

# **The Role of Architectural Education in Promoting Urban Heritage: Opportunities and Challenges**

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## **Keywords**

*Urban Heritage; Architectural Education; Dar Al-Hekma University*

## **Abstract**

Today, introducing *Urban Heritage* into the architectural education curriculum is becoming an important component of the learning experience. It strengthens the sense of belonging, national pride, and cultural identity to students as an active and remarkable part of their history that guides their future. Urban Heritage allows better understanding of previous generations to their long and rich history. The main objective for introducing Urban Heritage into the architectural education was to link heritage practice with teaching and research activities, as well as to create synergies between the educational activities and the surrounding community, in order to ensure the preservation and the appreciation of the heritage. As part of Hekma School of Design and Architecture, the architecture department at Dar Al-Hekma University reflected its mission "To graduate professionals in the field of architecture and equip them with the necessary knowledge and skills, focusing on sustainable design while preserving the cultural and aesthetic values of Saudi Arabia." within the curriculum. This was materialized through a set of interdisciplinary and co-curricular activities and initiatives for the promotion, conservation and revitalization of urban heritage in Saudi Arabia. Those activities and initiatives were determined to create a dynamic environment for social, cultural and economic development at large strengthen students' appreciation of urban heritage through sharing and exchanging of knowledge, skills and experience between the pedagogical activities and the real practices for mutual enrichment.

Often, each activity was dedicated to a given heritage theme. The activities are structured in thematic subjects covering many areas, such as Heritage and sustainable development, Theory and Practices of Conservation, Adaptive re-use of heritage buildings, Inter-disciplinary research investigations, Heritage for dialogue and reconciliation, among other themes. The creation of the architecture curriculum in the fields of urban heritage was a first step to share knowledge, and competences and to encourage professors' and students' participation in heritage safeguarding projects. Besides, it tends to promote inter-cultural dialogues through heritage appreciation.

The paper investigates the challenges associated with studying heritage in architecture, as well as opportunities for students to be more excited about studying heritage, develop their skills, and make them self-motivated. It is expected that the paper will analyze Dar Al-Hekma University educational experience in integrating urban heritage within the architectural education curriculum among other national and international experiences. It will evaluate related teaching approaches, and draw thoughtful conclusions in order to use this unique pedagogical process and learning outcomes in enhancing the heritage appreciation and its practices.

## **Introduction**

*Heritage* is something inherited from a generation to another. The definition of the heritage in Oxford English dictionary is “Valued objects and qualities such as historic buildings and cultural traditions that have been passed down from previous generations”.

There are different types of heritage, such as, cultural heritage, urban heritage, etc. Heritage might be tangible or intangible. Its tangible part includes countries/cities natural heritage, urban heritage, such as historic sites and/or historic buildings, etc. While its intangible part refers to cultural heritage and traditions, ideas, beliefs, memories, art, crafts, and dance among many other elements. As per Tonkin (2011), “Everything which the ancestors bequeath may be called heritage: landscapes, structures, objects, traditions.” Preserving, excavating, displaying, or restoring are all practices connected with heritage. People’s identity is being characterized according to their heritage among other factors. People are learning and being influenced by the people around them.

### **1. Teaching Urban Heritage in the Architecture Curriculum at DAH: Learning from Reality**

The philosophy of teaching architecture in Dar Al-Hekma University (DAHU) is based on an integrative learning approach. It focuses on real issues and local and global contexts, to prepare students to use their architectural skills and knowledge in preserving cultural identity and to create environmentally, economically and socially healthy communities. It promotes the awareness of the implications of globalization on the discipline and practice of architecture through liberal education fields.

Urban Heritage education in the school of design and architecture at DAHU is an important component of the curricula. In the architecture department, many courses are communicating urban heritage. The nature of the courses ranges from theory into practice.

While history and theory courses, such as ARCH 3301, “History of Islamic World Architecture”, and ARCH 4301, “Theory and Practice of Urban Form and Housing” cover the urban heritage from a wider perspective communicating knowledge and cognitive learning domains, special seminars, such as ARCH 3305 “Introduction to conservation, theory and practice” and ARCH 3306 “Regional Cultural Identity” are directly connected with urban heritage issues. In general, the architecture curriculum is conducted to promote an interactive learning process and implement the student-centered learning approaches in the heritage field.

Various thematic studios are being conducted to implement and communicate urban heritage, natural heritage, cultural heritage, as well as contextual heritage. Urban heritage life projects and community service projects are being developed through design studios, in order to link the students’ theoretical knowledge with the practical experience. Other courses in the architectural curriculum at DAHU are connected to the urban heritage in an indirect way, such as the technical courses group that deals with building construction, structure, materials, from sustainable and environmental perspective and consideration.

### **2. Integrating Urban Heritage as Part of the Architectural Education**

There are different methods in integrating *Urban Heritage* as part of the architectural education. Studios, seminars, history, conservation and preservation courses are following different approaches to integrate heritage in academic curricula. Students’ internship or training that provides practical experience in the vernacular heritage is of utmost importance in the learning process. All those approaches are tools for students to develop their knowledge, critical thinking, and practical experience in the heritage field.

One of the main objectives of teaching architecture at DAHU is to respond to the physical dimension, contextual dimension, and socio-cultural dimension among others. The curriculum focuses not only on classical methods of in-class education and research, but it heavily uses training, extracurricular activities and community service as primary tools of the learning process.

### **3. Dimensions of integrating Heritage Education within the School of Design and Architecture at DAHU**

Integrating Urban Heritage education within the architecture department at DAHU could be classified under seven main dimensions. Fig. 1 shows how the six dimensions of teaching heritage are needed and well integrated

through the curriculum, in order to communicate the heritage knowledge, appreciation, and practices from different perspectives and on a variety of learning domains.

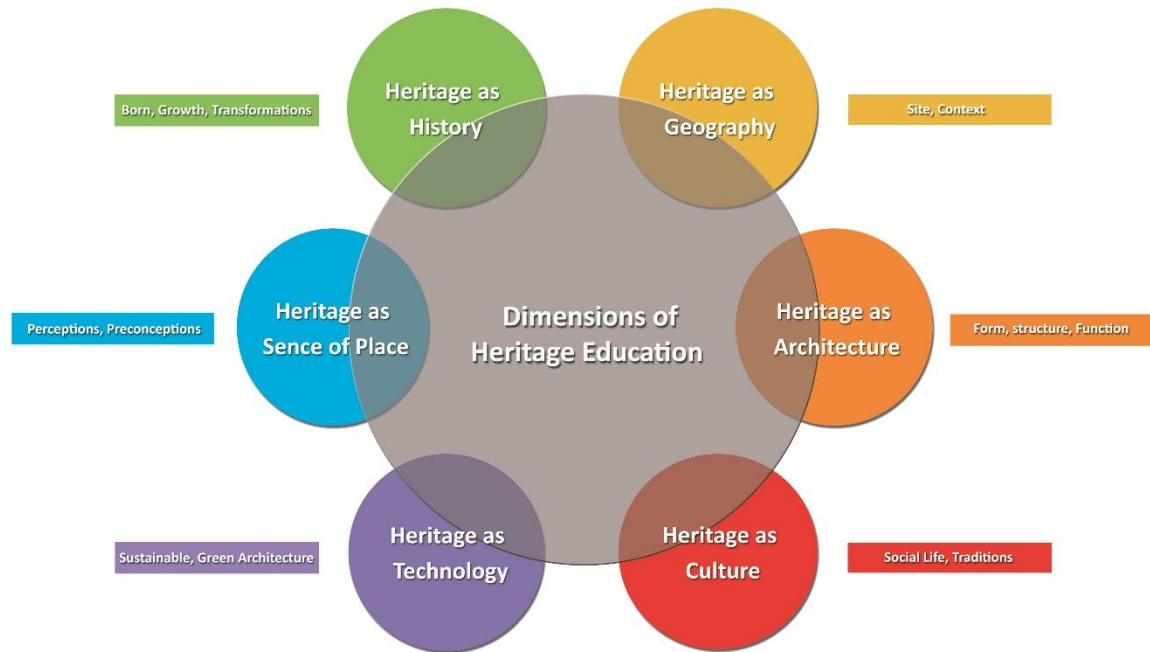


Fig. 1: Dimensions of Heritage Education  
Source: The author

### 3.1 First Dimension: Urban Heritage as a Surviving History

Urban Heritage could be perceived as a rich story telling source. It demonstrates the formation, establishment, growth, expansion, development, changes, and transformations of all built forms, urban environments, and building traditions among others. As per Heritage Perth, “Everywhere has a history and everywhere has a heritage”. The word ‘*heritage*’ means ‘*something that is passed down from previous generations; a tradition*’, while ‘*history*’ is: ‘*The discovery, collection, organization and presentation of information about the past of people, places and events*’.

The architecture curriculum at DAHU has five courses ranging between lecture- based and seminar-based to communicate heritage from its historical dimension. Courses, such as *History of World Architecture I* “(ARCH 2301), and *History of World Architecture II*, (ARCH 2303) focus on history of Architecture from pre-history, passing through all world historical eras, to European Renaissance through the 20<sup>th</sup> century. While *History of Islamic World Architecture* (ARCH 3301) surveys the architecture of the Islamic world from the 7<sup>th</sup> century onwards to the modern period. The course’s chronological structure introduces students to the historical evolution of architectural styles, and building typologies of Islamic architecture, highlighting its diversity and multicultural nature. Monuments are examined in their social, cultural, political, socio-economic, and aesthetic contexts.

Teaching strategies of the History of Architecture courses’ group is based on student-centered learning approach as well as thinking-based learning. It varies between interactive lectures, students’ seminars, class debate, case-based study, fieldwork and site visits. In fall semester 2013/14, twenty-six students of ARCH 3301, *History of Islamic World Architecture* have followed a case-study based approach in documenting and analyzing thirteen mosques in Jeddah.

The historical dimension of the *Urban Heritage* could be challenging to some students, as it relatively relies on studying and memorizing, which is more communicating the knowledge learning domain. However, incorporating field works and site visits, as well as case-study based analysis and learning approaches, which focus more on their cognitive skills, Interpersonal skills, and communication skills, make it more exciting to students.

### 3.2 Second Dimension: Urban Heritage as Geographical Place

One of the most important considerations of architecture and design is the building context, site, or its geographical place at large. Often, physical factors of Site-specific architecture (SSA), such as location, physical context and natural assets, are highly considered when designing or planning any project. In addition, non-physical sit factors, such as community values and traditions are governing some projects. However, some sites, such as mountain, lake, island, desert, monument, building, complex, or city are listed as world heritage sites if they meet the criteria of the UNESCO (United Nations Educational, Scientific and Cultural Organization) in this regard and the ICOMOS (The International Council on Monuments and Sites).

In fall semester 2014/15, students who are enrolled in *ARCH 3305, Introduction to Conservation Theory and Practice*, have worked on a collective research. The course introduced the concepts and methodologies of preservation, restoration and conservation of buildings. It also introduced basic concepts of the adaptive re-use of buildings. In addition, the course examined the role of governance as well as contemporary practices associated with architectural and urban conservation.

The research conducted through this course focused on “*Reinventing the Vernacular*” as a topic. The idea of the research was to use the heritage and the traditions of Asir region in bringing the past into the future of the region. In this course, students conducted an extensive research in Asir region. Parallel to that, students who were enrolled in *ARCH 3601, Studio III - Contextual Cultural and Environmental Design*, have proposed a design for a cultural center as well as other creative reuse strategies of existing buildings. The students’ work, including research and design projects, was judged by an invited national and international panel in Asir.

Urban Heritage is very challenging from its geographical or spatial dimension aspect, yet a very interesting one. It reflects students’ skills in knowledge, comprehension, analysis, synthesis, evaluation, and until reaching the application skills in some heritage based revitalization applications. Often, it is associated with site visits and tangible experience. It becomes of highest motivational value when it is associated with contextual studies and live projects.

### 3.3 Third Dimension: Urban Heritage as Vibrant Architecture

Urban Heritage in architecture has a set of design principles, categories and considerations. It varies and ranges from a project to another depending on the nature of the project and its context. While some applications/design projects, such as adaptive re-use projects, are completely following and guided by historic buildings’ designs to change the buildings’ functions with minor architectural modifications, other projects, such as infill projects in historic areas, are considering heritage as their main inspiration that guides design decisions. Other projects in historic or non-historic sites may interpret heritage and represent it in other contemporary expression or modern language.

Recently, a new trend of dealing with heritage has emerged. In this trend, infill projects in historic areas and heritage contexts are completely in contrast with their context. Often, contrasted design of architectural new projects is based either on design philosophy/ concept, or otherwise just to pop up and draw a design statement.

Expression of *Heritage Values* in modern buildings was conducted as a Design Charrette in the architecture department at DAHU. In the spring semester 2012, a three-day design workshop has been led by the renowned architect Dr. Rasem Badran and Arch. Jamal Badran, with the theme of “*Ritual Space Reinterpreted*”.



Fig. 2 & 3 :Dr. Rasem Badran and Arch. Gamal Badran conducting a design workshop at the architecture department at DAHU  
Courtesy of the Architecture Department at DAHU

The *three days'* design workshop was conducted for twenty architecture sophomore students to design a “*Mosque Complex*” within the city of Jeddah. The complex included the Mosque and its related services as well as some other structures/facilities. The additional facilities have varied between cultural, social, educational, and / or commercial facilities to serve Jeddah community. The site was selected to be in the modern part of Jeddah city. The objective of the design assignment was to be inspired from and to reflect the essence of Jeddah heritage in a modern context. The major challenge of the workshop was to demonstrate how the interpretation of architectural heritage vocabularies, elements and expressions can be maintained and revived, not only as physical form, but also as a mean to accommodate contemporary needs and aspirations.

The work done by Roa' Abdulhakeem Almargalani (see figures 4 and 5) shows the design process of the mosque and how the Hejazi heritage inspirations were reinterpreted and reflected in a modern dynamic expression.

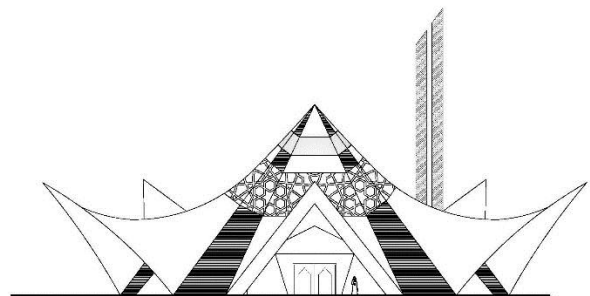
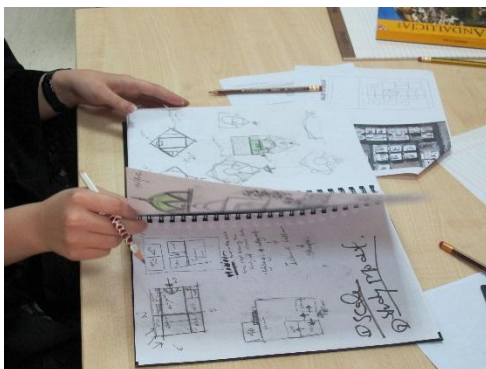


Fig. 4: The design process of Roa' Almargalani shows the mosque design development  
Fig. 5 : The mosque elevation shows the reinterpretation of the Saudi heritage in a modern expression  
Courtesy of the Architecture Department at DAHU, Roa' Almargalani

Another urban heritage interpretation was done by Sara Murad (see figure 6). Although her designed mosque looks conventional, yet some design elements, such as the minaret and the use of the arches were introduced in a new expression.

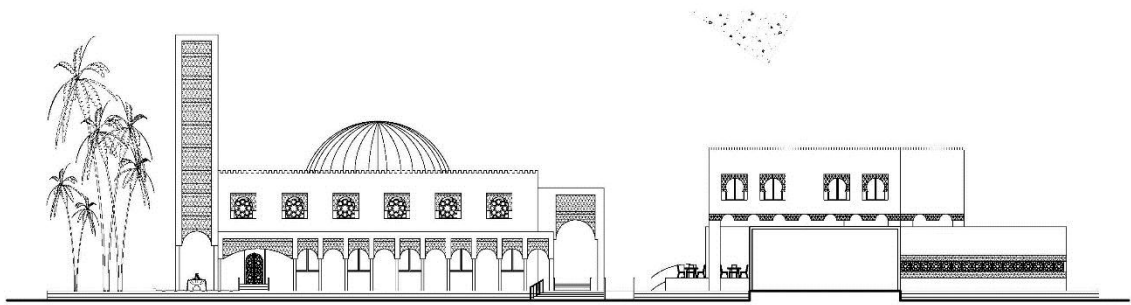


Fig. 6: The mosque elevation designed shows the reinterpretation expression of a conventional mosque  
Courtesy of the Architecture Department at DAHU, Sara Murad

The idea of introducing the design charrette was very motivational and challenging to the participated students. They were able to communicate their concepts in the mosque project in a limited duration. To build on the success of this workshop, the mosque design project was more developed and detailed throughout the semester. It was assigned to the students as the core semester project with a larger program of services and social facilities.

### 3.4 Fourth Dimension: Urban Heritage as Living Culture

Heritage doesn't only reflect a history of a city or a place, but also it reflects its culture. Traditional culture is what identifies communities, cities, or countries. Heritage from its cultural dimension is considered as a story teller that communicates traditions and social life of past communities. It is an essential part of preserving identities of living communities. As per Jokilehto J. (2011) "The integration of the different aspects of recognition of cultural heritage, whether physical, intangible, or living, and the motivation and involvement of society in its safeguarding, is one of the challenges of the 21<sup>st</sup> century".

In fall Semester 2009/2010, a collaborative design studio between the interior design students at DAHU and the urban planning students at the University of Colorado at Denver (CAP at UCD) took place. The topic of the project was initiated on "Jeddah: Affordable Housing". The design studio focused on "*Affordable Housing between Living Traditions and Contemporary Spaces*". It discussed the challenging design opportunities in the context of the rapid urban changes that are taking place in the rich, cultural and economic conditions in the city of Jeddah. The design studio aimed to explore opportunities for developing an affordable housing scheme within the context of modern urban, architectural, and design conditions. It also aimed to create a platform for exchanging knowledge between students from both academic institutions. The main research and design assignments for the DAHU students was to design the interior design in full detail of the affordable housing. Master plan and units were developed by students of CAP at UCD, to fulfil the target of designing affordable housing units that effectively respond to the Saudi Arabian (Jeddah) modern living conditions, while preserving its typical local living traditions and cultural identity. The scope of the project was to plan an affordable housing complex and to design a housing unit that allows maximum usage of the space with minimum expenditure. Students from both academic institutions have worked jointly in small groups of two students each, where the urban design and architectural components of the design project was carried out by UCD students. An online discussion process was the main tool of the mutual exchange of ideas and design development that took place between the students from both institutions.

Final design projects have manifested integrated and comprehensive team work efforts. Project nature was very challenging to students from CAP as per its nature that deals with exclusive and very specific cultural values and living habits considerations in the affordable residential units in Jeddah, which was completely different than housing considerations in the USA. Residential considerations in Saudi Arabia, such as privacy, needed spaces and functions, life style, among other considerations were raised and communicated between the groups from both institutions. Research took place has guided the design process and helped in reflecting a genuine (*Jeddawy*) style in the designed residential units. The experimental design studio stimulated innovative solutions and creative ideas that respected Saudi living traditions, residents' cultural needs and requirements. At the same time, the designs utilized modern technologies and applications, beyond the superficial reproduction of traditional elements, which was another challenge for the CAP students.

The work developed by Urjwan Al Shreef (see Fig.7) reflects a modern expression of Islamic design while preserving residential needs in Saudi Arabia. While the work developed by Kholoud Baroom (see Fig. 8) confirms a traditional identity of Islamic design in the interior design of the residential unit, yet in an elegant expression.

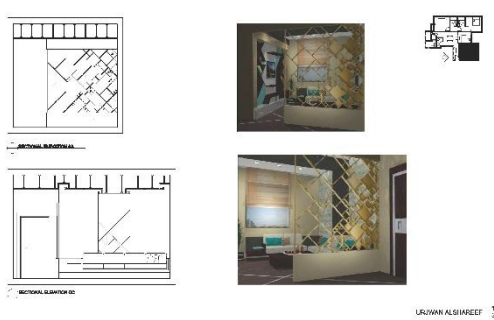


Fig. 7: Modern expression of Islamic design while preserving residential needs in Saudi Arabia  
Courtesy of the Architecture Department at DAHU, Urjwan Shareef

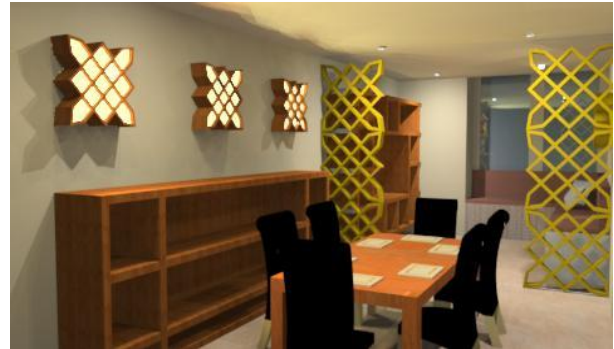


Fig. 8: Traditional design expression by Kholoud Baroom  
Courtesy of the Architecture Department at DAHU, Kholoud Baroom

The work developed by Nadia Mandourah from DAHU (see Fig. 9) shows the process of the project development that was carried out through knowledge and culture exchange with her counterpart from CAP at UCD. Through an interactive process of communication between the paired students from both institutions, residential unit was modified to respect Saudi living traditions and the residents' cultural needs and requirements.

# JEDDAH: AFFORDABLE HOUSING

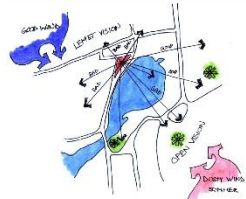
Between Living Traditions and Contemporary Spaces



## Location



Jeddah, Saudi Arabia



City Center is located on the East side of AlArba'in Lagoon across from the Red sea Palace and the historic Mosque.

**Housing Unit Total Area** 342 m2

## Users



Father, Mother, Three sons (17, 15, 14), Two daughters (9, 7), Driver, and Maid.

## Design Approach

Reinterpretation of Islamic style in an abstracted and contemporary atmosphere.



## Mood



Repetition, Shade and Shadows, Contrast

Student: Nadia I. Mandourah  
Instructor: Dr. Mona Helmy

## First Submission by Talia



**Second floor:**  
3.1 The toilet in shared bathroom is facing Qibla.  
3.2 We need to close the narrow corner in shared bathroom because it will be an area for collecting dust. Moreover, it can be used for drying. (It weakens the interior planning)

**First floor:**  
2.1 Guest area is exposed to the private area.  
2.2 We need a dining room for guest, and still can be used by the family.  
2.3 We need a kitchen close to the dining room.  
2.4 I replaced the cabinet beside the bathroom with a washing unit because it is more desired in Saudi culture.  
2.5 we need the balcony door to be parallel with the other entrances to effectively utilize the living room.

Oct 14, 2009



**Ground floor**  
1.1 According to Saudi culture we need a laundry room.  
1.2 Enlarge the storage due to future expansion needs.  
1.3 Since we have enough space, we can add a driver room to fulfill the Saudi requirements.  
1.4 To ensure the issue of privacy, we need a wall between the family entrance and the driver entrance.  
1.5 We need the kitchen close to the dining.  
1.6 We need to add windows in the laundry room, storage, and bathrooms.

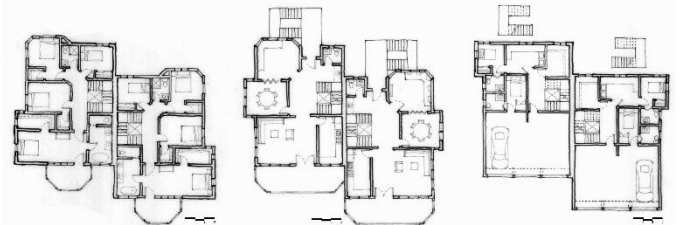
## Reviewed Drawings by Nadia



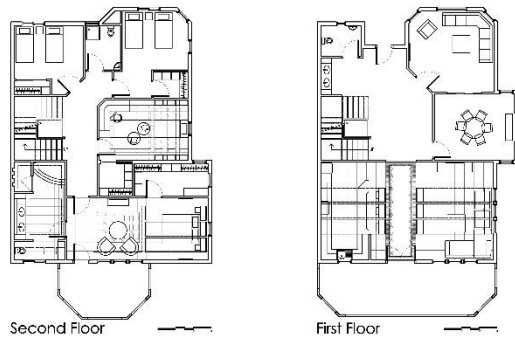
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## Second Submission by Talia

Nov 19, 2009



## Final Drawings



Second Floor

First Floor

IDES 4501 Studio V Advanced Design  
Semester Project

Sec. 1  
Jan 31, 2010



Fig. 9: An interactive learning approach. A process of the Affordable Housing collaborative design project shows the knowledge, traditions, and culture heritage exchange between a DAHU student with her counterpart in CAP  
Courtesy of the Architecture Department at DAHU, Nadia Mandourah



### 3.5 Fifth Dimension: Urban Heritage as an Adapted Technology

Design principles of Urban Heritage are considered one of the main solutions to inform our contemporary needs in buildings in terms of sustainability. By nature, heritage constructions are eco-friendly, sustainable, and considered as green architecture. They represent main examples of passive technology to meet communities' current and future needs, while preserving resources. Hosagrahar (2012) assumed that "The cultural heritage and creativity are valuable cultural resources for sustainable development in urban areas. The built heritage, monumental and ordinary, as well as cultural forms, expressions, practices, elements, values, and forms of knowledge, are all cultural resources that can contribute to development".

In spring semester 2014, an adaptive reuse live project was developed by the junior architecture students at DAHU in collaboration for Jeddah Municipality, upon an invitation from culture and tourism department. In this project, students were asked to develop an adaptive reuse project for Bab Al Bunt, an old building in Historic Jeddah, which dated back to almost hundred years ago. Bab Al Bunt was originally built as a place to receive the pilgrims arriving from Jeddah port. Students were asked to propose a variety of design solutions for using Bab Al Bunt as a Pilgrimage Museum. Bab Al Bunt Pilgrimage Museum in Jeddah was introduced as the facility that describes and documents the most important event in the life of any Muslim: the pilgrimage to the holy sites of Mecca and Medina.

The arrangement of the entire museum was proposed to be designed as a story told through a series of topics that was organized according to subject matter and specific time periods. The designs followed an itinerary, which brings to life the different phases and the overall meaning of the holy journey. As minimal changes in the building were allowed, a strict program was given to students. The project was designed to consider *sustainability and green architecture* as a development base. Students were asked to examine the sustainable design solutions that are already provided by the old building while composing the required applications and recommendations that make it eligible for the LEED certification.

The project designed by Mariam Dandachi (see Fig. 10) shows the sensitive design solution of changing the function of Bait Al Bunt building into a museum without changing the structure of the building. It also shows the sustainability considerations in the building.

#### Bab Al-Bont Museum

##### Project Brief:

Bab al Bont is an adaptive reuse project. It is being transformed into a Hajj museum, while striving to be LEED certified. Like all Islamic architecture, the journey inside the museum is simple yet interesting. Visitors do not know what awaits them behind the corners. They go in and out of rooms, while being exposed to a historical era, informing them about Hajj and people's culture back at the old times. Following one Islamic architecture principle, symmetry is evident in the museum (indoor as well as outdoor). In addition, the outdoor area beholds a combination of symmetry and different leveling, in order to create a diverse and more dynamic effect, resulting in a change of the visitors' mood.

##### Program:



##### Circulation:



##### LEED considerations:

- 1 Smoking is strictly prohibited inside any part of the museum.
- 2 A survey is conducted every two weeks to ensure that the workers are exposed to a healthy working environment.
- 3 Materials purchased and used in the museum do not emit any toxins.
- 4 Materials purchased include post-consumer, pre-consumer, and recyclable materials.
- 5 Any damaged furniture is donated to specific companies to be recycled and reused.
- 6 Light fixtures are energy controlled and are adjusted according to each function's needs.
- 7 Lamps used in the museum are either LED lights, or lamps with a mercury level below 90 picograms per liter per hour.
- 8 All sealants, adhesives, and chemical products are sustainable and do not emit any toxins.
- 9 Waste is reduced as much as possible by efficiently cutting the materials.
- 10 Waste from materials collected from demolishing parts of the building is used to construct the newly designed parts, where applicable.
- 11 All cleaning products purchased are sustainable and are safely stored.
- 12 A storage room is designated on site where waste is collected, stored in boxes according to the different types, and labeled for easier future use.
- 13 Construction waste produced will be given to hauler companies, SACEP and Al-Bernak companies, to either be reused in other constructions or recycled.

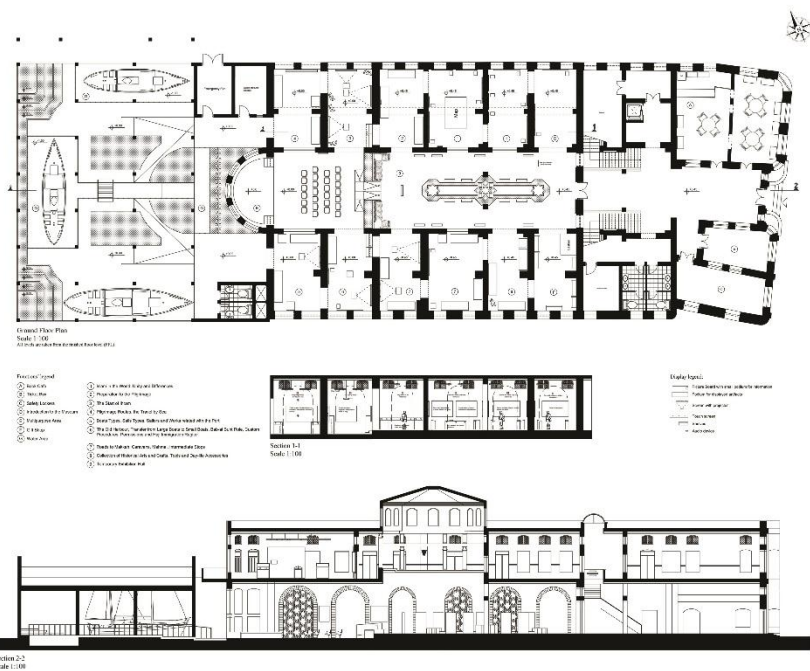


Fig. 10: Bait Al Bunt Adaptive reuse Project and sustainability considerations  
Courtesy of the Architecture Department at DAHU, Mariam Dandachi

### 3.6 Sixth Dimension: Urban Heritage as a Meaningful Sense of Place

The sense of place is an important element in perceiving, understanding and appreciating urban environments. It is a social phenomenon that incorporates individual people experience. There is no one specific or single sense of place, but a variety of perceptions that shapes it for people. Usually, people form the sense on any place with different personalities, cultural preconceptions, emotional and cognitive experience, etc. It is argued that different people characteristics can guide or inform the sense of place. Places that lack a *sense of place* are sometimes referred to as placeless or inauthentic. Fritz (1981) defines the sense of place as “the particular experience of a person in a particular setting (feeling stimulated, excited, joyous, expansive, and so forth).”

Heritage has a strong statement in terms of giving a powerful and authentic sense of place. Often, it reflects the original sense of place that sometimes symbolizes the identity of the place. As per Messary (1994) “the search after the 'real' meanings of places, the unearthing of heritages and so forth, is interpreted as being, in part, a response to desire for fixity and for security of identity in the middle of all the movement and change. A 'sense of place', of rootedness, can provide - in this form and on this interpretation - stability and a source of unproblematic identity”.

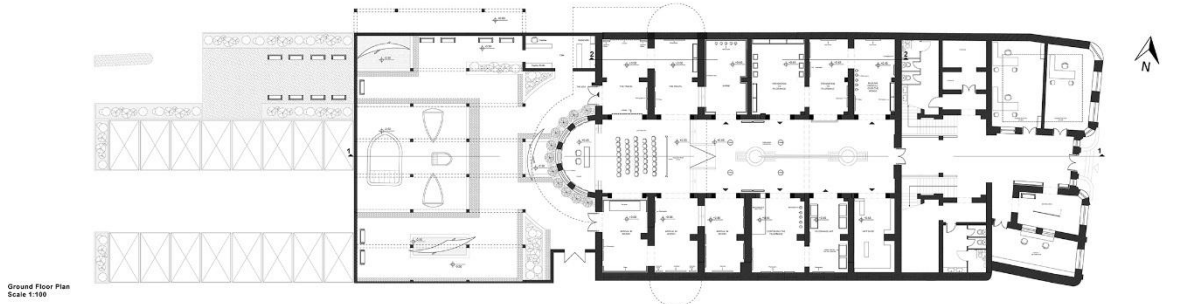
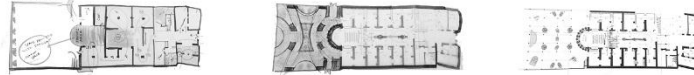
In the spring semester 2014, the adaptive reuse project that was developed by the junior architecture students at DAHU, has proved that sense of places conveyed through heritage is powerful enough to guide new development in heritage contexts. Although Bait Al Bunt adaptive reuse project had a strict program allows minimum interventions in the building, some students have developed the project and its surrounding using its genuine sense of place. The design project developed by Aya Zahran (see Fig. 11) has another design approach. In addition to the design solution suggested by the student to inform the adaptive reuse project, Bait Al Bunt building was integrated with its surrounding by adopting urban design solutions.

#### Project: Bait Al-Bunt Renovation

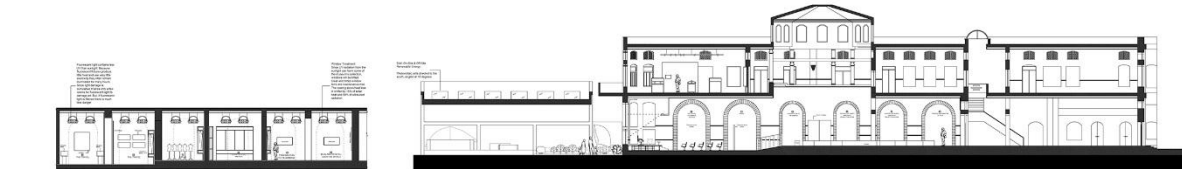
##### Project Brief

Bob Al Bunt was originally built as a place to receive the pilgrims arriving from Jeddah port, and redesign it to function as a "Pilgrimage Museum".  
This project will focus on redesigning the existing building with no or very minimal changes.  
Also, the project will propose the required applications and recommendations that make the building eligible for LEED certification.

##### Process/Sketches



Ground Floor Plan  
Scale 1:100



Section 2-2  
Scale 1:100

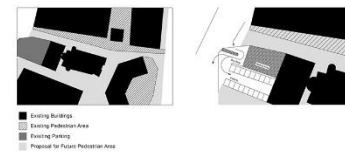
Section 1-1  
Scale 1:100

##### LEED Considerations

- ES2: Building envelope and heritage preservation plan**  
Make a heritage management plan to reduce energy intake, water intake, air pollution, and other environmental loads.  
The plan shall address the following operational elements:  
- Management approach  
- Cleaning of building envelope  
- Plans and materials used on building envelope  
- Cleaning of sidewalks, pavements and other hardwares
- ES3: Integrated Pest Management, Envelope Control, and Landscape Management**  
- Management of integrated pest management (IPM) plan  
- Avoid the use of chemical pesticides and non-native plantings  
- Develop landscape management plan, including an irrigation

- ES4: Alternative Cooling Transportation**  
- Surrounding the area surrounding to a pedestrian area, with a bus system that transports visitors  
- Also, applying so that not only people who work there can use their cars.

- ES4: On-Site and Off-Site Renewable Energy**  
- Add solar panels and solar radiation of 1.54 kWh/m<sup>2</sup>/day, above PV system to increase that intended to cover operating and heating.  
- Propose to add photovoltaic system on the open service roof



##### Diagrams



Circulation Key Diagram

Fig. 11: Bait Al Bunt Adaptive reuse Project. Integrating the building with its surrounding  
Courtesy of the Architecture Department at DAHU, Aya Zahran

The project developed by Amani Aljehani and Muhja Malaikah (see Fig. 12) is one of the best examples for that. Students have suggested an integrated design solution for the outdoor exhibition associated with Bait Al Bunt Museum that confirms and consolidate the main essence of the historic building.

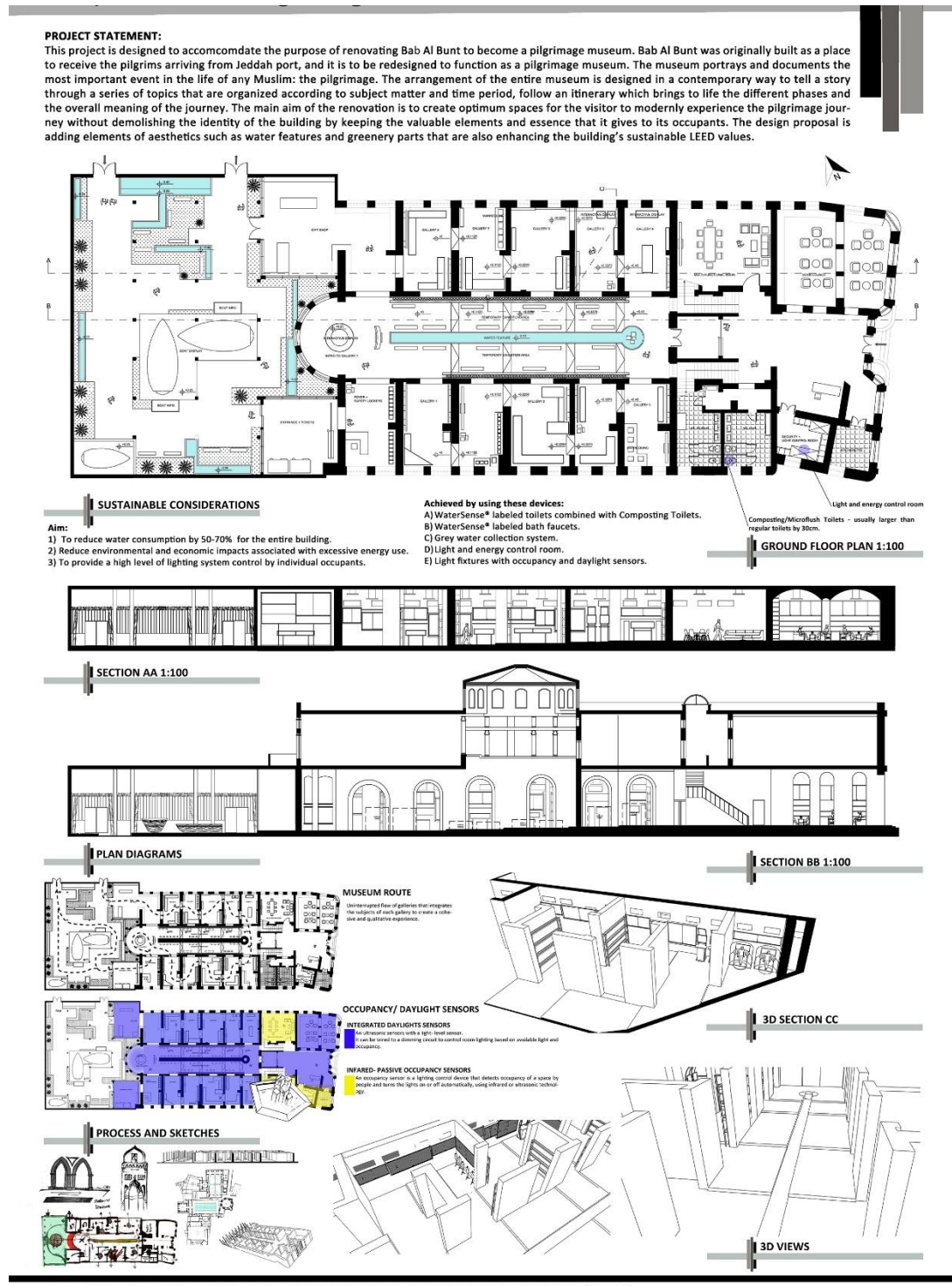


Fig. 12: Bait Al Bunt Adaptive reuse Project. Communicating the heritage through sense of place  
 Courtesy of the Architecture Department at DAHU, Amani Aljehani and Muhja Malaikah

In general, the project was challenging to students, as minimum changes and architectural interventions were allowed in the adaptive reuse design proposal. In addition, the strong identity of the building and its context controlled students design proposals. Students were more comfortable in designing the outdoor area of the building as they got less design constraints and more flexibility in their contextual proposed design solutions.

#### 4. From Practice to Theory

From the previous discussions on the dimensions of teaching heritage in the architecture department at DAHU, some conclusions and considerations could be theorized.

*Urban Heritage* is an essential component of architectural curricula. It needs to be integrated in architecture and design courses from different perspectives and following a variety of teaching dimensions. Some of these dimensions, such as urban heritage as history or as geography, are already imbedded in the nature of some architectural and design courses. However, other dimensions of teaching urban heritage, such as a guiding theme for architectural design studios, needs to get more flexibility and innovation in their topics and in their design nature. It needs not to be only limited to conservation, or preservation oriented, but also to communicate students' creativity in urban heritage reinterpretations. This paper recommends that a comprehensive educational plan should be addressed based on the school plan of study in partnership with a responsible organization, such as the Center for the National Built Heritage, in order to develop, support and promote the following recommendations, among others:

- Encourage a sense of belonging to the national cultural heritage, and activate the relationship of the students with their local urban heritage and historic places. This includes events, visits, and cultural raising awareness.
- Motivate students to exchange ideas and thoughts by following new teaching methods and to discuss the role of studying urban heritage for architects and designers.
- Build a social awareness of the urban heritage with local communities, with emphasis on integrating the urban heritage within the educational curricula through various study and academic means.
- Encourage academic meetings, workshops and conferences on urban heritage and promoting a culture of specialized community-based revitalization of urban heritage.
- Encourage investigating similarities and differences for curriculum contents through the pedagogy of teaching architectural and urban heritage.
- Diversify the methods in which the teaching of heritage with all its proposed dimensions in the curricula and to support it through educational activities.

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