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Two current projects

1. Heat emitters with low temperature domestic heat pump systems
2. Thermal stores and domestic heating systems

Hypotheses

1. Heat emitters

- The introduction of low temperature heat emitters will change people's:
 - experience of heat and their derived thermal comfort experiences
 - use of their heating systems
- People's requirements for 'future' heat emitters that operate at low temperatures will differ to the requirements met by current heat emitters
- People's expectations for heat and consequent thermal comfort will change as their perception/understanding of energy production and storage change

Hypotheses

2. Thermal stores

- The introduction of a store as a central part of a future heating and hot water system will change people's:
 - views/understanding of energy from an infinite resource to a finite resource
 - use of their heating and hot water systems
- People's requirements for heating and hot water will change as their perception/understanding of energy production and storage change
- People's requirements for 'future' thermal stores will differ to the requirements met by current thermal stores

Aims

1. Heat emitters with low temperature domestic heat pump systems

- To understand the user requirements for future low temperature heat emitters for domestic heating
- To explore potential changes in behaviour that may result from the introduction of new low temperature systems
- To ascertain the practicalities of retrofitting new low temperature systems into the existing housing stock

2. Thermal stores and domestic heating systems

- To understand the user requirements for future thermal stores for domestic heating and hot water systems

Methods

1. Heat emitters

Literature review

Thermal comfort and end user experiences.

Technologies review

Current and future projections
Large radiators, Underfloor heating, Fan assisted, etc..

End user questionnaire

- Gain overview of existing systems
- Satisfaction
- Changes in behaviour
- Use
- Systems used in conjunction with – i.e heat pumps and acceptance of these overarching systems

Co – design and context mapping activities

2. Thermal stores

Technologies review – Current and future projections

Thermal stores
Thermal store displays
Hot water tank displays
Current usage

Background questionnaire (and Filter)

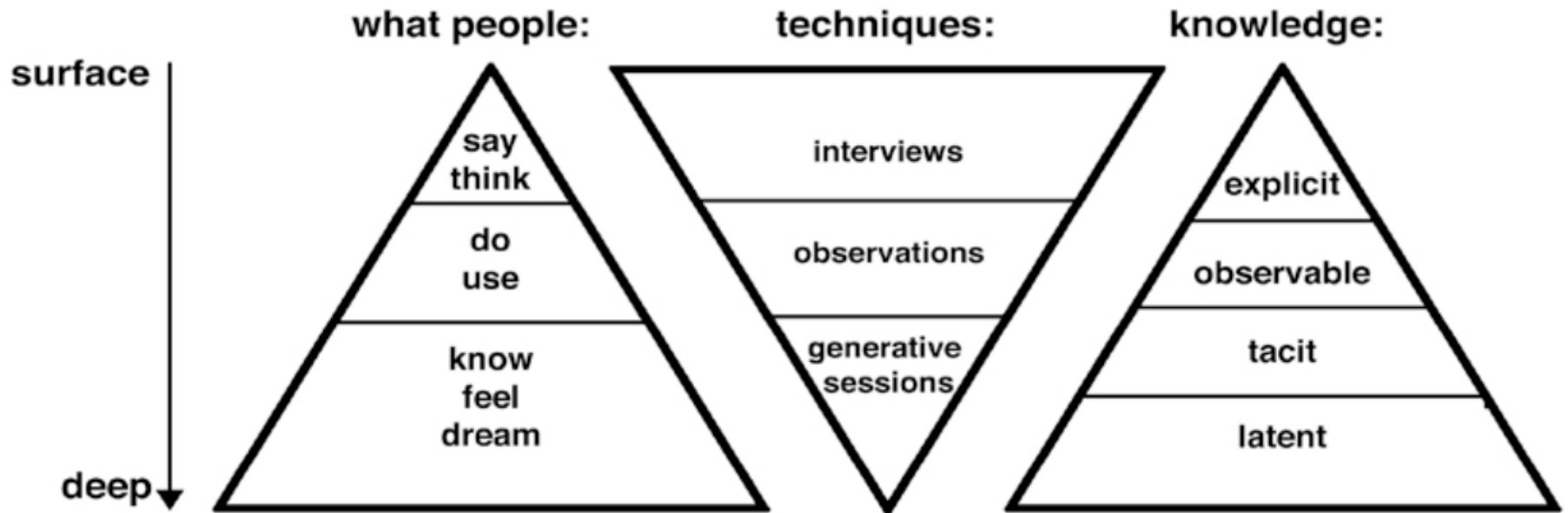
Gain overview of existing systems and understanding
Filter for participation in co design

Co-design and context mapping (Generative sessions)

- Initial visits -Sensitisation and immersion
- Second visit present 'Future' scenarios

Co-design and context mapping

The methods that we employ will taken us from collecting 'surface' data to more in-depth information enabling us to explore future designs/ concepts



Visser, Froukje Sleeswijk, et al. "Contextmapping: experiences from practice." *CoDesign* 1.2 (2005): 119-149.

Progress

1. Heat emitters

- Literature review for thermal comfort and heat emitters – on going
- Technologies review – on going
 - Preliminary review of ‘Fan assisted radiators’- First Draft submitted Oct 2013
 - Review of ‘Heat emitter guide for domestic heat pumps’ – conducted Nov 2014
- End user questionnaire – to be distributed Feb 2015
 - Distribution ‘Purposive sample’ – end users of different types of heat emitters- can we also get a list of potential participants from Glen Dimplex / HP association?
- Context of use - In-depth interviews / walkthrough - Mar 2015 onwards

Progress

2. Thermal stores

- Technologies review – Current and future – **on going**
- Background and filter questionnaire for co-design participation – **to be distributed May/June 2015**
- Co-design and context mapping (Generative sessions) – **to be conducted July/August 2015**
 - Initial visits (sensitisation and immersion) in participants homes – informal interviews / walk through
 - Second visit - present 'Future scenarios'
- Regular discussions with 'Hothouse' to avoid overlap and identify synergies

Thank you

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