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Methodologies in Housing Research. Discussion on implementation.

In the Swedish housing exhibitions Bo 99, Bo01, Hammarby Sjöstad 2002 and in earlier exhibitions there have been built houses and dwellings that in an extreme way are neglecting the knowledge of traditional housing research. Some researchers are protesting and trying to remind the building society about the knowledge they are neglecting. However, the official debate in newspapers and other media, concerns the economy of the exhibitions and the "architectural look". Very seldom the discussion mirrors the questions about how it is to live in an area like that. The difficulty of selling many of the apartments is a strong factor pointing on the problem of building without using well-known knowledge.

How can we promote and encourage implementation of the scientific results? Research and science in the field of housing is a particularly political question, it is firmly linked to what happens in society. There is no meaning in investigating the "housing-area" if no one is going to use the findings. We have research methods, quantitative and qualitative methods, and well experienced researchers, but how shall we make the practising professionals in the building sector to use our findings, or even ask for them?

My background and why I focus on implementation
In this paper I would like to discuss implementation of housing research. I have personal experience on the problems in implementing research results into practise. My background is as practising architect 1977-1990, planner 1990-1991, researcher 1991-1997 and finally working as an Educational Manager 1995-2001 in the leading architectural company in Sweden (FFNS) with a staff of approximately 400 architects based on 20 offices in Sweden. As Educational Manager my issue was focused on implementation of scientific findings that would be applicable on the architectural practise. Knowledge Management is one part of that job. Another part is investigating the scientific field to find out what would be of interest for the architects and then try to present the findings to the architects who always work under pressure. A challenge!

I am a member of a scientific board ARKUS (The architects' foundation for R&D) and I am engaged in Arkus' projects for implementation of architectural research.

Since 2001 I work as free-lance researcher and consultant focusing on evaluations of the built environment and on dialogue in planning and design projects. To develop and profound the knowledge of the design process in theory and practise is my issue.

As a PhD student I worked with and developed methods for evaluation of newly built and occupied habitations. I studied different Post-Occupancy Evaluation (POE) methods. The selection of methods was based on the possibility they gave to create a dialogue with the inhabitants. Methods studied were walk-through evaluation, mental- or cognitive maps, semantic model for describing perceived environment (used as foundation for a discussion), and discussion in a general meeting (as evaluation method). My main conclusion was that walk-through evaluation is a very efficient method for an evaluation in dialogue with the inhabitants. The method is very useful and can easily be managed by planners, architects, building facilitators and other actors in the building society. It can be used in all stages of the design process and it is a useful tool for researchers to scan an area that is meant to be studied more profoundly with other methods. It is an indicative POE-method suitable to combine with other methods. It is a method that supports feed-back and feed-forward in the design process, which is an important factor when we are discussing implementation of housing research.

A 'new' research field
Implementation of housing and architectural research is a research field that needs to be explored. Many experts have stated how important it is, but almost no research has been done all the same. The gap between science and practise is immense. Having worked with that task for approximately six years, as Educational Manager, trying to implement researchers' results into practise I can see that the need is massive, but the consciousness of the need is minimal, merely because it is so difficult to find relevant information to use. You need to have good contacts amongst researchers to find what you look for, i.e. a scientific education is necessary. You also need to invest time in the search for information.

Implementation as a scientific field on its own is interesting to discuss focusing on what strategies and methods that would be successful. It is a scientific field that would be multi-disciplinary and based on multi-method strategies and comprise action research and case studies.

Discussing implementation projects in housing research, one question is if it is reaching the practising architects that would be a solution? If we could come so far that the architects would use all knowledge available, that would be a huge step forwards. Of course that is one side of it, but the architects are not the decision-makers in the building projects. The real decision-makers in housing projects are the building proprietors. How could we make scientific results so exciting and interesting, that all architects and building proprietors would feel the need to be informed on the "latest".

How can we make scientific results available to all those ambitious architects who are not trendy but serious? As it is today a multiplicity of research and architectural science is difficult to reach for the practitioners. Even researchers have difficulties to find a certain report on a special topic. No one is making research findings available for the practitioners in a structured way and no one is asking for it. How can we create a market for it?

Who are we addressing, and why?
I mean that housing research needs a market. We need a debate that is based on facts and scientific findings and not on fancy ideas from commercial advertising or from architectural esthetical standpoints that don't respect the people living in the area. Evaluations of housing projects is important to accomplish systematically, so we know what we are discussing and don't just simply have an idea.

Another question is if it would be a change if we tried using media, TV, radio and newspapers to reach a debate that could deepen the perspective. That would put a pressure on the researchers to step in to the debate and try to formulate the scientific findings in a way that could have an impact on discussion and society.

Are we ready for such a challenge? I think that the importance of the question makes it urgent to do so. The methodology must comprehend even the implementation part of the research project otherwise we will be sitting in our chamber accomplishing projects that no one ever uses.

The funding for research is always the big problem, but in housing research the political impact in the question raises even more questions. The situation is complicated to summarise. Who are we addressing with our research? Are we addressing the foundations, the politicians, the professionals, the institutions for building-related education, or the users of the built environment?

Examples of what is written on this issue
In the politically initiated investigation SOU 2002:115 *Skärpning gubbar! Om konkurrensen, kvaliteten, kostnaderna och kompetensen i byggsektorn* (translated title: *Pull Yourselves Together Chaps! About Competition, Quality, Costs and Competence in the Construction Sector*), an official governmental report from the Swedish Building Commission; we can find many reasons why the situation for the use of knowledge, research and science is so distressing in the building sector in Sweden. The level of education amongst those who are acting in the building sector is alarmingly low. The decisions-makers level of education is similarly low and then the decisions and the results are not brilliant. The environment for implementation of scientific research is not productive and fruitful. The ethic standard of the participants in the building sector is seriously criticized in the investigation.

The investigation states a problematic situation especially for the R&D. During the last ten years the governmental financed funding for building-related science in Sweden has diminished probably as much as 70 %, and they give some suggestions to restore the funding to a more reasonable level. They also suggest that research on implementation and on innovation-systems should be promoted.

The building proprietors are powerful decision-makers in the Swedish building sector. How can we make them aware of the existence of housing research? The investigation points out the fact that the building proprietors have a huge responsibility but they are not efficiently prepared for their task. There exists no education for them and consequently there is no research done or organized to develop their knowledge. The investigation proposes an education for building proprietors on university level and that is a small step forward.

Ulf Sandström has made an outline of the history of building research in Sweden 1960-1992 (Sandström 1994) which includes most of the housing research made during the time studied. He emphasizes the political impact on building and housing research and discusses how and if the Swedish Council for Building Research (BFR) can survive the crisis in the construction sector. The cooperation between the building industry and the BFR was one of the ways to finance R&D. Looking back in the mirror we can see that BFR did not survive – it transformed, during the year 2000, into a new organisation named FORMAS were agricultural-, forestry-, environmental- and planning research were collected into a joint scientific council, where the political dimension was pushed aside in favour of the scientific standpoint (e.g. natural-science). The scientific society took over and the building research has diminished in a drastic way.

Sandström's historical résumé illustrates how difficult it is to create a functioning contact between theory and practise. He criticizes the fragmentized landscape of knowledge where contact and communication between different actors in the building industry and researchers are non-existing. One of the reasons why the situation is like that is the political impact on building research. The political ambition was to have building research, the politicians didn't give priority to innovation-systems with channels for communication. He also points out that the receivers of the scientific results didn't have the capacity to understand them because of the lack of R&D-educated staff in the building industry.

In Sweden 1964-1975 during the "miljonprogrammet" (the political programme: "one million dwellings built during ten years") the political impact on the building sector was enormous. BFR was a political instrument in a social-democratic society and when the politicians during the 1990'ies became more interested in trusting the "market", no one took responsibility for the R&D. Step by step the government and the industry diminished their funding. When the political responsibility disappeared it was not compensated with a similar responsibility from the building industry. Neither the industry nor the education system had been engaged in implementation of building-related science.

Birgitta Ericson and Britt-Marie Johansson have investigated the links between theory and practise in the building sector (Ericson & Johansson 1990). They focus on how difficult it is to apply social science in the building society. There is no understanding for social science in the pragmatic and technical building sector. We had a formal theoretical cooperation via BFR, but out in the field there was almost no implementation at all.

Jan Eriksson and Örjan Wikforss accomplished an investigation on the architectural research in Sweden (Eriksson & Wikforss 1983). One of their conclusions was that there was a need for better external and internal research-information. They also discussed the fact that the architectural education needed a more scientific alignment and that the continuing professional development needed to be arranged for the architects.

In a "state-of-the-knowledge"-report 1987, Ingvar Karlén discusses the growth of knowledge and its information problems. The report shows the importance of "research information" for all parts concerned, not least the researchers.

"Intra-scientific and extra-scientific information are related in several ways. Intra-scientific information serves as a base for information to practise. Extra-scientific information is one part of background knowledge in scientific research, etc. In the "knowledge-cycle" they thus run parallel with interconnections along the whole cycle.

The dialogues between research and practise – between researchers and professionals – bring in requirements for understanding and fore-knowledge (pre-understanding) and also particular requirements for fore-knowledge also for intermediaries in cases when intermediaries such as information- and documentation centres are established between researchers and professionals". (Karlén 1987).

Karlén even criticizes the intra-scientific phenomenon "papers" which are not registered in international databases. He calls them "grey literature", they are important to researchers but not easy to find.

Katja Grillner and Lars-Henrik Ståhl initiate a discussion about the professional practice in architecture and practice-based research in a current article in *Nordic Journal of Architectural Research* (1:2003). They are widening the meaning of practise to comprehend both 'professional' practises as well as 'academic' practises in architecture. They claim that the professional identity of the architect is determined by his or her role as a consultant, with a pressure to fulfil the commercial demands. No time or resources are invested in research and feed-back, the architect is simply engaged as a problem-solver. There is also a lack of critical and academic culture among the Swedish architects.

"The average capacity to identify the research potential in many everyday architectural projects might thus not be so high among practising architects. When developing practise-based research of this kind inside professional practise, it should probably be most interesting to develop collaborations between the project team of architects and designers, and researchers from different disciplines (planning, sociology, economics, and architecture). The project then becomes the site from which knowledge of many different kinds spring out."(Grillner & Ståhl 2003)

Grillner and Ståhl gives examples of explorative architectural practices in educational institutions with "architecture as poetic resistance", "avant-garde practices in architecture", "development of new forms of architecture through emerging technologies and materials".

"Issues concerning architecture and its spatial, social and urban implications has developed into an important thematic in contemporary art over the last decades. Ranging from perceptional experimentations to activist art, from documentary photo- and film projects on particular buildings to games with utopian urban projects, these practices constitute important examples of critical research into architecture and urbanity; research that may shift and turn around our very definitions of our field." (Grilllner & Ståhl 2003)

However Grillner and Ståhl don't mention evaluation and feed-back on housing in their article, they focus on the art, the artistic action and architectural experiments. But there

is nothing to prevent us from thinking that those experiments could be applied on housing and that different types of evaluation and feedback in the process could be studied, analysed and reported in 'explorative architectural practices'.

There is good reason to take these tendencies in recent architectural research seriously and investigate the possibilities to implicate these aspects on housing research. It might even shift the definitions of the "housing"-field. It could also be a key to overcome the gap between researchers and practitioners if they feel a mutual temptation to try something new together.

Proposing a pilot study

It is now time to start research projects on methods for implementation of housing research in full scale, in an explorative architectural practise. Perhaps it would be fruitful, as a pilot study, to focus on building proprietors and on architects in an initial stage. There is a need for full-scale action-research with researchers and practitioners working together in the different phases of a housing project. They should try different types of methods for information and communication, seminars and other methods to find and use applicable research results during the design-process. The whole design-process including initiation, planning, sketching, complete design, negotiating, constructing and post-occupancy evaluation would be studied. After each phase there would be an evaluation of the result and analyses of the outcome. It is not necessary to pick one project and follow it through the years, it would probably be better to pick a number of representative similar housing projects and make parallel studies of the different phases in the design process during one or two year's time. Joint seminars with the involved practitioners and researchers and swift reporting of the outcome would secure the feed-back and feed-forward of knowledge.

A systematic documentation of every step in such a project is a matter of course. Naturally it would be interesting to use internet as a method-facilitator and as a medium for communication and implementation. And finally it would be natural to evaluate internets' potential for implementation. My hypothesis is that the potential is almost endless.

The possibilities of internet

The possibility to choose to participate or just follow an ongoing project simultaneously is unique for internet, if the project is presented in an adequate way. The level of participation can also be differentiated which is a new aspect on implementation research.

Housing is an issue that concerns everyone, which makes the idea of using internet as a medium and method-facilitator even more attractive. You could have common and specialized parts in a projects home site and open up for questions and dialogues between laymen and professionals, as well as dialogues between professionals and researchers, or between laymen and researchers…and politicians as well.

However, the built environment is something you experience with your body and all your senses and it is very important to stress that all evaluations of built environment should comprise 'the real thing', a visit in the actual the building or the built environment. Internet can be quite seductive and the temptation to neglect reality is immense. Virtual reality is a tool that can be used in architectural research, but it can not substitute real reality. This is perhaps an unneeded commentary because it is obvious.

Still it is amazing to hear many architects discuss architecture, having opinions on the architecture, though they have only seen a picture of the discussed object. Often the picture they have seen is an 'architectural picture', a photo taken with no user in sight and it would be almost impossible to judge the usability of the building.

Internets rich possibilities of reaching databases with relevant information are also important. In Sweden we have two big actors on the building arena: Byggdok www.byggdok.se and Byggtjänst www.byggtjanst.se . Byggtjänst serves the building sector with current information about new building materials and printed reports on anything concerning building and construction. Byggdok is concentrating on being a library with several databases for building sector literature and reports and it is interesting for researchers to use. The practitioners and the 'market' are not very interested and consequently its existence is threatened. The governmental investigation (2002) observes this situation and makes proposes for its survival. In the discussion on implementation, the securing of existence of relevant databases available on internet is an important question.

It would be interesting to discuss the possibilities in connecting home site-links from ongoing housing research projects in a database were you also could find completed projects presentations and reports. Presumably the database could be so elegantly designed, that anyone would be interested in exploring its contents. This could be subject of another pilot project on implementation.

By way of conclusion, internet is a very interesting new medium and method-facilitator to explore in the field of implementation.

Summary and Conclusions
In the contemporary building activities in Sweden, the responsible participants don't take use of existing knowledge. Knowledge from traditional housing research is neglected. A governmental investigation accomplished during 2002 points at several reasons for the situation being. One of them is that the educational level is too low in the building sector, another is that funding for building research and science has diminished by approximately 70%. The investigation also points out the lack of channels for implementation scientific results. The investigation makes proposals about education. They also suggest that research on implementation and on innovation-systems should be promoted.

My background as architect, planner, researcher and as Educational Manager in a big architectural company gives me a natural anxiousness for the question of implementation. I think that most of the methods for housing research must comprise a certain moment of implementation. I also think that implementation should be a separate research-field, within housing and architectural research.

The 'new' research field of implementation would be a multi-disciplinary, multi-method scientific field, comprising action research and case studies. The question of implementation naturally raises the question: Who are we addressing, and why? Are we addressing the foundations, the politicians, the professionals, the institutions for building related education or are we addressing the users of the built environment. In Sweden the housing research has traditionally been politically commissioned, which is

part of the root of the implementation problem. The presumptive users of the scientific knowledge, the professionals, never were addressed in a proper way.

In the paper there are some examples of what has been written on this issue in Sweden during the last twenty years. The problem has been spotted for a long time, and ideas have been presented again and again. Still nothing has happened. The political dimension is interesting to discuss. Historically most of the housing research is politically funded and initiated. The market has not taken any free-standing responsibility, they could comfortably lean back and just criticise the initiatives taken. Now when funding is diminishing no one takes the overall responsibility. The only initiative pointing in the right direction is the governmental investigation mentioned above. Still that is just an investigation, and we don't know what the outcome will be in the end.

In the paper a pilot study is proposed. The pilot study is meant to be an example of what research in the 'new' research field of implementation of housing research could be like. The study should be in full scale, using action research, multi-disciplinary and multi-method - professionals and researchers working together. The issue should be testing methods and channels to find and use applicable research results during the different stages of the design process in housing projects. The proposal is just a sketch and it would be interesting to have opinions of its relevance in the forum of the workshop.

The method discussion of the proposed pilot study is slightly widened around the question of the possibilities of internet. Internet as a method-facilitator and as a medium for communication, participation and implementation is very interesting to discuss. You can introduce different levels of participation and you can create simultaneous implementation situations with this new medium. The possibility of dialogues between laymen, researchers, professionals, politicians and users of the studied environment or housing project, is a new and interesting field to investigate.

References

de Laval, S, 1997 *Planerare och boende i dialog, Metoder för utvärdering*, doktorsavhandling, Institutionen för Arkitektur och stadsbyggnad, KTH, Stockholm.

de Laval, S, 1994: *Metoder för utvärdering av nybyggda bostadsområden efter inflyttning.* Rapport R40:1994, Statens råd för byggnadsforskning, Stockholm.

Ericson, B & Johansson, B-M, 1990: *Att bygga på kunskap. Användning av samhällsvetenskaplig FoU inom byggsektorn.* Rapport R3:1990, Statens råd för byggnadsforskning, Stockholm.

Eriksson, J, 2000: *Bostaden som kunskapsobjekt* artikel i *Hem i förvandling* Arkitekturmuseets årsbok 2000, Stockholm

Eriksson, J, 1996: *Forskning, utveckling, nytta, om nytto- och relevansbedömningar av BFR-stödd forsknings- och utvecklingsverksamhet.* Rapport G19:1996, Statens råd för byggnadsforskning, Stockholm.

Eriksson, O, 1994: *Byggbeställare i brytningstid. Bostadssektorn och statligt byggande under miljonprogramsperioden.* Rapport T20:1994, Statens råd för byggnadsforskning, Stockholm.

Eriksson, J & Wikforss, Ö, 1983: *Arkitekturforskning.* Rapport G7:1983, Statens råd för byggnadsforskning, Stockholm.

Grillner, K & Ståhl, L-H, 2003: *Developing practice-based research in Architecture and Design* Article in Nordic Journal of Architectural Design 1:2003.

Karlén, I, 1987: *The Building Research Process and Its Information Problems, A state-of-the-knowledge Report,* BVN skriftserie 1987:3 Byggforskningsrådets vetenskapliga nämnd, Stockholm.

Sandström, U, 1994: *Mellan politik och forskning, 1960-1992.* Rapport T5:1994, Statens råd för byggnadsforskning, Stockholm.

Skärpning gubbar! Om konkurrensen, kvaliteten, kostnaderna och kompetensen i byggsektorn. Betänkande av Byggkommissionen, SOU 2002:115
(translated: *Pull Yourselves Together Chaps! About Competition, Quality, Costs and Competence in the Construction Sector*), an official governmental report from the Swedish Building Commission.