

Improving thermal performance of residential building depending on traditional architectural elements (A case study of the city of Hama)

Abstract

Traditional architecture is considered a school to learn lessons from the past and alive model to cope with harsh climate in the Arab region. Therefore, this study revolves around conventional architecture in the city of Hama and the reuse of its elements that proved its efficiency for successive ages and clarify the importance of environmental, humanitarian, functional and social aspects that these elements fulfill. The consumption of energy in residential buildings affects its thermal performance. Therefore, this research sheds on the matters of the reduction of energy consumption and thermal loads depending on conventional architecture modes and the use of its sustainable elements. It was necessary to support the study with many examples of local and Arab residential models and stating the reasons that mode from these residential models successful projects in the field of sustainable environmental design.

The study concludes with many design recommendations that tackle the aspects of the use of sustainable conventional and architectural elements in modern residential buildings to improve its thermal performance and increase the level of its sustainability in additional to the development of a local measuring tool in order to assess residential buildings from the perspective of its sustainability its efficiency and thermal performance to come up with agreed results and benefit from them in the improvement of current residential situation on the basis of conventional heritage architecture principles and standards.