



Handwritten Arabic text in the top right corner, likely a signature or name, possibly reading 'عبد الحميد' (Abdelhamid).

# **Green and sustainable historic preservation**

A thesis

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by

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## Abstract:

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Green building is now a must to meet the development strategy of healthy community. Much of the early emphasis has been on new buildings but there is an increasing awareness of the importance of greening the existing building stock.

A small but significant proportion of existing buildings are considered to be heritage buildings and the need to green these buildings while protecting their heritage values is an additional challenge that needs to be addressed. In every country, cultural heritage is both a record of life and history and also an irreplaceable source of creativity and inspiration. Yet despite its importance, there is never any guarantee that heritage will survive and be passed on to the next generation. That proves the importance of planned conservation and rehabilitation of historic buildings.

Conservation and the regeneration development is a prerequisite for achieving improvements in the quality of life in environmentally and culturally sensitive places. Since a historic area is a part of the economic dynamism, it should be able to compete with the rest of the city; it requires the improvement of services, public open spaces, and community-supported rehabilitation on historical buildings and open spaces. Furthermore, the historical conservation enriches the political, economic, social, cultural, and functional aspects of the site.

Historic buildings require specific restoration techniques to be integrated with the most innovative technologies to improve performing and quality capabilities of the building while maintaining the heritage intrinsic characteristics.

This thesis is concerned with the task of implementing green conservation on historic buildings. This is achieved through: First; examining the literature review of Green and Sustainable Architecture, the advantage of historic preservation, the influence of conservation and rehabilitation on the development of the place, its environmental impact and the professions needed to make a good preservation project achieving green and sustainable goals. Second: Analyzing examples of green rating systems and historic charters then combine them into one effective rating tool that focuses on historic buildings. This template is then tested on some case studies, selected from already certified green, examples to create a self supporting contextual framework, in order to achieve the goal of the research by creating a versatile and responsive tool according to different cases and specific context.

The main aim of the thesis is to analyze the existing situation of international rating tools; Thus to be able to identify the problems and to conclude recommendations, to sustain the rehabilitation of the historical buildings and strengthen the green and sustainable impact of the buildings. Also to apply a successful green preservation projects that depend upon making an inspection and report at regular intervals on all items of cultural property, recording the visible defects factually, in order to diagnose the causes of decay and propose an effective cure that involves only the minimum intervention by sustainable features respecting international green goals.

**Key words:** historic preservation, green goals, sustainability, adaptive Reuse.