Urgency and motives to reduce energy use in historic buildings
• Context: research project *Energieke Restauratie*

• Research problem

• Methods
  – Inventory of facts
  – Interviewing owners

• Findings
• Centre of Applied Research NoorderRuimte
• Sustainable Building

• **SIA RAAK MKB Project**
  – 2 years of research
  – North of the Netherlands
  – 4 research themes

> 40 (12) participating enterprises, owners and governmental organisations
> 50 (3) participating students
> 25 in depth case study projects

• Researcher
• Lecturer
• PhD student at University of Technology Delft
International agreements
- Reduction of 20% in 2020

Increased energy use by 10%

Research group
- Commonly known: higher energy use in historic buildings
- Owners less motivated for taking energy interventions

Should we focus on listed buildings or general buildings?
Goal 1
Providing insight into the relevance for reducing energy use in historic buildings

Inventory about
- Energy use
- Energy costs
- Rental charges
- Size of the building
- Activities in the building
About 40 historic buildings

- About 30 (21) churches
- About 15 (6) other buildings

Sources

- Interviewees
- Archives / drawings
- Additional survey
FINDINGS

Common residential buildings
Energy costs 32% of total of rental charges and energy costs

Historic buildings
• Average 41%
• 21 churches about 47%
  – Exceptions 65-90%
• 6 other buildings about 22%

But
• Average absolute energy costs: 20x higher
Goal 2
Providing insight into motives by owners for reducing energy use in historic buildings

Interviewing owners (15)
- Motives for housing
- Energy interventions taken
- Motives for (not) taking energy interventions
- Differences in type of owner?

Brand (1994): relation speed of modification and type of owner
## FINDINGS

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<thead>
<tr>
<th></th>
<th>Commercial organisations</th>
<th>Non-profit organisations</th>
<th>Individual private owners</th>
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<tbody>
<tr>
<td><strong>Motive for housing</strong></td>
<td>• Location</td>
<td>• Social importance</td>
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<td>• Heritage quality</td>
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<td>• Safe investment</td>
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<td><strong>Vision on modifications</strong></td>
<td>• Current activities!</td>
<td>• Current activities!</td>
<td>• <strong>Improving comfort</strong></td>
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<td></td>
<td>• Image organisation</td>
<td>• Social goal</td>
<td>• Beautiful building</td>
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<td><strong>Motive for energy interventions</strong></td>
<td>• Image: added value</td>
<td>• <strong>Image: added value</strong></td>
<td>• Ideals</td>
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<td>• <strong>Participant in the design process</strong></td>
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<td>• <strong>Reducing operating expenses</strong></td>
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<td><strong>Motive for not taking energy interventions</strong></td>
<td>• Energy policy</td>
<td>• Image organisation</td>
<td>• <strong>Subsidises?</strong></td>
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<td>• Energy policy</td>
<td>• Possibilities?</td>
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<td>• <strong>Guarantees</strong></td>
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<td>• Refined detailing</td>
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<td>• Transparency heritage qualities</td>
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<td>• Return of investment?</td>
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Thank you for your attention
Do you have any questions?