HOW ARCHITECTURAL EDUCATION IN SWEDEN SUPPORTS THE ROLE OF HANDLING USER INVOLVEMENT IN THE BUILDING PROCESS

Ingrid Svetof
Halmstad University, Sweden.

Abstract
The architectural skill of designing the right product that will function well for the future user requires an efficient dialogue with the user; which is an important argument in favour of involving users in the process. This paper deals with user involvement and how it can be strengthened through a change in focus in architectural education. The paper builds on the author’s licentiate thesis “User’s requirements in the building process” (2005) in which some questions about the role of architects were raised for further debate. Who is the professional actor who can guide and support the users when they formulate their needs and requirements? What knowledge is needed to take the pedagogical role of explaining the complex process for the user? The architect is often given this role as guide to the user in addition to the role of designer of the project. In this paper I will present the state of education in schools of architecture in Sweden and discuss how to find the right tools to operate effectively in current working practices.

Keywords: Architectural education, inclusive design, user involvement,

INTRODUCTION
Laws, regulations and environmental goals give a framework to the design process. Planning for a sustainable and robust society strengthens the aim of designing for all people. In 2010 all public areas must provide total access. This gives us an opportunity to raise our competence and expand our innovation in areas connected to the varying needs of all clients and users. The expression “democratic design” embraces the requirements for good design that takes into account disability, health and safety. It is also possible to add a social dimension to building design and urban planning. This may be is an important issue for architects to reclaim after some decades focusing on such other issues as lean production and aesthetics. Good knowledge of economic calculations is also needed to support decision-making in the early stages of the building process.

BACKGROUND
The architectural skill of designing the right product that will function well for the future user requires an efficient dialogue with the user; which is an important argument in favour of involving users in the process. In the licentiate thesis “User’s requirements in the building process” (Svetof 2005), some questions about the role of architects were raised for future debate. Who is the professional actor who can guide and support the present tenants when they formulate their needs and requirements? What knowledge is needed to take the pedagogical role of explaining the complex process for the user? The architect is often given this role as guide to the user in addition to the role of designer of the project. In this paper I will present the state of education in schools of architecture in Sweden and discuss how to find the right tools to operate effectively in current work practice. Focus is on user involvement and how it can be strengthened through, for example, a change in focus in architectural education. One basic question to deal with is whether there is any reason to work with the user’s involvement in the building process. In designing a work environment in a company there seem to be positive effects both for individuals and the organisation. In the doctoral thesis by Lindberg (2000) “When good intentions meet reality”, several effects are described. A cooperative design process makes it possible to take a step towards creating a learning organisation: new knowledge is developed and a common “language” is given to the co-workers in the organisation. An important “We” spirit
can be developed in the course of formulating the needs and requirements for the future work situation.

**THEORY AND EXPERIENCES**

Good quality, or a better expression, right quality, can also be an interesting argument in the building process because of the large scale of resources and money involved. For the real estate owner a user’s involvement can bring about positive long-term economic effects. Bergman and Klevsjö (2001), describe several arguments, models and tools for the important work of putting the customer in focus. A better quality also has an impact on the company’s earnings. The content customer comes back and requires fewer resources to the company due to small costs for product changes and so on. Customer-focused planning and design in a Japanese model is also described as a developing process. It seems necessary to work this way in order to be able to take the next strategic step in a changing world. The best strategy is to know all about expectations and needs even before customers know these them themselves.

When looking at development of products other than buildings, customer-driven processes are more often used in the design of new products. It’s useful to have a dialogue during the creative process in order to get as many guidelines as possible before production. In the case study of Campus Östersund (Svetoft 2005) there is a discussion about the importance of having a clearly articulated goal if the aim is to work with the user’s involvement. In this case both actors of importance meaning the real estate owner and university were very clear about the aim of the project: The personnel at the university were invited to participate in the process with support from the actors involved. Involving users takes time, and the need for resources is obvious, because time represents money, especially in the building process. The professional team of architects and engineers have to meet the users and discuss their requirements and then translate these into drawings and plans.

Lack of knowledge is one problem when involving users. According to Schéele & Rundlöf (1998) there are some barriers between different areas and actors that must first be surmounted to be able to integrate the necessary knowledge and action. They also talk about cultural differences that can hinder communication. If the user does not even know what kind of knowledge is needed participate in the process, there is a problem. The professional architects must also be willing to involve the user and to develop a clear understanding of the user’s situation. An interesting experience reported in several case studies made by Elisabeth Hornyánsky Dahlholm (2000) is that, in being involved during the design process, the users themselves became more aware of their own priorities and values concerning living/working. They also expected the professionals to respect their point of view due to their increased understanding. Related to this phenomenon a user may expect the architect to accommodate his or her personal preferences to a greater extent than usual, which may present problems for the architect. Involving the user in the building process raises questions about relations connected to roles and power, knowledge and competence and about who is responsible for the decisions. The architect must reflect on how to communicate. Both the architect and the user must have trust in the process.

**AIM AND METHOD**

When working on my licentiate thesis I followed and attended all the project meetings and I also had time to reflect on the roles of the actors. The architect has the opportunity to take the role as the pedagogue who can guide the user through the process. The problem is that no one actually gives this mission to the architect. When handling user involvement in large-scale projects involving large companies or organisations, there also seems to be a need for several other competences. Knowledge about how to handle people and their reactions and interactions in the changing process can be useful in this ongoing parallel process. Planning and moving into a new building causes different individual reactions, and it is good if this can be held out from the
building process and made more efficient. The most difficult decisions may be around the question of which actors to involve in the professional team. In today’s working conditions, the trend is to have fewer people doing more work, and taking on more varied roles, and sometimes it’s hard to admit one’s lack of competence in particular areas.

Based on my own experiences when working as an architect and reflections during the case studies, it is clear that there is a lack of knowledge among users about how to create and produce a building. This fact slows down the process as different actors have different levels of understanding of what is going on. There also seems to be a big difference in how to translate several basic expressions used in the building process. On several occasions it has been apparent that there ought to be more knowledge about how to open up a discussion in order to formulate user’s needs and requirements. There are so many different kinds of people with special needs due to different disabilities or other factors related to wellbeing, yet these are very poorly described in the literature. As an architect I have discovered that my “expert-knowledge”, even if it is delivered with the best of intentions, sometimes doesn’t match conditions encountered in a given “real-world” situation. After some years experience may teach you how to handle certain situations but you still have not got solid tools to better address these situations. During the course of education there is a great opportunity to learn more about dealing with “nonprofessionals” regarding the building process. The tools can be given to students during their time at the academy. When studying architecture at the University of Lund from 1980 to 1985 we had some lectures about the user’s needs and the function of a home. There were some lessons led by the teachers at the Department of Building Functions Analysis where we worked in a fullscale laboratory. This gave us a better understanding of how plans should function in real use. It was very useful and created a new understanding and attitude towards the issues of work and responsibility in creating the environment surrounding people’s everyday lives.

**Method**

Architectural programmes are offered at three universities in Sweden. Reading the descriptions of the education programmes on the websites of the University of Stockholm, Chalmers and Lund reveals some different formulations about architectural education and the former role of the architect. It is also possible to view details of various courses and see the content of the education. The difficult part is to really know how the teachers handle the task of guiding students through the programmes. Teachers with work experience can give a lot of extra knowledge to the students about how to involve the user. The overview is based solely on the official information at the websites.

**EDUCATION IN SCHOOLS OF ARCHITECTURE IN SWEDEN**

Descriptions of the programmes offered by the three schools of architecture in Sweden today give an interesting picture of the education and the role the architect is expected to take. A general description of the architect’s working situation will be followed by a description of the architectural programme of education. As a third theme there is an overview of courses that addresses the issue of user involvement in the building process. The following figure (Figure 1) presents a list of the architectural programmes at the three universities in Sweden is presented.

<table>
<thead>
<tr>
<th>KTH University of Stockholm</th>
<th>Deal with complex and changeable systems</th>
<th>Offers a holistic point of view</th>
<th>Explore architectural possibilities and limitations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chalmers University of Gothenburg</td>
<td>Ability to incorporate various aspects</td>
<td>Acquaints students with the architect’s tasks and methods</td>
<td>Give basic knowledge about the architects’ working methods</td>
</tr>
<tr>
<td>LTH University of Lund</td>
<td>Understand the relationship between humans and the built</td>
<td>Aims to produce creative architects able to identify and solve problems</td>
<td>Encourage consideration of different perspectives</td>
</tr>
</tbody>
</table>

461
**General description of the architects working situation**

**KTH:** “KTH School of Architecture offers a programme integrating art, technology and social science. Architecture has an indisputable position in a cultural context. Its importance in the social debate is increasing along with the growing importance of design a cultural and economic growth. Architecture is however a much broader subject than colouring, facades and disposition in space. It deals with complex and changeable systems depending on and emerging from larger number of aspects.”

*(A translated version of the Swedish description):* “As an architect you will work with development of the future society taking a broad perspective. You will use artistic, structural and technical skills to design interiors, buildings, towns and landscapes. It involves drawing dwellings, official buildings, offices and industries, or to working with renovations and reconstructions. Architecture has a great cultural and social importance which gives contacts with and knowledge about several sectors in our society. The job market fluctuates according to the market.”

**CHALMERS:** “Many architects in professional practice work with the design of buildings and building interiors. Others work to develop the existing building stock. Still other architects work with community planning or research and development. Common to all of these fields is that they require the ability to incorporate various aspects, interests, and knowledge into a unified whole. Architects must be able to oversee and respond to technical, economic, legal, social and aesthetic aspects, and they must be able to work together with others.”

*(A translated version of the Swedish description):* “The work of the architect goes beyond just designing buildings. When they hear the word “architect”, most people think of the architect that designs buildings. But architects work in a wide variety of areas: designing cities, parts of the cities, buildings and interiors, as well as research and development activities. If your goal is to leave your mark in society, you should know that the architect who plans a community has as much impact as the architect who designs a building! It is also important to have architectural competence among the real estate owners. It is here that the frames are given and ideas are tested towards the interests of the common society. The work of architects who are involved with the real estate business, focusing on reconstruction and extension of the existing building stock is also of importance. It is easy to “sink” a building if it’s changed unwisely.”

**LTH:** “The process of designing buildings and the built environment implies giving a functionally correct and artistically conscious form to building and urban districts. In order to do this, the architect must have knowledge in many different areas, and be able to understand the relationship between Man and the built environment.”

*(A translated version of the Swedish description):* “Technology and Aesthetics with people in focus. As an architect or an industrial-designer you are working in the interesting borderland between Technology and Aesthetics. A large portion of your working involves the issue of shaping the everyday products, environments and systems surrounding us, whether the task is planning cities or developing new products or concepts. To do this one requires strong knowledge in many different areas in which a central issue is the relationship between humans and the physical environment or technology is a central issue.”
Description of the education

KTH: “KTH School of Architecture offers a programme integrating art, technology and social science. The schools of architecture have a special position since they are regulated by an EU directive from 1985. The architect’s profession is carefully regulated in most countries and the directive guarantees that those whose education meets the requirements also have the right to freely carry out their profession within the whole EU/EES area. This adds to the special demands put on the schools; in Sweden more and more companies and architects get involved in international commissions and in these cases it is of utmost importance to have qualifications which meet the architectural directive. The architectural educational programme offers a combination of courses and project. Each year commences with an intensive course in, for example, architecture and theory and other subject areas are also integrated into the education, such as architectural history and building technology. In addition, there are subjects such as watercolour painting, sculpture and drawing through all the years of the programme. However the main focus rests above all on a number of optional projects the first of which is introduced at a very early stage. These projects develop in size and scope from short and strictly defined tasks to longer and more independent ones involving more and more complex application tasks. In these projects the students are faced again and again with the task of designing architecture projects themselves, in continuous dialogue with their teachers. The project work is both a way of acquiring knowledge and skills and a way of acquiring the architect’s work method, developing skills such as sketching; and continuous questioning and development, whether for a small one-family house or for a complex city plan. Within architecture, there is never a single given answer to each task there are many possible more or less good solutions.”

(A translated version of the Swedish description): “The central topic is architecture. You will solve architectural tasks in integrated studies in the form of projects. In the beginning the projects are short and limited in scope; as the programme progresses they become more extended and more complex. In addition to the projects you will read architectural theory/history, design and project management, design and you will perform some art tasks. The first three years contains the basic courses, the same for all. During the fourth year you can choose between different programmes. In the fifth year you can attend a variety of courses on theory and methods and finish the programme with an examination paper. The education is broad and will give you a holistic point of view, knowledge about configuration and insights about architecture.

CHALMERS: “The Master of Architecture Program is a five-year pre-professional course of study incorporating technology, social sciences, and the arts with a primary concentration on the planning and design of buildings. The first phase of the Master’s Program is a core curriculum of six terms of compulsory courses and projects combined with blocks of theoretical and concentrated studies. Thereafter follows a second phase comprising two terms of elective courses.

(A translated version of the Swedish description): “Within this programme a number of architects will participate as guest teachers or assistants. They come from our prominent architect offices here in Gothenburg and from various cities in Europe. They share their practical experiences and teach you the importance of starting with the actual reality of construction and use, which is very important for us here at the University of Chalmers. During your studies you will become acquainted with the architect’s tasks and methods. You will learn computer-programmes such as AutoCAD and 3D Studio, drawing everything from interiors to city plans. You will also learn how to contribute to a sustainable development of the society. You will have courses in architectural history, building materials, construction, sketching, painting and sculpture. An important part of your education is learning to see with the “architect’s eye”- and paying attention to what in the building and the environment is important for expression and function. You will also follow developments in international architectural.”
LTH: In the main goals for the programme there is an explicit aim to give the students skills and abilities to plan, shape, manage and renew environments and buildings with an overall concern for all people and the society. Linked to the EU directives, the students will also achieve an understanding of the architect’s profession and tasks and how to meet the user’s requirements within the frames of economics and regulations. “The analysis of buildings and the built environment, and an understanding of how they have been formed is what the students will learn in the programme in Architecture. With this understanding and good examples, visions of future environments can be developed in their entirety and in detail. The aim of the programme in Architecture at LTH is to produce creative architects able to identify and solve problems in the fields of architecture and town planning. The programme is both artistic and academic, and provides a comprehensive education dealing with spatial design and theoretical problems. In the 2001 term, a new syllabus was introduced. This is divided into 3 years of basic education and a final period of advanced studies for 1 year, with the possibility of a 6- month extension. Students are free to choose between a detailed area of specialisation or a broader, more general, course of advanced studies.”

(A translated version of the Swedish description:: A big part of the education is working with a project with strong connections to real and actual question. External organisations and companies often participate to create a realistic situation. You often work with expressions such as “concept”, “identity” and “form and function” setting out the conditions for the task, which might include analysis and shaping an environment, an object or a place while keeping the human being in focus.

Courses addressing issues of user involvement
KTH: Architectural project 1:2 : Planning multi-storey buildings and the individual room.
Architectural project 2:1: deeper studies and understanding of housing by studies in programmes, places, rooms and scales and by analysing needs, study materials, constructions and measures with the purpose of examining architectural possibilities and limitations.
Architectural communication: seems to be more about developing the students’ own skills in expressing themselves by using artistic tools rather than communicating with others during the building process.

CHALMERS: The courses during the first year contain basic knowledge about the architect’s working-methods and different working and competence areas. Shaping the room and theory of design combined with studies in built environment are two central parts, which are supplemented with architectural history and building construction.

LTH: The first two years provide project work and integrate a number of courses which present the student with a possibility to consider different perspectives including aesthetics and spatial, functional, technical and ecological factors. The Department of Building Functions Analysis presents the subject of the built environment and how it is designed, how it is used and how it changes. The user perspective is essential for these basic questions of knowledge and communication when they participate in the design-process. The students also have opportunities to work in a full-scale laboratory. The department of Environmental Psychology gives a course on the subject: “Humans, the Psychical and Social Environments and Their Interaction”. Areas introduced to the students include special needs for an aging population, special environmental factors such as influence of light on humans and the psychological effects of colour, noise and temperature, and how these affect mental performance.
DISCUSSION
In the general description of the architect’s working role none of the schools describes the pedagogical role that must be taken on when the user is involved in the building process. In the more detailed descriptions of the schools’ programmes, differences are apparent in how much each school focuses on the user. KTH describes Architecture as the broad subject which deals with complex systems depending on and emerging from a large number of aspects.” The communication skills that are provided gives insight into how to handle the methods and tools of the architect to express his or her ideas. Chalmers describes the need to develop the ability to incorporate various aspects and interests into a unified whole. The ability to work cooperatively with others can mean working successfully in the professional team with different engineers and consultants. The school in Lund has the most explicitly stated ambition with respect to addressing issues concerning user involvement in the building process. The description talks about developing products and environments for everyday use with the human being in focus. Here the technology is focused more directly on the needs of the user than on the development of the product.

All the teachers and assistants involved in architectural education contribute to the students’ knowledge when they describe the architect’s way of working and their own experience in the building business. My opinion is that the role to guide the user through the building process could be more clearly stated. It seems that the skill to express one’s own ideas has priority, over the task of formulating needs and requirements in cooperation with the user. The Swedish Association of Architects is working with the possibilities of a more international role fore architects. Due to this, they think it is important to claim a broad and responsible role. They have listed the most important goals for architectural education and several aspects of the user are mentioned. Both in a theoretical and practical sense it is important to understand the role and to have the ability to meet the needs of the user within the frames of economics and regulations. The student architect must learn to consider the needs both of the individual and the society in a sustainable development.

According to the case studies made by Hornyánsky Dalholm (2000) some architects may feel threatened by the prospect of involving the user in the design process. Such involvement may be seen negatively by architects as interfering with their work, and as reducing their space to create something with only their own ideas. The attitude towards the users and the responsibility of the architect can be discussed during the course of architectural education. Which methods and tools can be used to decrease the communication gap between the user and the professionals? The schools today have good opportunities to be part of a positive development in this issue. For example computer-aided programmes can already be used in education to support the students participating in creating new methods and in conducting ongoing research work in this area. The schools also have a huge responsibility and ability to give students a good perspective on the future role of the architect. Initiating a dialogue and discussion about this issue can also contribute to comparing the role in a wider perspective and helping students from different countries to develop a future role with an international perspective on user involvement.

References
Lindberg A, 2000, När goda intentioner möter verkligheten - om brukarmedverkan vid planering och utformning av nya arbetsplatser, Luleå Tekniska Universitet 2000:27
LTH, 2004, Arkitektprogrammet 04, Lunds Tekniska Högskola, S Sandby: Xanto Grafiska AB
Internet addresses (all visited 10.06.2005):