

## **SUSTAINABLE DEVELOPMENT OF ARCHITECTURAL HERITAGE OF CLAY BUILDINGS BETWEEN POTENTIALS AND CHALLENGES IN HADHRAMOUT REGION, YEMEN**

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### **ABSTRACT**

Several of Yemeni cities are on architectural heritage sites and in Hadhramout in particular, they are endowed with enormous wealth over a broad geographic field. These heritage sites can be developed as tourist destinations and research fields that are visited by tourists, visitors and researchers from all over the world. In return, the region will witness a scientific and urbanized renaissance. It will also witness burgeoning tourist development. In this notion, the architectural

heritage sites are considered a national wealth that should be preserved against any sort of decay. The present study presents a framework to conserve, renovate, and develop the architectural heritage sites by selecting the suitable developmental patterns specific to a particular site. To meet this goal, the methodology of the study used field trips, survey, and documenting some of the architectural heritage clay sites. This is an analytical and comparative study for the architectural heritage sites; their types, potentials, the encountering challenges, and prospective investment patterns. The study presents some recommendations for selecting the suitable the developmental patterns for the architectural heritage sites based on the findings. The study found that conservation process of architectural heritage sites could not be achieved except by improving the economic, cultural and social conditions of the heritage sites. The development process should be well planned and directed based on the type, significance, and location of the heritage site. The study suggests to revisit the conservation processes in use where revitalization of architectural heritage sites requires real

partnership between the state represented by the general sector and investors. There should be a real investment partnership between general and private sectors.

**KEYWORDS:** architectural heritage, sustainable development, clay buildings, potentials, challenges.

### **INTRODUCTION:**

Yemen contains rich and diverse architectural heritage sites all over the country including cities, villages, fortress, tombs, graveyards, and different monuments. These heritage sites have attracted local as well as international interest. However, the attraction focused on certain cities more than many others due to their significance, diverse constituents and environments such as Sana'a, Shibam Hadhramout and Zabid. Several other heritage sites are forgotten though they are worthy of care and conservation.

Local and international interest of preserving the three aforementioned heritage cities has been substantial ranging from different policies to renovation. The goal was preserving the overall picture for these cities and their contents irrespective of the contemporary people's needs who dwell in these cities as one of the components of these cities. The preservation of Tarim Old City is an example of negligence for people's requirements, where conservation focused on urban and architectural aspects. This phenomenon results in local residents' resentment against conservation process. The conservation of Tarim Old City, the capital of Islamic culture in 2010, was confined to the restoration of some mansions. The very same story applies to the historical city of Shibam Hadhramout, which was registered in the world heritage list in 1982 by UNESCO,<sup>[6]</sup> There has been no developmental and investment programs accompanying the conservation process. As a result, the architectural value of such constructional heritage sites has declined.

Conservation of heritage sites varies depending on the regions, their potentials and interests. Interest in constructional heritage sites in Yemen began in the mid seventies of the twentieth century and it focused merely on restoration. This reality is considered a planning process of the heritage sites and it transferred them into lifeless sites. In other words, the conservation did not improve the economic, cultural, and social statuses of the heritage sites.

The contents of the historical cities represent the most precious resource and a national wealth of the local society should they well exploited and invested. Residents make an

effective and cooperative partner when their issues and personal requirements are met. A massive portion of the contents of these heritage cities is private property for proprietors of modest economic status. They need to improve their resources and increase their income via directional investment of their private properties based on accurate studies. The studies should conserve the contents of the heritage cities and meet the residents' requirements. They should supply attraction factors and stability for the residents.

**Problem of the Study:**

The heritage sites lack a clear complementary strategy between conservation and directional investment in heritage cities. The presence of such a strategy assists in conservation and utilization of these historical buildings and the potential of investment based on conservation laws, meeting residents' requirements, improving their resources, revitalizing the sites, and curtailing immigration. These constructional heritage sites need a strategy to draw peoples' attraction for investment and services.

**Significance of the Study:**

The current study shows the increasing interest in ancient heritage cities. The resources of the cities can be developed as they are endowed with several potentials, which can be exploited and preserved. In return, these cities would be revitalized, and they would enjoy stability and tranquility. Also, they would return as urban centers that domestic and foreign tourists visit as important business and scientific hubs reinforcing its significance and status.

**Aim of the Study:**

The study aims at presenting a developmental and investment proposal for heritage cities. The proposal complements the conservation processes. It develops their resources and meets the residents' needs from services, stability, and prestigious status, which these cities have been enjoying since their establishment as scientific centers. The proposal works in line with conservation laws and requirements.

**Methodology of the Study:**

Analytical method for heritage sites was utilized to meet the goal of the study. Definitions of constructional heritage, types, developmental potentials, investment and conservation processes were delineated. Further, the study employed descriptive, analytical and deductive method for old buildings. It assesses their potentials and challenges that encounter the

conservation processes and investment. The results of the study conclude with a complementary vision between conservation and investment.

**Heritage:**

Heritage in a broad sense refers to the living memory of an individual and a community that defines their identity and belonging to a nation and a civilization, (Figure1). Heritage represents inheritance that reflects the evolution of human civilization over the history. It provokes individuals' sense of their root extension over history. Heritage is not restricted to ancestors' achievements, but it also includes recent human innovations that prove to be invaluable for the coming descendants. In other words, heritage is a constant phenomenon of an open end.<sup>[3]</sup>

Heritage is human's experience in dialog with nature. It means the reciprocal experience between human beings and their environment including different individuals and groups. Heritage includes every notion of related to man's history, past experiences, present days, and future,<sup>[3]</sup> In addition, heritage is a comprehensive concept for every inheritance including values, traditions, visions and architecture. Heritage does not belong to the past or a completed incident. Rather, it is cultural extension exists with individuals and communities and it forms the surrounding constructional and architectural environment,<sup>[1]</sup> Heritage refers to a distinctive accumulation and it features constancy and continuity. It combines virtues and aesthetics in addition to being an accepted and admired physical reality for it is a record for the culture of the community, its united method, and its humane and intellectual features over reigns.<sup>[7]</sup>

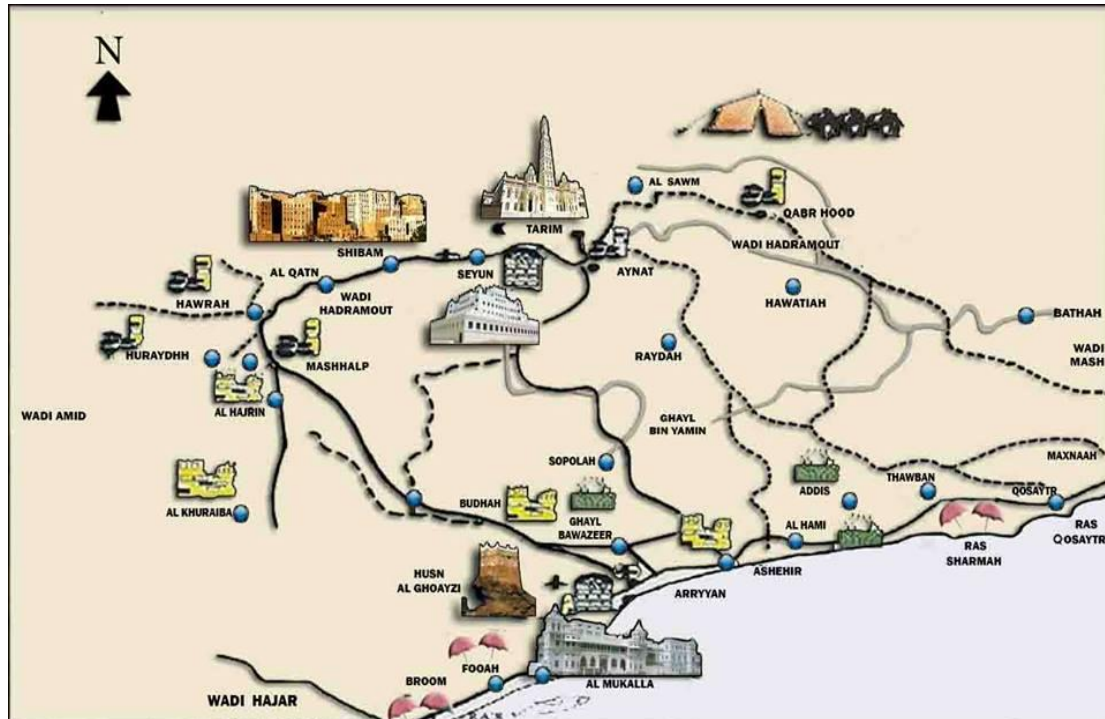


Figure 1: Illustrates Sites of Heritage Buildings in Hadhramout Region.

### Classification of Heritage:

Heritage is classified into:

**Natural Heritage:** it refers to prominent vegetation and geological resources, rare plants and animals, regions of beautiful and scientific values such as forests, and waterfall that the nature of a particular community is endowed with.

**Urbanized Heritage:** It refers to the material heritage through which humans gain primary information about the past. It includes all the vestige of the life in the past and sites of different human's activities, whether above sea level, under the sea, or inside soil. Two types are included under this class.<sup>[8]</sup>

**Cultural Heritage:** it includes humans' achievements over different civilizations whether material or immaterial. It is an index of nations' prosperity in culture, science, and art etc.

**Urban and Architectural Heritage:** it includes any instance of civilization that ancestors constructed inside and outside cities. These buildings and sites vary depending on their times, reigns, art, and the materials used in construction, their conditions, their spiritual and artistic values. Besides, they are a cultural record for a community over reigns, (Figure 2).



**Figure 2: Illustrates Heritage Buildings (Essha & Atawahi Palace) in the City of Tarim.**

**Architectural Heritage:** It is one of the most important examples of humans' evolution. People's needs in different phases affect the architectural environment. Architectural environment was affected by peoples' requirements in every historical phase in human development resulting in architectural heritage. It was part of daily life in the past vis-a-vis the contemporary buildings and constructions. Architectural heritage is a collection of buildings and construction that continued and proved its values and uniqueness encountering constant change. As a result, they gained respect and admiration becoming a lively record and a visual reference, which dates humans' relations with the environment.<sup>[7]</sup>

#### **Significance of Architectural Heritage:**

Architectural heritage represents the materialistic part of the cultural inheritance. Architectural heritage communicates a massive awareness in a traditional environment for a community whose historical roots influenced their privacy and architecture. Architectural heritage is an essential part of the traits of cities and villages and it makes them distinctive. Further, Architectural heritage is a school of inspiration and distinctive in functional exploitation. It forms a symbolic and spiritual values in addition to its heritage, historical, documentary, and religious values. Architectural heritage is important in terms of tourism because it has economic and social values and being a symbol of humans' prosperity over history,<sup>[2]</sup> Therefore, conservation of architectural heritage against decay is of paramount significance. It should be revitalized through restoration processes as it functions as an urban bridge of communication between old and contemporary architecture. Importantly enough, the real values of the architectural heritage and the components that had met material and spiritual needs of humanity should be underscored during the conservation processes. These



aspects would contribute greatly in solving problems in several fields. Architectural heritage is essential in tourism industry and it is directly related to the roots of nations. Heritage is not a nation bound; rather it is general to all human being. Therefore, international organizations assist in conserving many endangered heritage sites all over the world.

### **Challenges Encountering Architectural Heritage:**

The following are the main challenges:

- The national agendas lack any significant roles for the architectural heritage.
- Lack of a real legal framework for the conservation process.
- Overlapping roles between the different institutions government, private sector, and civil society organization.
- Unplanned urban expansion which leads to destroying heritage monuments.
- Continuous demolition and looting of the heritage sites and monuments.
- Lack of social awareness about the significance of architectural heritage as a source for development.
- Lack of qualified personnel in this field.
- Dearth of economic resources for architectural heritage.

### **Influential Factors on Architectural Heritage:**

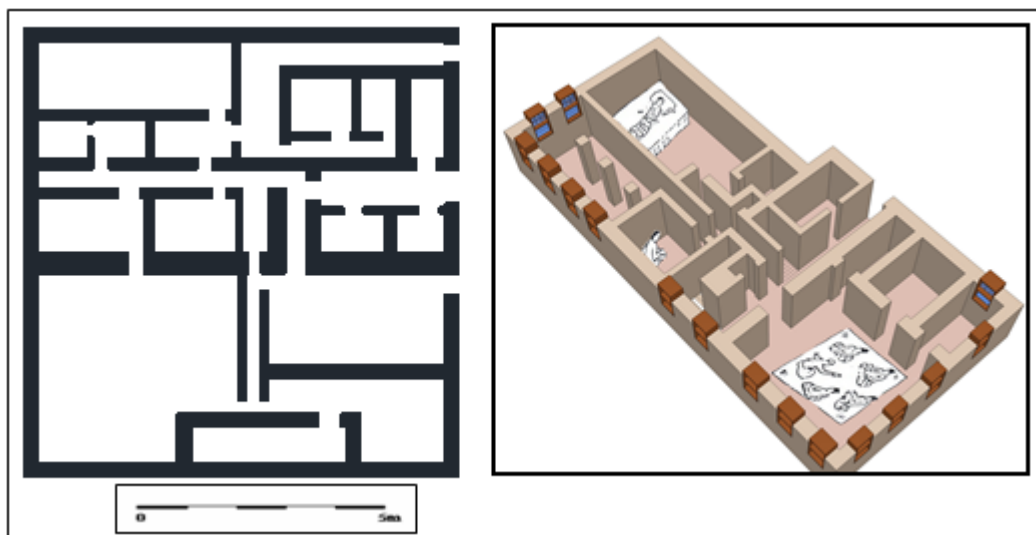
Several factors lead to the destruction of heritage

#### **Urban Factors:**

Urban expansion leads to erosion and substitution of architecture. Modern technology encourages the utilization of modern gadgets such as electricity, gas, and devices. This in turn leads to the destruction of heritage sites and negatively influencing the renovation process. Overlap of the purpose of using the heritage monuments, commercial, and industrial use lead to chaos and carelessness. Density of population leads to rapid urban expansion and visual pollution. As a result, they lead to inconsistency of the surrounding environment. Further, haphazardness and wrong behaviors of individuals and premature administrative decisions pose tremendous challenges to heritage sites, (Figure 3&4).



**Figure 3: Illustrates View of Clay Buildings in the City of Shibam.**



**Figure 4: Illustrates Type of Plan of Shibami House.**

**Human Factors:** They refer to the following:

**Economic Factors:** Heritage sites have poor economic resources that support their conservation by residents and by governments. As a result, heritage sites are substituted by modern projects of high economic values.

**Political Factors:** Some of the political changes urges to get rid of the monuments for their predecessor regimes.



**Legislative Factors:** The current legislations has obvious defect. Therefore, it weakens supervisory and implementation authorities. In addition, there are haphazard and overlapping decisions due to multiple supervisory and responsible authorities.

**Social Factors:** There is insufficient cultural awareness about the historical values of the heritage sites. This phenomenon is attributed to several factors such as increasing sense of dissociation, poor participation in conservation processes, lack of identity, poverty, and unemployment.

**Natural Factors:** Relative humidity and disparity in temperature degrees bring about dangerous interactions for materials of construction. Wind causes erosion of construction materials. Disparity in temperature degrees and dryness lead to crack between many inner parts of the buildings.<sup>[4]</sup>

**Cultural Factors:** It refers to people's rudimentary awareness about architectural heritage. Lack of a sense of belonging brings about carelessness. Lack of general, social and cultural services as well as fallacies poses enormous challenges for monuments such as tombs and statues.<sup>[5]</sup>

**Social Factors:** Heritage sites encounter great challenges due to immigration of native people, negligence from the incoming migrants, and high population growth. All these variables negatively affect heritage monuments.

**Political Factors:** Heritage sites are influenced by wars and their aftermaths such as demolition, disfigure, and absence of laws, legislation and supervision.

**Economic Factors:** Increase in the price of land encourages people to manipulate heritage buildings. Also, cheap rents of heritage monuments do not cover conservation processes. There are no local resources; nor is there a state budget allocated for conservation process.

**Administrative and Organizational Factors:** The authorities in charge do not document heritage sites. There is an overlap between supervisory authorities over heritage sites. There is a lack of qualified staff for conservation processes. Insufficient awareness about teaching conservation processes for heritage sites.<sup>[5]</sup>

### Environmental and Technological Factors:

Utilization of modern and improper materials in conservation poses challenges for heritage monuments. Environmental and technological challenges also include vehicle emission and deposition on facades, pollution, and building vibration due to vehicle traffic.

### Factors that assist in Developing the Architectural Heritage:

The following factors increase the urban heritage value:

Historical reference: It refers to the historical phases related to incidents, changes, and individuals, where living styles and requirements are reflected such as instruments, movements, and thoughts.

### Artistic Quality:

It refers to the distinctive traits that could continue if they are conserved. These traits become educational benchmark and artistic and architectural guide.

### Association:

The sense of belonging to the roots provokes peoples' association and their interaction with their ancestors' past life, location and events. Also, belonging draws a social picture of life in the past that should be kept as memories of the past and as genuine association to the land and humans,(Figure 5).

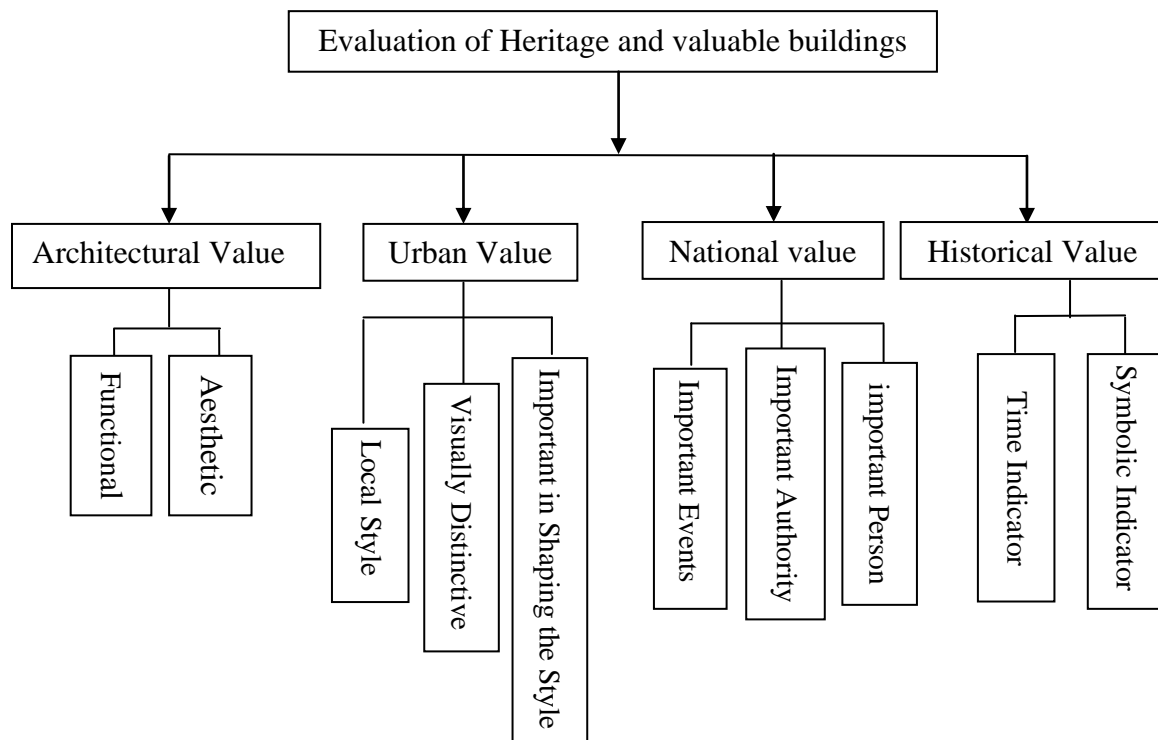


Figure 5: Flow Chart of Evaluation of Heritage and valuable buildings.

### Classification of Architectural Heritage Sites:

Architectural heritage sites are classified in accordance with their model, the historical period at which they were established, location and significance on the world heritage map, type and size. A heritage monument might be transferred (such as antiques and memorabilia); or it might be buildings such as a complete heritage site; or it might be established for a certain function (religious, defense, residential, commercial). As per the present study, two kinds are highlighted: (a) the location of the monument inside the site and the extent to which they interpenetrate; and (b) the distribution patterns of monuments inside the heritage site. Heritage site and their relation to monuments:

There are two kind of relations between heritage sites and monuments:

1. Interpenetrating; on the border of the heritage site; and separated from the heritage site (temples, grave yards, citadels, mountainous fortress), (Figure 6).
2. Distribution patterns inside the heritage site. This kind of distribution can be classified into centered (cities and Archeological sites), or dispersed (buildings and urban groups distributed inside heritage site).



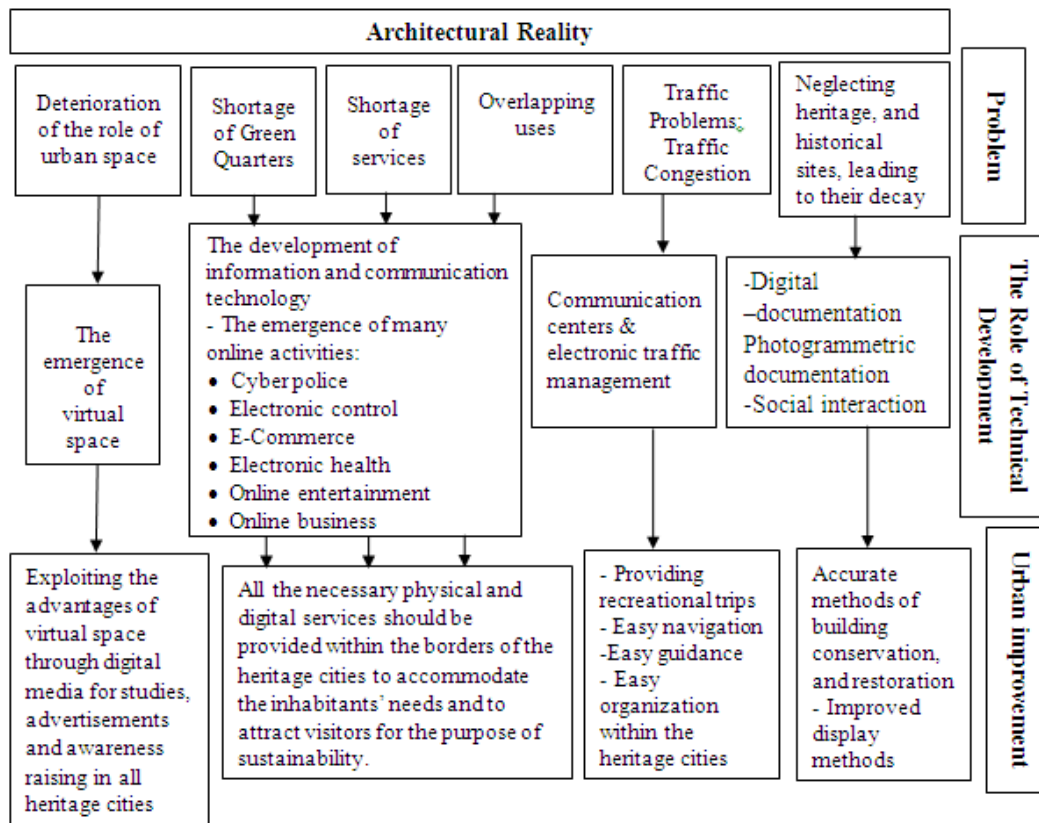
**Figure 6: Illustrates Clay Fortress in Hadhramout Region.**

### Economic Significance of Heritage Sites:

Heritage sites have an economic value as one of the sustainable resources. Heritage sites are a great opportunity for creating jobs, attracting private sector investments, reviving handicrafts and community participation.

### Investment and Conservation of Heritage Environment:

Architectural heritage consists of several values that distinguish them over other natural and material resources. The most important value is the materialistic value of the heritage monuments where they can be exploited and invested. A cultural value of monuments communicates the culture of a society; a social value communicates the privacy of a society. Monuments, also, have aesthetic and spiritual values,(Figure 7).



**Figure 7: Flow Chart of Modern Technological Developments and Improving the Architectural Reality of Heritage Cities.**

### RESULTS:

The present analytical study on the clay architectural buildings arrived at the following results:

1. The study discussed models of clay heritage monuments in Hadhramout.
2. Hadhramout contains unique patterns of heritage architecture, and clay buildings. These mud bricks buildings represent urban and human dimension. They should be conserved.
3. Hadhramout features ancient history and it enjoys a special status locally, regionally and internationally.

4. The historical cities that comprises Hadhramout were established during the pre-Islamic era and they grew and developed after Islam.
5. Cities of Hadhramout are endowed with several social, cultural, economic, and scientific potentials that attract investment.
6. The conservation efforts of the state and local society require further reinforcement.
7. Heritage cities in Hadhramout encounter several problems as the following:
  - **Economic:** The residents' economic level is very poor. There is multiple ownership of the heritage building. Financial resources are scares.
  - **Social:** residents' awareness of the heritage is low and they are careless about developing heritage sites and conserve monuments.
  - **Services:** Heritage sites lack general services. They feature deteriorating and overlapping functions of disqualified infrastructure.
  - **Architectural:** The construction of the heritage building is deteriorating due to their defective physical fabric. As a result, heritage buildings are disintegrating and visual pollution occurs.
  - **Administrative and Legislative:** Heritage sites encounter serious issues related to administration such as mal-administration, overlapping tasks of the concerned authorities, deficiency in laws, and legislations.

### **Recommendations:**

The present study concludes with a number of recommendations:

1. Symposiums and conferences about conservation of clay buildings in Hadhramout should be held.
2. A detailed map of the important clay heritage monuments in Hadhramout should be created.
3. The study recommends releasing a national project for saving heritage monuments in Hadhramout Governorate. The project should include conservation and renovation giving exact replica of the heritage buildings and using the same materials that had been used. The project should also stop any sort of innovative constructions and pollution.
4. The study recommends revitalization of historical cities and transferring them into tourist destinations and scientific and research fields.
5. The study recommends reviving handicrafts and traditional architecture.



6. New laws should be introduced to stop tampering with historical buildings. People need to raise awareness regarding heritage sites. They should be conserved as cultural, historical traditions, and national resources.
7. State authorities are urged to organize programs and campaigns for educating people and raising their urbanized and environmental awareness of the architectural heritage, and their valuable national value.
8. The study recommends the participation of private sector, civil society organizations, and associations for heritage and culture conservation in awareness raising campaigns.
9. The recommendations are further addressed into different levels as the following:

#### **Architectural Level:**

Development of the heritage sites should be conducted based on the proposed plan. It should encompass society's potentials and it should bring about stability and prosperity. It should also result in continuity of the several jobs in heritage cities. Development should sustain different activities in heritage cities as it directly influences sustainable development and investment. Balanced investment weighs the different elements of investment attractions (supermarkets, museums, squares, etc...). Any alien construction bringing about anomaly to clay buildings should be removed such as using modern materials in conservation, electricity network, and infrastructure services. Different markets and buildings of investment attraction should be renovated using traditional materials that had been used. Historical cities and investment opportunities should be easily accessible. There should be enough parking spaces for visitors' vehicles inside and outside the cities.

#### **Economic Level:**

Different investment projects inside the heritage cities need to focus on creating more jobs for residents of heritage sites. Also, residents should be trained on different relevant handicrafts for investment in order to improve their income. Government support and private sector investment might need to improve the products of investment. Likewise, complementary services of the heritage bazaars should be improved such as cultural centers, and recreational activities.

#### **Community Level:**

Community participation in development and sustainable investment should reinforced. Training workshops and awareness campaigns on handicrafts should be conducted to educate population about investment.

**Organization and Legislation:**

Licenses for traditional handicrafts stores outside old cities should be banned. At the same time, campaigns about investment inside heritage cities should be released via the different media sources. Information technology and media should be developed to play crucial roles in investment process. Investment laws and legislations of sustainable development should be activated. Marketing and management of heritage cities should depend on recent systems such as electronic systems and geographic systems. Government authorities should follow laws and regulations when developing the surrounding areas bearing in mind their heritage architectural identity.

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