

First UserTEC PhD defence

11 November 2016, Pernille V. K. Andersen defended her PhD thesis *“Steps towards a third space. A case study of multi-stakeholder communication mediated by a tangible tool.”* The thesis is part of the research of WP 2, and can be downloaded at UserTEC’s website.



Pernille at her defence

Pernille’s thesis contributes with a communication theoretical analysis of the challenges in communication among multiple stakeholders in residential green transition of energy consumption. Data stems from workshops held at the UserTEC partner meetings. The purpose has been to study participants’ understandings and attitudes towards end-users and the role of technology related to issue of energy conservation in the home. Both Danish and international business and research partners have participated.

Coining the term “versus-communication” Pernille demonstrates that confrontation and evocation of

The project is supported by:



contradicting viewpoints must be lived through, before the parties can move towards a common understanding. To support such confrontational communication she has developed and tested a communication tool, named 3P (Perspectives, Positions, and Priorities).

The evaluation committee emphasised in their conclusion that this research is important, yet complicated, and that the outcome of Pernille’s research contributes both to the research field Participatory Design and to the practical facilitation of building mutual understanding among stakeholders in design processes.



The 3P tool will be produced as a box-set.

Social interaction matter

By Mette Hove Jacobsen

It is widely acknowledged that transitions towards a low carbon society require significant changes in patterns of energy consumption and in the practices and habits that comprise everyday life. In my dissertation, I focus on the social and cultural context of habits and the possibilities for changed behaviour. The dissertation consists of one theoretical and three empirical articles submitted to peer-reviewed, international journals.



In the empirical articles, I first use possession of household appliances in Denmark to address the role of social groups in reproducing social norms of consumption practices. Using latent class analysis, four distinct latent subgroups with similar patterns of possession of appliances are identified and analysed. These groups are characterised and labelled *unlimited* (households possessing a variety of appliances), *outdated* (households having a low probability of possessing the newest state-of-the-art equipment), *limited* (households possessing a limited amount of appliances) and *updated* (households possessing primarily up-to-date technologies). Further, I find that these patterns of possessions are socially structured by age and educational level. Second, I focus on the use of washing machine as an example to depict, categorise and understand differences in energy-consuming activities and to shed light on the role of social groups in reproducing common understandings of the use of washing machines. This study shows huge differences in the amount of time we wash and the temperature level. These differences are to some extent related to educational level. Third, together with Anders Rhiger Hansen, I use heat consumption as a case to document how inconspicuous consumption practices are transmitted from one generation to another. This study shows that we across years have similar patterns of heat consumption as our parents. I expect to hand in my dissertation by the end of the year.

Indoor environment feedback

One of the aims of a sub-project in UserTEC WP 3 is to reduce the gap between predicted and actual building performance by improving the tools used for building performance predictions. The project

will build on existing statistical models and include very detailed measurements in 50 similar town houses. The measurement program consists of a large number of wireless internet connected sensors which measure more than 30 variables at 5 minute intervals in each house. The measurements have started and will run throughout the entire heating season.

The measurements will also serve as an investigation of a feedback procedure in which the occupants will receive information about the indoor environmental variables that are measured. Numerous studies have focused on feedback on energy use. This single sided focus on energy savings may have undesirable effects in the form of deteriorating indoor environmental quality which may result in adverse health effects and reduced comfort.

The intervention in this project will consist of feedback in the form of indoor environmental variables such as temperature and air quality indicators as CO₂ concentration. The feedback and the information is given in an attempt to give the residents an ability to achieve a high indoor environmental quality with as low energy consumption as possible. The measurements will run until June 2017. After that, a large task of analysing the vast amounts of data awaits. The project is conducted by Rune Korsholm Andersen at DTU-BYG.



Measurements are in Hedelyngen housing area