

Preserving the Architectural Heritage within an Academic Framework



Mahmoud Tarek.M.Hammad

Abstract- The Arab region is one of the areas rich in architectural heritage associated with historical and religious events. It is replete with Roman, Byzantine and Islamic monuments that must be preserved as much as possible by rehabilitating those monuments and investing this heritage which reflects the experience of intellectual creativity of ancient human societies through different civilization ages.

This research discusses the methods of conservation and restoration in one of the most important cities in that region, namely the village of Al-Zafeer and located in Saudi Arabia, which is one of the most important landmarks of the architectural heritage in the Kingdom. However, the village suffers from neglect and failed restoration efforts. The local municipality tried to save the village, but the efforts lacked a comprehensive strategy to revive it as a part of its cultural heritage and identity.

The present research aims to develop a plan and strategy to preserve the old city in order to improve its visual image and rely on the involvement of restoration experts with local people and municipalities in a scientific academic framework as a means to provide cadres of students and professionals in the rehabilitation work and preservation. . To achieve this goal, the research adopted a clear methodology for the descriptive analytical approach along with field observations and preliminary surveys.

The conclusion would clarify a strategy and a proposal to maintain the mechanism followed by advance planning which helps to Revitalize the village with all its components in line with the identity of the local community and meet the requirements of contemporary architecture.

Keywords: Architectural Heritage, rehabilitating , conservation , restoration , cultural , identity, local municipalities , academic framework , contemporary

I. INTRODUCTION

Protection and preservation of architectural heritage are national duty to protect the cultural identity of urban communities. It is considered the index of differentiating between ancient civilizations and traditional cultures. In spite of the kingdom's efforts to preserve the architectural heritage and the traditional cultures by taking appropriate measures and legislations, a clear strategy for rehabilitating and revitalizing the areas to its origin is almost lacking. Investment projects in the village of Al-Zafeer, the ancient city of Al-Baha led to demolishing some traditional buildings.

In addition, many individual restoration works carried out by local contractors and engineers were not reasonably successful because of deficiency in experience especially when dealing with building materials of different qualities and characters.

Using of modern materials as well, cause serious damage in the long run. Other traditional buildings were neglected and left to the harsh climate and disintegration to the extent that any restoration attempts are nearly impossible.

The historic village of Al-Zafeer is located about one kilometer southeast of AL-Baha (figure:1&2). In the southeast, the Buraida Mountains are located in the back of a hill extended to the northeast of the Valley (National Authority of tourism and archaeology), (General Authority for Tourism,2010).



Figure 1: shows the Al Baha city and the al-dhafeer village location to KSA
Source: Google Earth



Figure 2: shows the village of al-dhafeer site for the Baha city
Source: Google Earth

One of the principal objectives of this work is to survey and collect data about these buildings in order to authenticate them before putting architectural solutions.

The study and documentation of these buildings and the architectural solutions to restore and revive them would be important elements of touristic attraction, both local and international.

This work is also aiming at achieving an optional balance between the process of reviving the heritage and the protection of the environment, The current project also tries to develop an awareness among citizens of the importance of heritage preservation and national identity

The results would clarify the importance of preservation and the possibility of restoration. Facing problems in this approach are outlined in the following:

- The absence of surveys and scientific documents of the sites of architectural heritage.
- lack of attention to the rehabilitation of the heritage village both culturally and economically.
- Destruction of many of the historical buildings as a result of randomized investments in the near by urban planning activities.
- Discouraging of the activities of traditional industrial crafts related to the old environment prevailing in these villages(General Authority for Tourism,2010).

Manuscript published on January 30, 2020.

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The restoration projects carried out by the KSA varied in terms of both quality and efficiency, also in terms of followed strategy and the authorities' point of view. This is due to the divergence in general sponsors and managers. In addition to many administrative and financial factors which led to canceling of projects in some areas. For example, the project carried out by the Municipality of Al-Baha city in the village of Al-Zafeer, which has been charged with inexperienced contractors in the field of restoration led to some kind of distortion of old buildings.

II. METHODOLOGY, CONCEPTS AND APPROACHES.

The descriptive analytical approach was adopted. Field observations and preliminary surveys were carried out, documented by photography and sketching as supporting activities. Restoration images were then elaborated. The following concepts, and approaches are discussed

Defined policies dealing with architectural heritage comprise the following trends:

- The first trend looking at old cities and villages with a kind of idolatry and sacred vision so that preserving of archeological ruins is the only trend, (Najdi Naji al-Masri Magd, 2010).
- The second trend is including the old city or any part of it as a part of the contemporary city. The old city, therefore, should be restored or even revived with its accompanied activities including economy, industry, and environmental conditions. This way of the application must be integrated with the modern urban and social development of the contemporary city (Amir, Saleh, 1998).
- The third trend is viewing the old village as a separate living entity with its cultural heritage preserved, without considering its alignment in the vicinity of the surrounding modern communities.
- Kingdom's efforts in preserving the Architectural heritage varied between; keeping it without change after the minor restoration of the traditional buildings or the documentation of the ruins before complete demolishing. Since 1408(H) the kingdom is adopting an architectural heritage program for studying, documenting, and preservation. This program is aiming at preserving and taking care of detected heritage together with the rehabilitation and revitalization.

III. PRESERVATION PROPOSAL AT AL-DHAFEER VILLAGE

A. Urban Planning and Designing of Houses in the Village.

The Urban planning of the old village is characterized by simplicity and uniformity and reflects the design style of buildings. The pattern of the urban planning reflected the security aspects at that time where buildings were built in a compact form without large spaces between them, and generally on a hilly terrain. (Figure:3)

The design of Houses consist of a set of common walls. The division of the house on the ground floor is devoted to livestock and warehouses. The first ground is specified to receive guests, in addition to two rooms for the family and a

toilet, also has a place to store agricultural yields and food. The second floor has a kitchen and the

family room together with an open court (Mastaba), generally used to sit and watch the family in case of a third floor it often contains a main room for the Lord family in addition to a kitchen, which is called «Asall».

The stairs are designed to be outside the building, constructed with elongated flat stones. and the diversity of windows are all depending on the financial level of the owner and his social stand. Some important houses are including a multi-storey fort in the middle to store supplies and crops and also to be used as a defensive mean in the case of wars. In most cases, the roofs were made of trunks of trees as a skeleton, covered with stacks of leaves of trees and then covered by a layer of a clay paste. The houses usually have a front courtyard used as a guest area.

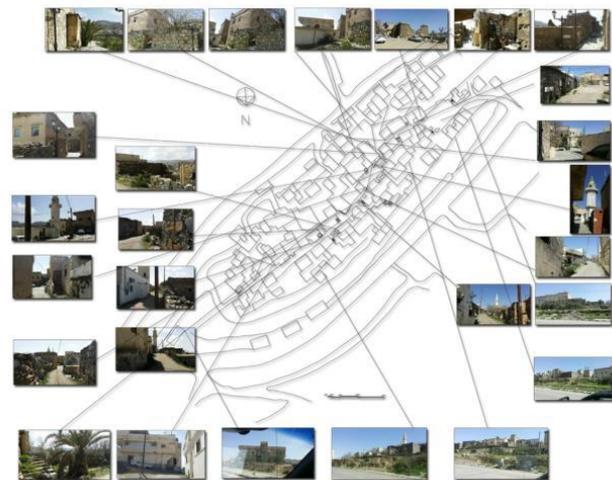


Figure 3: Organization diagram of buildings located longitudinally at the main path of the village

Source: researcher

B. The Current State of the Old Village

As a result of the improvement of the financial situation and the increase in revenues in the country, new ways of living emerged. Some inhabitants were encouraged to add a concrete store above their old buildings which caused a partial or total collapse of the whole building. Others were urged to leave the old city and to build modern houses. The new extensions were made north and south of the old village. Most of their buildings were made of concrete and other modern building materials. The situation of the old village became too critical, where many existing buildings are almost rubbles. Restoration efforts were actually in vain, due to several reasons. Important of which is assigning restoration projects to unspecialized contractors. Random restoration of some buildings in the village led to incomplete restoration processes. The following consequences were noticed:

1. Random stone types paving pedestrian routes and plazas.
2. The lack of spaces between elements of movement especially between pedestrians and vehicles.
3. Random and dissonant treatments of walls looking on squares.

4. The poor distribution of flowerbeds in a way inconsistent with the distinctive characteristics of the old architecture.
5. Scattering of seats and lighting units in squares and main tracks.

C. Intervention Works to Revive the Heritage Village of Al-Zafeer.

The basics of a strategy when planning to revive the heritage village of Al Zafeer was developed by the research team. Primarily, to improve permeability within the village through the main longitudinal path in the village, which is running northeast - southeast. This path is overlooked by a group of mainly and secondary spaces. Improving the existent spaces, creating new ones together with reviving important buildings surrounding this path such as Emarah building are proposed. A preservation of the pedestrian zone will offer suitable locations for Bazaars and a tourist center for crafts and traditional ornaments. Coordination of yards and the separation of movement elements including parking zones would provide and facilitate several activities concerning the local inhabitants, tourists, and casual visitors. To achieve all these solutions, technical comprehensive efforts are needed. Suitable and appropriate investments should be allocated. Application of this strategy includes simultaneous and integrated activities summarized as shown in (Figure:4&5)

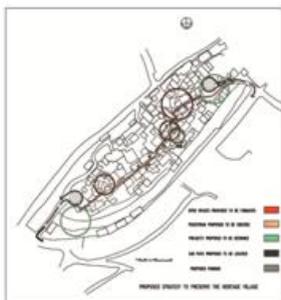


Figure 4: The proposed strategy to preserve the heritage village
Source: researcher

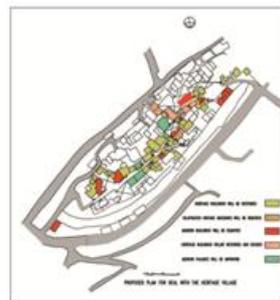


Figure 5: Buildings that will be dealt with in the village
Source: researcher

D. Academic and Field Training School.

A school of academic and field training has been postulated as a way of providing cadres of local students and professionals in the rehabilitation and preservation works supervised by a committee of professors from the Faculty of Engineering. It is an educational and training establishment, at the same time providing the trainers with lectures and workshops, and carrying out documentation works and surveys.

E. Elements to be Considered.

The longitudinal path which runs through the middle of the village of Al-Zafeer and extends longitudinally from northeast to the southwest has been identified to be the scope of the current study and as a main foundation of the current project. This path has a set of mainly and secondary spaces where collections of heritage buildings are overlooking (figure:6).

Improving this path is considered the main pillar of the process of maintaining the old village of Al-Zafeer. Finding suitable solutions to re-coordinate and rehabilitate the constituent elements of the path are highly recommended.

The following operations are recommended along that path:



Figure 6: The proposed strategy after and before rehabilitating operations
Source: researcher

- Highlighting the ancient buildings surrounding the spaces and confirming its characteristics and architectural value.
- Excluding and removing all the random and inappropriate elements that encroached on the site.
- The simplicity and clarity of squares design taking into account the physical aspects with surrounding buildings.
- Choosing carefully the flooring and the furniture material of the Spaces, including, settings, lighting units, and flowerbeds that combine simplicity and functionality to be in harmony with the surrounding architecture.
- In addition to the configuration works and re-employment, it has been suggested new establishments that contribute to tourism recovery. A project of three parts is extended to be implemented along the axis of the main path. The first part is a craftsmen business center, the second part is a collection of crafts shops in the central square of the path. The third part is intended to be a commercial center including restaurant and some shops at the end of the path.
- Reviving the old residential and abandoned buildings representing the basic services. The old residential buildings still existing should be restored and improved to encourage people to live their, especially those involved in the village activities.

Alemarah compound buildings which is located on the main longitudinal path penetrating the middle of Al-Zafeer village consists of three main buildings together with a group of secondary buildings. One of them is overlooking the old market square where the main mosque of the village is located. The other two secondary buildings are overlooking the main large yard.

In the past the buildings were originally used as administrative and residential places. For more specification, the first building is overlooking a large yard including a reception hall and many important offices. The second one is used as an extension of the first one. The third building was used as a temporary prison (transit prison) for outlaw prison.

Al-Emarah compound was documented in the current situation (drawing of plans, facades, and sections) as shown in (Figures:7),and Several photographs from different angles were taken as shown in (Figures: 8&9).



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The buildings are not currently occupied or used, but neglected completely. Parts of the buildings and their accessories are collapsed. The roofs are those parts heavily ruined due to the effect of rains in a condition of abandonment and neglect.

The idea of this project is mainly aimed at reviving the whole group by rebuilding the ruined parts in coordination with other buildings and to reuse it as a museum for local and traditional arts and handicrafts. The suggested museum is expected to revive and stimulate tourism both local and regional, providing and creating jobs opportunities for inhabitants of the village and the surrounding population.

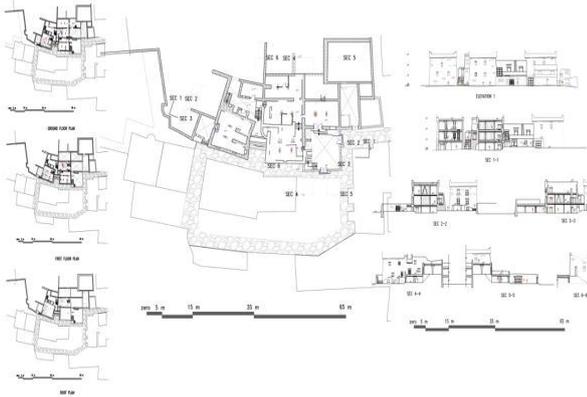


figure 7: The current plan of the Emarah
Source: researcher

F. The reuse of Al -Emarah Building.

The current project proposes a re-use of the El-Emarah building after the renovation to become a museum of the region heritage. The principal condition of this proposal is not to abuse interior spaces and their functional relationship. The changed functions of the restored buildings should comply with the current design. The museum will include halls of artifacts and small cafeteria for visitors, an educational library, some crafts workshops and educational classes all recommended is shown in (Figures 10). A compilation of perspective perception before and after the rehabilitation proposal is shown in (Figure 11).

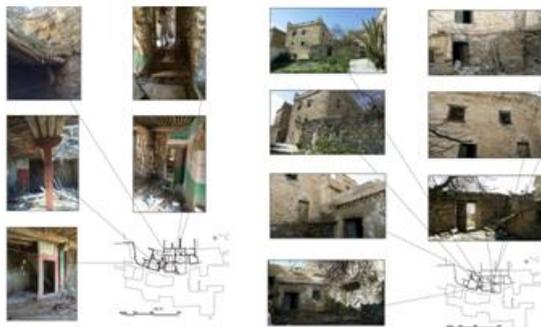


Figure 8: shows the Photographic documentation of the Emarah from abroad
Source: researcher

Figure 9: shows the Photographic documentation of the Emarah from inside
Source: researcher

G. General Precautions to be considered during Strengthening and Retoration operations the Heritage Village of Al-Zafeer

Retrieval Number: E5691018520/2020@BEIESP
DOI:10.35940/ijrte.E5691.018520
Journal Website: www.ijrte.org

Dealing with restoration works, the following Precautions should be taken into consideration:

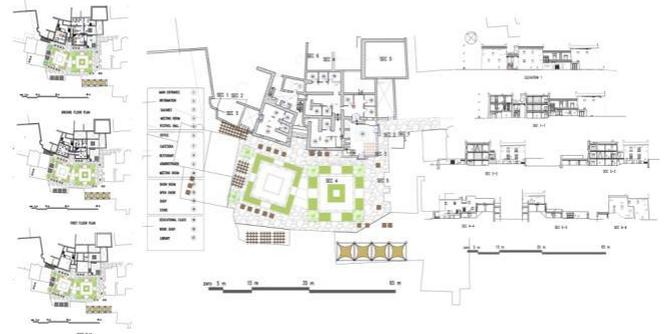


figure 10: re-employment proposal plan of the Emarah
Source: researcher

1. Repair works should be carried out in the parts of buildings to be preserved. The materials used in the consolidation and restoration must be compatible with the characteristics of the original materials. In any case, it is preferred to use the traditional materials and the handicrafts techniques.
2. Strengthen Work of T stones must be implemented according to specific techniques approved by the engineer in charge of the site to fit in with the existing elements. At the same time, it must be distinguished from the original stones. Using materials of different physical and chemical characteristics than the original ones would result in a different reaction with the environment leading to gradual collapse of the repairs. (Najdi Najji al-Masri Magd,2010).

Partial replacement of the collapsed walls technique

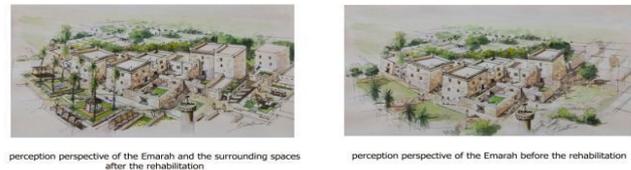


figure 11: perception perspective of the Emarah before and after the rehabilitation
Source: researcher

3. should aim to restore the structural continuation of the previous elements without affecting the stability of the existing elements.
4. In case of damage in the foundation, consolidation by injection with cement or through encircling with iron cages is recommended.
5. Strengthening of vulnerable parts or incoherent arches resulted from human or natural activities should be undertaken according to the state of the building.

H. Reconstruction Techniques.

It is known that the structural system used in the village of Al- Zafeer is depending on load-bearing walls. This technique is applied almost in all other heritage villages. In many cases, foundation parts are founded on loose clayey soils that swell upon wetting with seepage water. In this particular case, strengthening may include expanding foundations by very careful drilling and adding of the concrete mixture. However, this technique may not be followed literally and it depends on the case in the field where engineers can evaluate.

Concerning roofs strengthening, Preparation and restorations should be undertaken carefully taking into consideration all possible safety factors. The process according to what is available is applied by wooden pillars, and bars to loosen loads on walls needed to be rebuilt or for the reestablishment of doors, windows or arches. Carpentry works may be followed after balancing roofs with walls. Walls of the first floor if they are partially damaged, may pose an intricate situation. Engineers are enhanced in this case either to demolish the building or to rebuild the whole building in its former construction. (The Aga Khan Trust for Culture, 2005).

It is natural that walls of the upper floors are affected by rain waters more than others. It is imperative when exchanging stones, bricks or mortar as well as the components in the new parts, to be similar to those used materials. This precaution is considered to prevent cracks resulting from the differences in expansion coefficients of different materials, (Alsaied Hassan, Rafeay Yousef, 2008).

The stones in the village of Al-Zafeer heritage village are of local origin. They are mainly of igneous and metamorphic origin. These types of stones are irregularly shaped and used in general for **external** interfaces. In restoration works, these stones must be given priority and could be reused from other ruins. Reformation of stone elements, architectural blocks and columns should follow previous forms. Proposed new materials must be largely homogeneous with the existing elements in terms of, mechanical resistances, mineral composition, and colors...etc. Documented problems were noticed between the stones used in the construction of the village such as trees and herbs. Stones also accidentally came under fire, covered with cement mortar, paints and stains as shown in (Figure 12). Techniques used to treat the outlined problems could be implemented;

1-Cleaning the stones from dust and weathered products, by applying a wet process using water and sometimes vapor is recommended.

2- cleaning the stones otherwise, by following dry methods using simple tools like chisel and hammer. Sand spray pumps may be used in case of fire exposed stones, (General Authority for Tourism and Antiquities,1430).

3- Chemicals or detergents may be used to remove surface stains.



figure 12: the problems that have been detected in the stones of the village

Source: researcher

IV. Comprehensive Development of Al-zafeer Village and Its Vicinity.

Beside renovation and restoration work in the old village to preserve its history and to gain at most benefit for the presence of such a heritage village, it was proposed to implement a comprehensive development program in the

village. The proposed strategy would bring the region to be a part of a touristic and historical system. It could be a model for other areas in the kingdom to be adopted. This may encourage the present architecture to benefit from the simple methods used to overcome harsh environment, including climate, wind erosion, Pollution, and other environmental problems. A project of three stages was extended;

Along the principal axis of the main path in the village, a center of commercial handicrafts in the northern part at the beginning of the path is to be established. The second stage will include a compound of commercial activities in the middle part of the path. At the end of the principle part, a center of services including paramedic, security, rescue communications and customer services is proposed. Principles and criteria for new buildings in the surrounding region should be in harmony with those followed in the heritage buildings. It is proposed to maintain a height criteria in transition zones (Buffer Zone) with the old ones. The height of new buildings should rise gradually to afford a skyline view to the heritage areas.

The proposed design is inspired by the design of the old village in which the main pedestrian path is an extension of the main village one, thus linking the present to the past imparting unique characteristics of the local environment and gives comfort to both visitors and inhabitants. It was taken into account to choose building materials from the surroundings as much as possible. Open spaces are also taken into account in order to achieve ventilation and regulating the temperature of all the project elements (Figures 13).

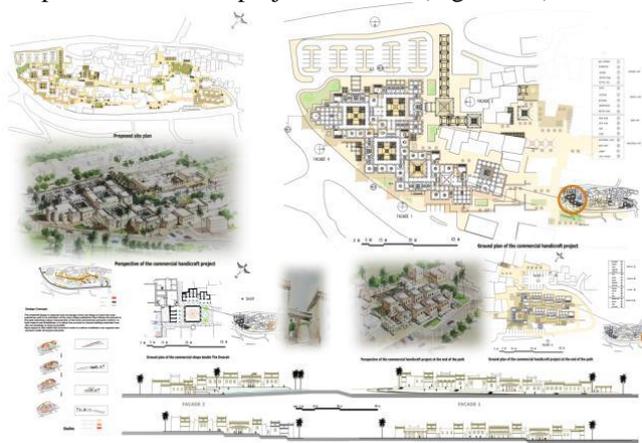


Figure 13: The drawings of The proposed commercial handicraft project

Source: researcher

V. CONCLUSIONS

The work presented discussed principal axes in the preservation and conservation fields of Al-Zafeer Architectural heritage. The concept proceeded in this strategy was clear in concentrating on the rehabilitation of important traditional buildings for the intention of reusing them in a modern image. Building materials previously used for this purpose were inconsistent with the original materials to attain sustainability. The proposed project was considered to evaluate and confirm the importance and the value of the architectural heritage along the intellectual genius of El-Baha community across the various ages.



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This is very important in differentiating the role of this heritage to ascertain the identity of the region.

The study provided valuable data about restoration and repairing technologies that are intended to be a reference for those concerned with the field. Avoiding the problems faced by El Baha municipality council in dealing with this subject was intentionally considered. The proposed plan proceeded according to scientific bases known in the field of rehabilitation of traditional buildings. Consequently, all buildings along the principal axes of the town were authenticated. Developed procedures for coordination (assortment) of open spaces and urban voids were attempted. Appropriate restoration materials conforming to original building materials were identified and selected

The proposal of establishing a school of municipal activities was being in effect where a teamwork trained in restoration works were accommodated in most of the stages of this work. Students, technicians, and local volunteers were all individuals engaged. This achievement will provide future candidates for future similar projects. Establishing of the commercial and technical center would revive old handicrafts and will accordingly help in conserving and developing traditional buildings in the region, and in creating of several work chances. The resultant will certainly revive economic and touristic status of the region.

The popular participation would play a clear role in the rehabilitation and conservation processes proposed, which strengthens the population's affiliation and their connection to their heritage.

The academic role has a great impact on conservation proposals. The organization of lectures and teaching workshops for students and local people engaged in developing should lead for more sustainable solutions commensurate with the size of facing problems and complexities. The dissemination of awareness among citizens of the importance of conservation processes following the correct methods of restoration will flourish.

The conservation and rehabilitation operations carried out by the General Secretariat of the Heritage City should be carried out by professional companies in preservation field, and should not be focused only on the restoration of buildings.

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Google Earth, Satellite Images

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The Architecture University of Venice (Universita Di Architettura di Venezia)(IUAV) (Italy.	Assistant Professor (visitor). Arch.. Eng. Dept	2005-2006
Al-Baha University	Associate Professor, Arch.. Eng. Dept	2011-Present

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- Egypt Tourism Organization (ETO)
- Egyptian Environmental Affairs agency (EEAA)
- Member, GOPP General Organization of Physical Planning
- Egyptian Architects Association.
- Engineers Syndicates of Engineers

5. Principle Publications (Last Five Years)

1. Tarek, M. The Challenge Between Traditional And Environmental Aspects Against Modern Architectural Design, a Case Study. Proceedings of the 3rd International Multi- conference on Engineering and Technological Innovation (IMETI 2010) Volume 1, Orlando, Florida,USA

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