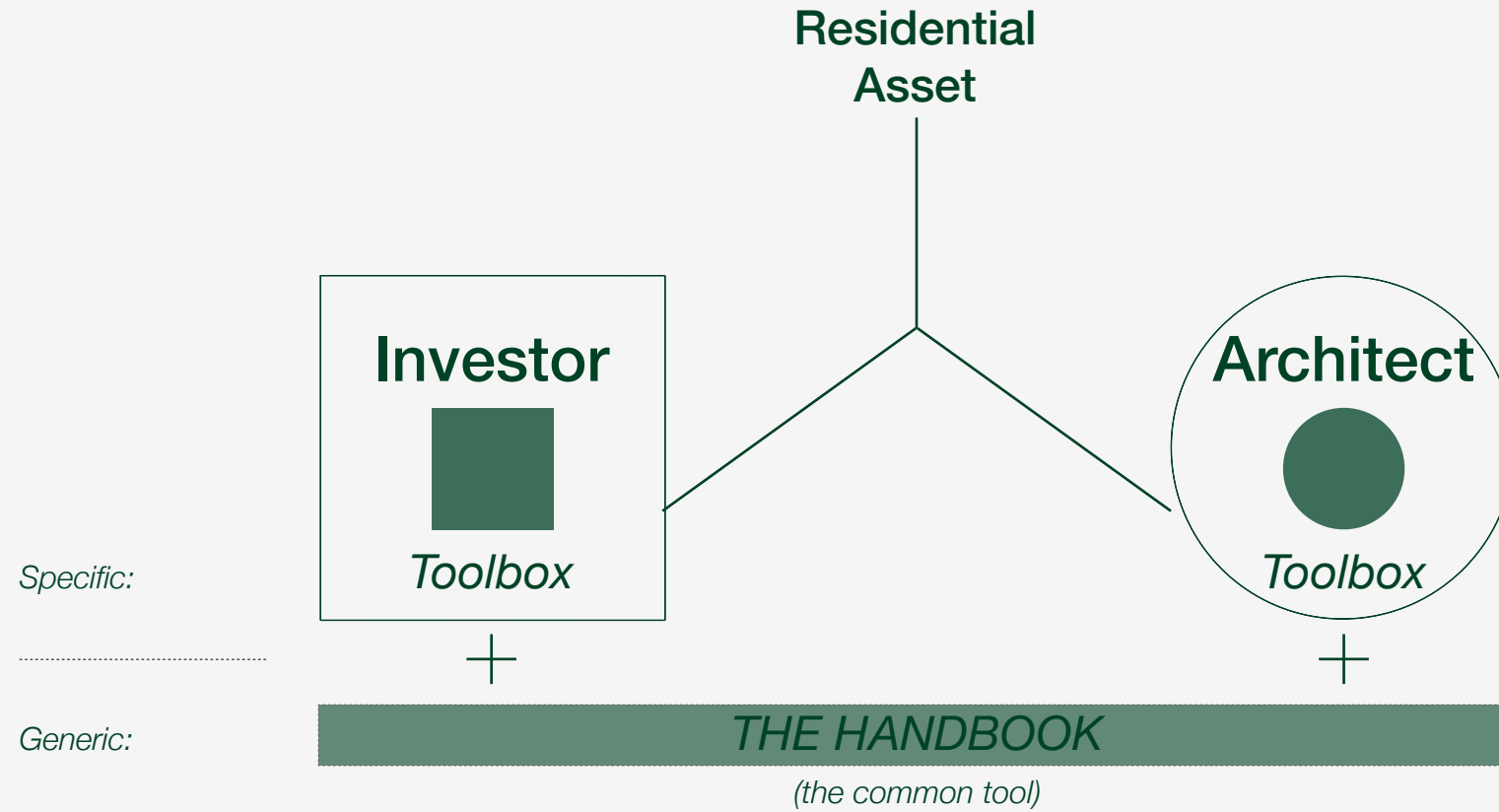
02

continents



(PRINTED)

OPERATIONALISATION

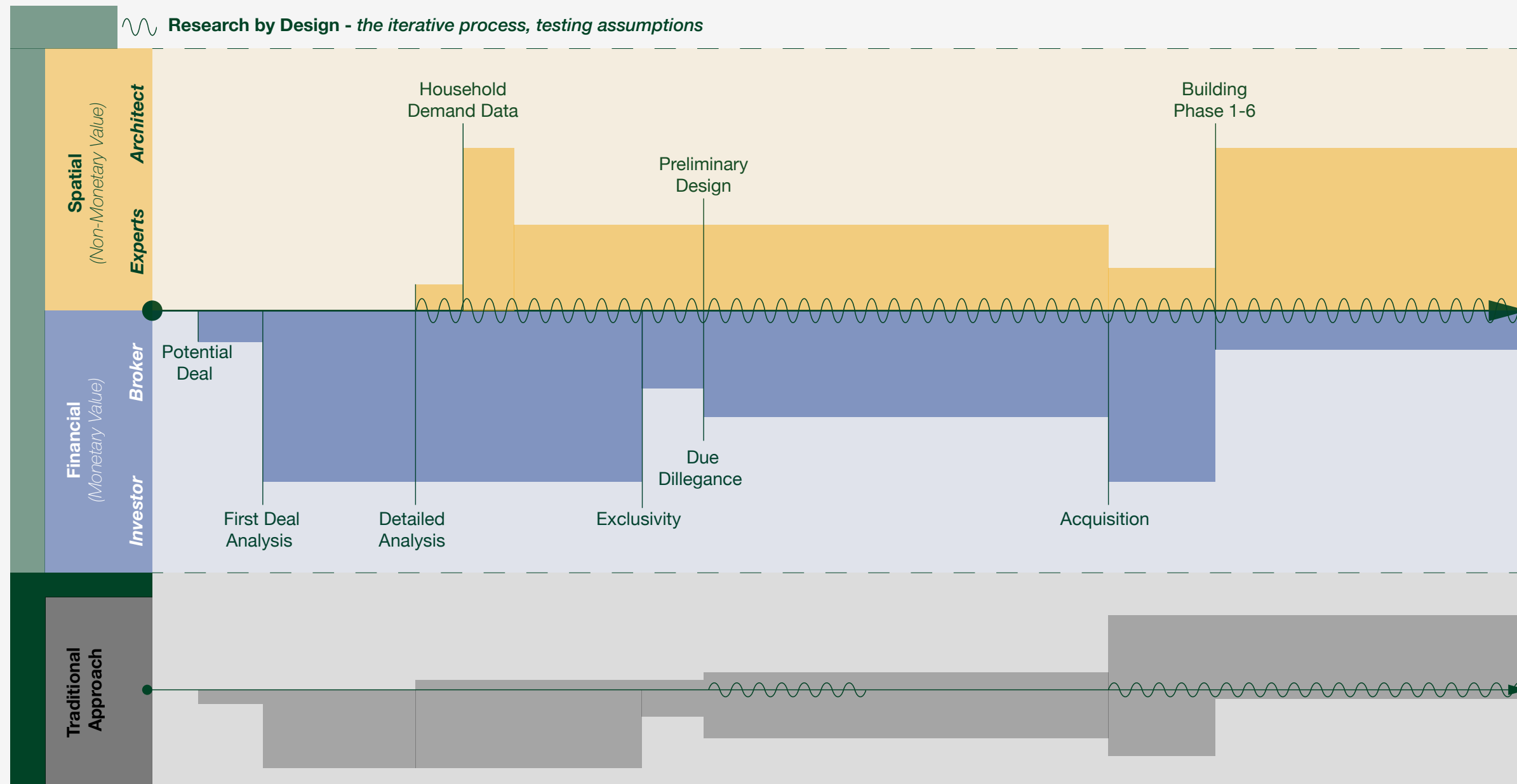


Collaboration

Research by Design

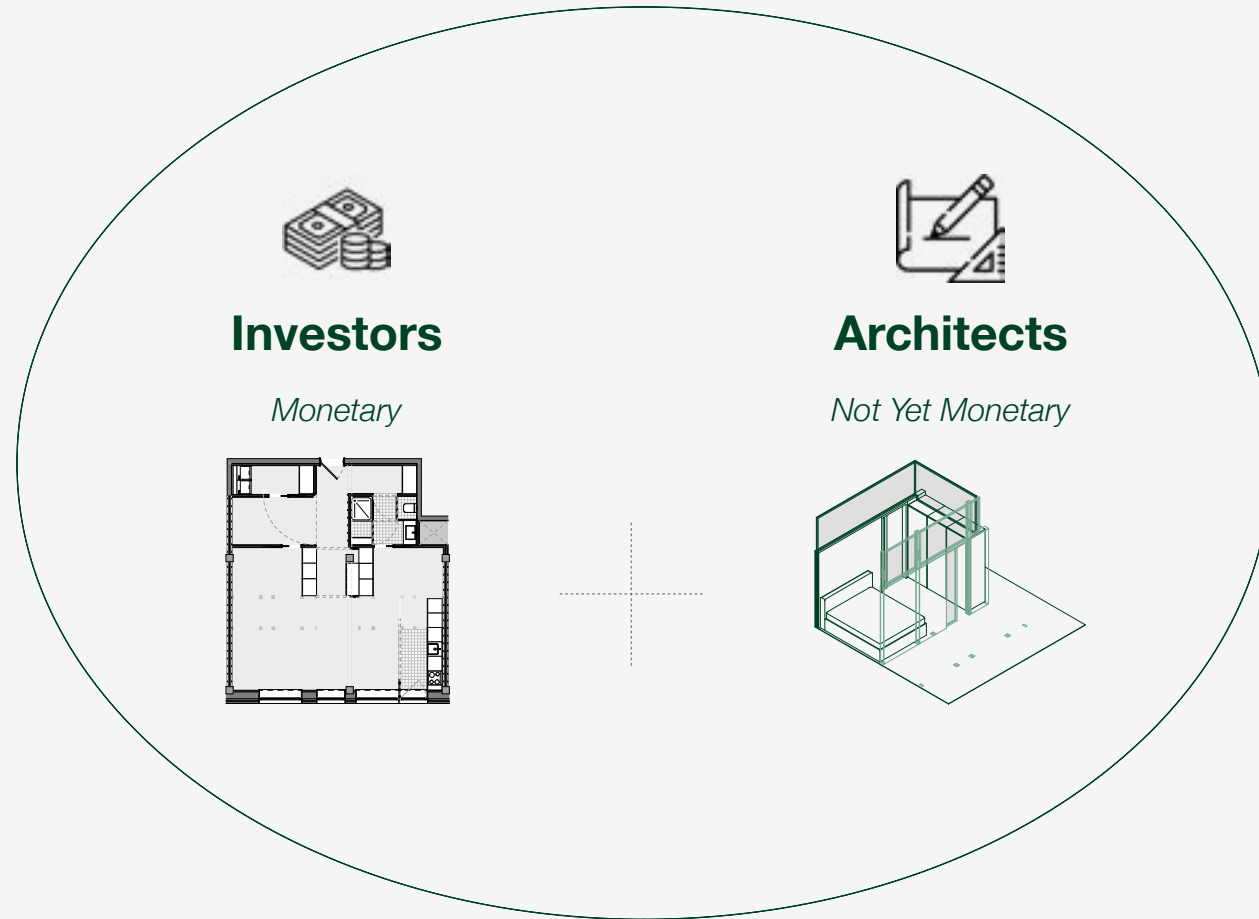
Iterative Process

KEY ELEMENT - RESEARCH BY DESIGN



“Investment Conviction through shared understanding”

KEY CHANGES - SELF-BELIEF



Self Belief

Shared Understanding

One Argumentation

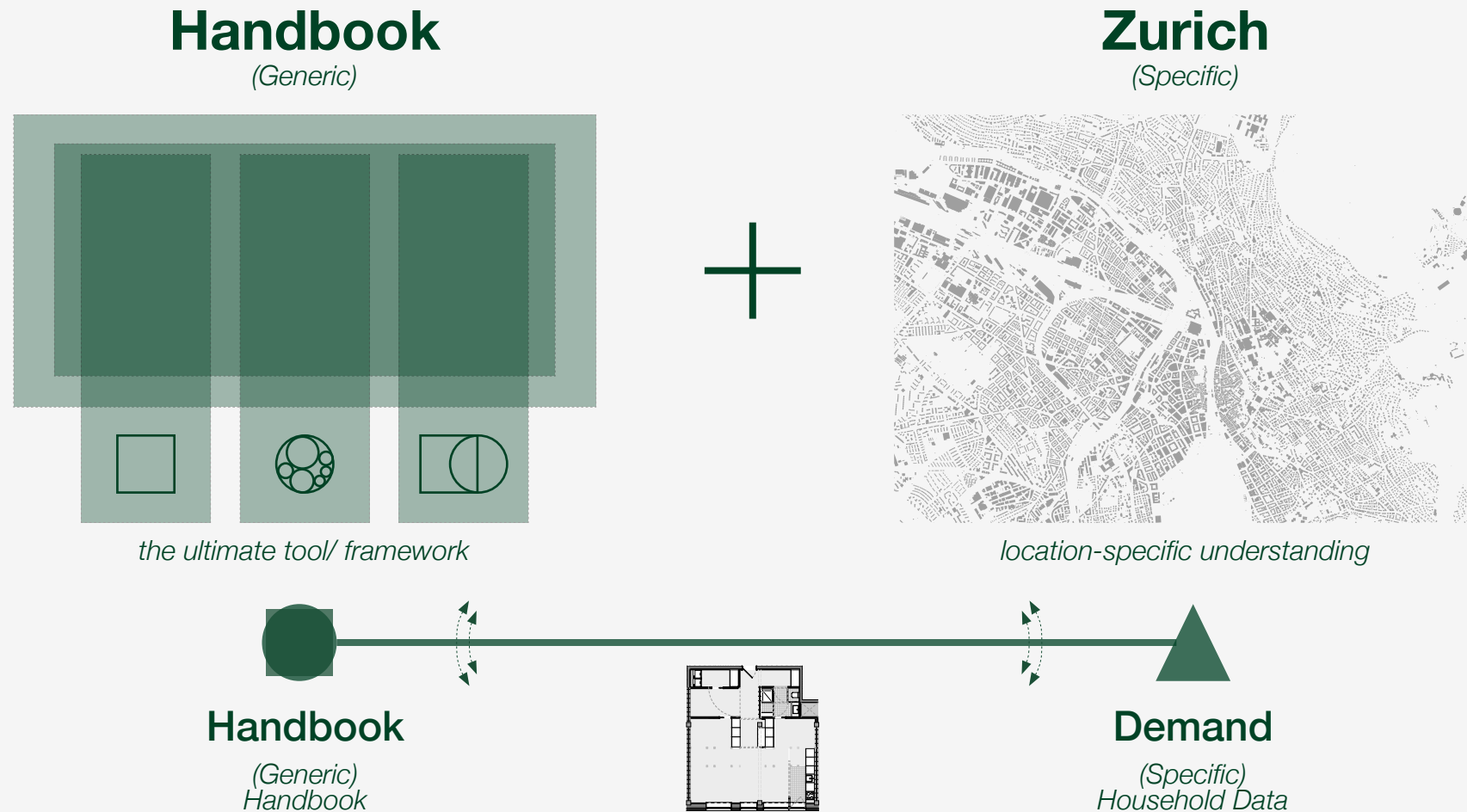
THE DESIGN

Specific

“What is an architectural solution to the problem?”
“What does the handbook application look like?”

INPUT

Generic + Specific



*"If I had asked people what they wanted, they would have said faster horses."
Henry Ford*

ZURICH'S HOUSEHOLD DEMAND QUESTIONNAIRE



Source: Household Demand Questionnaire in Zurich

65
Households

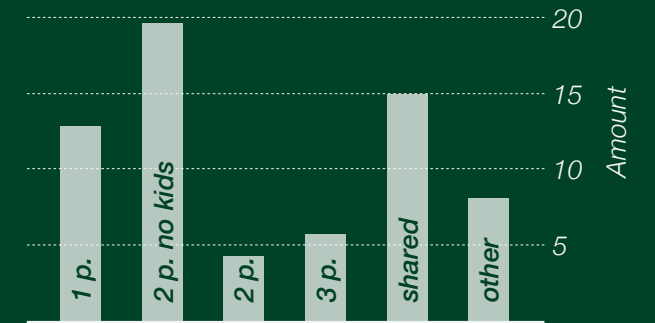
52%
pay > 30% of their
income to rent

65%
live < 3 year in their
current apartment

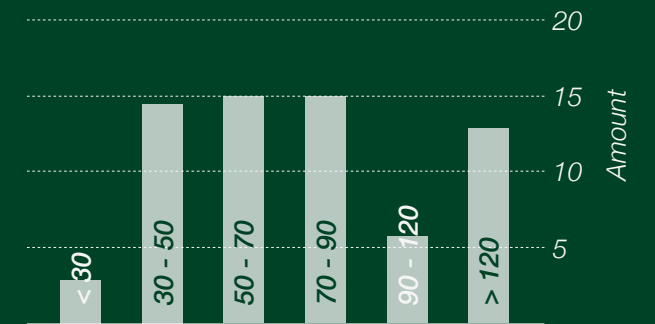
20-40
years old of major segment

Studying
Y. Professional
Professional
Retired

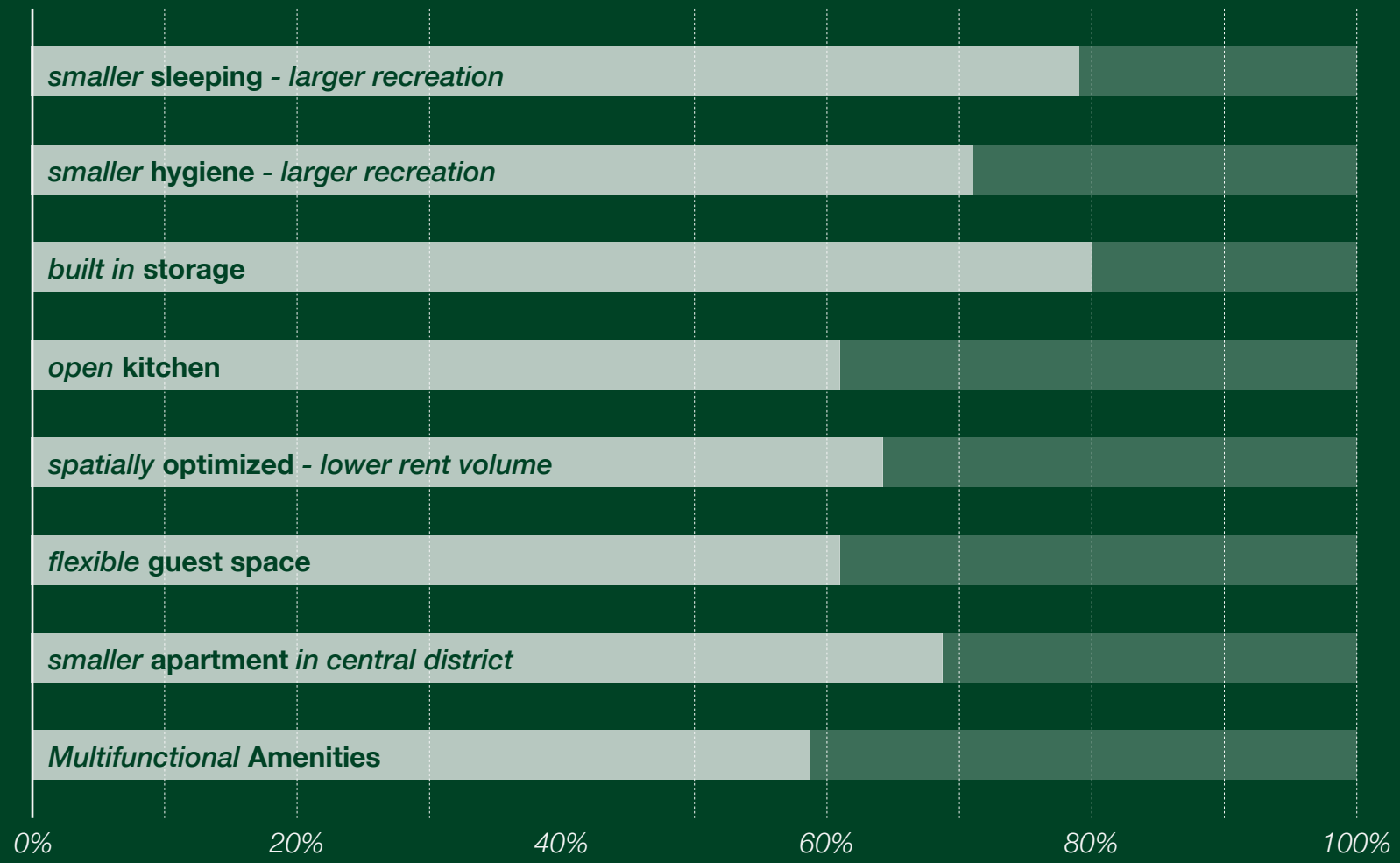
Household composition



Household total space in m²



ZURICH'S HOUSEHOLD DEMAND QUESTIONNAIRE



Quality importance

- Recreation**
- Sleeping**
- Cooking
- Balcony
- Hygiene
- Study

Primary compromise

- Rent too high**
- Poor spatial quality**
- Location**
- Outdated space
- Too small
- Too large

67%
find it difficult to find
suitable housing

Source: Household Demand Questionnaire in Zurich

Typological Mismatch

Competing Segments



**2 Adults
1-2 Children**

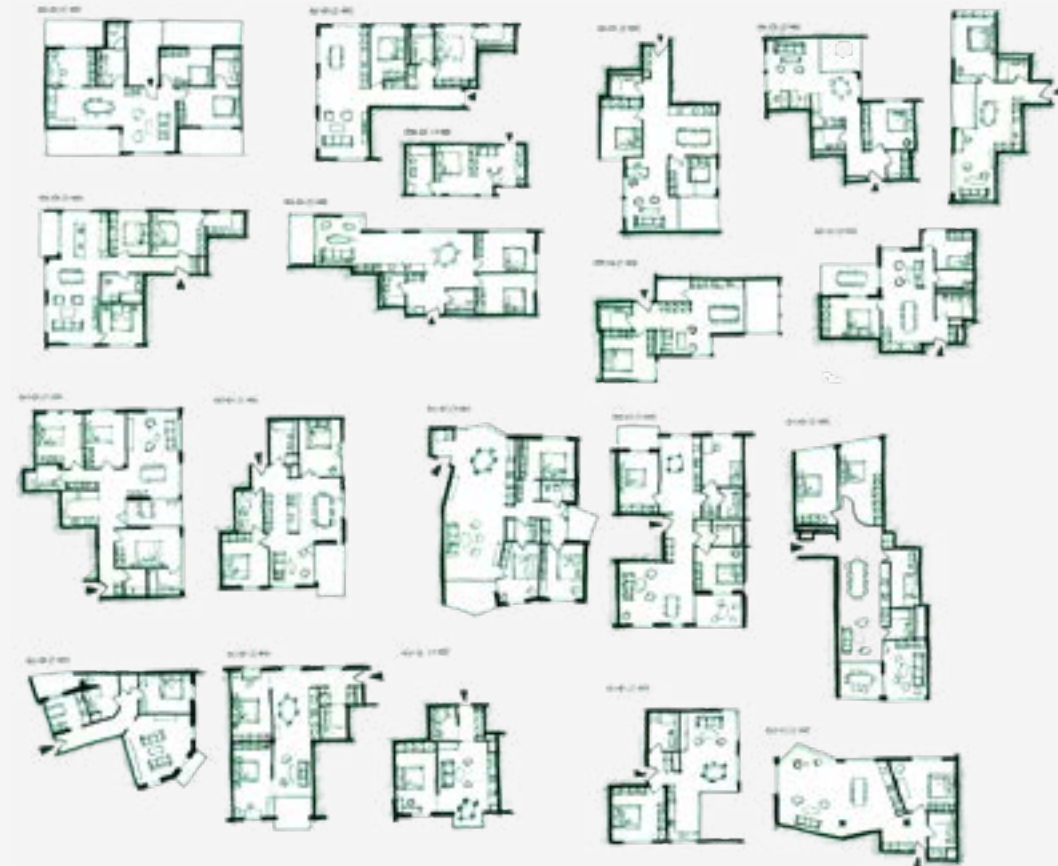
- \$\$
- space needed
- spatial adequate



1-2 Adults

- \$\$\$\$
- space not needed
- spatial inadequate

Zurich's typological supply



NEEDED DENSIFICATION IN ZURICH

Urban Space



1. Old Town

<5 floors
mixed use
high density

2. Perimeter Blocks

<10 floors
mixed use
medium density

3. Garden Districts

<4 floors
residential use
low density

4 - Con. Densification

>10 floors
mixed use
very high density

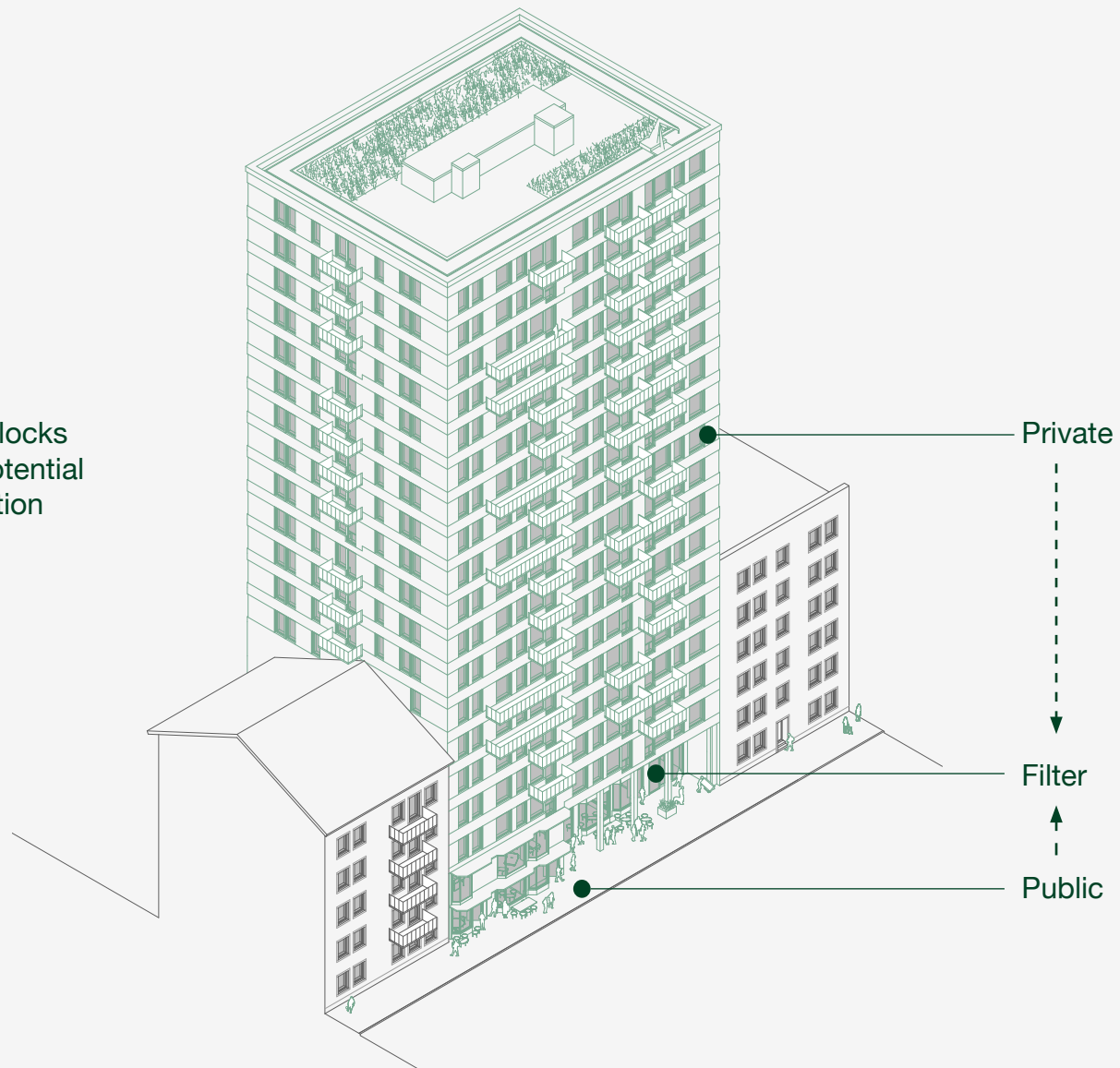
Current Data of Zurich's Building Stock

Floors	% of buidling stock
0-5 floors	72,1%
6-10 floors	27,2%
11-20 floors	0,6%
21- floors	0,1%

URBAN EMBEDDING



Perimeter Blocks with high potential of densification

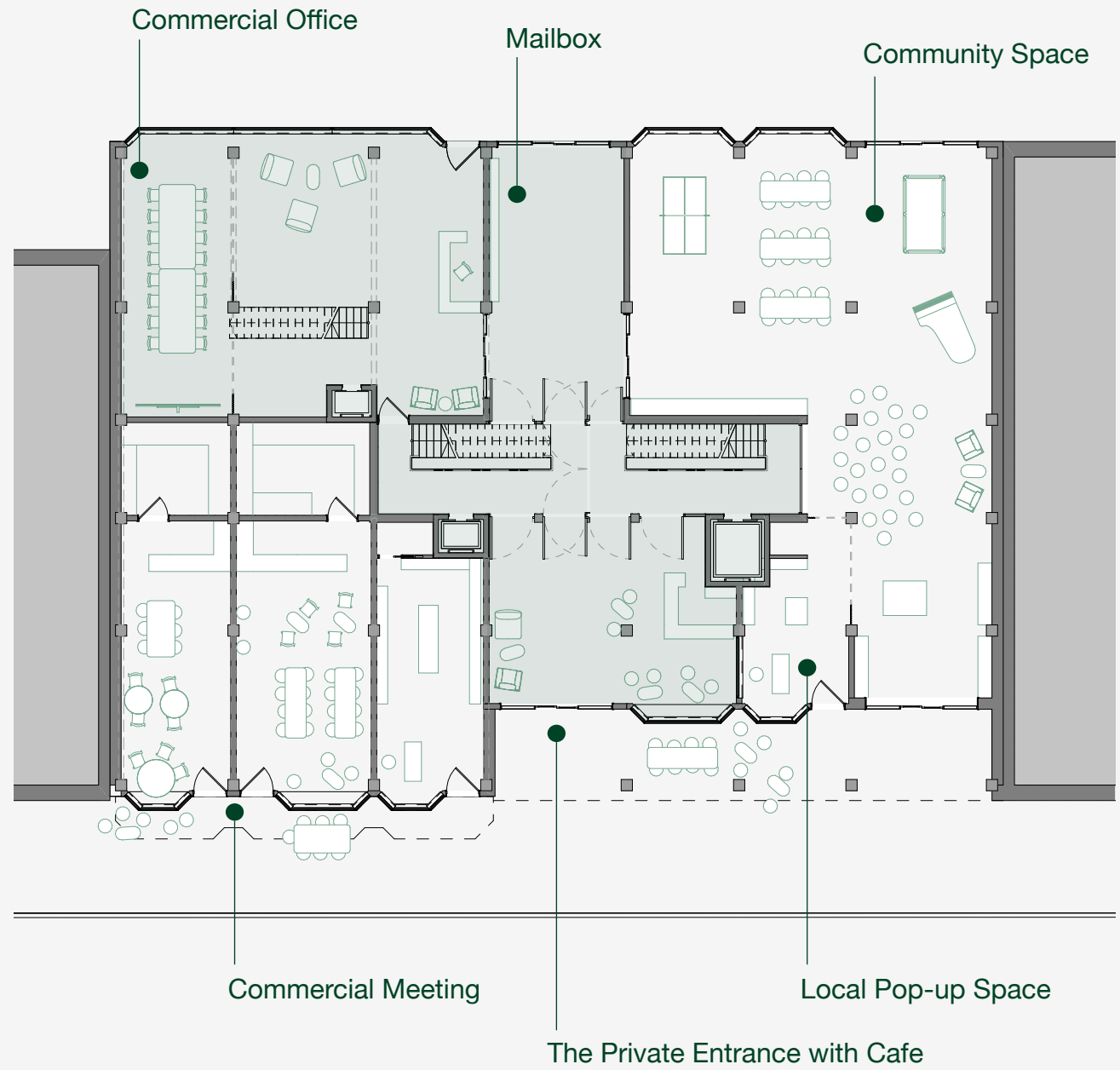


Private

Filter

Public

THE GROUND FLOOR AS FILTER ZONE

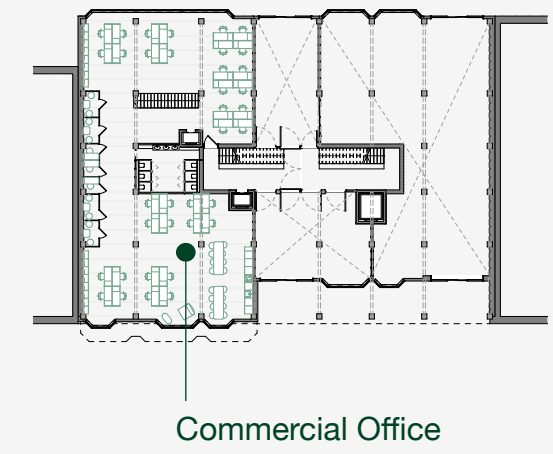


Space of Interaction

The middle ground of private and public space

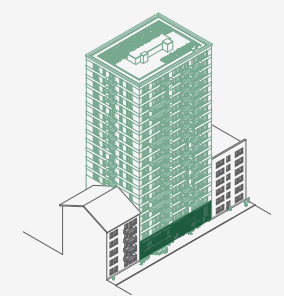
Cautious Contact

The contact of interaction is a matter of choice

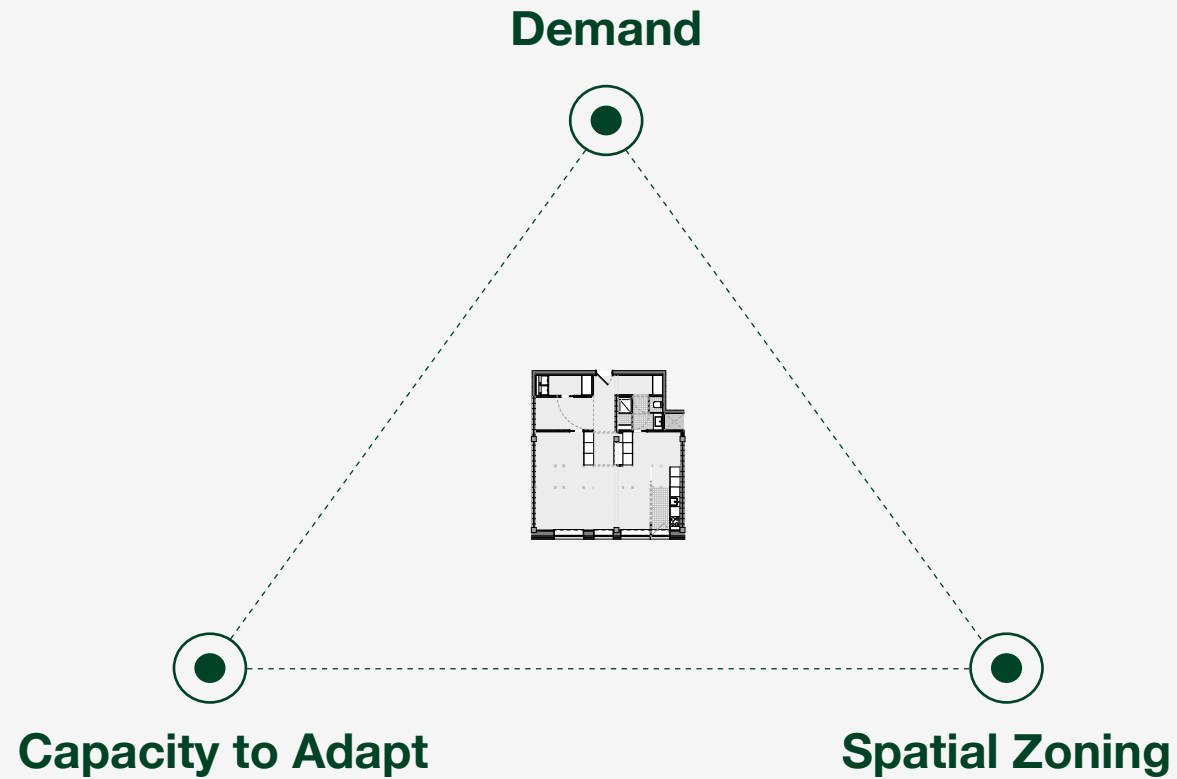


■ Private

Public



Spatial Adequacy



Demand *(Household Data)*
The reinterpreted segment-specific household demand

Capacity to Adapt
Well Designed Space with future adaption capabilities

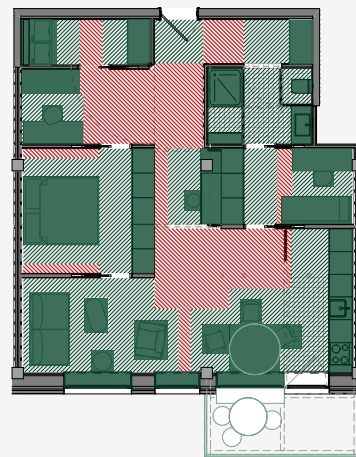
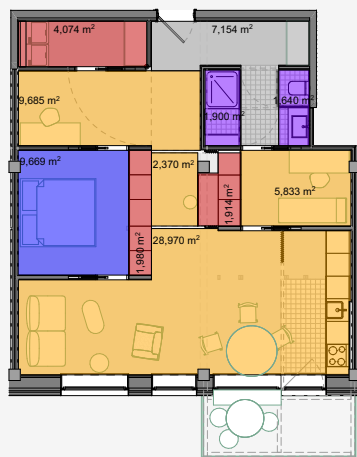
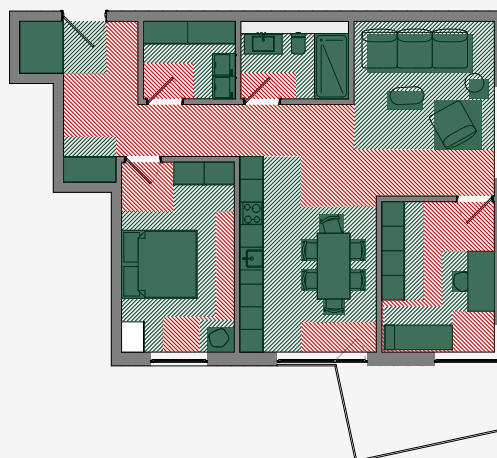
Spatial Zoning
Carefull use of space and multilayer use

ZURICH'S SPATIAL INADEQUACY - SPACE RECONSIDERATION

Functional Distribution



Spatial Distribution



Functional Space

The space required for the functional elements themselves.

Serving Space

The space required for the function to be used accordingly.

Space to Be Served

The space that needs to be served by the resident and does not fulfil a specific function.

Space reconsidered

Spatial distribution and design need to be reconsidered and thought through in detail, to create multilayered use of space.

- Sleeping
- Hygiene
- Storage
- Recreation/ Cooking
- Entrance

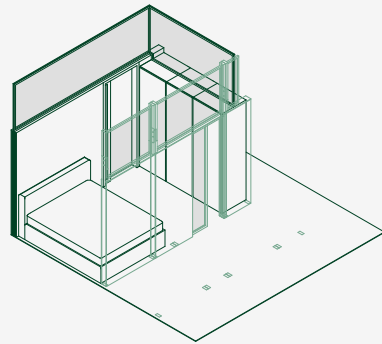


**THE INNOVATED
TYPOLOGY**

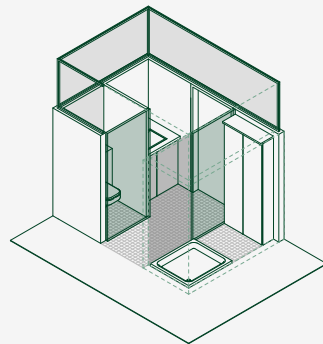
THE DEVELOPED FUNCTION CONCEPTS

Private Space

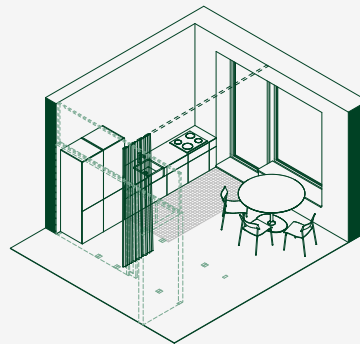
Sleeping



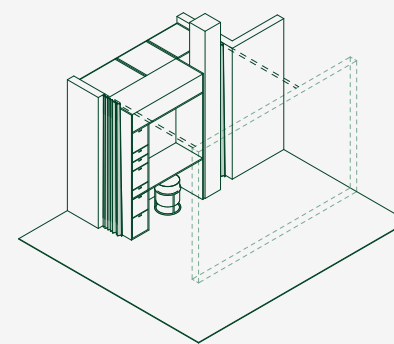
Hygiene



Cooking

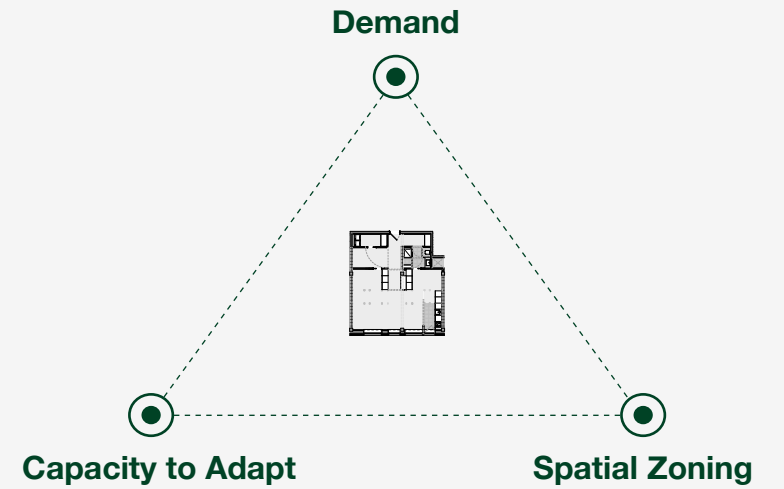


Storage



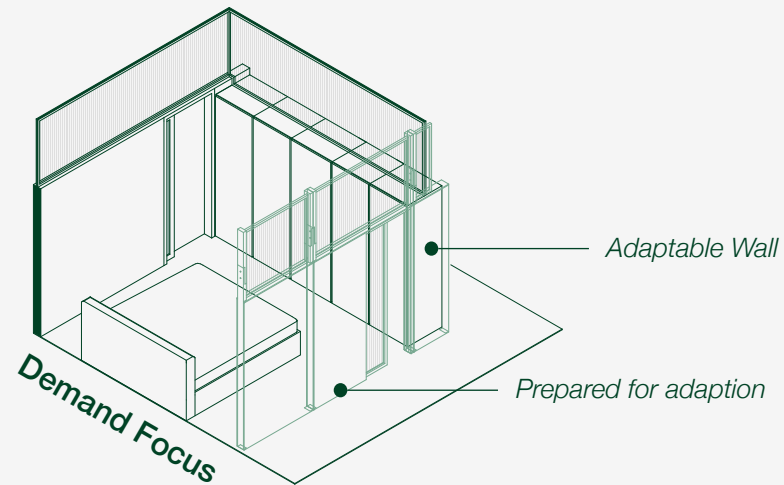
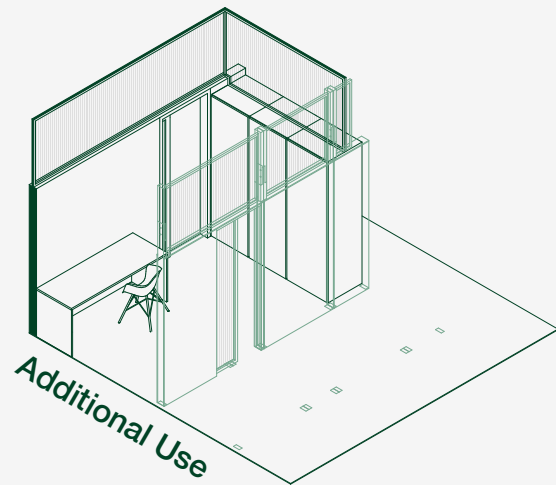
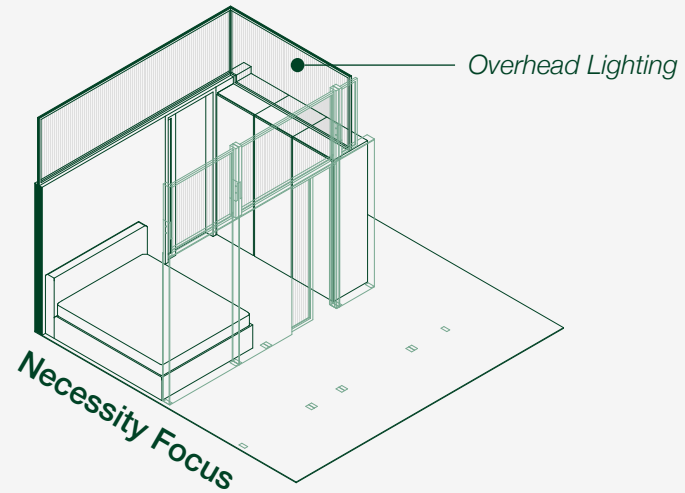
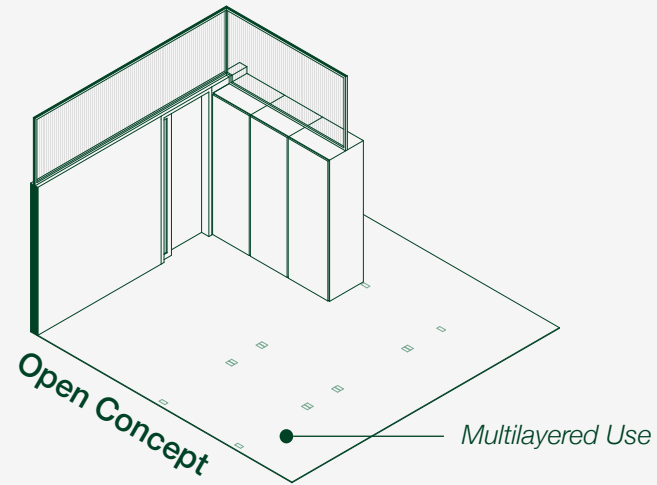
Production of Space

The rethinking of Spatial adequacy occurs on every scale to push the convention and focus on designing with aim.



THE DEVELOPED FUNCTION CONCEPTS

Sleeping

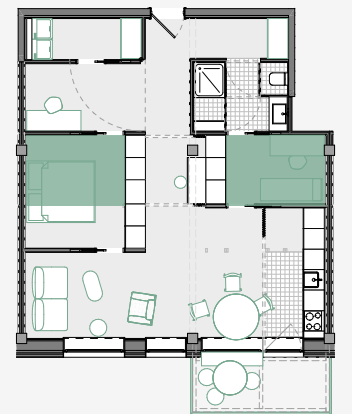


Intimate Location

Inspired by the Swedish Concpet, sleeping is located at an intimate location, away from the facade

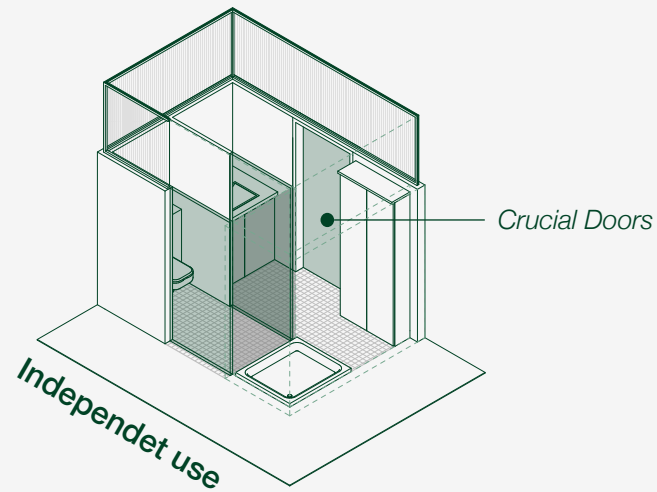
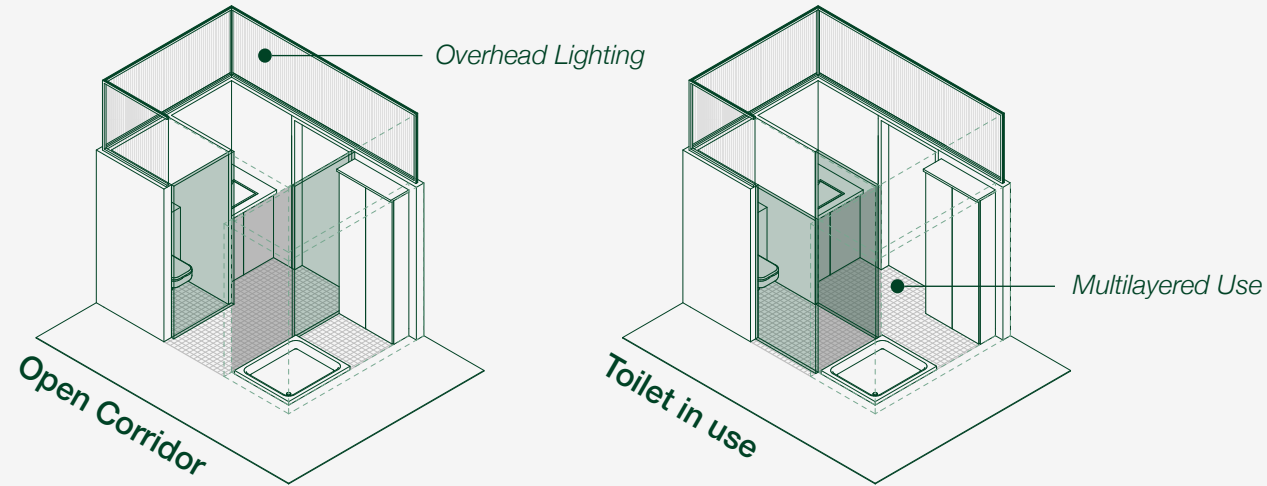
Capacity to Adapt

Sleeping patterns have shifted, thus capacity to adapt to the residents need is crucial for a sustainable asset.



THE DEVELOPED FUNCTION CONCEPTS

Hygiene



Play with Doors

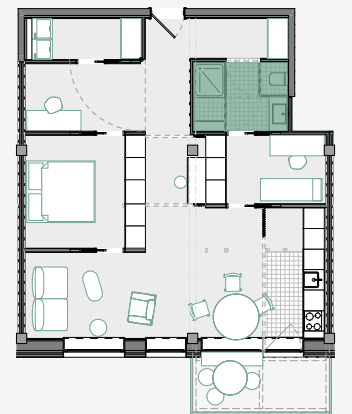
Cautious use of Doors unlock the potential within small spaces.

Independet Use

The Design enables the Toilet, Shower and Sink to be used independently to unlock multi-use.

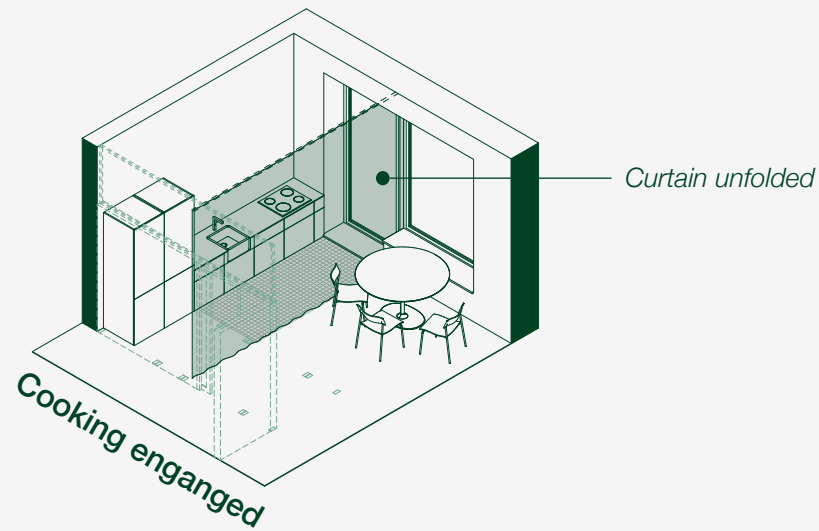
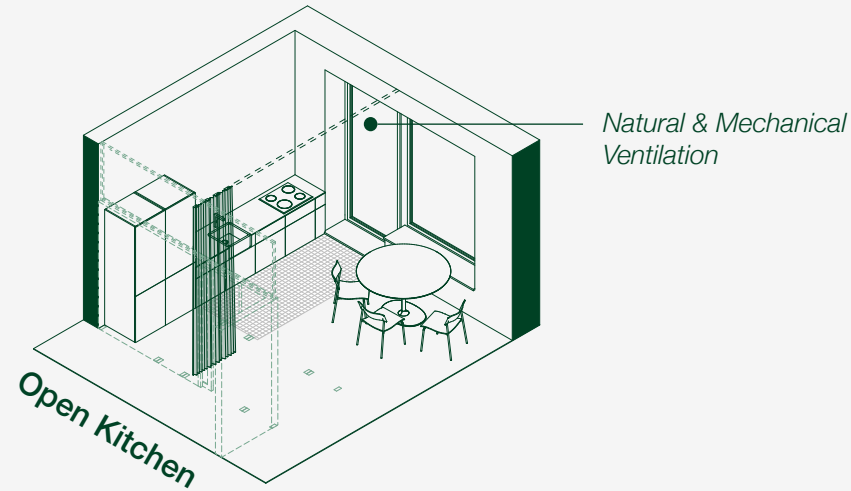
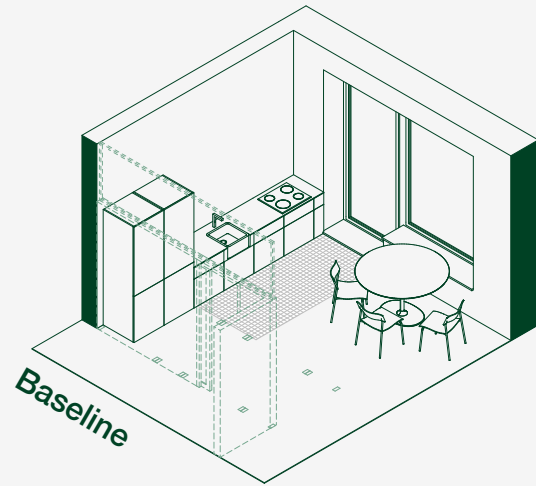
Circulation Element

The Multilayered use of space enables the Hygiene space to function as secondary circulation.



THE DEVELOPED FUNCTION CONCEPTS

Cooking

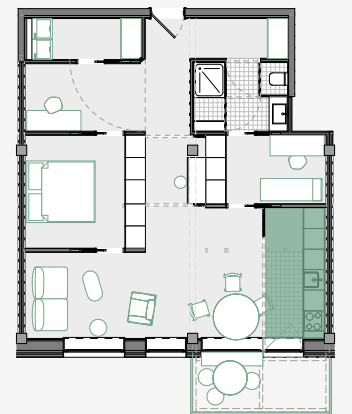


Adaptable Separation

The desired open kitchen concept is designed with the ability to adapt to cultural cooking demands.

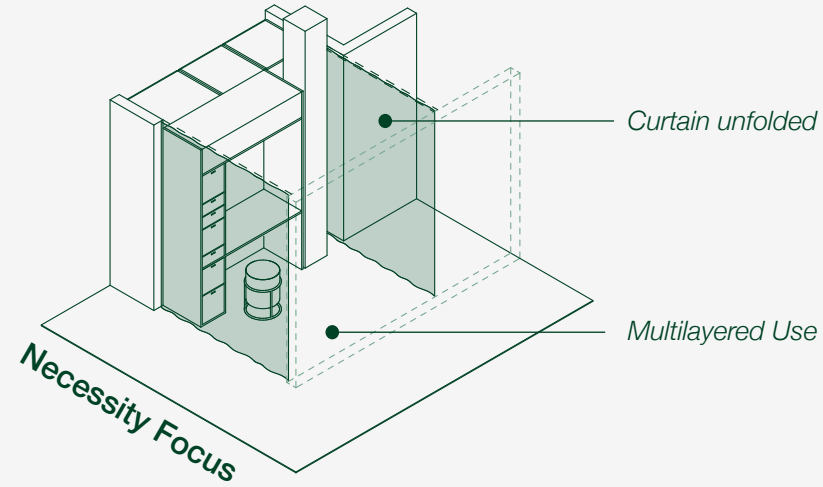
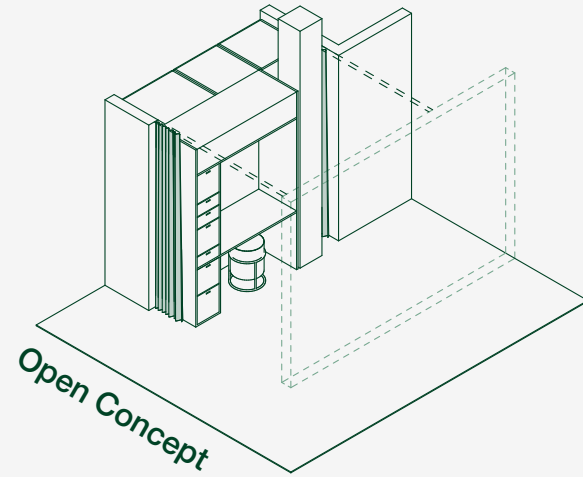
Ventilation

The use of natural and mechanical ventilation enables the use separated use.



THE DEVELOPED FUNCTION CONCEPTS

Storage

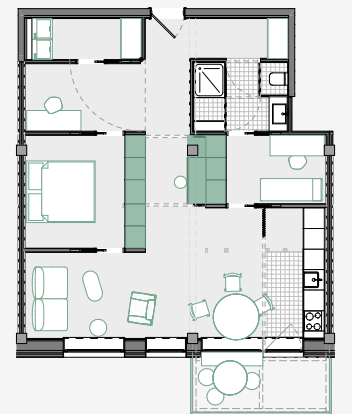


Multilayered Circulation

Circulation within the typology serves various functions at different times of the day.

Capacity to Adapt

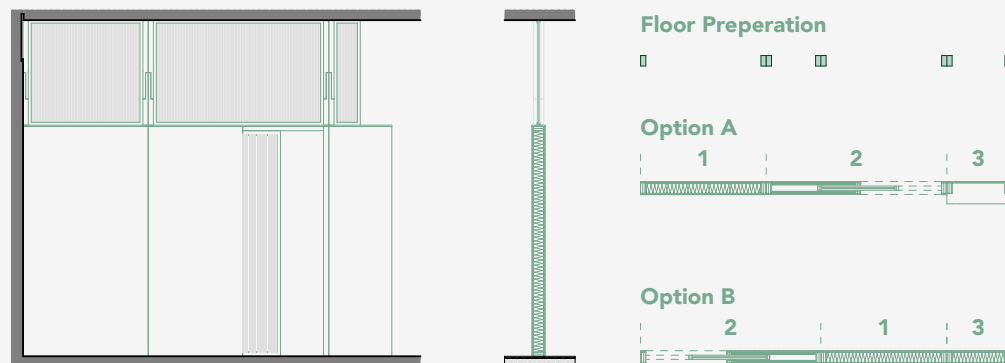
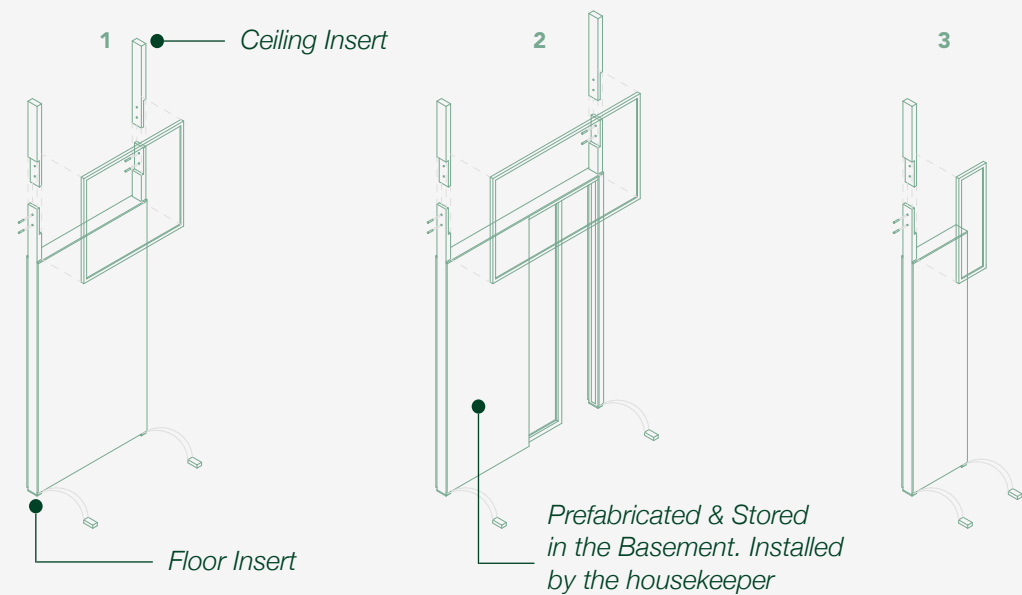
The multi-circulation layer enables the transformation for the main circulation to another use.



CAPACITY TO ADAPT - CONFIGURATIONS

The Elements to Configure

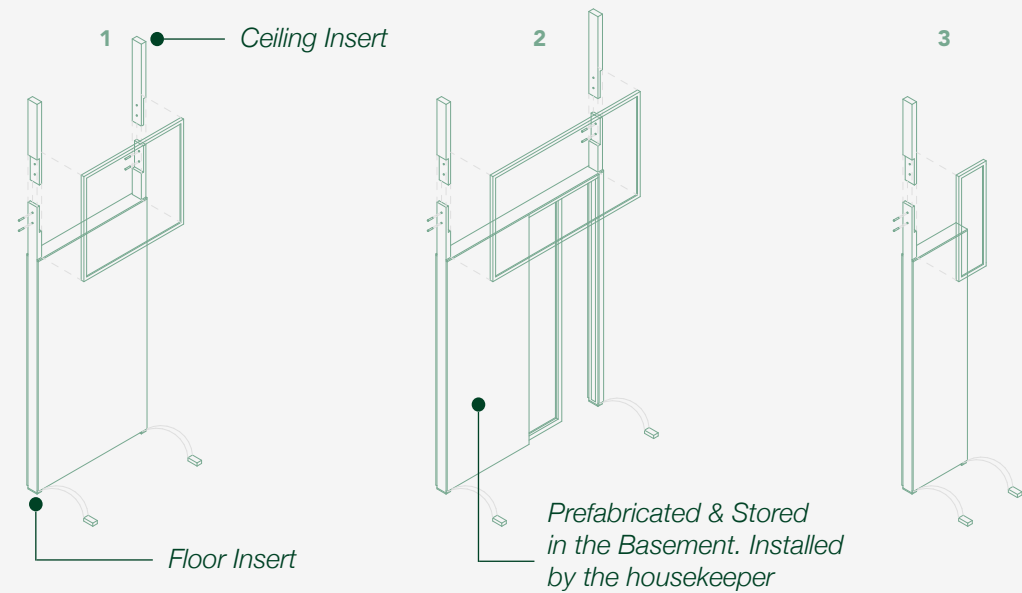
A. Adaptable Wall



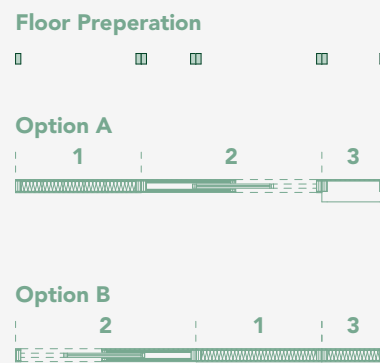
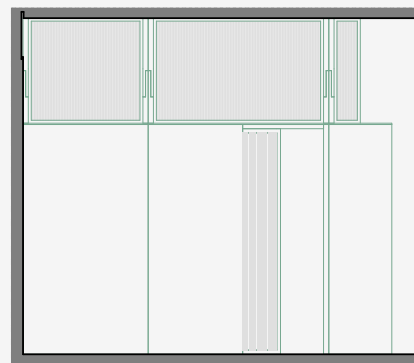
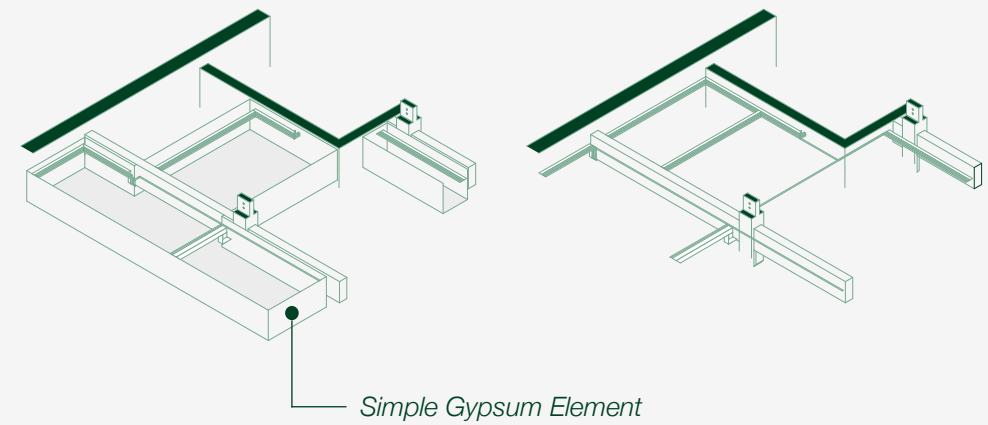
CAPACITY TO ADAPT - CONFIGURATIONS

The Elements to Configure

A. Adaptable Wall



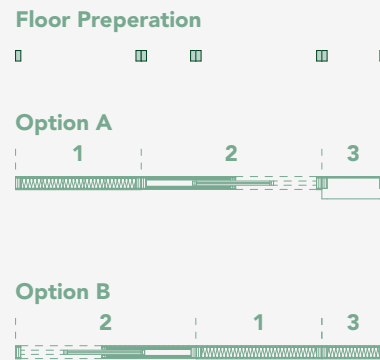
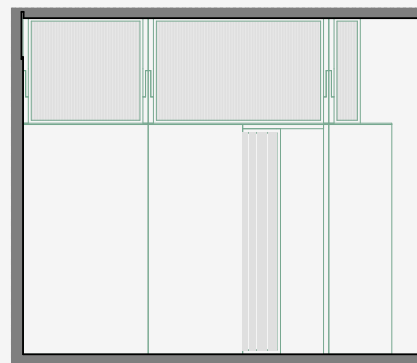
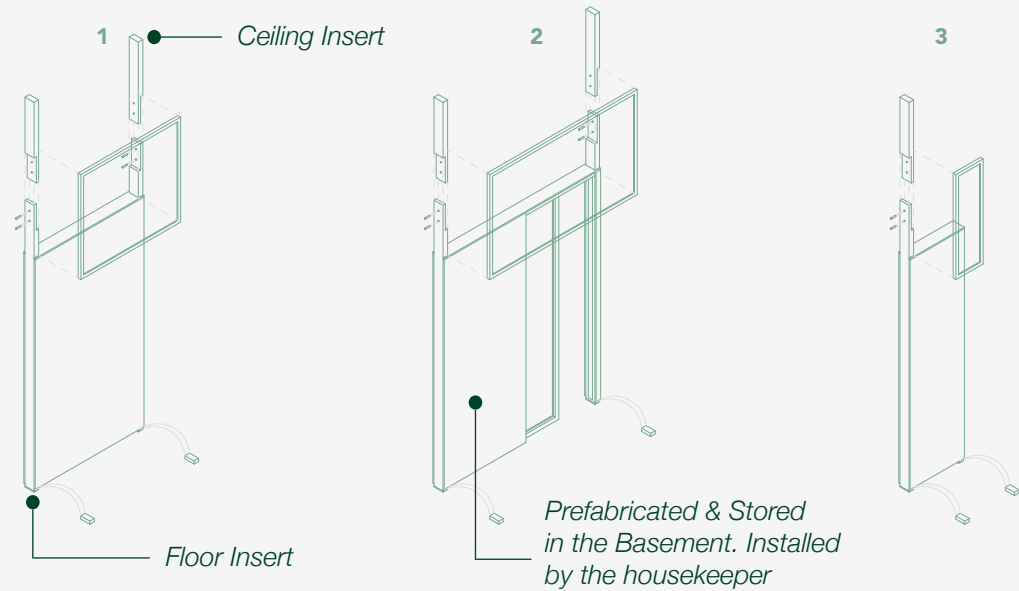
B. Second Ceiling



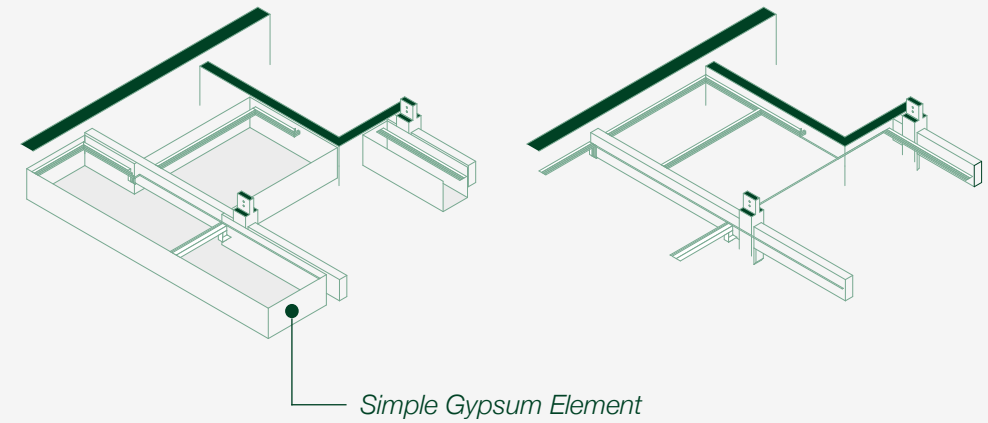
CAPACITY TO ADAPT - CONFIGURATIONS

The Elements to Configure

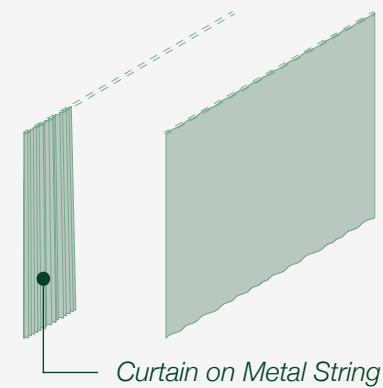
A. Adaptable Wall



B. Second Ceiling



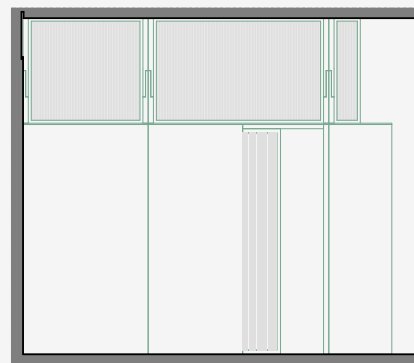
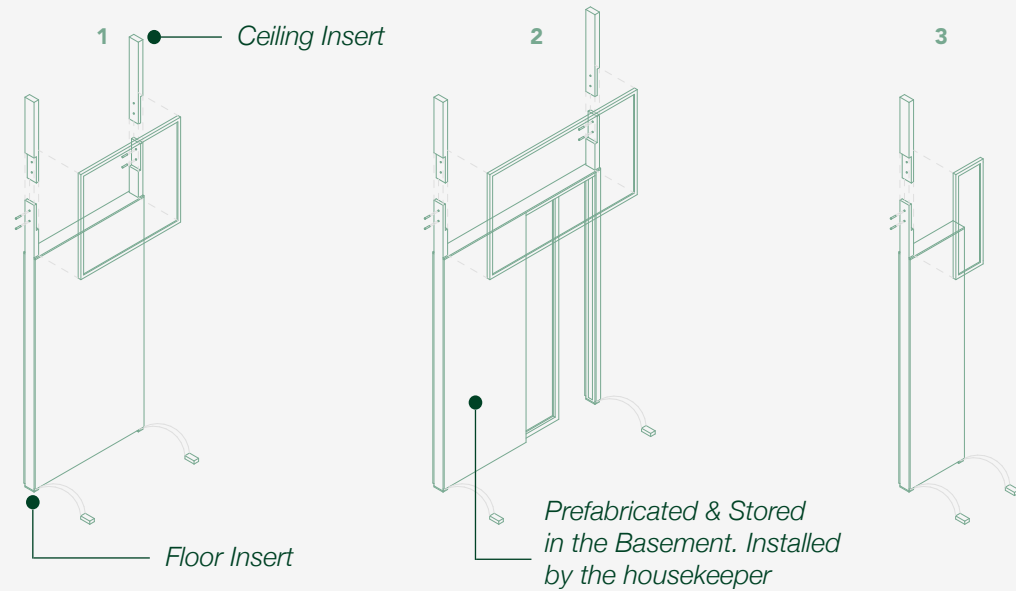
C. Curtain



CAPACITY TO ADAPT - CONFIGURATIONS

The Elements to Configure

A. Adaptable Wall



Floor Preparation



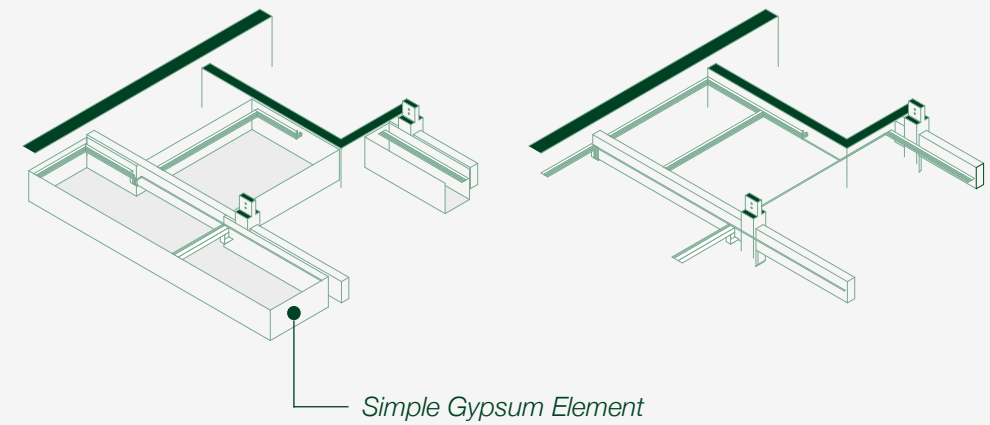
Option A



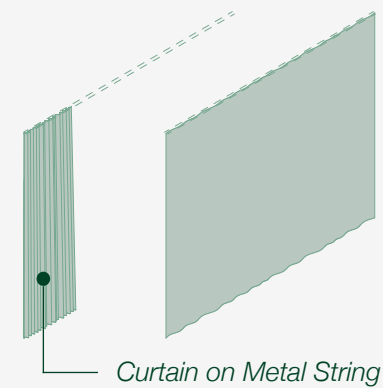
Option B



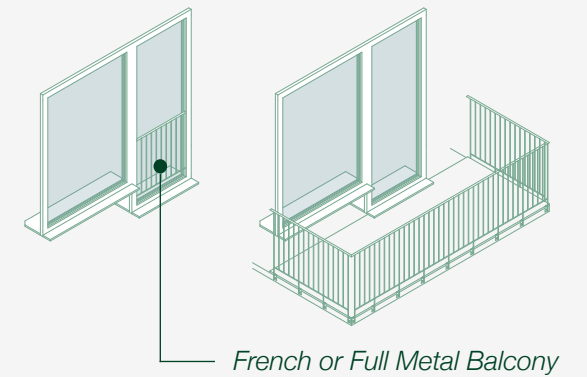
B. Second Ceiling



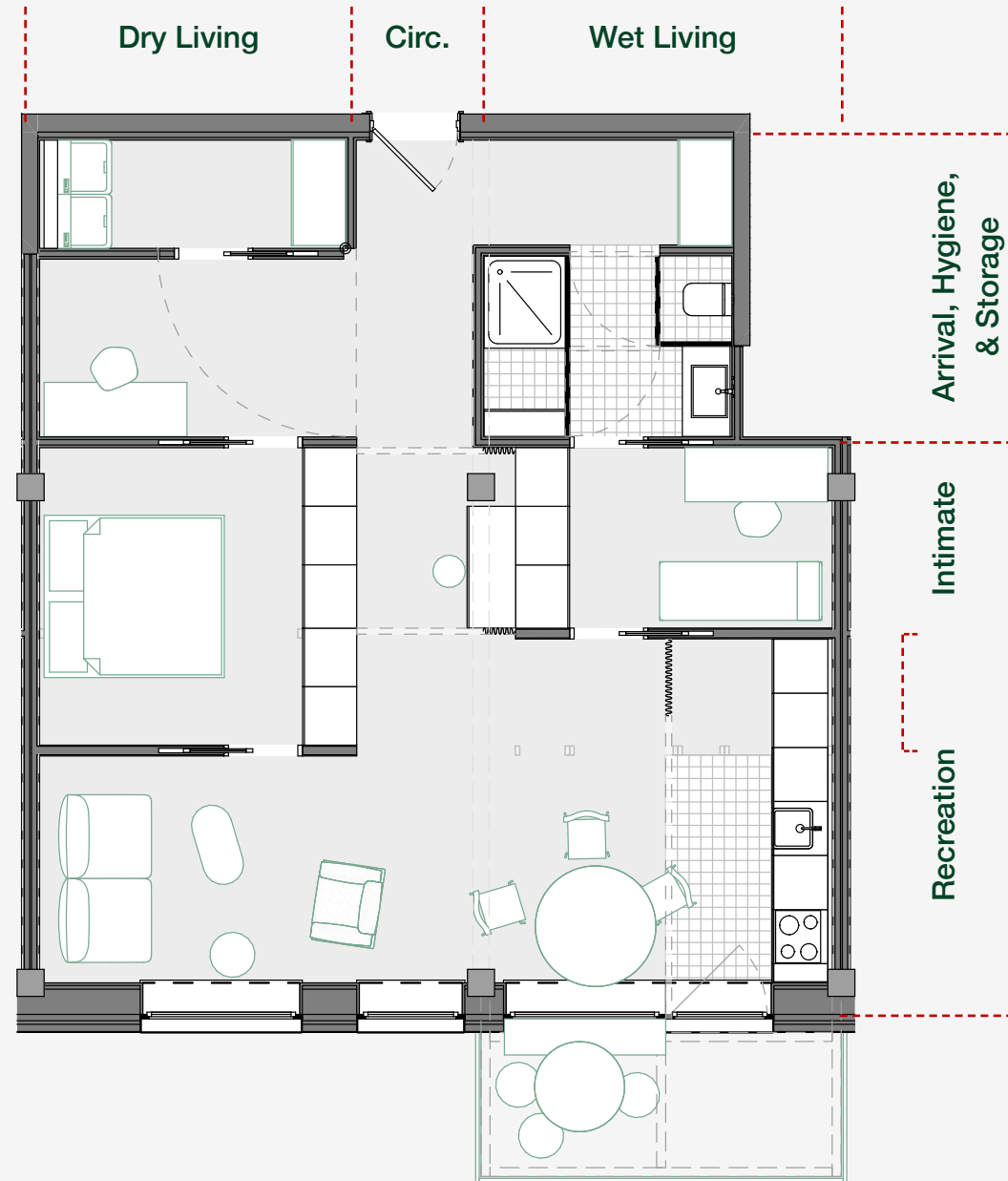
C. Curtain



D. Balcony



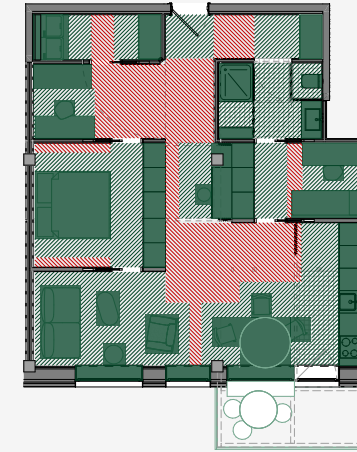
THE EVOLVED TYPOLOGY



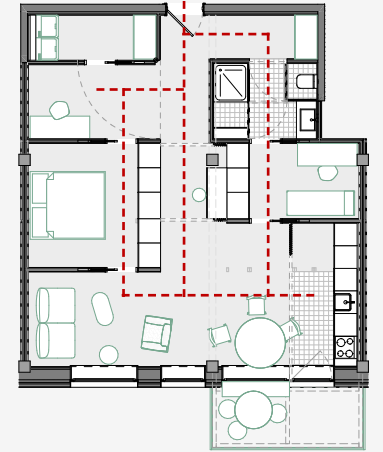
Function Distribution



Space Distribution



Circulation Options



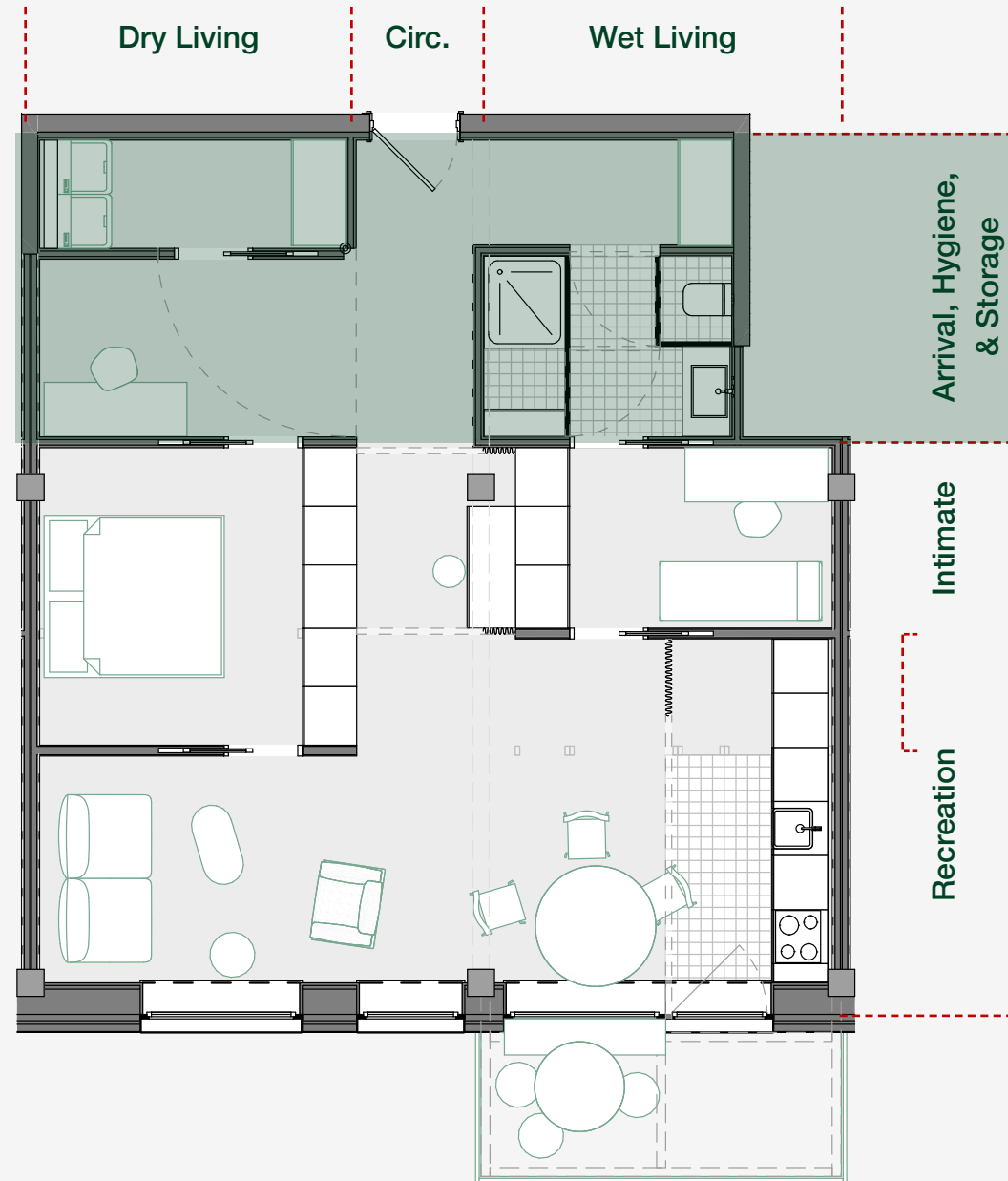
Capacity to Adapt

Cautious Design decisions, informed through the process of research by design created capabilities allowing the typology to be sustainable for the future.

Multilayered Space

The innovative design of each function and its correlation to one another, creates a spatial multi-use, making space efficient, high in quality and spatial adequate to demand.

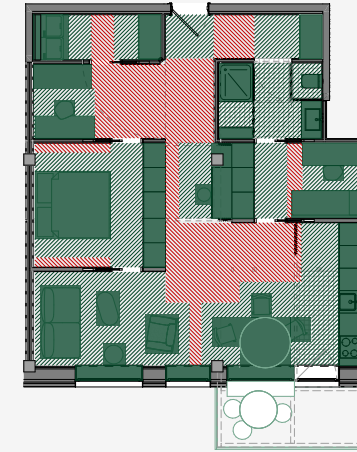
THE EVOLVED TYPOLOGY



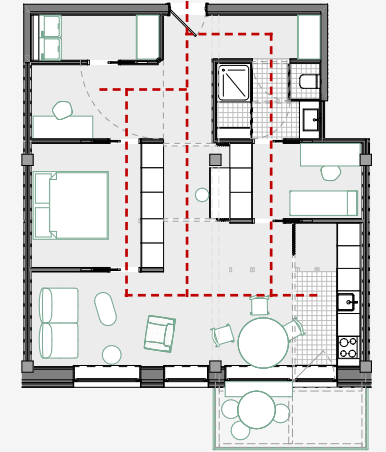
Function Distribution



Space Distribution



Circulation Options



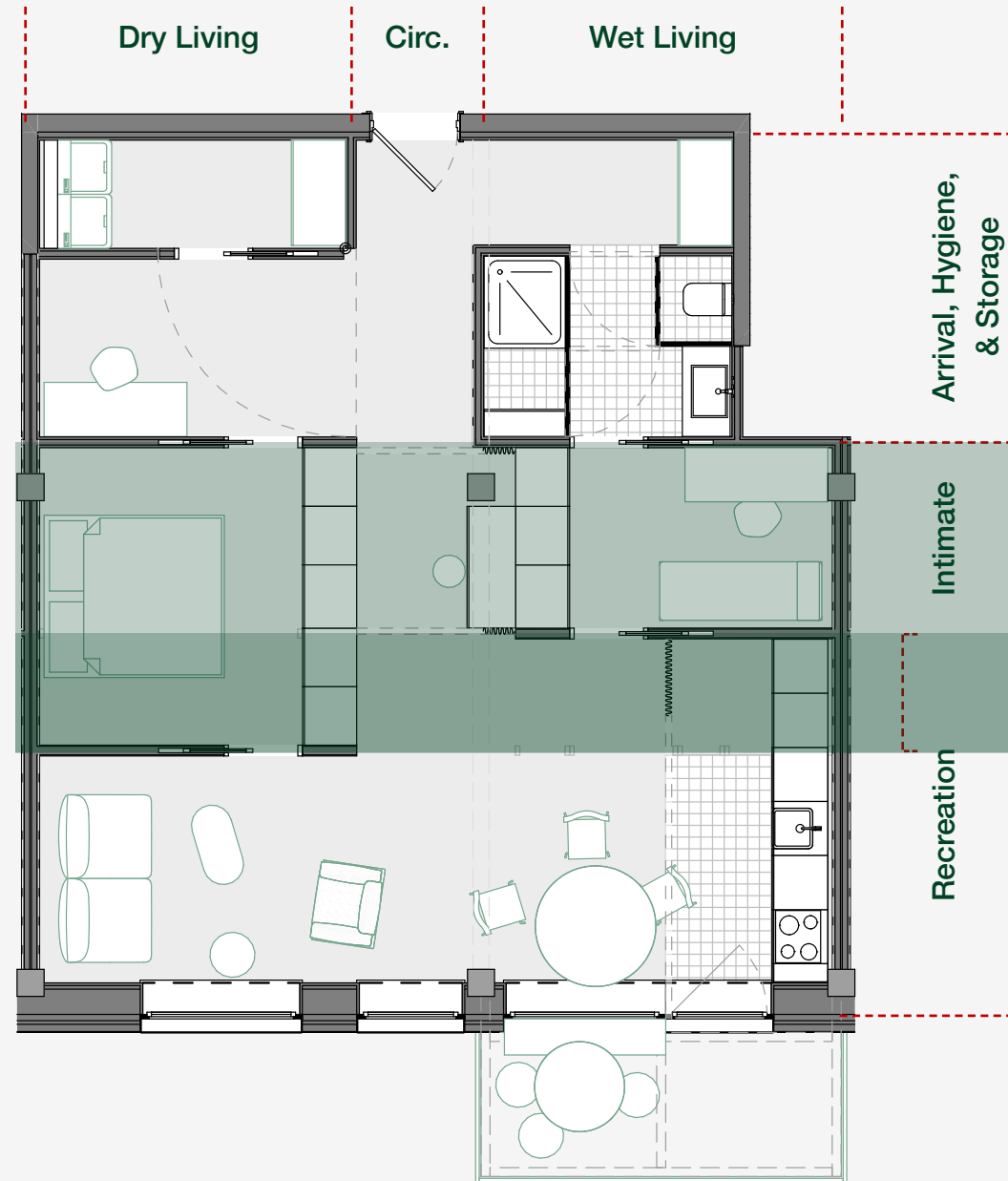
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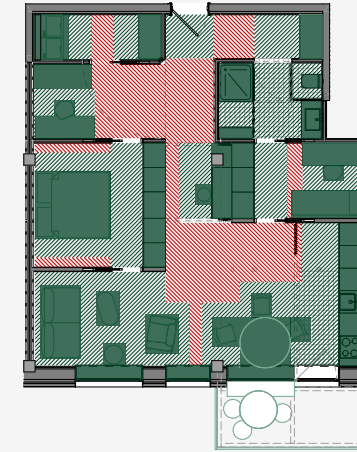
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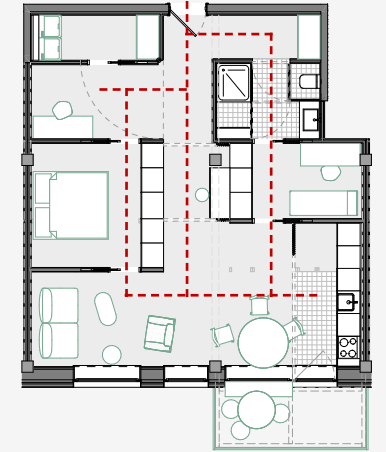
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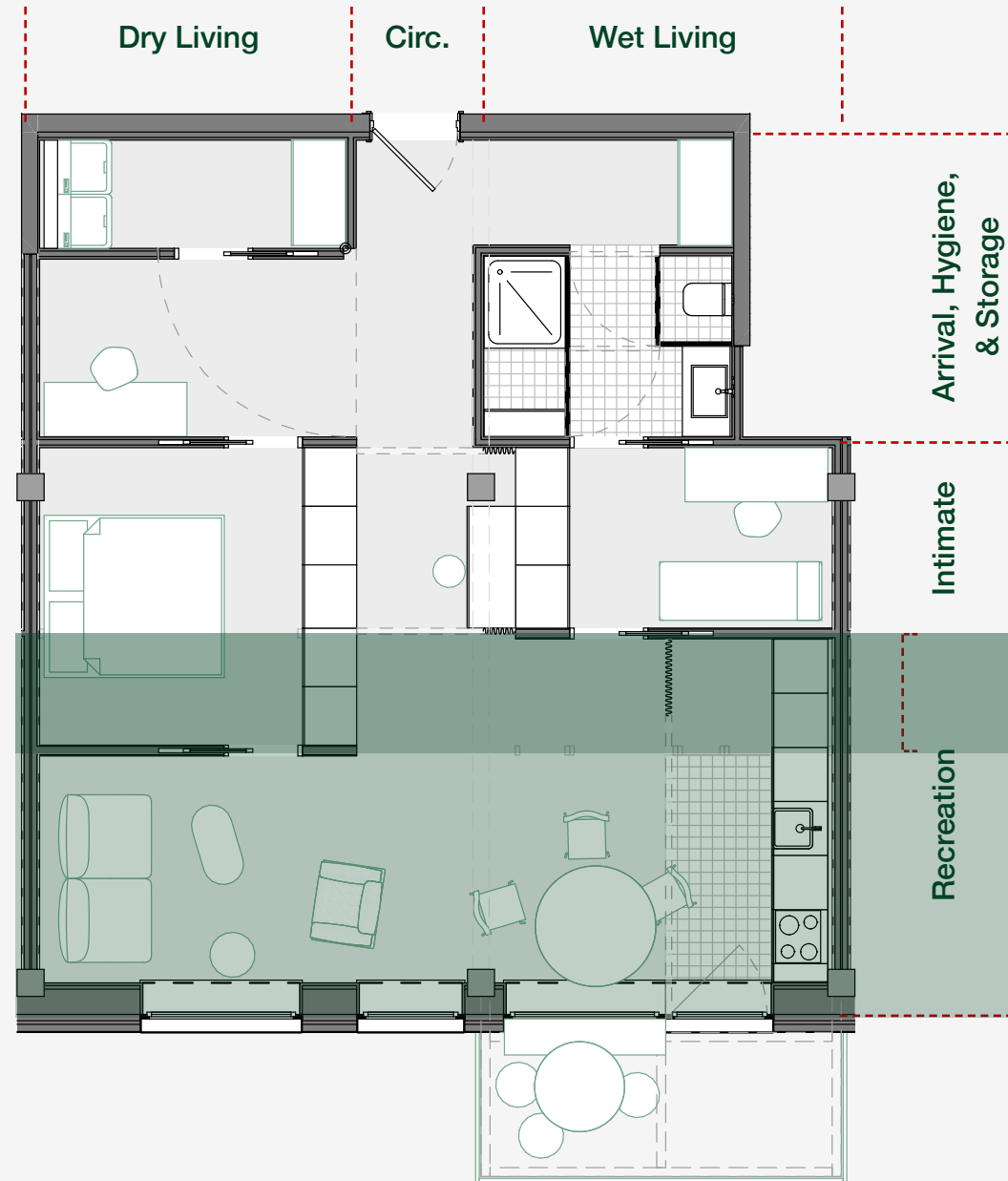
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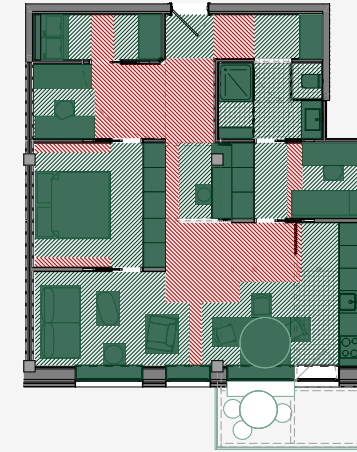
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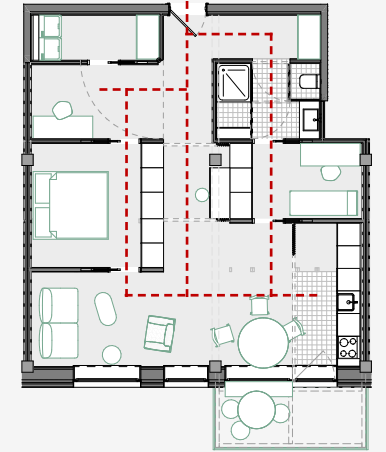
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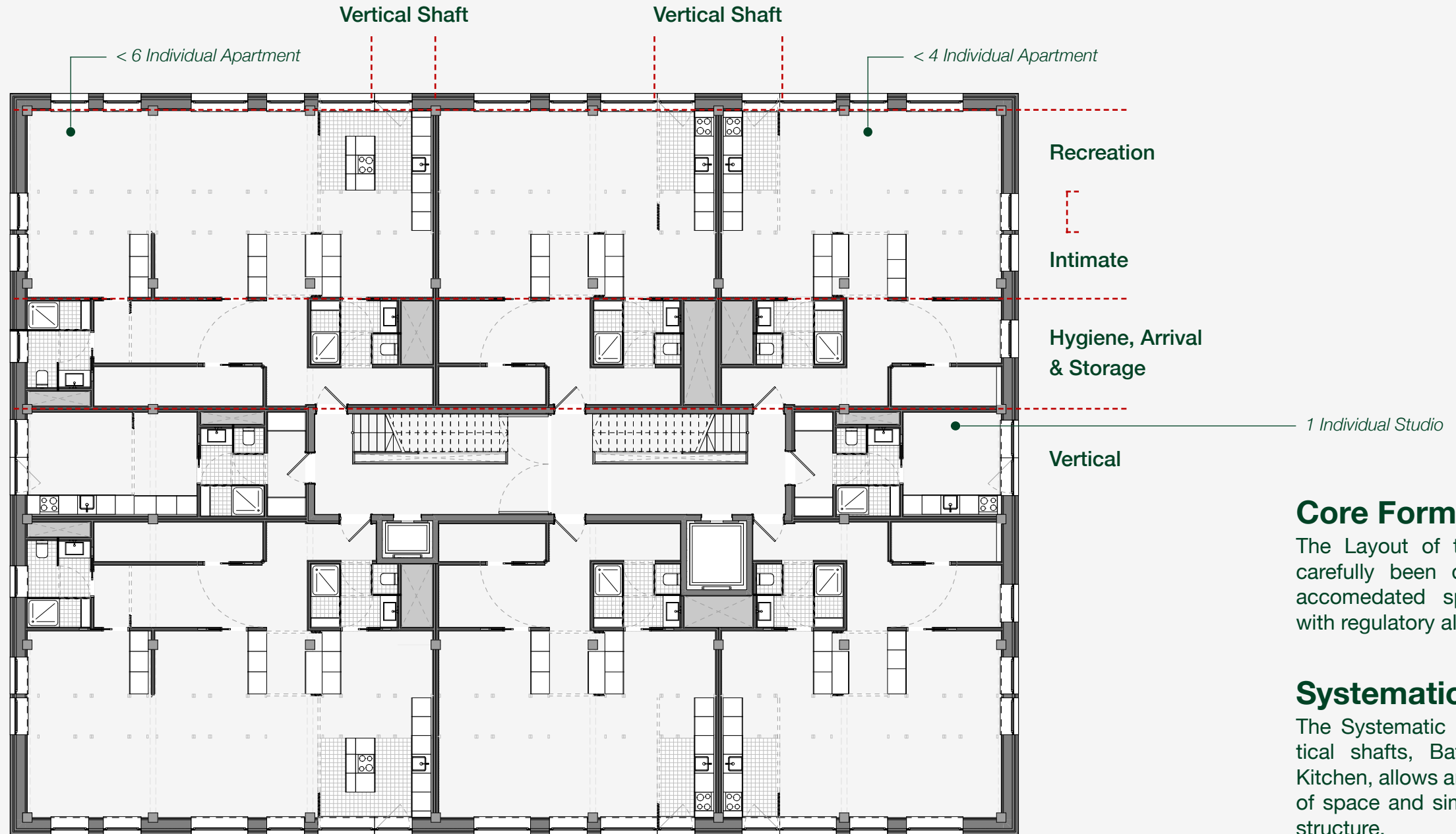
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THE EVOLVED TYPOLOGY WITHIN THE FOOTPRINT



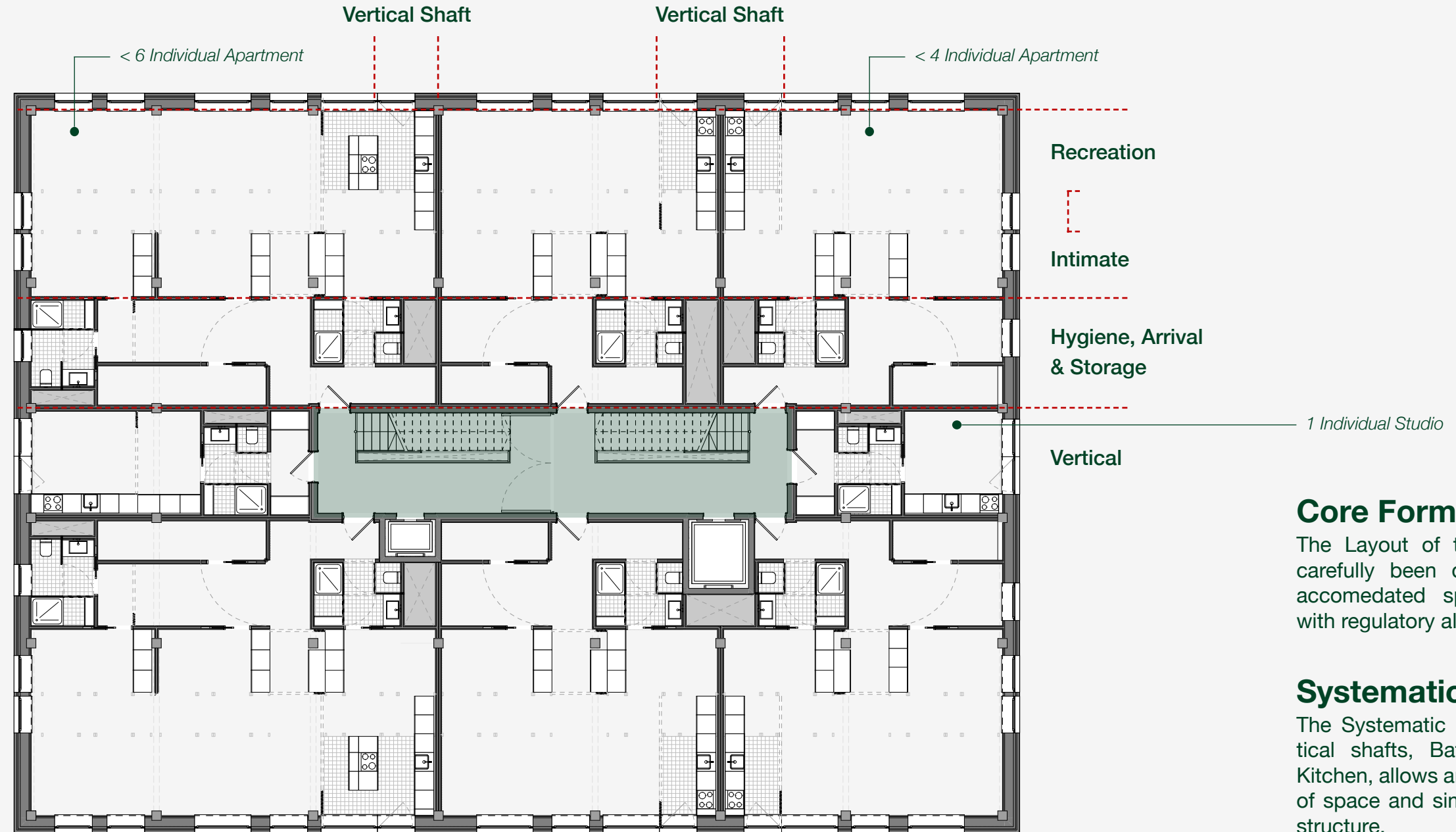
Core Form

The Layout of the core has carefully been developed to accomedated spatial quality with regulatory alignment.

Systematic

The Systematic Order of Vertical shafts, Bathrooms and Kitchen, allows an efficient use of space and simpler building structure.

THE EVOLVED TYPOLOGY WITHIN THE FOOTPRINT



Core Form

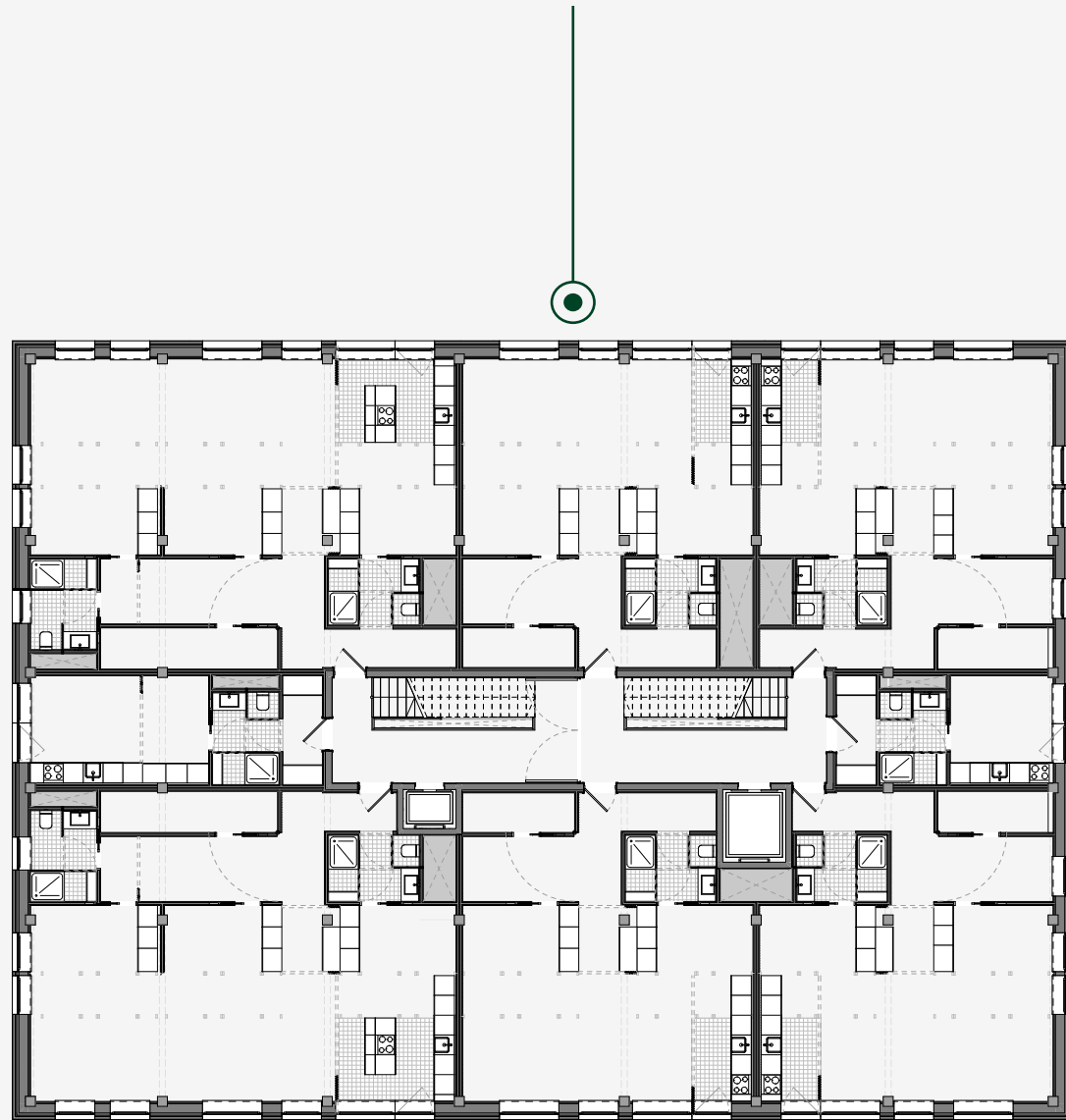
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THE CONFIGURATION

The Baseline Model

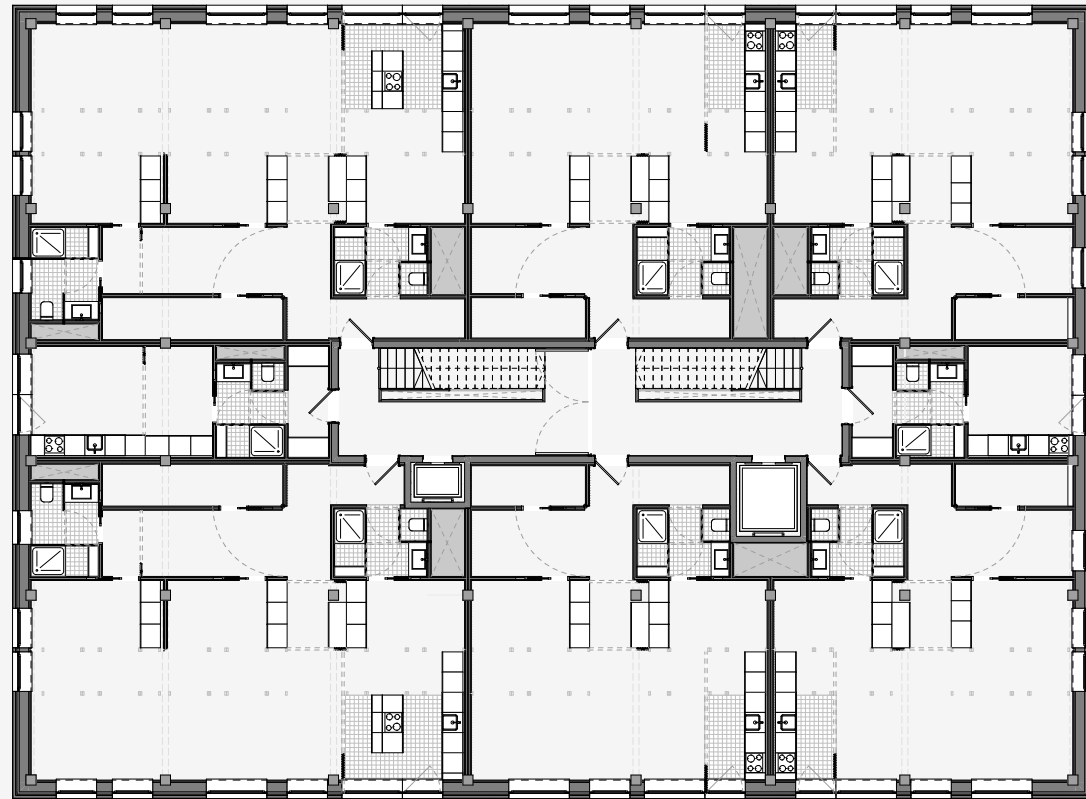
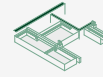


THE CONFIGURATION

The Baseline Model

Configurator

A. Adaptable Wall B. Second Ceiling C. Curtain D. Balcony

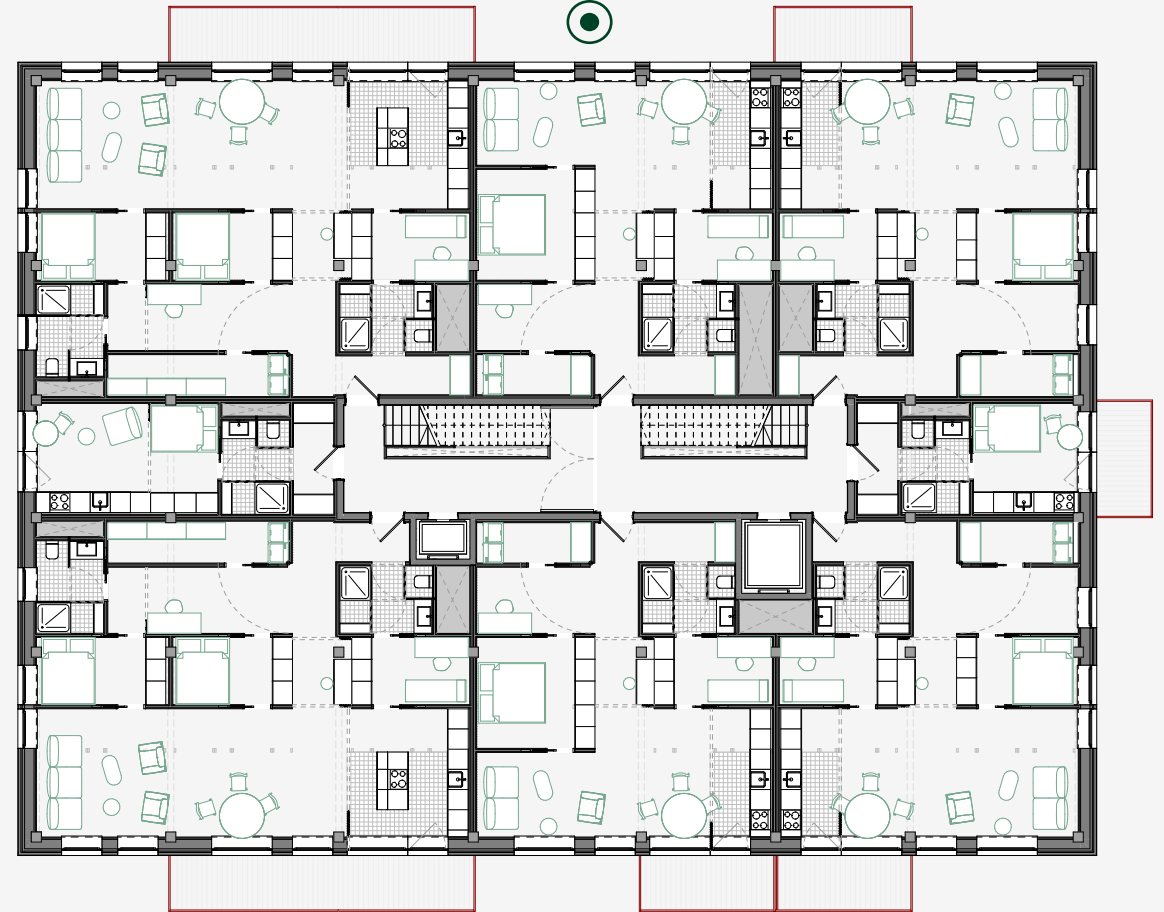
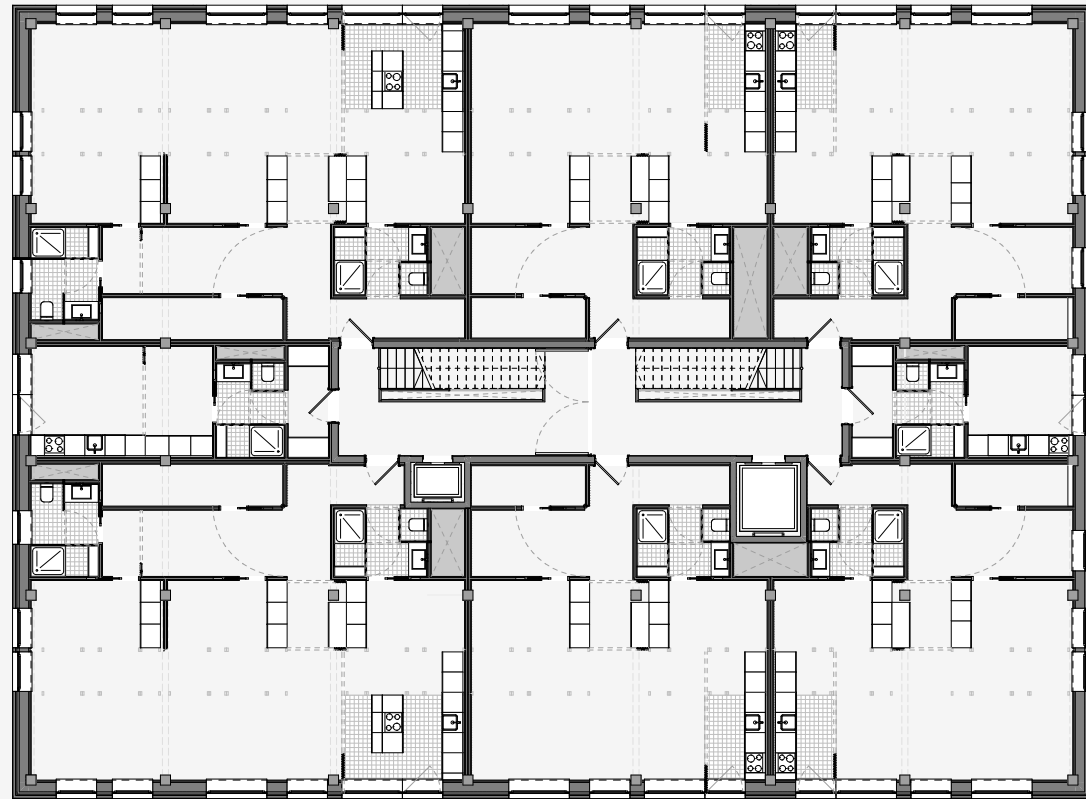
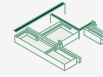


THE CONFIGURATION

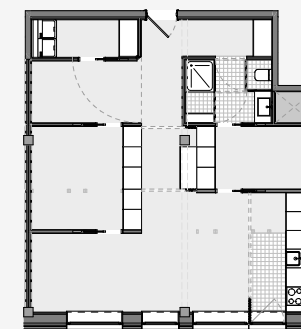
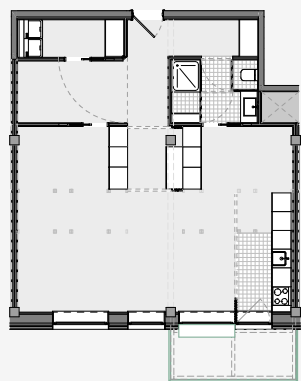
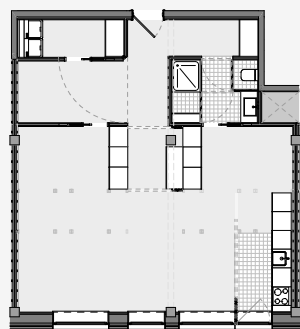
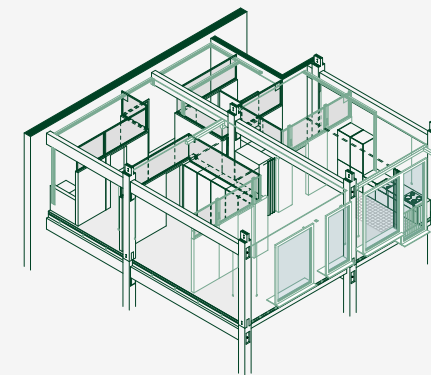
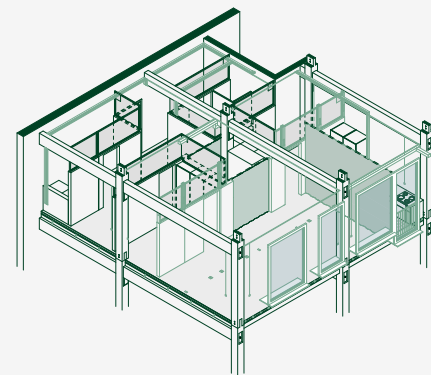
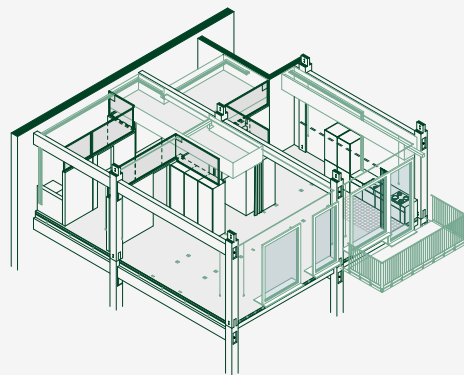
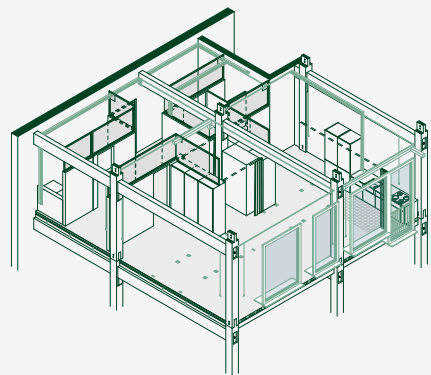
The Baseline Model

Configurator

A. Adaptable Wall B. Second Ceiling C. Curtain D. Balcony



POSSIBLE CONFIGURATIONS



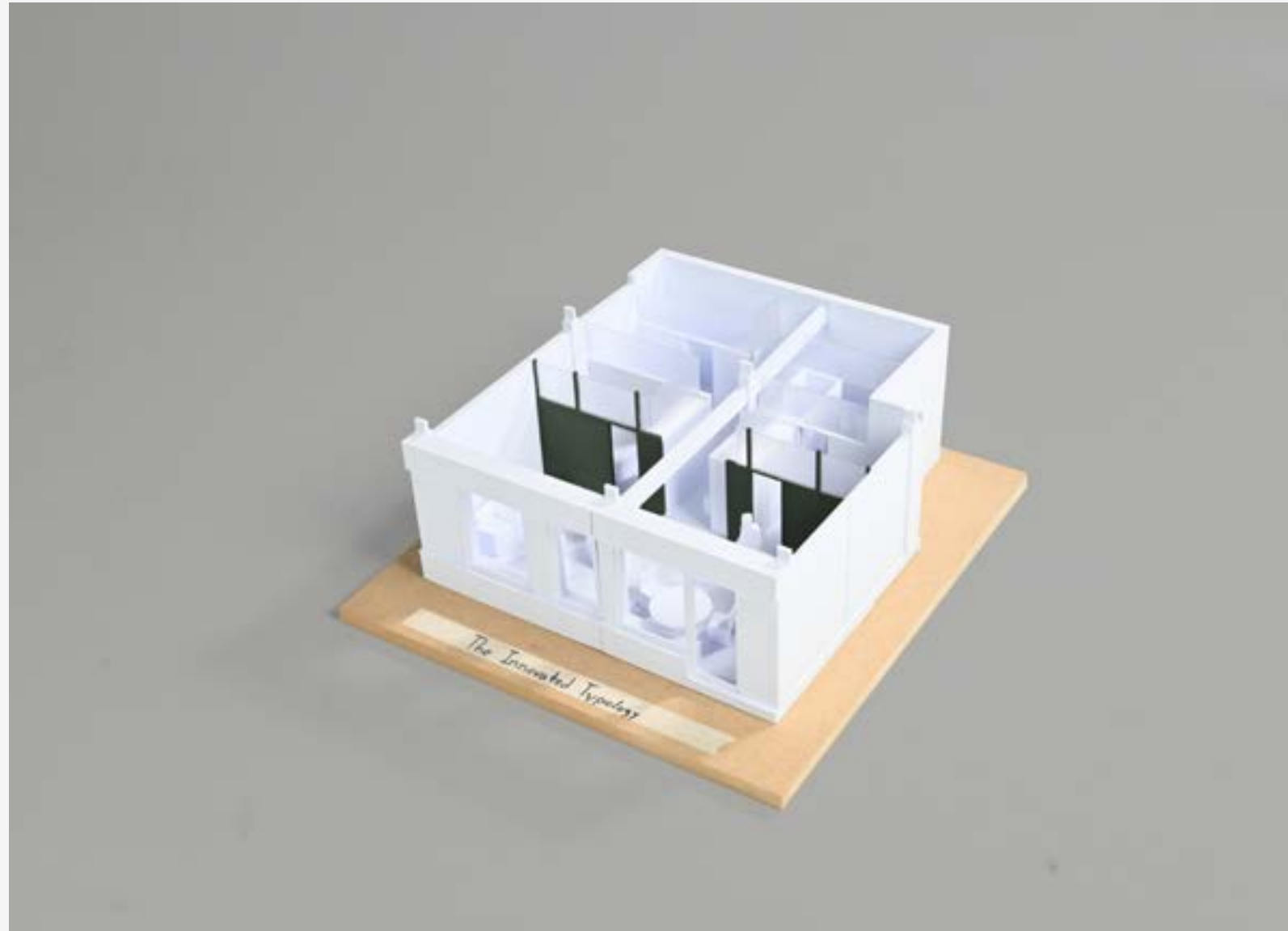
Open Living
Baseline Model

Open Living
+ Balcony
+ Second Ceiling

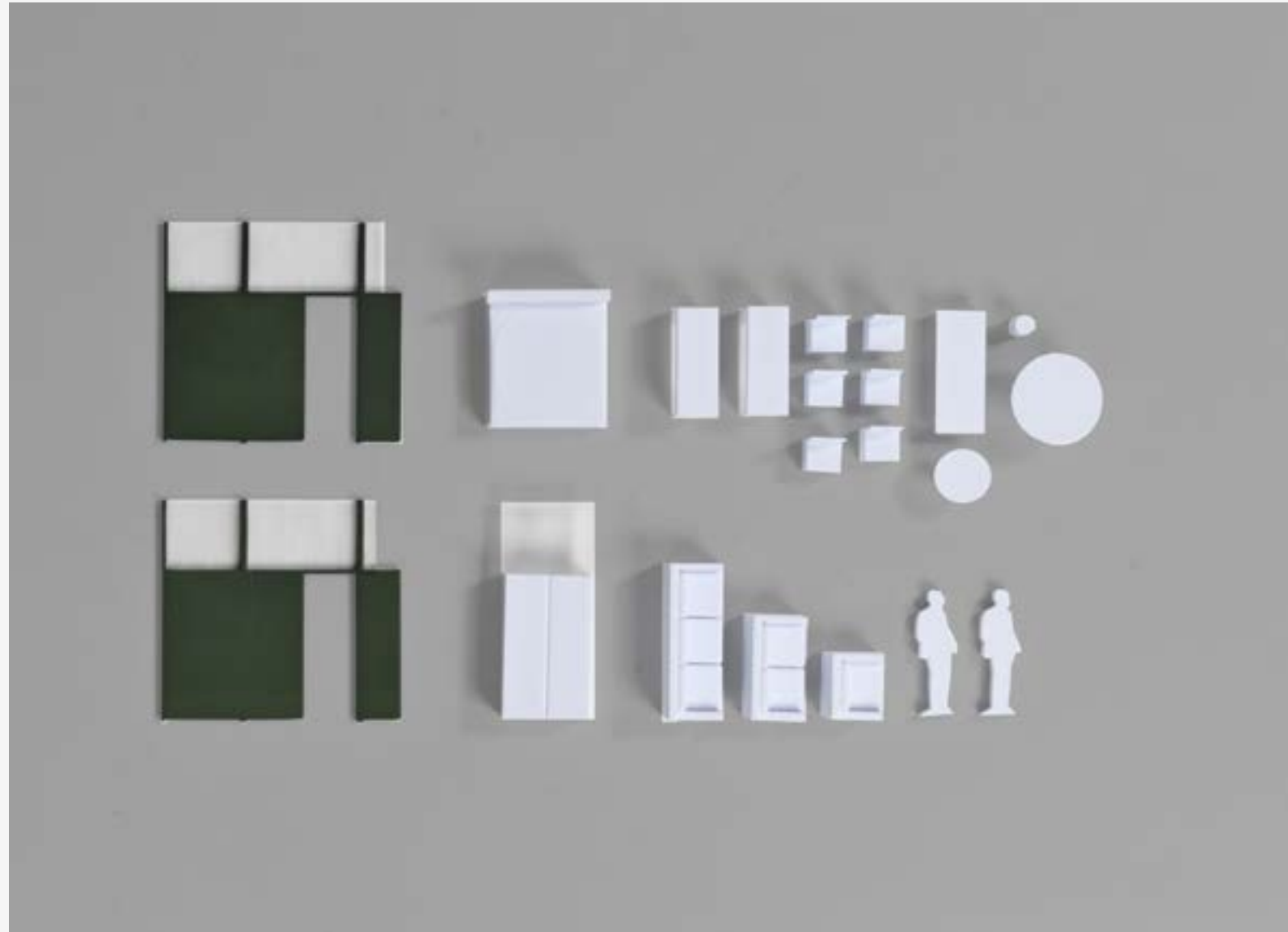
Small Intimate
+ 2x Wall
+ Curtain

Large Intimate
+ 2x Wall
+ Curtain

Capacity to Adapt



KEY ELEMENTS FOR ADAPTABILITY



Adaptable Wall

The core element, creating the long term adaptability towards household shifts and demands.

ADAPTABLE WALL



Baseline

ADAPTABLE WALL



Small Sleeping

ADAPTABLE WALL



Large Sleeping

ADAPTABLE WALL



Large Sleeping + Small Room

ADAPTABLE WALL



Small Sleeping + Small Room

ADAPTABLE WALL



Large Sleeping + Large Room

ADAPTABLE BATHROOM



Corridor use

ADAPTABLE BATHROOM



Shower use

ADAPTABLE BATHROOM



Seperate Toilet use

ADAPTABLE STORAGE



Open Transition

ADAPTABLE STORAGE

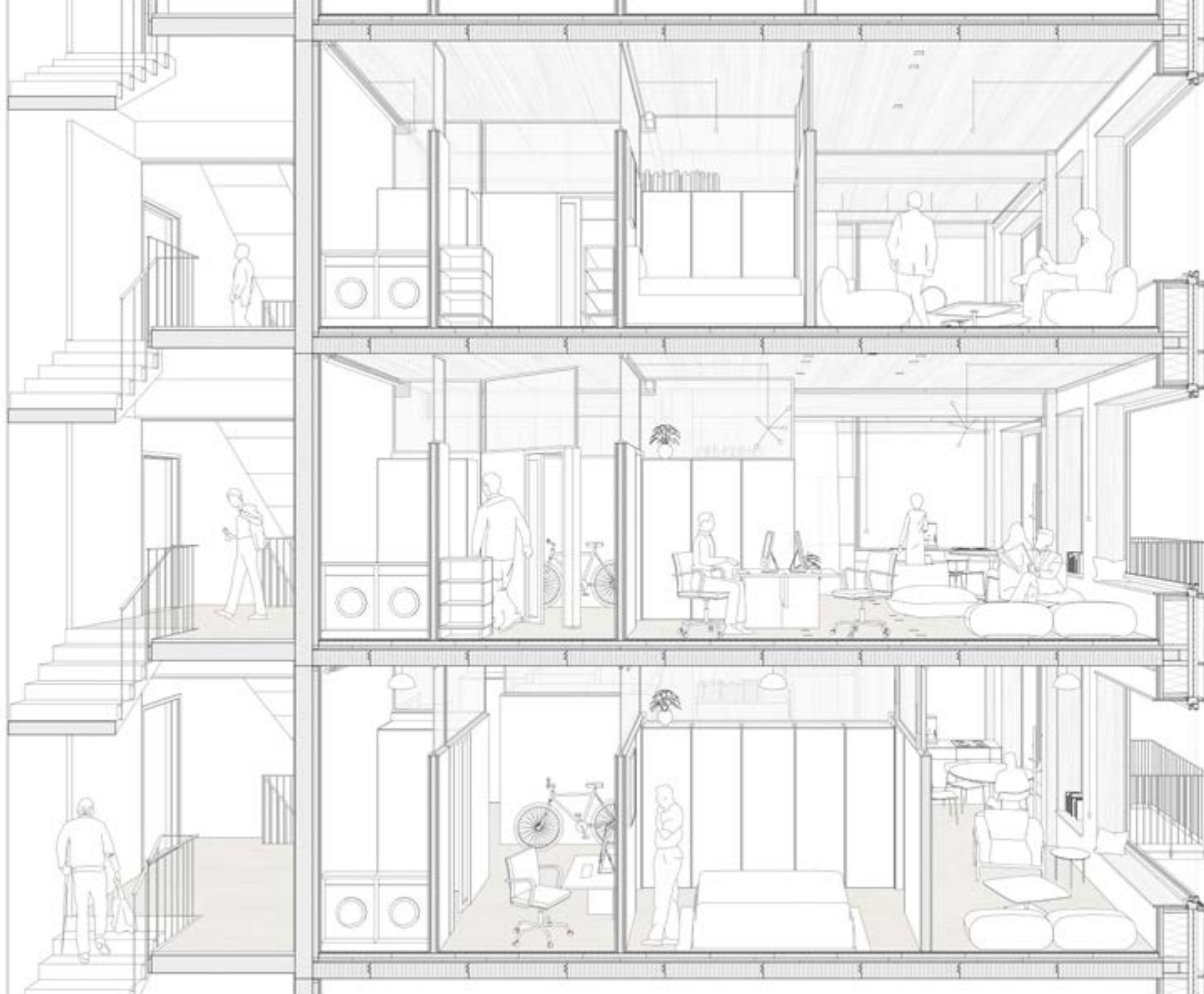


Playful Wall Element

ADAPTABLE STORAGE



Storage Seperation



Capacity to Adapt

Small Intimate

Spatial Adequat for residents preferring focused sleeping space with enlarged recreational space.

Open Living

Spatial Adequat for residents preferring open layout to spatially merge functions.

Large Intimate

Spatial Adequat for residents preferring large sleeping arrangements with less recreational space.



Open Systems

Part of the spatial structure and supply-demand alignment for evolved households.

Glue Laminated Timber

Chosen for material quality and construction focus.

Recycled Polycarbonate

Allowing light transparency and visual diffusion, creating spatial play.

Wooden Structures

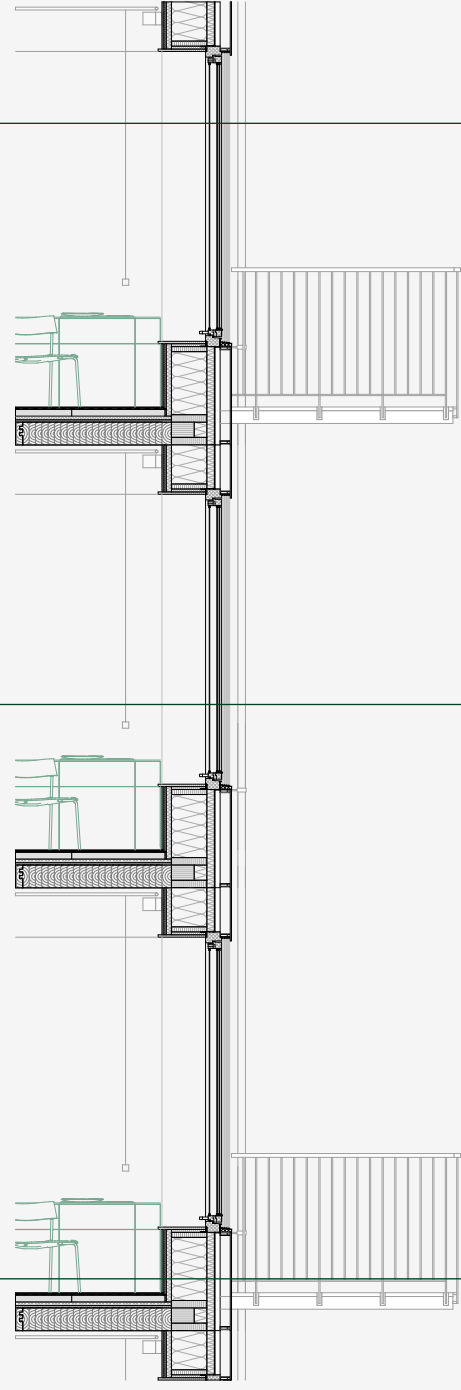
Light structures for easy adaptability throughout the residency.

Natural Plaster

High contribution to a comfortable room climate accompanied by the wooden elements.

Recycled Vinyl Flooring

Chosen for high spatial quality, low maintenance and simple to fix if repair is needed.



Polycarbonate Panels

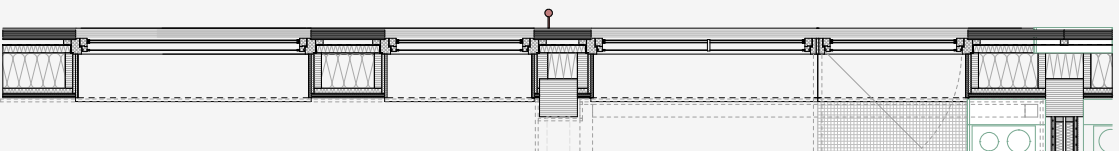
The Filter between Private and Public. Creating visual diffusion and light transparency. Movable Panels for light protection and visual play.

Steel Balcony

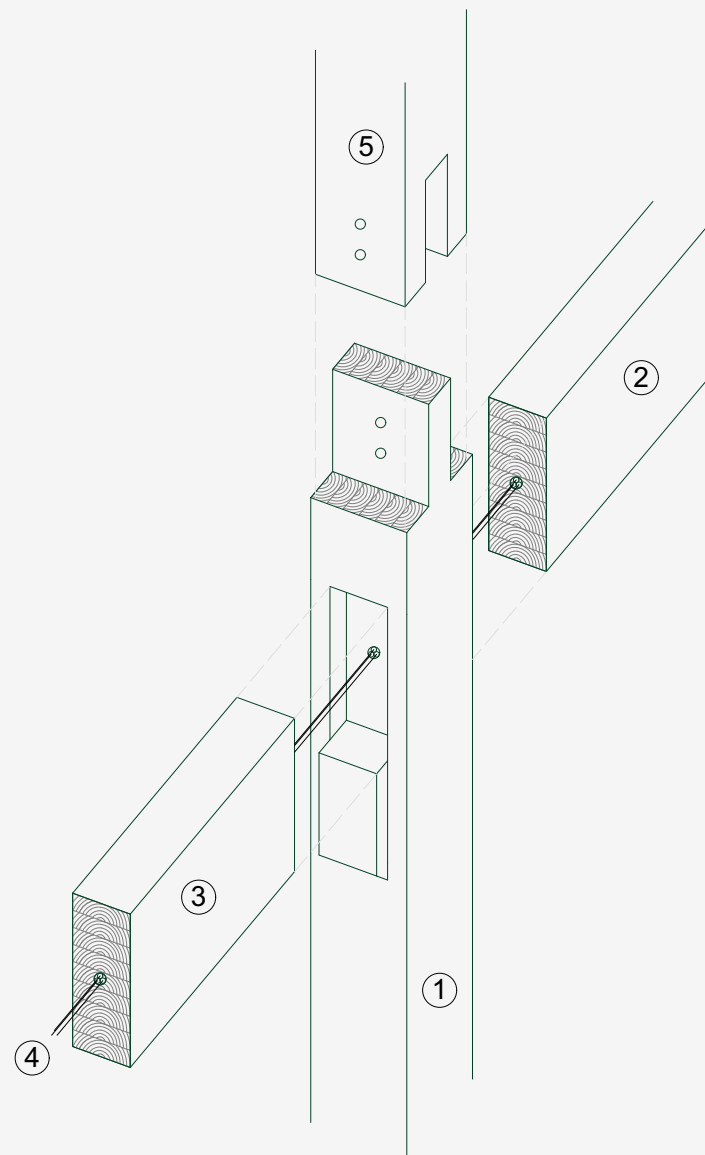
The Steel Balconies have been designed to be easily mountable, depending on the choice of the resident.

Water System

Cautious placement of water piping acts as design element to set proportions.

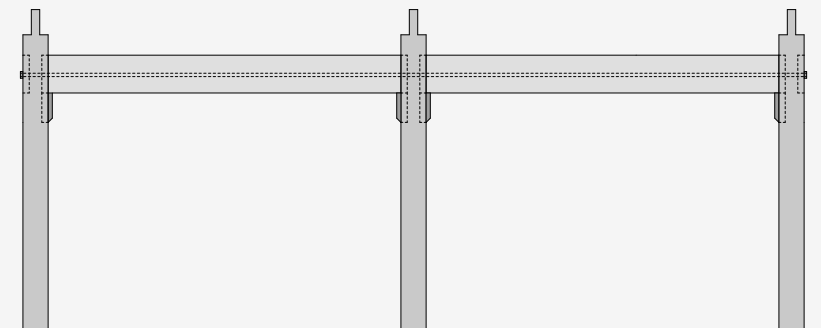


THE CRUCIAL BEAM - COLUMN CONNECTION

**GLT - Steel Tendon joint**

The solution draws on ETH Zurich-inspired steel-tendon construction, a hybrid approach that reduces material consumption by exploiting timber's compressive capacity and steel's tensile capacity within a single, efficient joint.

1. **Glue Laminated Timber Column** placed on top of the previous floor
2. & 3. **Glue Laminated Timber Beams** are being inserted between the columns
4. **Steel Tendons** are feed through the designated path, to bring tension alive.
5. **The Next Floor** can be build up



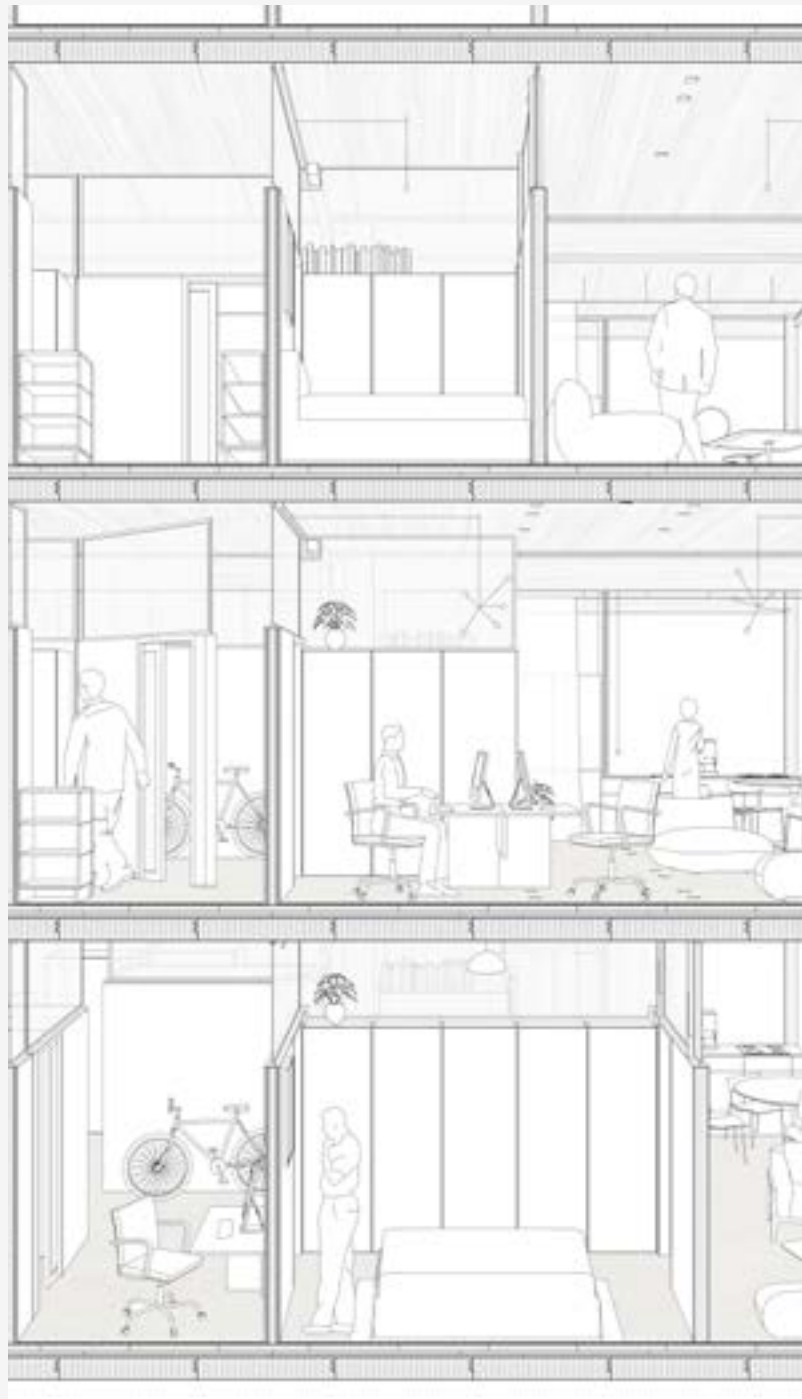
THE URBAN EXPRESSION CHANGES BY TIME



Travel of Light

The choice of Polycarbonate Panels and Devision elements allow the light traveling within the facade. Creating an adequate use of material for the function needed.





BUSINESS CASE IMPACT

ADAPTABILITY SCENARIOS



Various Scenarios

The Innovative Typology creates capacity to adapt, thus allows the resident to transform with the typology for a long term stay.

Risk Mitigation

Social Impact

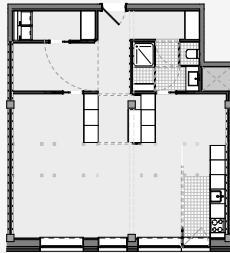
Competitive Advantage

THE DESIGN'S EFFECT ON THE BUSINESS CASE

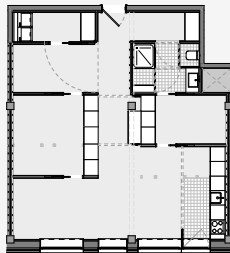
Asset



Baseline



Configured



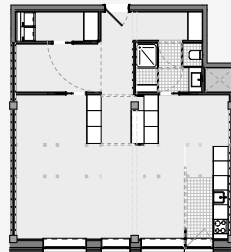
THE DESIGN'S EFFECT ON THE BUSINESS CASE

Asset

Effect



Baseline

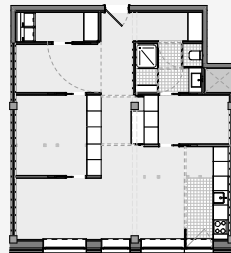


1. Supply <-> Demand alignment

2. Spatial Quality <-> Financial Assumptions alignment

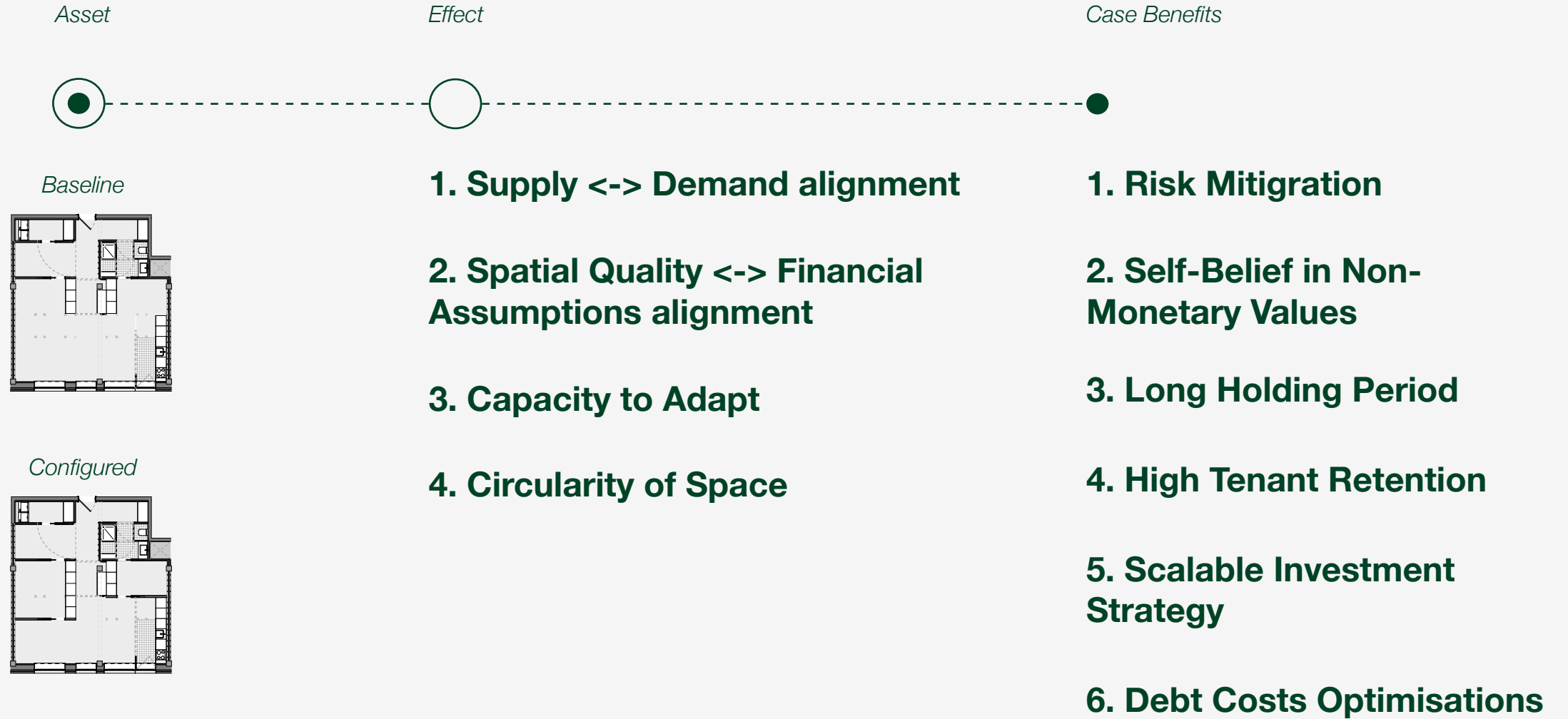
3. Capacity to Adapt

Configured



4. Circularity of Space

THE DESIGN'S EFFECT ON THE BUSINESS CASE



RESULTING IN

Specific

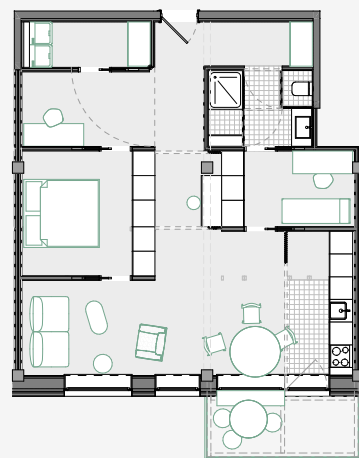
“What is the solutions impact”
“Who benefits from it?”

Supply-Demand Aligned Design

(Specific)

2,5-3,5 Room Traditional Typology

*competing with families
disproportioned
high social cost
high volume of rent*



*designed for evolved demand
+ prepared to adapt
adequat size/ rent volume
matched with targeted segment
demand*

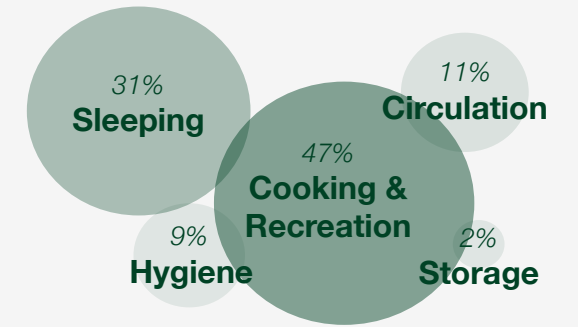
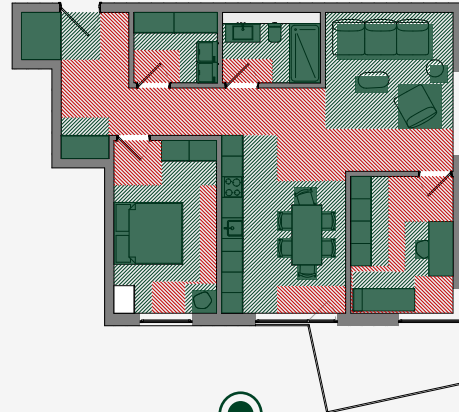
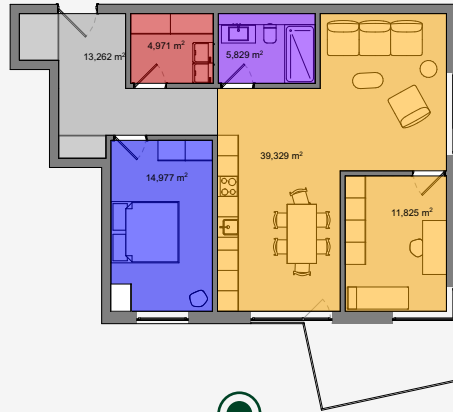
(4,5 room??)

Studio Furnished Apartment

*furnished/ detached
disproportioned
short-term
proportionally high rent*

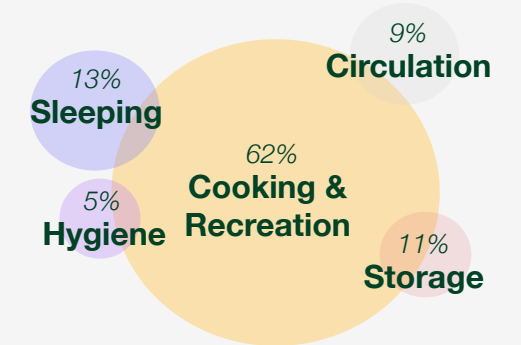
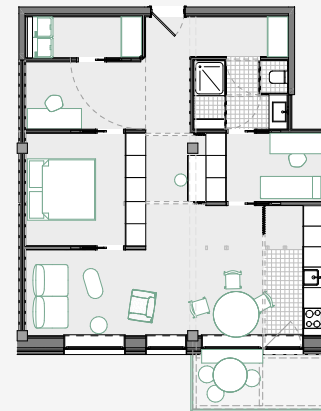
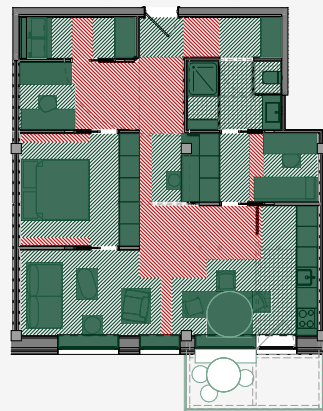
DEMAND ALLIGNED SUPPLY

Example Typology Supplied in Zurich



Application of the Handbooks integrated Framework

Evolved Typology for Zurich



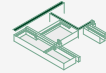
LONG TERM STABLE

Capacity to Adapt *(Long-Term-Stable)*

Adaptable Wall



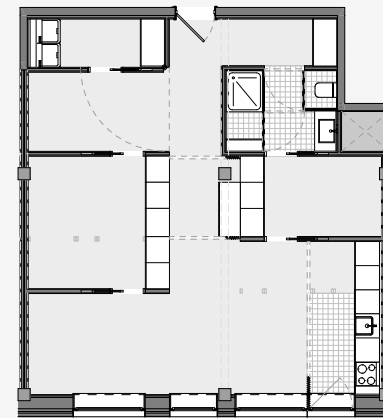
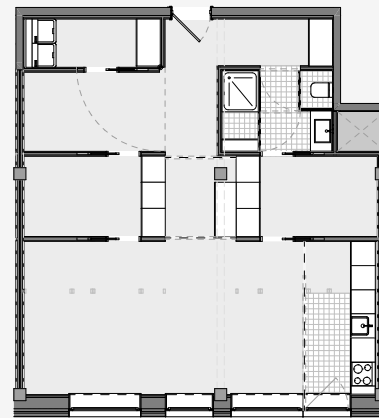
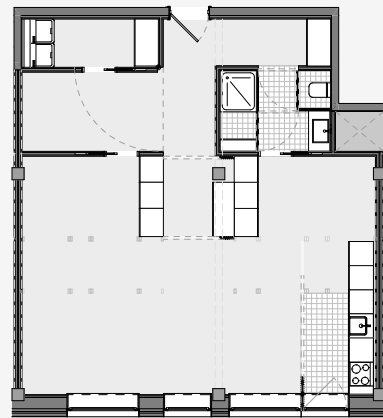
Second Ceiling



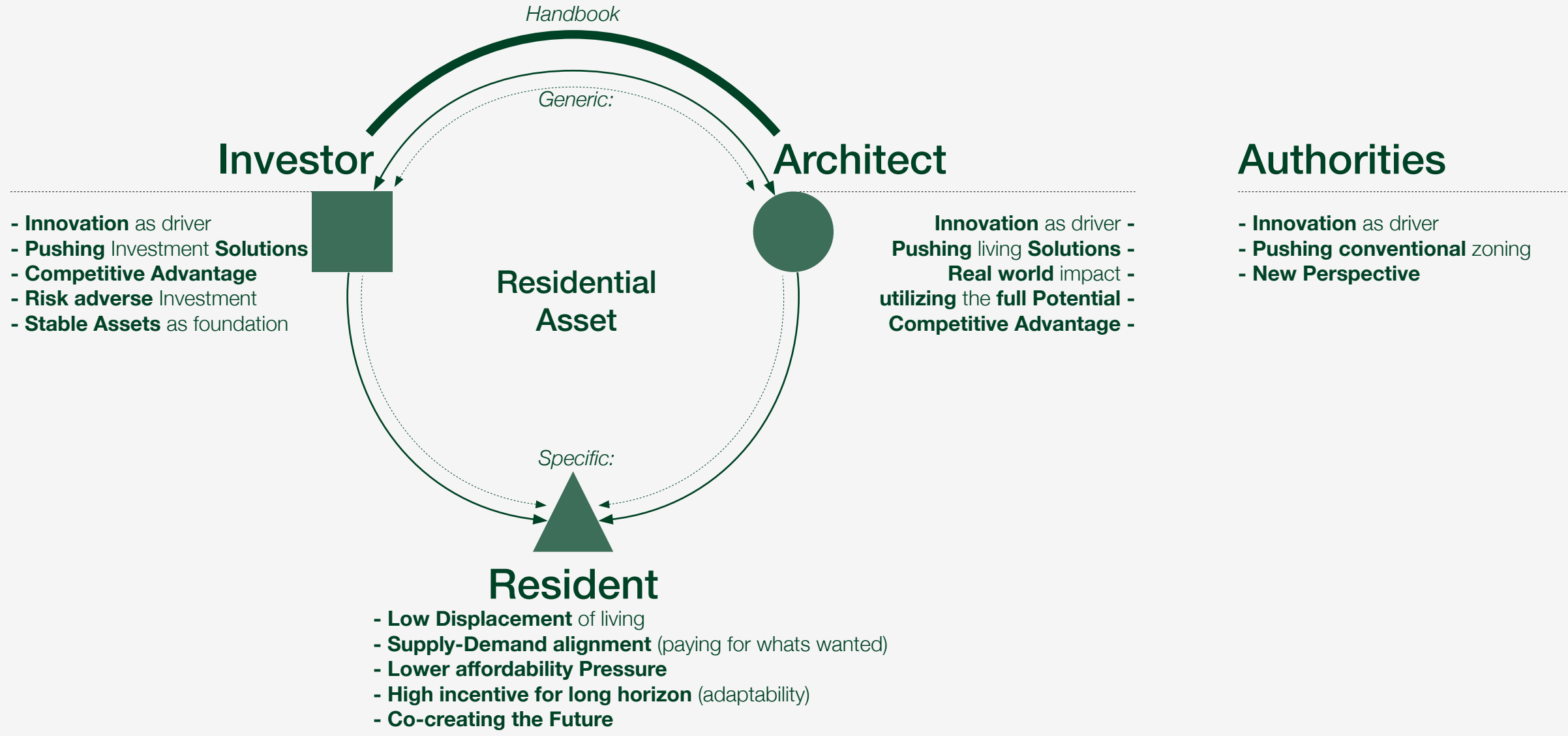
Curtain



Balcony



THE KEY BENEFITS OF THE DESIGN



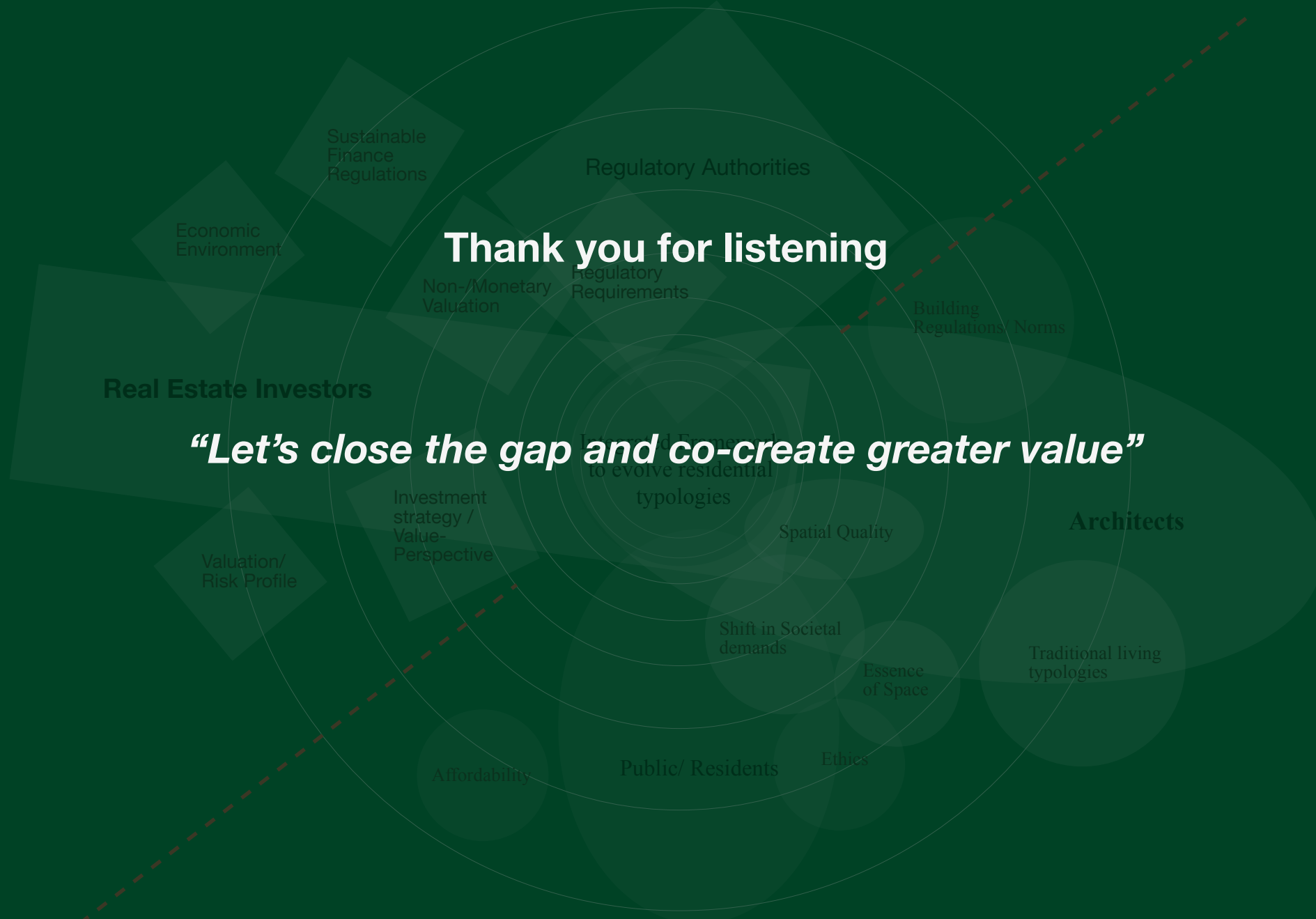




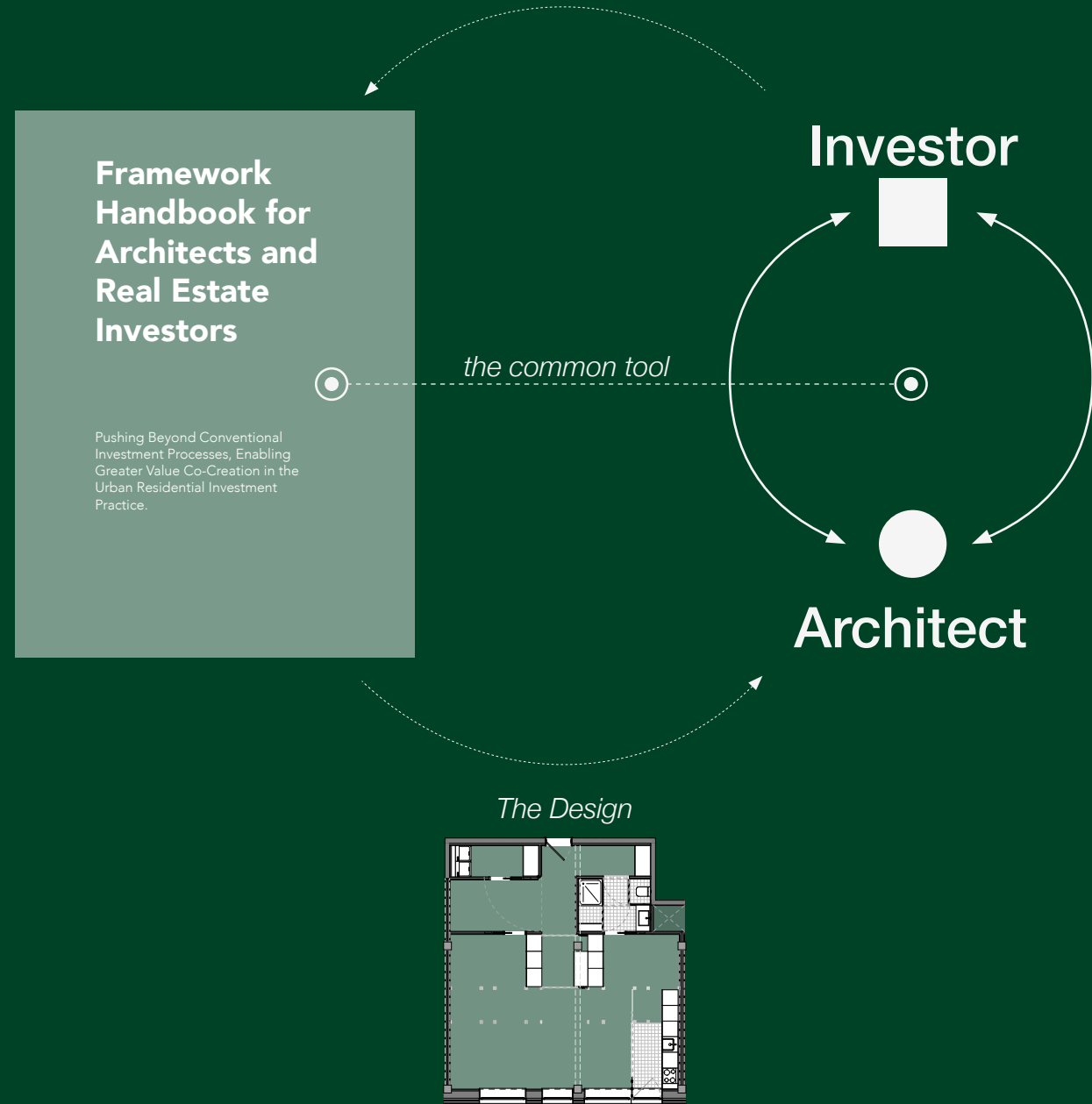
“Knowledge Production”

Thank you for listening

“Let’s close the gap and co-create greater value”



Bridging the Knowledge Gap between Real Estate Investor and Architects within the Urban Residential Investment Practice



Gordian Graf Strachwitz

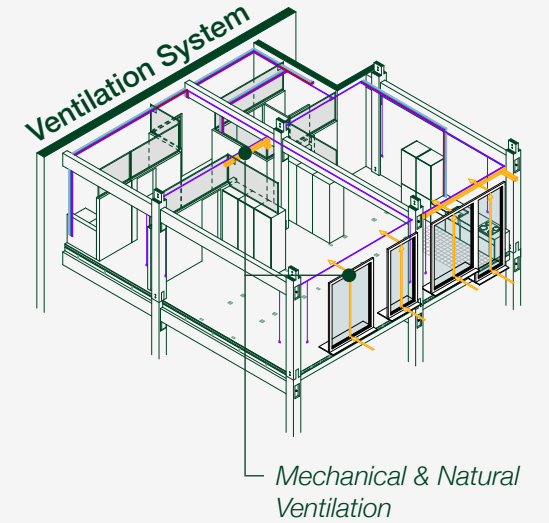
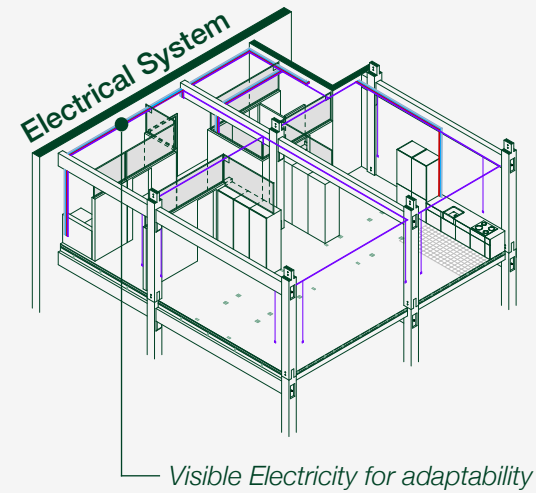
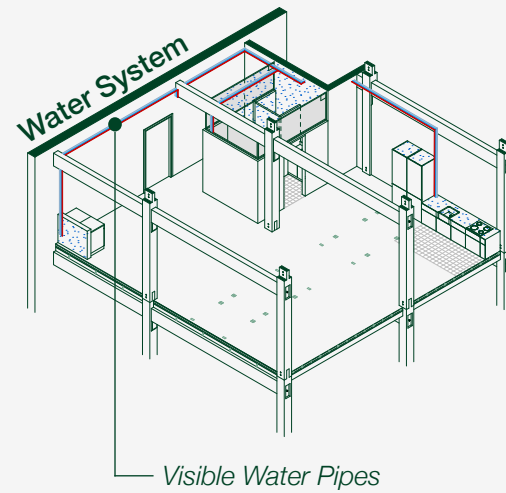
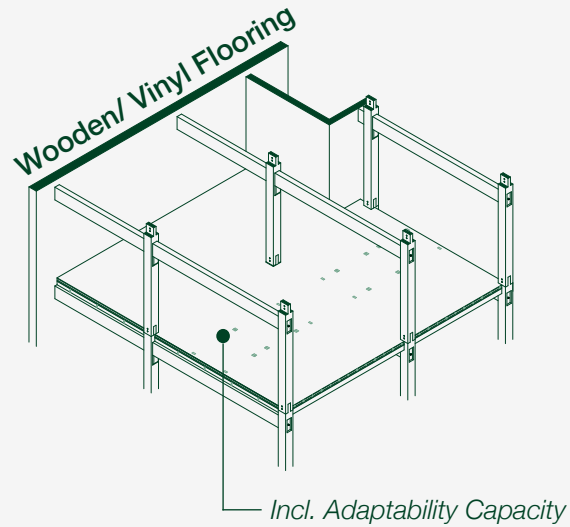
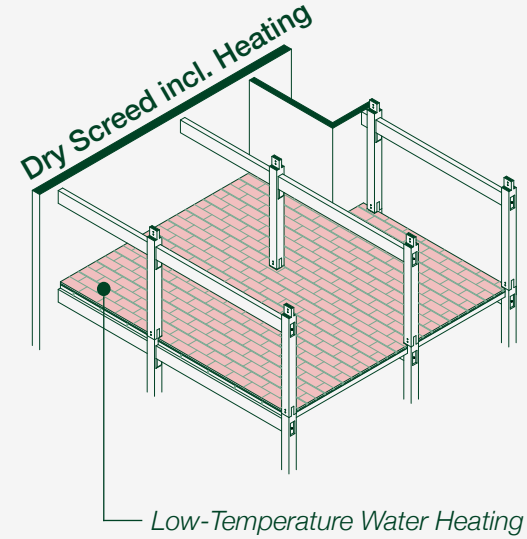
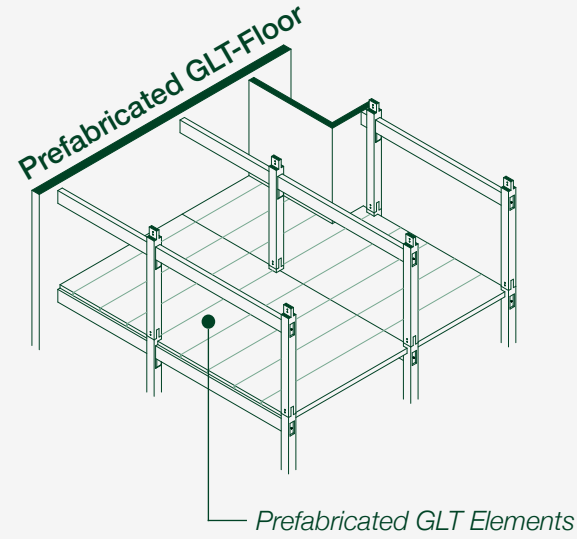
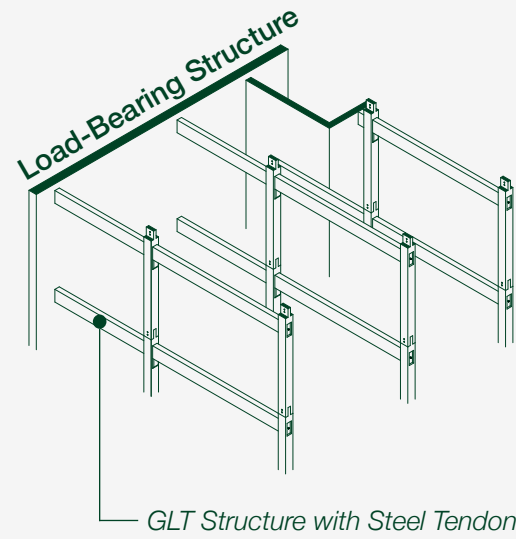
Bridging the Knowledge Gap in Typological Supply
between Real Estate Investor and Architects within
the Urban Residential Investment Practice

MSc Architecture Thesis
A4 Presentation - 19th June 2026

6143768 - Gordian B. C. J. M. Graf Strachwitz
AR4CFA010 Cross Domain City of the Future
Graduation Studio (2025/26 Q2)
1st Supervisor – Joran Kuijper
2nd Supervisor – Michaël Peeters
3rd Supervisor – Mauro Parravicini
Delegate – Thomas Verbeek



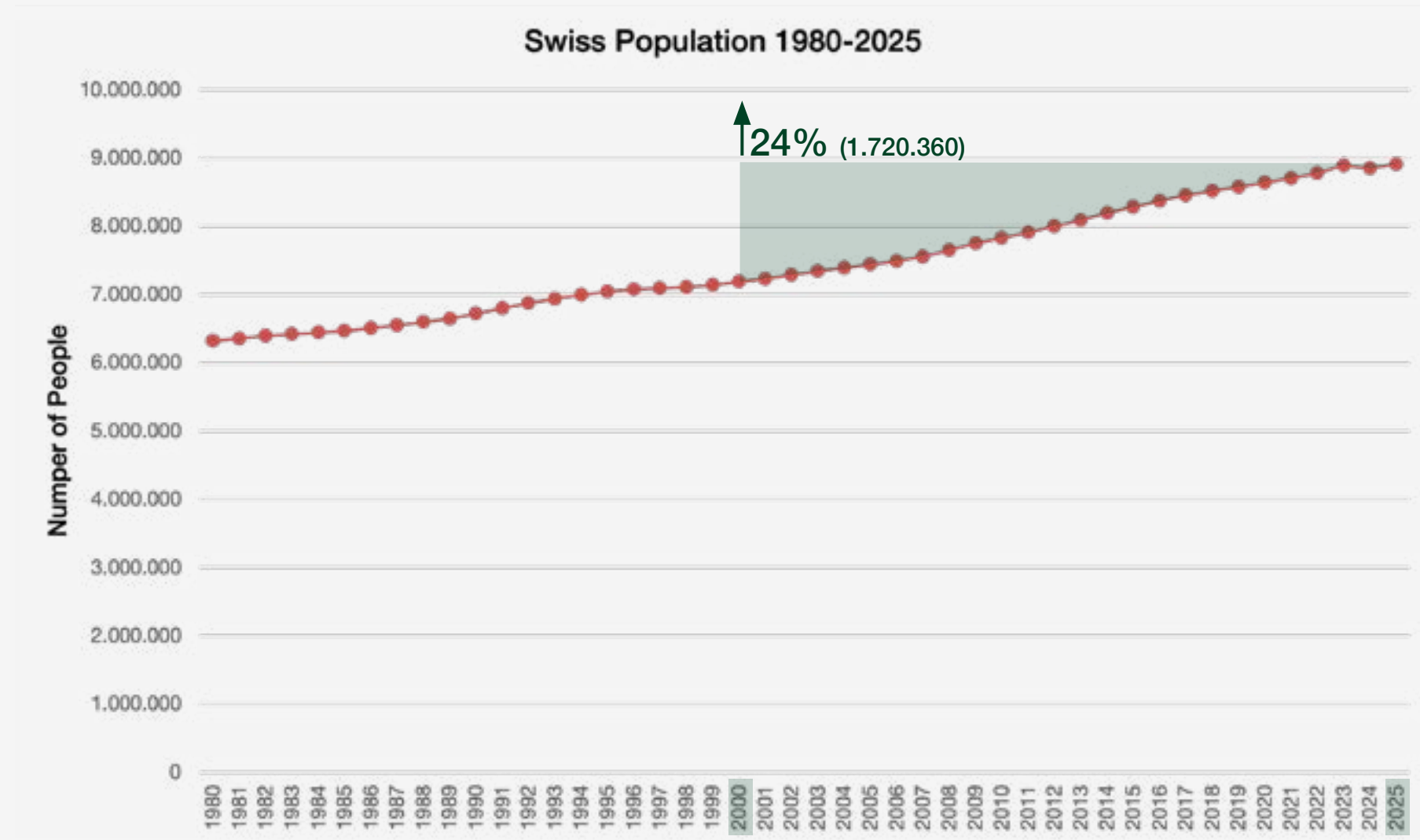
SYSTEMATIC BUILT-UP



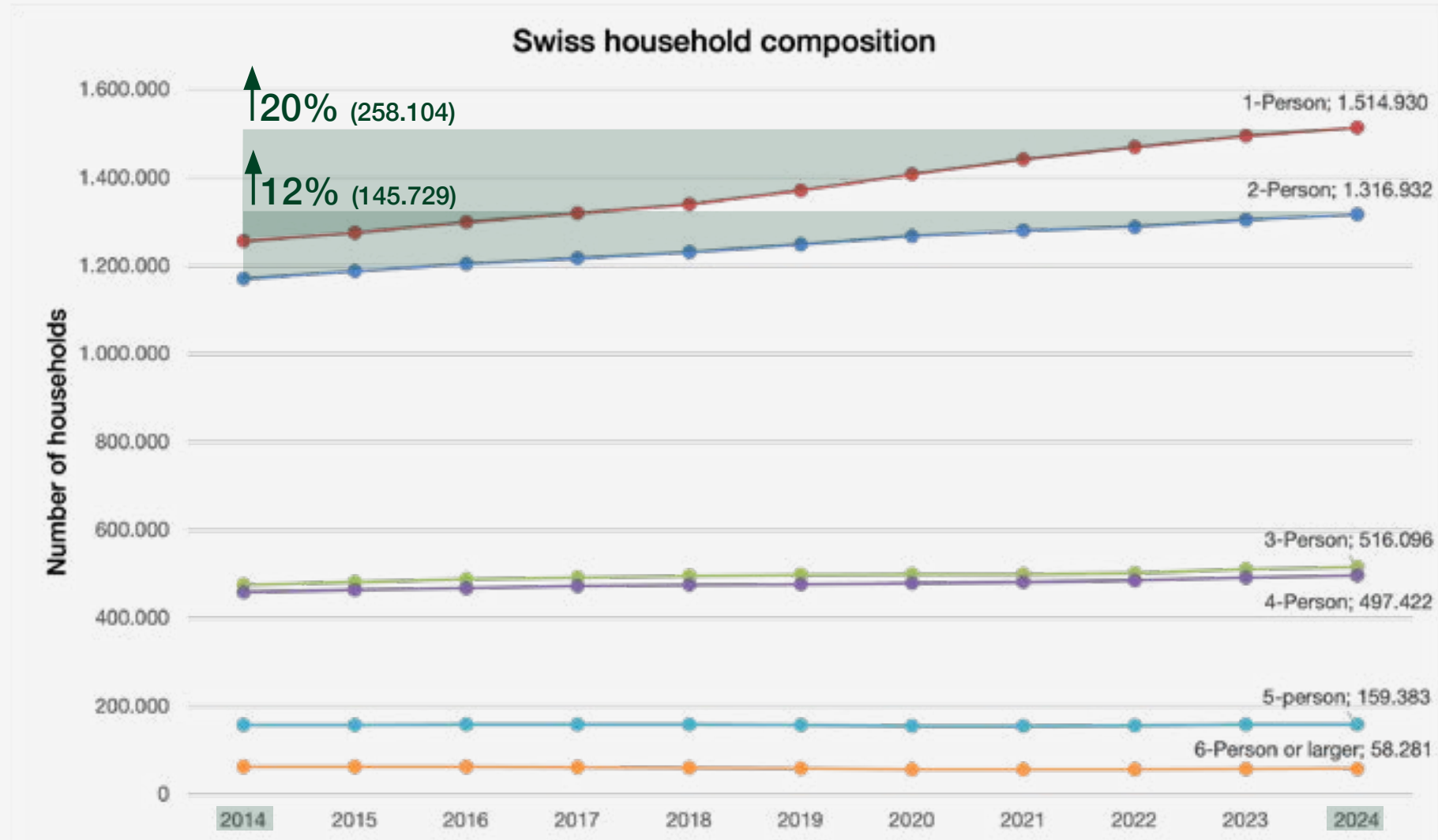
More than Systems

Systems are not only providing necessary elements for the functions, but when designed cautiously, contribute to spatial quality and proportional distribution.

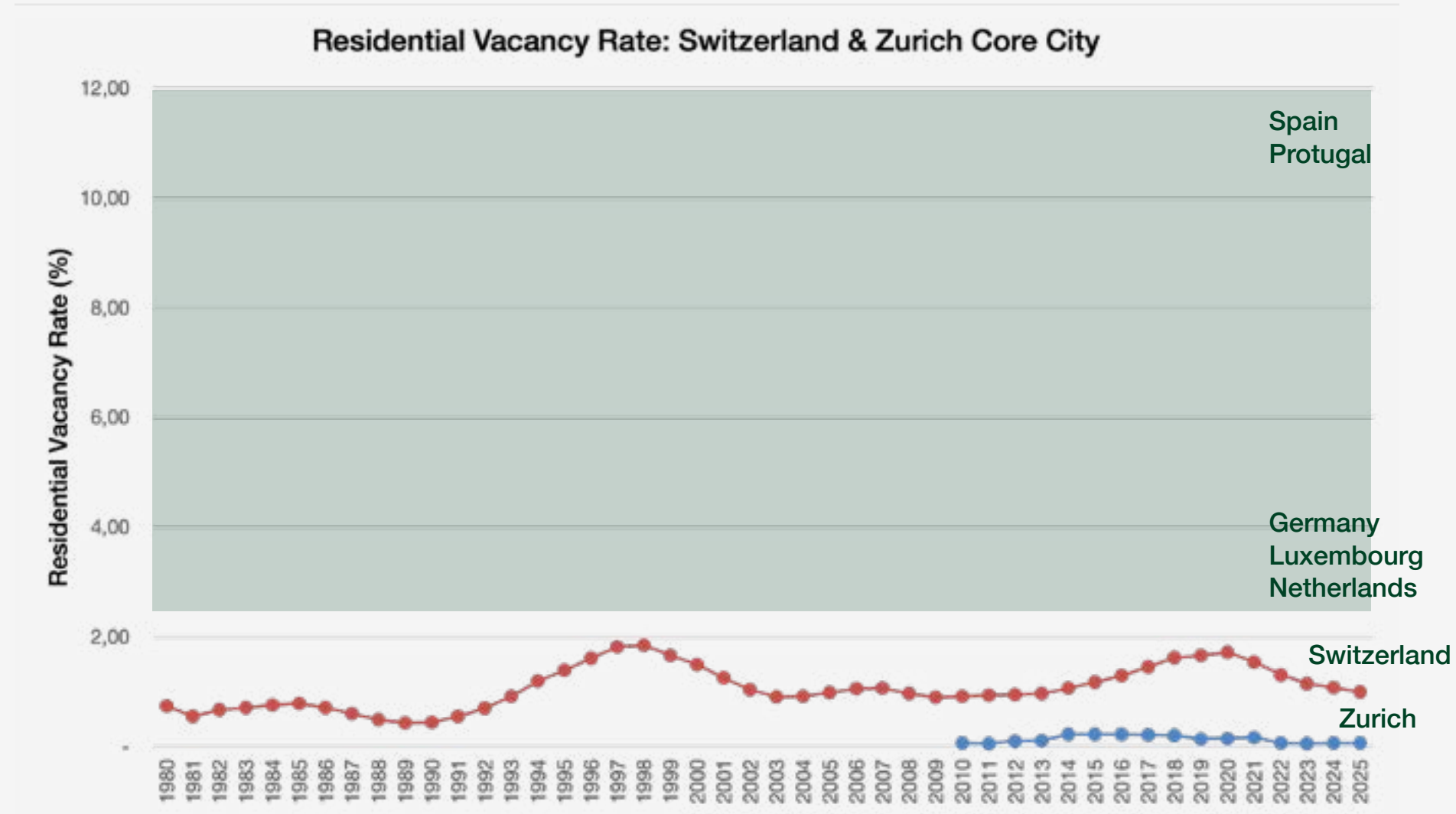
THE HOUSING CRISIS – Population Growth



THE HOUSING CRISIS – Household Composition

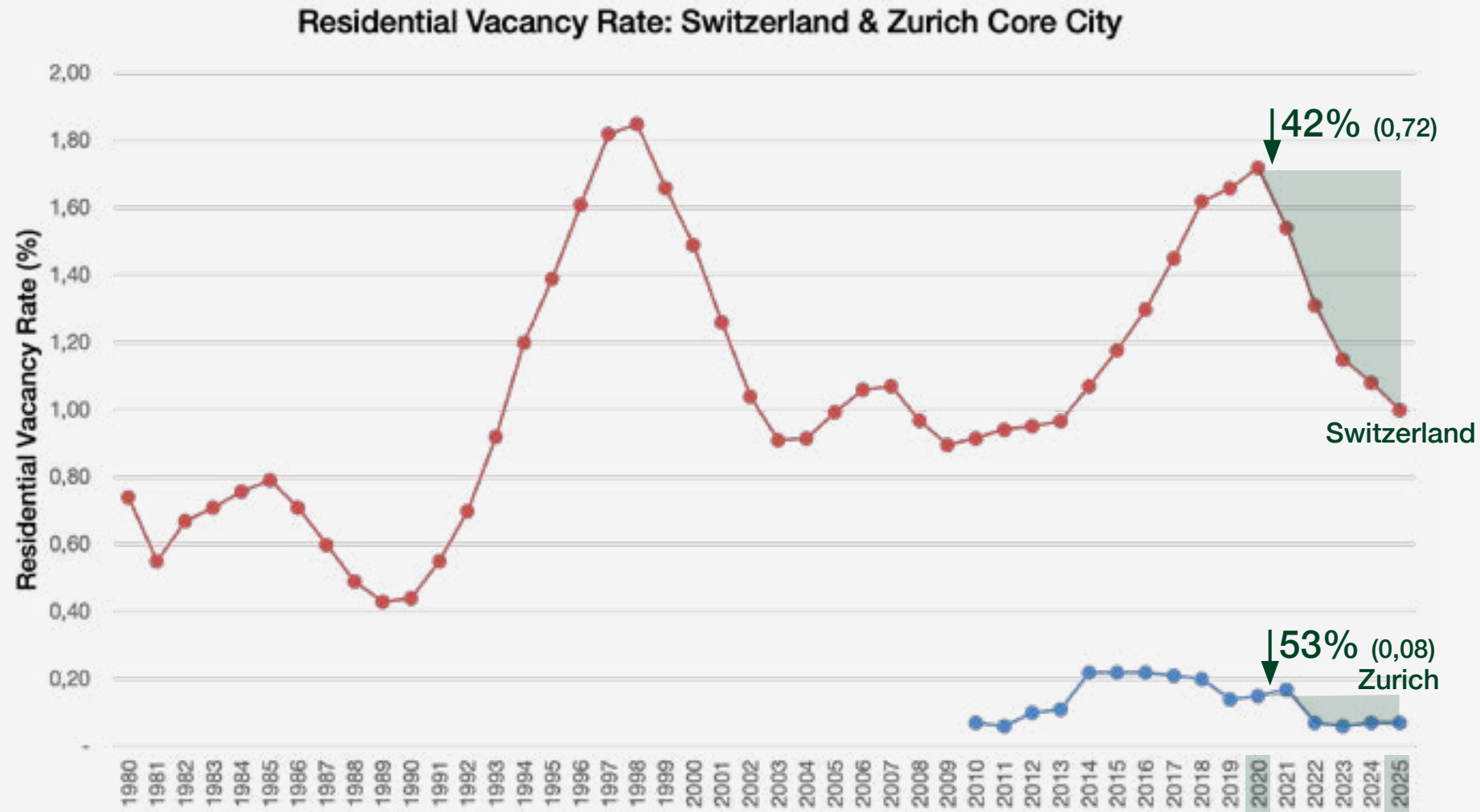


THE HOUSING CRISIS – Vacancy Rate (Switzerland)



Sources: Swiss Federal Statistical Office





THE HOUSING CRISIS – Vacancy Rate (Switzerland)



Business Model Canvas: Residential Urban-Asset

Designed for: Real Estate Investor

Version: 1

<p>Key Partners </p> <ul style="list-style-type: none"> - Architects - spatial design expertise, early-stage - Residents - demand intelligence, co-creation input - Municipal planning authorities - zoning, permits, density bonuses - Debt providers – patient capital-aligned, flexible covenants - Data providers – household demand, market analytics 	<p>Key Activities </p> <ul style="list-style-type: none"> - Demand intelligence - Supply-demand gap identification - Co-strategic design with architect - Targeted marketing - Active stewardship 	<p>Value Propositions </p> <p><u>Problem</u> Typological mismatch: oversized units, outdated layouts, inflated costs</p> <p><u>Solution</u></p> <ul style="list-style-type: none"> - Baseline typology - Spec options - Demand-aligned supply - Capacity to adapt - Long-term stability <p><u>Customer benefits:</u></p> <ul style="list-style-type: none"> - Affordability through spatial efficiency - Quality over quantity, essential space, no waste - Choice within standardization 	<p>Customer Relationships </p> <ul style="list-style-type: none"> - Online platform - Pre-leasing portal - In-person workshops - Tenant community - Transparent communication 	<p>Customer Segments </p> <p><u>Primary:</u> 1-3 person professional households: young/mid-career, urban, high mobility, quality-focused</p> <p><u>Secondary:</u> Families (3-4 persons): smaller footprint, flexibility-oriented Single professionals: efficient, well-located, affordable</p> <p><u>Selection criteria:</u></p> <ul style="list-style-type: none"> - Determined by local supply-demand mismatch - Willingness to trade size for quality + location - Long-term residency potential
<p>Cost Structure </p> <p>CAPEX: 100 - Land acquisition, due diligence, demand data, architect commission; 200 - Site preparation; 300 + 400 - Main construction; 500 - Landscape, communal spaces; 600 - Interior adaptability (movable walls, balcony options); 700 - Planning, permits.</p> <p>OPEX: Debt service; Maintenance; Platform operation; Active stewardship</p> <p>Optimization: Debt Timber construction - subsidy-eligible; Modular adaptability - reduces vacancy, extends lifecycle; Density bonus - lowers per-unit land cost</p>		<p>Revenue Streams </p> <p><u>Primary:</u> Residential & Commercial rent</p> <p><u>Secondary:</u> Subsidies; Density bonus value; Rental premium</p> <p><u>Long-term:</u> Exit value appreciation; Refinancing gains</p>		

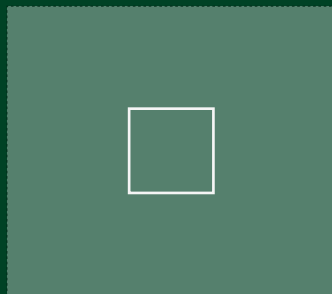
THE RESEARCH QUESTION

Generic

“trying do identify the crucial gap”

“how can we do this”

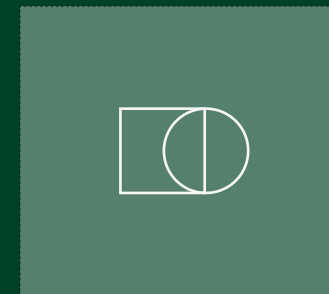
*How can an integrated framework,
enable the development of residential typologies that align
supply with actual household demand,
while maintaining spatial quality and ensure long-term asset
stability for real estate Investors in Swiss urban contexts?*



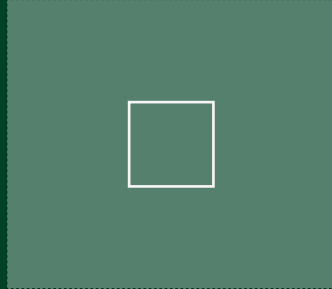
Investor's
Value-Perspective



Architect's
Design Strategy



Integrated
Collaboration



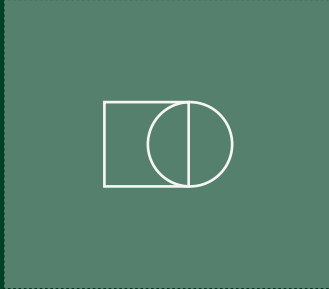
Investor's
Value-Perspective

*How must Investors valuation-
perspective evolve,
to assess typological strategies,
balancing supply-demand alignment
with financial feasibility for
long-term asset stability?*



**Architect's
Design Strategy**

What spatial criteria and strategies, enable Architects to align residential typological supply with shifting household demand, while maintaining essential spatial quality?



**Integrated
Collaboration**

*How can an integrated framework,
strengthen Architect-Investor
collaboration to co-create value?*