

NOS NIEUWS • ECONOMIE • 17-02-2021, 16:06

Schreeuwend tekort aan woningen, wat moet eraan gedaan worden?



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Woningvoorraad: Nederland komt dit decennium bijna een miljoen woningen tekort



redactie De Hypotheek • Leestijd: 5 min • Laatste update: 14-10-2021



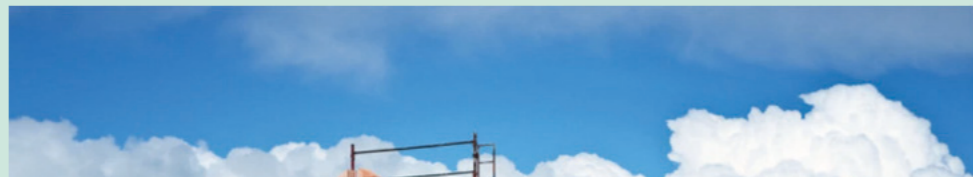
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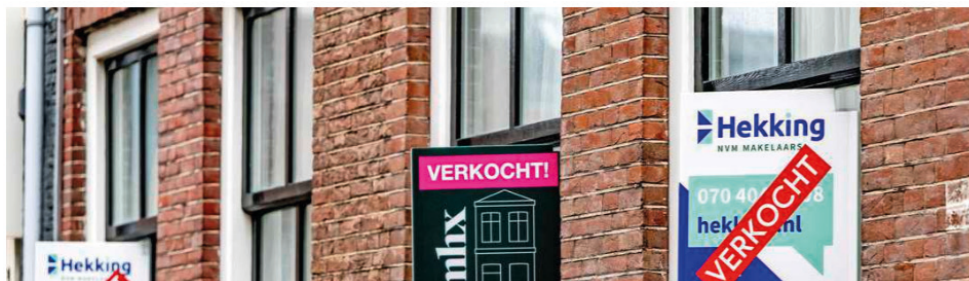
'Woningtekort wordt komende jaren alleen erger'

10 feb. 2022 in GELD



Lees voor

UTRECHT (ANP) - Het tekort aan woningen in Nederland loopt waarschijnlijk nog zeker drie jaar op. Dat denken deskundigen van adviesbureau Capital Value. Ze wijzen erop dat het aantal huishoudens groeit, terwijl er de afgelopen jaren te weinig bouwvergunningen zijn verleend. Het bouwen van nieuwe huizen duurt vaak meerdere jaren.



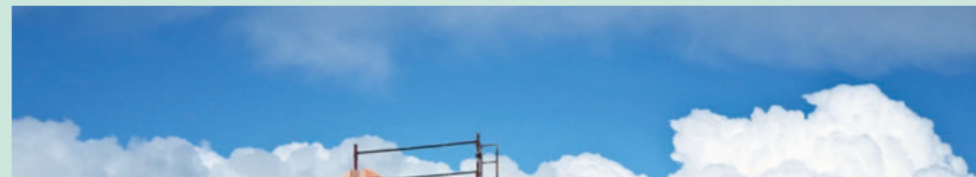
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Erfgoedvereniging: sloop oude ministerie van Sociale Zaken niet

26 oktober 2021, 14:53 • 2 minuten leestijd



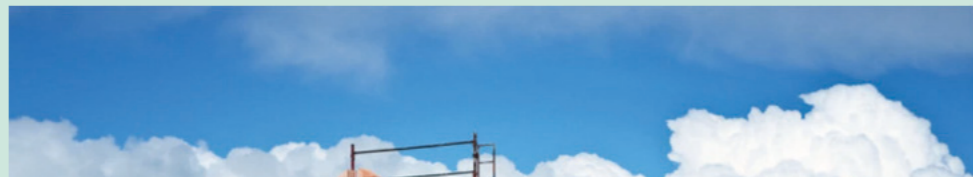
Het voormalige ministerie van Sociale Zaken
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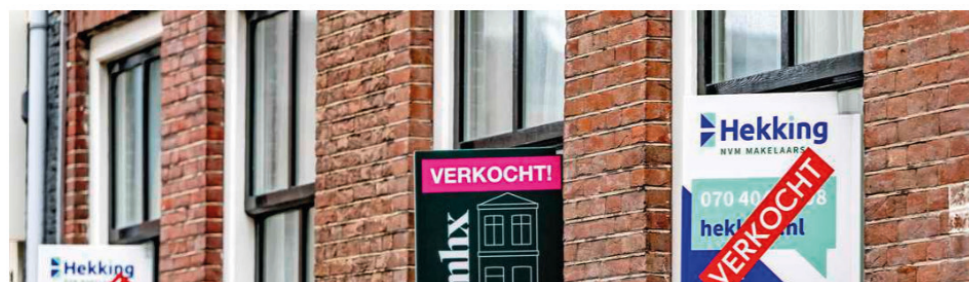
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© Getty Images

Vanaf 2023 verplicht om te renoveren naar een energielabel D: wat betekent dit? En hoeveel kost het?

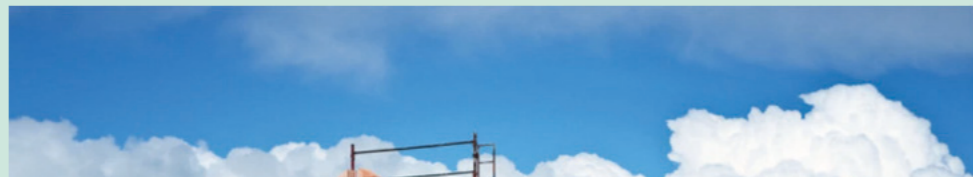
LIVOS Of je nu een bestaande woning koopt, erft of geschonken krijgt, vanaf 2023 moet je ervoor zorgen dat het pand dan binnen de vijf jaar

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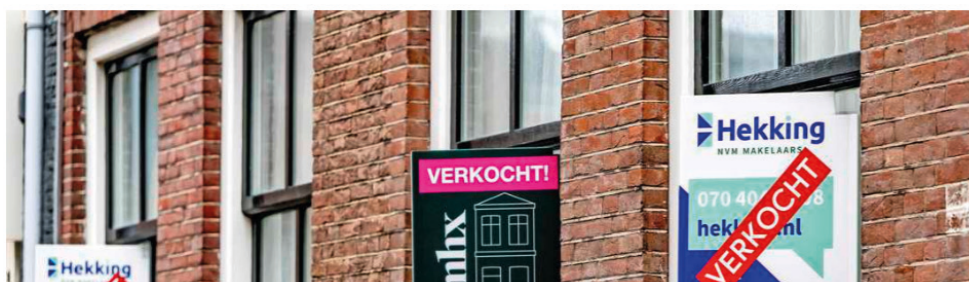
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10 feb. 2022 in GELD

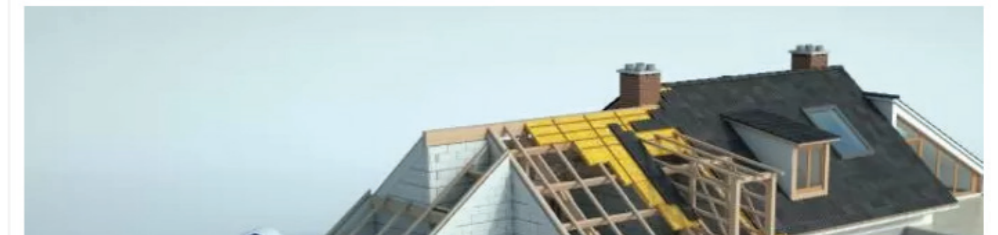


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HOME > FINANCE > DE DRIE GROTE BANKEN PLEITEN SAMEN VOOR GROTE RENOVATIE VAN WONINGMARKT

Economen van ING, ABN Amro en Rabobank pleiten voor 'grondige renovatie van de woningmarkt'

ANP
15 jun 2022



Foto: Sem van der Wal/ANP

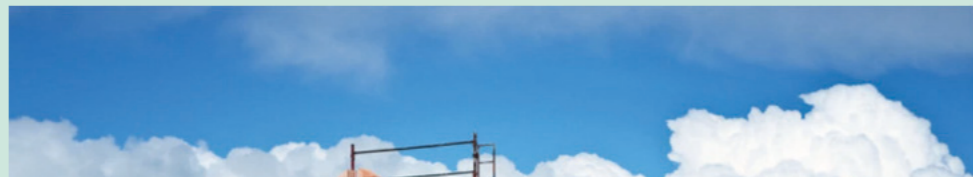
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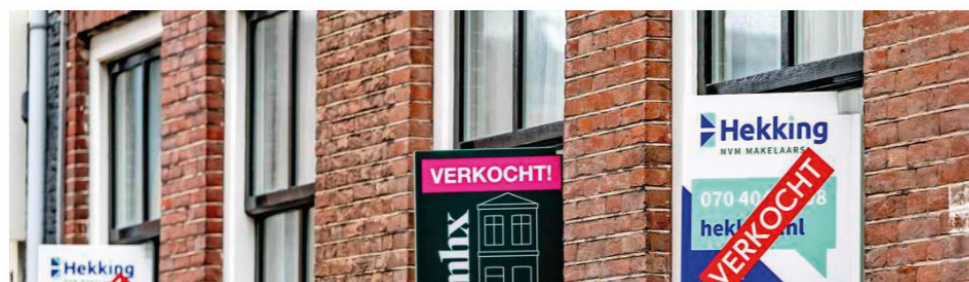
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Economen van ING, ABN Amro en Rabobank pleiten voor 'grondige renovatie van de woningmarkt'

Met flexwoningen en transformatie naar 100.000 woningen per jaar

DOOR GERARD VOS IN POLITIEK EN ECONOMIE - 14 JUNI 2022

TAGS: 'TASKFORCE VERSNELLING TIJDELIJKE HUISVESTING', FLEXWONINGEN, TRANSFORMATIE, UITGELICHT



Onderdeel van de groei naar 100.000 woningen per jaar is de realisatie van 15.000 flexwoningen en 15.000 woningen door transformatie. Er komt er een 'Taskforce versnelling tijdelijke huisvesting' die in combinatie met € 100 miljoen aan middelen voor meer slagkracht zorgt.

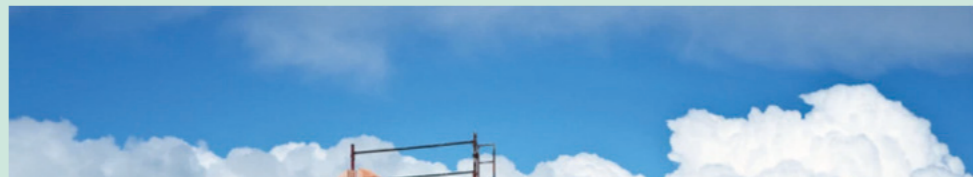
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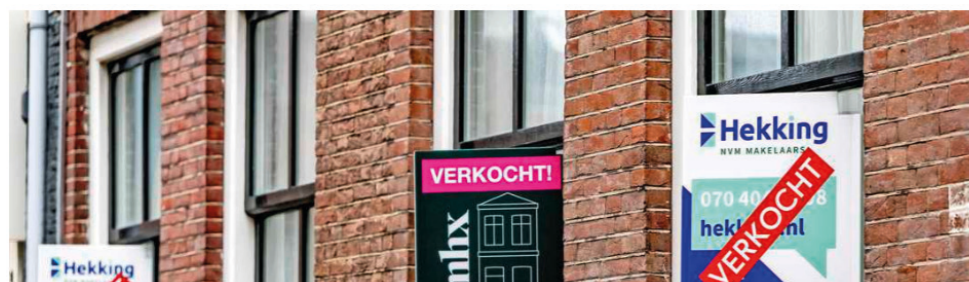
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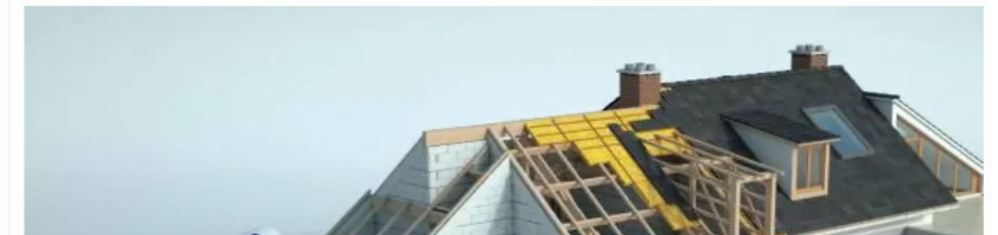


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Economen van ING, ABN Amro en Rabobank pleiten voor 'grondige renovatie van de woningmarkt'

Met flexwoningen en transformatie naar 100.000 woningen per jaar

DOOR CEDRICK VOS IN DE NEDERLANDSE ECONOMIE 41 JUNI 2022



Studio040 | Alain Heeren

Robin van Wechem en Ilse van Knegsel 21 juni 2022 - 15:56 uur 23 juni 2022 - 09:55 uur

Herbestemming kerken in stad gaat zeer traag en moeizaam

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'Woningtekort komende jaren

10 feb. 2022 in GELD

Lees voor

UTRECHT (ANP) - Het tekort aan woningen in Nederland, deskundigen van adviesbureau Capital Value. Ze wijzen op het afgelopen jaren te weinig bouwvergunningen zijn verspreid over de komende jaren.



NIEUWS

Woningtekort: is flexibel en duurzaam bouwen de oplossing?

17 juni, 14:00 • 4 minuten leestijd



Energiezuinige patiowoningen voor senioren in Zwolle voor DeltaWonen © Hodes Huisvesting

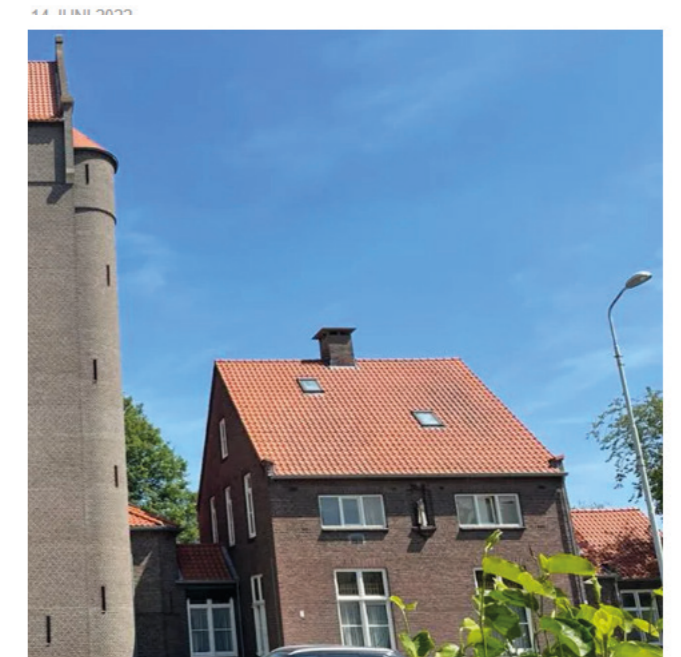
Erfgoedvereniging: sloop en herbestemming van Sociale Huurwoningen



LEIDEN SAMEN VOOR GROTE RENOVATIE VAN WONINGMARKT

G, ABN Amro en Rabobank ondersteunen digitale renovatie van de

transformatie naar 100.000



Studio040 | Alain Heeren

Robin van Wechem en Ilse van Knegsel 21 juni 2022 - 15:56 uur 23 juni 2022 - 09:55 uur

Herbestemming kerken in stad gaat zeer traag en moeizaam

MANAGING METABOLISM

enabling re-adaptive housing possibilities
in the Netherlands




TU Delft
BK Bouwkunde

MSc graduation thesis
P5 Presentation - June 30th 2022

Author
S.I.A. (Shajwan) Jabar
5229960

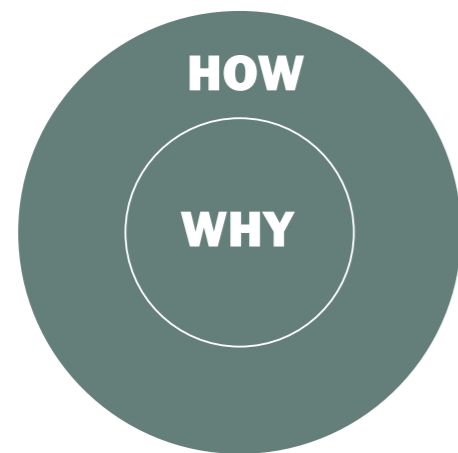
Supervisors
1st mentor
2nd mentor
Internship

Dr. Ing. G.A. van Bortel
Ir. L.G.K Spoormans
Ir. L van Dam MBA

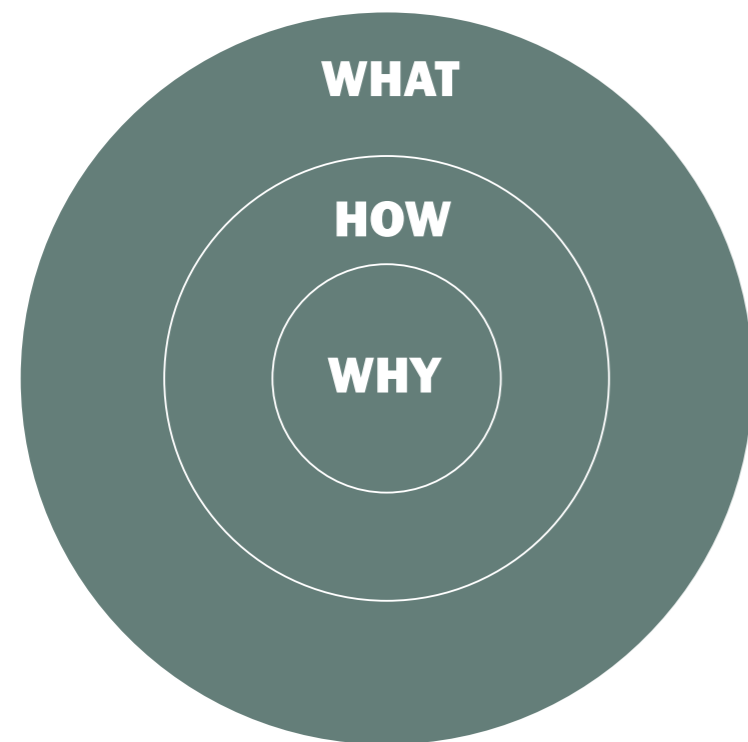
Delegate of board examiners
Ir. F.W.A Koopmans



WHY introduction



WHY introduction
HOW research questions
methodology



WHY

introduction

HOW

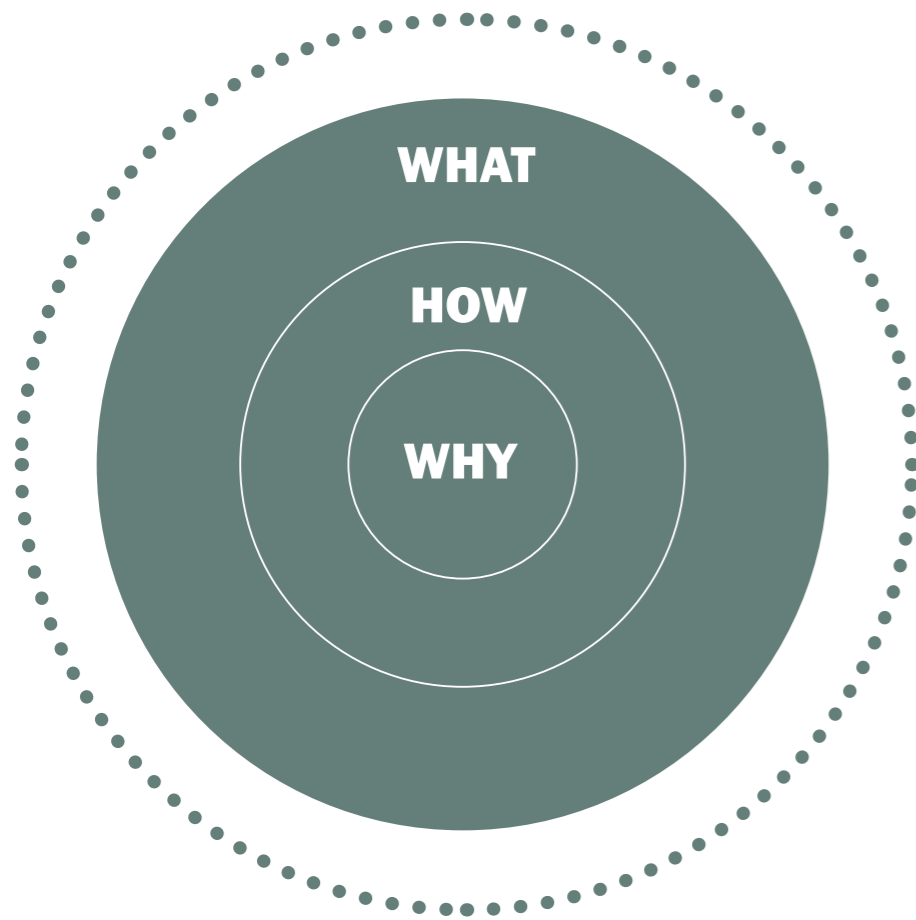
research questions

methodology

WHAT

findings

conclusions



WHY

introduction

HOW

research questions

methodology

WHAT

findings

conclusions

limitations

recommendations



INTRODUCTION

WHY

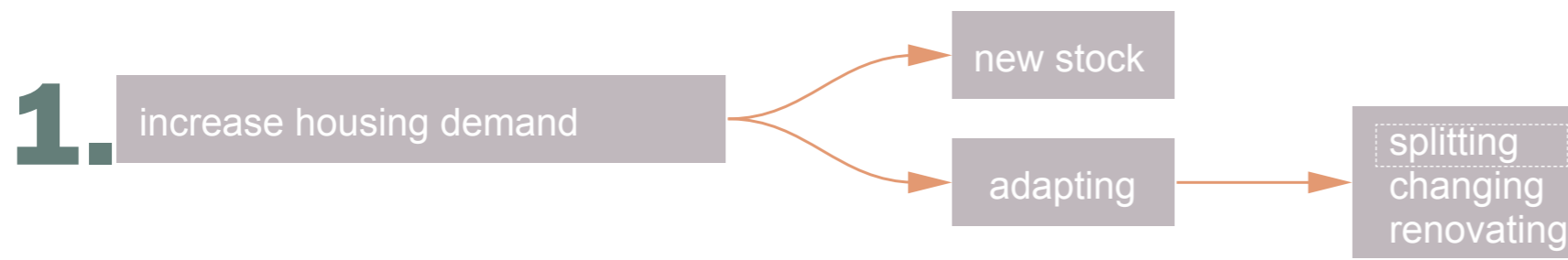
1. increase housing demand

1.

increase housing demand

new stock

adapting



New housing stock 2020



■ New construction ■ Additional new ■ Withdrawn

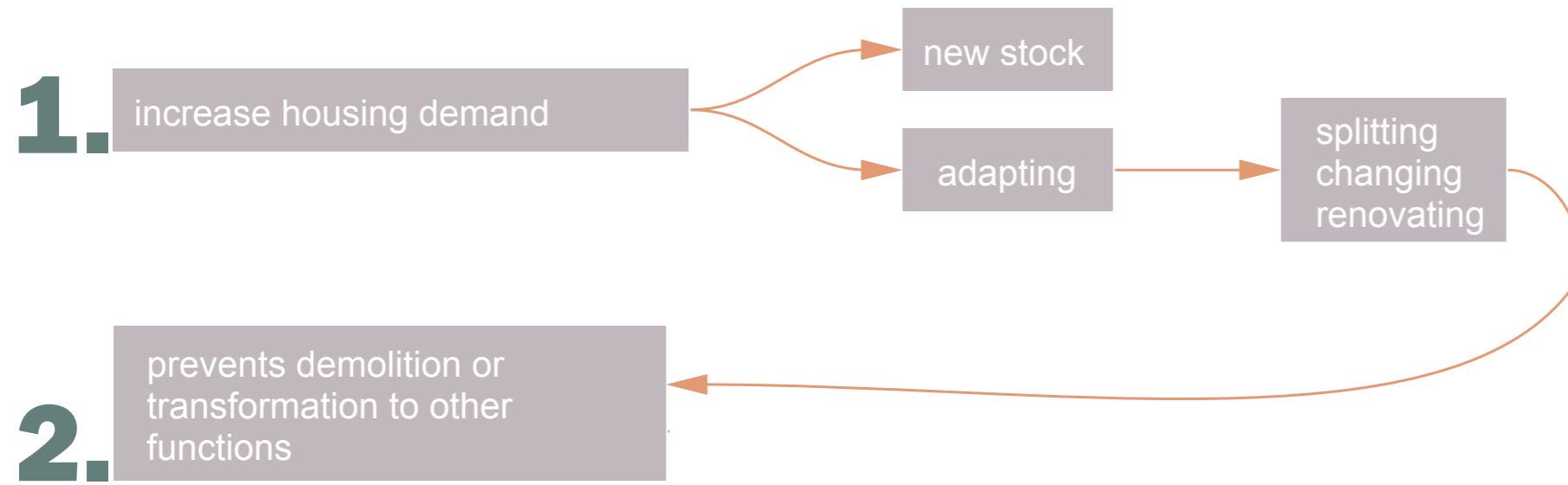
New housing stock due adaptivity in 2020
(data from CBS, 2021)

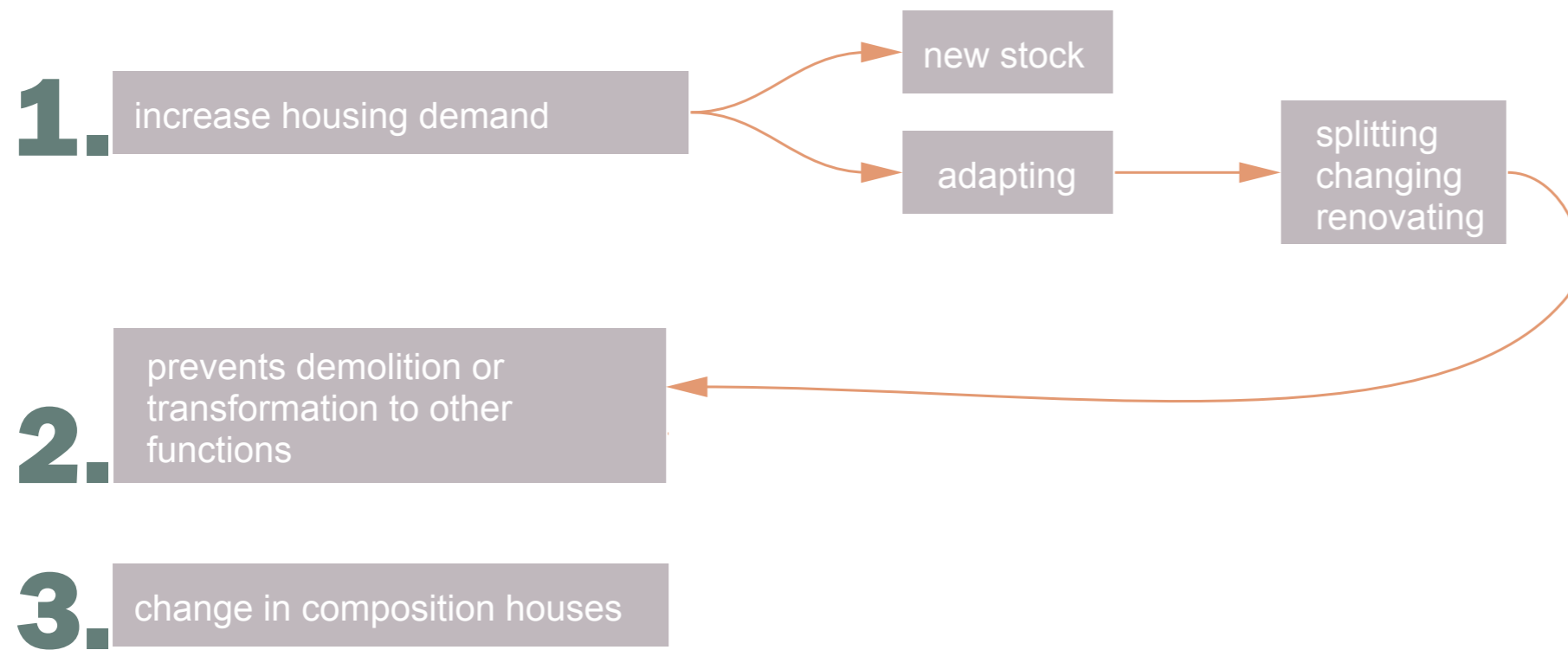
New housing stock 2021



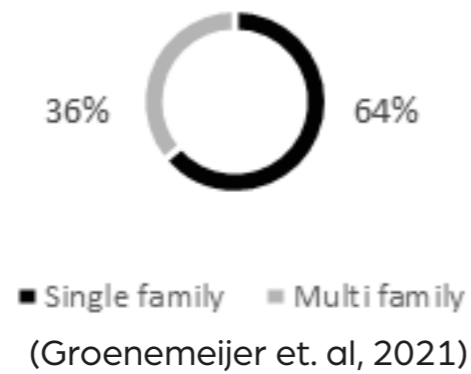
■ New construction ■ Additional new ■ Withdrawn

New housing stock due adaptivity in 2021
(data from CBS, 2021)

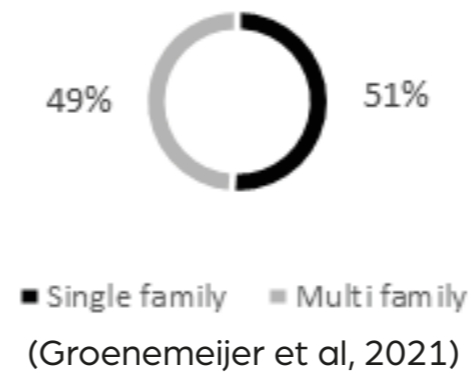


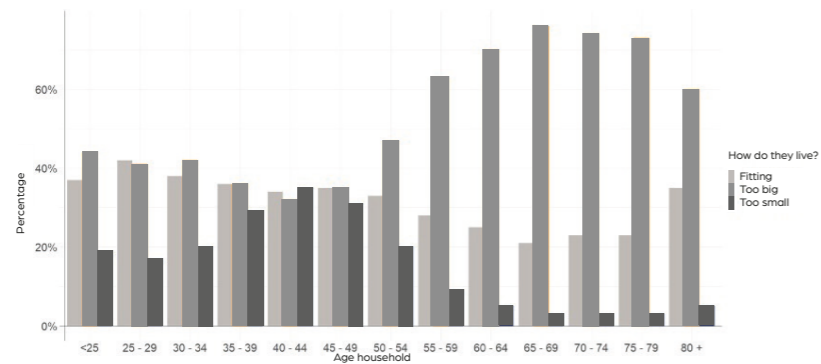
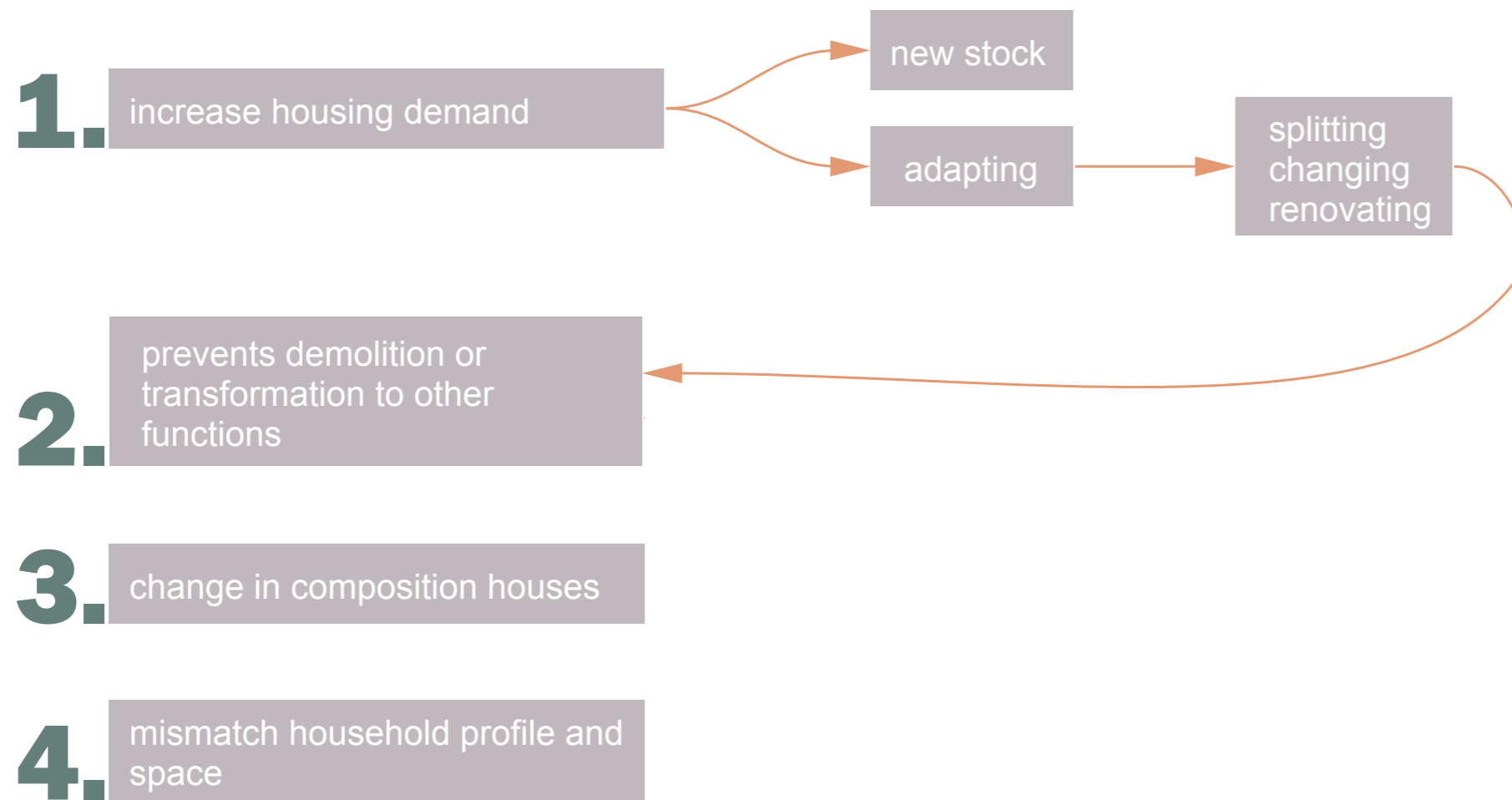


Ratio single family and multi family housing 2021

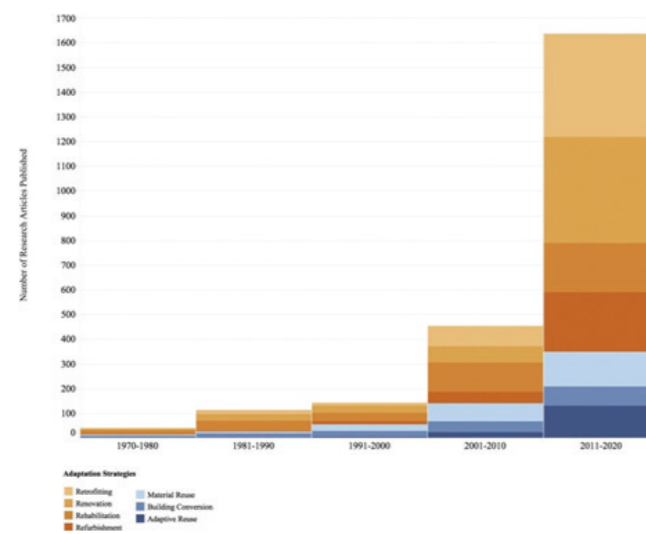
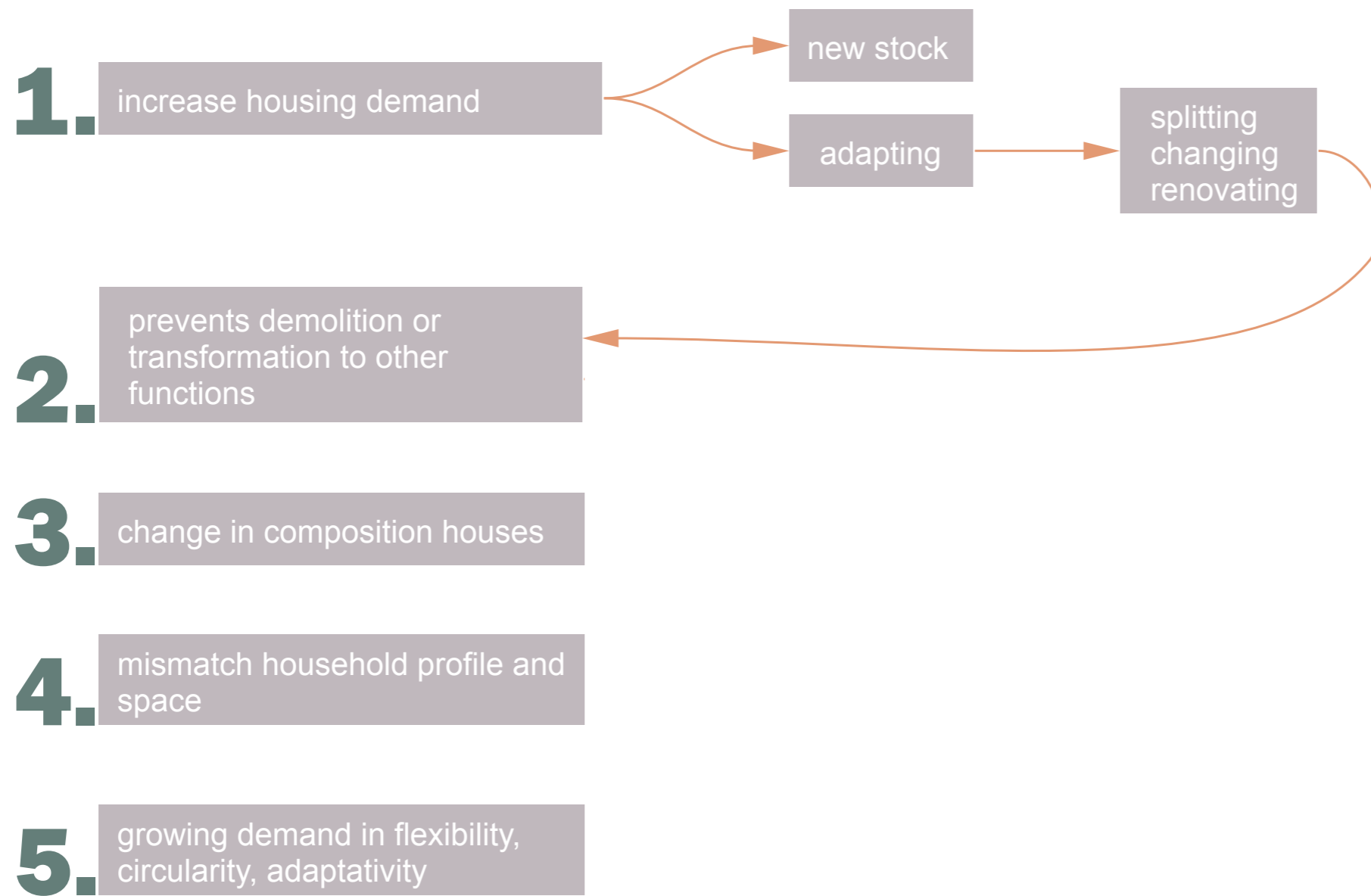


Ratio single family and multi family housing 2035

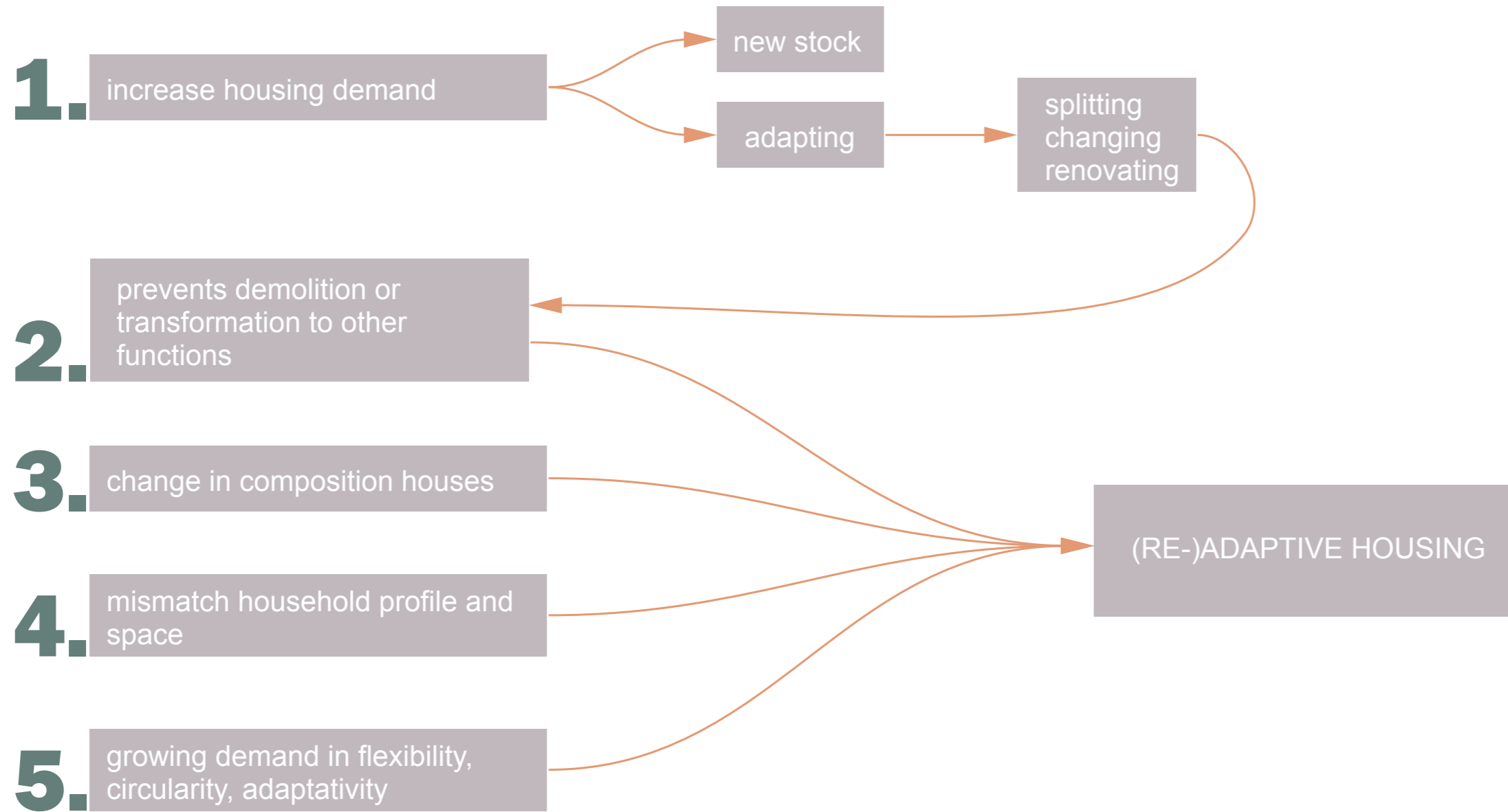


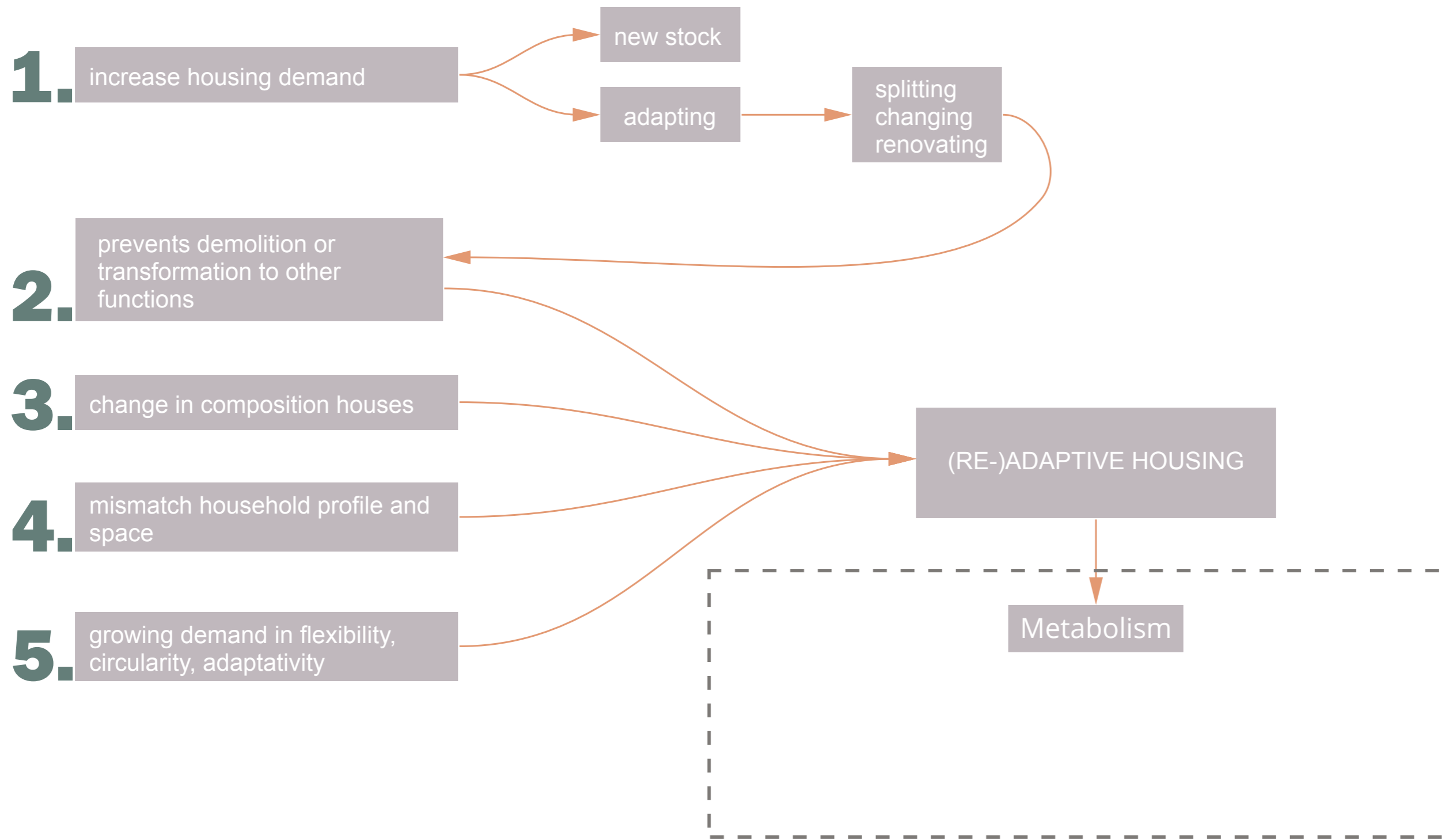


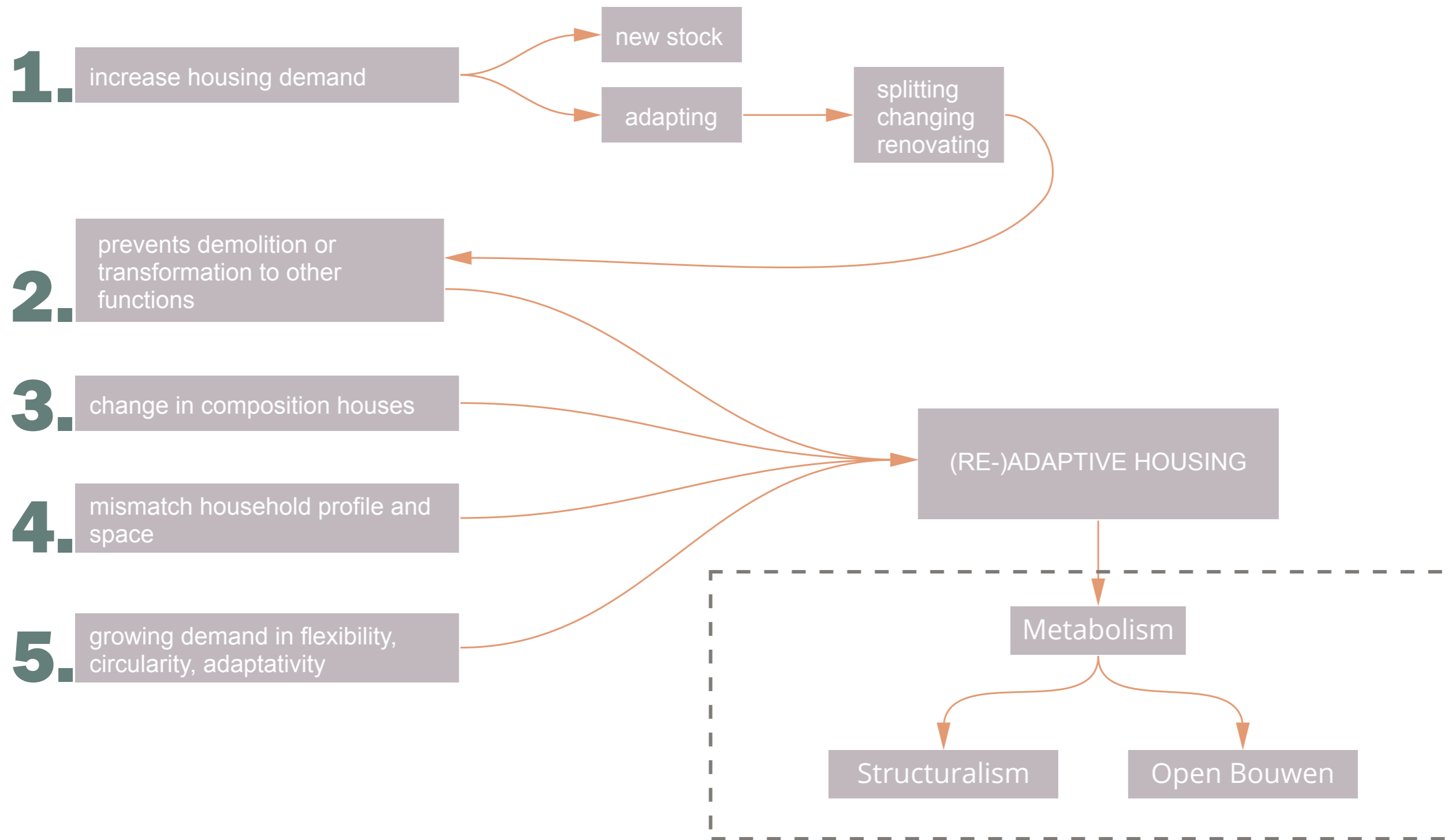
Ages resident and surplus of housing area (Stadszaken, 2020)

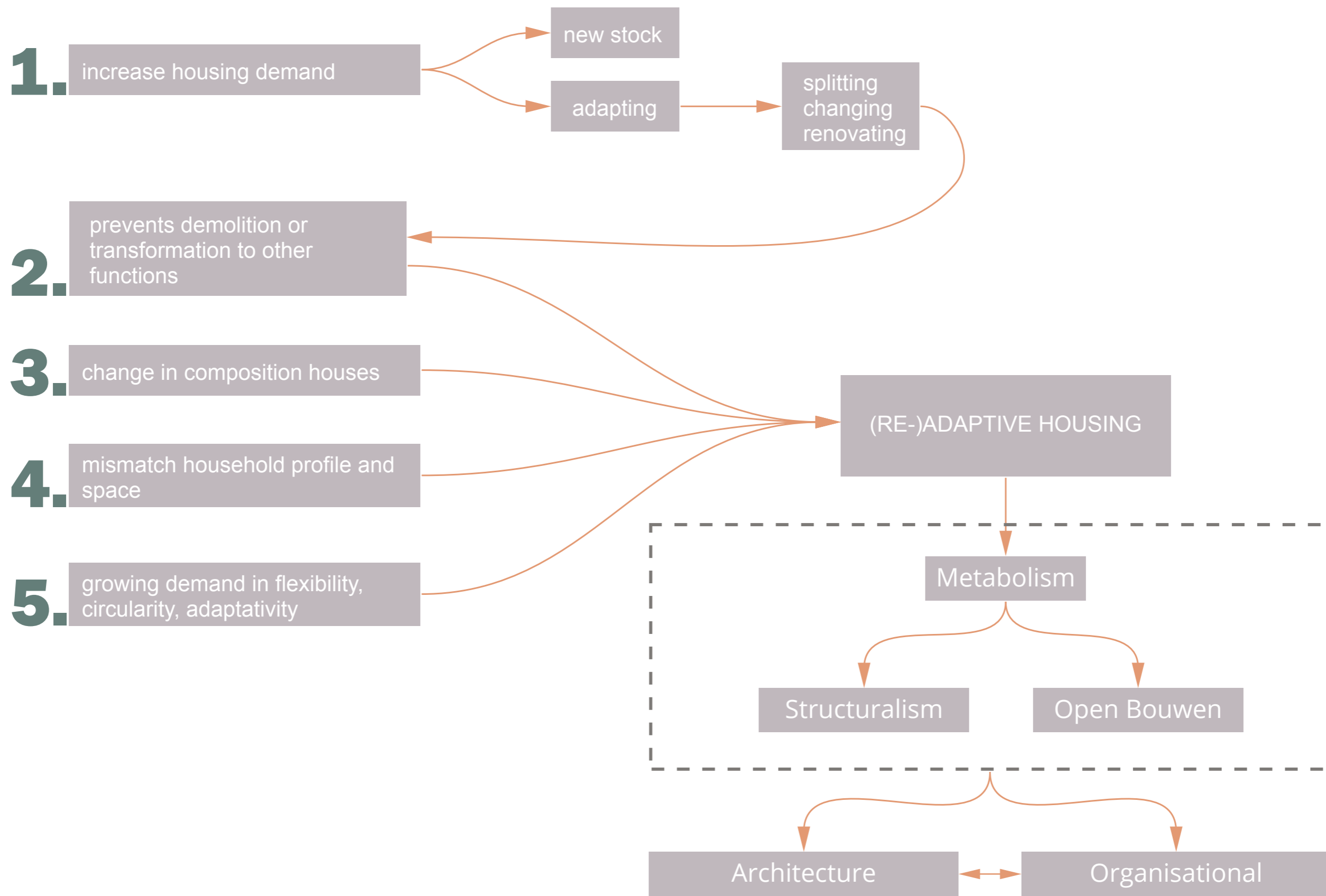


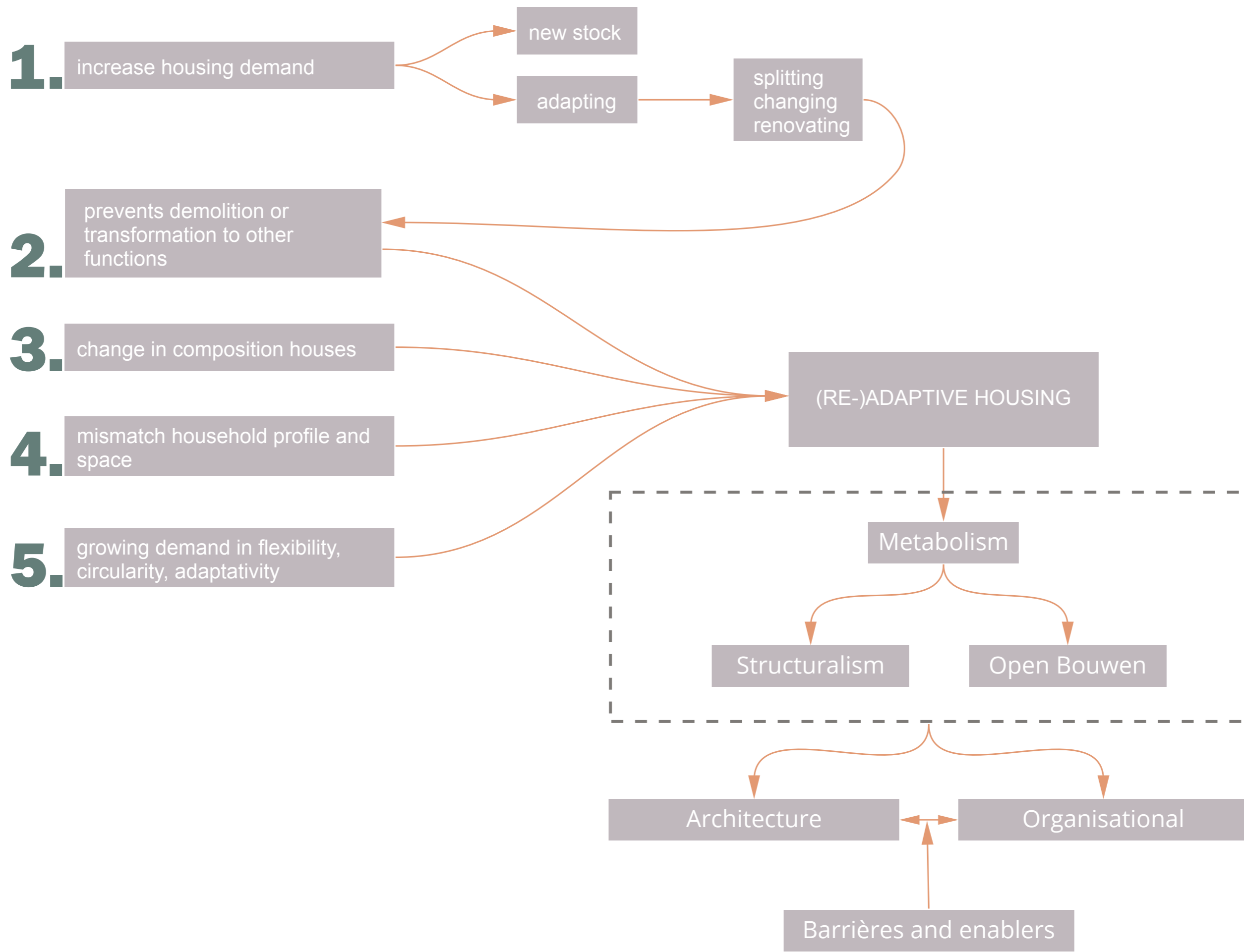
Published housing adaptivity papers (Shahi et al., 2020)



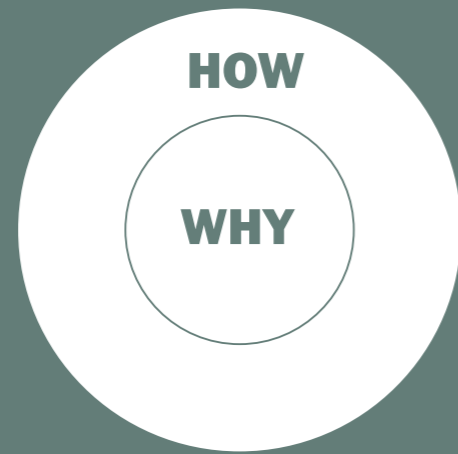








introduction



RESEARCH QUESTIONS

HOW

**In what way can newly constructed
re-adaptive housing in the
Netherlands be managed?**

In what way can newly constructed re-adaptive housing in the Netherlands be managed?

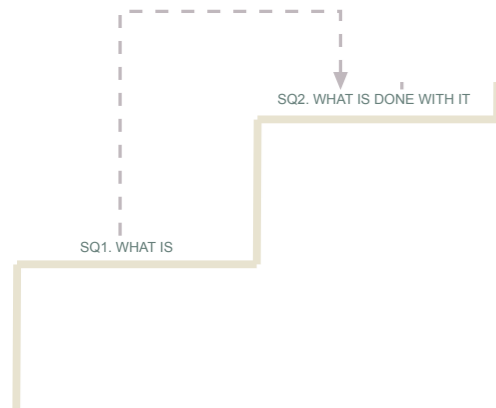
OBJECTIVE

Explore in what way re-adaptive housing can be initiated and managed

Recommendation proposals

In what way can newly constructed re-adaptive housing in the Netherlands be managed?

- 1 What are **principles and definitions** for re-adaptive building?
- 2 How do principles and definition of re-adaptivity manifest itself **in projects**?



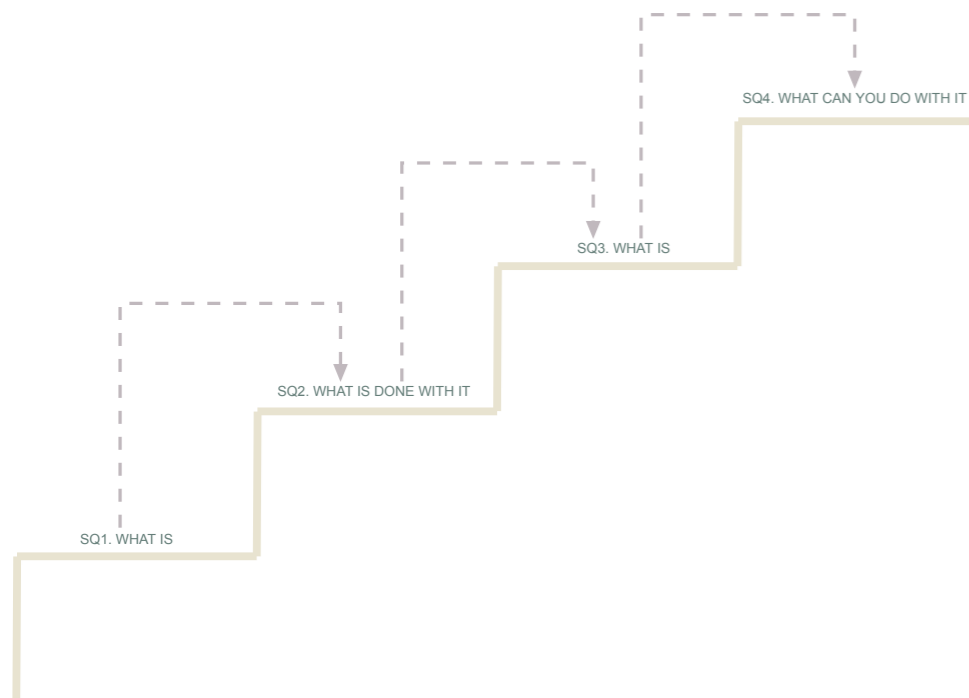
In what way can newly constructed re-adaptive housing in the Netherlands be managed?

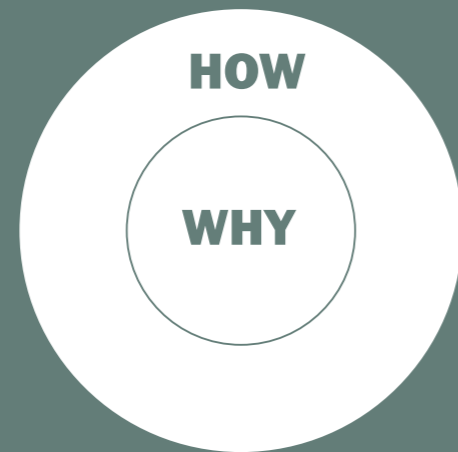
1 What are principles and definitions for re-adaptive building?

2 How do principles and definition of re-adaptivity manifest itself in projects?

3 What are **enablers and barriers** regarding re-adaptivity in housing?

4 How could barriers and enablers be **addressed** to improve re-adaptivity in housing?





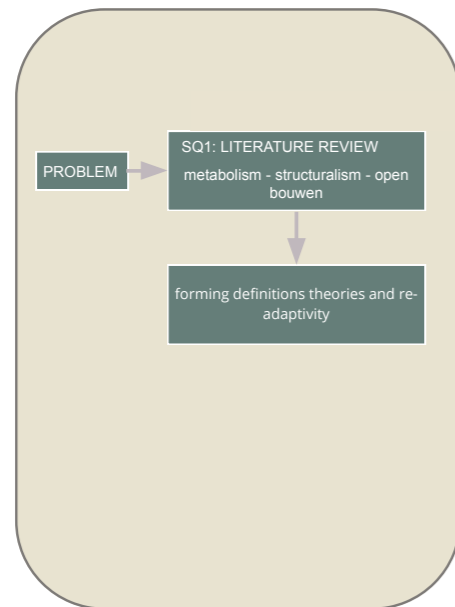
introduction
research questions

METHODOLOGY

HOW

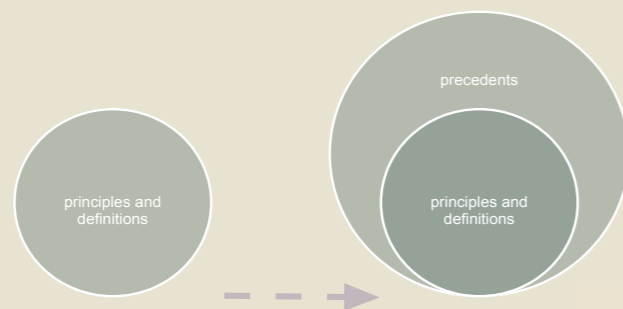
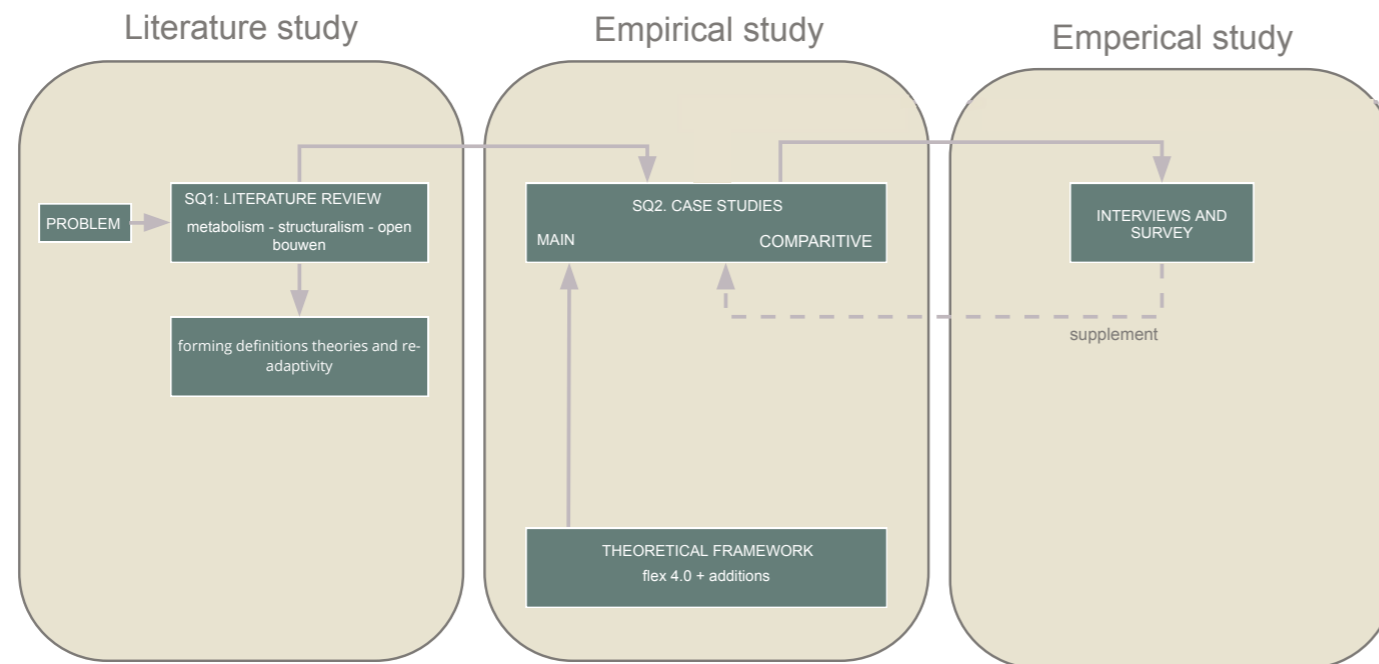
1 What are **principles and definitions** for re-adaptive building?

Literature study

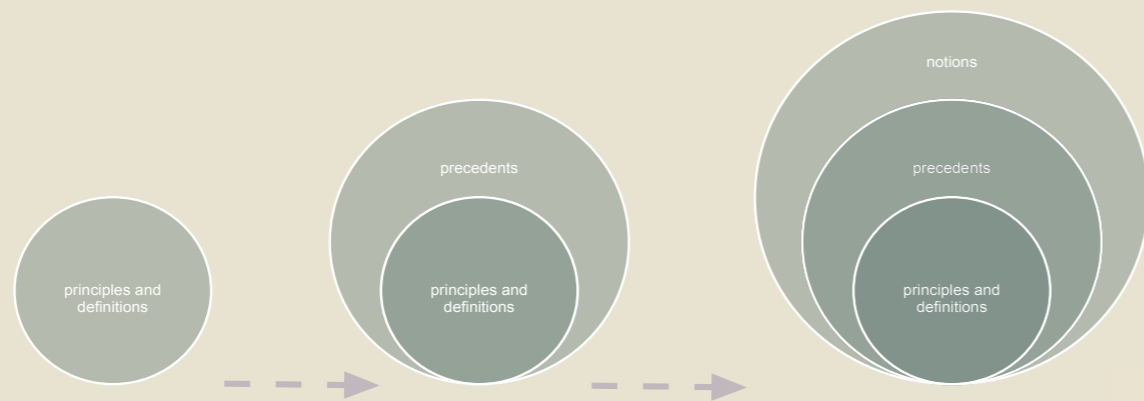
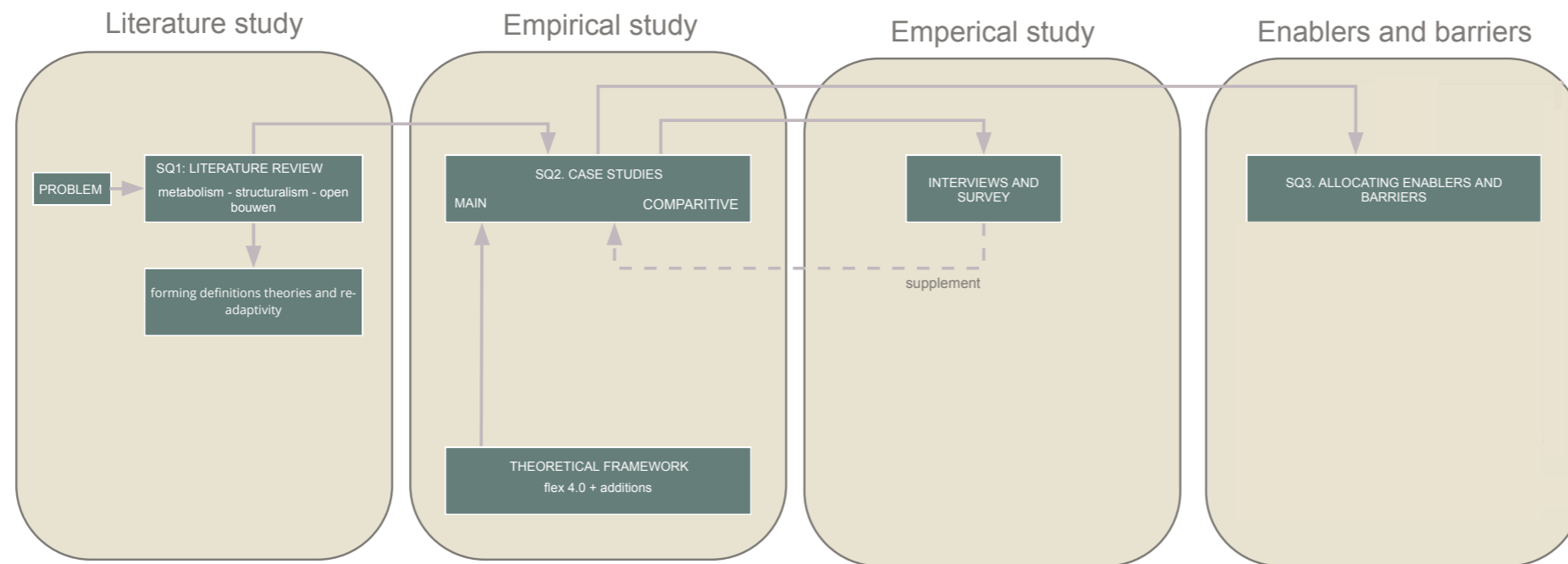


principles and
definitions

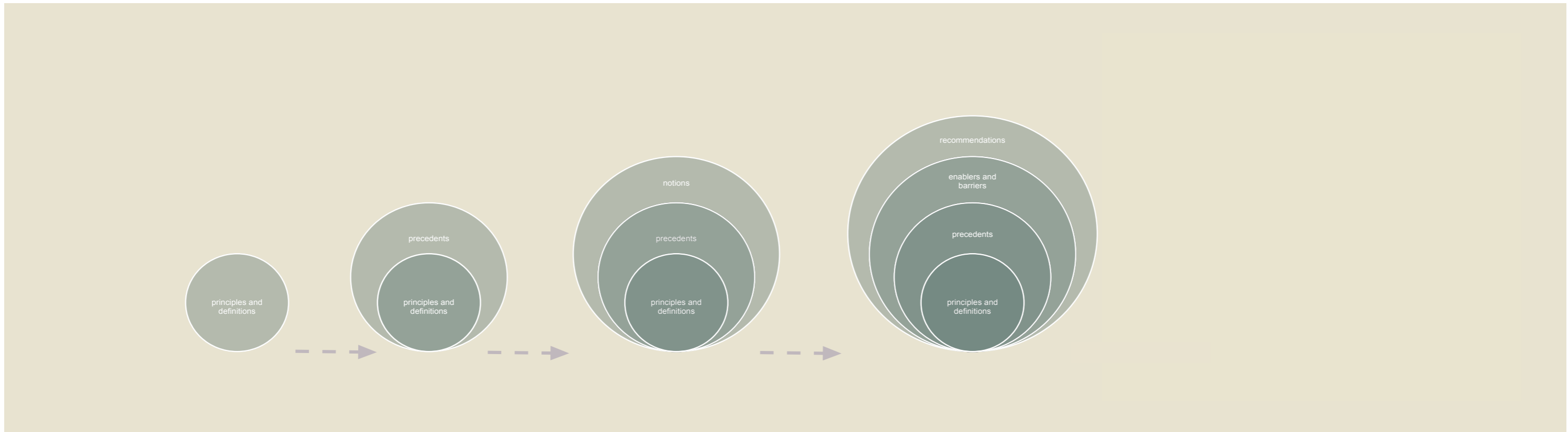
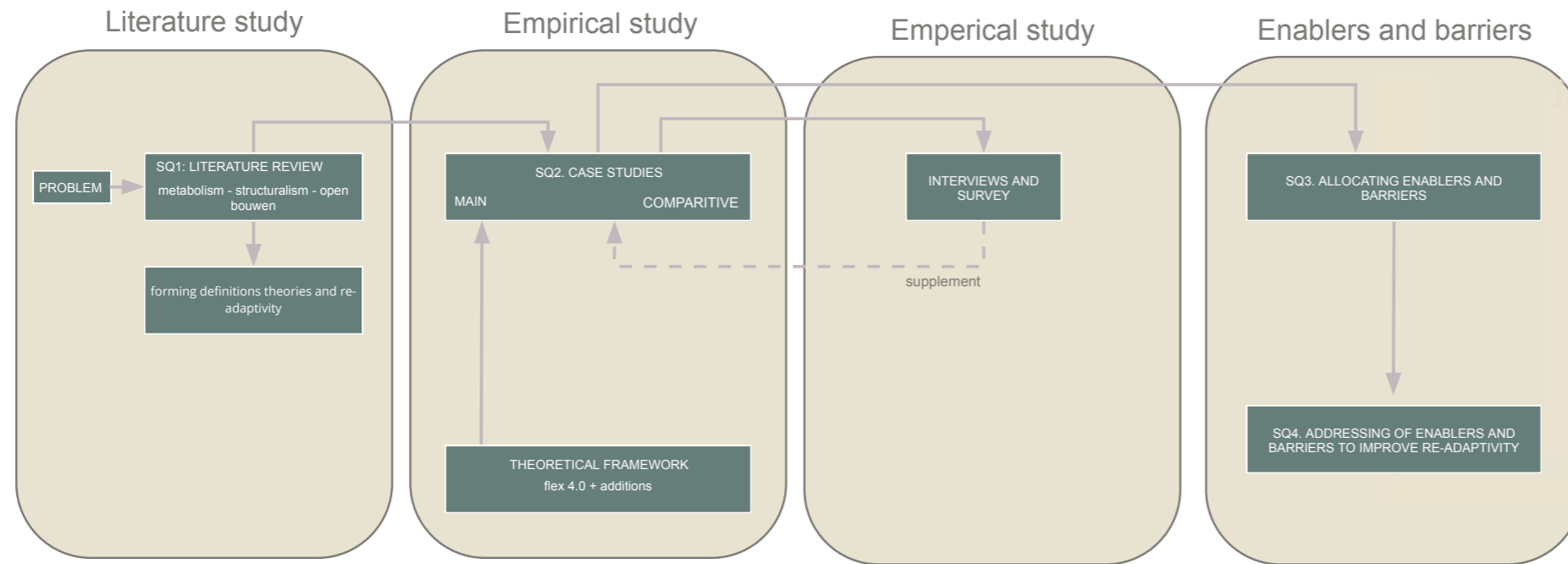
2 How do principles and definition of re-adaptivity manifest itself **in projects**?



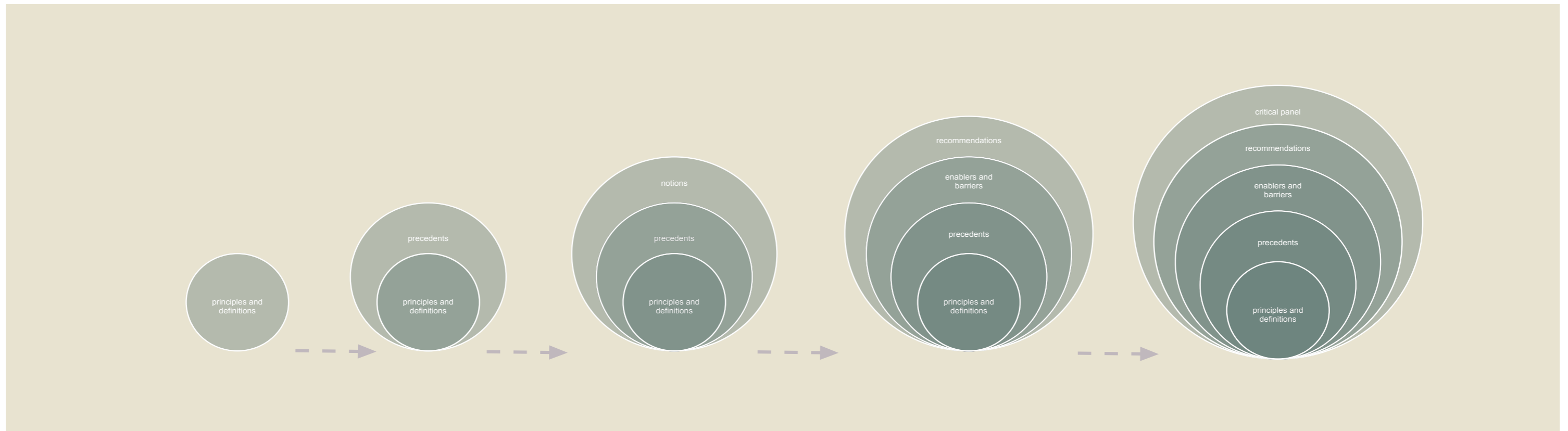
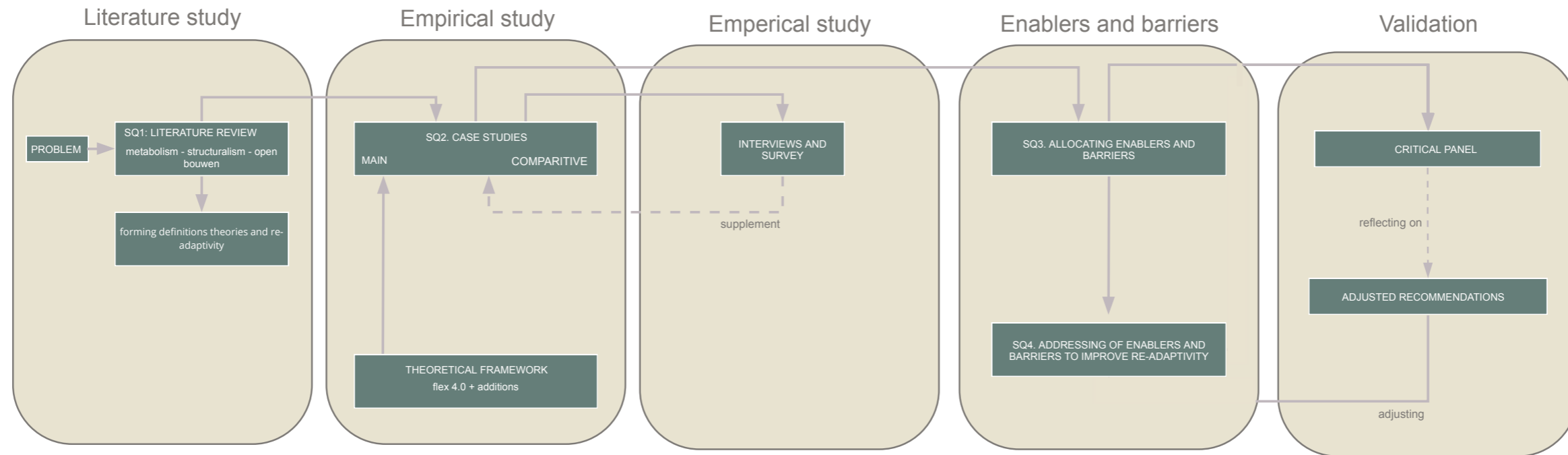
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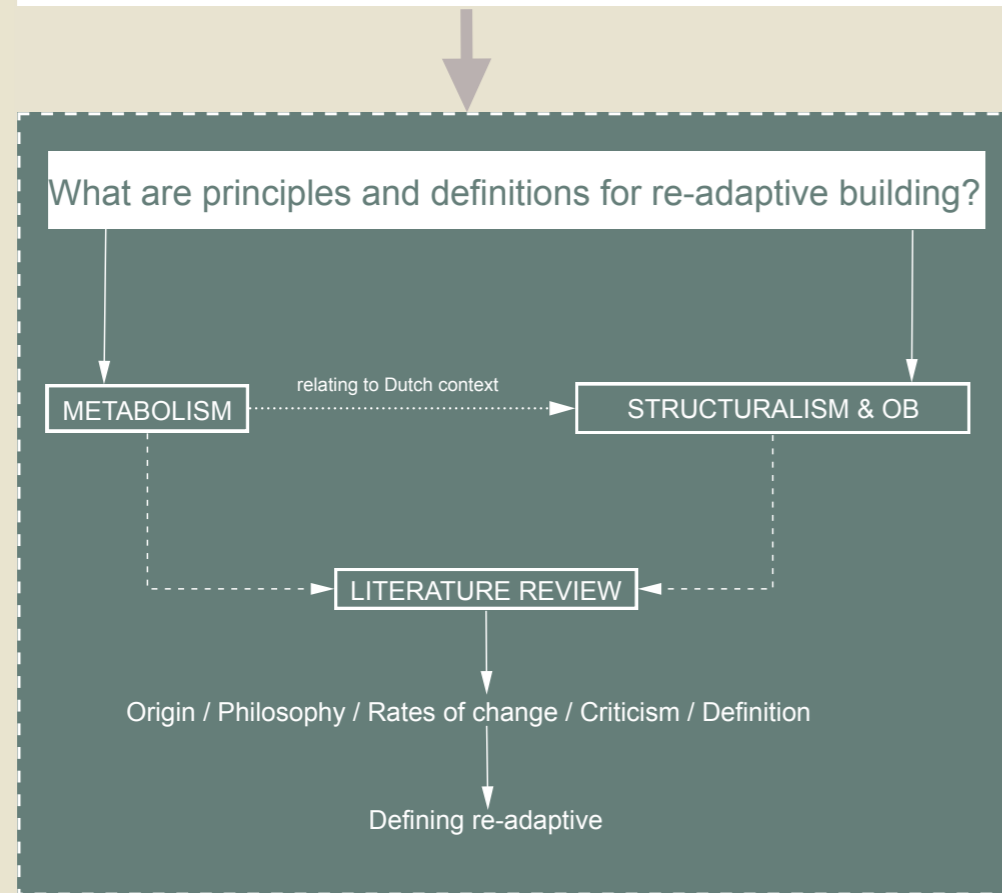
4 How could barriers and enablers be **addressed** to improve re-adaptivity in housing?



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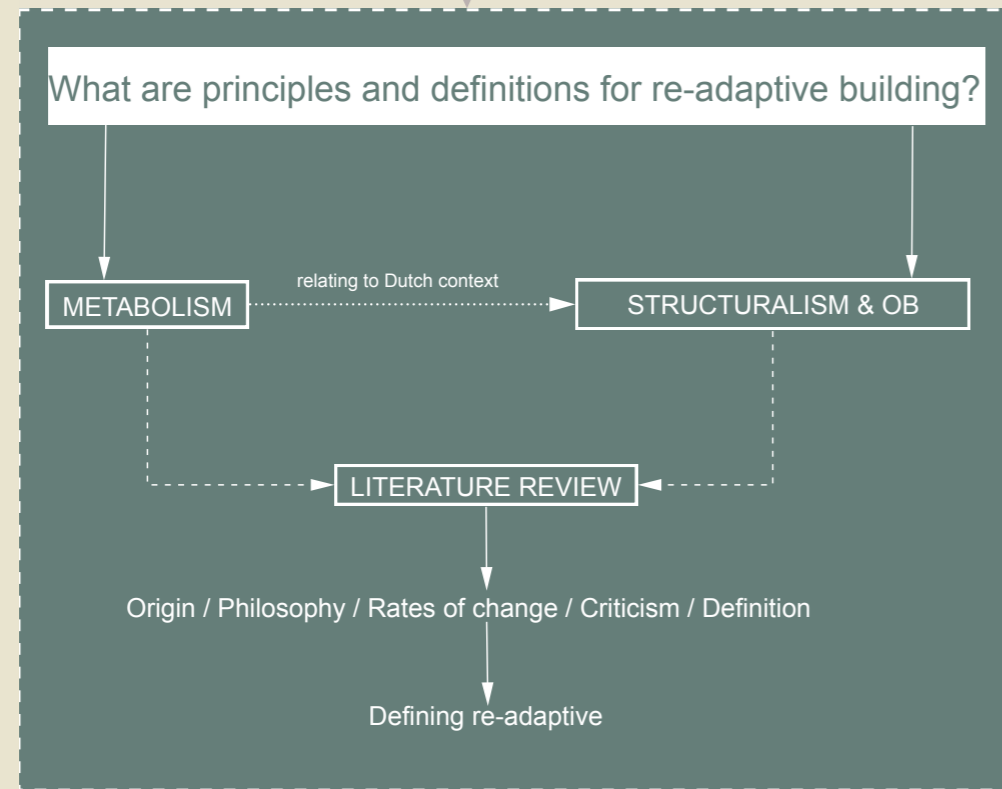


In what way can newly constructed re-adaptive housing in the Netherlands be managed?



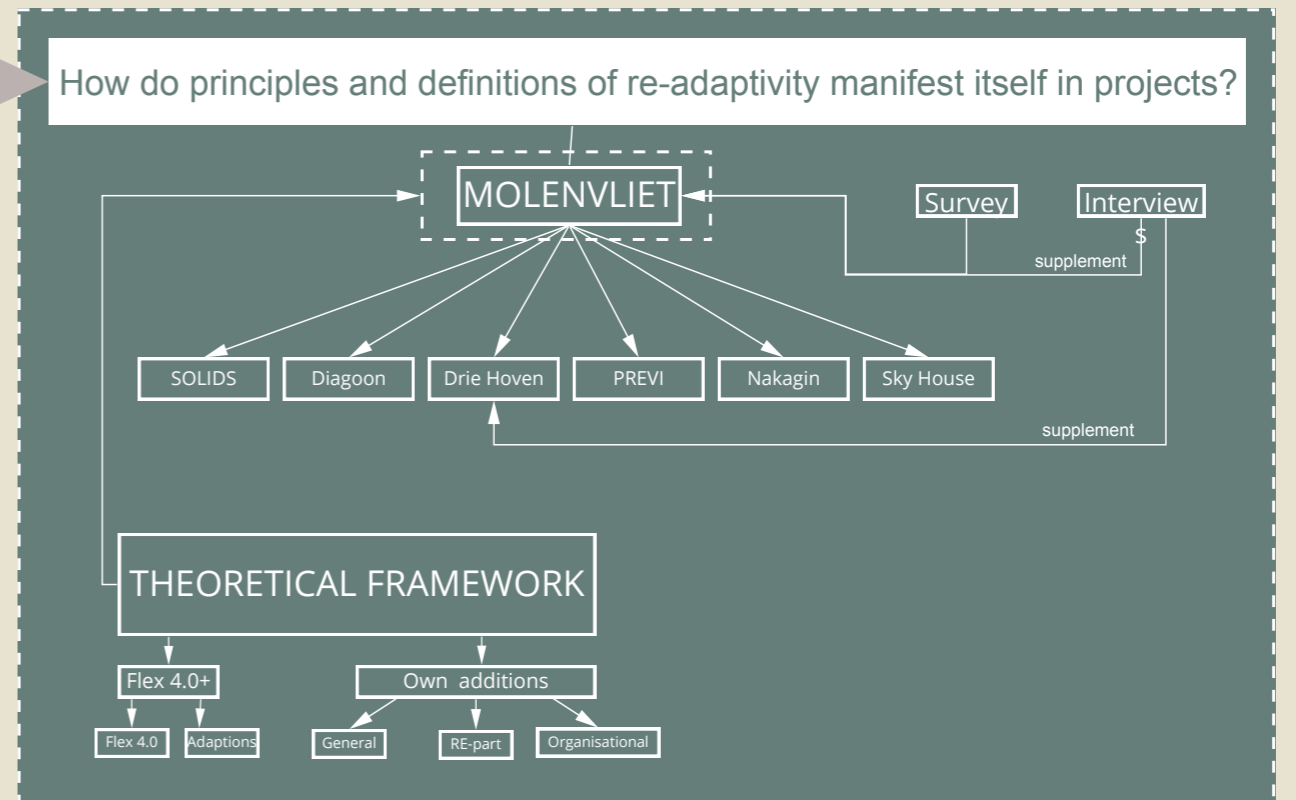
PHASE I - LITERATURE STUDY

In what way can newly constructed re-adaptive housing in the Netherlands be managed?



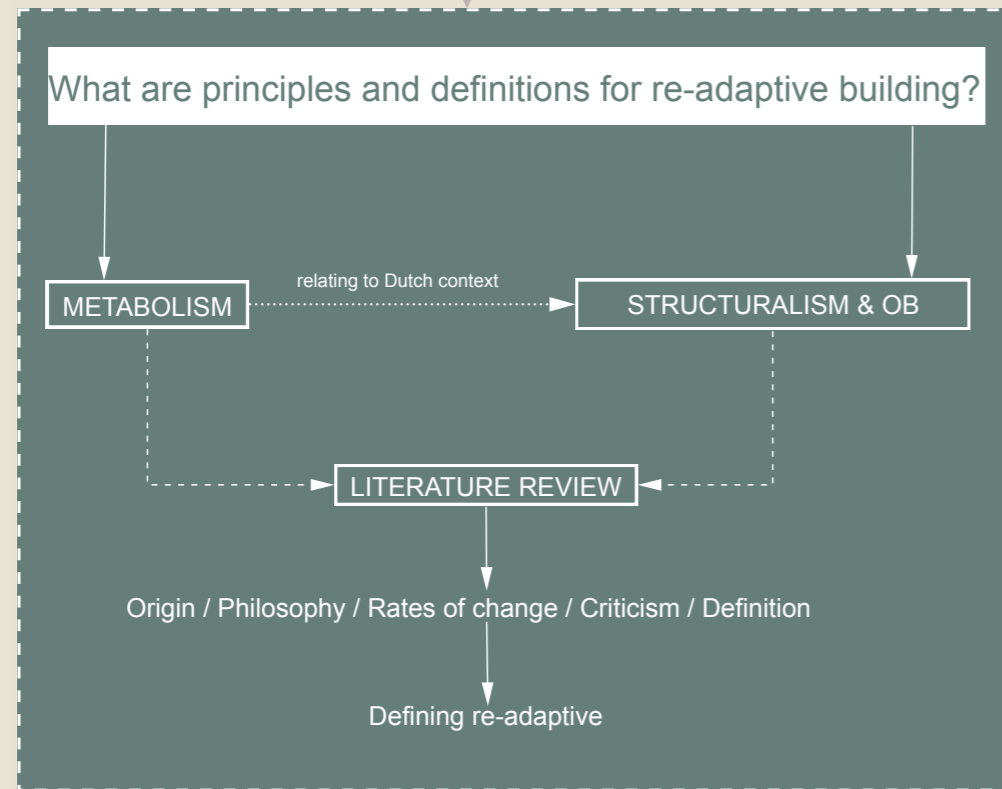
PHASE I - LITERATURE STUDY

theory in practice



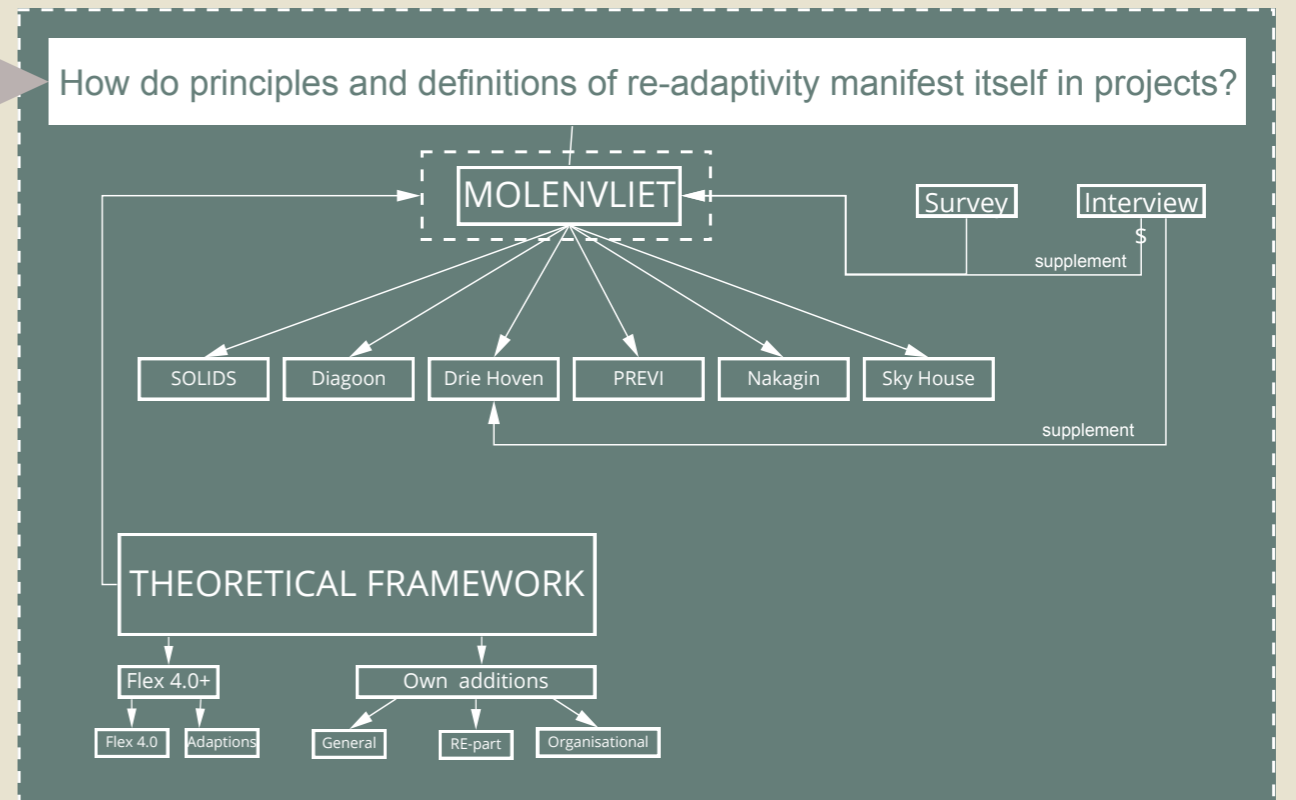
PHASE II - CASE STUDIES

In what way can newly constructed re-adaptive housing in the Netherlands be managed?

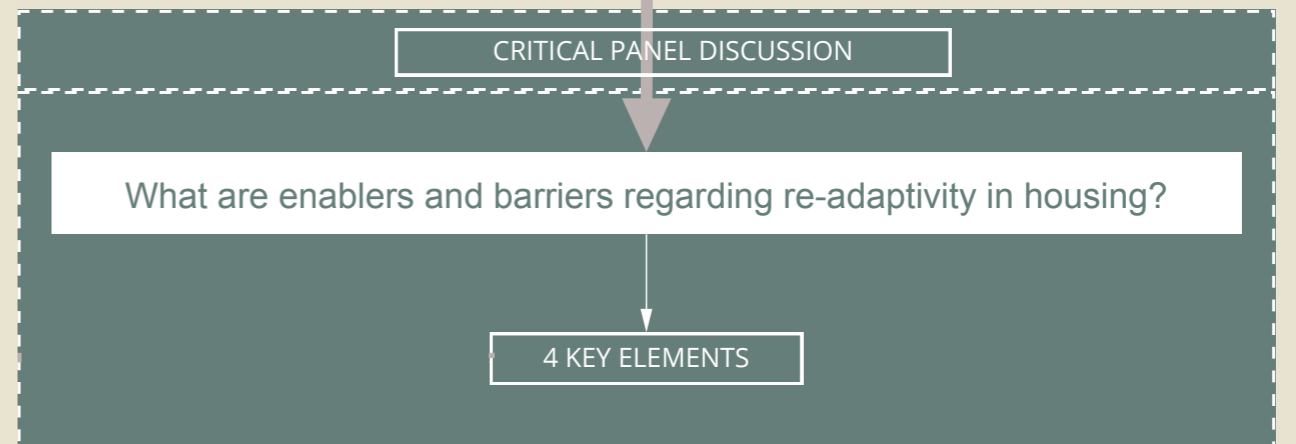


PHASE I - LITERATURE STUDY

theory in practice

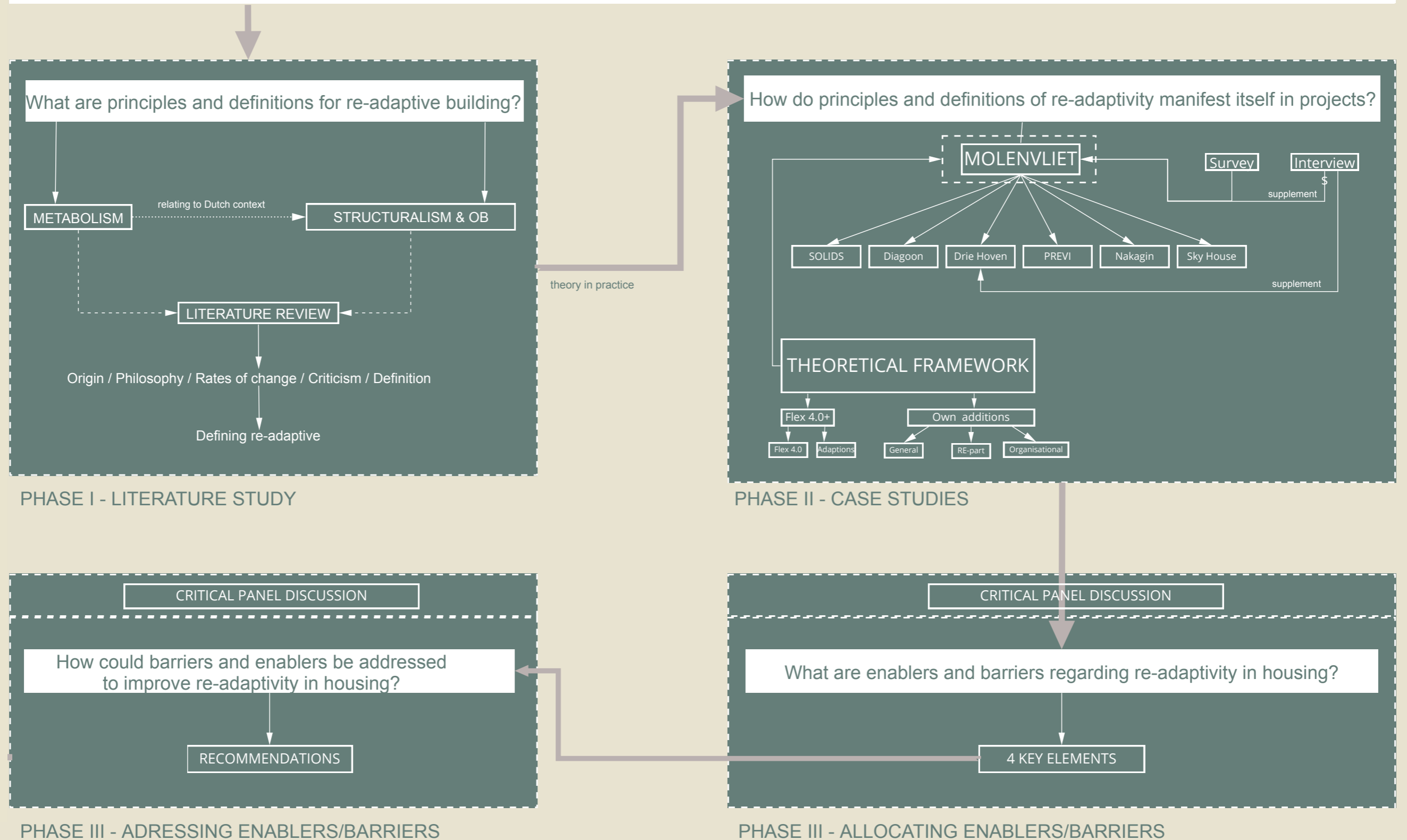


PHASE II - CASE STUDIES

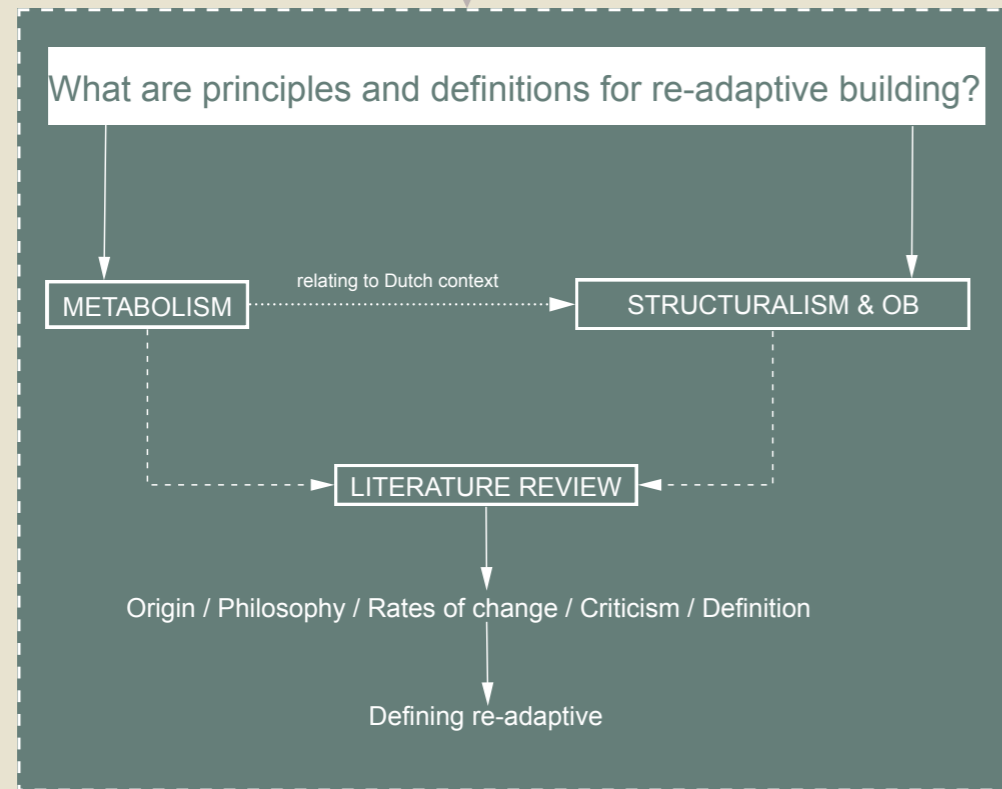


PHASE III - ALLOCATING ENABLERS/BARRIERS

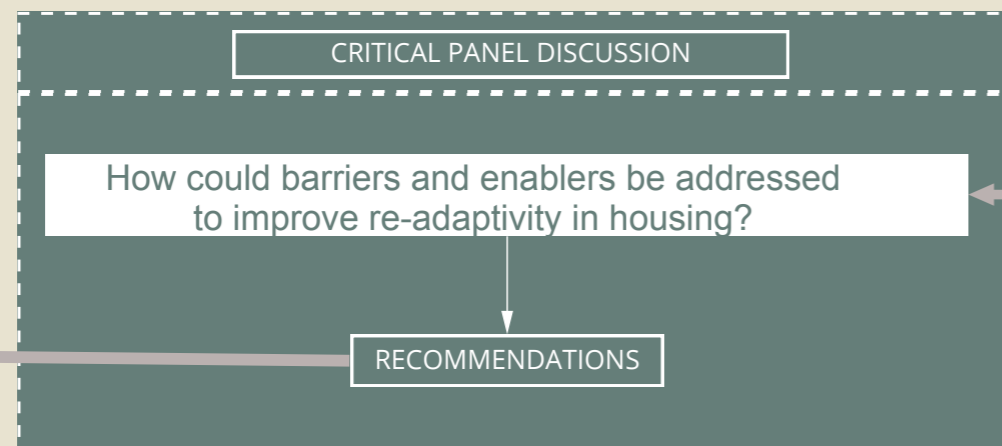
In what way can newly constructed re-adaptive housing in the Netherlands be managed?



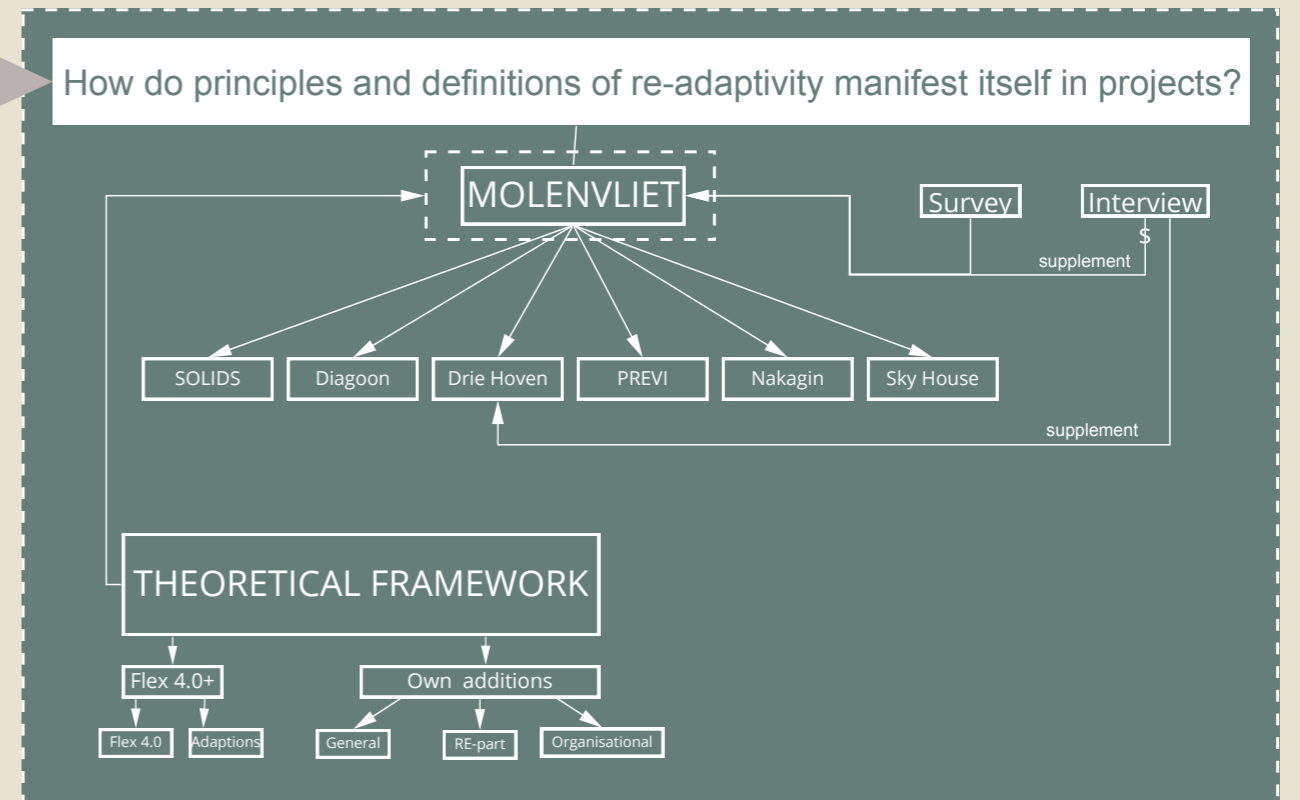
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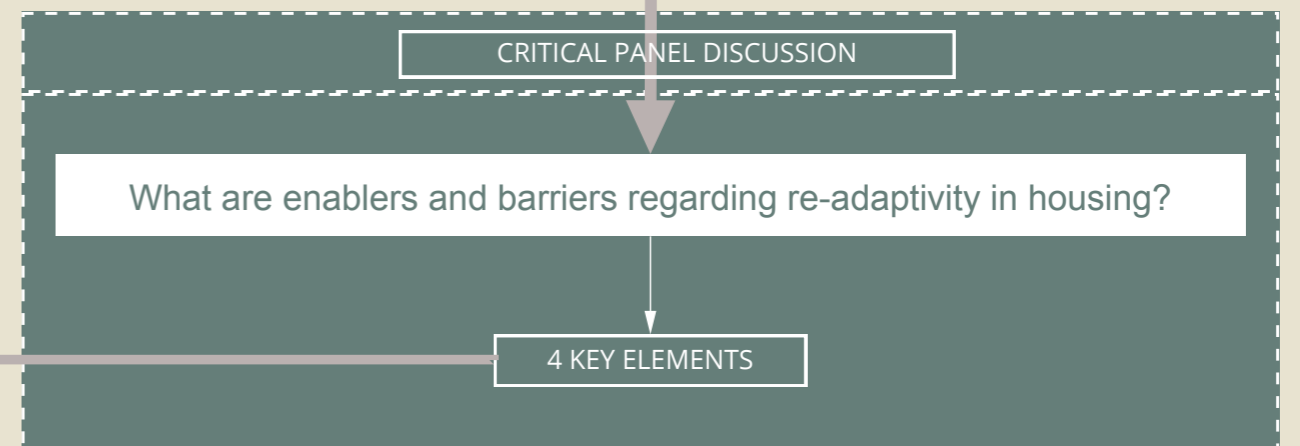
PHASE I - LITERATURE STUDY



PHASE III - ADDRESSING ENABLERS/BARRIERS

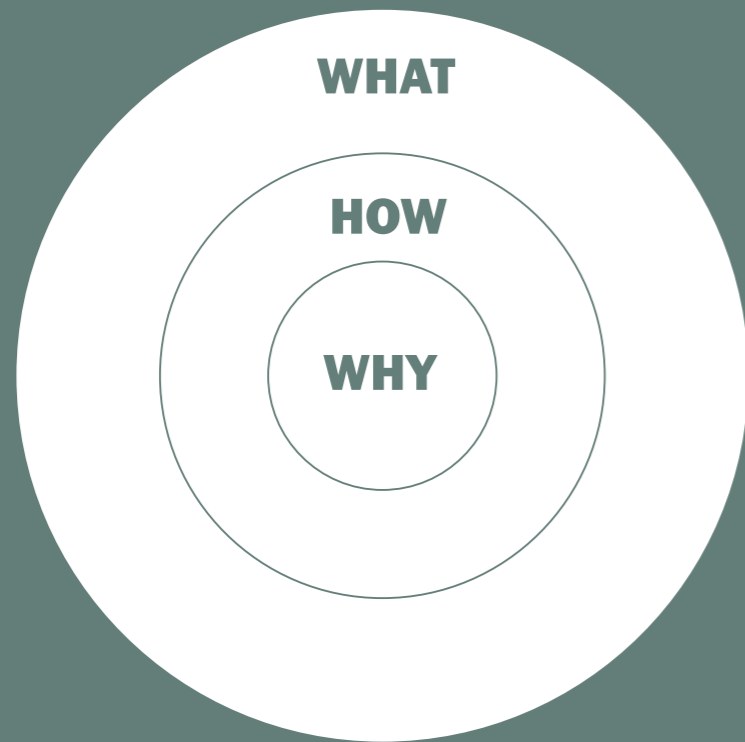


PHASE II - CASE STUDIES



PHASE III - ALLOCATING ENABLERS/BARRIERS

theory in practice



introduction

research questions

methodology

FINDINGS

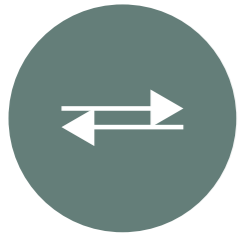
WHAT

DEFINITION

01

LITERATURE REVIEW

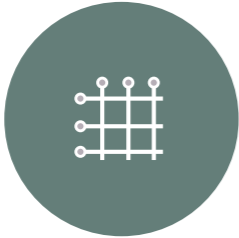
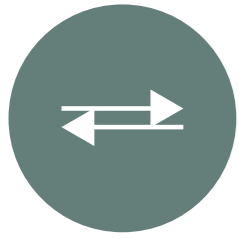
principles and definitions for re-adaptive building



01

LITERATURE REVIEW

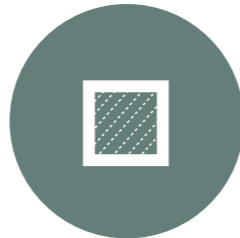
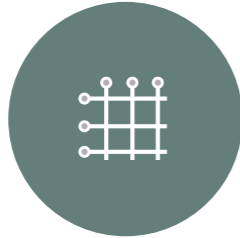
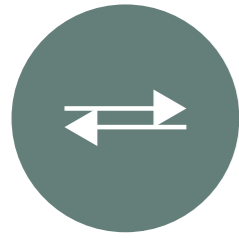
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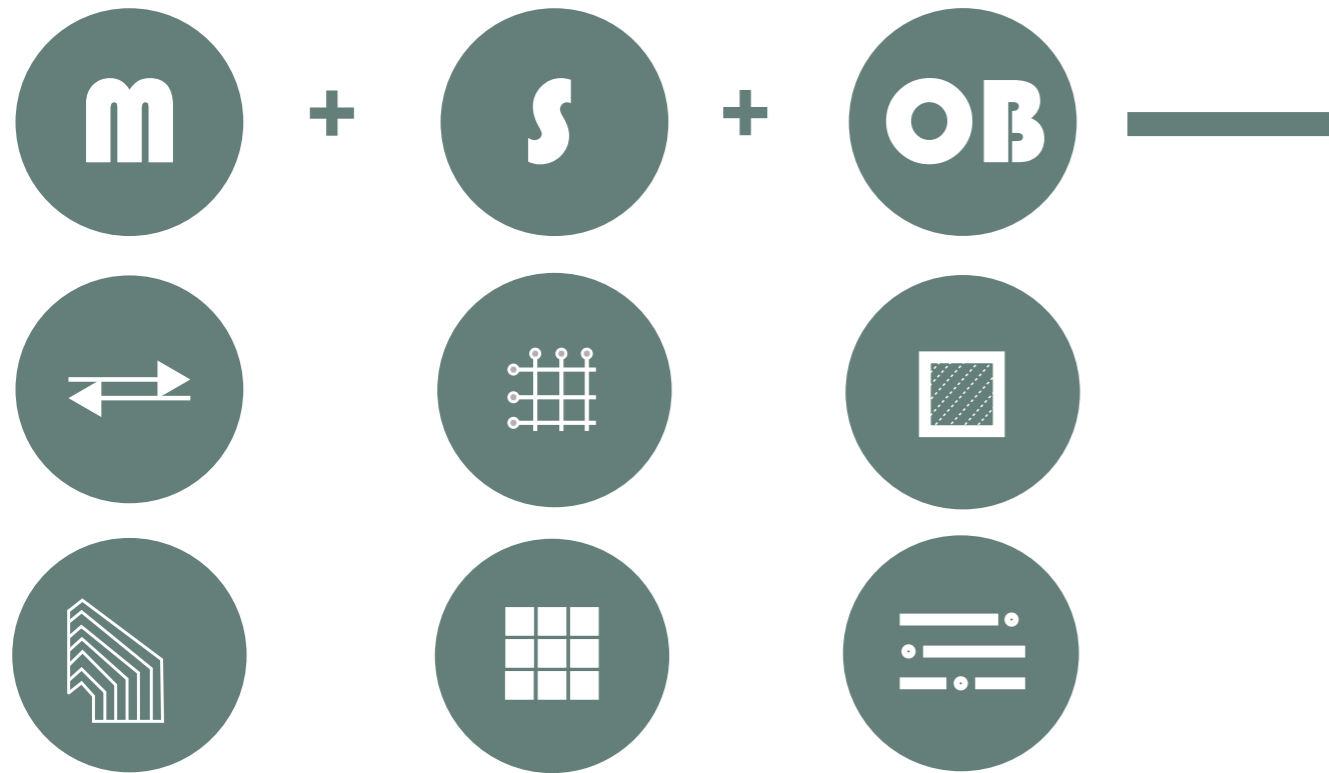
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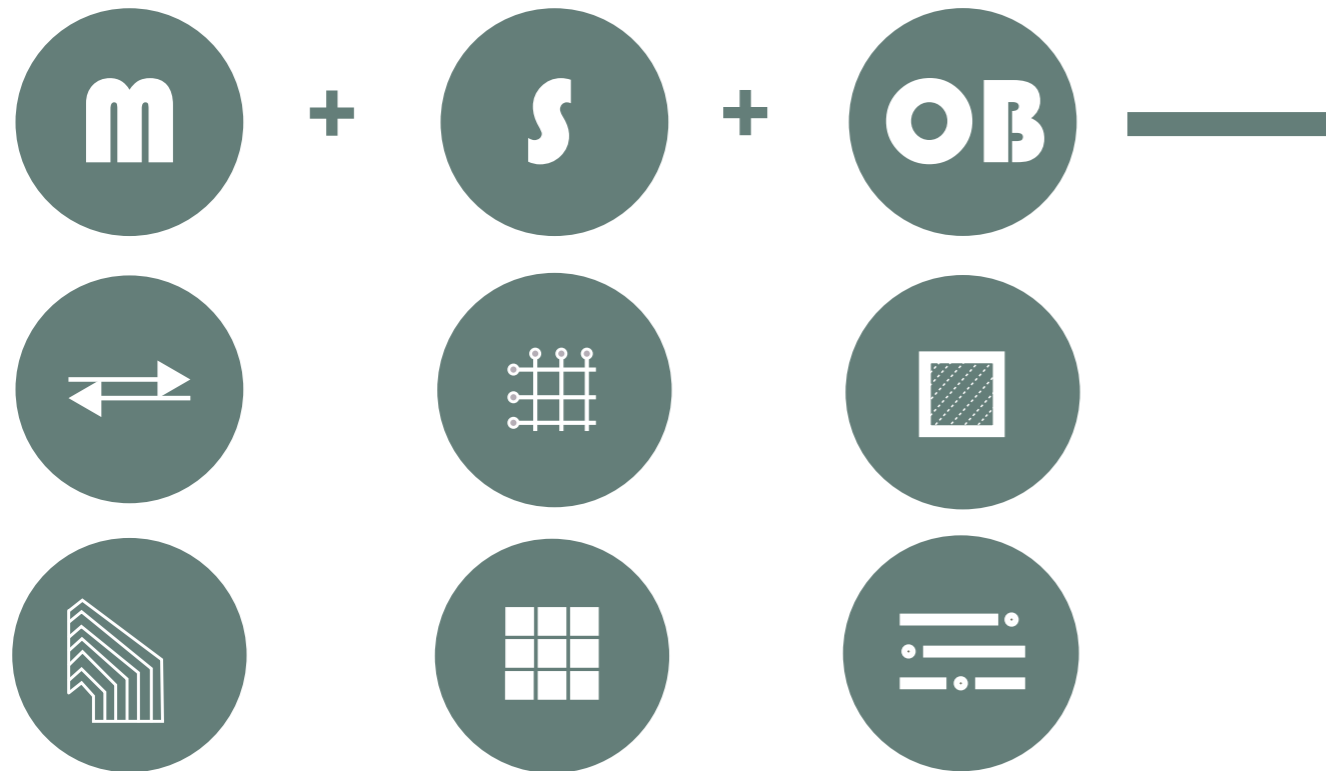
01

LITERATURE REVIEW

principles and definitions for re-adaptive building



PROPOSED DEFINITION RE-ADAPTIVE



PROPOSED DEFINITION RE-ADAPTIVE

The use of a structured grid system, margins related to this where interchangeability and expandability is possible through its core and/or multiplication. It has the possibility to **add, remove or interconnect components** of the building by using the structure and infill principle -and its differentiation of life cycles of the building layers - which also enables the possibility for focus on personal individuality of the user with (possible) user participation.

DEFINITION
|
IN PRACTICE

02

CASE STUDIES

re-adaptive principles and definitions **in projects**

MAIN - MOLENVLIET [structure-infill, resident participation, re-allocation, grid]



MAIN - MOLENVLIET [structure-infill, resident participation, re-allocation, grid]





COMPARITIVE

SOLIDS

Overdimensioning,
Rental auction
Ownership infill
Mixed-use

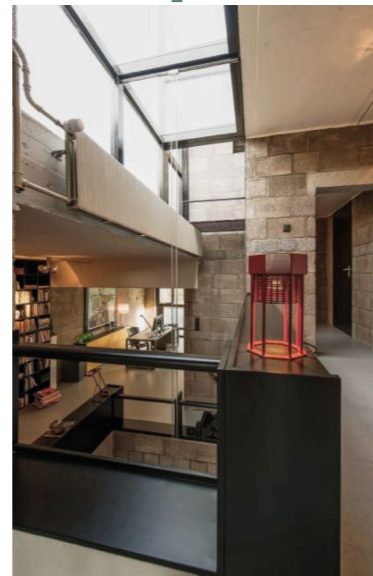




COMPARITIVE

DIAGOON

Growth
Polyvalence

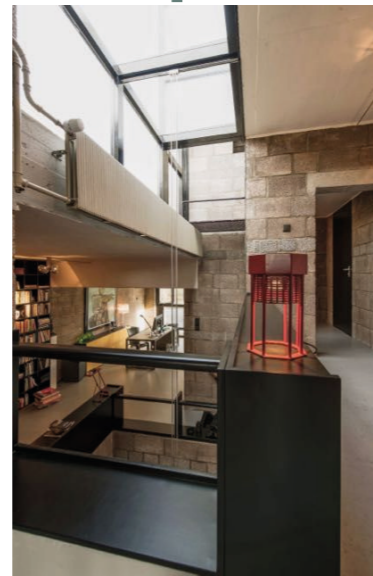




COMPARITIVE

DRIE HOVEN

Overdimensioning
validation
Grid
Mixed-use





COMPARITIVE

PREVI

Open-ended design
Resident freedom
Resident individuality
Mixed-use





COMPARITIVE

N. CAPSULE

Capsule - core
Interchangeability
Common agreements



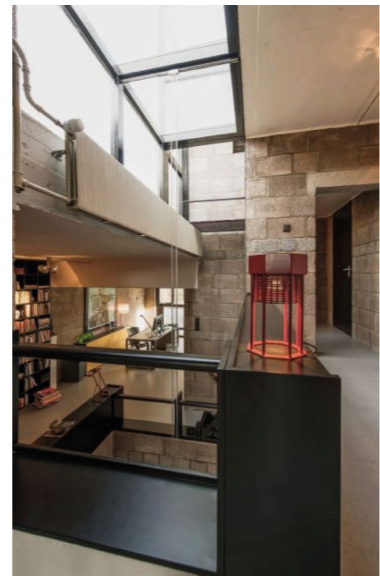


COMPARITIVE

SKY HOUSE

Structure-infill
Moving nets
Growth & shrink





distilling case study information

to come to its barriers and enablers

- Origin
- Key characteristics
- Tender
- Design
- Construction
- Operation
- Maintenance
- Decision making
- Financing
- Rates of change
- Growth and shrink
- Evaluation
- FLEX 4.0+

Molenvliet

Other projects*

Solids

Diagoon woningen

De Drie Hoven

PREVI

Nakagin Capsule Tower

Sky House



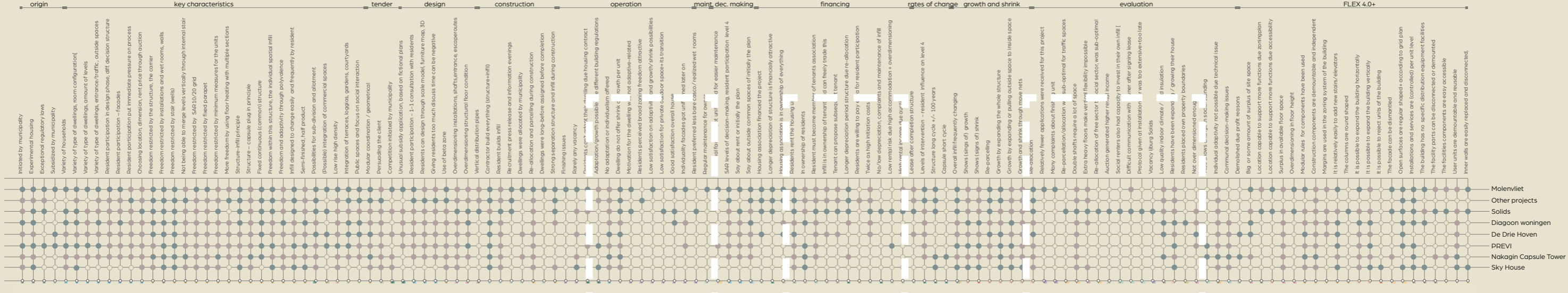
| origin | key characteristics | tender | design | construction | operation | main_tec. making | financing | rates of change | growth and shrink | evaluation | FLEX 4.0+ |
|--|---------------------|--------|--------|--------------|-----------|------------------|-----------|-----------------|-------------------|------------|-----------|
| Initiated by municipality | | | | | | | | | | | |
| Experimental housing | | | | | | | | | | | |
| Exceptional regulatory laws | | | | | | | | | | | |
| Subsidized by municipality | | | | | | | | | | | |
| Variety of households | | | | | | | | | | | |
| Variety of type of dwellings, room configuration | | | | | | | | | | | |
| Variety of type of dwellings, amount of levels | | | | | | | | | | | |
| Variety of type of dwellings, entrance/traffic, outside spaces | | | | | | | | | | | |
| Resident participation in design phase, affr decision structure | | | | | | | | | | | |
| Resident participation – facades | | | | | | | | | | | |
| Resident participation out immediate pressure on process | | | | | | | | | | | |
| Choosing location, dimension, rent price through auction | | | | | | | | | | | |
| Freedom restricted by the structure, the carrier | | | | | | | | | | | |
| Freedom restricted by installations and wet rooms, walls | | | | | | | | | | | |
| Freedom restricted by stair (wells) | | | | | | | | | | | |
| Not being able to merge levels vertically through internal stair | | | | | | | | | | | |
| Freedom restricted by SAP10/20 grid | | | | | | | | | | | |
| Freedom restricted by fixed parapet | | | | | | | | | | | |
| Freedom restricted by minimum measures for the units | | | | | | | | | | | |
| More freedom by using floor heating with multiple sections | | | | | | | | | | | |
| Structure-infill principle | | | | | | | | | | | |
| Structure – capsule plug in principle | | | | | | | | | | | |
| Fixed continuous (common) structure | | | | | | | | | | | |
| Freedom within this structure, the individual spatial infill | | | | | | | | | | | |
| Freedom and adaptivity through polyvalence | | | | | | | | | | | |
| Infill designed to change easily and frequently by resident | | | | | | | | | | | |
| Semi-finished, 'half product' | | | | | | | | | | | |
| Possibilities for sub-division and allotment | | | | | | | | | | | |
| (Possible) integration of commercial spaces | | | | | | | | | | | |
| Low rise high density | | | | | | | | | | | |
| Integration of terraces, loggias, courtyards | | | | | | | | | | | |
| Public spaces and focus on social interaction | | | | | | | | | | | |
| Modular coordination / geometrical | | | | | | | | | | | |
| Persuading the client | | | | | | | | | | | |
| Competition initiated by municipality | | | | | | | | | | | |
| Unusual subsidy application based on fictional plans | | | | | | | | | | | |
| Resident participation – 1-1 consultation with residents | | | | | | | | | | | |
| Residents can design through scale model, furniture map, 3D | | | | | | | | | | | |
| Owing residents too much discuss time can be negative | | | | | | | | | | | |
| Use of beta zone | | | | | | | | | | | |
| Overdimensioning installations, shafts, entrance, escape routes | | | | | | | | | | | |
| Overdimensioning structural floor condition | | | | | | | | | | | |
| Vertical distribution pipes | | | | | | | | | | | |
| Contractor build everything (structure+infill) | | | | | | | | | | | |
| Resident builds infill | | | | | | | | | | | |
| Recruitment press release and information evenings | | | | | | | | | | | |
| Dwellings were allocated by municipality | | | | | | | | | | | |
| Re-allocation and parcelling during construction | | | | | | | | | | | |
| Dwellings were long before assigned before completion | | | | | | | | | | | |
| Strong separation structure and infill during construction | | | | | | | | | | | |
| Finishing issues | | | | | | | | | | | |
| Rarely any vacancy | | | | | | | | | | | |
| Residents can't adapt their dwelling due housing contract | | | | | | | | | | | |
| Adaptation growth possible due different building regulations | | | | | | | | | | | |
| No adaptation or individualism offered | | | | | | | | | | | |
| Dwelling do not offer shrink or growth per unit | | | | | | | | | | | |
| Motivation for the dwelling was not adaptive-related | | | | | | | | | | | |
| Residents perceived broad zoning freedom attractive | | | | | | | | | | | |
| Low satisfaction on adaptivity and growth/shrink possibilities | | | | | | | | | | | |
| Low satisfaction for private outdoor space + its transition | | | | | | | | | | | |
| Good satisfaction overall house | | | | | | | | | | | |
| Individuality facades got uniformed later on | | | | | | | | | | | |
| Resident preferred less bare casco / realized wet rooms | | | | | | | | | | | |
| Regular maintenance for owner | | | | | | | | | | | |
| Individual facades got uniformed for easier maintenance | | | | | | | | | | | |
| SAP levels of decision-making, resident participation level 4 | | | | | | | | | | | |
| Say about rent or initially the plan | | | | | | | | | | | |
| Say about outside common spaces of initially the plan | | | | | | | | | | | |
| Housing association financed the project | | | | | | | | | | | |
| Longer depreciation of structure is financially attractive | | | | | | | | | | | |
| Housing as association is in ownership of everything | | | | | | | | | | | |
| Residents rent the housing unit | | | | | | | | | | | |
| In ownership of residents | | | | | | | | | | | |
| Resident must become member of tenants association | | | | | | | | | | | |
| Infill is in ownership of tenant and can freely trade this | | | | | | | | | | | |
| Tenant can propose subsequent tenant | | | | | | | | | | | |
| Longer depreciation period structure due re-allocation | | | | | | | | | | | |
| Residents are willing to pay extra for resident participation | | | | | | | | | | | |
| Ticks as high initiation costs | | | | | | | | | | | |
| No/low depreciation, complaints and maintenance of infill | | | | | | | | | | | |
| Low rental risk due high accommodation + overdimensioning | | | | | | | | | | | |
| High rental income due auction | | | | | | | | | | | |
| Lease after completion structure | | | | | | | | | | | |
| Levels of intervention – resident influence on level 4 | | | | | | | | | | | |
| Structure long cycle +/- 100 years | | | | | | | | | | | |
| Capsule short cycle | | | | | | | | | | | |
| Overall infill frequently changing | | | | | | | | | | | |
| Shows (signs of) growth | | | | | | | | | | | |
| Shows (signs of) shrink | | | | | | | | | | | |
| Re-parcelling | | | | | | | | | | | |
| Growth by expanding the whole structure | | | | | | | | | | | |
| Growth by expanding or pulling outside space to inside space | | | | | | | | | | | |
| Growth and shrink through move nets | | | | | | | | | | | |
| Re-allocation | | | | | | | | | | | |
| Relatively fewer applications were received for this project | | | | | | | | | | | |
| Many complaints about finishing unit | | | | | | | | | | | |
| Re-parcellation/allocation was sub-optimal for traffic, spaces | | | | | | | | | | | |
| Double shafts require a lot of space | | | | | | | | | | | |
| Extra heavy floors make vertical flexibility impossible | | | | | | | | | | | |
| Re-allocation of free sector to social sector, was sub-optimal | | | | | | | | | | | |
| Auction generated higher rental income | | | | | | | | | | | |
| Social renters also had capacity to invest in their own infill | | | | | | | | | | | |
| Difficult communication with owner after signing lease | | | | | | | | | | | |
| Protocol given at installation fair was too extensive+too late | | | | | | | | | | | |
| Vacancy (empty Solids) | | | | | | | | | | | |
| Low quality indoor climate / bad insulation | | | | | | | | | | | |
| Residents have been expanding / growing their house | | | | | | | | | | | |
| Residents placed own property boundaries | | | | | | | | | | | |
| Not over dimensioned enough | | | | | | | | | | | |
| Also shows change in social standing | | | | | | | | | | | |
| Individual adaptivity not possible due technical issue | | | | | | | | | | | |
| Common decision-making issues | | | | | | | | | | | |
| Demolished due profit, reasons | | | | | | | | | | | |
| Big or some amount of surplus of site space | | | | | | | | | | | |
| Location capable to support more functions due zoning plan | | | | | | | | | | | |
| Location capable to support more functions due accessibility | | | | | | | | | | | |
| Surplus in available floor space | | | | | | | | | | | |
| Overdimensioning in floor height | | | | | | | | | | | |
| Modular rules for components have been used | | | | | | | | | | | |
| Construction components are demountable and independent | | | | | | | | | | | |
| Margins are used in the zoning system of the building | | | | | | | | | | | |
| It is relatively easily to add new stairs/elevators | | | | | | | | | | | |
| The columns are round shaped | | | | | | | | | | | |
| It is possible to expand the building horizontally | | | | | | | | | | | |
| It is possible to expand the building vertically | | | | | | | | | | | |
| It is possible to reject units of the building | | | | | | | | | | | |
| The facade can be dismantled | | | | | | | | | | | |
| Open surfaces are regular shaped + according to grid plan | | | | | | | | | | | |
| Installations and services are (controlled) per unit level | | | | | | | | | | | |
| The building has no specific distribution equipment facilities | | | | | | | | | | | |
| The facility parts can be disconnected or demounted | | | | | | | | | | | |
| The facilities components are easy accessible | | | | | | | | | | | |
| User units are demountable and reusable | | | | | | | | | | | |
| Inner walls are easily replaced and disconnected | | | | | | | | | | | |

- Molenvliet
- Other projects
- Solids
- Dagoon woningen
- De Drie Hoven
- PREVI
- Nakagin Capsule Tower
- Sky House

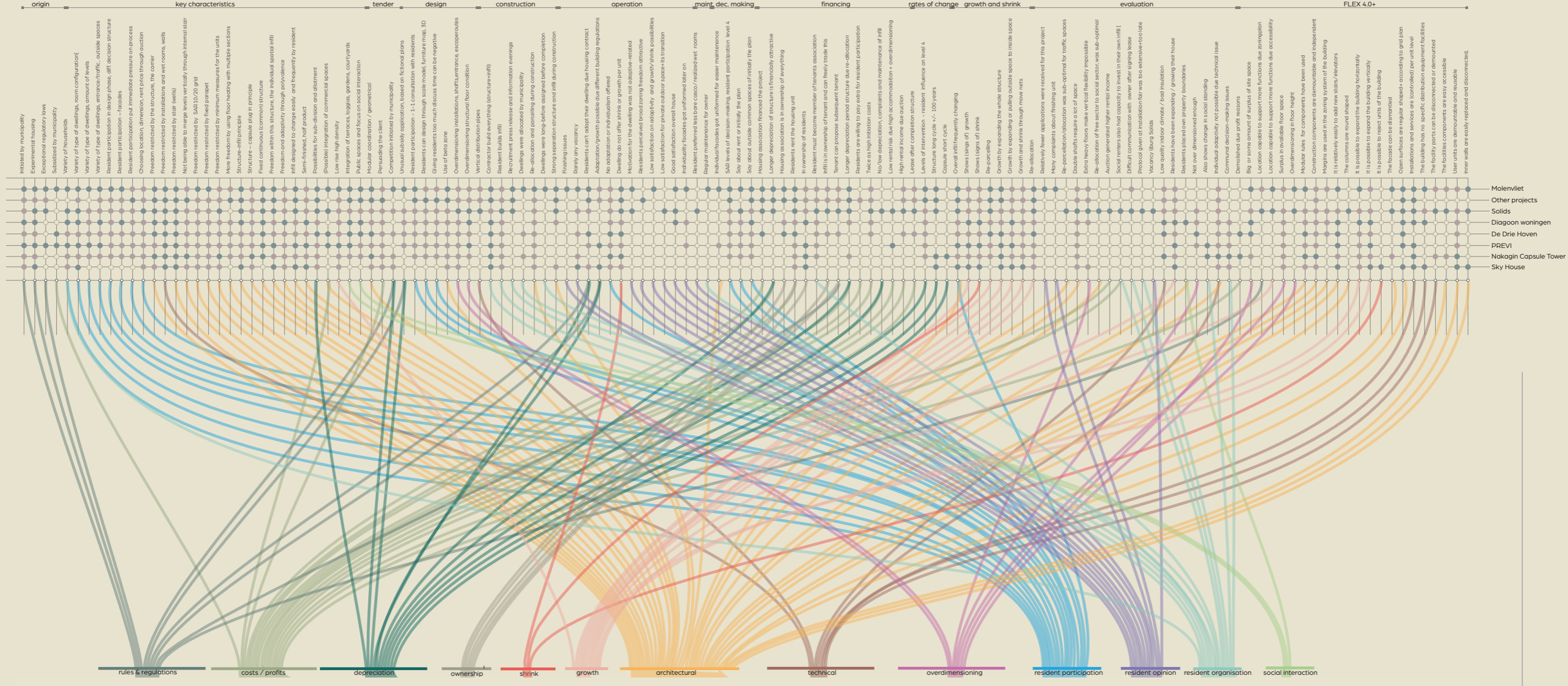
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● statement correct

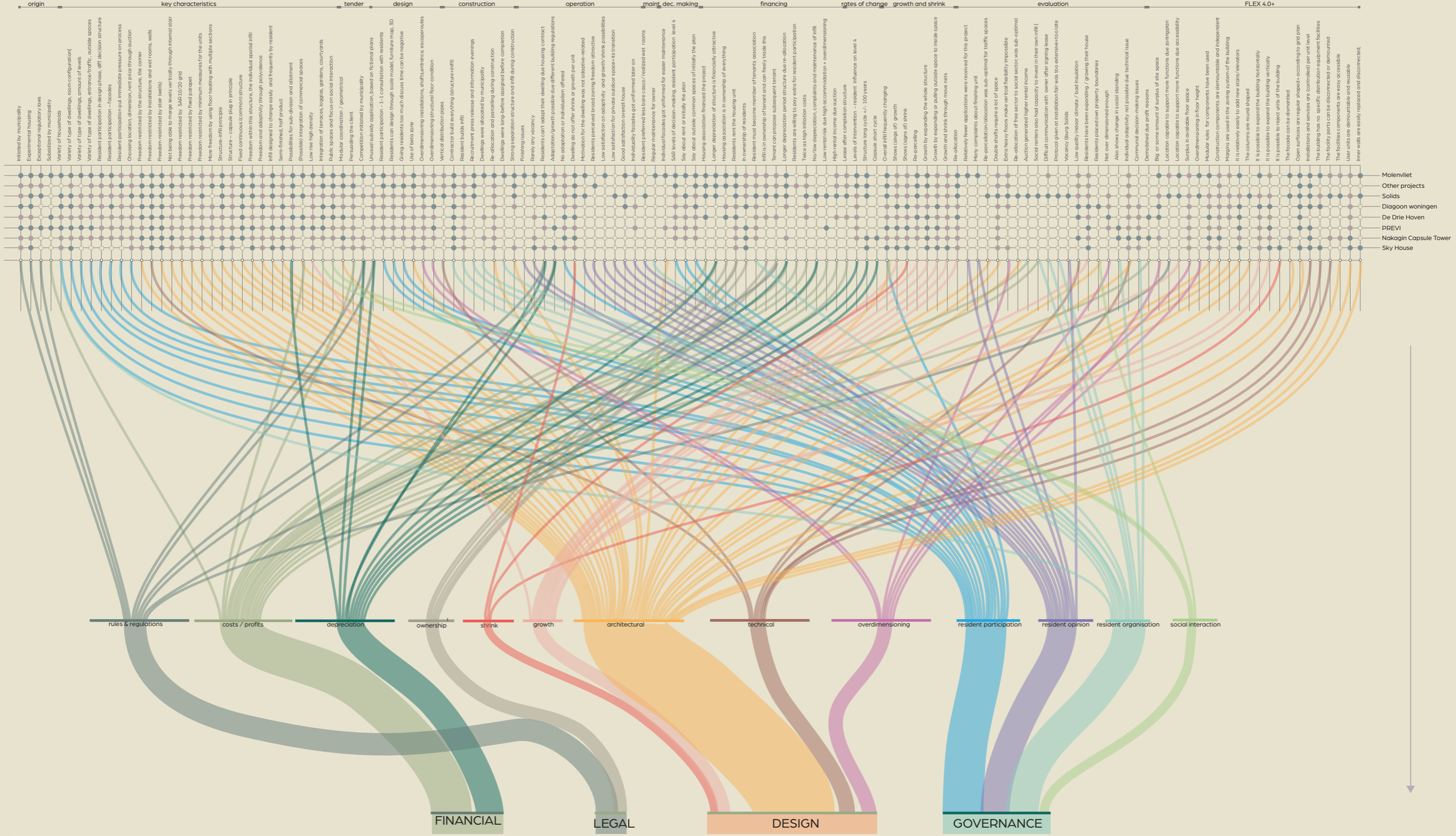
○ no relationship / not applicable



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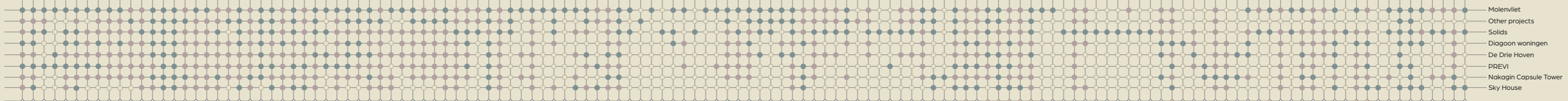
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origin **key characteristics** **tender** **design** **construction** **operation** **maint./dec. making** **financing** **rates of change, growth and shrink** **evaluation** **FLEX 4.0+**

Initiated by municipality
 Experimental housing
 Exceptional regulatory laws
 Subsidized by municipality
 Variety of households
 Variety of type of dwellings, room configuration
 Variety of type of dwellings, amount of levels
 Variety of type of dwellings, entrance/traffic, outside spaces
 Resident participation in design phase, diff. decision structure
 Resident participation – focuses
 Resident participation out, immediate pressure on process
 Choosing location, dimension, rent price through auction
 Freedom restricted by the structure, the carrier
 Freedom restricted by installers and wet rooms, walls
 Freedom restricted by stair (wells)
 Not being able to merge levels vertically through internal stair
 Freedom restricted by SAP10/20 grid
 Freedom restricted by fixed parapet
 Freedom restricted by minimum measures for the units
 More freedom by using floor heating with multiple sections
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 Structure – capsule plug in principle
 Fixed continuous (common) structure
 Freedom within this structure, the individual spatial infl
 Freedom and adaptivity through polyvalence
 Infill designed to change easily and frequently by resident
 Semi-finished, 'half product'
 Possibilities for sub-division and allotment
 (possible) integration of commercial spaces
 Low rise high density
 Integration of terraces, loggias, gardens, courtyards
 Public spaces and focus on social interaction
 Modular coordination / geometrical
 Persuading the client
 Competition initiated by municipality
 Unusual subsidy application based on fictional plans
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 Residents can design through scale model, furniture map, 3D
 Giving residents too much discuss time can be negative
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 Overdimensioning installations, shaft, entrance, escape routes
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 Resident builds infill
 Recruitment press release and information evenings
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 Re-allocation and parceling during construction
 Dwellings were long before assigned before completion
 Strong separation structure and infl during construction
 Finishing issues
 Rarely any vacancy
 Residents can't adapt their dwelling due housing contract
 Adaptation growth possible due different building regulations
 No adaptation or individualism offered
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 Motivation for the dwelling was not adaptive-related
 Residents perceived broadening freedom attractive
 Low satisfaction on adaptivity and growth/shrink possibilities
 Low satisfaction for private outdoor space + its transition
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 Also shows change in social standing
 Individual adaptivity not possible due technical issue
 Common decision-making issues
 Demolished due profit, reasons
 Big or some amount of surplus, of site space
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 Location capable to support more functions due accessibility
 Surplus in available floor space
 Overdimensioning in floor height
 Modular rules, for components have been used
 Construction components are demountable and independent
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 It is relatively easily to add new stairs/elevators
 The columns are round shaped
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rules & regulations costs / profits depreciation ownership shrink growth architectural technical overdimensioning resident participation resident opinion resident organisation social interaction

FINANCIAL

LEGAL

DESIGN

GOVERNANCE



DEFINITION

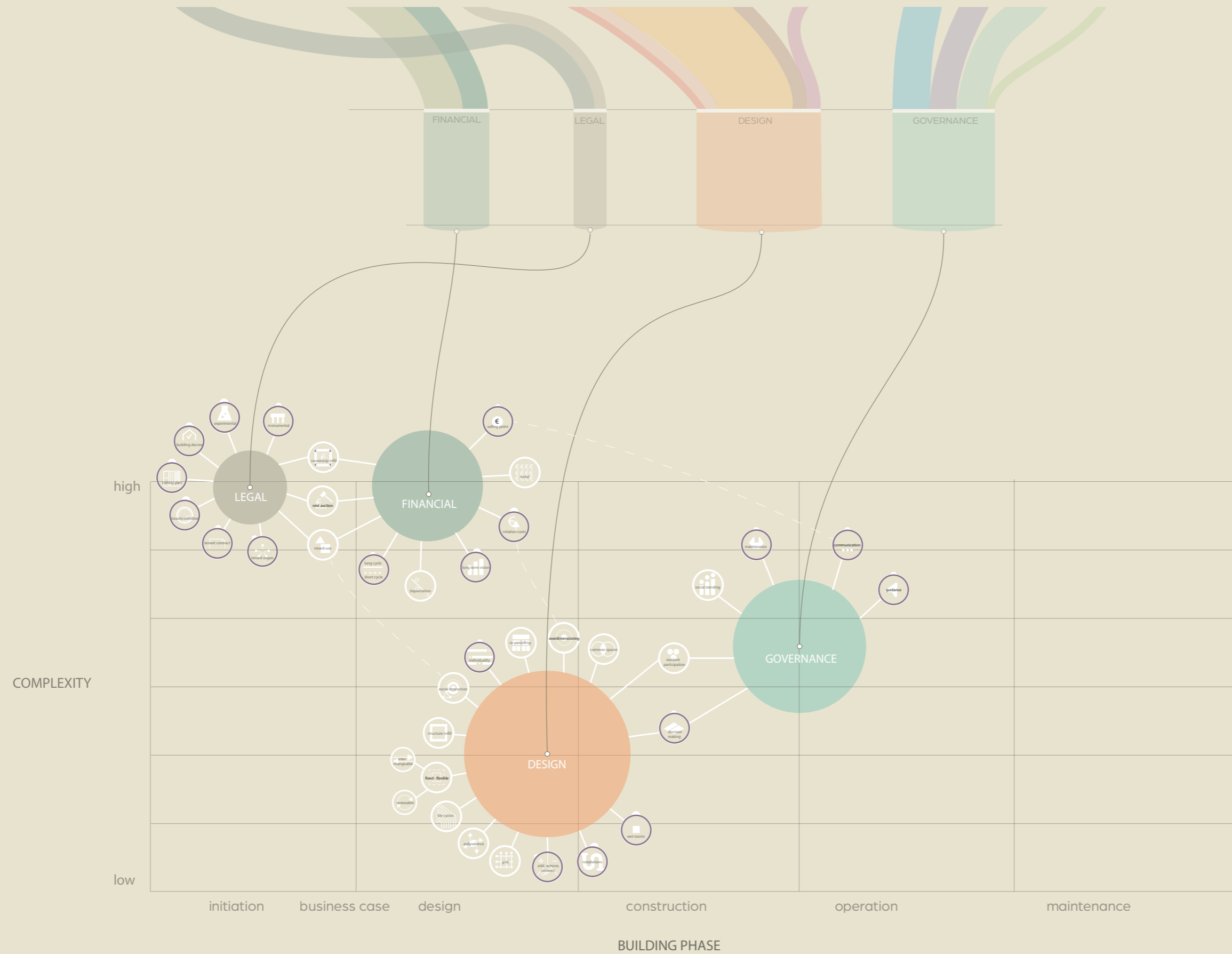


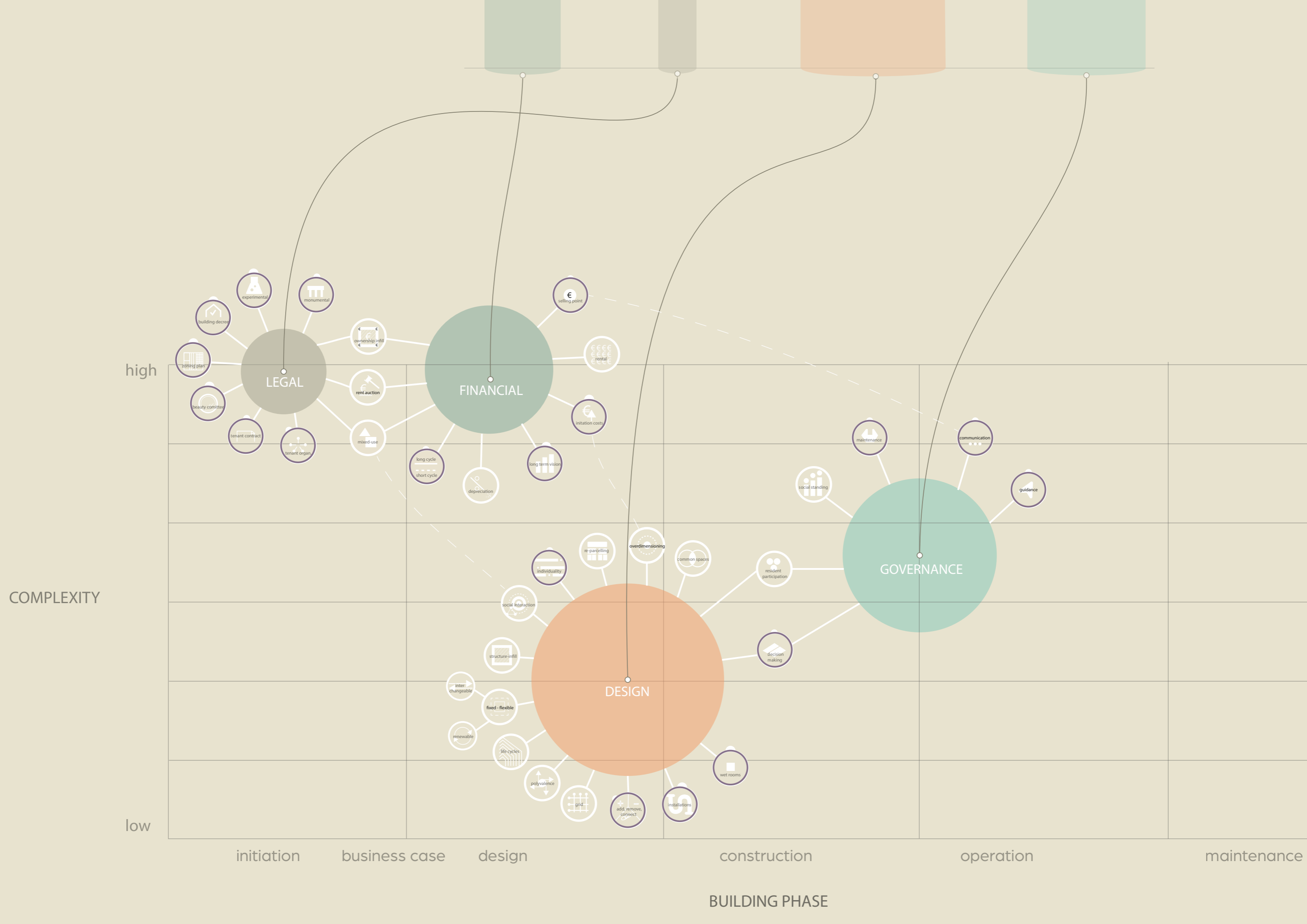
IN PRACTICE

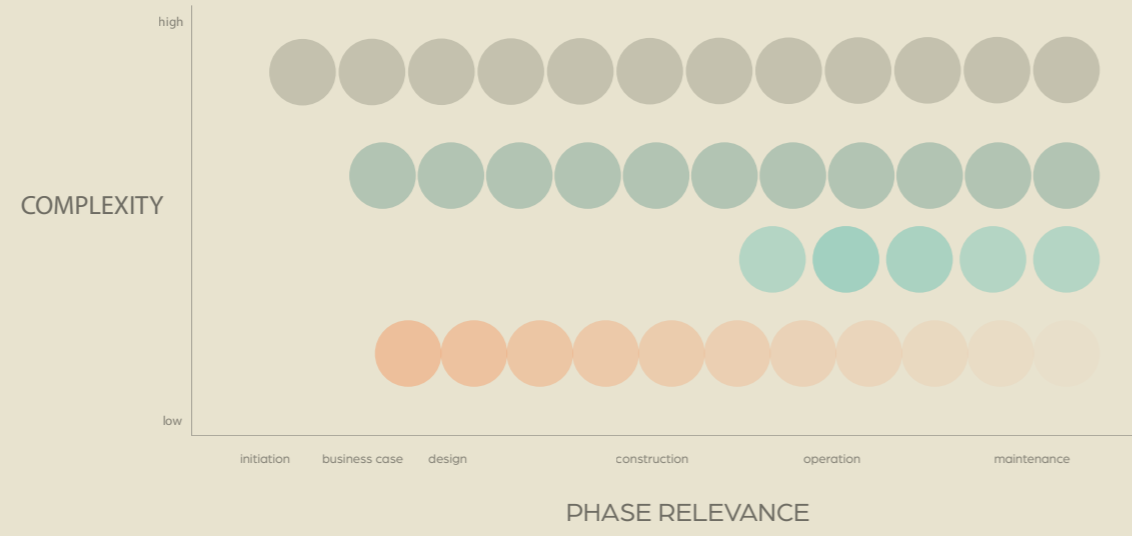


ITS BARRIERS & ENABLERS

BARRIERS AND ENABLERS





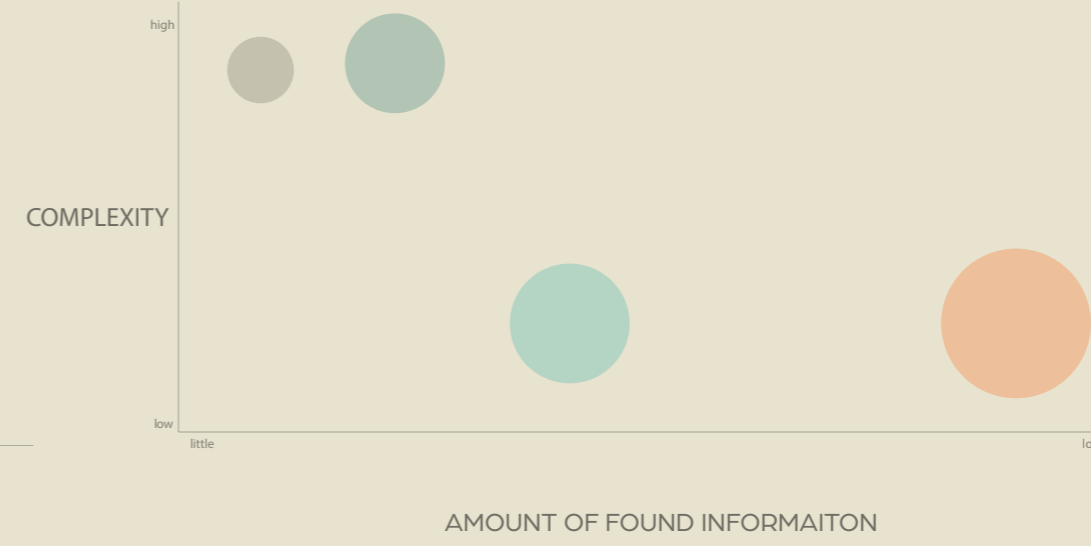
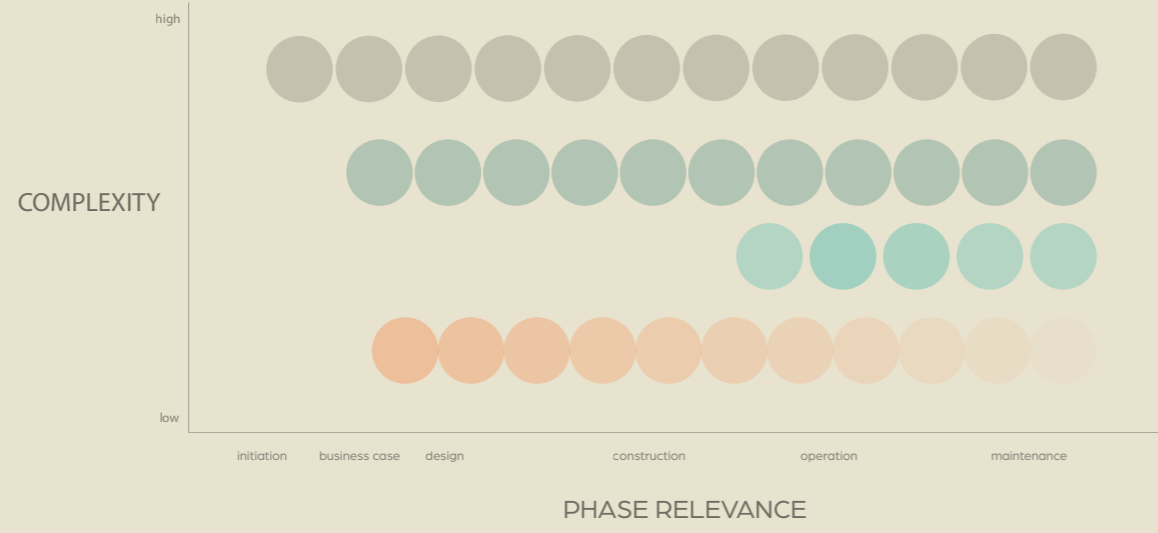


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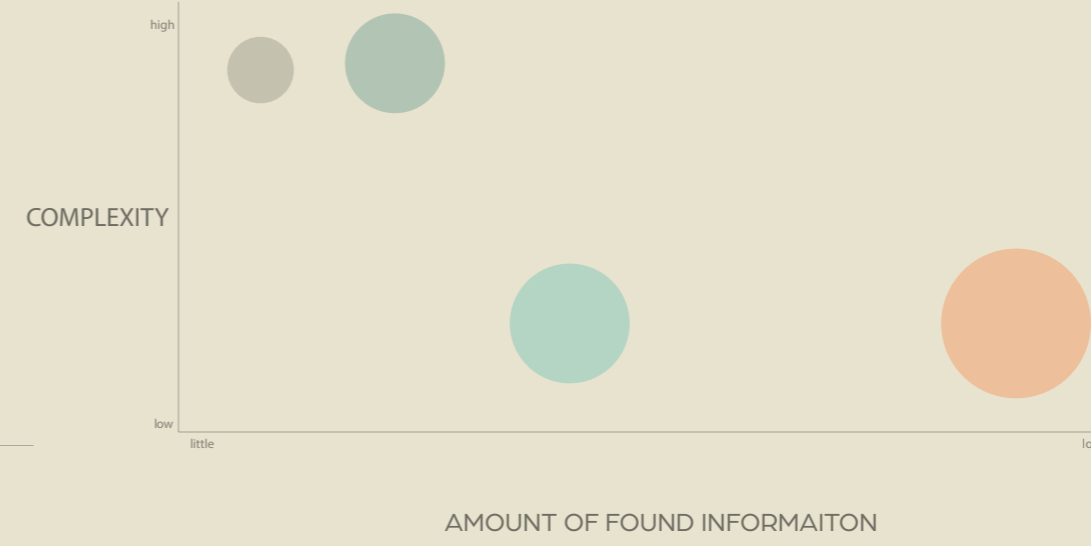
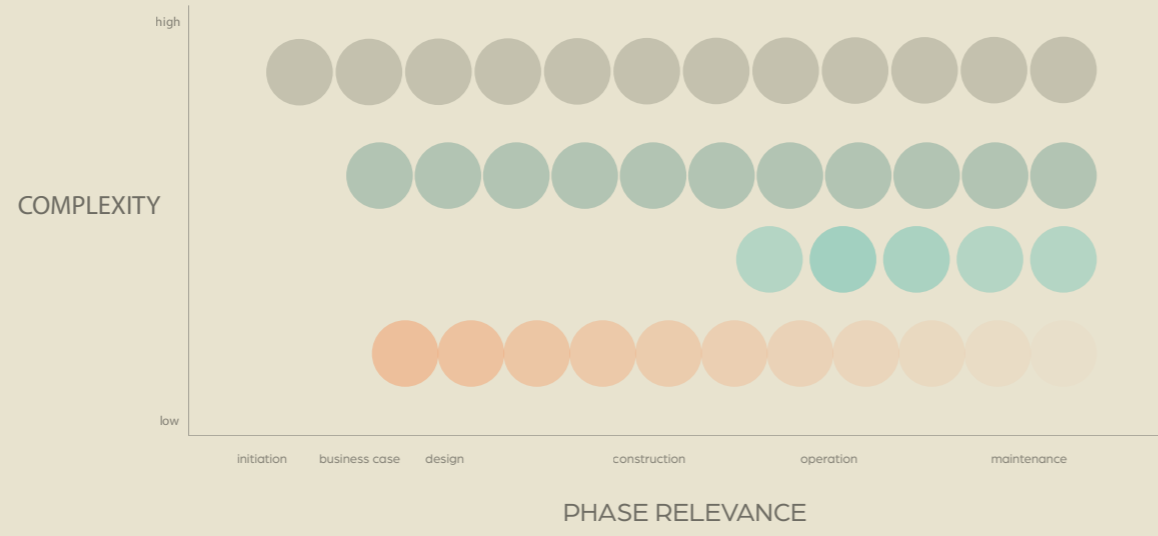
FINANCIAL

GOVERNANCE

DESIGN

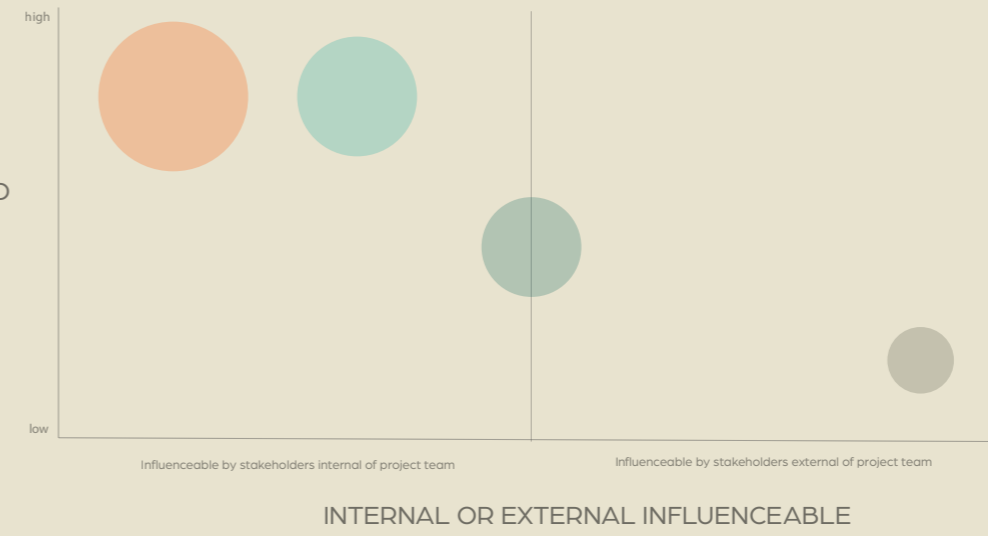


- LEGAL
- FINANCIAL
- GOVERNANCE
- DESIGN



- LEGAL
- FINANCIAL
- GOVERNANCE
- DESIGN

IMPLEMENTATION LIKELIHOOD



DEFINITION

IN PRACTICE

ITS BARRIERS & ENABLERS

ADDRESSING BARRIERS & ENABLERS

ADRESSING THE BARRIERS AND ENABLERS

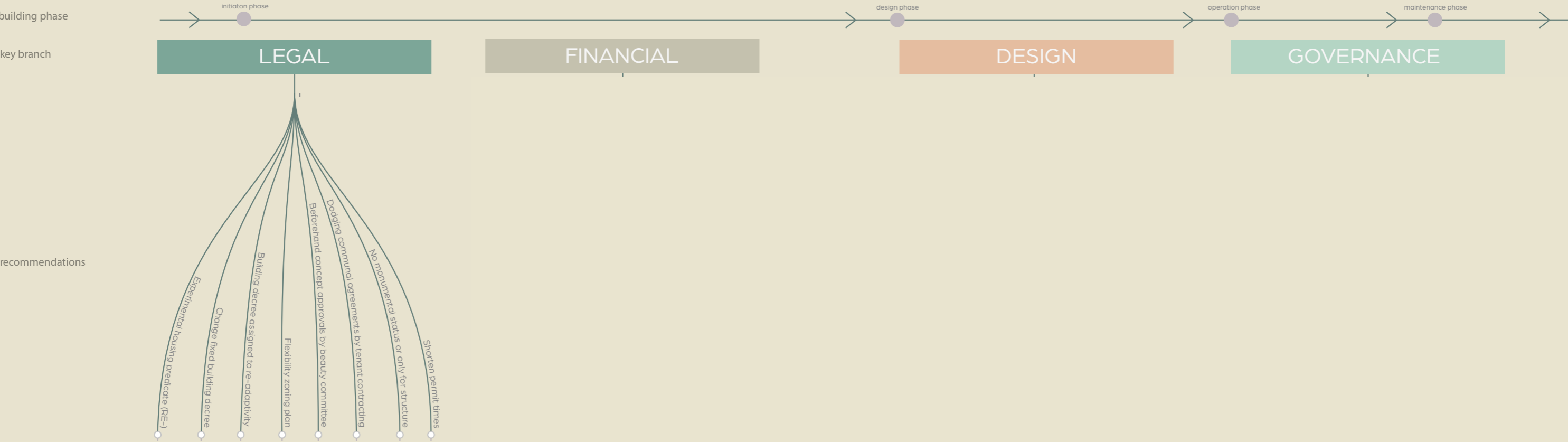
building phase



ADRESSING THE BARRIERS AND ENABLERS

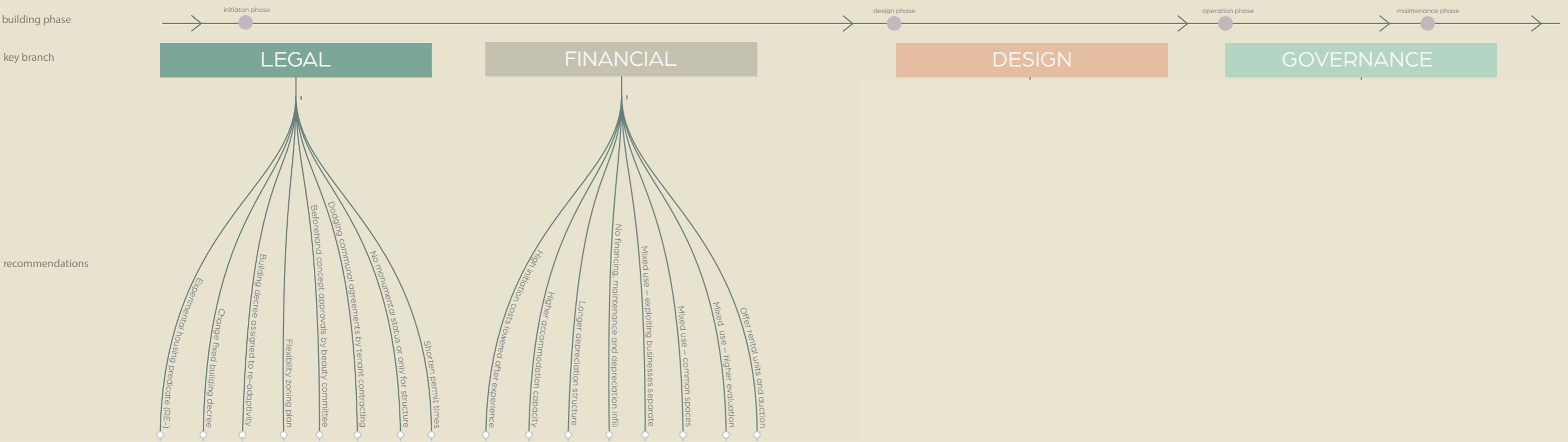


ADRESSING THE BARRIERS AND ENABLERS



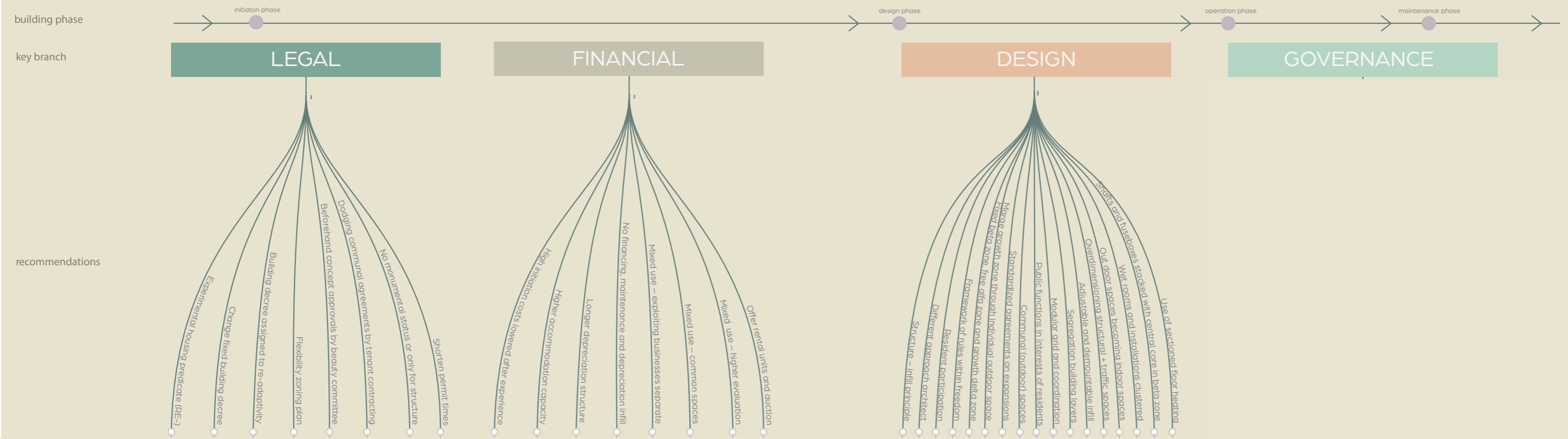
change in current building rules and regulations
ownership infill tenant contract
no monumental status

ADDRESSING THE BARRIERS AND ENABLERS



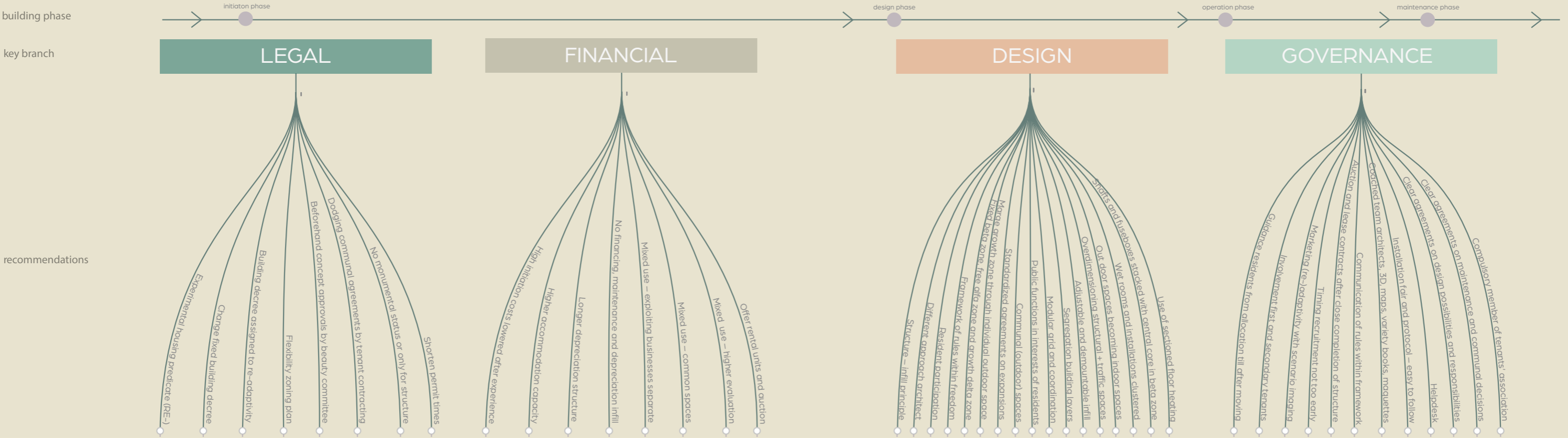
larger accommodation
longer depreciation
no infill financing
mixed-use

ADDRESSING THE BARRIERS AND ENABLERS



structure-infill
overdimensioning
framework with zones
resident participation

ADRESSING THE BARRIERS AND ENABLERS

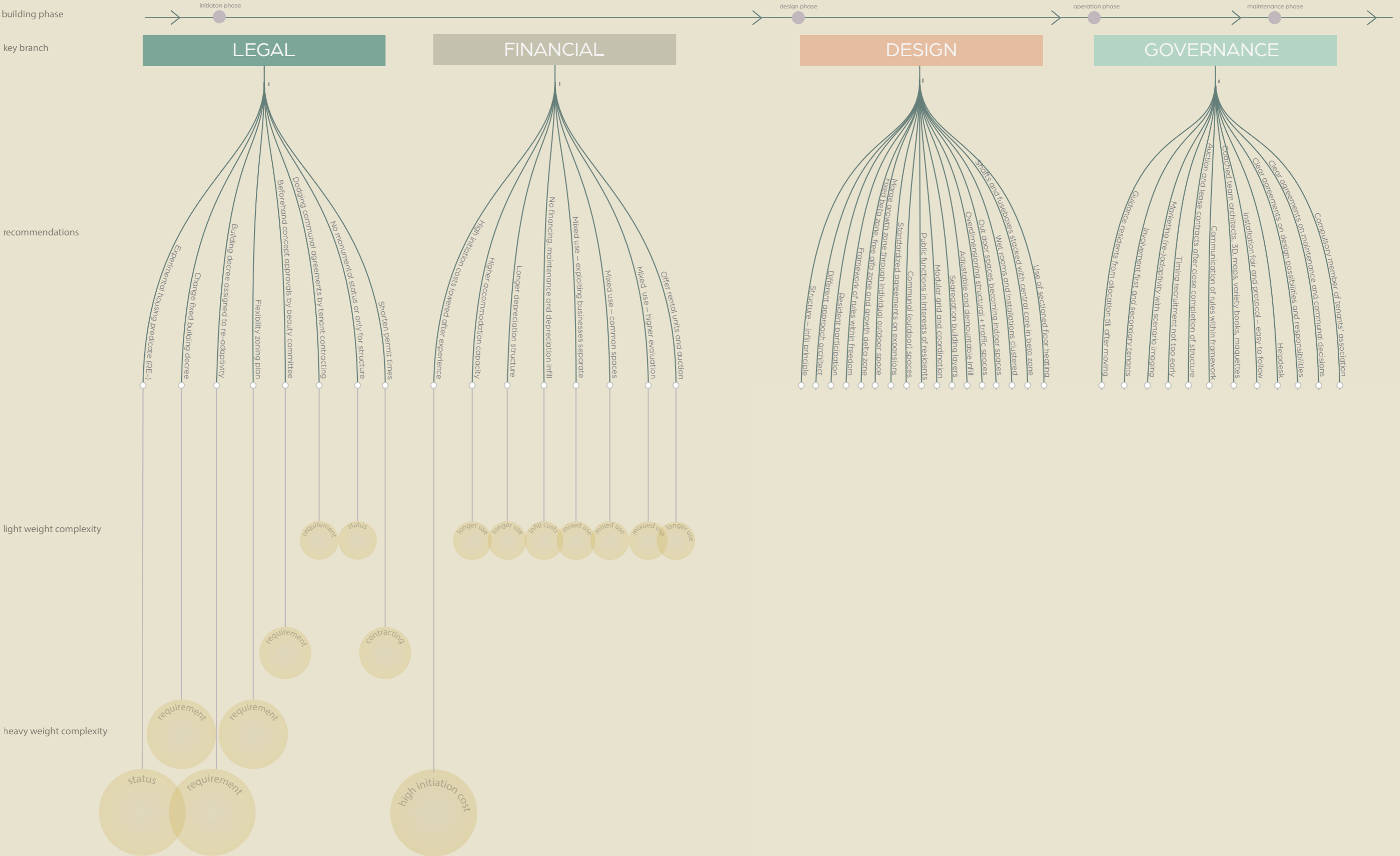


guidance
agreements
communication

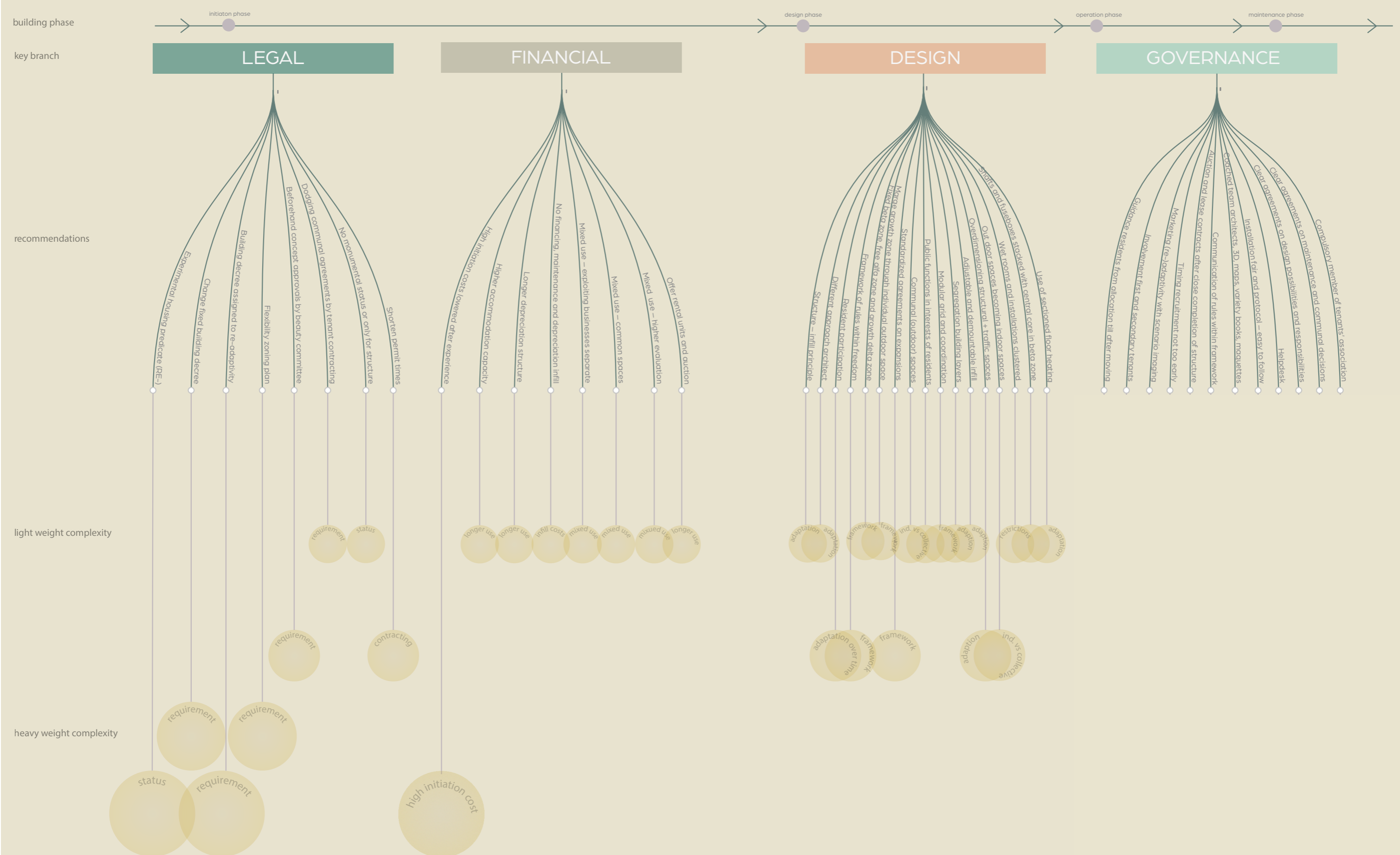
ADRESSING THE BARRIERS AND ENABLERS



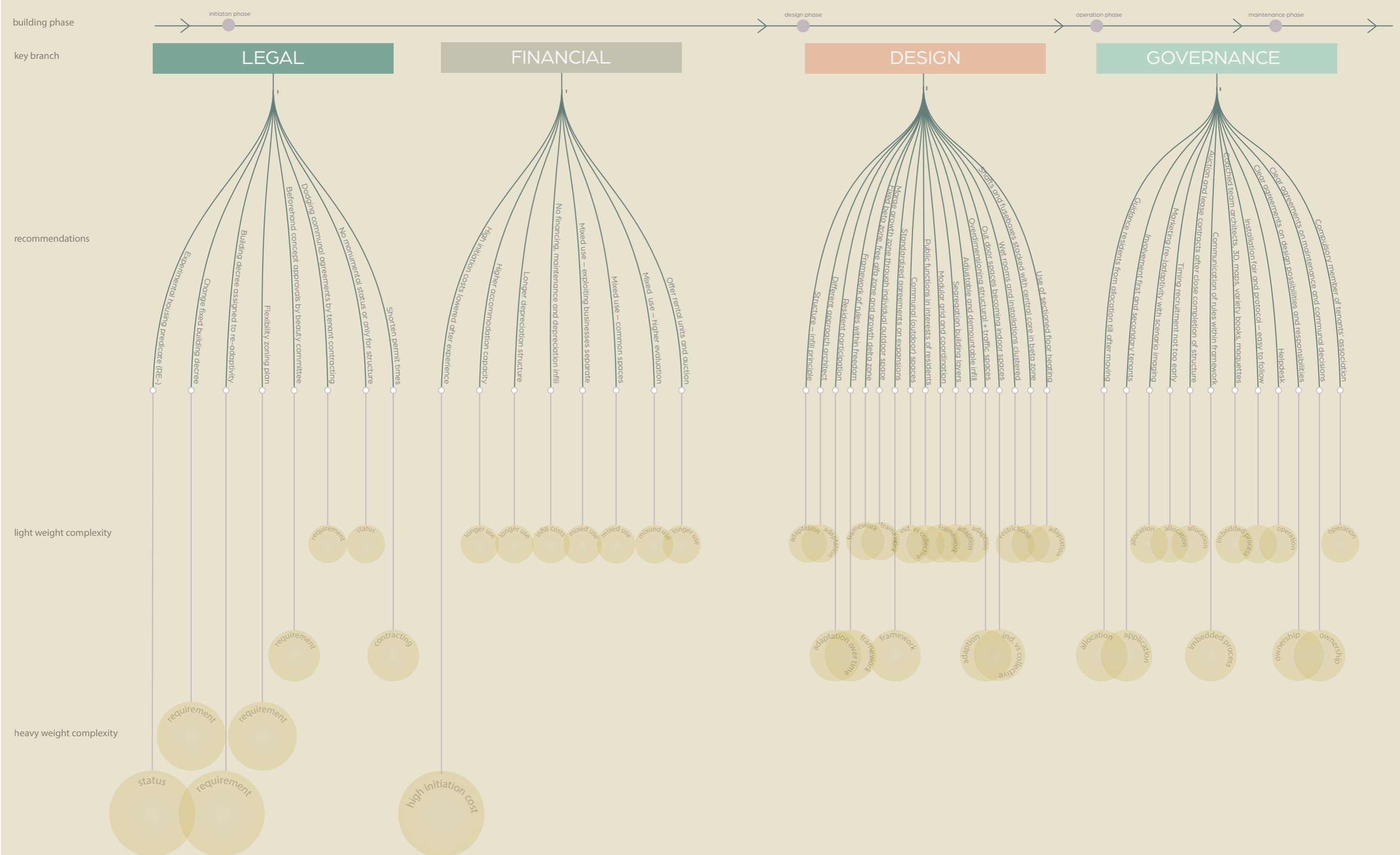
ADRESSING THE BARRIERS AND ENABLERS



ADRESSING THE BARRIERS AND ENABLERS



ADRESSING THE BARRIERS AND ENABLERS



CHANGE IN ROLES AND

BUILDING PHASES

TRADITIONAL HOUSING



INITIATION

PHASE
→



Resident representative



Developer



Project manager



Architect



Construction engineer



Installation advisor



Contractor



Investor / owner

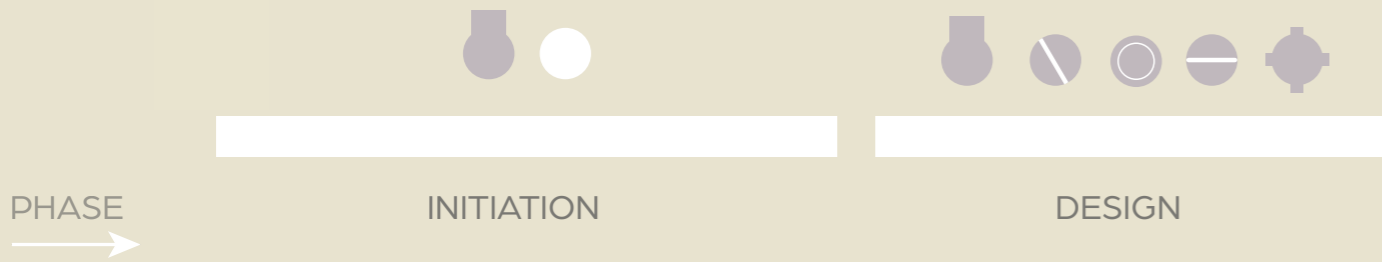


Resident

CHANGE IN ROLES AND

BUILDING PHASES

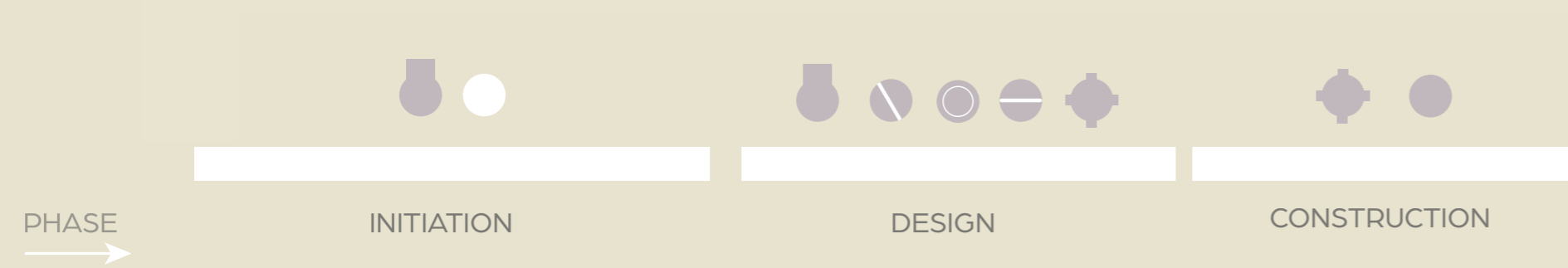
TRADITIONAL HOUSING



CHANGE IN ROLES AND

BUILDING PHASES

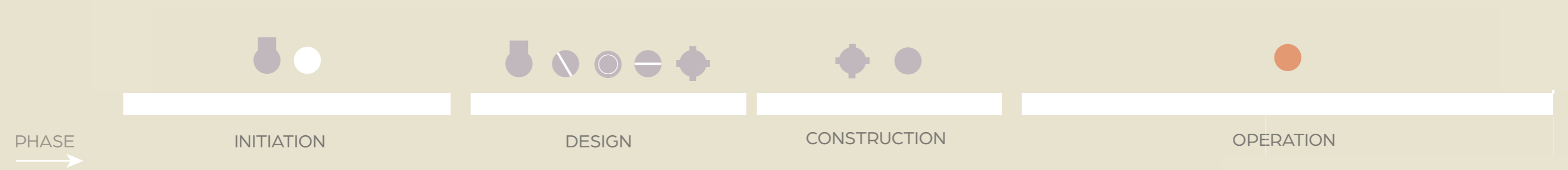
TRADITIONAL HOUSING



CHANGE IN ROLES AND

BUILDING PHASES

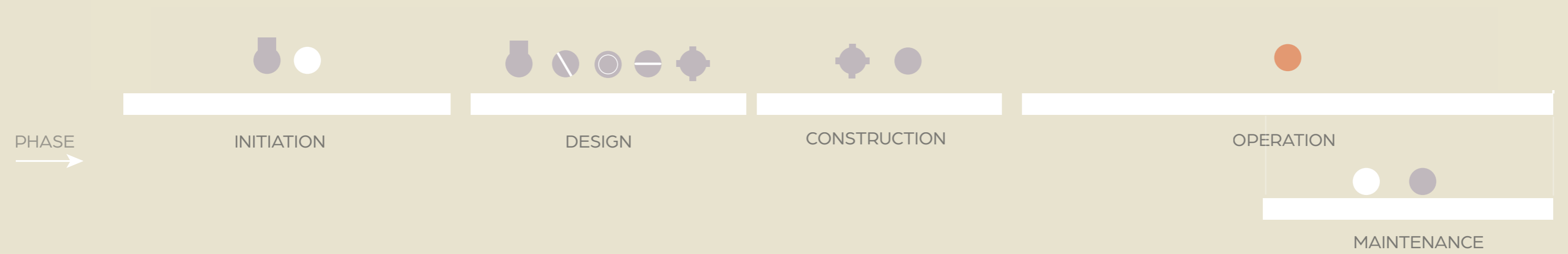
TRADITIONAL HOUSING



CHANGE IN ROLES AND

BUILDING PHASES

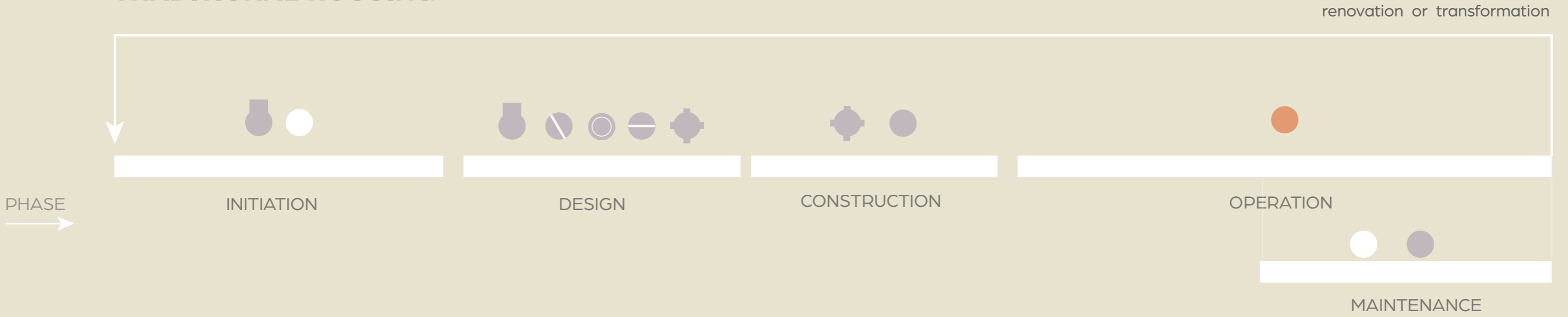
TRADITIONAL HOUSING



CHANGE IN ROLES AND

BUILDING PHASES

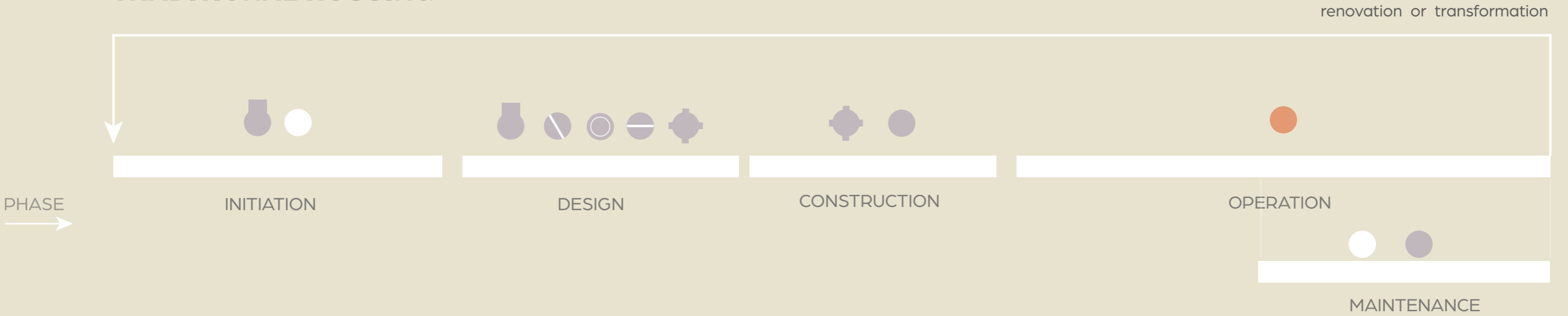
TRADITIONAL HOUSING



CHANGE IN ROLES AND

BUILDING PHASES

TRADITIONAL HOUSING



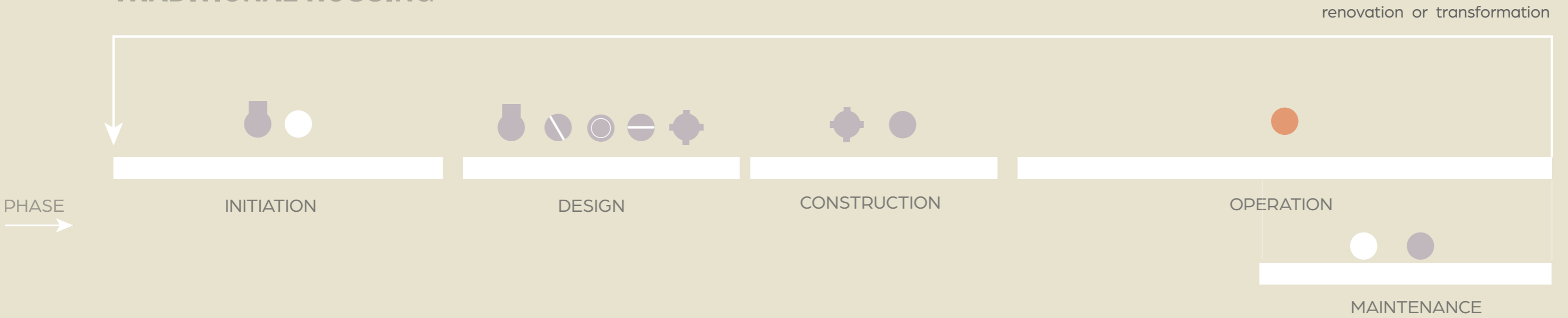
RE-ADAPTIVE HOUSING



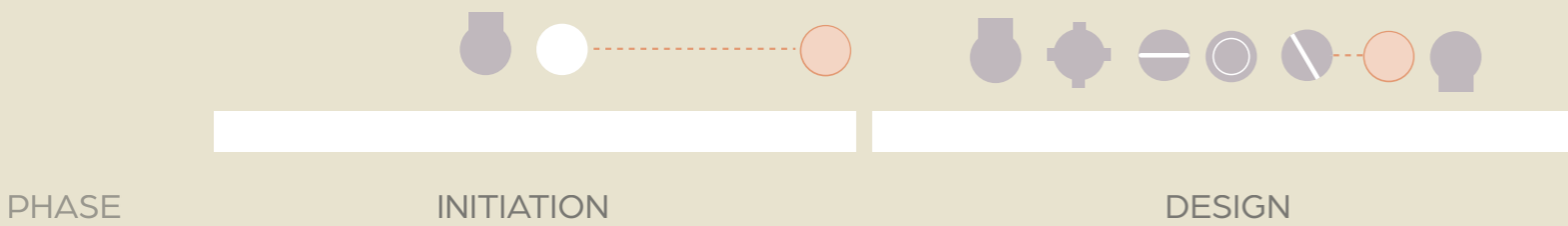
CHANGE IN ROLES AND

BUILDING PHASES

TRADITIONAL HOUSING



RE-ADAPTIVE HOUSING



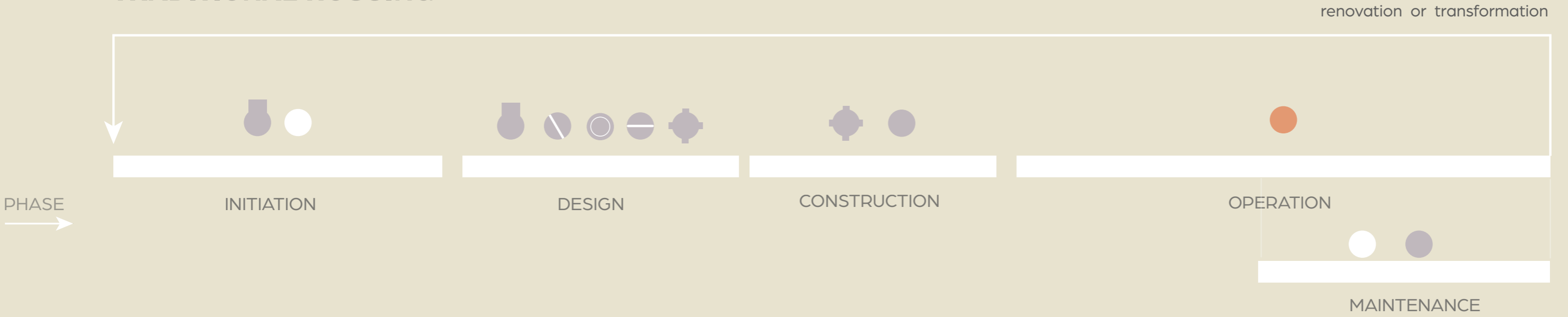
LEGENDA

- Resident representative
- Developer
- Project manager
- Architect
- Construction engineer
- Installation advisor
- Contractor
- Investor / owner
- Resident

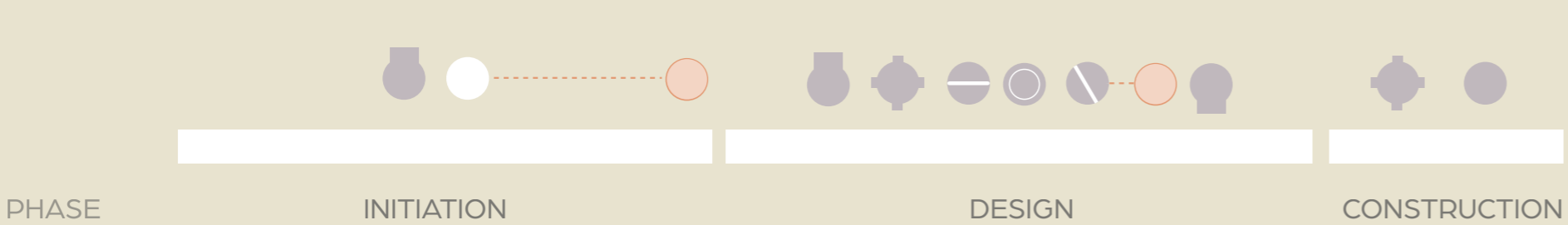
CHANGE IN ROLES AND

BUILDING PHASES

TRADITIONAL HOUSING



RE-ADAPTIVE HOUSING



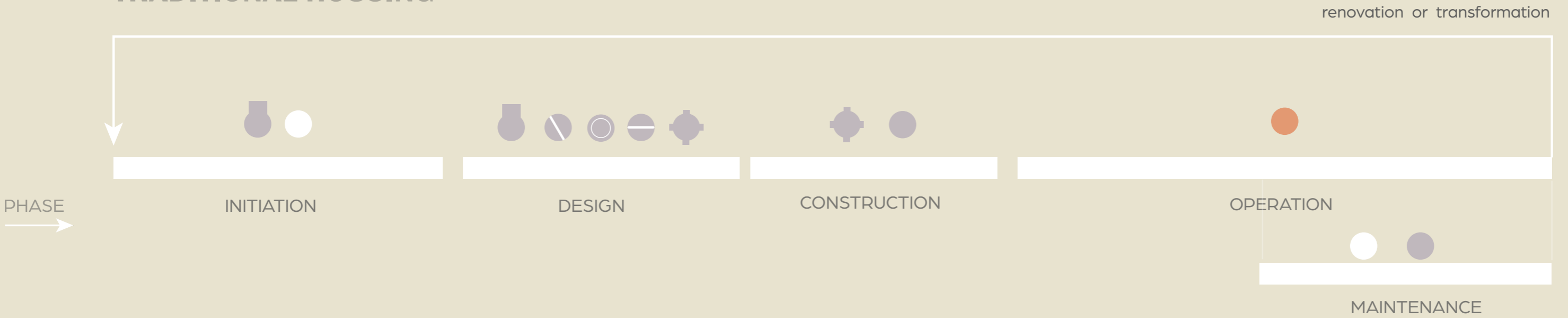
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CHANGE IN ROLES AND

BUILDING PHASES










TRADITIONAL HOUSING



RE-ADAPTIVE HOUSING



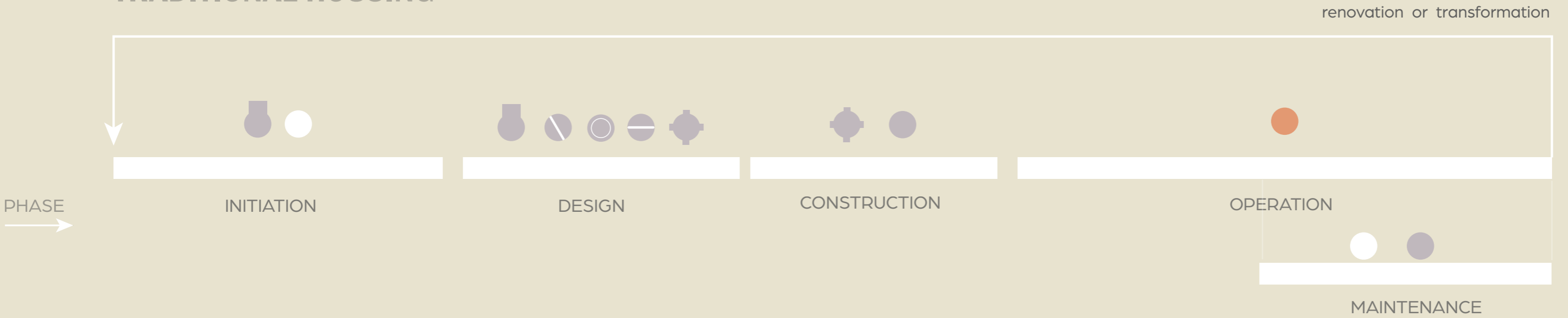
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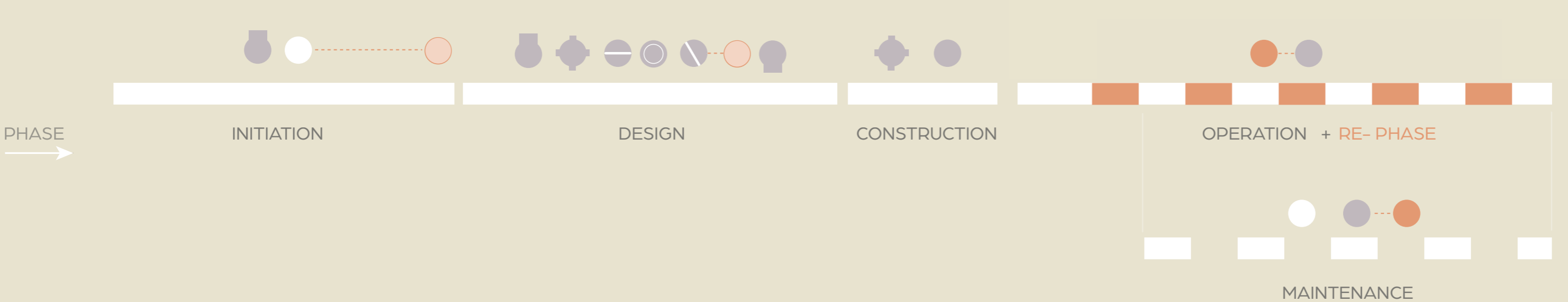
CHANGE IN ROLES AND

BUILDING PHASES

TRADITIONAL HOUSING



RE-ADAPTIVE HOUSING



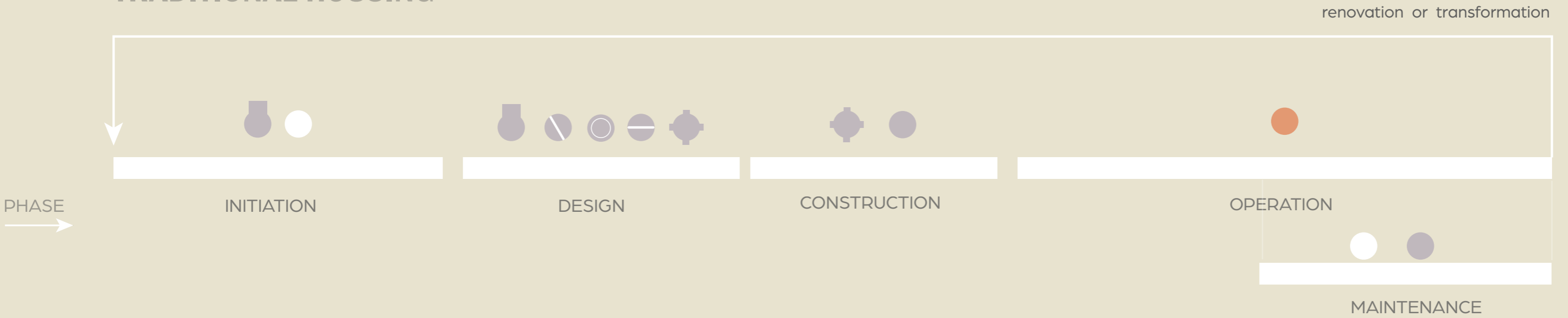
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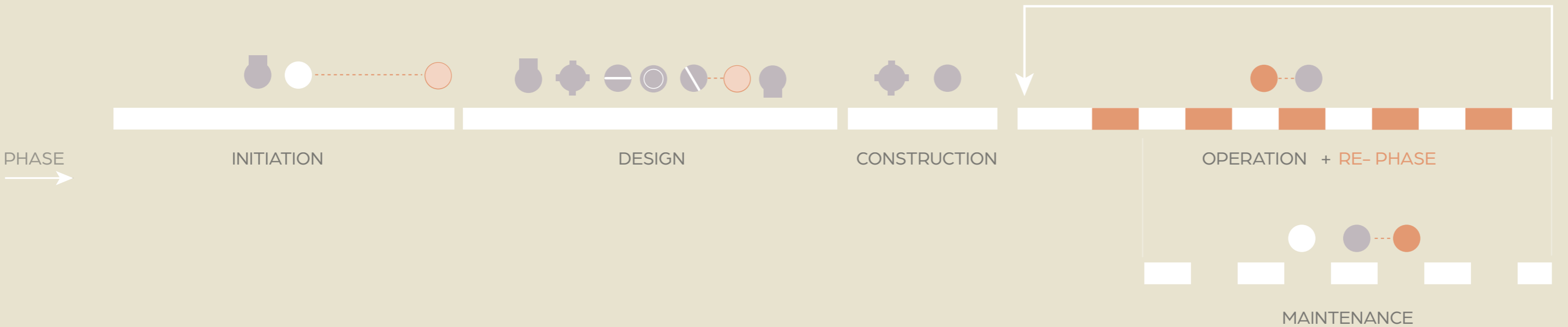
CHANGE IN ROLES AND

BUILDING PHASES










TRADITIONAL HOUSING



RE-ADAPTIVE HOUSING



LEGENDA

-  Resident representative
-  Developer
-  Project manager
-  Architect
-  Construction engineer
-  Installation advisor
-  Contractor
-  Investor / owner
-  Resident

DEFINITION

IN PRACTICE

ITS BARRIERS & ENABLERS

ADDRESSING BARRIERS & ENABLERS

MAIN RECOMMENDATIONS

legal

Influenced by external legal bodies, difficult to implement project - per project

↑_B

↑_E

REQUIREMENTS
(bouwbesluit, beauty committee, zoning plan)

CONTRACTING
(infill resident)

STATUS
(monumental)

STATUS
(monumental)



legal

NEW FLEXIBILITY-IN-USE POLICIES

Influenced by external legal bodies, difficult to implement project - per project

↑_B

REQUIREMENTS
(bouwbesluit, beauty committee, zoning plan)

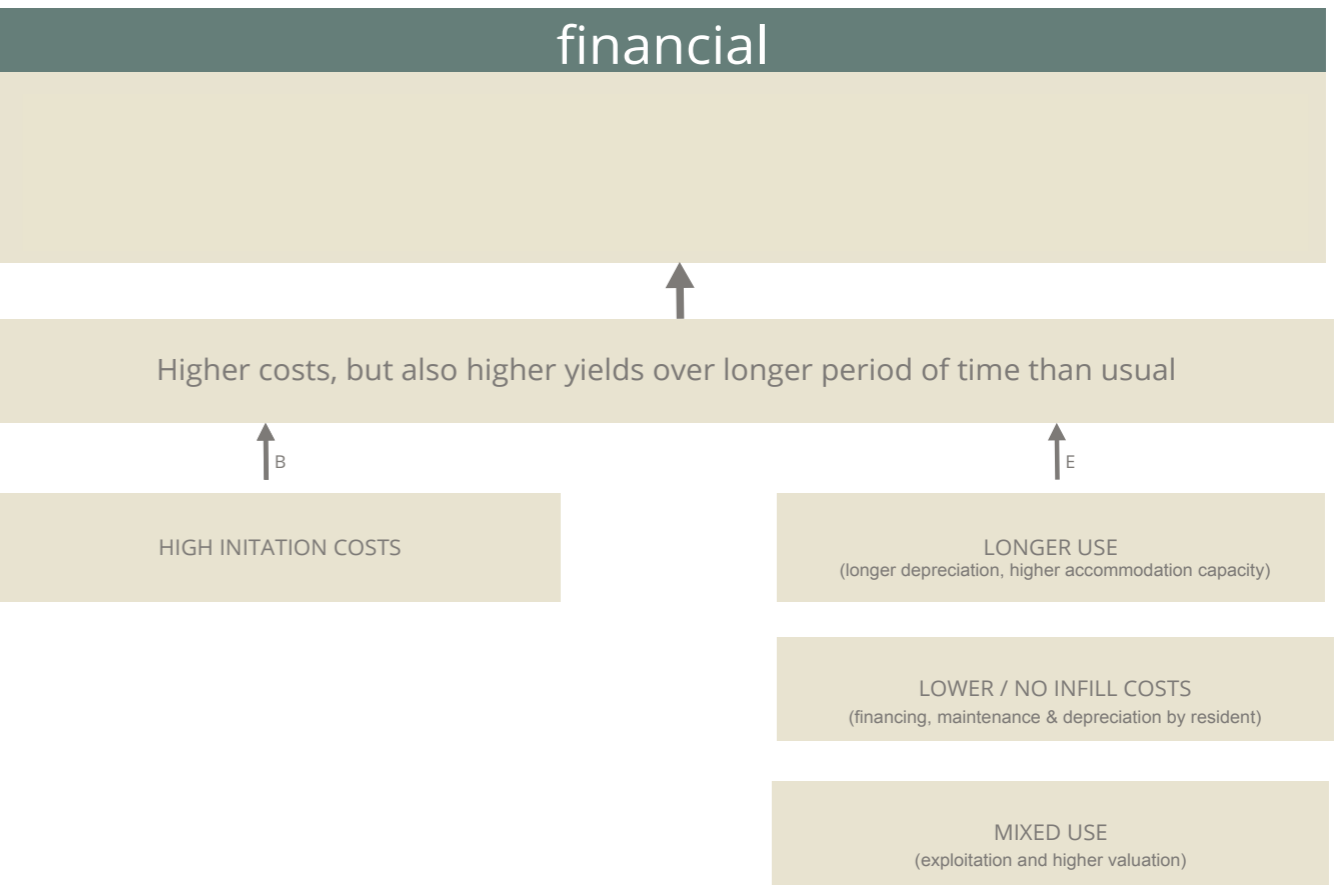
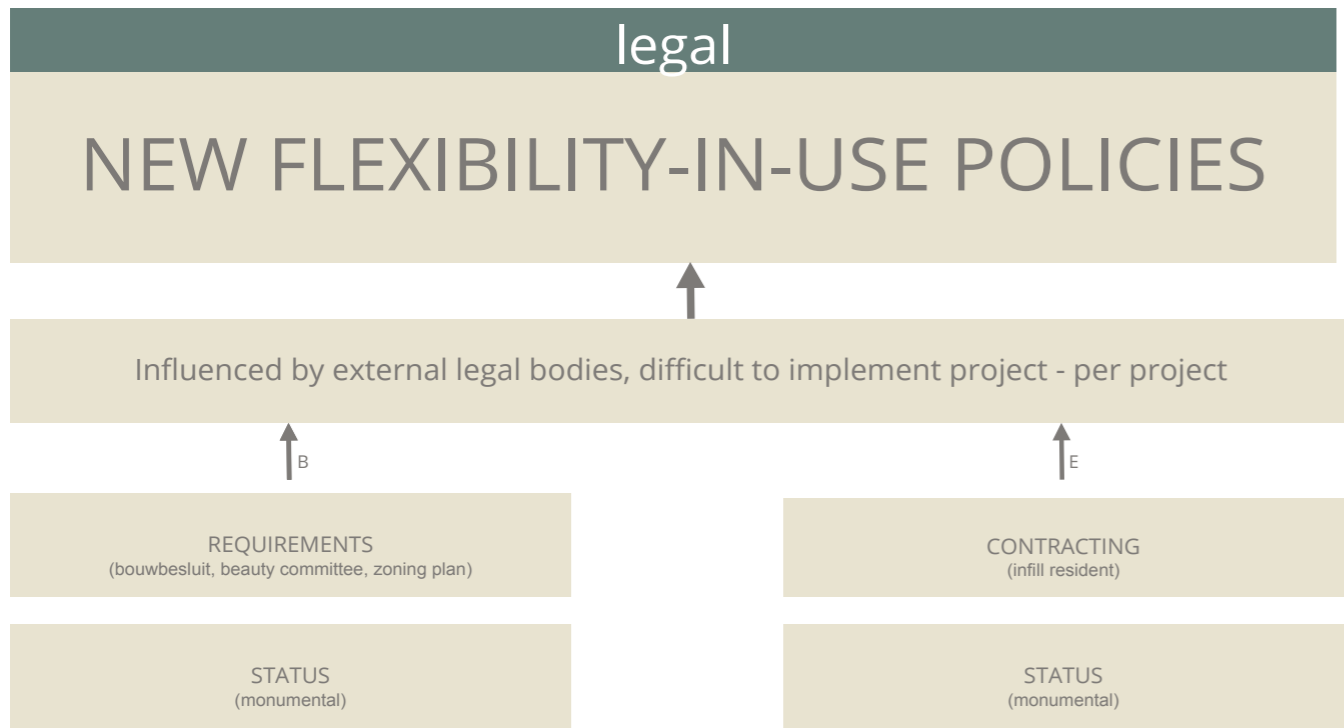
STATUS
(monumental)

↑_E

CONTRACTING
(infill resident)

STATUS
(monumental)





legal

NEW FLEXIBILITY-IN-USE POLICIES

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REQUIREMENTS
(bouwbesluit, beauty committee, zoning plan)

CONTRACTING
(infill resident)

STATUS
(monumental)

STATUS
(monumental)

financial

LONG TERM INVESTOR

Higher costs, but also higher yields over longer period of time than usual

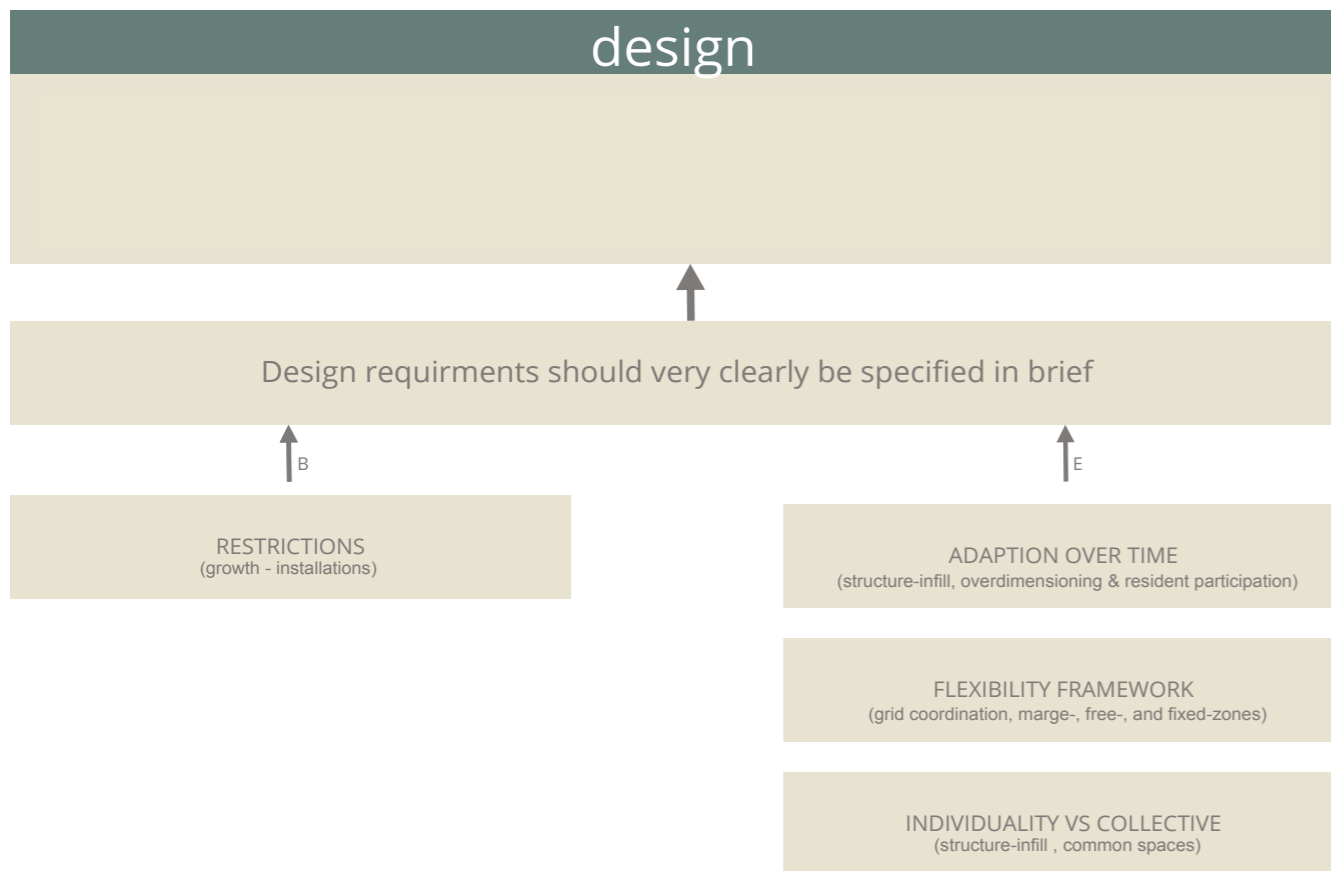
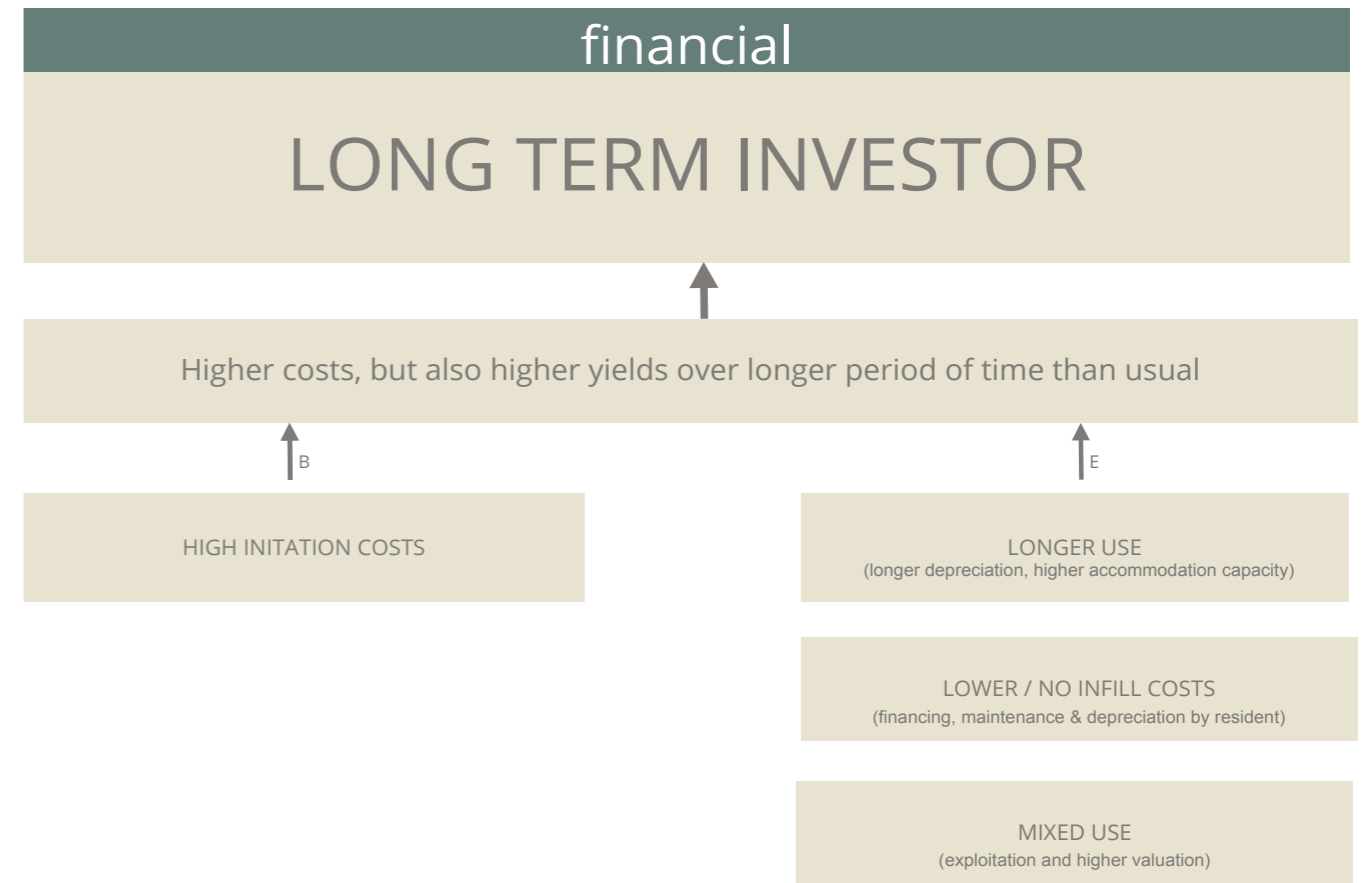
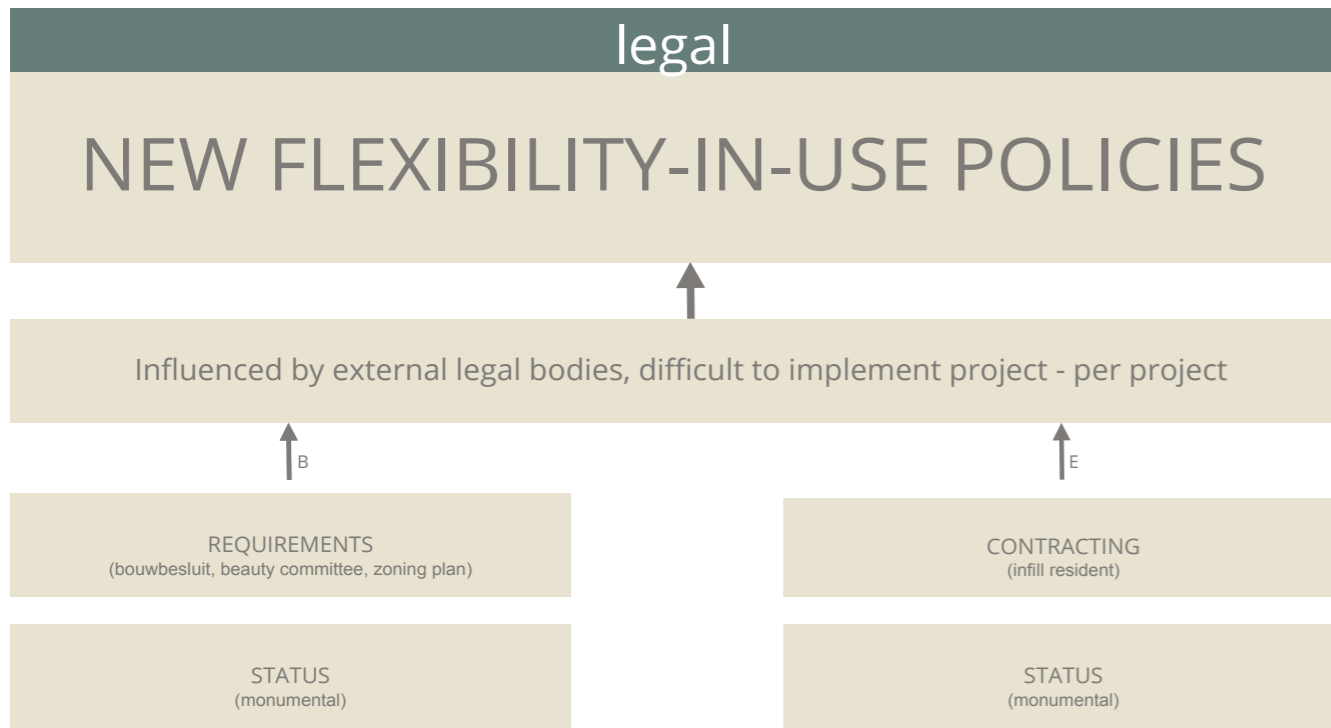


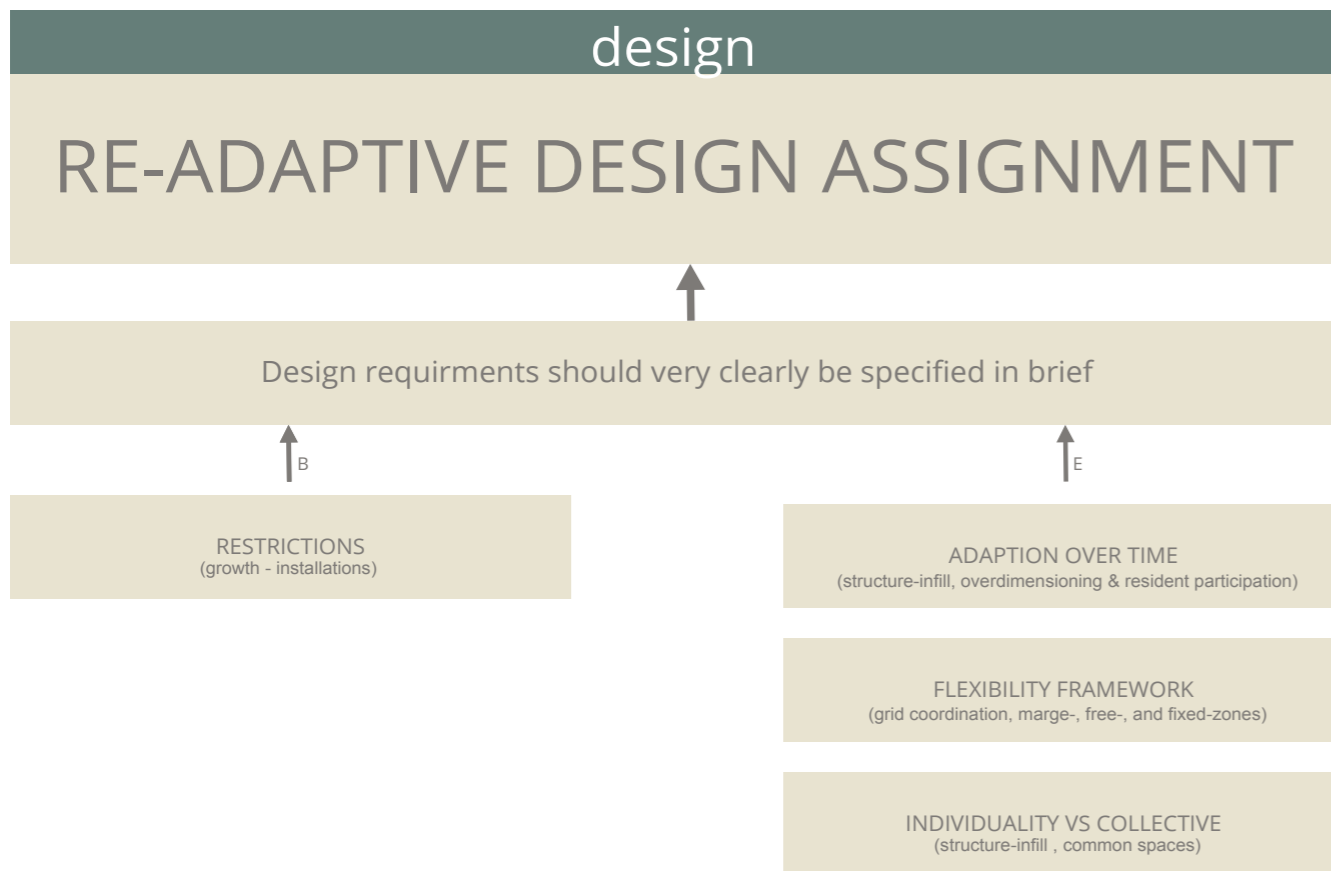
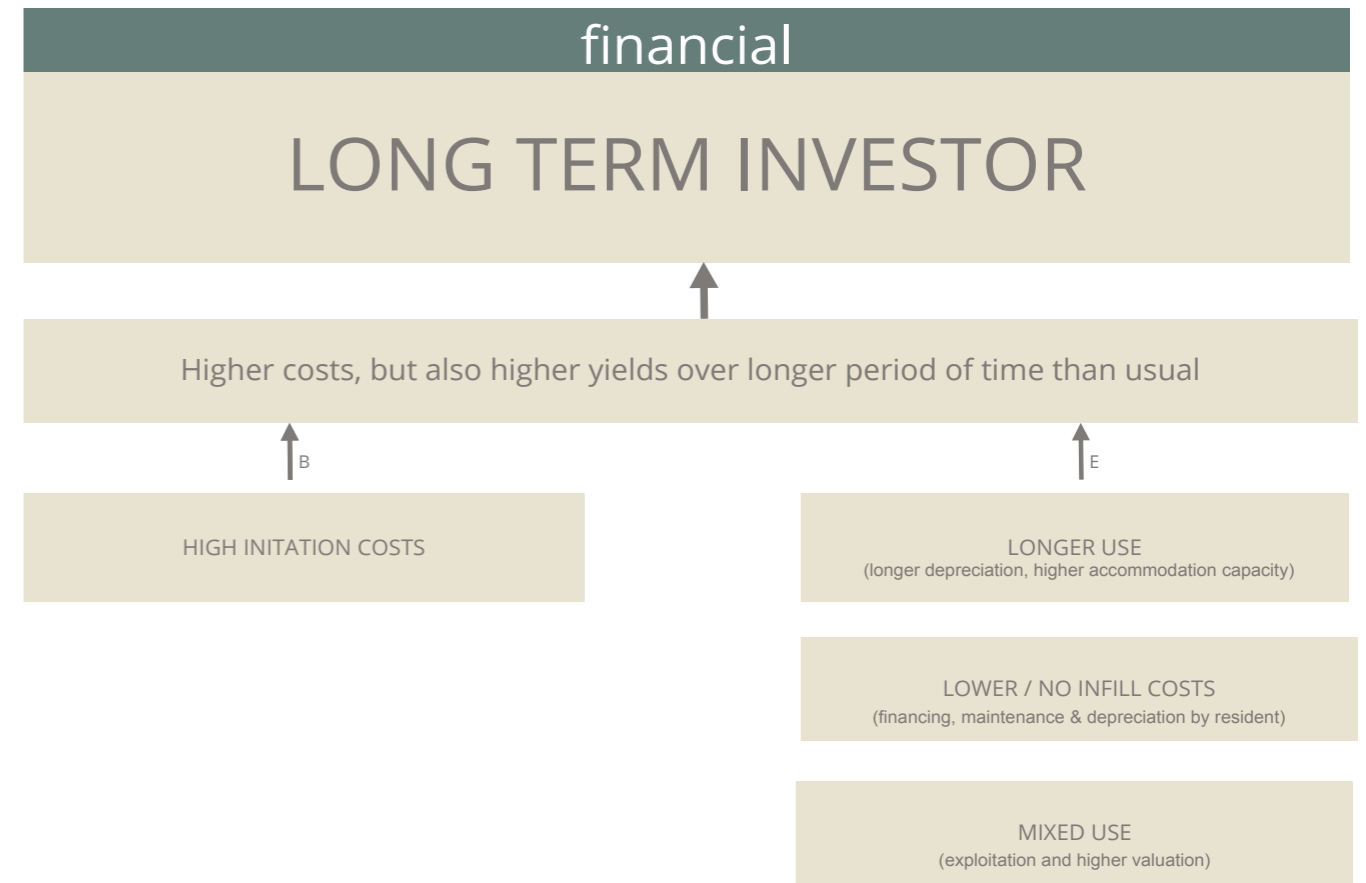
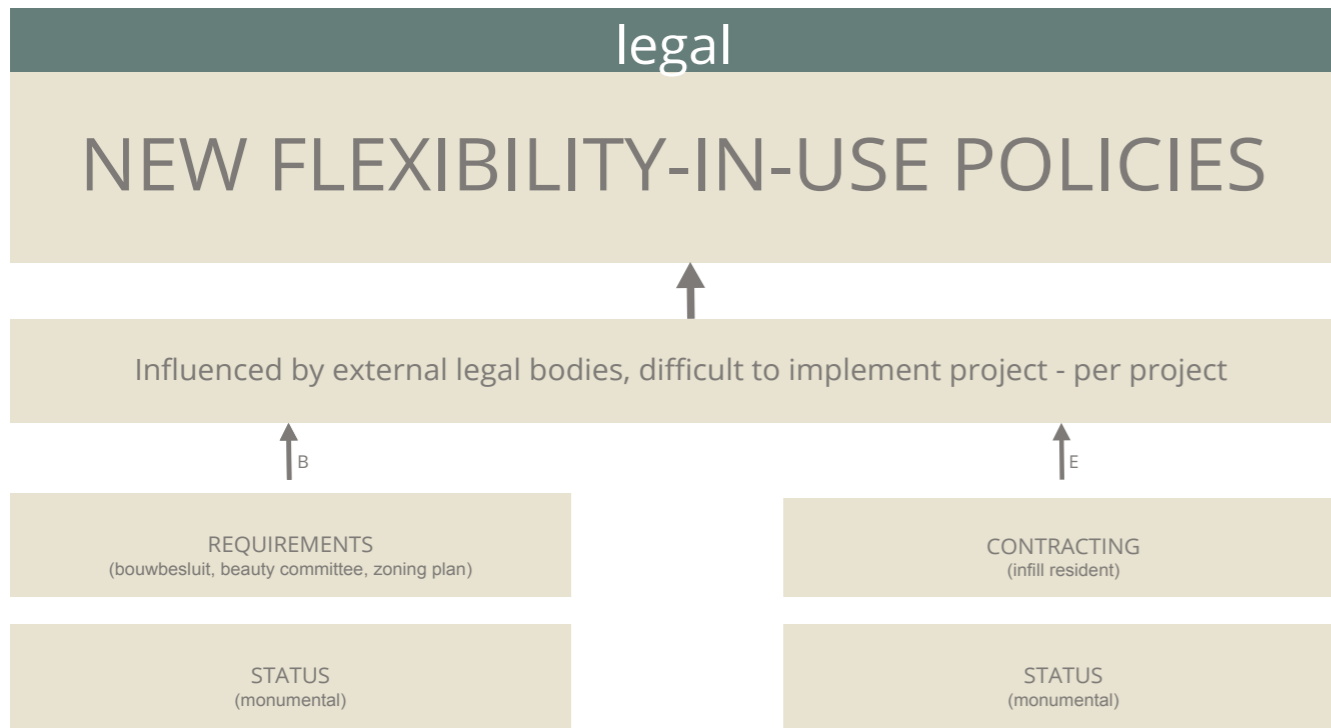
HIGH INITIATION COSTS

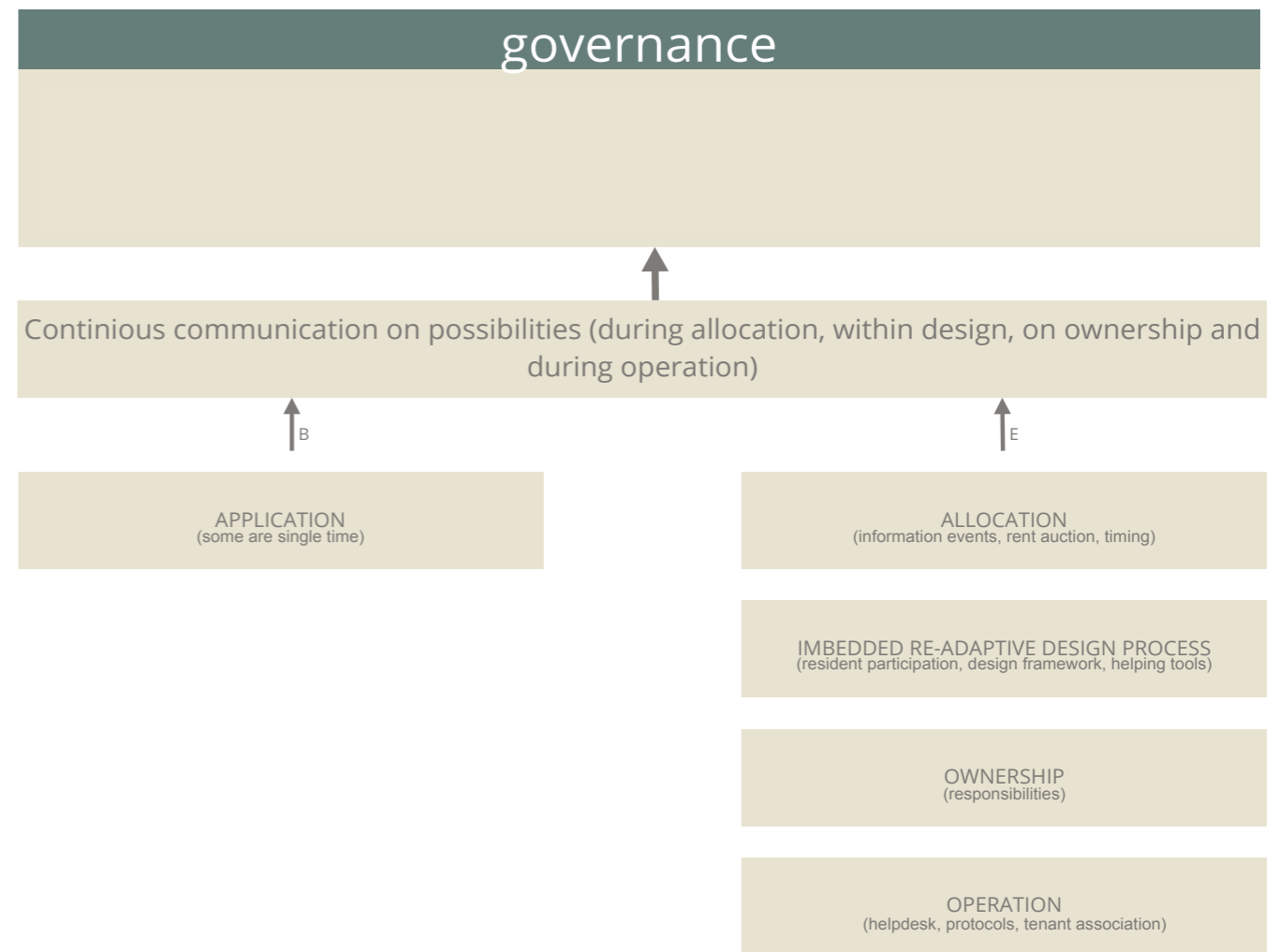
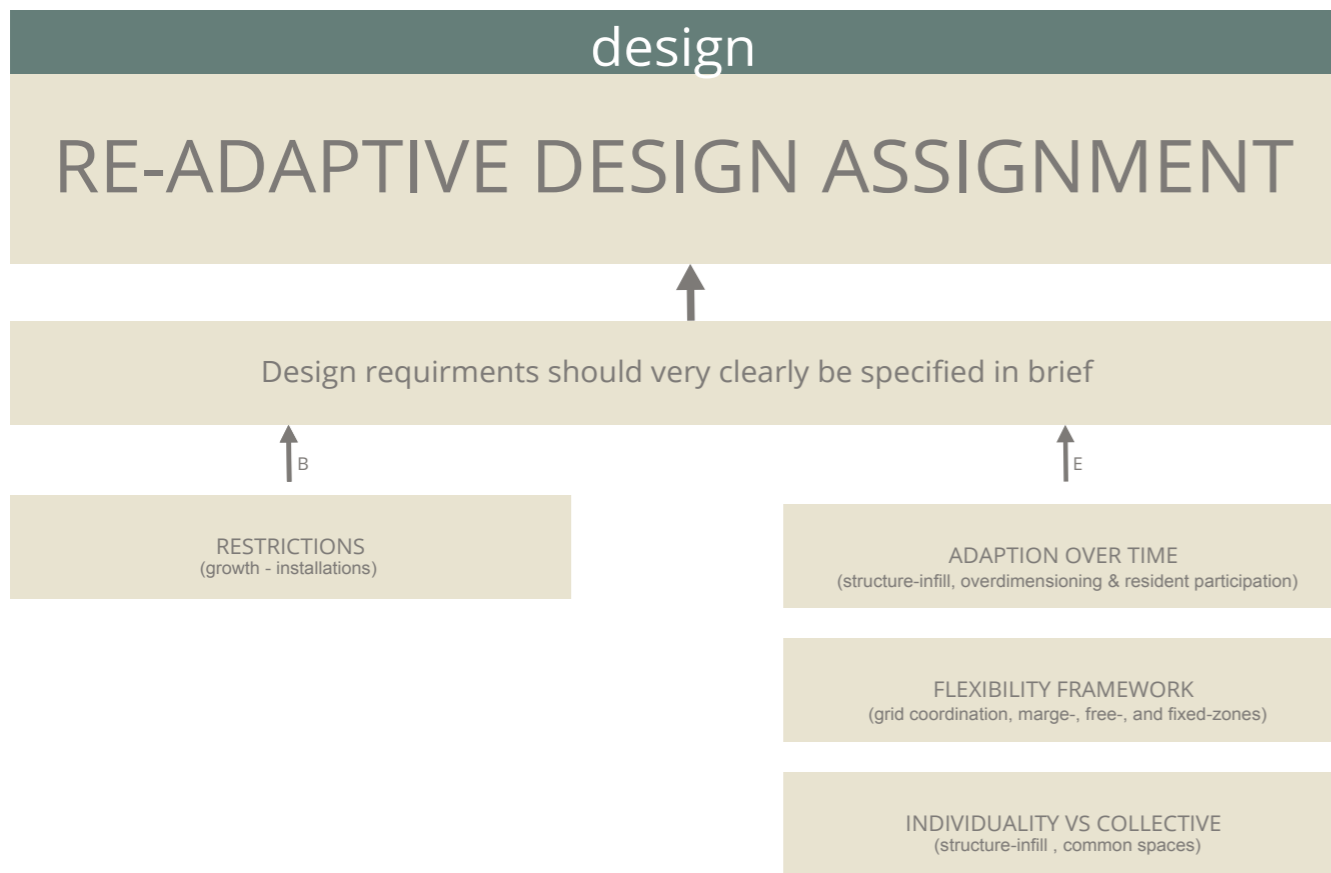
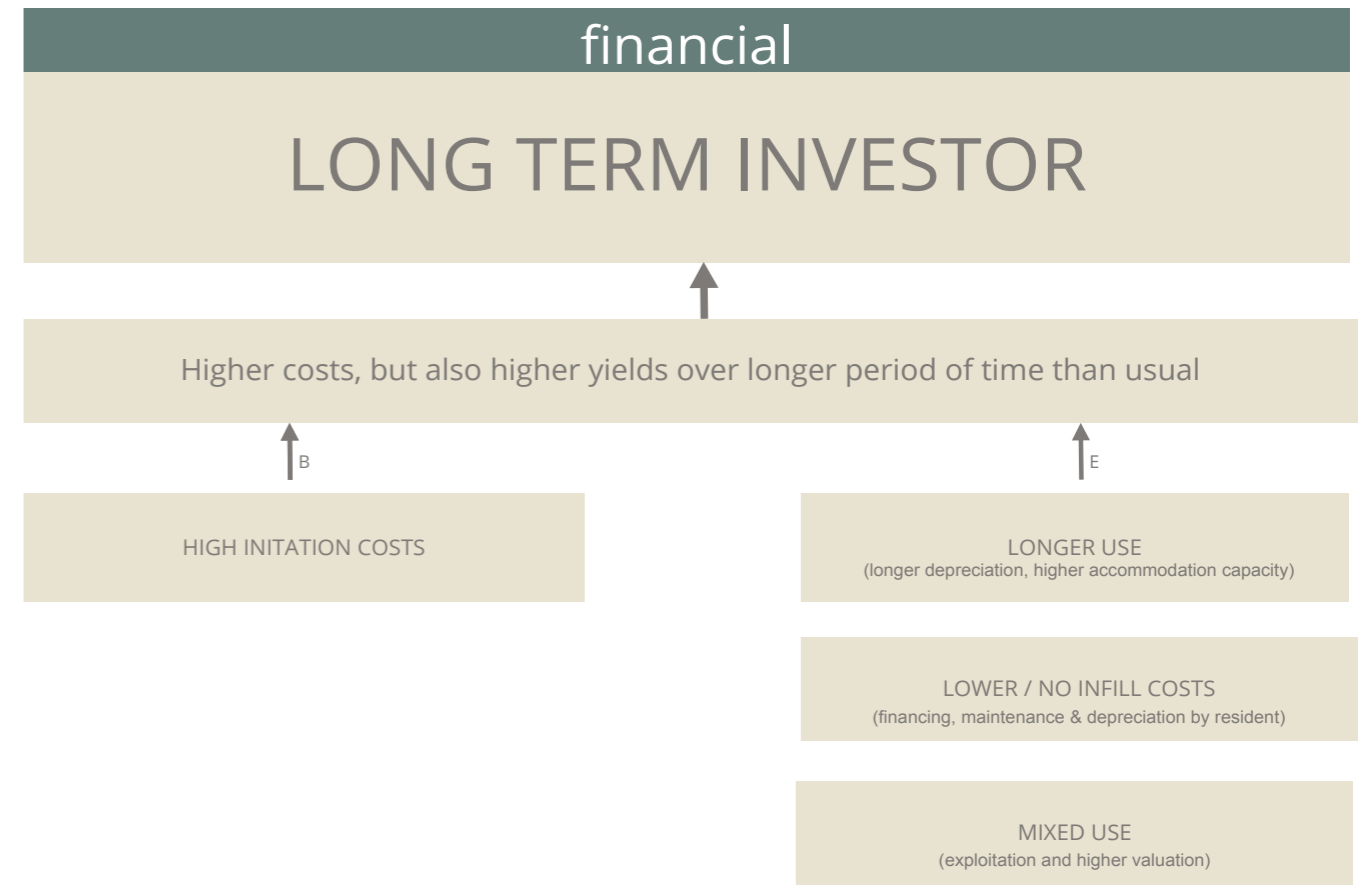
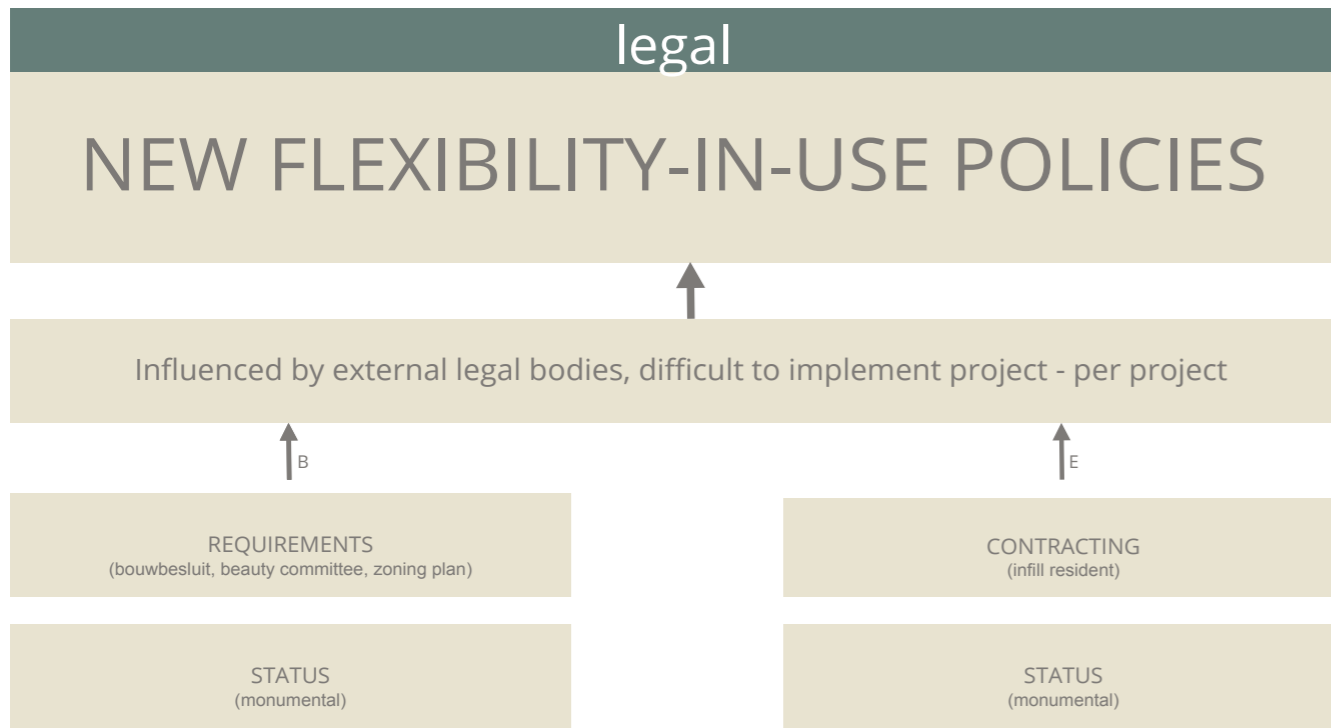
LONGER USE
(longer depreciation, higher accommodation capacity)

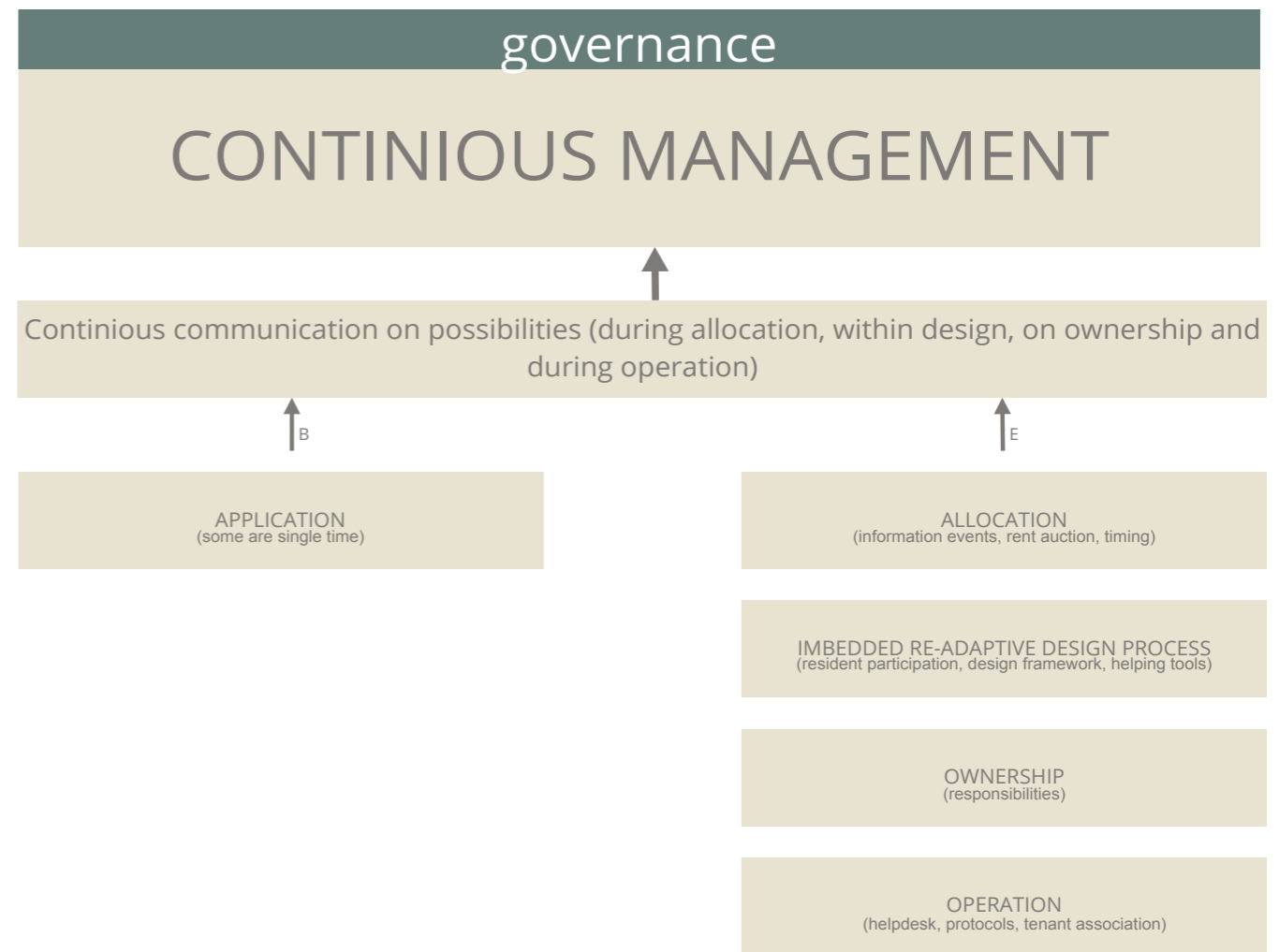
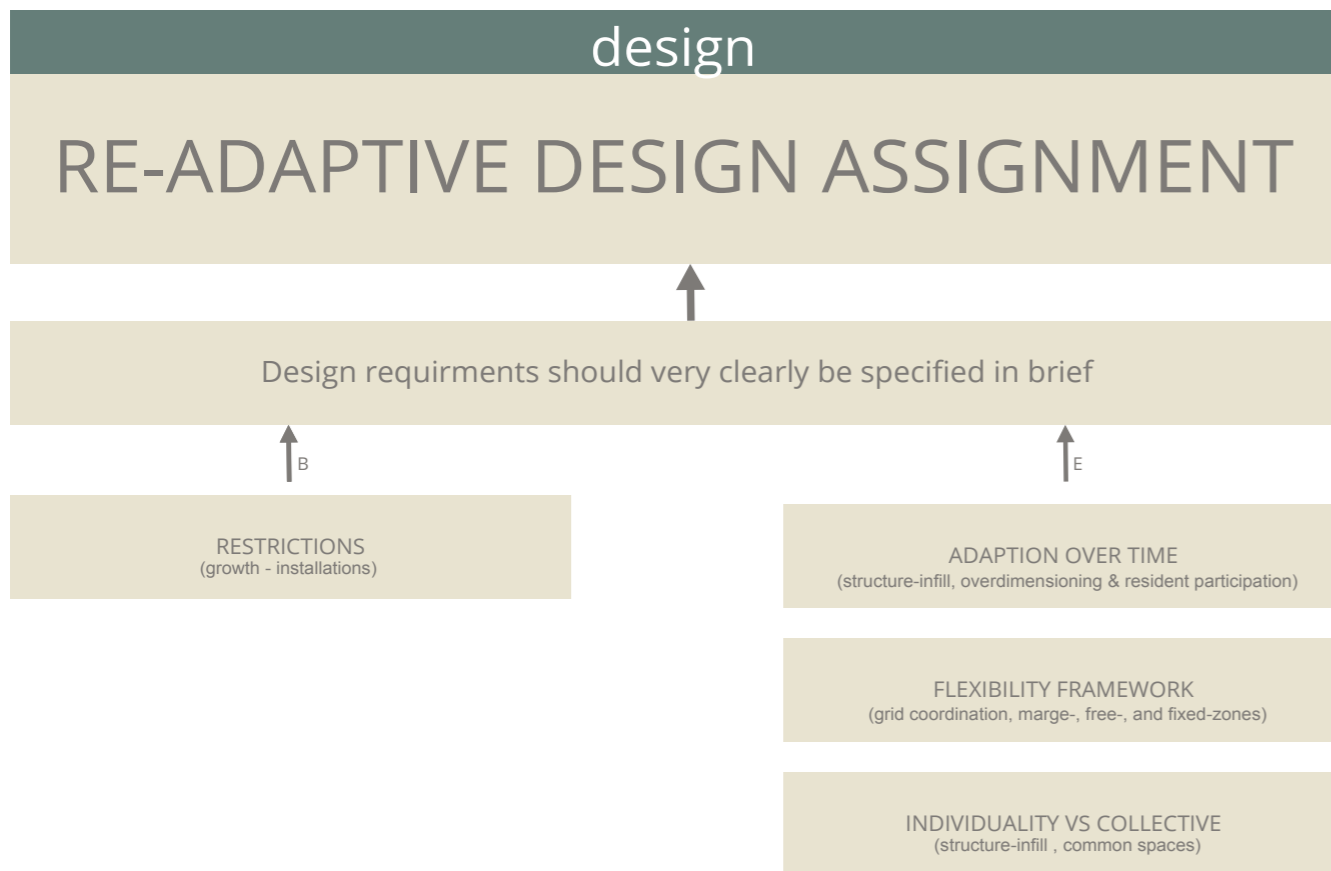
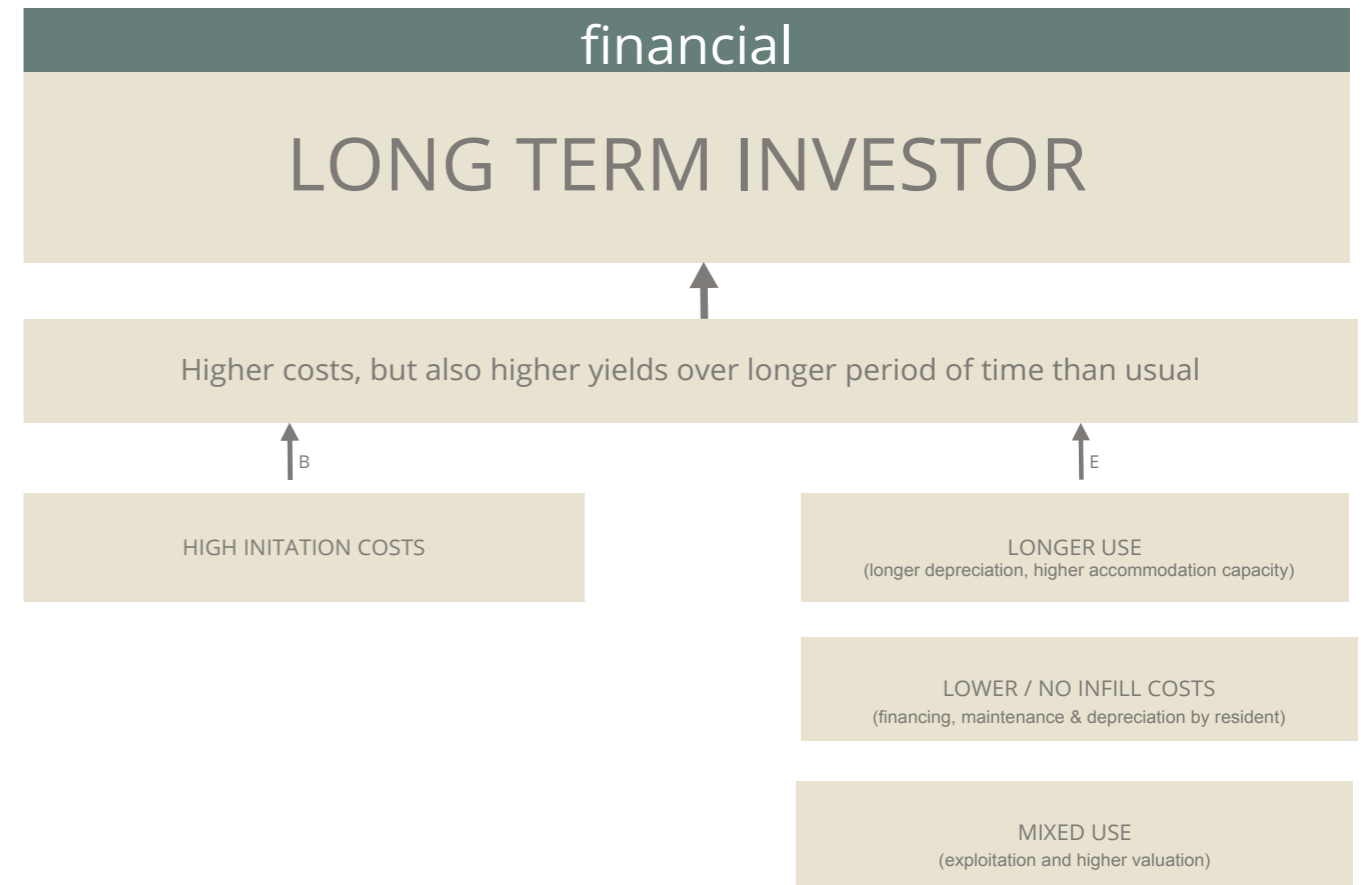
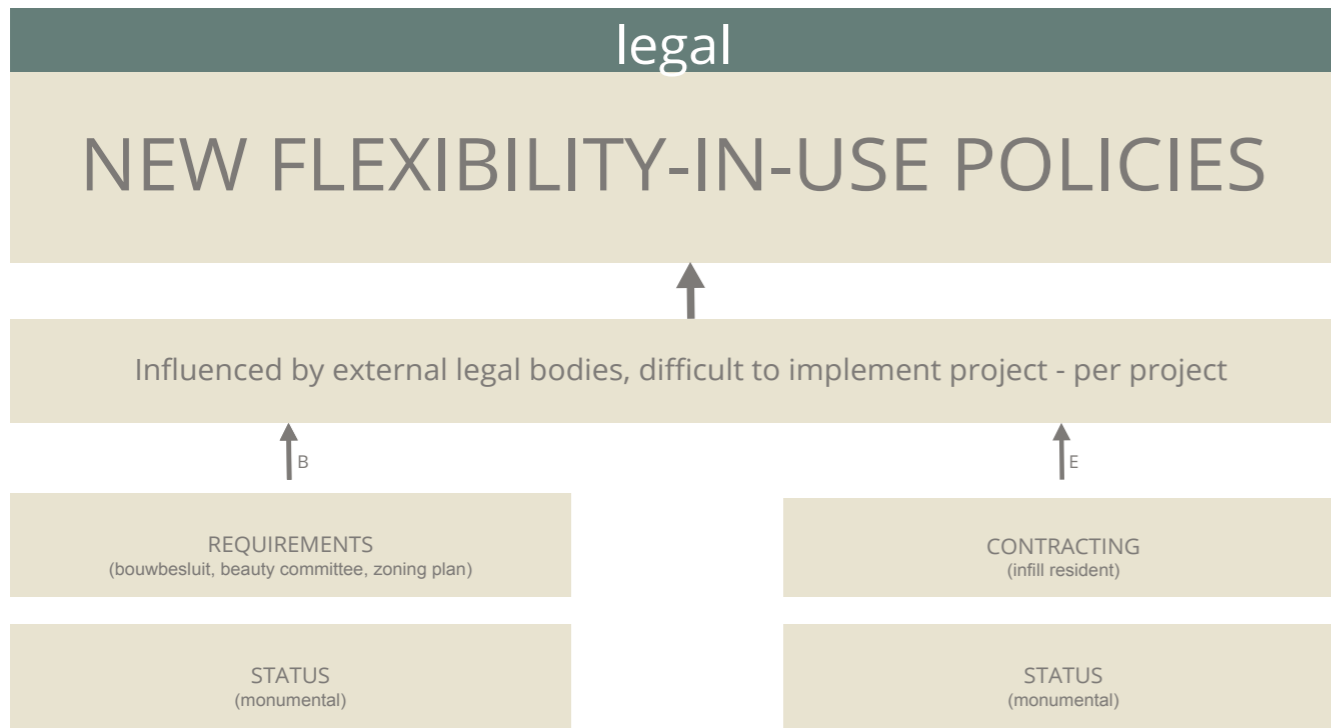
LOWER / NO INFILL COSTS
(financing, maintenance & depreciation by resident)

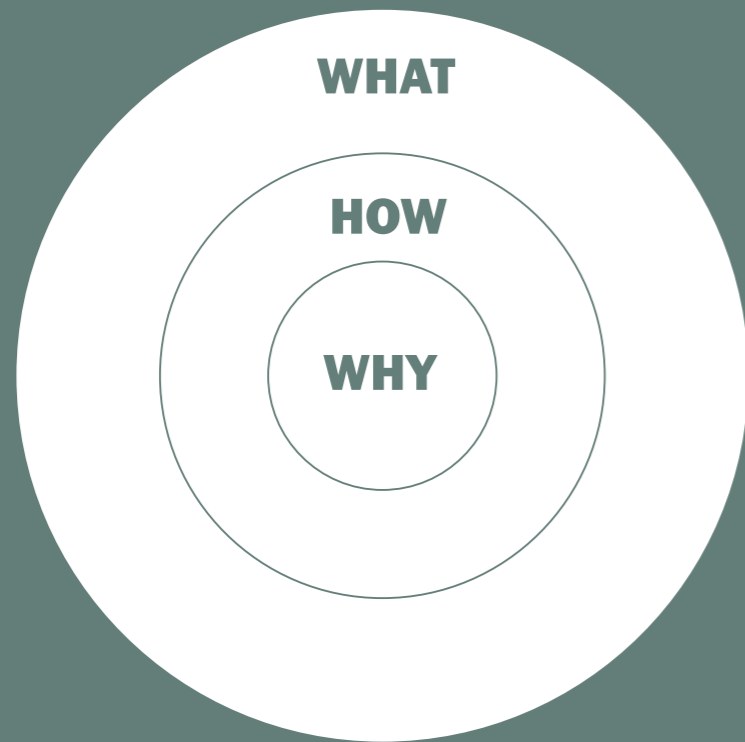
MIXED USE
(exploitation and higher valuation)











introduction
research questions
methodology
findings

CONCLUSION
WHAT

legal

NEW **FLEXIBILITY-IN-USE** POLICIES

financial

LONG TERM INVESTOR

design

RE-ADAPTIVE DESIGN ASSIGNMENT

governance

CONTINUOUS MANAGEMENT

legal
NEW **FLEXIBILITY-IN-USE** POLICIES

financial
LONG TERM INVESTOR

design
RE-ADAPTIVE DESIGN ASSIGNMENT

governance
CONTINIOUS MANAGEMENT

LONGER TERM

NOT A PROJECT BUT A PROCESS

Re-adaptive housing is a ..

project

process

project

temporary endeavor

process

continious

project

temporary endeavor

unique singular objective

process

continious

never ending

project

temporary endeavor

unique singular objective

initiation - ending

process

continious

never ending

imbedded workflow - procedure

project

temporary endeavor

unique singular objective

initiation - ending

scheduled

process

continuous

never ending

imbedded workflow - procedure

event driven

project

temporary endeavor

unique singular objective

initiation - ending

scheduled

time constrained planning



process

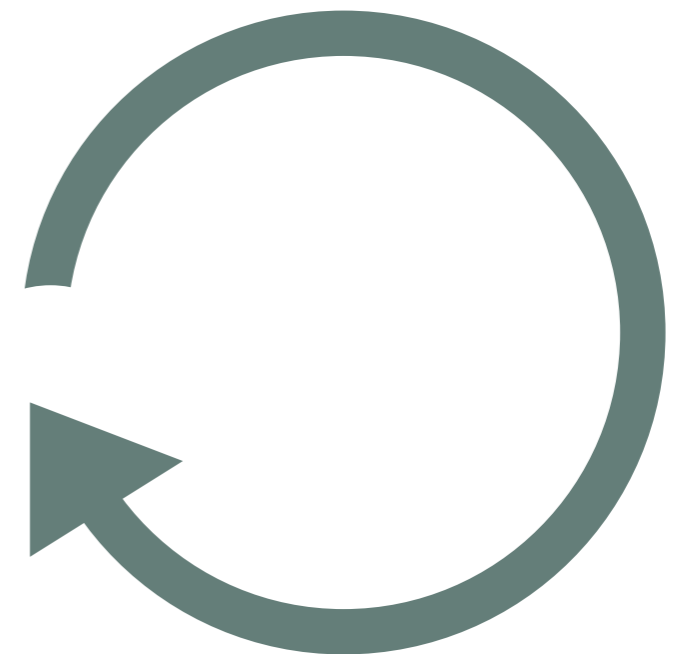
continious

never ending

imbedded workflow - procedure

event driven

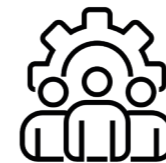
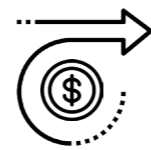
no definite duration



**In what way can newly constructed
re-adaptive housing in the
Netherlands be managed?**

In what way can newly constructed re-adaptive housing in the Netherlands be managed?

1. New flexibility-in-use policies
2. Long term investor
3. Re-adaptive design assignment
4. Continuous management



In what way can newly constructed re-adaptive housing in the Netherlands be managed?

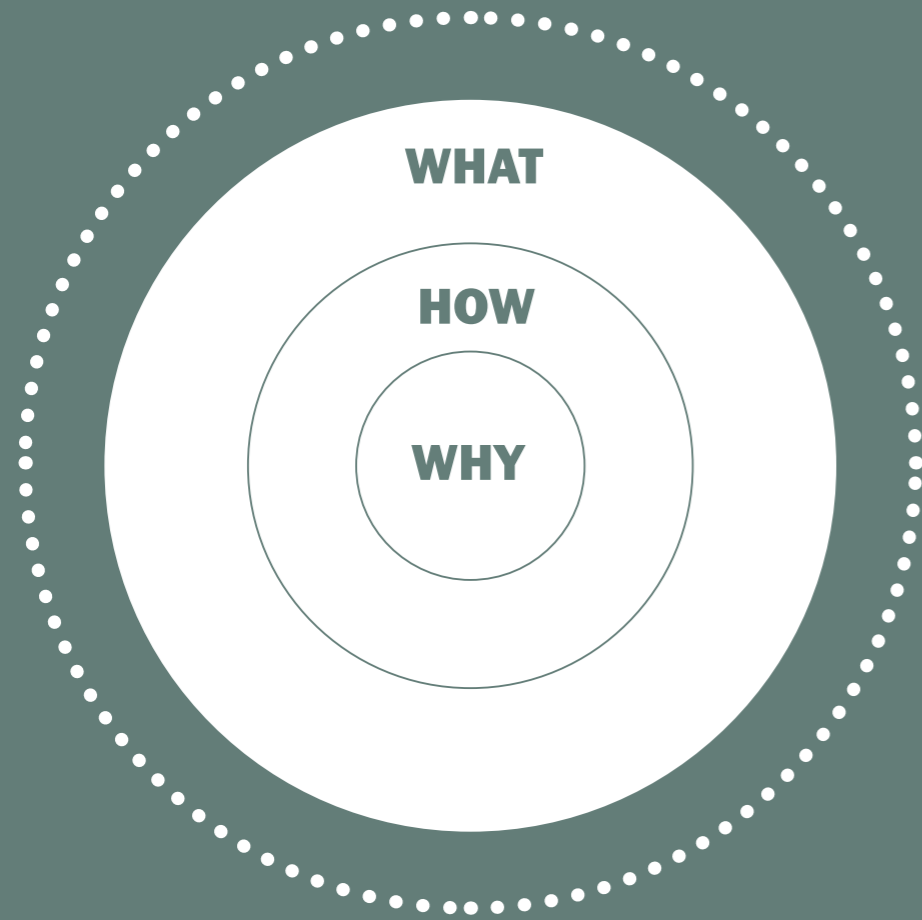
1. New flexibility-in-use policies
2. Long term investor
3. Re-adaptive design assignment
4. Continious management



Initiating and performing as a **process**

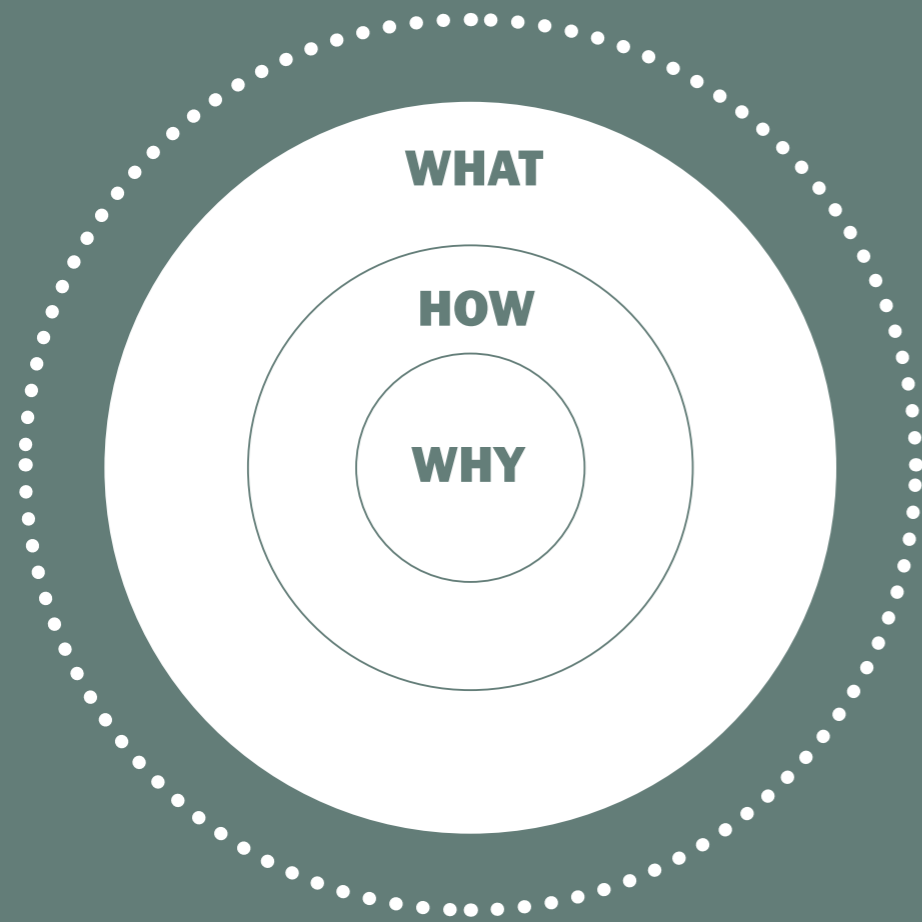
introduction
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LIMITATIONS



Limitations

- >Scope (theories)
- >(No)definition
- >Theoretical framework
- >Contextual
- >Interviews - surveys
- >Legal and financial



introduction
research questions
methodology
findings
conclusion
limitations

RECOMMENDATIONS

Recommendations

- >Further define re-adaptivity
- >Additional interviews (investor - municipality)
- >Explorative -> descriptive research (further define) -> explanatory research
- >Process

MANAGING METABOLISM

enabling re-adaptive housing possibilities
in the Netherlands

THANK YOU!

MOLENVLIET RESIDENTS

A survey was conducted to all 122 housing units of Molenvliet project in Papendrecht designed by Frans van der Werf.

HOW IS THE (RE-)ADAPTIVENESS OF MOLENVLIET EXPERIENCED BY ITS RESIDENTS

9 RESPONDENTS

5 single women

1 single man

1 couple

1 parent with kid

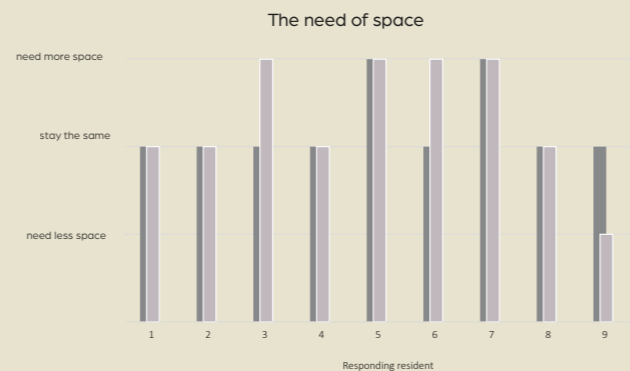
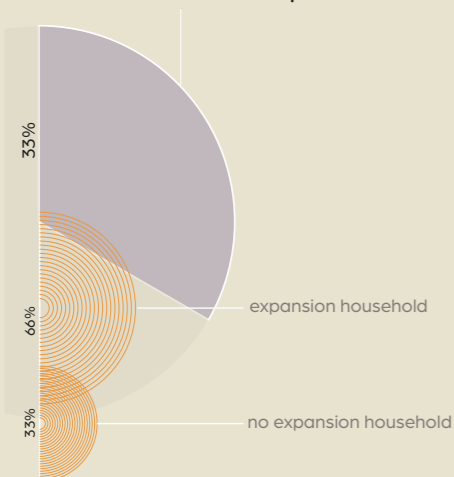
1 parents with kid

7.4/10 An average of 7.4/10 was given to the overall housing satisfaction

3.8/10 An average of 3.8/10 was given to the adaptability possibilities of the dwelling

2.4/10 An average of 2.4/10 was given to the growth and shrink possibilities of the dwelling

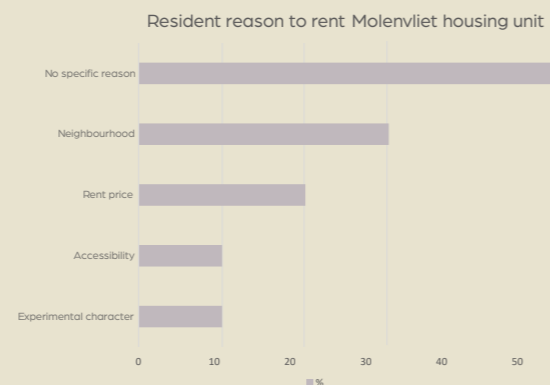
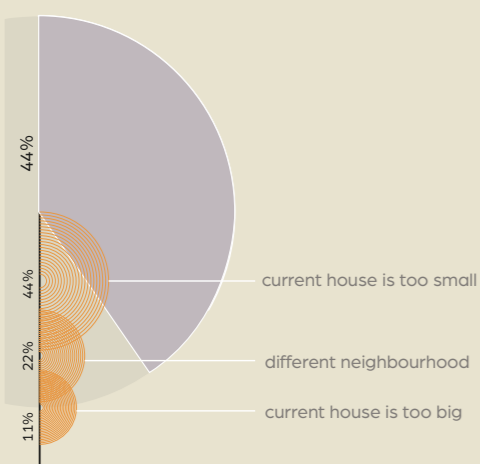
33% needs more space



One knows very well what the experimental characteristic of Molenvliet entails. Five have heard of it and three have no idea.

AWAWARENESS

44% wants to move



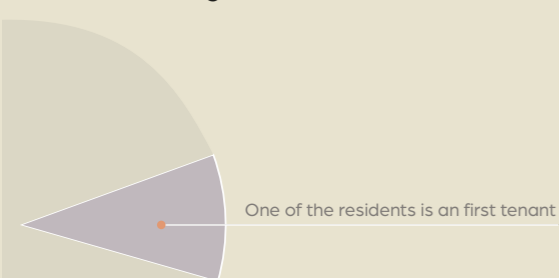
Two have been making adjustments - these were very small adjustments.

MADE ADJUSTMENTS

No future adjustments are expected.

EXPECTED ADJUSTMENTS

11% is an original tenant



- Good team work with architect and freedom of choice
- Amount of decision influence was right and enough
- Experiences her own design on the short term as very good
- Experiences her own design on the long term as very good

The residents find mostly the diversity (mentioned five times) of the housing units the most outstanding characteristic of Molenvliet. Other mentioned characteristics are the possibility to design an own individual lay out (mentioned by the first tenant), the big roof terrace with enough privacy and enough space.

OUTSTANDING ELEMENTS

Residents do not move once their housing unit is too big for them due moving housing would be too much effort for them, the tight housing market and the preference to live bigger than needed.

MOVE HOUSING

CRITICAL PANEL DISCUSSION

DESIGN

FUNCTION CHANGE

LOCATION

ARCHITECTURAL



resident participation and re-adaptive designing is possible

STRUCTURAL



lots of possibilities

INSTALLATIONS



difficult due shared floors possibilities with stacked shafts and fuseboxes in central core per unit

COMMON SPACES



can be exported seperately or caluclated in service costs

SCHOOLS AND OFFICES



schools or offices seem to be more re-adaptive due high ceilings more common for a school or office to be adapted to housing than the other way around

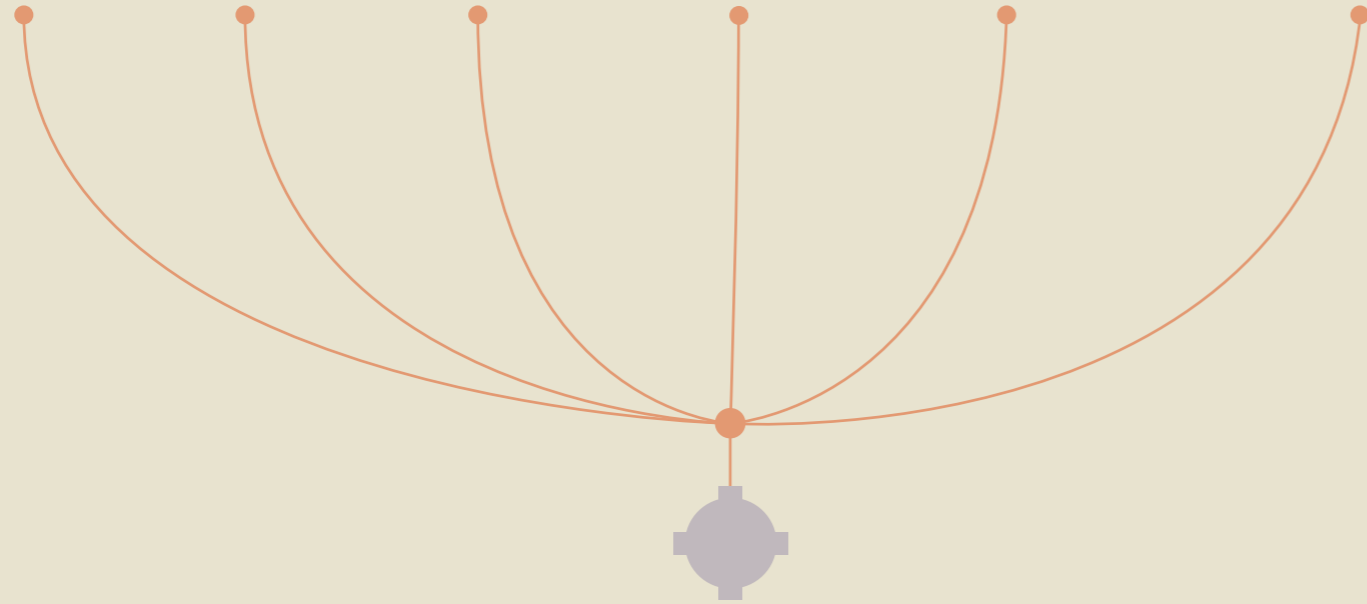


higher ceiling heights can costs a building layer

VALUE ADDING

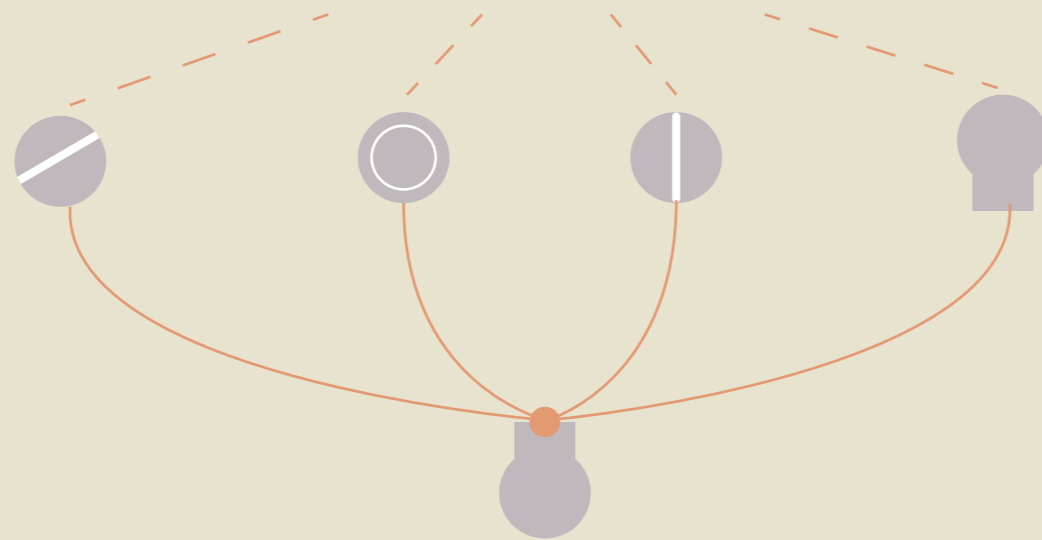


difficult to get the extra appreciation



Different parties

Short incentive (consultants) and long term (investor)
short term vision and long term vision



Investor should have longer term vision

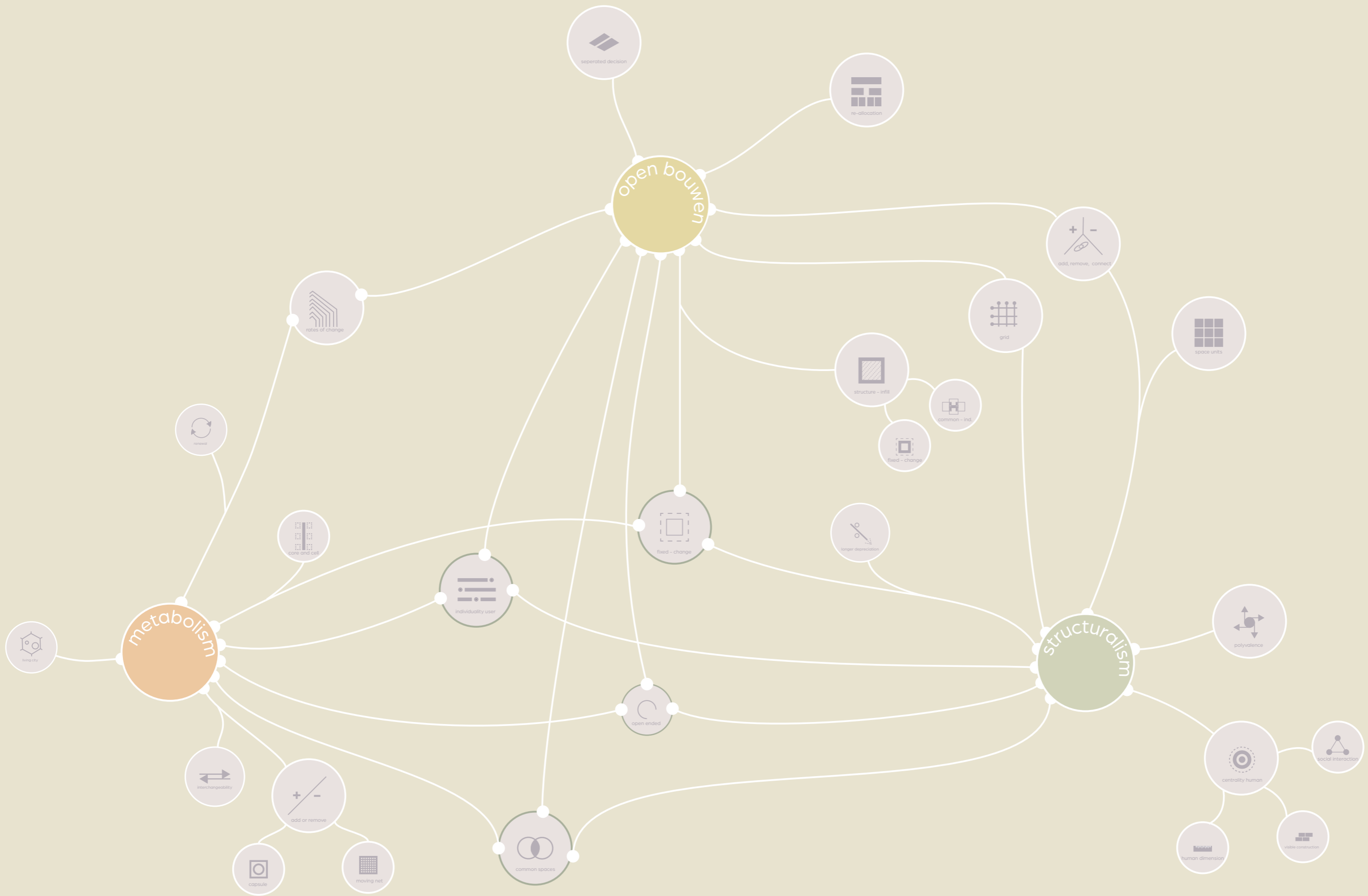
COSTS BRIEF



-  Resident representative
-  Developer
-  Project manager
-  Architect
-  Construction engineer
-  Installation advisor
-  Investor

DEFINING

RE-ADAPTIVE



- open ended
- renewable
- interchangeable
- fixed and flexible
- core and cells
- structure - infill
- living city
- common spaces
- polyvalence
- cycle of change
- depreciation structure
- centrality human
- human dimensions
- visible construction
- individual - collective
- resident participation
- separate decisions
- re-allocation
- grid
- space units
- add, reject, connect
- add and reject
- capsule
- moving net
- theory
- linked to more theories
- linked to one theory
- link subelement

- metabolism
- structuralism
- open-bouwen