جامعة الإسكندرية
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Faculty of Engineering
Department of Architectural Engineering

PARAMETRIC APPROACH IN GENERATING DIGITAL HERITAGE MODELS

PARAMETRIC SOLUTIONS IN RESTORATION AND RECONSTRUCTION OF HERITAGE BUILDINGS "PSRH"

A Thesis submitted in partial fulfillment of the requirements for the degree of Master of Science

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ABSTRACT

It is an undeniable fact that heritage buildings are a valuable asset for society, it reveals their achievements over the years. Therefore, the need to conserve built heritage has become an increasingly urgent case to experts and the community, they exploit any possible tool to achieve this aim. However, the concept of heritage conservation has completely changed due to the new technologies and inventions which opened up new opportunities to the conservation process of built heritage.

This research outlines a parametric approach for generating digital heritage models which will help in the restoration and reconstruction processes. A library of parametric architectural heritage models will be designed according to parameters that extracted from architectural pattern books and historic manuscripts which will then be embedded in a new plug-in for ArchiCAD software. This new plug-in will provide multiple parametric solutions for historical buildings and will also automate the modelling process by using parametric and procedural modeling techniques.

KEYWORDS

Built heritage, Conservation, Parametric solutions, Digital heritage models, New plug-in.