

Investigating the Conformity of Dismantling Principles with Guilan Rural Vernacular Architecture

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EXTENDED ABSTRACT

Introduction

Building industry has a great share in environmental pollution and energy consumption. Dismantling as a method for sustainable design and development that spotlights issues such as energy and environment is contemplated by the construction industry and designers. Considering the useful lifespan of a building, its components and materials, and the possibility of installing and dismantling these components in the end, their reuse and recycling result in saving of energy and raw materials; and reduces damage caused to the environment by wastes from building dismantling. The vernacular architecture of some areas provides the possibility to separate its components and materials. Therefore, these architectural practices can be studied to evaluate their compliance and compatibility with the principles of deconstruction. Guilan's vernacular rural architecture has unique properties regarding structures and forms; the building and its components are enabled for dismantling due to the techniques which were implemented, types of joints and materials. The purpose of this research is to define dismantling, its principles, objectives and benefits; and studying Guilan's vernacular rural architecture and its constituent structures and their conformity with dismantling method.

Methodology

Considering its purpose, this study is an applied research, in terms of the nature and method, it is a descriptive-analytic research with a qualitative approach and regarding its implementation, is a survey type. Information needed for this research has been obtained in two ways: documents (referring to scientific and research centers and library documents, resources related to the research topic), and field (using interview and diagnostic view). Meanwhile, information gathering tools were used relying on deductive reasoning and to study the cases part to whole. The statistical population includes rural vernacular villages in Guilan province; that is some of these buildings were selected as study samples and the research findings were obtained by analysing them. In this selective targeting approach, indicators such as method of implementation, consumed materials, and type of joints in buildings are considered.

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Results and Discussion

Studies have shown that Guilan's vernacular rural architecture has a general structure and can be divided into 11-type different parts of its components from roof to base. In all parts because of a specific technique used, simple connections and appropriate local materials, there has been a possibility of dismantling. Comparing this construction method with dismantling method in the tables of the architectural sections, structures, components, joints, materials, installation and dismantling, it was revealed that this method is in accordance with the principles of dismantling. Analysis shows that this architecture has a flexible and environmentally friendly structure that allows components and materials to be separated and reused.

Conclusion

Architectural structures which can be dismantled have many environmental benefits. A combination of environmentally-friendly local practices and dismantling principles as design and construction patterns is a step towards sustainability goals and sustainable architecture that reduces consumption of energy and raw materials. According to the discussed topics, Guilan's vernacular rural architecture can also be defined and used as a local construction pattern capable of being dismantled based on dismantling principles.

Key words: dismantling, Guilan rural vernacular architecture, vernacular material, joints, reuse of component and material