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Enabling Rooted History: A Synopsis of Medieval Cairo

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Abstract

During the period of middle ages, the Islamic Empire reached its peak and art and architecture flourished to a great extent. Egypt in general and Cairo in specific was sometimes marginalized in history, but it was also glorified in other periods. This was mainly dependent on the interest of the ruling power at the time. The current work is an attempt to link literary work with spaces in the historical Islamic district in Cairo. It presents dynasty successions and their main characteristics in the location, design, art and architecture of the city. It also extends to cover a review of the available online resources of historic Cairo and the efforts towards the development of an interactive atlas of the city's spaces and places.
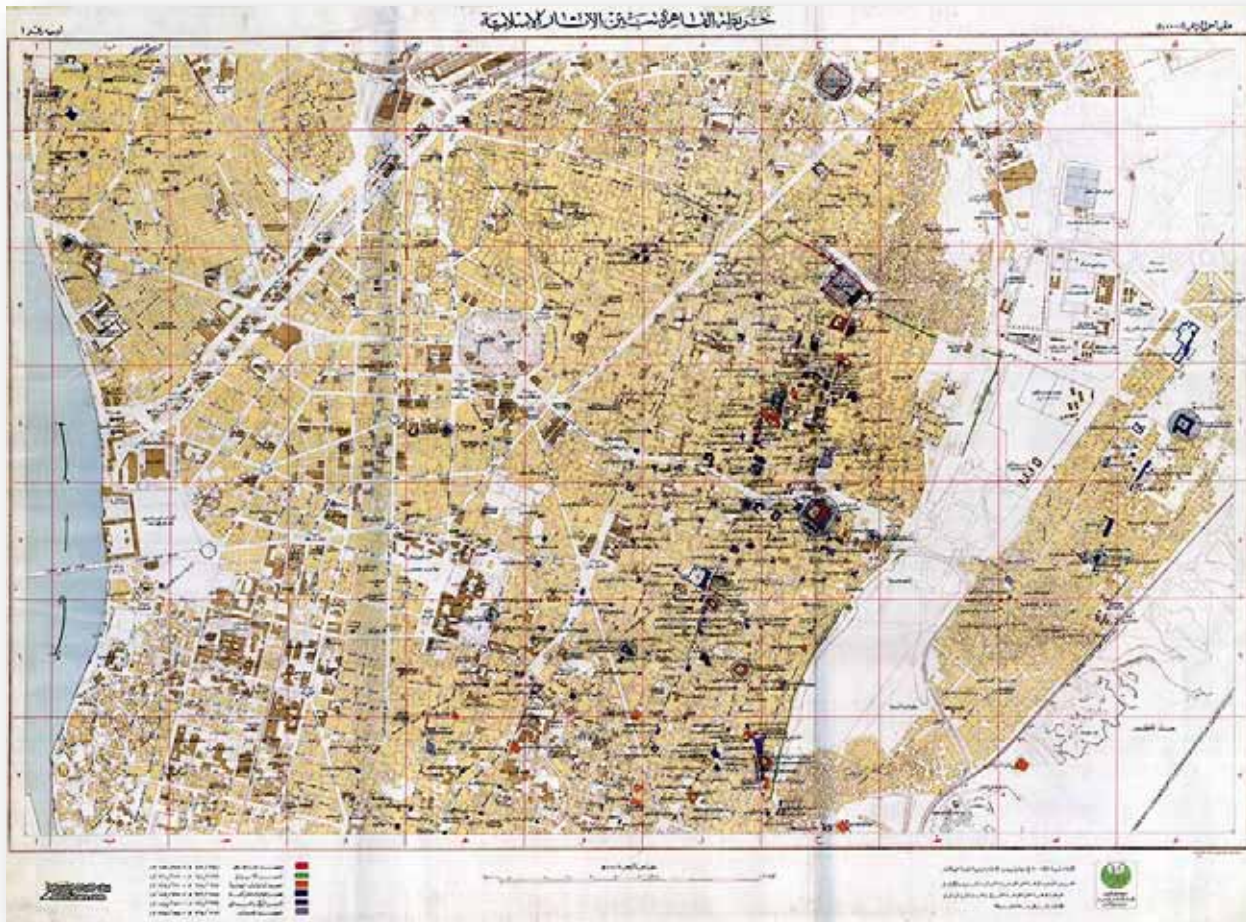
Introduction

Egypt is known with its wealth of historical monuments representing great civilizations that inhabited its land for thousands of years. For the western casual tourist, visiting Egypt means the indulgence in its Pharos civilization, old Egyptian customs and stories that do not necessarily constitute any importance in the shaping up of contemporary Egypt. This paper is concerned with bringing to light an era that touches modern Egyptians who are nowadays living its continuum. Not necessarily in its same exact shape or form, but in a very similar manner, and in many cases, in the same places, structures and spaces. It is the era that is well known to the west as the "dark ages". Far from being dark for Egypt and the Middle Eastern nations, the Muslim civilization flourished during the period between the 7th to the 18th centuries. With ups and downs like many other dynasties, but generally, it was the turn of this part of the world to reign the areas of scientific discoveries, literature, art, medicine and mathematics which would become, in later times, the basis for the western advancement and the birth of its flourishment.
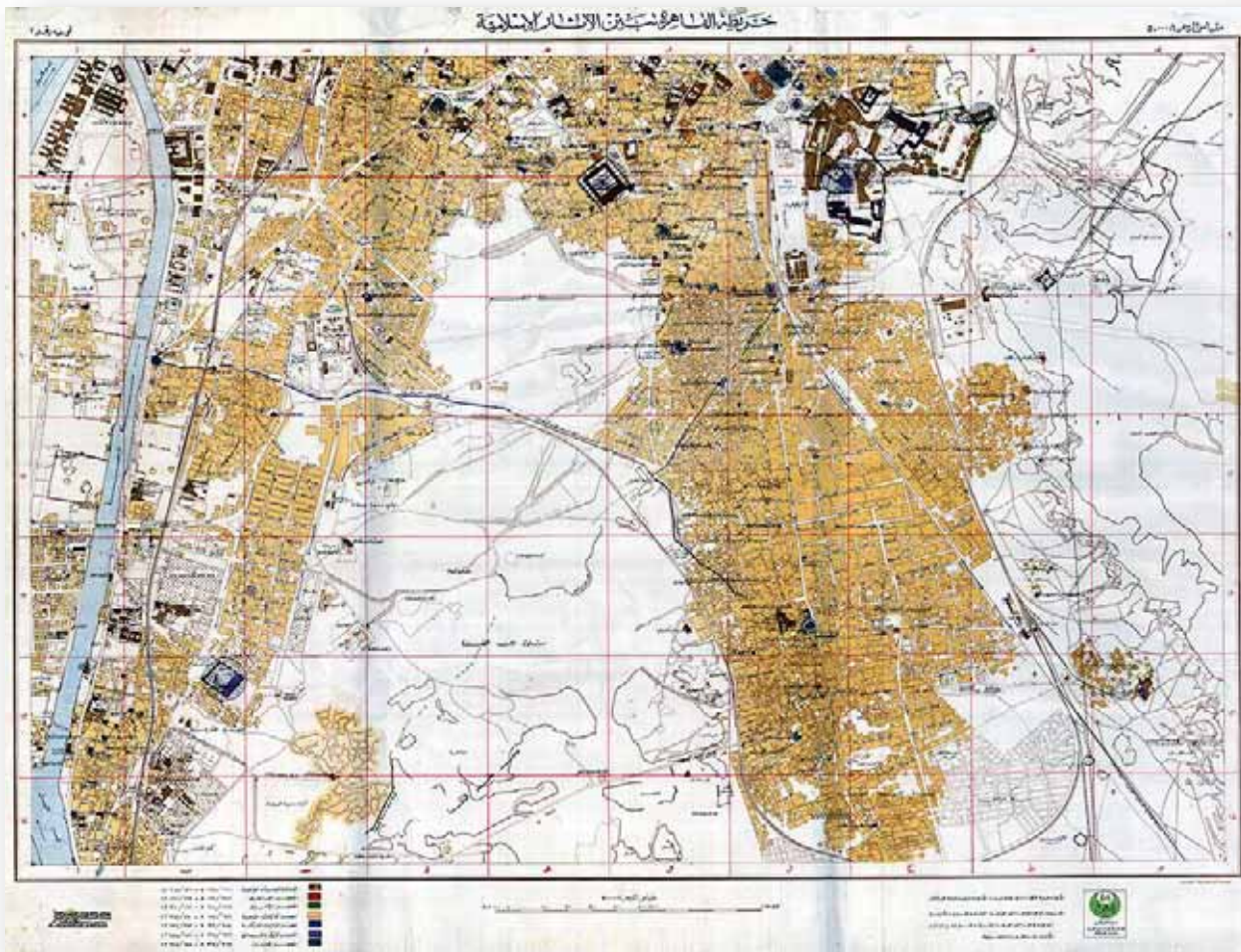
One would face an overwhelming number of references when attempting to study any aspect of this period of the Egyptian history. A wealth of documentation on the Islamic monuments that date back to the early 7th century exist in multiple forms, but very few would have the information (historical account, stories, legends, and description of the reasons and the circumstances behind its construction), place identification (in the form of maps or sketches), and the illustration (photographs, drawings, multimedia, ... etc,) in the same place. Those three elements (information, place identification, and illustration) are important to get a full appreciation of the place especially when it is put in context with

other events and/or monuments that existed in the near vicinity. Examples of such references that lack those three elements are:

- Two maps of Islamic Cairo (2) created by the Egyptian Surveying Agency in 1948 – In Arabic. Those are excellent maps and probably the only ones that gather all of the monuments that are registered with the Supreme Council of Antiquities (each with its corresponding unique ID). The maps constitute a reference to everyone with serious research agenda in the field of Islamic Cairo.

Map 1: Cairo Map Showing the Islamic Monuments, produced by the Egyptian Surveying Agency (ESA) in 1948 – Scale 1:5,000.

Map 2: Cairo Map Showing the Islamic Monuments, produced by the Egyptian Surveying Agency (ESA) in
1948 – Scale 1:5,000.

- Cairo Islamic Monuments website (*http://www.cim.gov.eg*) – In Arabic: an excellent website that was developed as a joint effort between the Egyptian Cabinet Information and Decision Support Center (ECIDSC), and the Supreme Council of Antiquities (SCA). It is a searchable database of all Islamic Monuments in Cairo, which has very useful information but not linked with any maps. Some of the photos are also outdated.

- ArchNet.org Digital Library (*http://www.archnet.org/library*): An architectural reference for many Islamic monuments in the world. It contains a wealth of information, references and some photos, but no maps. The site was mainly designed to study the architectural heritage as well as its corresponding art in the Muslim world. Many monuments have floor plan contributions from the site members in digital scanned and/or CAD format.

- Islamic Monuments in Cairo: A Practical Guide, by Caroline Williams (2008). The book is an excellent resource for field visitors to Islamic Cairo. It contains almost the three elements discussed earlier, as it divided the old district into manageable sections that can be visited in one trip and lists most of the monuments that fall within this path within the section. It also categorizes those monuments according to their importance and/or historical significance (very and less important to visit). It contains many maps that would guide the visit, but those maps lack accuracy and they are, more or less, sketches and nothing close to real cartographic representation of the area. Also photos are not recorded for each of the discussed monuments, and once in the field, it gets extremely confusing to identify them solely from the descriptive text. The book is more of a field guide than a documentation method of the monuments.

Nevertheless, this book's series of maps were used as the guide to the author's field visit. Those maps were gathered from different figures, edited together in Adobe Photoshop as much as possible to create a seamless mosaic of all of the maps of the core area of Islamic Cairo.

Mosaic of multiple map figures from Caroline Williams' Monuments of Islamic Cairo book.

- The Art and Architecture of Islamic Cairo, by Richard Yeomans (2006). The book is an excellent resource for information, photos and maps. The maps are in an excellent format but are used in seldom sections of the book. It presents the Islamic civilizations in Cairo by the different dynasties and their corresponding artistic and architectural characteristics.

- Other books or articles that contain many descriptive information either about the monuments themselves or about the socio-economic and political circumstances behind the structure or the era in which it belongs. They would discuss who was the ruler at that time, who built the monument and other national and international events (see list of references at the end of this paper).

Objectives

This study is concerned with the documentation of monuments in Islamic Cairo using information (or links to information), maps, and illustrations (photos from the past as well as the present) all in one centralized location to provide a comprehensive knowledge that can be tailored for different types of audience.

This main objective can be divided into the following sub-objectives:

1. Design and implement a geodatabase to hold the necessary information about the monuments; and,

2. Publish different online maps that would have the following audience as an aim:

   a. The casual tourist/visitor to explore the area prior to visiting the location;

   b. Stemming the interest and education of a more general audience to visit this region, read and research this flourishing period of the Egyptian history;

   c. Researchers who need to identify the location and the major characteristics of a monument or a group of monuments for architectural, art, historical, antiquity, and anthropological objectives; and,

   d. Researchers or field editors who would have an interest in updating the contents of the database, including disconnected editing, especially of the location as well as the basic information attached to it.

Geodatabase Design

The production workspace was built with a file geodatabase with the intention to convert it to an SDE work environment in order to enable versioning as well as feature service creation for online editing capabilities.

The following table lists the domains implemented in the geodatabase:

Code	Desc	AR_Desc
1	Mosque	مسجد/جامع
2	Sabeel/Kottab	سبيل وكتاب
3	Mosque/Madrasa	مسجد ومدرسة
4	Mosque/Madrasa/Khanqa	مسجد ومدرسة وخانقاه
5	House	بيت/منزل
6	Wikala	وكالة
7	Bab	باب/بوابة
8	Palace	قصر
9	Wall	سور/حائط
10	Mosque/Madrasa/Mausoleum/Hospital	مسجد ومدرسة ومقام/مدفن ومشفى
11	Mosque/Mausoleum	مسجد ومدفن/مقبرة/مقام
12	Mosque/Madrasa/Khanqah/Mausoleum	مسجد ومدرسة وخانقاه ومقام/مدفن
13	Madrasa	مدرسة
14	Hammam	حمام
15	Sabeel	سبيل
16	Kottab	كتاب
17	Iwan	إيوان
18	Well	بئر
19	Maq'ad	مقعد
20	Qubbah	قبة
21	Qa'ah	قاعة
22	Rab'	ربع
23	Tekkeyah	تكية
24	Khanqah	خانقاه
25	Manarah	منارة
26	Zawyah	زاوية
27	Mausoleum	مدفن/مقبرة/مقام
28	Houd (basin)	حوض
29	Ribat	رباط
30	Saqueefah	سقيفة
31	Saqeefah/Sabeel	سقيفة وسبيل
32	Fort (Qal'ah)	قلعة
33	Tower (Burg)	برج
34	Bimarestan	بيمارستان
35	Statue	تمثال
36	Armory	جبخانة
37	Courtyard	حوش
38	Khan	خان
39	Water Wheel	ساقية
40	Sahreeg	صهريج
41	Mill (Tahoonah)	طاحونة
42	Qanater	قناطر
43	Cave (Kahf)	كهف
44	Bridge	كوبري
45	Kushk	كشك
46	Minaret	مئذنة
47	Muesum	متحف
48	Madash	مدش
49	Tannery (Masbaghah)	مصبغة

Code	Desc	AR_Desc
50	Mussalah	مصلى
51	Meter (Mequyaas)	مقياس
52	Fountain (Nafoorah)	نافورة

The following table lists the main feature class (monuments) attributes and their associated domains:
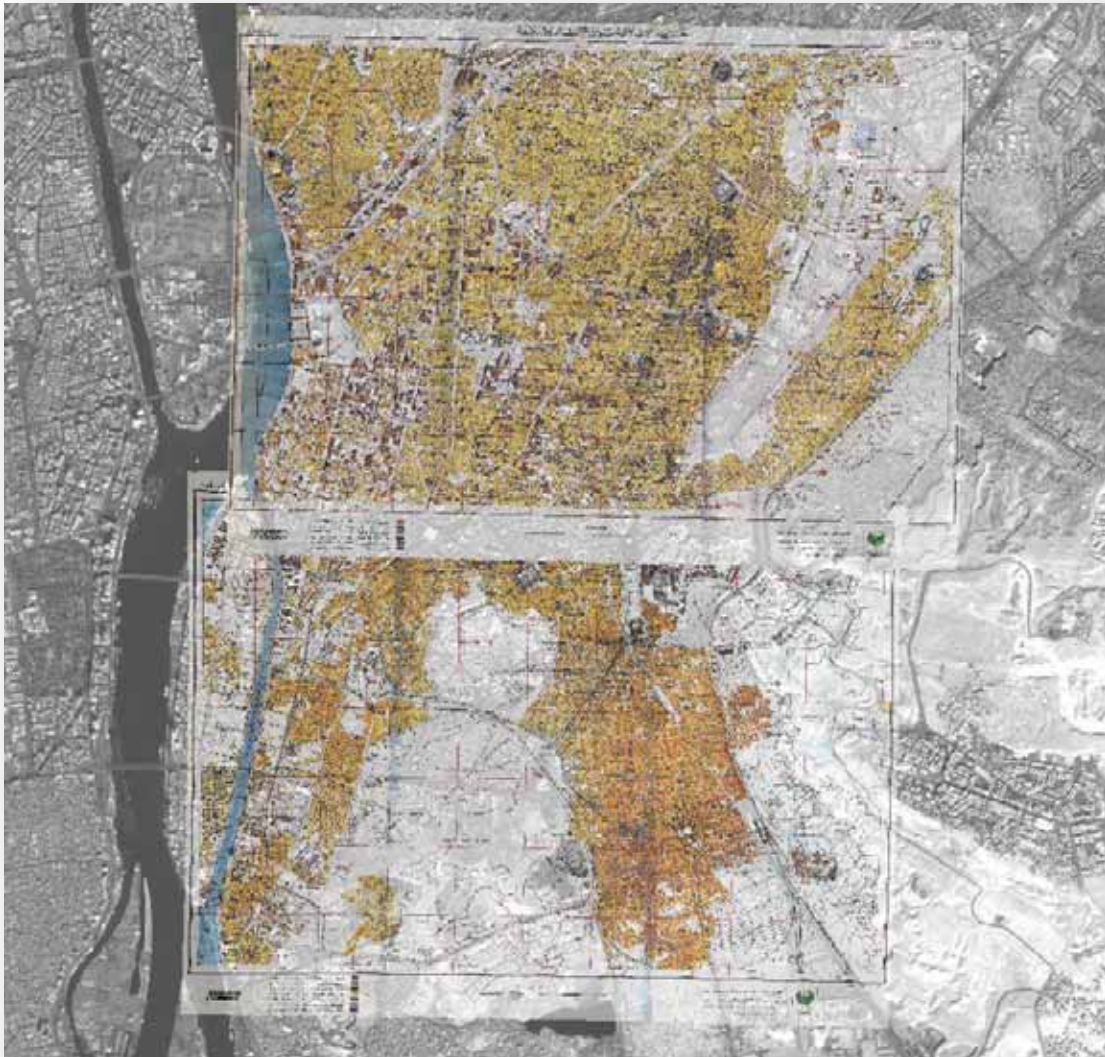
Field Name	Description	Domain	Domain Values
MON_NUM	Monument ID		
MON_TYPE_EN	Monument type (English)		
MON_TYPE_AR	Monument type (Arabic)		
MON_NAME_EN	Monument Name (English)		
MON_NAME_AR	Monument Name (Arabic)		
DATE_BEGIN_HIJRI	Beginning date in Hijri		
DATE_END_HIJRI	Ending date in Hijri		
DATE_BEGIN_GREG	Beginning date in Gregorian		
DATE_END_GREG	Ending date in Gregorian		
DATE_ESTIMATED_YESNO	Is date estimated?	YesNo	YES
			NO
DATE_CENTURY_HIJRI	Monument's Hijri century		
DATE_CENTURY_GREG	Monument's Gregorian century		
DATE_CENTURY_DESIGNATION_EN	Century designation (English)	CenturyDesignationEN	Beginning
			Middle
			End
DATE_CENTURY_DESIGNATION_AR	Century designation (Arabic)	CenturyDesignationAR	بداية
			منتصف
			آخر
BUILT_BY_EN	Built by (English)		
BUILT_BY_AR	Built by (Arabic)		
ERA_GENERAL_EN	Dynasty name (English)	ERA_EN	RASHIDUN
			UMAYYAD
			ABBASID
			TULUNIDS
			IKHSHIDID
			FATIMID
			AYYUBID
			BAHRI MAMLUK
			BURJI MAMLUK
			OTTOMAN
			MUHAMMAD ALI
ERA_GENERAL_AR	Dynasty name (Arabic)	ERA_AR	دولة الخلافاء الراشدين
			الدولة الأموية
			الدولة العباسية
			الدولة الطولونية
			الدولة الإخشيدية
			الدولة الفاطمية

Field Name	Description	Domain	Domain Values
			الدولة الأيوبية
			دولة المماليك البحرية
			دولة المماليك البرجية
			الدولة العثمانية
			دولة أسرة محمد علي
LOCATION_EN	Location description (English)		
LOCATION_AR	Location description (Arabic)		
PHOTO_HYPERLINK	Photo hyperlink		
CIM_HYPERLINK	www.cim.gov.eg monument link		
EDIT_SOURCE	Source of editing information	EDIT_SOURCE	www.cim.gov.eg
			Map of Islamic Cairo - ESA 1948
			Islamic Monuments in Cairo: Caroline Williams
EDIT_PERSON	Editor Name		
EDIT_NOTES	Editing notes		

Map Creation

Data entry followed the georeferencing of the two paper maps of Islamic Cairo (Egyptian Agency of Surveying). The base map used for georeferencing was a GeoEye satellite image of Cairo (2009). The final georeferencing result was acceptable as the map features were mostly aligned with their corresponding features on the satellite image.

The first map (north) was the main concentration of this study since it contains the majority of monuments from the Fatimid era, the founders of Al Qahera (Cairo).
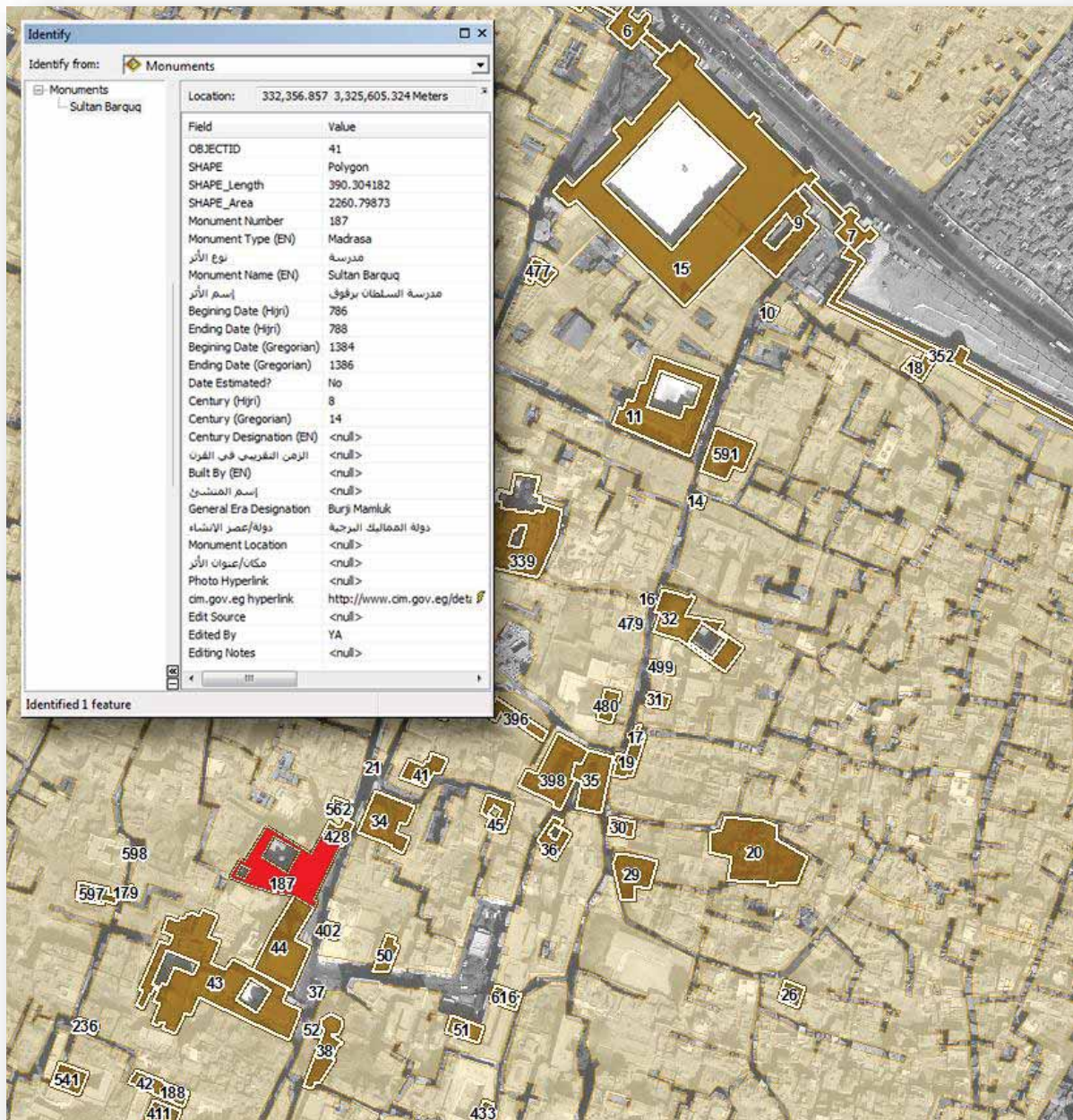
Georeferenced Maps 1 and 2 of the Cairo Map Showing the Islamic Monuments, produced by the Egyptian Surveying Agency (ESA) in 1948

Monuments were digitized using their actual shape from the satellite image while the reference maps were used to identify their location, name, and their official identification number.

The major street blocks were also digitized using the satellite image as a reference in most cases. Some difficulties were met especially in identifying narrow and covered alleys surrounded with relatively high elevation structures.

A general view of the northern portion of the digitized monuments.

A sample zoomed in version to the northern most portion of the digitized section shoing monuments labeled with their corresponding official ID as well as a sample identification of one of the monuments.

Web Mapping

As mentioned in the objectives, web mapping design targeted four types of audience/purpose:

a. The casual tourist/visitor;
b. Stemming the interest to visit this region;
c. Researchers; and,
d. Field editors.

A hybrid web mapping application could not fulfill all four types due to design and purpose constraints. A casual visitor to the web mapping application might be overwhelmed with tools that a field editor would need to update the data, while its simplicity for a casual visitor might not fulfill the needs of more sophisticated operations that a researcher needs.

Al Qahira .. The Conquerer: A Web Map Application

http://clarion.maps.arcgis.com/apps/MapTour/*index*.html?appid=a0d47085e2ac4d308dfc5c85300c5f9f&webmap=da7fac4fe35 84bc0a784b5b35a62621a

The application took advantage of the Storytelling with Maps (*storymaps.esri.com/home*) to create a simple documentation of a sample trip through one of the most well known areas that contains a wealth of monuments of different dynasties. It documents with photography, maps and simple information each of the visited monuments.
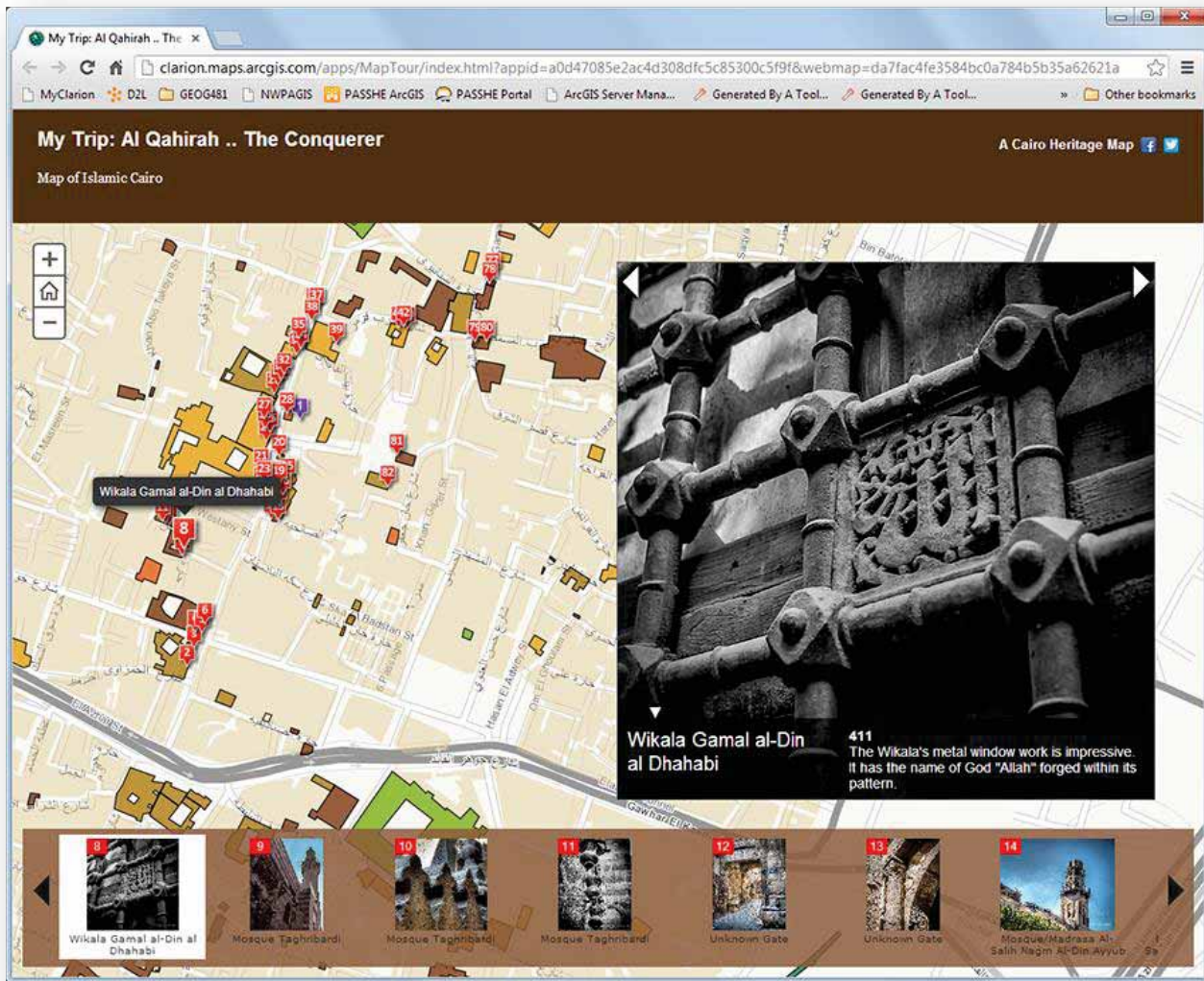
This map is fulfilling the aim of documenting a sample field trip to the area that would work nicely for a casual user as well as to stem the interest in visiting the region.
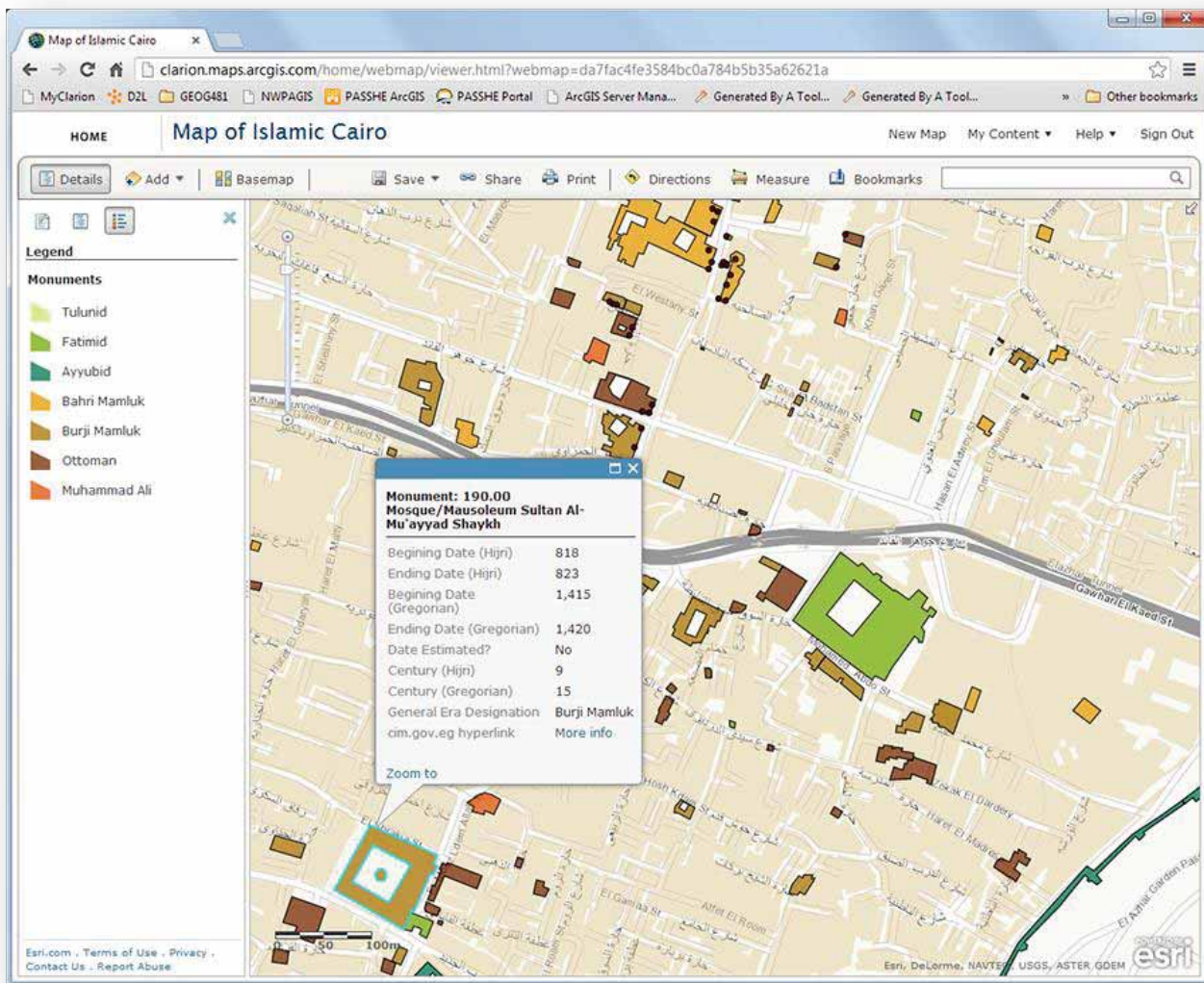
Map of Islamic Cairo: A Web Map

http://www.arcgis.com/home/webmap/viewer.html?webmap=da7fac4fe3584bc0a784b5b35a62621a

This web map created in ArcGIS online using a basic mapping service created using ArcGIS for server include a simple interface that would allow the user to identify each monument and explore the information stored in the attribute table. An English version is available and another Arabic one is planned.

This web map enables the research of the location, dynasty (by color) as well as the identification of the monuments. The attributes include hyperlinks to other websites that provide historical accounts on the monument, their location and the circumstances in which they prevailed.

A storytelling web map application that documents a field trip to the area in summer of 2012.

A sample web map that was developed using ArcGIS online for quick research of monuments and their corresponding information (attributes).

Future Work

At the current stage, the basic objective is met while expanding the database to cover the remaining set of monuments from the first and second reference maps is accounted for. This is a project in progress and work on developing more capabilities and functionality to both the database as well as the web mapping applications will continue.

Adding additional fields in the geodatabase to encounter for online resources is planned for, as well as including thumbnails of the photographs in the attribute table. If necessary, schema editing of the geodatabase will be carried out at different stages, and the corresponding web maps would be updated accordingly.

At the time of submitting this paper for the conference proceedings the multiuser geodatabase editing capabilities for committing local and online updates to the monument features is currently limited and will be fully developed in the following months. This will involve the development of both the hardware and software upgrades at the hosting institution (Clarion University of PA). An upgrade of the GIS web mapping server is taking place during the development of this paper and, as a consequence, all enterprise geodatabase handling and development is on hold for the short term.

Please contact Dr. Yasser Ayad if you have any questions, comments, recommendations or serious intentions for active collaboration in taking this project to a higher level.

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