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SUSTAINABILITY AND CULTURAL HERITAGE within the energy renovation of Danish dwellings

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SUSTAINABILITY AND CULTURAL HERITAGE within the energy renovation of Danish dwellings

ARKITEKTSKOLEN AARHUS



Marie Kirstine Pilegaard

Background

When many sustainability proponents talk of creating a sustainable environment by focusing only on removing buildings and replacing them with new buildings that are more energy efficient, they will justify the benefits based on just the lower operational energy usage of the new building compared to the existing building. That view does not account for the embodied energy needed to construct the new building, nor the demolition energy needed to remove the existing building. We must take care of the existing buildings and do it carefully with a long term perspective.

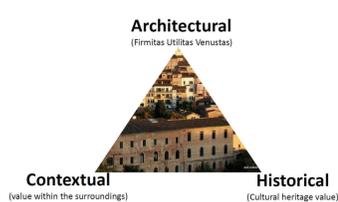
Preservation and reuse of the built environment as heritage has been an architectural task in Denmark for the past almost 100 years and is indeed concerned with the care for buildings, but since we have opened up the notion of monument, the number of buildings to preserve is growing very fast. We now include built documents of social and industrial history, and we can no longer draw a clear distinction between monuments and other existing buildings. The task to preserve all these buildings is no longer possible and many of them will be wasted. We therefore need to redefine the purpose of preservation.

The current focus on energysavings will be one of the largest challenges in history and architects needs to take action now.



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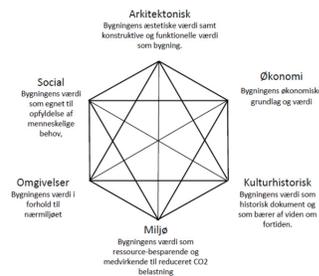
Combining values



1: Purpose scope 1 - (1) The purpose of this Act is to safeguard Denmark's old buildings of architectural, cultural-historical or environmental value, including buildings which illustrate housing, working, and production conditions and other significant characteristics of societal development.
Principles of the Act on Listed Buildings and Preservation of Buildings and Cultural Environment



U.N. Bruntland Commission's 1987 report, Our Common Future, which defines sustainable development as:
"development that meets the needs of the present without compromising the ability of future generations to meet their own needs."



Aims

The aim of the research is to establish a more sustainable approach to the preservation of buildings in the future, a task which is increasingly unsustainable for multiple reasons. The last decades this area has been influenced by many new ideas but somehow it is not leading to a sustainable built heritage. This research is trying to discuss the perspectives of the current practice and the problems that will come if the preservation practice does not try to adapt the challenges of the future.

In the first part, I analyze the methods used in the assessment of the buildings worth of preservation, and confront them with the need for a more sustainable approach. New perspectives on building preservation methods are proposed.

In the second part I argue, that the current effort on energy savings in the built environment could easily benefit from the knowledge and the methods used in the preservation practice. The model is illustrated by cases in this part to point out that the knowledge of how to make buildings live longer and increase their value on more aspects, is extremely underestimated and could lead to less waste of material and architectural qualities in the future.

The third part of the project is an introduction of new possible strategies to use in the preservation work, based on theories of how to make buildings last longer and how to understand and manage the mechanism of change. The case study of Finnebyen was used to illustrate the multiple possibilities of preservation in the future, turning the preservation work into a more sustainable practice and adding new value to the built environment for the benefit of future generations.

Conclusions

Conserving buildings preserves the embodied energy, and reduces the need for new materials. Preservation as we know it and the practice of selecting buildings with no consideration of the environmental, economical and social values, is not sustainable and will cause more waste and losses in the built environment.

The possibilities of making buildings last longer are many beside the traditional preservation and new strategies must be implemented in the future practice. The notion of preservation must be constantly adapted and updated. (upgraded)

Energy savings are important, but we need to be more aware of the threats we are creating on the architecture all over the country - especially the many dwellings that constitutes the most visible part of the everyday life.

Theories of how to make buildings last



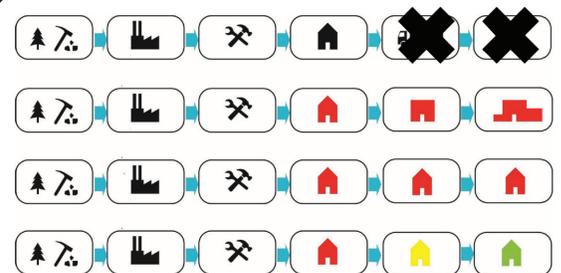
John Ruskin: (The seven Lamps of Architecture)

Eugène Viollet-le-Duc: (The Architectural Theory of Viollet le Duc)

Frank Bidendijk: (Solids)

Steward Brand: (How Buildings Learn)

Rodrigo Perez del Arce: (Bymæssige forandringer og additionsarkitektur)



Some buildings can last for centuries and still be of value, but not all.

