



29th World Congress International Project Management Association (IPMA) 2015, IPMA WC 2015, 28-30 September – 1 October 2015, Westin Playa Bonita, Panama

## Strategies for optimization of value in hospital buildings

Peter Johann Hareide<sup>a\*</sup>, Svein Bjørberg<sup>b</sup>, Marit Støre-Valen<sup>a</sup>, Amin Haddadi<sup>a</sup> and Jardar Lohne<sup>a</sup>

<sup>a</sup>Department of Civil and Transport Engineering, NTNU, Høgskoleringen 7A, Trondheim 7491, Norway

<sup>b</sup>Department of Civil and Transport Engineering, NTNU/Multiconsult, PB Skøyen, Oslo 0213, Norway

---

### Abstract

Nearly half of the Norwegian hospital buildings are reported inadequate for today's procedures. This paper investigates how value is created through pre-design, and, furthermore, identifies measures to add value in future hospital buildings. A literature review, document studies, case studies and semi-structured interviews with key personnel from four Norwegian hospitals were conducted, and constitute the main source of information. The research reveals that a valuable hospital building is *a building creating optimal conditions for effective delivery of healthcare services*. In brief, value within hospital buildings is added by focusing on adaptability, life cycle costs, and strategic involvement of facilities management.

© 2016 The Authors. Published by Elsevier Ltd. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

Peer-review under responsibility of the organizing committee of IPMA WC 2015.

*Keywords:* hospital buildings; value; pre-design stage; life cycle planning, facilities management

---

### 1. Introduction

There are high costs related to a highly developed healthcare system, but without investments, an unhealthy population in working age will contribute to large annual expenses (Nedin, 2013). Larssen (2011) claims that hospital buildings only serve one purpose: assisting the healthcare services to be as functional as possible. The healthcare sector in Norway occupies more space than any other public sector with a total building stock of 4.9 million m<sup>2</sup>. Estimated monetary value of hospital buildings was in 2013 NOK 76.7 billion (Norwegian Ministry of Health and Care Services, 2013). The Association of Consulting Engineers in Norway (RIF) reports an annual

---

\* Corresponding author. Tel.: +47 957 80 114.

E-mail address: [peterhareide@gmail.com](mailto:peterhareide@gmail.com)

downgrading of maintenance, development and operational costs within hospital budgets, consequently leading to a backlog with nearly half of the hospital buildings reported as unacceptable for use (RIF, 2015). Apparently, a common approach of planning hospital buildings on a national level seems lacking, with several new hospital buildings holding different solutions of future development. The healthcare system in Norway is divided into four regional health authorities, and much competence and experience stay within each region authority, however with few routines on how to exchange this. As an initiative to improve the hospital buildings, the Ministry of Health and Care Services introduced the trust Sykehusbygg HF (SBHF) late 2014. SBHF's purpose is to aid the health region authorities in planning and construction of new hospital buildings, as well as development of the facilities management (FM) of existing hospital buildings (SBHF, 2015).

This paper explores the understanding of value in hospitals and search to identify the value proposition of hospital buildings. Accordingly, the purpose is to look for *Strategies for Optimization of Value in Norwegian Hospital Buildings, and how the building can add value*. In order to address the statement, answering three research questions respectively composes the assessment:

1. *What is value in a building context?*
2. *What creates value within hospital buildings?*
3. *Which strategies are required for future development of hospital buildings?*

## 2. Research methodology

This paper presents the results of a research involving a comprehensive literature review as well as examination of five cases, thus applying the triangulation methodology in qualitative research (Yin, 2013). The literature review aims to create a theoretical framework within the topic and the research questions. When searching for relevant literature, the stated keywords *hospital buildings, added value, pre-design stage, life cycle costs, adaptability, and facilities management* respectively composed the foundation of the review. Internet queries through library databases, as well as curriculum literature from previous courses attended, constitute the main source of information in the theoretical framework.

A total of five cases were investigated, involving four Norwegian hospitals and the recent established health trust SBHF. The hospitals were selected on basis of their completion dates, spanning from 2000 to 2015 with pre-design starting 12-15 years earlier, thus enabling an analysis of how planning of hospital buildings has evolved. The studies consist of document readings, and at three of the hospitals and SBHF, open-ended semi-structured interviews were conducted. At the fourth hospital, the authors led a workshop with four employees from the FM-department. The interviewees had background from design and project management, FM-services and pre-design projects, respectively.

The reviewed hospital buildings were from merely two of the four health region authorities in Norway. In hindsight, cases from the remaining two regions could have been studied to achieve an improved generalization of the findings in the paper. Moreover, key personnel from the administration of the health region authorities, Ministry of Health and Care Services and SBHF could have been interviewed to attain additional material regarding upcoming strategies of development of hospital buildings in Norway.

## 3. Theory

### 3.1. The concept of value in a building context

As there are several definitions of *value*, it is challenging to describe the notion with one single definition. The simplest description of the notion is to express value as subjective, with an interpretation differing from each individual conducting the assessment (Ashworth & Hogg, 2000). Another, more common approach of defining value in mathematical terms, is to assess the relationship between needs, functions, costs and used resources (Kelly et al., 2008; Institute of Value Management, 2015). To evaluate value in a building context, Dewulf and Wright (2009) argues that value should be defined by in which degree a building is flexible and supportive of the core business activities in the operational phase. Blanc-Brude et al. (2006) and Smit and Dewulf (2002) present comparable definitions, stating that inexpensive solutions to provide a prompt and low-cost construction will

Download English Version:

<https://daneshyari.com/en/article/1107515>

Download Persian Version:

<https://daneshyari.com/article/1107515>

[Daneshyari.com](https://daneshyari.com)