

# The Principles of Flexible Architecture as a mean for Enhancing Structural Forms of Lightweight Metal Buildings System

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## The Abstract

Due to developments in construction and material techniques, as well as the economic, environmental and societal challenges that surrounding us; many changes have occurred in the design and construction methods, to achieving unique results to meet an increasing requirement of users. Many studies were recommended for the importance of moving towards the principles and applications of flexible architecture. This will help in responding to the successive and intertwining challenges in dynamic societies. At the same time, it will provide creative design insights, in which the requirements of the present are combined with the potential changes in the future, with the aim of making them more adaptive and efficient.

The problem of research lies in the need to utilize the principles of flexible architecture in enhancing the structural forms of lightweight metal building systems. This will make them more adaptive to potential functional and environmental changes, and allow future adjustments to be made that are compatible with the needs and desires of their users. Accordingly, the research questions include the following: What is flexible architecture? How can its principles be used to enhance the structural forms of lightweight metal building systems? And how will this be reflected in the applications of these systems in the future? Accordingly, the research aims to shed light on flexible architecture, as one of the trends expected to occupy an important place in future architecture. At the same time, benefit from studying its principles and analyzing some of its applications to enhance the structural forms of lightweight metal building systems. It is expected to achieve this aim based on a research hypothesis that: Flexible architecture includes features and principles that can be used to enhance the structural forms of lightweight metal building systems, and contribute to their spread. The aim of the research was accomplished according to a descriptive and analytical approach. Finally the research was concluded by discussing some of the related findings.

## Keywords

Flexible architecture, adaptability, transposition, Mobility, Lightweight Metal Buildings, pre-fabrication, structural flexibility