



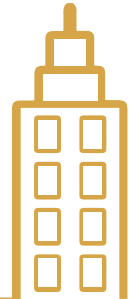
Image 1 | Haut Amsterdam (Team V, 2016)

# Time for Timber

A research on policy instruments for a successful timber transition in the Metropole region of Amsterdam

J. (Josefien) de Wind  
Master thesis presentation

June 2022



TU Delft | Gemeente Amsterdam

# Content

Introduction

Theory

Empirical research approach

Main findings

Conclusions

Recommendations



## Climate change

- ✘ Nitrogen + CO<sub>2</sub>:  
**emission reduction**
- ✘ Resource depletion:  
**circular economy**



Image 2 | Construction pollution (dePauw, 2019)

## Climate change

- ✘ Nitrogen + CO<sub>2</sub>:  
**emission reduction**
- ✘ Resource depletion:  
**circular economy**

## Housing crisis

- ✘ Employee shortage
- ✘ Immigrants



Image 3 | Woonprotest (de Boterman, 2021)

# Time for timber?

metropool  
regioamsterdam

**convenant**



## **Green Deal Houtbouw Duurzaam uit de crisis**

Gericht op de uitvoering van de  
schaalsprong houtbouw in de  
Metropoolregio Amsterdam  
2021-2025



Image 4 | Green Deal Houtbouw: Duurzaam uit de crisis (MRA, 2021)

## Timber as a construction material through the ages



Image 5 |  
Greek temple (Hullworks, n.d.)



Image 6 |  
Pagoda of Fogong Temple (Fong, 2019)



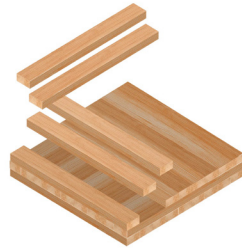
Image 7 |  
Amsterdam canal houses (Hall, 2021)



Image 8 |  
Haut Amsterdam (Team V, 2016)

## Timber constructions

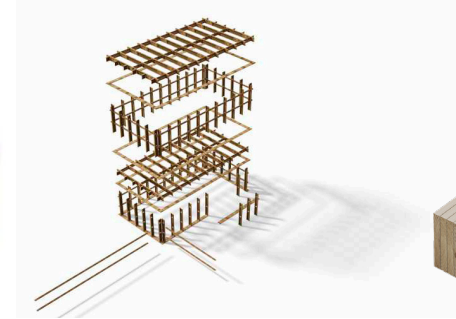
⊘ Different application methods



**CLT**  
Cross laminated  
timber



**Modular**  
Modular  
constructions (prefab)



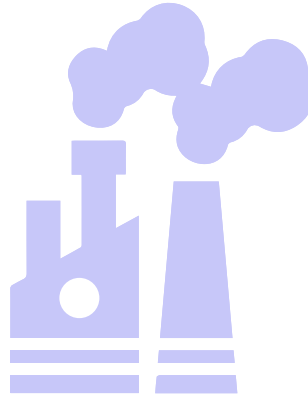
**HSB**  
Houtskeletbouw



**Glulam / LVL**  
Glued beams /  
veneer layers

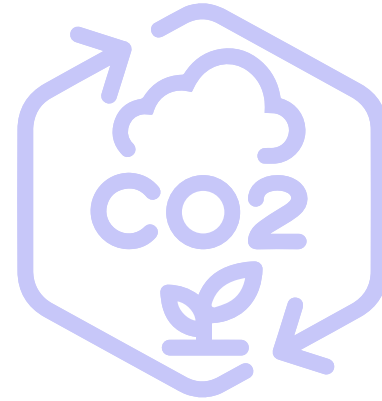
## Timber constructions

- Different application methods
- **Contribution to circular economy**



### Less emissions

Lower CO2 emissions during production



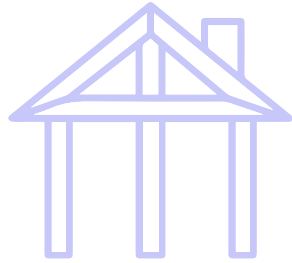
### Carbon neutral

Natural carbon sink



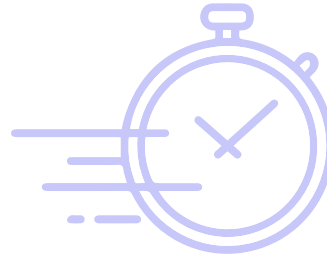
## Timber constructions

- ⌘ Different application methods
- ⌘ Contribution to circular economy
- ⌘ **Other benefits**



### Efficient

Light weight & high strength



### Quicker

Less nuisance & quick housing production



### Comfort

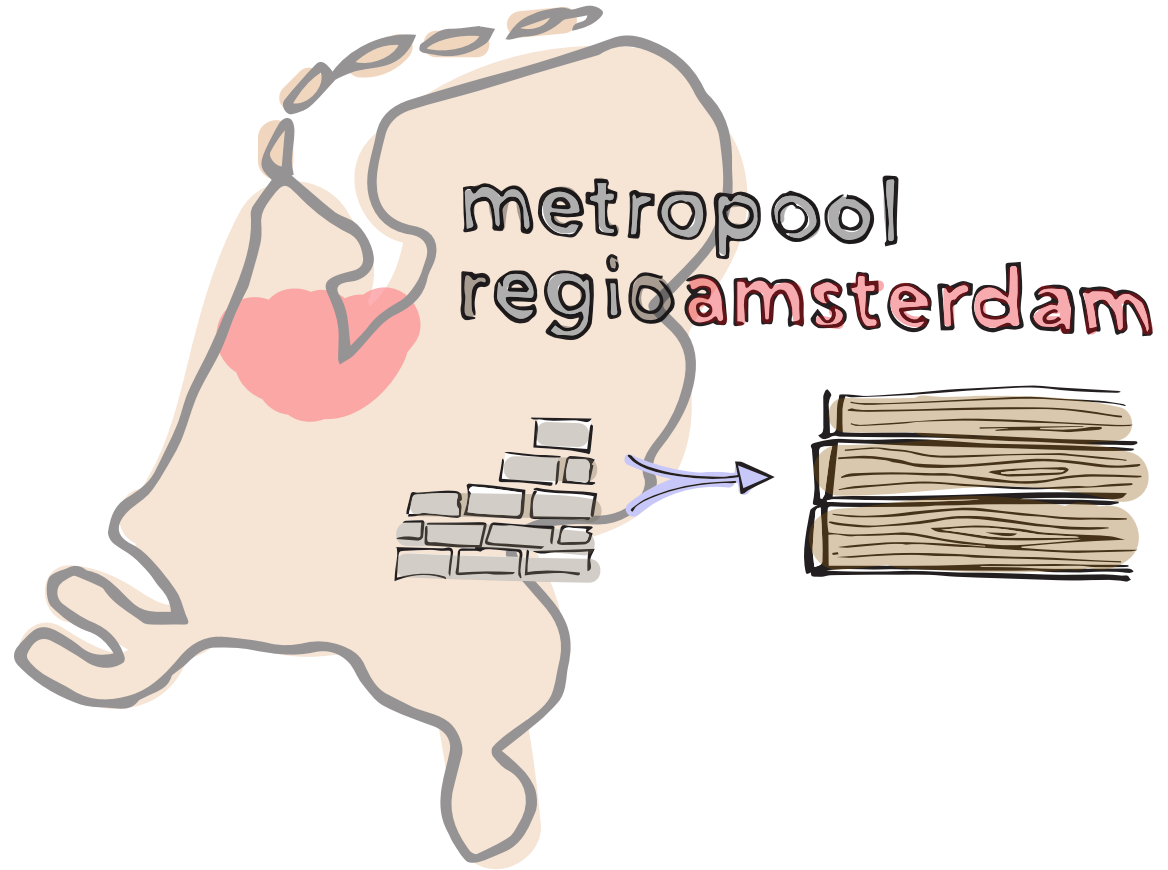
Healthy indoor climate & less stress

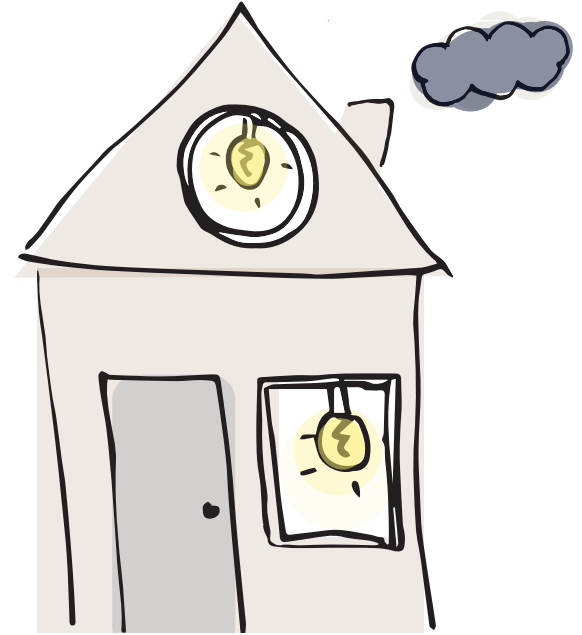
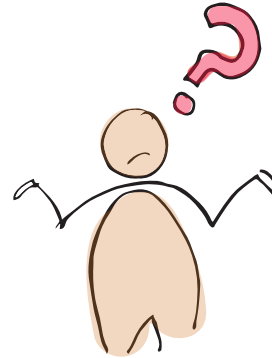


### Certified

Decrease of tropical deforestation

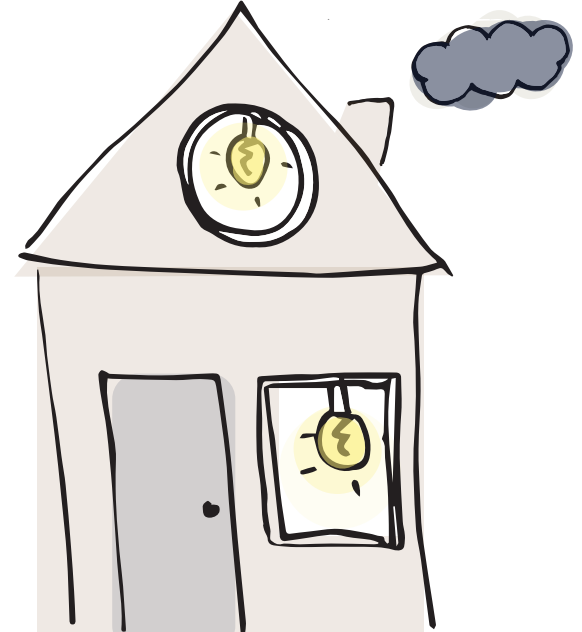
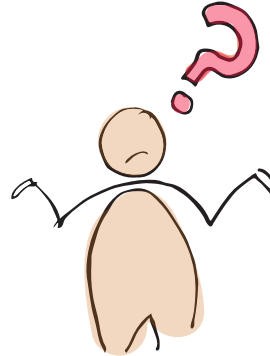
# How?





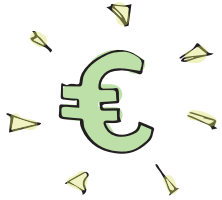


## Provide information

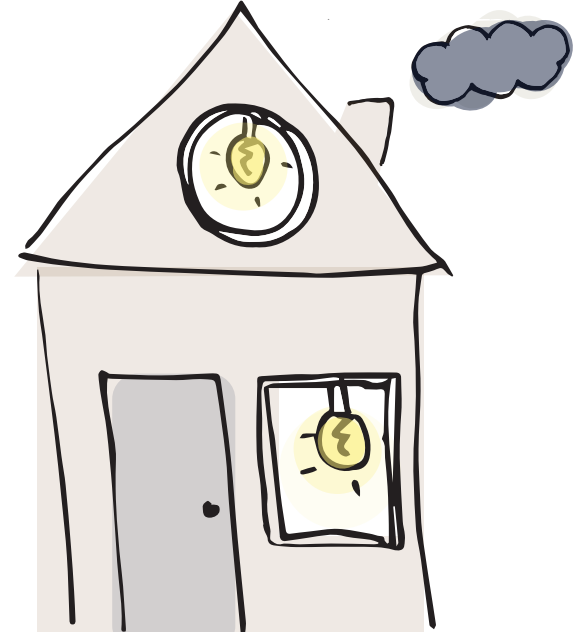
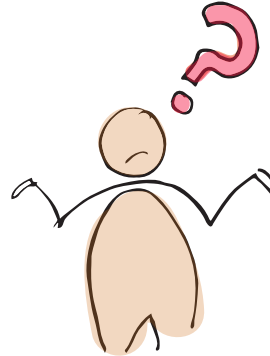




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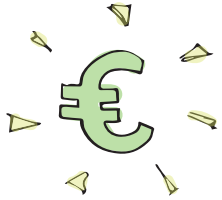


**Financial incentives**





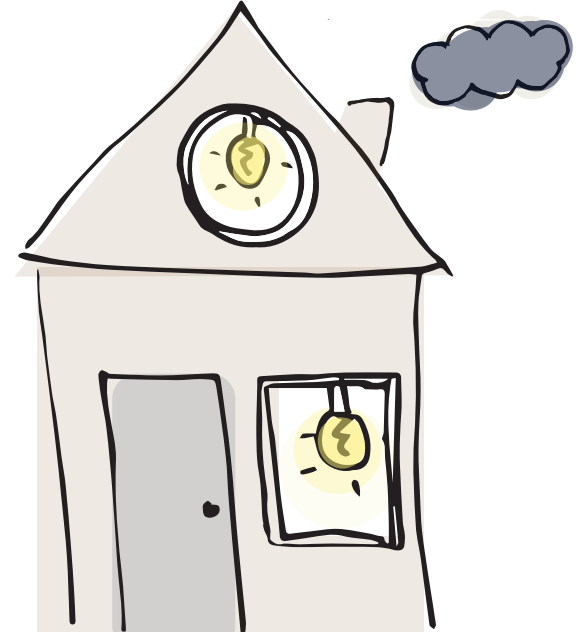
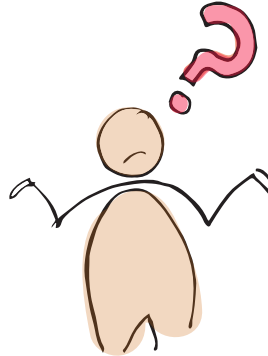
**Provide information**



**Financial incentives**



**Make strict rules**





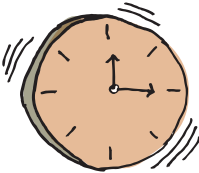
**Provide information**



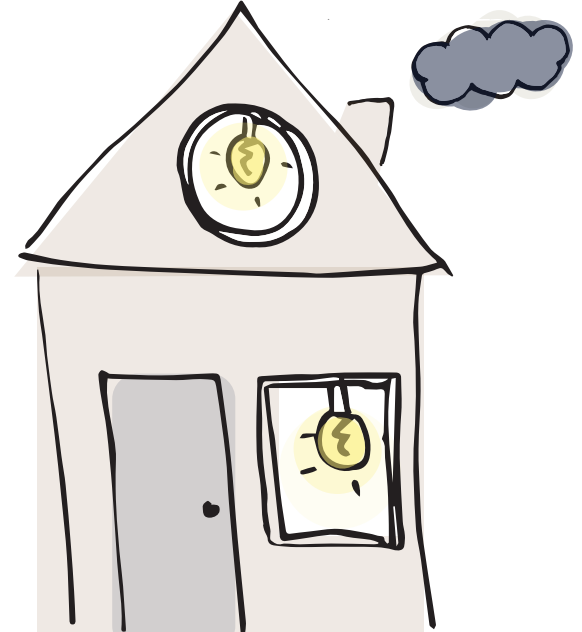
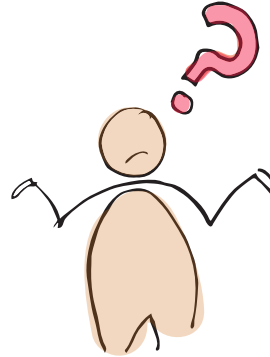
**Financial incentives**



**Make strict rules**



**Facilitate alarm**





Information



Economic



Regulatory



Facilitating

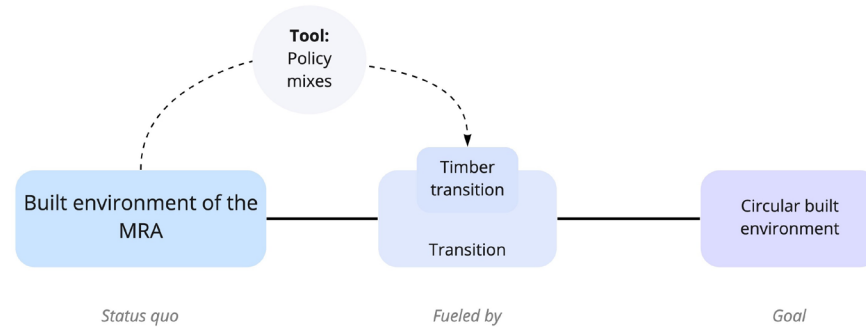
## Policy instruments

*“A set of techniques by which governmental authorities wield their power in attempting to ensure support and effect (or prevent) social change.” (Verdung, 1998, p. 50)*



## Problem statement

There is little knowledge on how a **combination of policy instruments** can be used to **foster a transition of the built environment** towards the **circular economy**.



## Goal

- ❖ **Deeper understanding of:** the effects and the requirements for policy instruments for this transition.
- ❖ **Provide advice about:** the combination of policy instruments that can foster the timber transition.

## Main research question

*How can a combination of **policy instruments** foster a transition to **timber housing constructions** in the **MRA**?*

## Research topics

- **Literature**
- Empirical research

## Literature review & theoretical framework

- Contribution of **timber constructions** to a **circular economy**
- **Policy instruments** for a **sustainability transition**



**Theoretical  
framework**

## Research topics

- Literature study
- **Empirical study**

### Literature review & theoretical framework

- Contribution of timber constructions to a circular economy
- Policy instruments for a sustainability transition

**Theoretical framework**

### Qualitative case study research

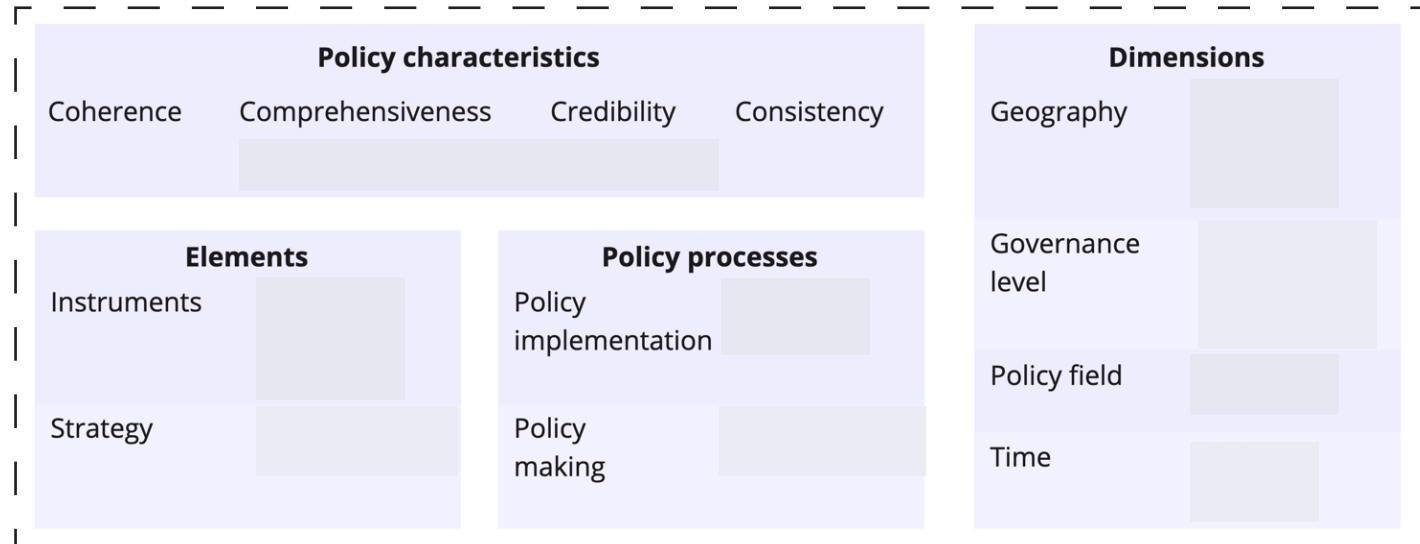
- **Stakeholder involvement**
- **Covenant** (proposed policy mix)
- **Needed** policy instruments
- **Effect** of current policy instruments

## Theoretical framework

- Policy mix building blocks (Rogge & Reichardt, 2016).

Successfully develop a **combination of policy instruments** (= policy mix) for a **sustainability transition**

## POLICY MIX



## Analytical framework

- Policy mix building blocks (Rogge & Reichardt, 2016).

Successfully develop a **combination of policy instruments** (= policy mix) for a **sustainability transition**

| Policy characteristics                      |                   |             |             |
|---|-------------------|-------------|-------------|
| Coherence                                   | Comprehensiveness | Credibility | Consistency |
| Absent   Somewhat in place   Fully in place |                   |             |             |

| Elements    |   |
|-------------|---|
| Instruments | Regulatory<br>Economic<br>Information<br>Facilitating |
| Strategy    | Aligned<br>Misaligned                                 |

| Policy processes      |                             |
|-----------------------|-----------------------------|
| Policy implementation | Effect<br>No effect         |
| Policy making         | Underdeveloped<br>Developed |

| Dimensions       |   |
|------------------|---|
| Geography        | European<br>National<br>Provincial<br>Municipal                         |
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| Policy field     | Private law<br>Public law   |
| Time             | Past<br>Present<br>Future   |

### Elements

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### Processes

|                       |                             |
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Descriptive for elements within the policy mix

# Descriptive for elements within the policy mix

## Elements

|             |  |
|-------------|--|
| Instruments | Regulatory<br><b>Economic</b><br>Information<br>Facilitating |
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## Processes

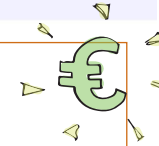
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### Example

*A financial reward system for turning out the lights has been developed. It has effect as the energy bills are already lower!*





Descriptive for elements within the policy mix

### Elements

|             |   |
|-------------|---|
| Instruments | Regulatory<br>Economic<br>Information<br>Facilitating |
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|                       |                             |
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Descriptive for the whole policy mix

### Characteristics

| Policy characteristics                      |                   |             |             |
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Descriptive for elements within the policy mix

### Elements

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### Processes

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Descriptive for the whole policy mix

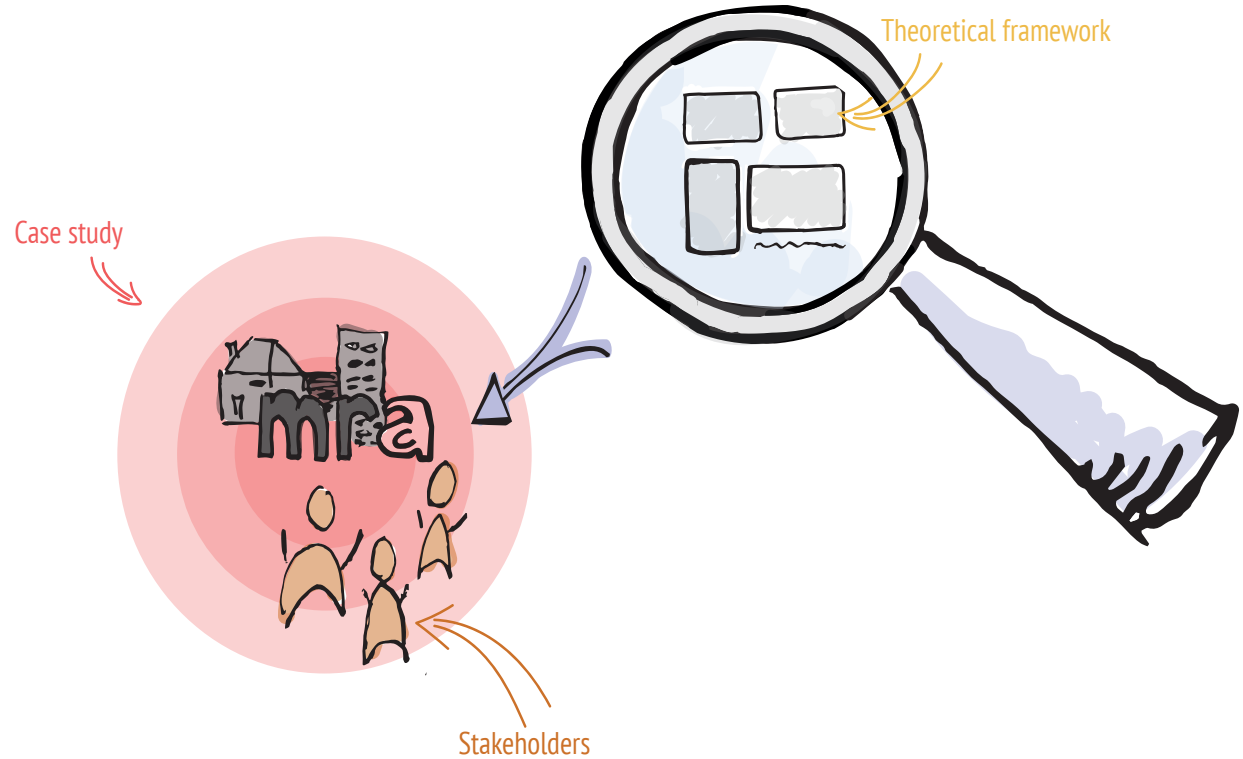
### Characteristics

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| Coherence                                   | Comprehensiveness | Credibility | Consistency |
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|                                       |   |
|---------------------------------------|---|
| Credibility: <b>believability</b>     | Consistency: <b>elements alignment</b>  |
| Coherence: <b>processes alignment</b> | Comprehensiveness: <b>extensiveness</b> |

## Stepwise operationalisation

1. Stakeholder analysis
2. Case study description + analysis
3. Semi-structured interviews



## Stepwise operationalisation

- 1. Stakeholder analysis**
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### Stakeholder involvement

(Non-)governmental stakeholders from covenant

## Stepwise operationalisation

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- 2. Case study description + analysis**
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### Stakeholder involvement

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### Covenant

'Green Deal: Houtbouw'

**Stepwise operationalisation**

1. Stakeholder analysis
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- 3. Semi-structured interviews**



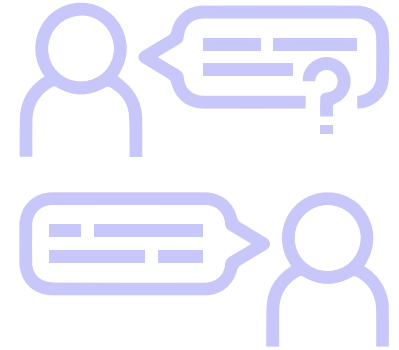
**Stakeholder involvement**

(Non-)governmental stakeholders from covenant



**Covenant**

'Green Deal: Houtbouw'



**Effect & needed policy instruments**

Perceived effects & what is necessary

## Findings step 1- Stakeholder analysis

- Simplified method of Bryson (2004)
- **Governmental** stakeholders
- **Non-governmental** stakeholders



### Analysis

- Generally **capable** to comply to covenant
- Non-governmental: biggest barrier is current **regulations**
- Governmental: biggest barrier is **incoherency**

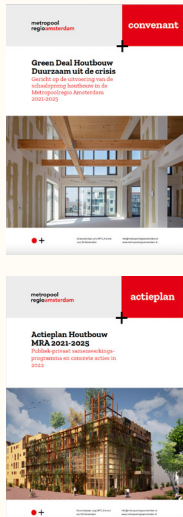


### Validation

- There are more barriers, including a lacking **demand**
- Incoherency due to **lack of knowledge**

## Findings step 2- Case study

- Analysis based on analytical framework



Convenant 'Green Deal: Houtbouw' & Actieplan Houtbouw (MRA, 2021)



### Analysis

- No **economic** instruments
- No concrete **goals** and **goal assessment**
- Lacking **consistency** with existing policies



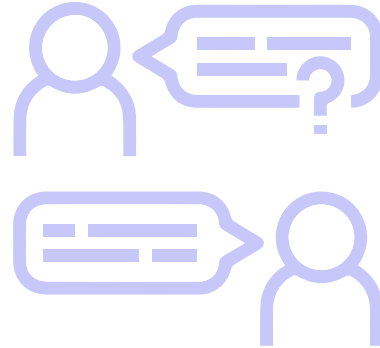
### Validation

- Covenant is **not binding**: 'Coalition of the willing'
- Lack of **knowledge**



## Findings step 3- Interviews

- ⌘ Semi-structured
- ⌘ 21 interviews
- ⌘ Deductive coding with AtlasTI
- ⌘ Analysis based on analytical framework



### Analysis

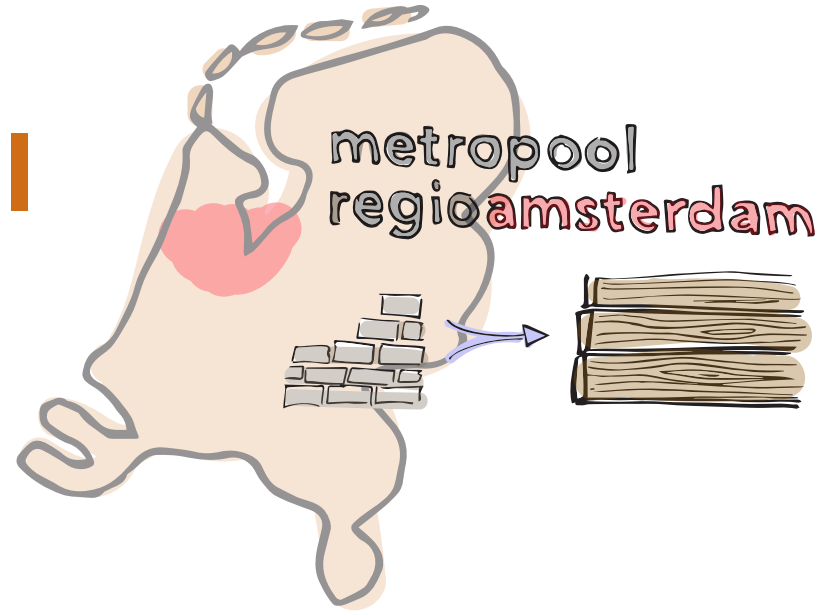
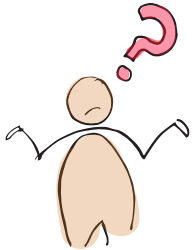
- ⌘ **Regulatory and facilitating** instruments most important
- ⌘ **Regulatory** instruments mainly on national and municipal level



### Validation

- ⌘ Set a clear goal for **clear goal** for regulatory instruments
- ⌘ Facilitating instruments needed to make other instruments work, the **'how to'**

# Develop a successful policy mix?



# Findings in analytical framework

## 1. Instruments, processes & dimensions

## 2. Characteristics

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**Effect & needed policy instruments**  
Perceived effects & what is necessary

# Findings in analytical framework

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### Existing instruments with positive effects



### Example

*Nitrogen regulations (implemented on national level) have a positive effect on the timber transition.*

# Findings in analytical framework

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- Existing instruments with positive effects
- Existing instruments with negative effects**



### Example

*Standardization that is used for the assessments of buildings doesn't always allow for timber.*

# Findings in analytical framework

## 1. Instruments, processes & dimensions

## 2. Characteristics

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❏ Existing instruments that are necessary



### Example

*Include award criteria for timber constructions in tender requirements.*

# Findings in analytical framework

## 1. Instruments, processes & dimensions

## 2. Characteristics

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| Time             | Past<br>Present<br>Future   |

- Existing instruments that are necessary
- Non-existing instruments that are necessary**



### Example

*Priority in the permit process for timber (biobased material) to accelerate the project process.*

## Findings in analytical framework

1. Instruments, processes & dimensions

2. Characteristics

| Policy characteristics                      |                   |             |             |
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- ✘ Coherence: **Somewhat in place**
- ✘ Comprehensiveness: **Somewhat in place**
- ✘ Credibility: **Fully in place**
- ✘ Consistency: **Absent**

### Example

*Different interests within one municipality can lead to inconsistent policymaking.*



# Key takeaways from the interviews



## Regulatory instruments

### 1. Improve norms and standardization for timber

- Make assessment processes standardized
- Include timber & biobased
- European and national level

### 2. Appoint more locations for timber constructions

- Covenant as guiding principle?
- Also on provincial level
- More room in zoning plans & 'plot passports'

### 3. Priority in permit process for timber constructions

- Acceleration of biobased projects
- Exclude aspects from permit assessment

### 4. Include award criteria for timber in tenders

- Use BREAAAM (material criteria)
- Look at impact perspective

### 5. Government as client in the permit process



## Facilitating instruments

### 1. More municipal capacity on timber projects for faster turnaround time

- More active involvement & contact
- Bring together knowledge & experience
- Deepening own knowledge (e.g. fire department)

### 2. More transparency in assessment process

- Proactive attitude during assessment process
- Early involvement

### 3. Assistance & proactiveness after project delivery

- Quickly renting out the projects

### 4. Closing the future businesscase for timber rather than financial incentives

- Commitments with suppliers
- Buyer groups or other provisioning

### 5. Partnering with the community

- Increase knowledge, expertise, collaboration
- Show the market trust for intrinsic motivation



## Other takeaways

### 1. Inconsistency has counteracting effects & loss of trust from the market

- Inconsistent policy implementation (varying policies)
- Inconsistent policy making (different incentives between and within departments)
- Deepening own knowledge (e.g. fire department)

### 2. Many municipalities are not concerned with the topic

- Other priorities and not enough capacity
- Cultural differences (incentives, ambitions)
- No integrated responsibilities and agreements: 'lost' topics

### 3. More information & knowledge exchange about timber is needed

- On all levels, in a triple helix collaboration

### 4. More emphasis on, and alignment with the covenant

## Main research question

*How can a combination of **policy instruments** foster a transition to **timber housing constructions** in the **MRA**?*

## Main research question

*How can a combination of **policy instruments** foster a transition to **timber housing constructions** in the **MRA**?*

### Content

- ⊠ Combination needed
- ⊠ Regulatory & facilitating (the 'how to')
- ⊠ Research hindering instruments
- ⊠ Gain characteristics

### Development

- ⊠ Research barriers for stakeholders
- ⊠ Alignment in and between different governments
- ⊠ Foremost: a way of thinking! (analytical stance, use framework)

## Limitations

### Literature study

Lacking connection to transition literature

### Analytical framework

Deductive coding gives limited results

### Stakeholder analysis

Simplified version due to research scope

### Interviews

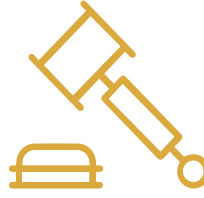
Not all participants and not generalizable

## Recommendations

▫ **For policymakers in general**



Understand implications, needs and interests of involved stakeholders



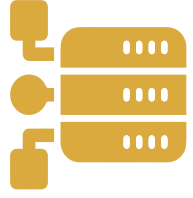
More emphasis on regulatory instruments



Understand importance of facilitating instruments



More alignment between governments in policymaking



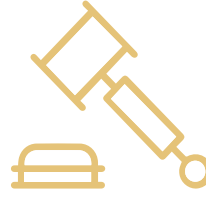
Use the operationalization of the AF as a background for policy development

## Recommendations

- For policymakers in general
- Addition for policymakers in the timber transition**



Understand implications, needs and interests of involved stakeholders



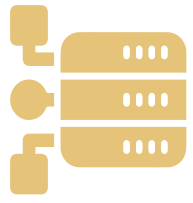
More emphasis on regulatory instruments



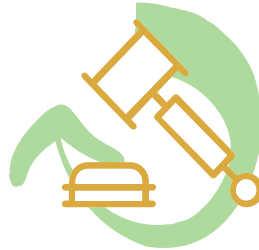
Understand importance of facilitating instruments



More alignment between governments in policymaking



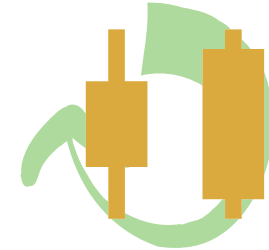
Use the operationalization of the AF as a background for policy development



Do not limit the implementation of policy instruments to the current regulations



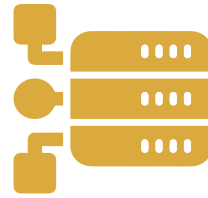
Implement more facilitating instruments



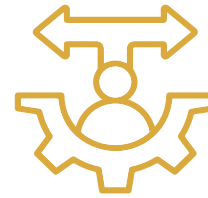
Improve consistency in policymaking and implementation



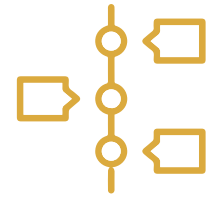
Conduct another case study



Complement the policy mix theory with transition theories



Decision-making models for PI's to overcome barriers



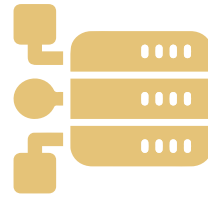
Timeline for implementation of policy instruments

## Recommendations

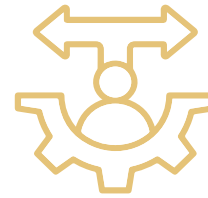
### ▫ Future research



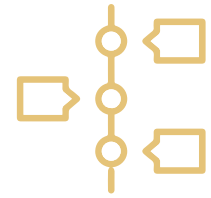
Conduct another case study



Complement the policy mix theory with theories on sustainable transitions



Decision-making models for PI's to overcome barriers



Timeline for implementation of policy instruments

## Recommendations

- Future research
- **Concluding recommendation in relation to my internship at Gemeente Amsterdam**

### Complement currently used method

- 'New' instruments
- why & how

### Analytical operationalization

- Theoretical background
- Roadmap for policymakers



**Thank you for your time!**  
**Questions?**



# **Time for timber**

Introduction

Theory

Empirical research approach

Findings

Conclusions

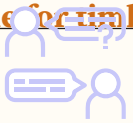
Recommendations

## References

- Image 1 Team V. (2016). 'HAUTE ARCHITECTURE' IN HOUTEN WOONTOREN AMSTERDAM [Render], from TeamV, retrieved January 2022, from <https://teamv.nl/haute-architecture-in-houten-woontoren-amsterdam/>
- Image 2 dePauw, R. (2019). *How to decrease construction pollution across your job sites* [Photo], from ExacTime, retrieved June 28th, 2022, from <https://www.exactime.com/blog/how-to-decrease-construction-pollution-across-your-job-sites/>
- Image 3 de Boterman, L. (2021). *Zo blijf je opkomen voor een beter woonbeleid* [Photo], from Vice, retrieved June 28th, 2022, from <https://www.vice.com/nl/article/epnegj/voor-een-beter-woonbeleid>
- Image 4 MRA. (2021). *Green Deal Houtbouw: Duurzaam uit de crisis* [Report cover], from MRA, retrieved February 22th, 2022, from <https://www.metropoolregioamsterdam.nl/wp-content/uploads/2021/10/Convenant-Green-Deal-Houtbouw.pdf>
- Image 5 Hullworks. (n.d.). *The Ancient Greek Temple* [Photo], from Hullworks, retrieved June 28th, 2022, from <https://hullworks.com/the-primitive-classical-building/>
- Image 6 Fong. (2019). *The Sakyamuni Pagoda of Fogong Temple* [Photo], from Wikipedia, retrieved June 28th, 2022, from [https://en.wikipedia.org/wiki/Pagoda\\_of\\_Fogong\\_Temple](https://en.wikipedia.org/wiki/Pagoda_of_Fogong_Temple)
- Image 7 Hall, Z.D. (2021). 'Canals, cobbles and wonky houses': *the allure of Amsterdam* [Photo], from Financial Times, retrieved June 28th, 2022, from <https://www.ft.com/content/a9e83b73-6232-4884-8b44-7c71a7e6dbd3>
- MRA. (2021). *Actieplan Houtbouw MRA 2021-2025: Publiek-privaat samenwerkingsprogramma en concrete acties in 2022* [Report], from MRA, retrieved February 22th, 2022, from <https://www.metropoolregioamsterdam.nl/wp-content/uploads/2021/10/Convenant-Green-Deal-Houtbouw.pdf>

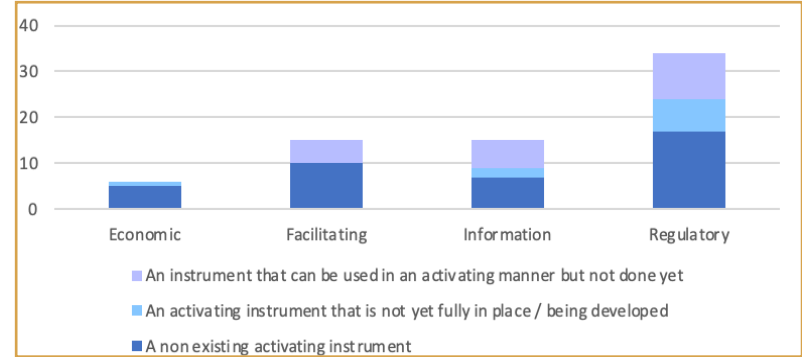




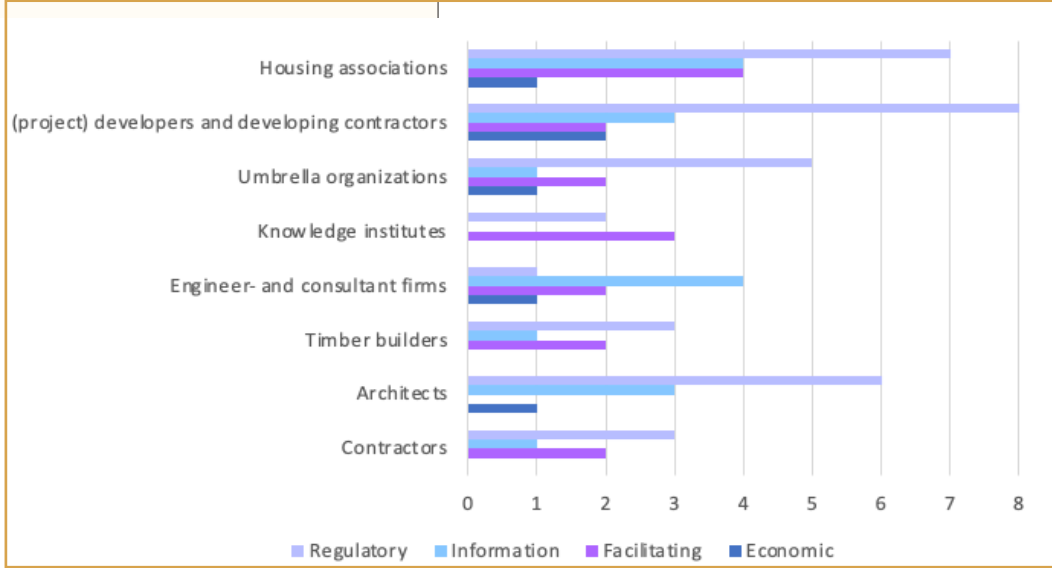


**SQ5: Which policy instruments are necessary for an effective timber transition?**

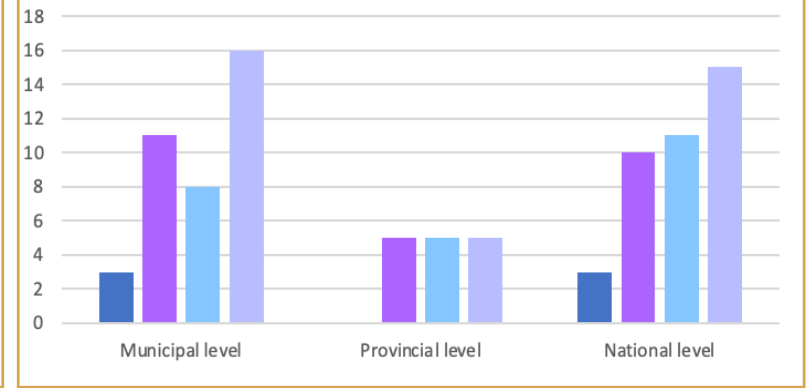
**Instruments that are perceived necessary for the timber transition**



**Necessary instruments according to the different stakeholders**



**Required implementation level of necessary instruments**



## How can a combination of policy instruments foster the transition to timber housing construction in the MRA?

### Complex...

- Nature of policies
- Effectiveness of policies
- Interests and needs of stakeholders

### Focus on

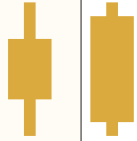
- Combination rather than individual instruments
- Regulatory instruments
- Implications (interests and needs) of stakeholders that hinder the transition
- Communication between different governmental levels
- Avoid misalignment within organization
- Improving the characteristics of the policy mix

# Recommendations

## Policymakers in general



Understand implications, needs and interests of involved stakeholders



Government alignment in policymaking



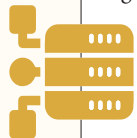
More emphasis on regulatory instruments



Understand importance of facilitating



Assessment of governmental responsibilities



Assessment of characteristics of policy mix

## Timber transition



Research on hindering regulatory



Implement new not yet existing instruments



Design based on implications, needs and interests of stakeholders

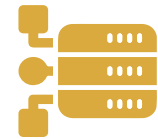
## Future research



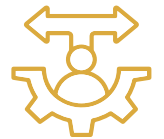
Conduct another case study



Timeline for implementation of policy instruments



Assessment of using the policy mix building blocks



Decision-making models for PI's for implications



## Examples of instruments

### Non existing activating instrument

*'If you dare to make a difference in this as a municipality that you say, well, we treat construction projects with priority, that would be a very nice step.'*

### Activating instrument that is not yet fully in place or being developed

*'What would help a lot is to have some kind of a carbon tax and to arrange a fee for a carbon storage.'*

### An instrument that can be used in an activating manner but not done yet

*'But I do see opportunities, because the province, but certainly also the national government, is just transcending municipalities and projects, so you could certainly have a lot of exchange there in terms of knowledge sharing, I think.'*

### An existing instrument that hinders the transition / covenant

*'The testing framework is actually fully geared to traditional construction, so the moment you come up with an alternative we actually test against the same yardstick as we use to test traditional construction and there are tests that are not very useful and some things are not tested that you would say, well, we should actually pay more.'*

### An existing instrument that activates the transition / covenant

*'Well, I actually notice now within the municipality that they are quite cooperative and facilitating and in any case the municipality of Amsterdam is, I think, ahead when it comes to the accumulated knowledge for timber construction.'*