An exploration of Australian homeowners' efforts to reduce energy & water use through renovation & retrofitting

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Background – about the Global Cities Institute

- The GCI focuses on the intersection of globalization & climate change
- Urban Infrastructure is one of 6 programs, including:
  - Climate Change Adaptation
  - Globalization & Culture
  - Learning Cities
  - Community Sustainability
  - Human security

The Urban Infrastructure program

- How cities might respond to increasing infrastructure demands
- Key area of research: household sustainability
  - Home improvements i.e. renovation & retrofitting

Background to the issue

- Regulatory & policy attention has focused on new homes, < 20% of current stock (ABS, 2008)
- Focus shifting to existing housing
- Expectation homeowners will ‘do their bit’

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Gaps & opportunities

- Home improvement **(HI)** activities are ubiquitous (Davidson & Leather, 2000; Goodsell, 2008)
  - but we know very little about such phenomena
- Even less known about homeowners' HI efforts to reduce own homes' environmental impact

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Gaps & opportunities continued…

- Volume of HI represents a key opportunity to ↓ GHG emissions & H_20 use of existing housing stock
- Impact largely dependent on how homes function as individual systems:
  - –house condition
  - –homeowners' know how
  - –how homes lived in, used & changed

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Gaps & opportunities continued….

- Tempting to rely on individual choice, focusing on common 'drivers':
  - saving money
  - improving health or comfort
  - protecting environment
- Likelihood of success improved by deeper exploration & understanding of complex experience of HIs

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Broad research questions

1. What HI activities do Australian homeowners undertake?
2. Why & how do they undertake these activities?
3. To what extent are E & H_2O efficiency taken into account, if at all?
4. What facilitates & what blocks attempts to improve E & H_2O efficiency?
5. What is the role of daily routines?

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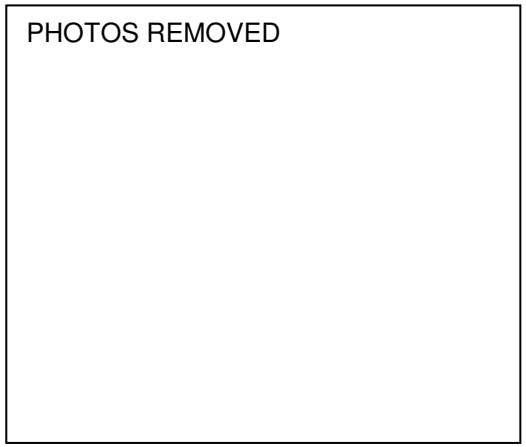
Approach taken

- Qualitative: in-depth data to create basis for large scale quantitative exploration
  - –rich data
  - –room to include complexity of HIs
- Interview-based, conducted in person



‘Green’ renovators pilot

- Aim: to document experience of renovators who attempted to address their homes’ environmental performance through renovation & retrofitting
- 16 Melbourne households who varied in:
  - age & life stage
  - SE & work status, work type
  - educational levels
  - household members
  - houses occupied

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Who are 'green' renovators?

- Households interested in green renovations = diverse

'Irene' & 'Richard'

- *live near the beach, in modern townhouse, after downsizing*
- *both retired from well paid jobs*
- *professional renovation*
- *2 x adult children, one at home part-time*

'Martin' & 'Emily'

- *live in northern suburbs in ex-1956 Olympic village home*
- *bought when prices were cheap*
- *work part-time*
- *DIY renovation over 4 years*
- *1 x young child at home*

Sort of HIs undertaken

- Wide range of activities, including retrofits to extensions & 2nd storeys
- 5 most common HIs:
  - ceiling insulation
  - new bathroom or new kitchen, incl. new appl.
  - H_20 tank
  - extension
  - double glazing

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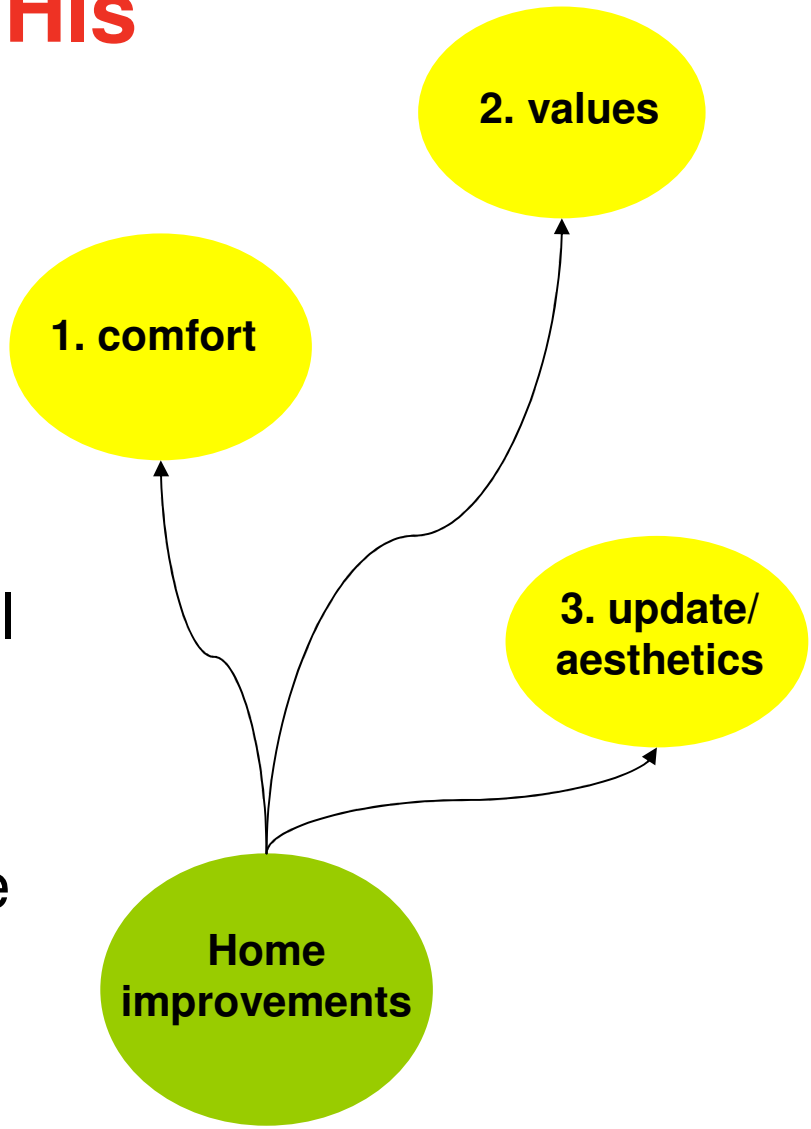
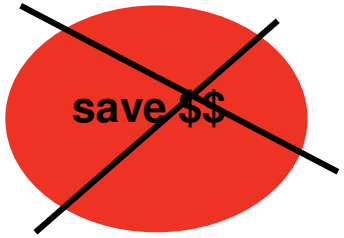
Why? Explanations for HIs

1. to improve comfort:
   a) more space
   b) warmer/cooler (thermal)
   c) increased light
2. a moral imperative/personal values relating to the environment
3. to repair or update, improve aesthetics



Why? Explanations for HIs

- Financial gain or saving on running costs not an explanation
- More concerned with meeting perceptions of 'green' standards
- Improving env. performance secondary to other explanations?



"Then there's the whole, the guilt that I've been talking about. Which has also been a constant backdrop through the renovation and how it's so consumerist, capitalist, unnecessary, excessive, you know. Will I go on? And I walk in here and I go 'Oh my God, it's so big'". ('Jasmine')

‘General’ renovators pilot

- Aim: to understand the potential ‘audience’ for the Australian Government’s Green Loans program
- 16 homeowners who varied in:
  - location
  - age
  - SE & work status, work type
  - educational levels
  - household members
  - houses occupied

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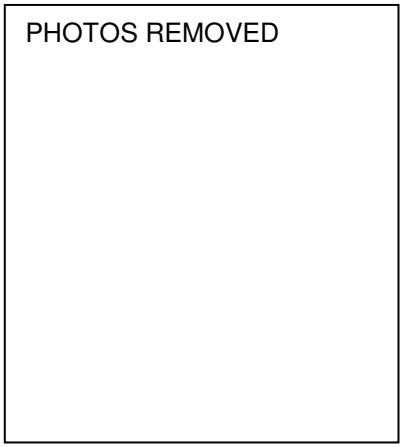
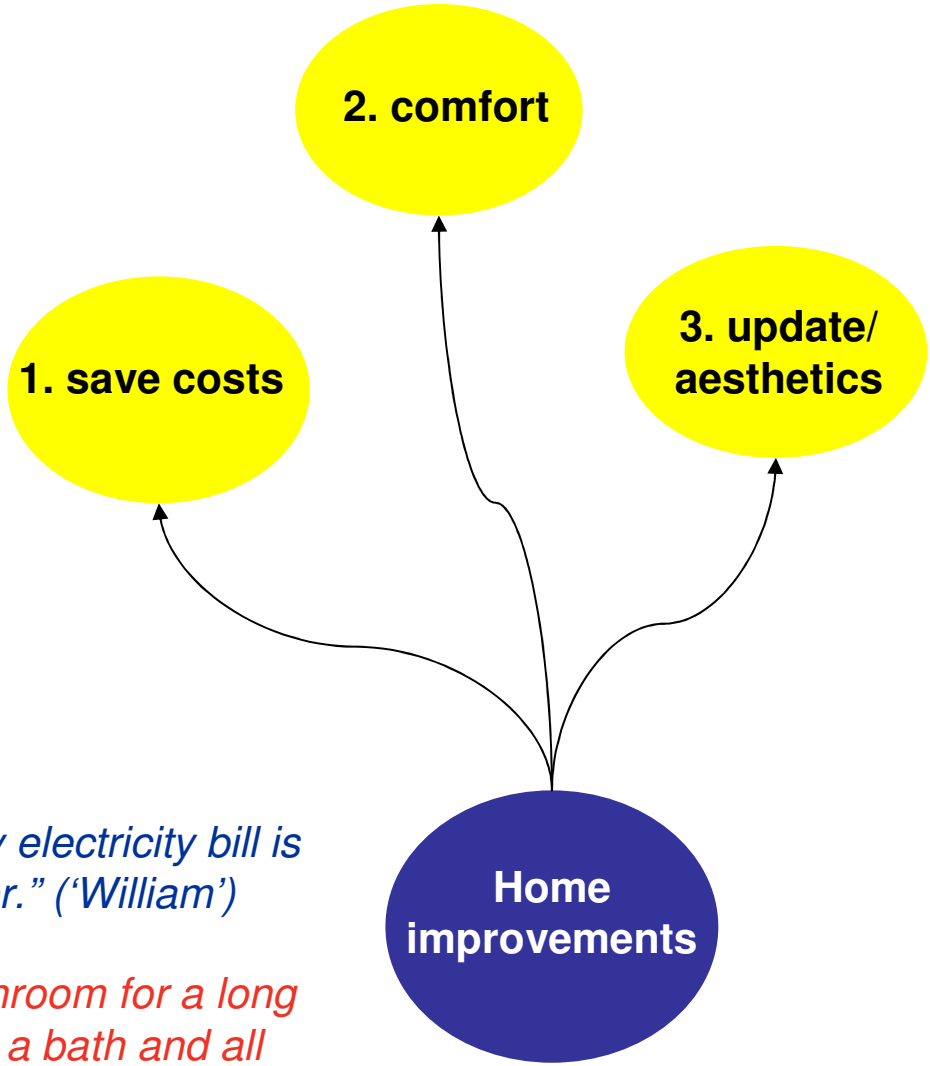
Sorts of HIs undertaken

- HI activities undertaken varied – from changing fittings to full-scale renovation
  - –but mostly retrofits
- 5 most common HIs:
  - –E efficient globes
  - –new kitchen or bathroom appl.
  - –ceiling or sub-floor insulation
  - –blinds/curtains
  - –low-flow showerhead



Why? Explanations for HIs

1. to save on household running costs
2. to improve comfort
   a) warmer/cooler (thermal)
   b) more space
3. to update or improve aesthetics

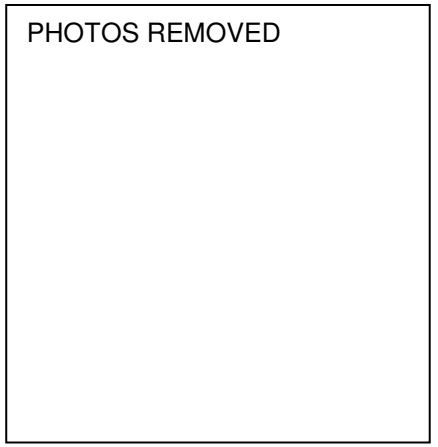


"Because my electricity bill is getting higher." ('William')

"I lived with the hideous bathroom for a long time while I saved up to buy a bath and all the fittings." ('Deborah')

Extent E & H_20 efficiency addressed

- 'Green' & 'general' renovators both proactive in addressing E & H_20 efficiency, e.g.
  - insulation
  - efficient appl.
- Both also described future plans to improve environmental performance, e.g.
  - 2^{nd} H_20 tank
  - solar E or H_20



Comparisons

- Common explanations of
  - –comfort &
  - –aesthetics
- Little difference in efforts to address E & H_20 efficiency
- Diverge on ‘green’ standards & saving $$

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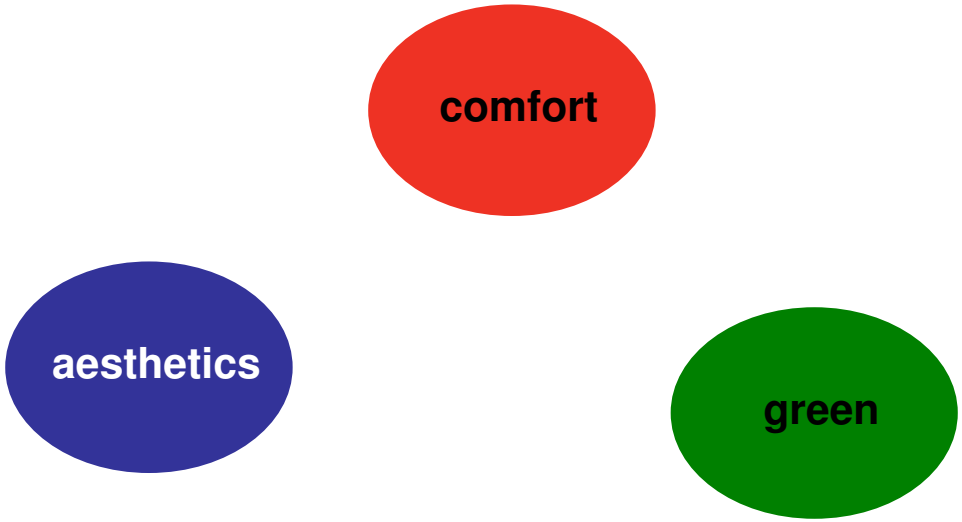
Next steps…

- More research with renovators & HI industry (currently underway)
- Future research with households:
  - –further questions: e.g. know how, how homes used
  - –larger sample
  - –more locations
  - –multiple types of data (visual, verbal, numerical)
  - –in-depth exploration

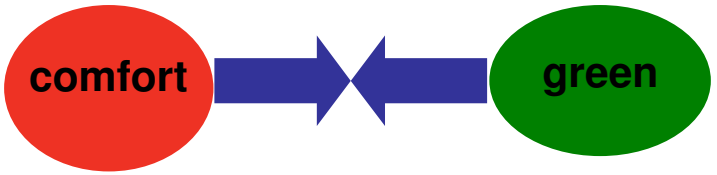
Conclusions

- Households explanations interlinked & layered
  - –subject to change over time & prioritised in diff. circumstances
- Strong reference to standards & norms:



Conclusions

- Need to a deeper understanding of how standards & norms shaped, & how play out in renovation 'journey'
- Potential for conflict



- Norms of comfort equally (more?) important as green
- Comfort + green factored in future policy

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References used available on request