

# Parallel planning: applied

Kes van Leeuwen

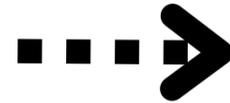
October 31st 2025

**Supervisors:** Gerard van Bortel & Marjolein Spaans

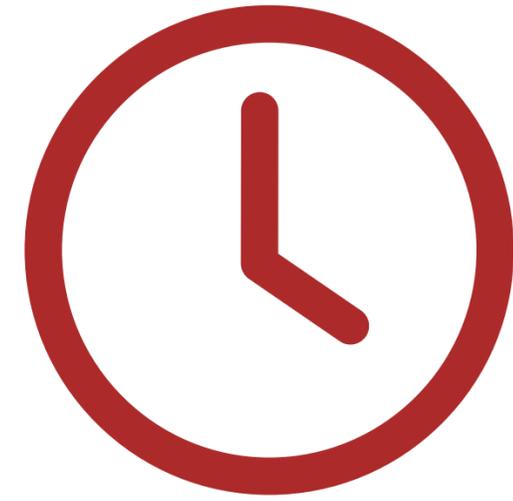
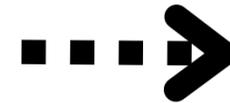




**Housing crisis**  
**Netherlands**



**900.000 homes**  
**by 2030**



**'10 years'**  
**Average length**  
**of a project**

# Duration of the planning phase

- No standardized timeframe
- Planning is an estimate not a deadline

Phase project	Duration
Decision-making and planning phase (initiative)	Years
Procedure phase (zoning plan)	Weeks/months
Permitting phase	Months
Construction phase	Months

*Phases and their duration of housing development (Holt et al., 2022)*

# Plan of attack



2023

## Fast-tracking housing developments

- Efficient processes
- Increased coordination and collaboration,
- Stimulating innovation
- Adapting laws and regulations
- Introduction:

## Parallel Planning

# Traditional planning

## Waterfall-method

*Sequential approach to planning*



### Benefits

- Project scope
- Costs control
- Easy to manage
- Externely stable

### Challenges

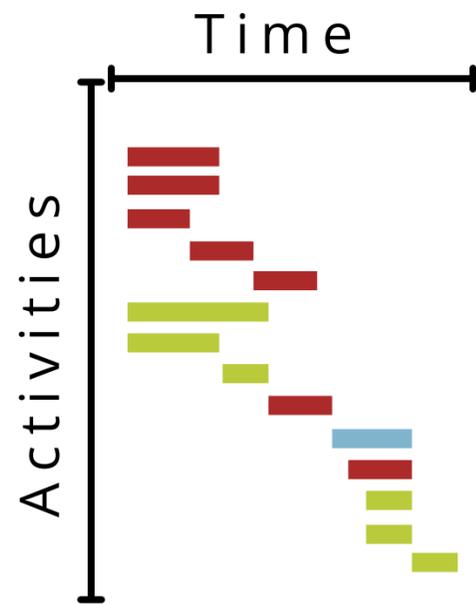
- Planning is an estimation  
≠ deadlines
- Unflexible
- If one activity delays, all  
are delayed

# Parallel Planning

**Fakton, 2022**



**Planning phase  
from estimated  
6 to 2 years**



**Integrates activities  
on the same timeline**



**Different  
way of working**



**Pilot Projects**

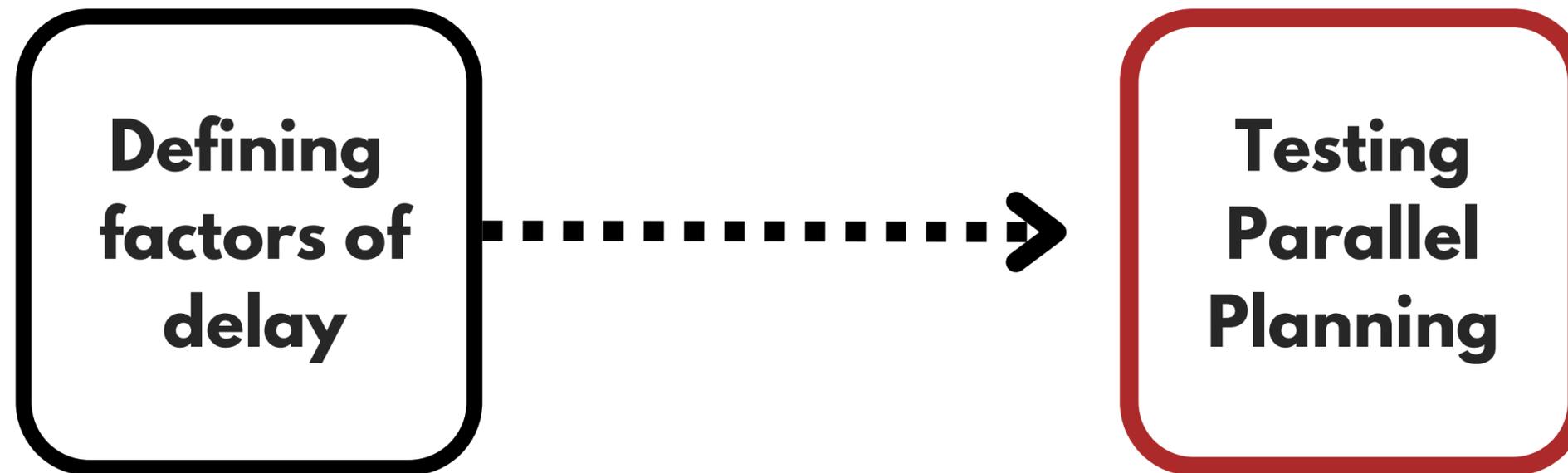
# Woontop



2024

- Parallel planning in the standard terms and conditions included in location subsidies
- Working method is still in pilot phase
- Pending results
- Pilots take a long timeline

**Goal: Accelerate the applicability of Parallel Planning**



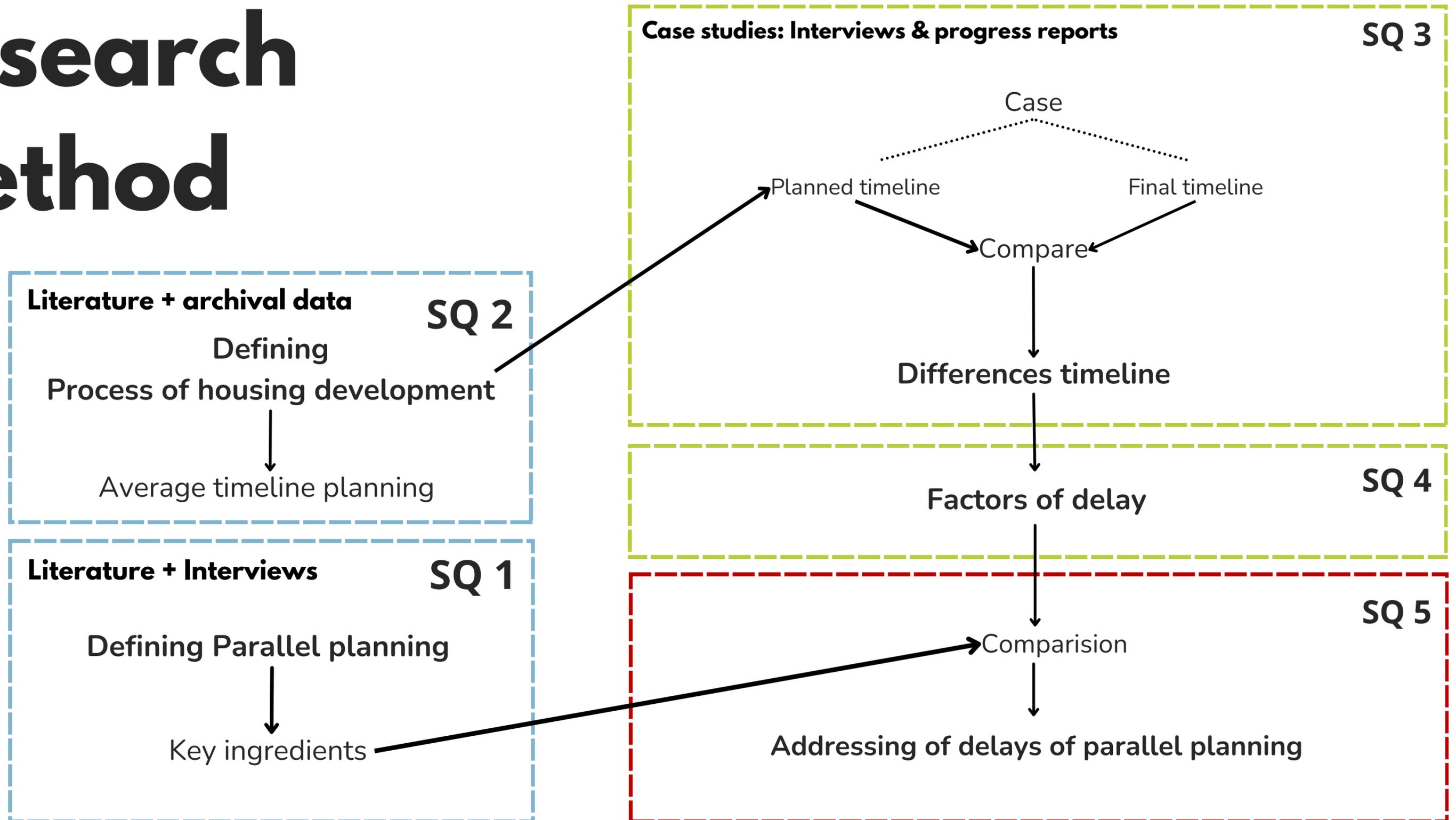
*Completed projects (Case studies)*

# Research question

How can parallel planning **address delays** in housing development to **reduce the planning phase?**

1. What is **parallel planning**?
2. What are **the activities and duration** of the process of housing development?
3. What are **the differences** between the planned timeline and the final timeline of housing development?
4. What are **the factors of delays** of housing development projects?
5. To what extent do parallel planning key ingredients contribute to **reducing the factors of delays?**

# Research method

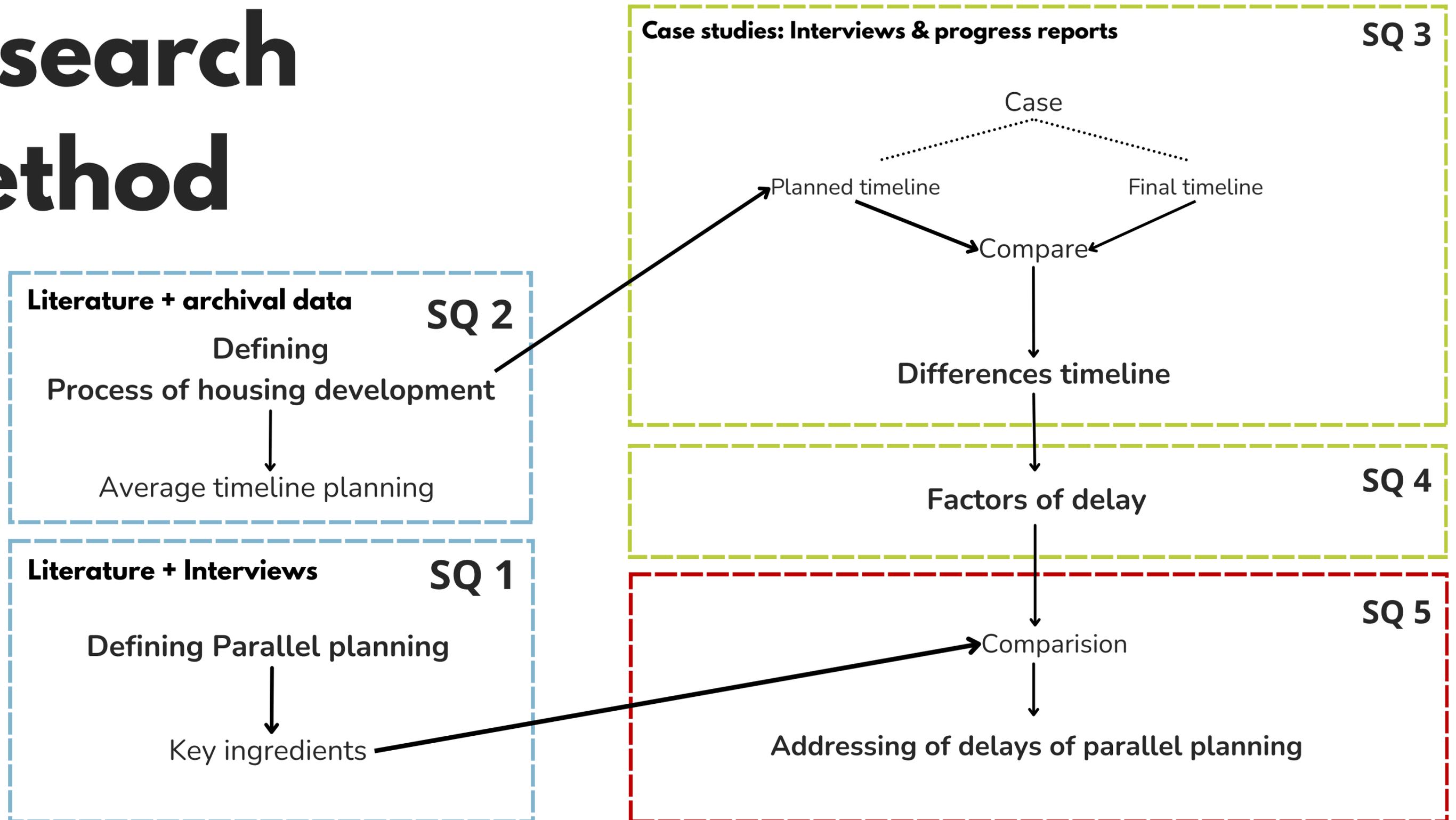


# Case criteria

- Cases are a housing project with more than **100 homes**
- Cases with an **irrevocable environmental permit**.
- Cases are **part of an overarching urban area development**
- Cases which have come across **delays**

**Selected: 2 cases**

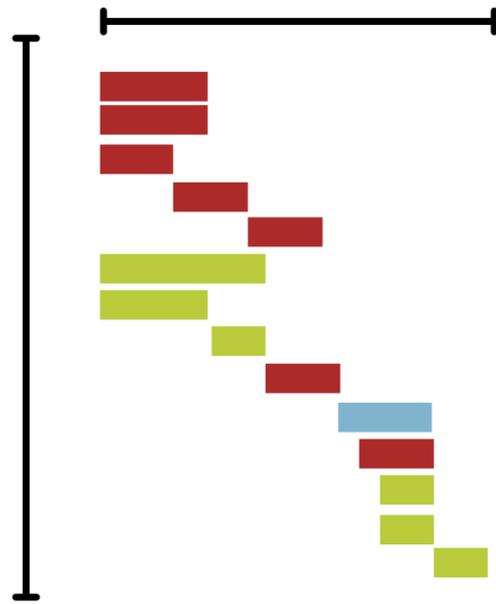
# Research method



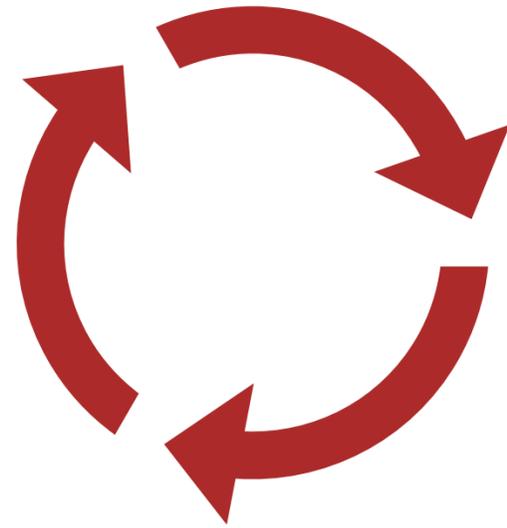


# Parallel planning

# Pillars of parallel planning



**Parallel planning  
as principle**



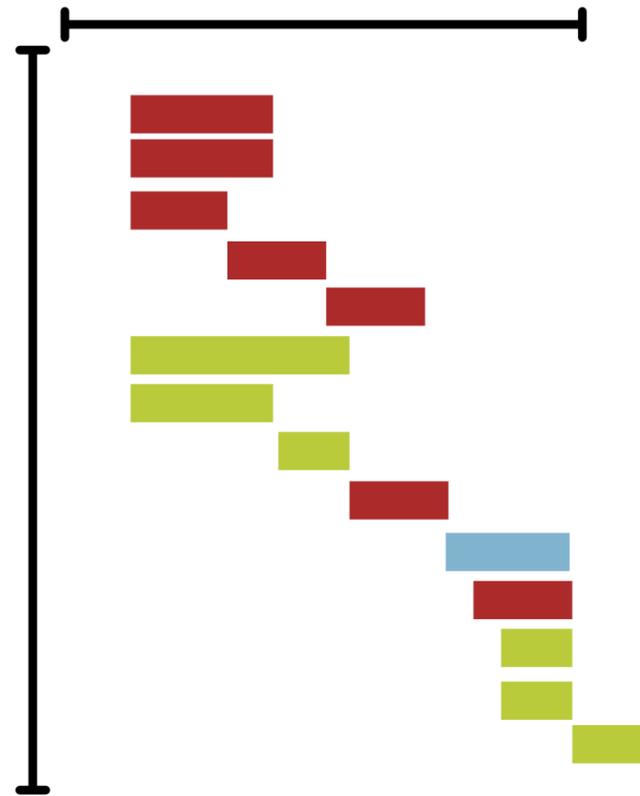
**Continious stream  
of information**



**Standardization**



**Efficient working**



## 1. Parallel planning as principles

- Commitment to parallel planning is key.
- Over-all planning & 8 week planning
  - Hiring professional planner
- Deadlines
  - Flexibilities



## **2. Continuous stream of information**

- Continuous communication
- Early establishment of preconditions
  - Notion of pre-conditions
- Public participation starts early
- Design phase



### **3. Standardization**

- Standardized documents and decision-making frameworks
  - Table of contents of notion of pre-conditions
- Compensating for a lack of specialized professionals.



## 4. Effient working

- Acceleration chamber
- Scrum-like meetings
  - once a week
- Intensity reduces throughout the project

# Key ingredients parallel planning

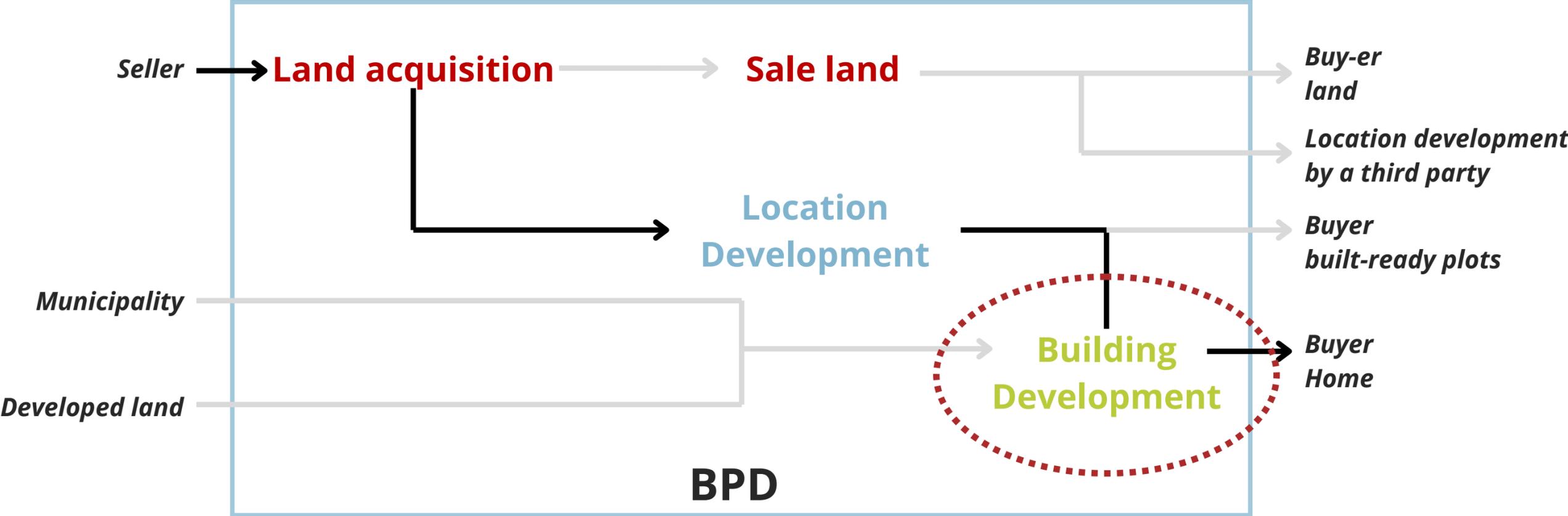
Pillar	Key ingredients
<b>1. Planning in Parallel</b>	Stacked Task Scheduling
	Collaborative Scheduling
	Structured 8-Week Planning
	Professional Planner Involvement
<b>2. Continuous Information Flow</b>	Preconditions Document
	Digital Infrastructure (open information sharing)
	Early Risk Identification
	Continuous Feasibility Management
	Early Public Participation

Pillar	Key ingredient
<b>3. Standardization</b>	Standardized Documents
<b>4. Efficient Working</b>	Scrum Roles
	Accelerating Chamber
	Early Stakeholder Commitment
<b>Other</b>	Stable Governance

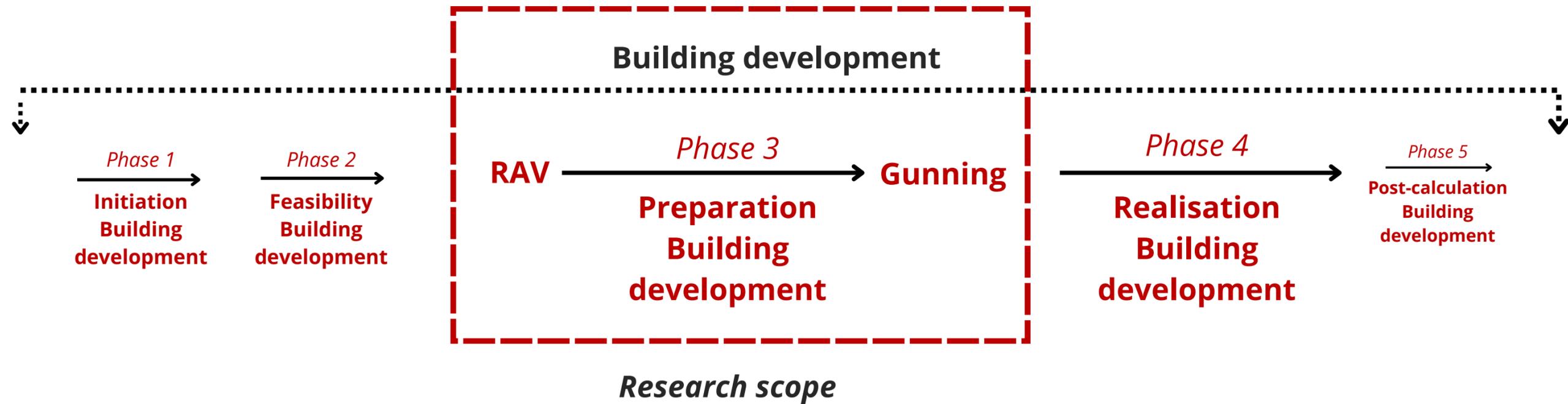


# **Process of housing development**

# Complete process BPD

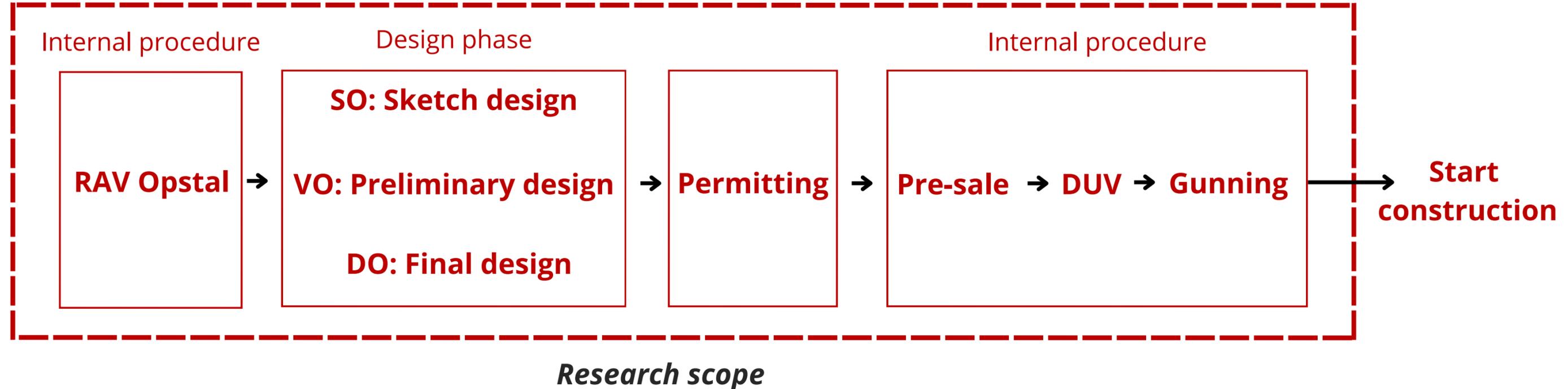


# Planning phase BPD



# Process of housing development

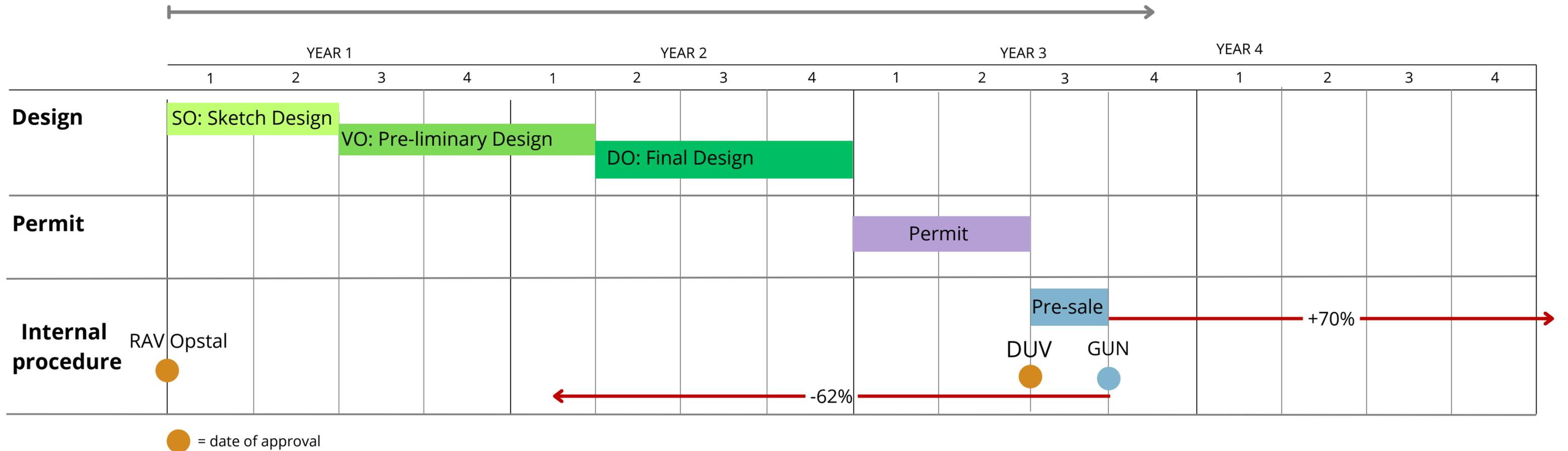
## *Phase 3* Preparation Building development



# Average planning phase BPD

- Average of 13 cases meeting the case criteria

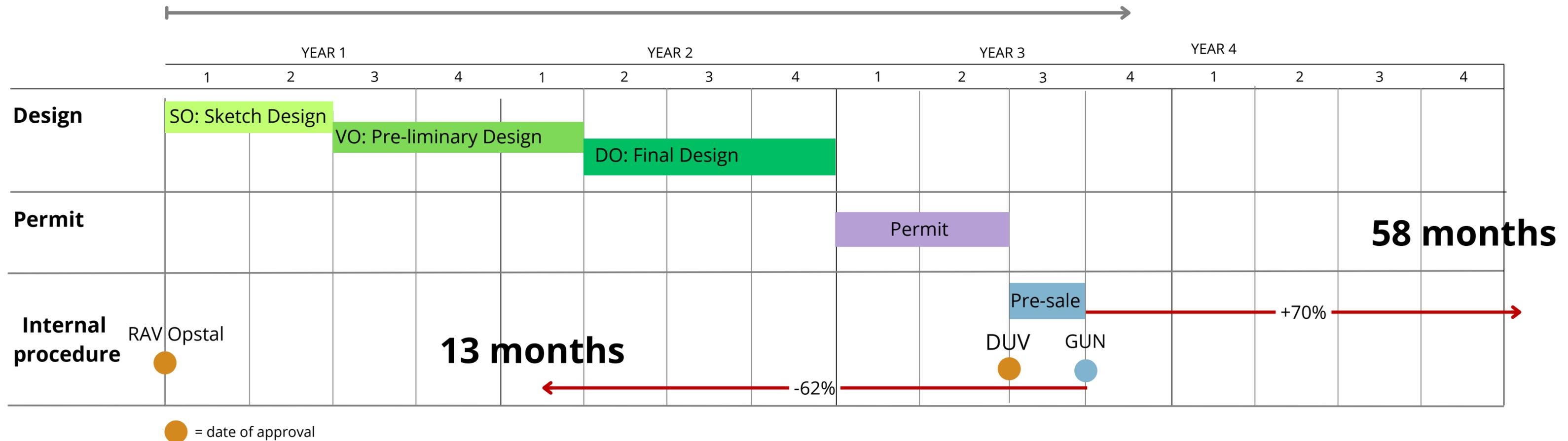
2 years and 9 months average



# Average planning phase BPD

- Average of 13 cases meeting the case criteria

2 years and 9 months average



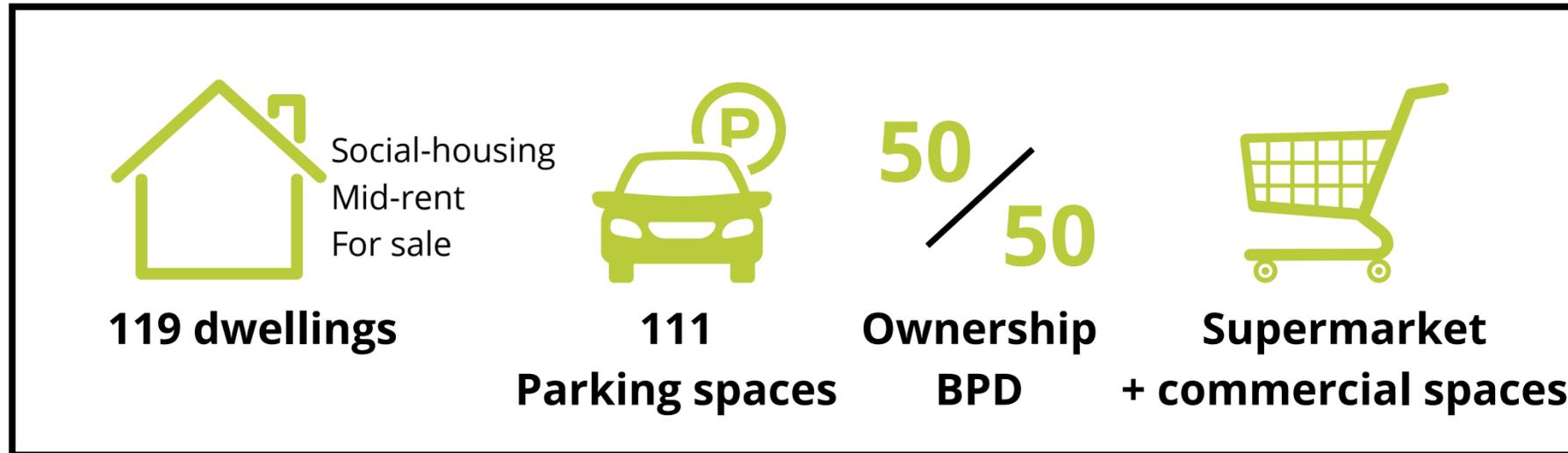


# Cases

# Case selection

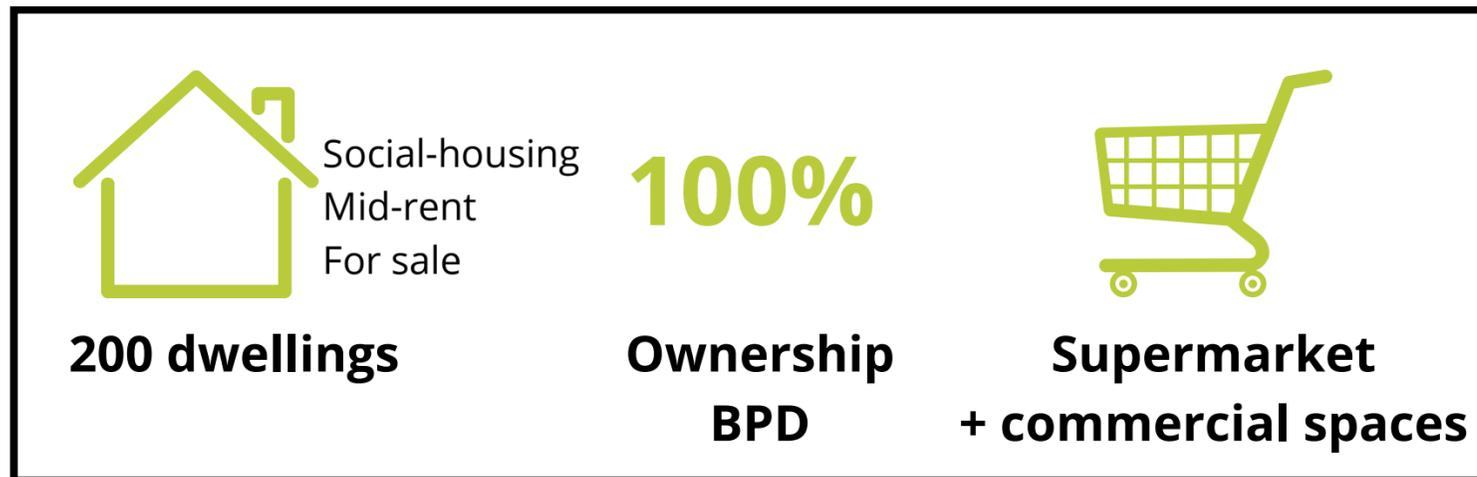
Phase 1 of an urban re-development of around 700 dwellings

## Case One

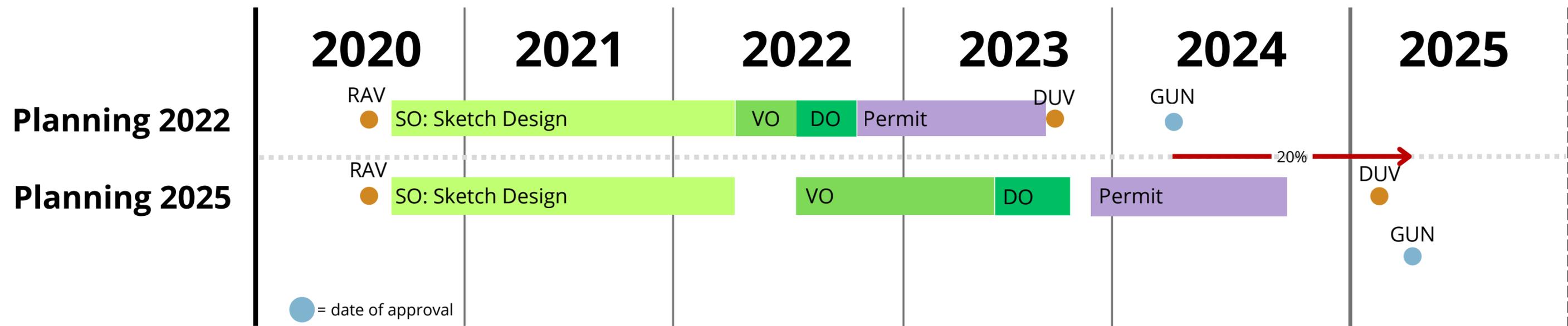


Phase 6 of an urban re-development of 3000 dwellings

## Case Two

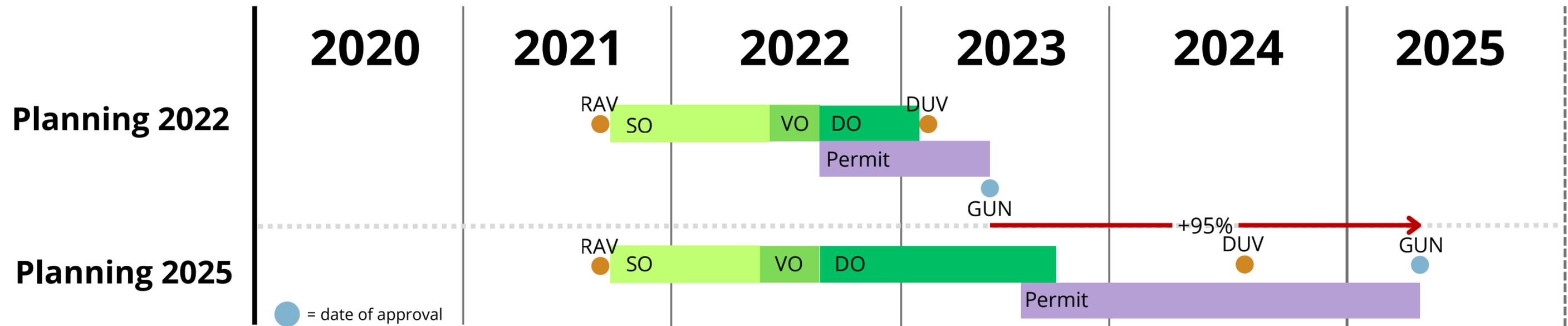


# Planning Case One



- Estimated 3 years and 4 months, final timeline around 4 years
- Delay in VO phase due to switch in phases
- DUV & GUN close together

# Planning Case Two



- Estimated 1 year and 10 months, final timeline 3 years and 7 months
- Delayed DO phase
- Permit still pending till GUN



# Differences planned & final timeline

- Confirms:
  - Lack of standardisation
  - One deadline moves, everything moves
- Timeline can change anytime, does not specify specific occurrences of delays



# Factors of delay

# Factors in the Netherlands

Government issued research

Factor of delay	Source
Appeal of third parties	Derksen, D., 2024
Building costs	Derksen, D., 2024
Collaborated project planning	Holt et al., 2022
Collaboration	Holt et al., 2022
Coordination by developer	Holt et al., 2022
Coordination by municipality	Holt et al., 2022
Environmental permit	Holt et al., 2022
Extensive research requirements	Holt et al., 2022
Laws and regulations	Holt et al., 2022
Location problems	Geuting et al., 2021

Factor of delay	Source
Market problems	Geuting et al., 2021
Personnel capacity developer	Holt et al., 2022
Personnel capacity municipality	Holt et al., 2022
Pre-conditions municipalities	Derksen, D., 2024
Priority	Holt et al., 2022
Setting frameworks	Holt et al., 2022
Spatial planning instruments and procedures	Holt et al., 2022
Technical design problems	Geuting et al., 2021

# Delays of cases

## Categorization

### External

Delays, that originate outside the control of the project team\*

### Internal

Delays, that originate within the control of the project team\*

\* *project team = project developer & municipal representative/developer*

# Literature factors of delay

Results are based on the amount of mentions

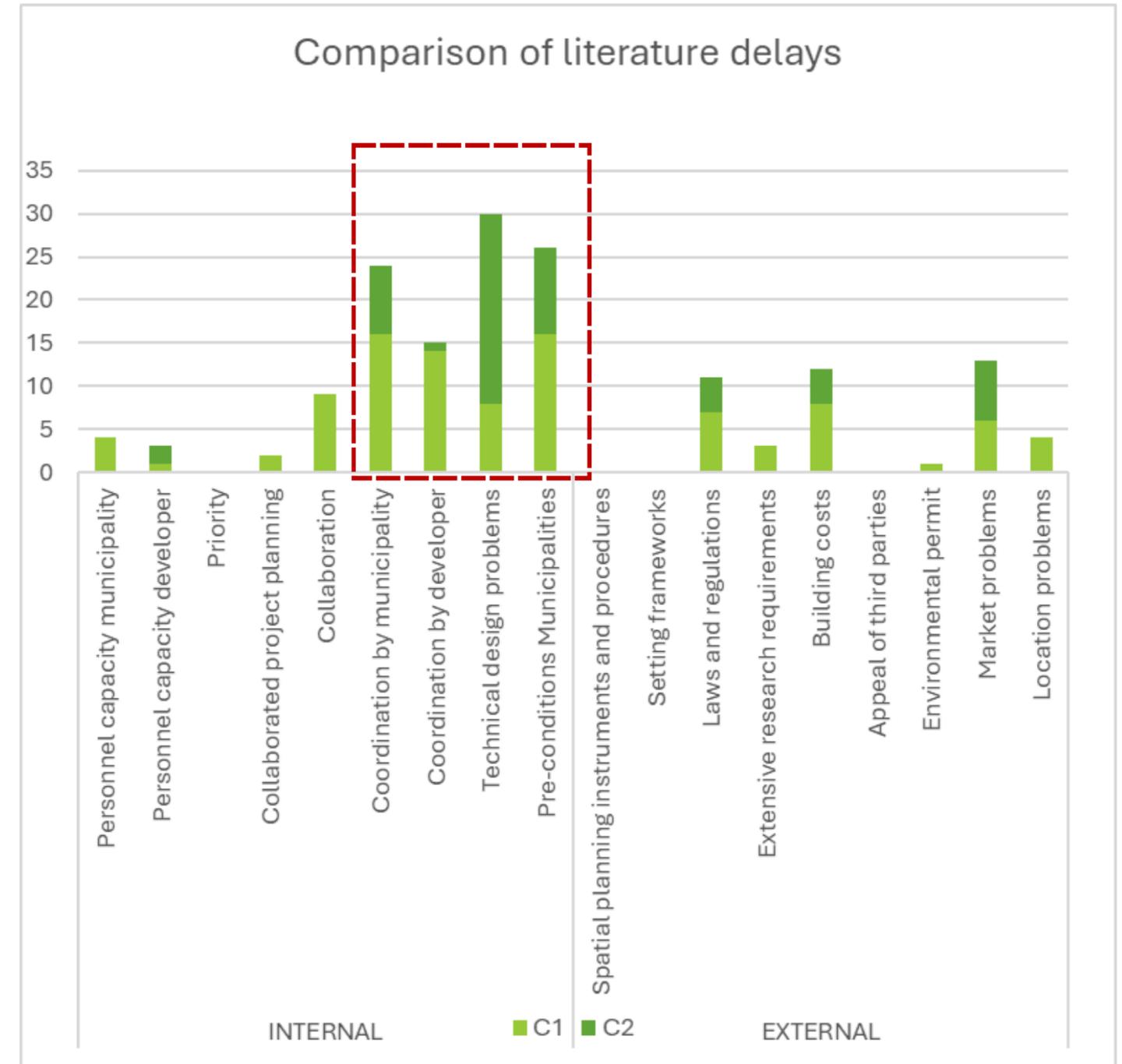
<b>INTERNAL</b>	Personnel capacity municipality
	Personnel capacity developer
	Priority
	Collaborated on project planning
	Collaboration
	Coordination by the municipality
	Coordination by the developer
	Technical design problems
<b>EXTERNAL</b>	Spatial planning instruments and procedures
	Setting frameworks
	Laws and regulations
	Extensive research requirements
	Building costs
	Appeal of third parties
	Market problems
	Location problems

*Categorization of literature factors of delay*

# Literature factors of delay

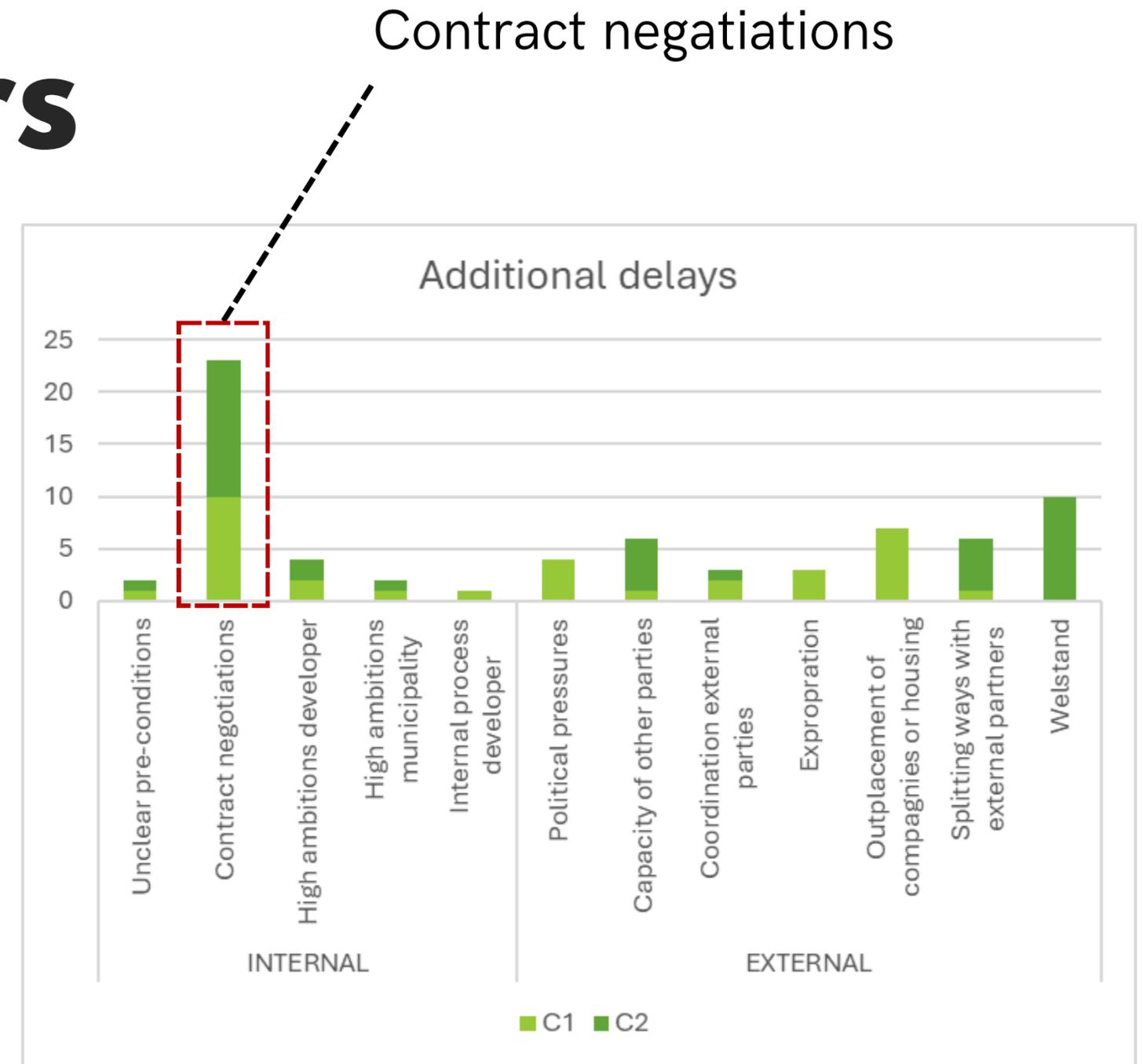
## Excluded factors

- Appeal of third parties
- Priority problems
- Setting of frameworks
- Spatial planning instruments & procedures



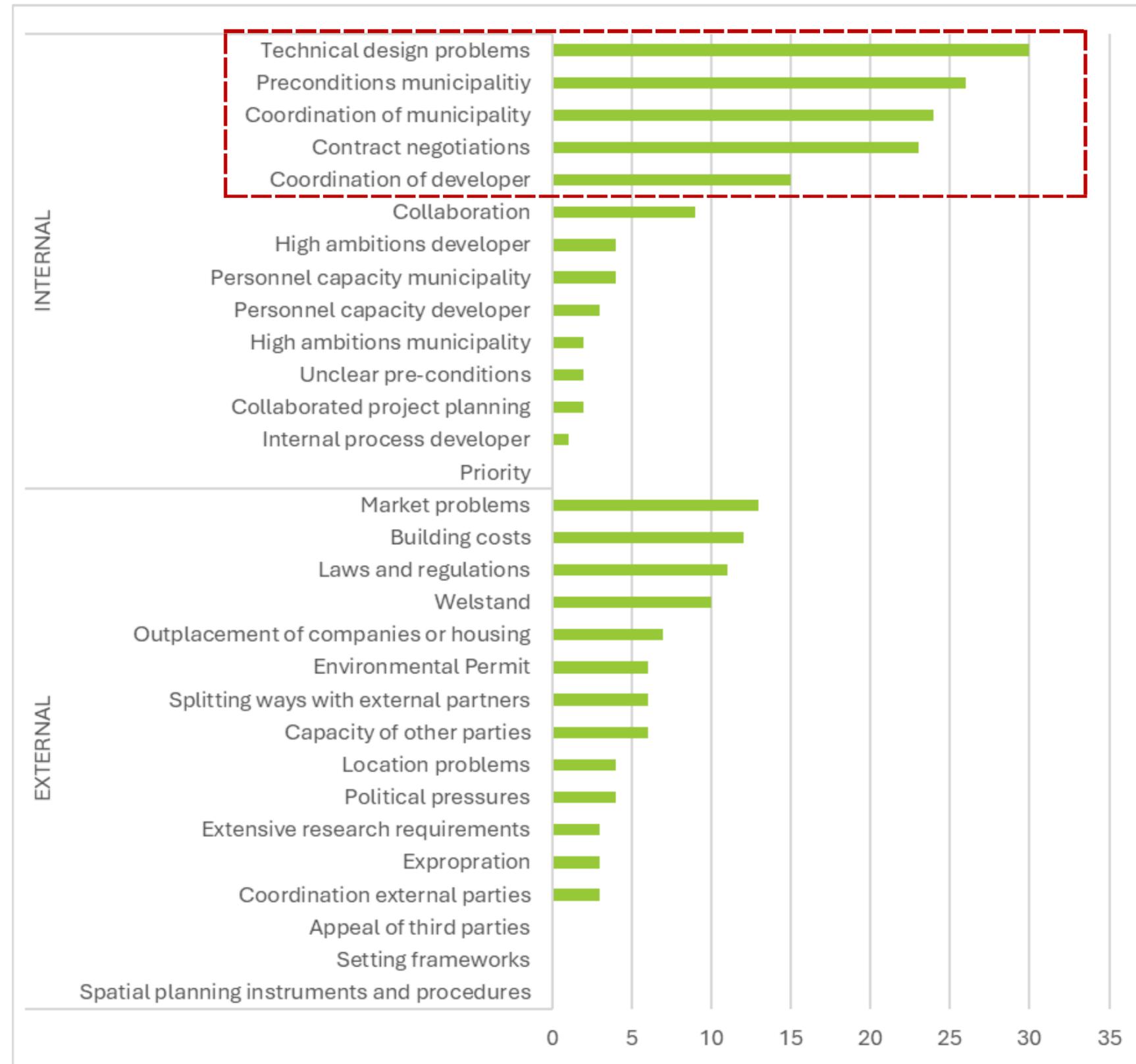
Comparison of the literature factors of delay

# Additional factors of delay



Comparison of additional factors of delay

# All mentions of delay



*All mentions of delays*

# Impactful factors of delay

## 1. Appeal of third parties

*Amount of delay: 6 to 12 months*

## 2. Financial issues (building costs) & Market problems[1]

*Amount of delay: a few months to years*

## 3. Technical design issues

*Amount of delay: 6 to 12 months*

## 4. Pre-conditions Municipality

*Amount of delay: 6 to 12 months*

## 5. Contract negotiations

*Amount of delay: a few months to 6 months*

*[1] These two delays are combined, because they are always linked in occurrence.*



# Testing parallel planning

# Key ingredients

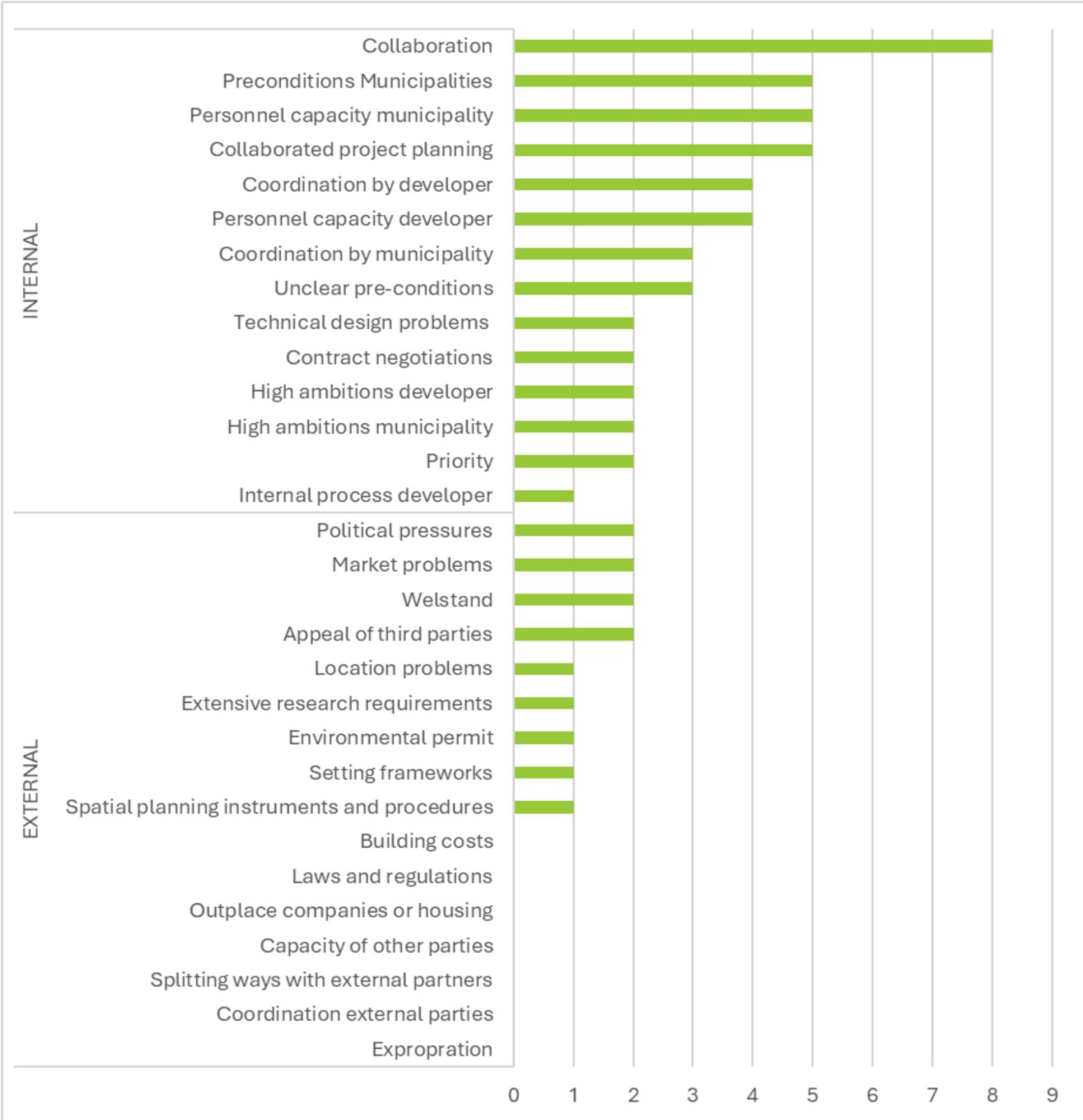
Pillar	Key ingredients
<b>1. Planning in Parallel</b>	Stacked Task Scheduling
	Collaborative Scheduling
	Structured 8-Week Planning
	Professional Planner Involvement
<b>2. Continuous Information Flow</b>	Preconditions Document
	Digital Infrastructure (open information sharing)
	Early Risk Identification
	Continuous Feasibility Management
	Early Public Participation

Pillar	Key ingredient
<b>3. Standardization</b>	Standardized Documents
<b>4. Efficient Working</b>	Scrum Roles
	Accelerating Chamber
	Early Stakeholder Commitment
<b>Other</b>	Stable Governance

# Links with factors of delay

Factor of delay	Key ingredient
<b>Collaboration</b>	Collaborative Scheduling
	Structured 8-Week Planning
	Preconditions Document
	Professional Planner Involvement
	Digital Infrastructure (open information sharing)
	Accelerating Chamber
	Early Stakeholder Commitment
	Stacked Task Scheduling

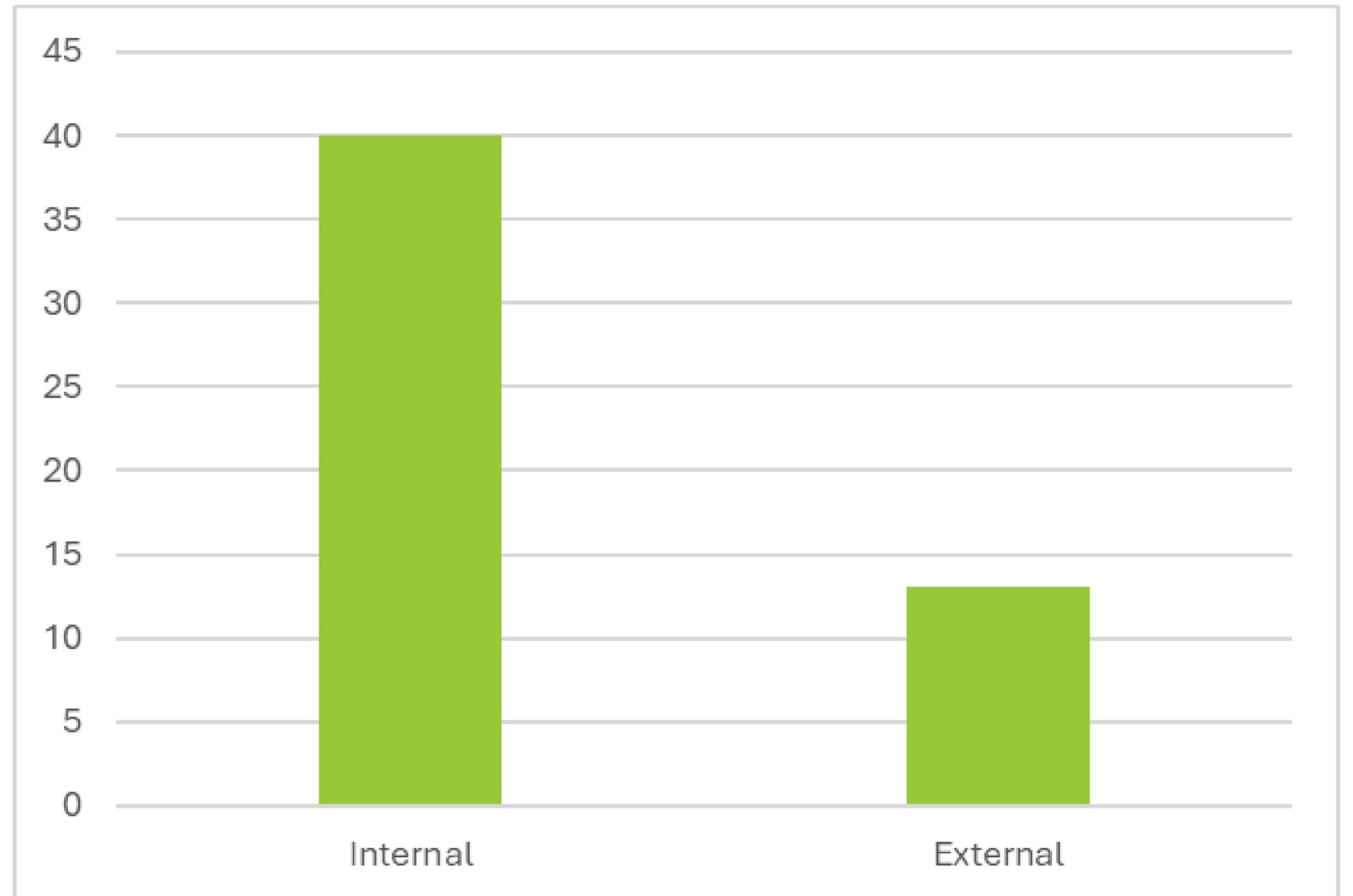
# Links with factors of delay



*Number of key ingredients linked to factors of delay*

# Internal vs External

More links with internal factors



*Comparison of the number of links with parallel planning key ingredients between internal and external factors of delay*

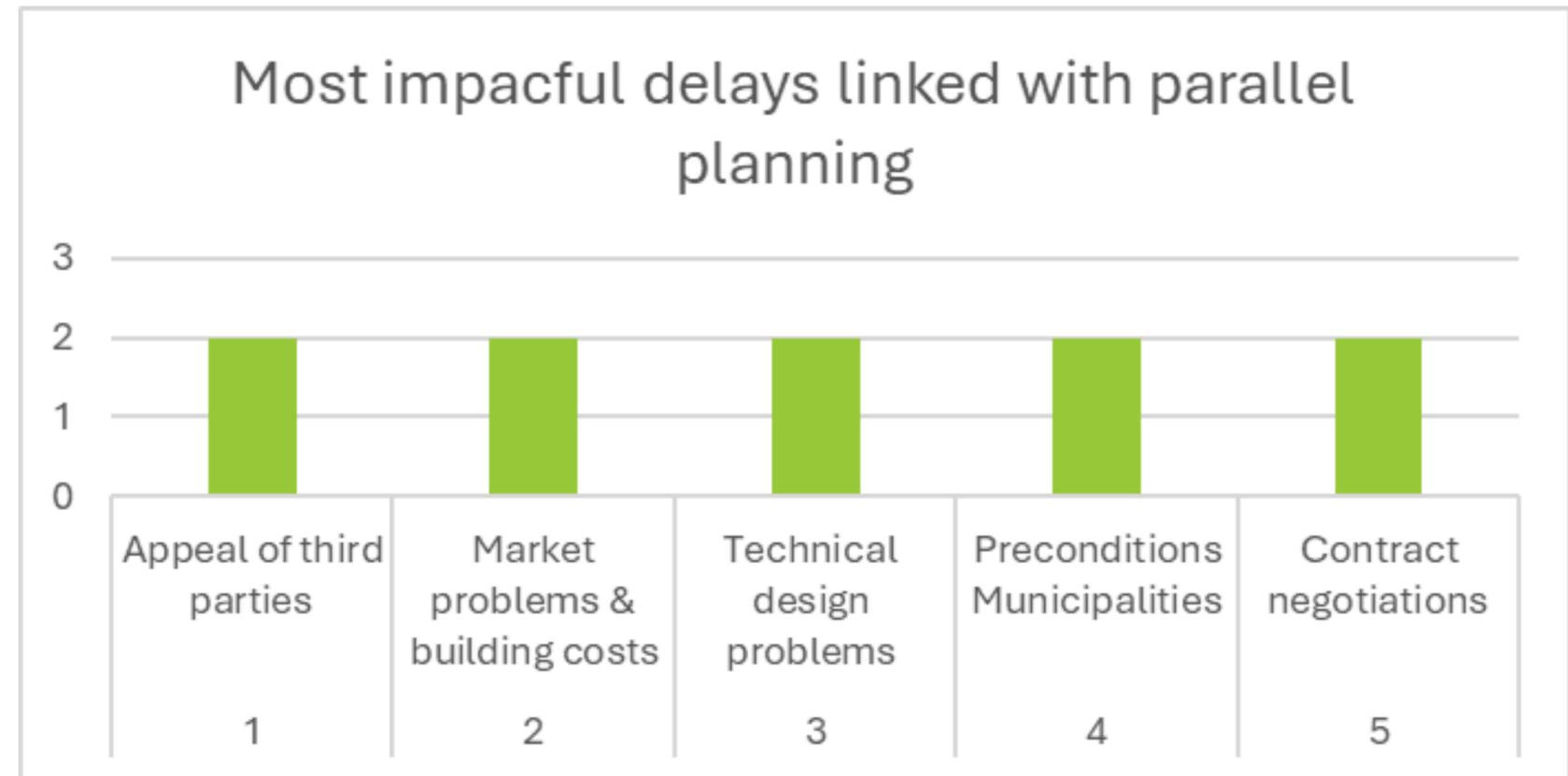
# Excludes

- All external factors
- Only risk planning, but no strong connection with mitigation through parallel planning

External
Building costs
Laws and regulations
Outplace companies or housing.
Capacity of other parties
Splitting ways with external parties
Coordination of external parties
Expropriation

# Impactful factors of delay

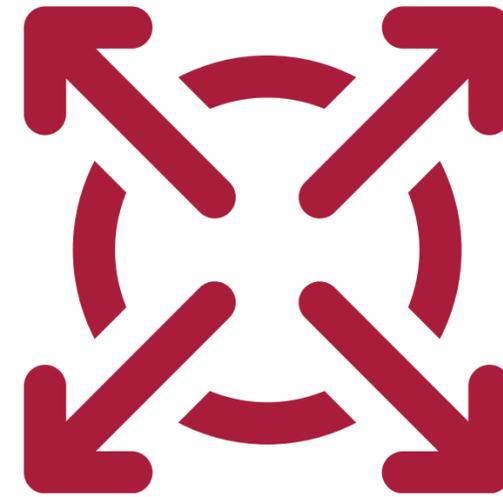
- Little links
- Remain difficult to mitigate



# Reduction factors



Results do not specify  
the reduction in time



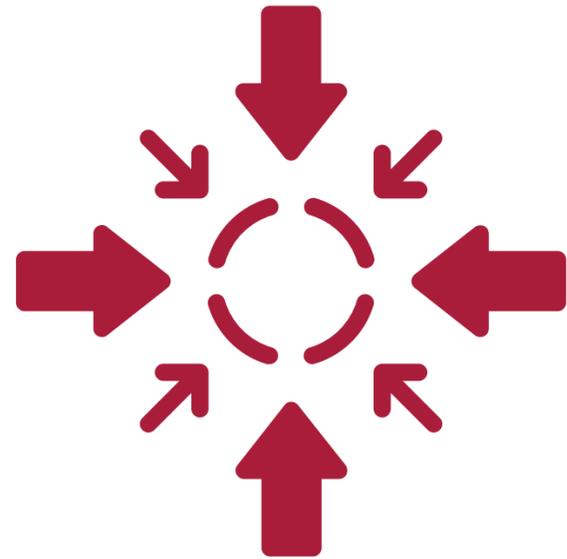
External factors:  
difficult to mitigate



# Conclusion

# Conclusion

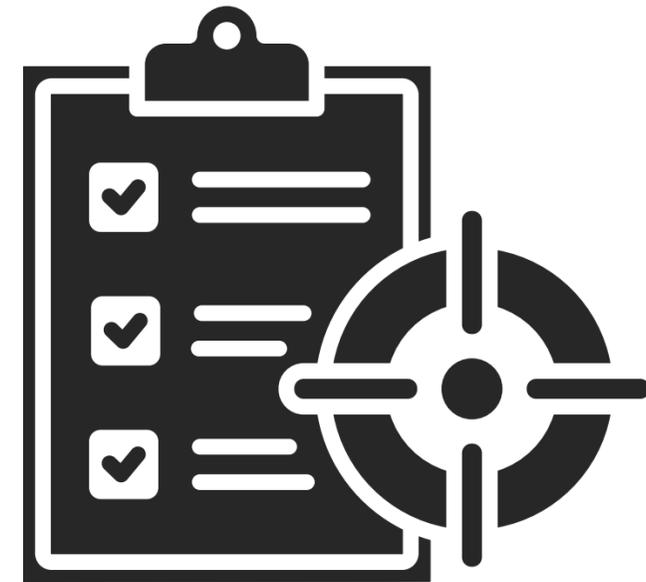
How can parallel planning address delays in housing development to reduce the planning phase?



Targets internal delays



Promotes collaboration



Intentional approach to  
planning



# Discussion

# Discussion

## Definition of planning phase

- Beginning and end of planning phase
- BPD planning phase average vs parallel planning

## Stakeholder and research bias

- Data based on interviews and progress reports
- Links key ingredients are based on the researcher
  - do not state the **differentiation** in the amount of mitigation

# Limitations

## Parallel planning

- Limited amount of information
- Theory is still in development
- No finished project yet

## Methodology

- Cases
  - Same company
  - Limited stakeholders
  - Not delivered (start of construction was delayed)

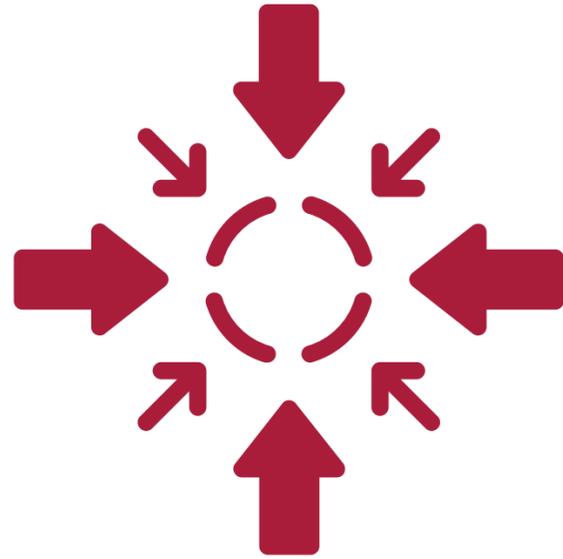
# Recommendations

## Scientific

- Research based on the **pilots**
- Factors of delay with different **contexts**
- Effects of a factor of delay on the **timeline**

## Societal

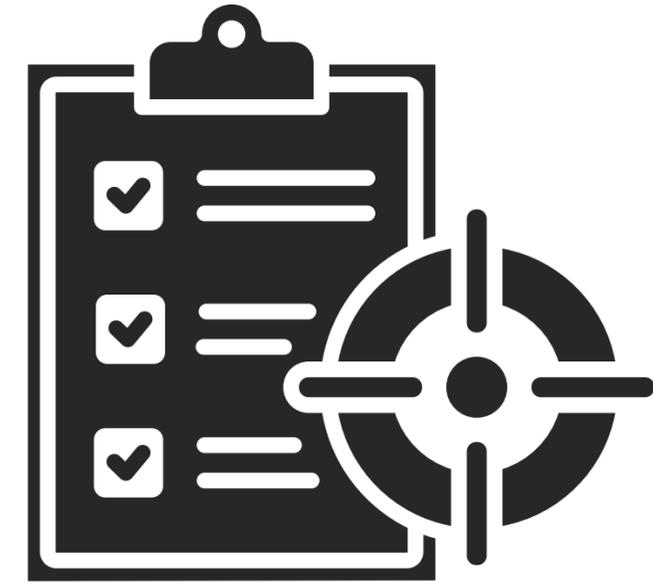
- **Guidelines**, better established, for the application of parallel planning
- Implications of factors of delay in housing development, for early risk identification and time management



**Targets internal delays**



**Promotes collaboration**



**Intentional approach to  
planning**

# Questions?

