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Sustainable Planning in Refurbishment Projects – An Early Phase Evaluation

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Abstract

Approximately 80 % of the current Norwegian building stock is expected to still be in use in 2050. Norwegian government demands that the refurbishment and modernization of these buildings should be sustainable. According to the authors the early phase planning should therefore be improved in order to be able to fulfill the sustainability requirements. A great deal of the potential for a successful project lies in the early phase, but there seem to be no clear definition of when it starts or when it finishes. This paper investigates different definitions of “early phase” and what this phase of the project should contain to facilitate a successful rehabilitation. Economy is important when defining if a project has been successful or not, but budget overrun is an everyday problem in refurbishment projects. This paper will see if it is possible to determine a more secure economic framework in the early phase. The research has been conducted as a case study approach, based on a literature study, ten interviews and a survey. The first case study was a refurbishment with both technical and financial challenges. The other case study consisted of an investigation of how two municipalities in Norway decide whether to refurbish or demolish their school buildings. The interviews and the survey have been carried out with major stakeholders such as building owners, architects, consulting engineers and contractors. There seems to be no unanimous agreement of what the content of the early phase in refurbishment projects should be. The interviewees have individual definitions, depending on their role. Another notable finding is that all the respondents mean that they have more to contribute with, if they were contracted at an earlier stage in the project. The results will hopefully enable stakeholders in refurbishment projects to improve the structure of their activities. This will support the shareholders to get better and more sustainable end results.

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1. Introduction

On a worldwide basis, people use approximately 70% of their time indoor, and in the western world this number is closer to 90% [1]. Based on this information there is a demand for high quality buildings. According to Statistics Norway (SSB), Norway has 4.085.834 different buildings [2]. It is expected that 80% of these buildings will still be in use in the year 2050 [3]. In the upcoming years other challenges will also occur. Currently there are approximately 615.000 buildings in Norway which is located in areas with high risk of rot and mould growth. In the future the temperature is likely to increase, and it is anticipated that in year 2100 about 2.400.000 buildings in Norway might be in high risk areas [4].

Based on the amount of time we spend indoors, the upcoming challenges in context with the temperature and the ageing building stock there is interesting to see what has to be done to facilitate the work with existing buildings. This work must be done as satisfying as possible, and in the same time be sustainable for future generations.

A lot of the premises for a successful project lies in the early planning phase. It is in this phase of the project you can facilitate a great deal of the value creation [5-8]. At the same time there seem to be no clear definition of what the content in this phase should be.

Budget overrun is an everyday problem in refurbishment project, and the cost seems to be difficult to determine [9-12]. It will therefore be interesting to see if the professional actors believe it is possible to predict a budget which is more certain, and how.

In this paper the early phase of refurbishment projects will be evaluated to see how important this phase of the project is. The main research questions that this paper is trying to answer is:

- What should an ideal early phase in refurbishment projects contain to achieve successful projects?
- When does the early phase starts and when does it end?
- Is it possible to determine a certain financial secure framework for refurbishment projects?

2. Methodology

The research has been carried out with both a qualitative and a quantitative approach. The research process is shown in figure 1. A literature review of relevant themes such as refurbishment, sustainable refurbishment, early phase and project success was conducted in accordance with the procedures described by Blumberg et al. [13]. These themes were viewed relevant considering:

- Our 1st research question suggest that we need a better understanding of what success is, and what is special about refurbishment projects.
- The 2nd research question suggest that we try to identify whether there is a common understanding of when early phase starts and when it ends.
- Finally, our 3rd research question suggest that we should have a closer look on the financial aspect, and if it is possible to determine a secure financial framework for refurbishment projects.

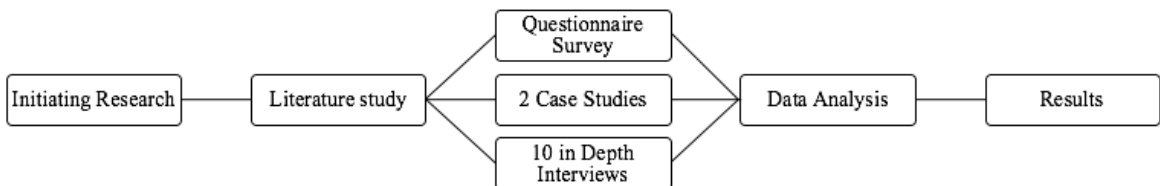


Figure 1: Research Process

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