

USABILITY OF HOSPITAL BUILDINGS

Is patient focus leading to usability in hospital buildings?

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Abstract

Experience from several hospitals indicates challenges according to usability of hospital buildings, associated with the rapid and continuous changes in the hospital organization and use of new technology. Experience also shows that hospitals are having difficulties in adapting existing buildings to new requirements and user needs. In recent years there has also been a change in cultural and ideological aspects of hospital operation, and an increased focus at the patient, patient's rights and participation in the treatment situation.

How is this ideological change affecting usability and efficiency of hospital buildings? In this paper we discuss some of the challenges for planning, design and operation of patient focused hospitals. Usability, defined as the effectiveness, efficiency and satisfaction, with which a specified set of users can achieve a specified set of tasks in a particular environment (ISO 9241-11, 1998), form the basis for the discussion. We are using a theoretical framework for exploring usability presently under development by CIB Task Group 51 and the Planetree philosophy regarding patient focused hospitals. The theoretical discussion is related to the new university hospital project in Trondheim, where the project organization has an expressive goal of achieving both a greater efficiency and a more patient focused hospital.

Keywords: Building performance, hospital, patient focus, usability.

1. CHALLENGES IN HOSPITAL BUILDINGS REGARDING TECHNICAL AND FUNCTIONAL ASPECTS

Hospital buildings are characterized by major complexity, and hospital operation are affected by rapid changes and trends. Based on this the physical design and organization of hospitals has gone through comprehensive changes through the history. In recent years there has been a changing trend in cultural and ideological aspects due to hospital operation, and increased focus at the patient, patient's rights and participation in the treatment. The quality of hospital buildings depends on the buildings ability to absorb organizational, operational and technical changes. Experience indicates challenges according to usability of hospital buildings.

2. OPERATIONALIZING THE CONCEPTS

Both the terms usability and patient focus are hard to make operational. In the development of

St. Olav's Hospital it is taken the consequence of a stronger patient focus in both organization and building. Several concepts are affecting usability and patient focus. It is interesting to describe and discuss the topics *generality* and *general centre*, to visualize how the terms usability and patient focus are made operational in the project.

The bed cluster is a physical and organizational model representing one way to organize patients' rooms in the wards, and provides an opportunity to develop a more practical, social and building-related environment for patients and staff. The patients' rooms are grouped around stores for supplies and workstations for the staff. At St. Olav's Hospital there are 6 – 8 patient rooms per bed cluster, and the clusters are placed in series with supporting rooms in between.

The holistic model "Human and material resources" (figure 1), is developed to discuss, among other aspects, generality in physical solutions. The holistic model describes various aspects of the hospital organism, and shows how various aspects affect each other in a

development process. The development process will include all the aspects, whether they are taken into account or not.

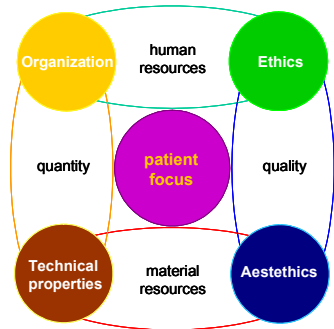


Figure 1: The holistic model “Human and material resources”.

Objectives and visions for developing the hospital organism are placed in the centre of the model. In St. Olav’s Hospital, the expressive goal is to achieve both a greater efficiency (production focus) and a more patient focused (customer orientation) hospital. This involves that the whole model is activated.

The concept “general centre” is developed as a part of the hospital project. The target of this has been to develop a model to take care of common qualities and solutions in the project, general for all centres, corresponding with the superior objectives. This is considered to be an important feature in gaining flexibility.

3. THE BUILDING VERSUS THE EFFECT OF THE BUILDING

Traditionally it has been usual to develop hospital projects in line with the dark arrow in figure 2, focusing “the nursing factory”, “the medicine in focus” and the building as a product, rather than focusing the effect of the building.

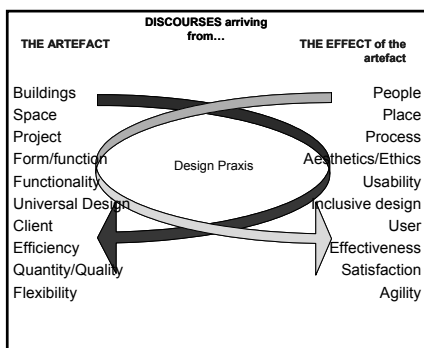


Figure 2: The artifact versus the effect of the artifact.

St. Olav’s Hospital is based on a fundamental reorganization of the hospital activity, and in a higher degree than most of the other hospital projects the latest years, the planning and development is based on the right side on figure 2, by emphasizing the patient focus. This is representing an exceptional way of going through with the planning and building process.

Usability is defined as the “...effectiveness, efficiency and satisfaction with which a specified set of users can achieve a specified set of tasks in a particular environment” (ISO 9241-11, 1998). According to this definition, a product’s usability is determined by the 3 key factors effectiveness, efficiency and satisfaction.

In the paper we discuss some aspects considering the connection between the 3 key factors and a patient focused ideology. The dominating discussion is related to user satisfaction. Evaluations show an immediate relationship between a stronger patient focus and satisfied patients. Implementing a patient focused ideology might however cause some challenges related to usability of the building;

1. Different actors have different perspectives on usability of buildings. The planning process in hospital projects is often accomplished with extensive user participation, mainly consisting of hospital employees. The question is whether the hospital employees and the architects have the necessary knowledge and ability to take the patients’ perspective in the process of planning a patient focused hospital.

2. Will involvement of the users in the planning lead to usable buildings? We have seen that rather extensive user participation is used as a mean to implement the concept of patient focus in St. Olav’s Hospital. Some actors are questioning the user participation in the project, and whether this is contributing to tailor made buildings rather than flexibility and usability in a long time perspective.

3. Another question that is important to emphasize is the relationship between efficiency and a patient focused ideology, and whether these are incompatible. Parts of the medical profession fears that founding the new St. Olav’s Hospital on a patient focused ideology will result in a fragmenting of specialist environments, and that this will cause a decrease in efficiency.

These questions will be taken further as part of a PhD-study at the university, focusing usability of buildings related to a stronger patient focus, and discussing the relationship between efficiency and a patient focused ideology.

