The Neglected Practice

Uncertainties encountered by occupants in a new energy efficient building

Charlotta Isaksson - Rise, Research Institutes of Sweden
and University West.

- **The aim is to examine uncertainties encountered by occupants when managing the technologies for buildings.**

Technologies for buildings: e.g. heating system, mechanical ventilation, photovoltaic (PV), and lighting.

The users' difficulties and /or disinterest in dealing with the energy system of the building simply means that they are not able to handle the technology in an energy efficient way.

(Lindén et al 2006; Gram Hanssen 2010; Caird et al 2012; Leaman & Bordass, 2007; Isaksson 2009; Mlecnik et al 2012; Thomsen et al 2013; Isaksson 2014; Wågø & Berker 2014; Tuohy & Murphy 2015).

"There is a need for improved information to the user"

Background

www.need4b.eu

- EU-funded project, Need4B.
- The Swedish demo site: two pre-fabricated low energy houses with bearing construction made in wood.
- Building 1, completed 2014: equipped as a full scale test lab for energy efficient technologies and construction details, with artificial user behavior.

The key technologies are ground source heat pump, photovoltaic (PV) panels, exhaust air heat recovery and LED lighting.

- Building 2, completed 2015, occupied by a household consisting of two adults and three children

→

- Two semi-structured interviews with the two adult October 2015 and May 2016.

- User study

USER STUDIES

e.g Domestication
(Silverstone m. fl. 1992)

Three dimensions:

- - Meaning
- - Practical
- - Cognitive

Different Phases:

- Before use - Early use - Later use

- Who is supposed to handle the technology?

- In what context? How does the technology become integrated into the routines of everyday life?

Social practices:

Emphasizes people's routinized actions:

Involves:
- Meanings and norms.
- Knowledges: (Practical and theoretical)
- Technologies, infrastructures

(e.g. Shove et al 2012)

Practical rationality: (e.g. Foulds et al 2016)
The households make decisions in accordance with the practice they carry out.

Three approaches for carrying out the practice of managing the technologies for building

- **Leaving it as it is**
- **Handling the technology**
- **Support from professionals**

Leaving it as it is

- The automated technology should manage by itself
- The technology involves the users but still leaves them outside

"You should not touch it, you should not touch it", it will manage by itself" (woman 2016)

The photovoltaics alerted frequently:
"No, it says alarm, then it says corrected. I have no idea. You get no information." (Man 2015)

Should we contact someone who might know what the problem is?
Is the technology to be trusted? Does it manage by itself?

The regulation of the lighting:
Woman: "We have found out that now it turns of at 11 and 5 o'clock. We do not even touch it".
Man: "We have not had the energy to call them either."
Woman: "You get so tired." (2016)

- It is more convenient to leave it as it is….

Handling the technology

Activities that decrease uncertainty: Written and oral information, changing settings and exploring the technical system by trial and error.

Is the technology able to deliver what we prefer?
Is it not performing correctly?
Does it depend on us not knowing what to do?

- “We should change, now we changed [the setting], now we should have it on minus, it's the only thing we can do, + 2 or - 2. But what is everything else? How should it be? ". (Woman 2016)

Support from the professionals

“It is always when it [technology] alerts. Then you have to call them. [The contractor answer] do this and do that. Then the research institute comes, or whoever comes and says why do you have it like this? Nah, but they told us over the phone. Then someone else arrives, no, you should have it this way. Then the electrician comes and says "no I raise it now to two". Everyone goes on with their thing so you do not know what to do yourself.” (Woman 2016)

Who knows what to do? Who can I trust?

Who is supposed to handle the technology?

The households?

The professionals?

or just leave it as it is…?

- Make the practice more visible
- Strengthening the professionals as well as the occupants responsibillity to handle the technology
- Adjust the information, support and technology to the concerns and realities of various occupants.
- Facilitate for the users to handle it in an energy efficient way.

Overconsumption of energy: has to do with the technology:

- Woman: “There is something that uses electricity unnecessarily, I think. The floor heating has not been working, and still it [electricity] has been used.”
  Man: “No, it does not work properly, and still it consumes.” (2016)