

A BRIEF PROPOSAL FOR AN ONLINE PRESENTATION OF THE ARCHITECTURAL HERITAGE IN THE UNITED ARAB EMIRATES (UAE): AN APPLICATION IN AL-AIN CITY

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Abstract

In this short paper, the authors are proposing and briefly describing an online system for the gradual surveying, recording, documenting and presenting of architectural heritage in the UAE. On one hand, the immediate aim is to present these documented historical sites online for the current and the future generation of Emirates-nationals. This would help in spreading knowledge of the architectural historical icons among students eager to know their own heritage. The online documentation would also help in promoting the cultural awareness on the subject of U.A.E. architectural heritage among the general public.

On the other hand, the long term aim of this study is to accurately document the architectural heritage of the UAE. This documentation can further be used by current and future generations in their effort to conserve their own history and heritage. The brief description of the online system will only focus on the architectural heritage of Al-Ain city, a major city in the Eastern Region of Abu-Dhabi Emirate the capital of the U.A.E., as a pilot model. This model can be expanded and applied in the future to cover more cities and sites in the UAE.

In this proposal and its pilot web-site, the authors adopted a simple WEB interface that works on standard PCs and utilizes standard virtual reality technology. Based on a study presented by Haval in 2001, this system would not compromise the strong need for gathering and linking heritage information, and yet, its' simplicity would save time and produces a user-friendly environment for the general public (Haval, 2001).

Key Words: Cultural or Architectural Heritage; Heritage Web-sites; Al-Ain; United Arab Emirates.

Introduction

Over the last few decades, western modern-style buildings had completely altered the original Emirates architectural style and the local identity. Fully glazed towers and high-rise modern buildings are now the dominant features of all major cities in the United Arab Emirates (UAE). However, there is a strong feeling among the Emiratis of the urgent need to conserve their own heritage and to preserve their local identity. In the last few years, there have been several successful projects that aimed to conserve some of the main historical icon-buildings in the country. However, these projects are not fully known and represented to the general public. The majority of the Emiratis are not fully aware of the significance of their own architectural heritage except of these located in their immediate vicinity.

Furthermore, the UAE lacks a full inventory and a proper documentation of its architectural heritage. The absence of these elementary data made it very difficult to assess and conserve the historical buildings and sites. Moreover, there is no central place within the UAE where general information on the architectural heritage can be obtained or easily accessed by those requiring information on the subject. From the above discussion, the need for a complete, easy accessible information management system that hosts all information on the architectural heritage of the UAE is urgently needed.

In this short paper, the authors are proposing and briefly describing an online system for the gradual surveying, recording, documenting and presenting of architectural heritage in the UAE. On one hand, the immediate aim is to present these documented historical sites online for the current and the future generation of Emiratis. This site should be made available to all users requiring information on the subject. This would help in spreading knowledge of the architectural historical icons among college and school students thirsty for knowing their own heritage. It should also be accessible to all interested parties, specially, conservation authorities, researchers, educational institutions and tourism promotion activities. The online documentation would also help in promoting the cultural awareness among the general public.

On the other hand, the long term aim of this study is to carefully and accurately document the architectural cultural heritage of the UAE. This

documentation can further be used by current and future generations in their effort to conserve their own history. This brief description of the online system will only focus on the architectural heritage of Al-Ain city as a pilot model. This model can be expanded and applied in the future to cover more cities and sites in the UAE.

In this proposal and its pilot web-site, the authors adopted a simple WEB interface that works on standard PCs and utilizes standard virtual reality technology. Based on a study presented by Haval in 2001, this system would not compromise the strong need for gathering and linking heritage information, and yet, its' simplicity would save time and produces a user-friendly environment for the general public (Haval, 2001).

In the next Section, a briefly describe the difference between the web-site proposed in this study and similar online web-sites. Section 3 illustrates the different phases that were followed to produce the digital application. A brief description of the proposed web-site is illustrated in Section 4. Section 5 reports on the results of a questionnaire designed to test users' response to the proposed web site. Conclusions and future work is then outlined in Section 6.

Literature Review

The authors reviewed a large number of similar web-sites on the Internet. These sites are listed among references. The main difference between those listed sites and the web site proposed in this study is the global national content of the site. Thus, it covers all the different Emirates and cities in the UAE, and would serve as a reference for all the architectural heritage sites in the country.

For the purpose of this study, Static HTML was the authors' choice. This is because users of Dynamic sites have to know exactly what they are looking for. In a dynamic setting, the web pages are not actually pre-set; instead, they are called upon users' request for information. This would not be the case in a heritage web-site. Users may not have any previous architectural heritage information before using the site. Thus, a Static setting would really help them to gradually browse through the different subjects and increase their information as they go through. Most of the intended users would have an easier time surfing

through a Static site with fewer choices and clear hierarchy than a Dynamic site where they have to select specific targets and skip others.

Digital Application

The work on the digital application was divided into eight phases. These phases are briefly described in the next sub-Sections.

1 Data Gathering and Field Visits

That included an initial survey of the architectural monuments and sites in Al Ain city, their classification by type, importance and location. This phase also included some field visits to acquire digital images and the verification of available data.

2 Web Site Hierarchy and Organization

That included the design of the Web-Tree. This tree is based on a well defined hierarchy that will be explained in full in the Web site description in section 4. In this phase, decisions had to be made on the sequence of web-levels, and possible links that would maintain the homogeneity and the integrity of the Web site. The Web-tree was then executed on FrontPAGE for Windows XP as the base of the work (Figure 1).

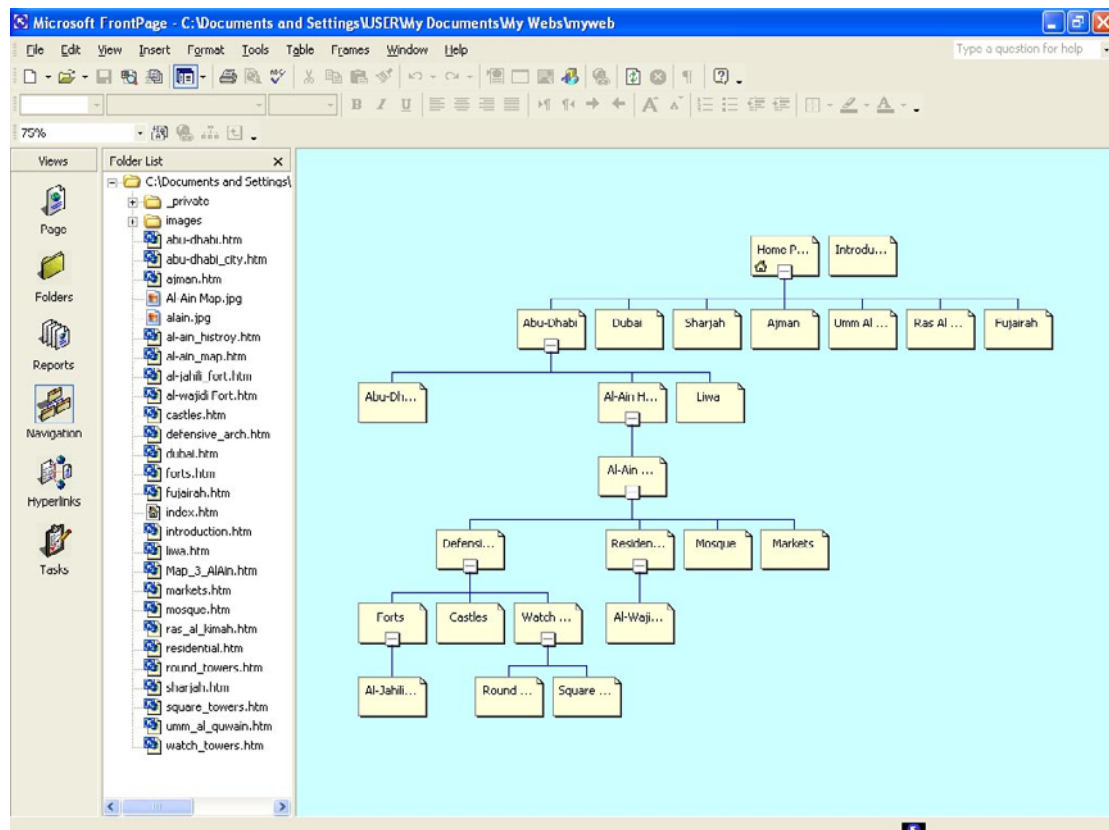


Figure 1: Web-tree and hierarchy.

3 Graphic Work

That included the design and the execution of the main graphic theme of the Web site, which included in turns, the design of buttons, text effects, background images, images selection, sizing the Web pages, and finally, integrating all the graphic work in a harmonious design. The graphic work was mainly executed on Adobe PhotoSHOP 7.

4 Buttons, Special Effects, and Animations

That included the design of buttons "Overlay" and "Down" effects. It also included text and banner animations. This work was mainly executed on Adobe ImageREADY7.

5 Executing Web Hierarchy and Links

That included putting individual pre-saved Web pages previously constructed on Adobe ImageREADY 7 in their pre-designed location on the Web-tree executed on FrontPAGE for Windows XP. This phase also included assigning each button to its proper URL link.

6 Adding Special Web Components

That included adding image galleries and database. It also included links with special "Plug Ins" which included Anfy and PixMaker used in managing and displaying special image effects.

7 Adding Virtual Reality Viewers and Files

A Virtual Reality viewer was embedded into the HTML code of the Web page. Links to VRML files would trigger virtual reality viewer to appear. Users may then view, manipulate, and walkthrough VR models at their own will.

8 Testing the Web on Different Browsers

During the course of work, the previewing of the various steps and phases on actual Web browsers was essential to validate the work on a step by step base to prevent wrong or dead-end links as well as long loading time.

Web-Site Description

The web-site can be categorized into six interconnected levels. These levels include: (1) The Introduction and the homepage level; (2) Individual Emirates level; (3) The cities level; (4) Architectural heritage buildings categorized based on buildings' function; (5) Building types within each function

category; and finally, (6) Within buildings' function and type, buildings are then listed by name. The next sub-Sections include a brief description of the above mentioned levels.

Although the above levels can be explored in a sequential order, the website is designed to allow the user to directly skip from the home page directly to individual Emirates and cities through a clickable map. This map illustrates the geographic relationship between the UAE and neighboring countries. It also includes the position of the seven Emirates of the UAE. Another clickable map is provided within the major cities level. This map can also take the user directly to individual historical buildings without the need to go through all the intermediate levels.

1 The Introduction and the Homepage Level

This level includes an introductory page that leads to the index or homepage. The homepage in turns include a general description of the UAE, its history, environment, geography, demography and the different Emirates that forms the UAE federation. In that level, there are buttons and also a clickable map that lead directly to the Emirates level.

2 Individual Emirates Level

This level includes seven different pages; each represents one of the Emirates. These Emirates are: (1) Abu Dhabi; (2) Dubai; (3) Sharjah; (4) Ajman; (5) Umm Al Quwain; (6) Ras Al Kimah; and finally, (7) Fujairah. The history, geography, demography, and the basic characteristics of each Emirate are illustrated in these individual pages (Figure 2). Each page in this level has buttons that allow the user to switch to other Emirates without the need to go back to the homepage. A "Next" button would take the user to cities within the Emirate. Moreover, a clickable map of each emirate showing the major cities within is provided (Figure 3).



Figure 2: Index page.

3 The Cities Level

This level includes the major cities in each Emirate. Again, each city page provides a general description of the city and a clickable map showing all the architectural heritage sites in the city. This clickable map can lead the user directly to individual historical building without having to go through the intermediate levels (Figure 4).

4 Architectural Heritage Buildings Categorized Based on Buildings' Function

This level includes four buildings' categories: (1) Defensive; (2) Residential; (3) Religious (Mosques); and finally, (4) Commercial (Markets). The general description of each of these functions is listed in each individual page. Buttons to the next and the pervious levels as well as other pages on the same level are provided within each page.

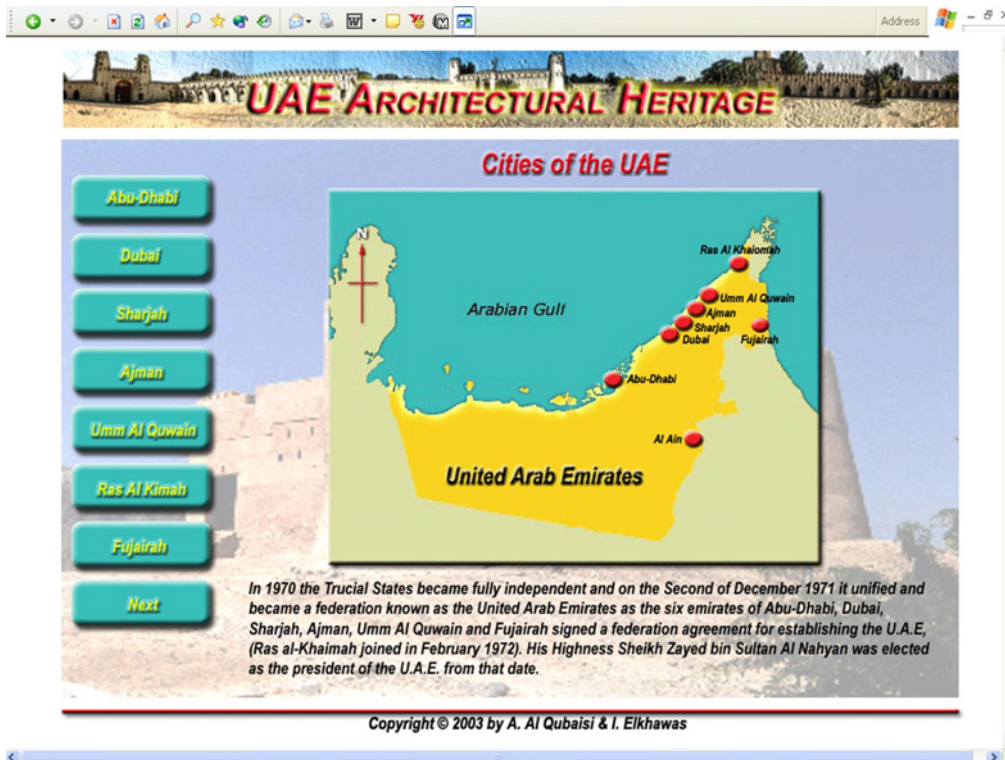


Figure 3: The UAE clickable map.

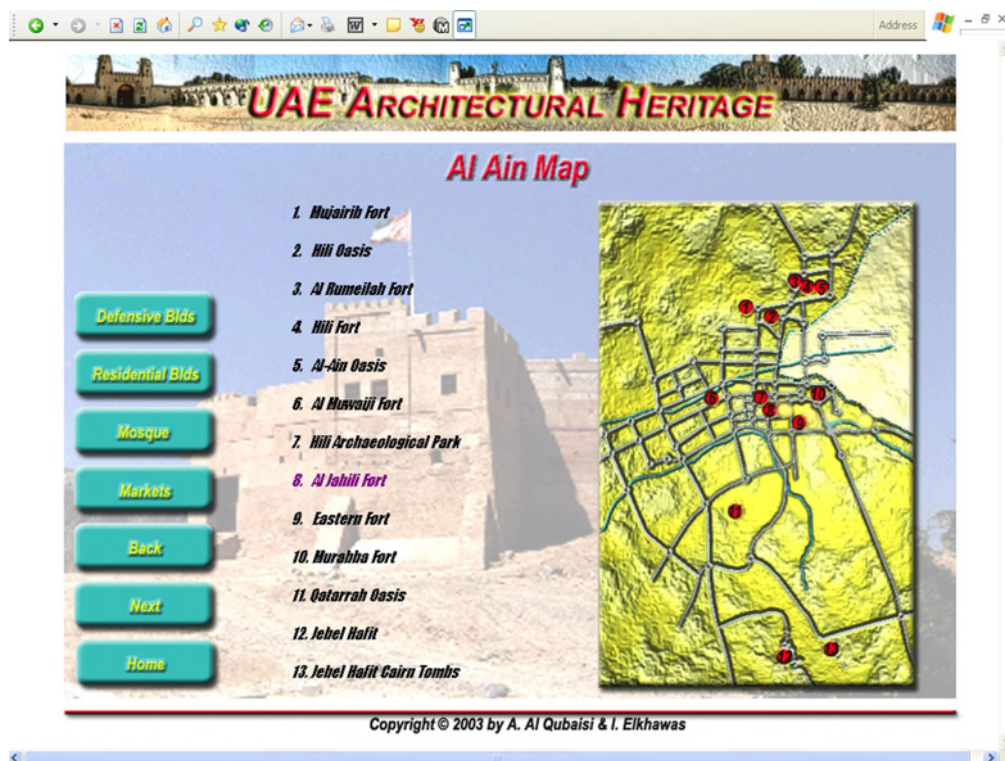


Figure 4: The Clickable map of Al-Ain.

5 Building Types within Each Function Category

This level includes different building types within each function. For example, Defensive buildings includes: (1) Forts; (2) Castles; and finally, (3) Watch towers. In each of these pages, buttons of the buildings in each of these categories are provided, as well as links to pervious and next pages (Figure 5).

6 Buildings Listed by Name, Based on Building's Function and Type

This level includes pages dedicated to each individual historical building. A number of pages are nested in relation to each building. These pages include: (1) Web-based building-history documentation; (2) Non-interactive internet based picture book system; (3) Pseudo-3D-immersive views; (4) CAD drawings; (5) Rendered images; and finally, (6) A VRML fully immersive virtual model for the building (Figure 6).



Figure 5: Defensive architecture page.

Testing Users' Response

The product of this research work has not been posted on the Internet. It was, however, presented to the students and the staff of Department of

Architectural Engineering at the United Arab Emirates University through open sessions. Students from other departments were also introduced to the proposed web site through similar sessions. The aim was to test the output of this study on a number of random users. This test was intended to evaluating the users' responses and to guide us in adjusting our work accordingly.



Figure 6: Building's level pages.

In this context, the views of a random sample of users were investigated using a simple questionnaire. This questionnaire was designed to measure and evaluate the following: (1) The frequency of using internet among the intended users; (2) The need for information on the cultural heritage of the UAE on the

internet; (3) The effectiveness of the proposed web site as a tool utilized to raise the awareness of architectural heritage issues in the UAE; (4) The appropriateness of the information hierarchy proposed in this site; (5) The adequacy of the information posted; (6) The view of the intended users on the practicality of surfing the proposed site; Finally, (7) the enthusiasm among the intended users for possible future expansion of this digital tool. Table 1 reports on the questionnaire and the responses of both groups.

Table 1: The questionnaire and the responses of both groups.

	Group 1	Group 2
1 What is your major source of information on the cultural heritage of the UAE? (Only one answer)		
Books	33.33 %	34.78 %
TV	22.22%	30.43 %
The Internet	37.04 %	17.39%
News Papers	3.70%	0.00%
Others	3.70%	17.39%
2 How frequent do you use the internet?		
Daily	44.44 %	13.04%
Five days a week	29.63 %	4.35%
More than once a week	18.52%	39.13 %
Once a week	7.41%	43.48 %
Never	0.00%	0.00%
3 Have you ever search the internet for sites on the cultural heritage of the UAE?		
Never	7.41%	17.39 %
Rarely	7.41%	13.04%
Sometimes	81.48 %	65.22 %
Often	3.70%	4.35%
4 In your own opinion, do you think that having this site or similar sites would increase the cultural awareness in the UAE?		
Strongly disagree	7.41%	0.00%
Mildly disagree	7.41%	4.35%
Neither agree nor disagree	7.41%	8.70%
Mildly agree	37.04 %	13.04 %
Strongly agree	40.74 %	73.91 %
5 Having tested this web site, do you think that it would be a good representation of the cultural heritage of the UAE?		
Strongly disagree	14.81%	4.35%
Mildly disagree	3.70%	4.35%
Neither agree nor disagree	0.00%	13.04%
Mildly agree	14.81%	17.39 %
Strongly agree	66.67 %	60.87 %
6 Do you think that the general information provided on this web site is sufficiently covering the subject?		
Insufficient	7.41%	0.00%
Mildly insufficient	11.11%	8.70%
Mildly Sufficient	44.44 %	39.13 %
Sufficient	37.04	52.17

	%	%
7 In your own opinion, how do you rate the information posted on the site representing individual buildings?		
Insufficient	3.70%	0.00%
Mildly insufficient	14.81%	8.70%
Mildly Sufficient	37.04 %	39.13 %
Sufficient	44.44 %	52.17 %
8 Would you be able to rely on this site or similar sites as a source of information of the cultural heritage of the UAE?		
Strongly disagree	3.70%	0.00%
Mildly disagree	7.41%	0.00%
Neither agree nor disagree	11.11%	8.70%
Mildly agree	37.04 %	30.43 %
Strongly agree	40.74 %	60.87 %
9 How do you evaluate the hierarchy of information provided on this web site?		
Excellent	29.63 %	34.78 %
Very good	48.15 %	30.43 %
Good	22.22%	30.43%
Fair	0.00%	4.35%
Poor	0.00%	0.00%
10 Do you think that this web site is user friendly?		
Strongly disagree	0.00%	4.35%
Mildly disagree	11.11%	0.00%
Neither agree nor disagree	7.41%	13.04%
Mildly agree	37.04 %	30.43 %
Strongly agree	44.44 %	52.17 %
11 Are you in favor of expanding this digital representation to cover all the architectural heritage of the UAE?		
Strongly unfavorable	0.00%	4.35%
Generally unfavorable	3.70%	0.00%
Uncertain	3.70%	4.35%
Generally favorable	51.85 %	21.74 %
Strongly favorable	40.74 %	69.57 %

Two main groups were targeted to participate in the evaluation process. The first group was those with architectural background and a direct interest in architectural heritage. The second group, however, was the rest of the public. Going through the results, it is clear the first group uses the internet more frequent than the second. The results also show that at some point the majority of both groups had searched the internet for heritage information. This proves the internet is an effective medium for conveying heritage information to the intended users. In general, both groups agreed that having this web or similar sites would increase the cultural heritage awareness in the UAE. It is fair to say that except on the subject of the frequency of using the internet mentioned above, both groups showed similar or close responses to all other questions.

With regards to the questions that specifically targeted the participants' opinion on this proposed web site, the majority of both groups strongly agreed that it is a good representation of the cultural heritage of the UAE. They also agreed that the information provided were sufficient and reliable. On the issue of the actual design of web site, most of the participants' graded the information provided as very good to excellent information. They also agreed that the site is user friendly. Finally, the vast majority of the participants are in favor of expanding this site to cover all the architectural heritage of the UAE.

Conclusions and Future Work

In this short paper, the authors introduced a pilot model for a national architectural heritage web-site. The current digital application covers only one city; however, one of the main future aims of this study is to gradually expand the web-site to include all historical architectural icons of the UAE.

Adopting this digital approach in documenting the architectural heritage has changed the work practice of those involved. Originally, the work was done manually in a non-centralized manner for some selected buildings. Even those buildings were not properly documented or easily accessible. Now and in light of this work, the beginning of a central, intensive, properly documented inventory of the architectural heritage is being realized. For those buildings already in the database, there is a direct easy-access way to obtain proper digital information on demand. Although, the digital documentation process is tedious and time consuming, on the long run it should be more reliable and easy to update.

The response we encountered though our open presentations showed that the vast majority of participants have found this web application to be effective, desirable, and reliable. They were also strongly in favor of expanding this application to cover the rest of architectural heritage icons in the UAE. However, this anticipated and recommended expansion will not be an easy task. The project is in need for adequate funds, more experienced working team, and a lot of patient.

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