

## Military Technical College Kobry El-Kobbah, Cairo, Egypt



## 11<sup>th</sup> International Conference on Civil and Architecture Engineering

ICCAE-11-2016

# The case of high valued educational buildings in Cairo, Egypt

(A documentary, analytical study of the hight valued educational buildings case, took place between 2005 – 2008)

#### Hanaa Moosa, Phd

The Higher Institution of Engineering at Al Shorouk, Architecture Department (Shorouk Academy)

#### **Abstract**

High Valued Educational Buildings (HVEB) in Cairo are buildings containing one or more value such as historical, esthetical or functional etc... and some of them are registered as historical monuments.

These buildings can be classified into two categories, the first are those buildings which were originally built to provide the educational function. The second were built to serve other functions and were reused later to provide the educational function.

Most Cases existing in Cairo belong to the second type and their origin goes back to palaces and luxurious villas established in the  $19^{th}$  and  $20^{th}$  century. Reuse of heritage buildings in Cairo was a common action to fulfill the needs of population growth.

Initially , the conflict is obviously physical, where the buildings are exposed to almost common incursions as a result of negligent use and negative reactions.

The conflict could be explained too in another way, as at the time these buildings were built , the public and the elite didn't share much common cultural interests . Builders and nowadays users are totally apart in their cultural backgrounds. Users do not recognize (HVEB) as their own heritage icon, history and identity .

The paper shall deal with political, cultural, economical and social factors as well as the historical background and laden values in (HVEB). Also, it will explore the common harms which inflicted to the buildings, which led, in some cases, to emergency evacuation and closings.

The study shall also discuss formal and legal policies dealing with (HVEB) status, mutual effect between buildings and users, users' opinion about these buildings and to how extent the educational function is fulfilled. It shall include too a number of detailed case studies.

The study aims to produce a comprehensive vision helping to further understanding of reusing high valued heritage buildings. As a result, an effective integrated conservation plan respecting the surrounding conditions could be devised. The study recommends the need of creative thinking, innovative ways of actions and methods to first surround and then overcome the problem. The actual goal is the possibility to create solutions to benefit from the present status of valuable educational buildings to act as a tool towards raising awareness of the upcoming generations to preserve their heritage instead of misusing it.

**Keywords**: Educational buildings, Heritage awareness, High valued buildings, Historical Palaces in Cairo, Design standards of educational buildings

historical palaces.



sr Sch. ex:English Sch. ategory



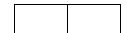
rahimeya Sch,
) category

#### 1 Identifying and categorizing (MEB).

This is a study about value –laden educational buildings i.e., buildings containing one or more value such as historical, atheistically or functional, and have been reused as educational buildings. Some of these buildings are, however, registered as historical monuments.

These buildings can be classified into two categories; the first are those buildings which were originally built to provide the educational function. The second comprises buildings built solely to serve various functions, other than educational ones, and later on, were re-used to provide educational functions.

Proceedings of the 11th ICCAE-11	Conference.	19-21 April.	2016
----------------------------------	-------------	--------------	------



#### 2 Reasons of existence

The transformation of palaces to re-use for educational functions was due to different reasons as shown below.

#### 2.1 Political Reasons - July 1952 revolution principles

The 23rd July Revolution principles -especially nationalization laws- right of free education, and liquidation of differences among various layers of the Egyptian society.

#### The Egyptian constitution issued in Jan 16,1956,confirmed in articles 49 and 51 the following:

- i.Education is a right for all Egyptians (guaranteed by the state ) which shall establish schools, cultural and educational institutions.
- ii. Education is compulsory and free in the primary stage in governmental schools.

#### Every day school project

Is the project which allowed using every land space available as an educational space, including the reusing of the royal's family and pasha's palaces schools.

**Note:** Also donations by original owners of palaces played an important role in reusing them as schools before the 1952 revolution.

#### 2.2 Economic and Social Reasons.

As a result of military conflicts and wars such as 1956 and 1967 aggressions, supporting liberalization movements in various parts in the Arab and African countries, acute financial shortage affected the domestic obligation of the state including the educational sphere.

Due to limited number of schools, evening classes system was introduced to accommodate the huge number of students. In some cases the same school was working for 3 periods daily. Inspite of this the capacity of each class was higher than normal.

#### 2.2.1 Effect of narrowing the gap between different social layers.

Internal migration from country side to big cities especially Cairo, came as a result of obvious difference in the economic rise in such cities, in addition to the gradual lessening of the psychological barrier between laymen and the elite of the pre revolution epoch. Residents in main cities soared from 42.63% in the year 1996, to 43.09% in the year 2006, from the growth population.

#### 2.2.2 Continuing of population increase.

It is considered the prime and main factor for the continuous need of more school buildings as the population in the year 2006 reached 76,699,427.

#### 2.3 Historical Reasons, History of creating the high valued urban settlements.

Going through several ages, urban settlements were established, each expressing its original age, circumstances, history, culture etc, such Islamic era with its different ages up to the French occupation and Mohamed Aly's family rule thereafter.



l'faran school, Abbaseya District



eed Haleem Pasha Palace, ElNasseria



eekar Hanem Palace, Kasr El Dobara Iagli Palace, f preparatory School



It is hard to mention all of the (MEB) cases belonging to all of these ages. Just a quick highlighting will take place on Mohamed Aly's Royal Family period as the majority of the cases are located in the settlements belonging to this age.

#### 2.3.1 Famous (MEB) s located in the most important historical urban settlements

The start will be with Shoubra, the first district settled by Mohammed Aly himself,

- Mohamed Aly palace (built between 1808 & 1821) has been reused as faculty of Agriculture, Ain Shams University. On year 2000 a wall separated the still existing educational zone and the other part rehabilitated by Supreme Council of Antiquites (SCA).
- Tosoun Pasha Palace, built on 1869, reused as a school on 1927. Four schools are now occupying the surrounding previous garden zone.
- The kiosk annexed to Touson Pasha stable -Omar ibn el khatab primary school is occupying it now.



- Mohamed Said pasha palace built on 1855, reused as AL Tawfeekeya Secondry School on 1886, the palace has been demolished on 1995. But the school is still occupying the same place.



rahimeya School





eva School



ın Hussien Kamel Palace, Masr Al Gbbaseya

#### El Abbaseya district by Abbas Helmi the First.

- El Za'faran palace, built on 1922, reused as Foud Al Awal Secondry Scool on 1952, Reused later as administration quarter of Ain Shams University.

#### Al Ismai'leya ,Al Moneera and Al Enshaa districts.

- Said Haleem Pasha palace, built between 1897 & 1901, had been occupied as Al Nasseria Preparatory School, now is evacuated due to a slab failure
- Casdagli Palace, used as Aly Abdulatif Preparatory girl's School.
- Princess Shweekar Hanem Palace, used as Kasr Al Dobara Experimental School. It has been rehabilitated recently.

#### Zamalek district.

- Isma'el Pasha Palace built on 1923, reused as Educational Music Faculty.

#### Heliopolis – Masr Al Gadeea – District.

- Sultan Hussien Kamel Palace, used as Masr Al Gadeeda Girl's School on the year 1960.

#### **3** Factors affecting (MEB)

Among factors affecting (MEB) status, the study shall review on the policy making and the economical one.



Figure 11, Saeed Haleem Pasha Palace ElNasseria Preparatory School 3.1 Policy Factors:

#### 3.1.1 General Authority of Educational Buildings (GAEB).

GAEB is a governmental entity affiliated to ministry of education and responsible of planning, designing, construction and maintenance of educational buildings. Real Estate Department, being part of the GAEB, has the authority either to buy the valuable educational buildings or return them to their original owners. The maintenance departments in GAEB classify buildings according to their construction dates. The oldest category comprises buildings established before year 1950 .As such no real importance or special attention is attached to the value of the building.

Only in cases of buildings officially registered as (antiquity), recommendations for any required maintenance, repair, demolition etc., shall apply upon consultation with the Supreme Council of Antiquities SCA.

#### 3.1.2 Supreme Council Antiquities (SCA).

It has been established pursuant to Republican Decree no. 82 for the year 1994, and comes directly under supervision of the minister of culture. SCA has supervisory responsibilities over all officially registered antiquities, among them a number of (MEB), even if they were evacuated and are no more performing educational functions, such as Saeed Haleem Pasha palace – El Nasseria Pereparatory school (evacuated)and Casdagli palace – Aly Abdulateef school (still performing).

#### 3.1.3 Heritage Conservation Committee.

It is affiliated to the Housing Directorate, Cairo Governorate. Since its inception it conducted, through many working groups, various surveys of valuably distinguished buildings within the capital. Such surveys were later subject to various revisions. Later on, law no. 144 for the year 2006 was issued with the main purpose of conserving high valued buildings. The law prohibits demolition of any such buildings unless it constitutes imminent danger to the users or upon final judiciary verdict.

#### 3.2 Economic Factors:

The economical factor, however, is clearly expressed in ability of the individual person to satisfy his essential needs and requirements, including suitable dwelling, good nourishment, and effective education. This last need is affected by the continuously increasing numbers of students, which surpass schools capacities. Deterioration of the economic status, due to low income and inability to cater for required daily materialistic needs-among other various problems – may lead students to quit studying, which is generally known as "Students Leakage".









em Palace Kasr El DobaPalace Faculty of Fine Artseneen Prep. School cover expenings.

/ building.

/e the staircase.

Naturally, and as a result of all such circumstances, it becomes very hard to convince such a citizen to understand the need to know and to be aware of heritage values, unless his essential and primitive physiological and safety needs are satisfactorily fulfilled.

These conditions have, for the ordinary citizen, ultimate decisive attitude towards negligence and non awareness, or even mere appreciative feelings towards valuable buildings. This is the first step of estrangement between the individual and heritage world in general and educational buildings in particular. In this section, site research observations points will take place as a reflection of the actual Public heritage awareness considering the case of (MEB).

#### 4 Case Studies

It is hard to figure out detailed individual cases, so it would be much more practical to mention chosen cases exposed to common harms.

#### 4.1 Common Physical harm

(MEB) are exposed to almost common incursions such as: electrical connections, sanitary installations, painting on walls and pillars, and hanging objects on walls. They also similarly need constructional support either for roofs, staircases and many other elements. Some of the cases really approached a highly sensitive harm scale, as slab failure, which led to an emergency evacuation and closings.







l'faran Prep. Sch. Replacir.l mehaneya Prep. Sch. stassayneya Sec. Sch. Ceilii







d Haleem Pasha Palace, ElNasserseya Prep. Sch. flooring replacemdagli Palace, Aly Abdu y units. ical connections.

#### General incursions to most of the (MEB) cases

Constructing individual buildings either for the direct educational function or for a certain service through:

- Additions on the building itself.
- Extending some parts of the building vertically.
- Constructing whole new buildings in vacant areas.
- Closing façade openings.
- Covering existing open areas in the buildings.
- Supporting structural failures of slabs and stairs.
- Replacing new stair steps.

#### Walls and floorings

- Replacing original deteriorated floorings with new ones.
- Re painting walls and ceilings.

#### **Electrical connections**

- Adding electrical connections to fulfill educational lighting, computer rooms and other needs.
- Installing ceiling fans.







Itan Hussien Kamel, Masr Abbaseya Prep. Sch instahaneya Prep. Sch. ce Ceiling fan installed.









ashed glass.

nting on marble Column's baden door destruction.

Pasha Palace, El Nasseria Prep. Sch.

#### **Toilets**

- Building individual toilet units in the playground.
- Replacing original saintary units with other ones.

#### Sanitary installations

- In some cases new sanitary installations are added.

#### Other incursions

- Painting on walls and columns .
- Covering walls with coloured papers.
- Hanging a lot of guiding charts.
- Drawing and wrighting on walls as negative actions from some students.

  <u>Other harms</u>
- Destruction of whole heritage buildings and building new modern ones.
- Destroying façade ornaments breaking.
- Wall cracks appeared after 1992 earthquake.
- Destruction of wooden doors and smashing windows glass.

#### The cases could be evaluated through two trends:

#### 4.1.1 General awareness of the importance of (MEB)

Site visits to various (MEB) revealed that majority of users, teachers and students lack the least adequate awareness of their building value.

However, rare individuals are aware of the importance of high valued buildings and can sometimes influence the surrounding users about it.

The librarian in Masr Al Gadeeda Girl's School, was well aware of the heritage importance in respect of identity and culture. She was keen on collecting data about the palace of Sultan Hussien Kamel, and organizes it manually in volumes.

It was noted that privately owned and managed (MEB) s, financially well - off through high fees and parent's donations, can afford suitably maintained building and surrounding environment.

Although the researcher explained importance of highlighting these positive cases, she was banned from entering or even photographing. This confirms that heritage awareness cannot be confined only to materialistic capabilities. As such, the attitude towards only materialistic conservation cannot create the required awareness.

#### 4.1.2 Compatibility of (MEB) with educational function needs

It is essential, as well, to gauge the efficiency of valuable educational buildings in fulfilling the educational function requirements.

Using the established environmental designing criteria for educational functions, such as treatment of lighting, temperature, and sound factors, and their effect on designing elements such as orientation, formation, landscaping, etc... and also the areas and other different architectural elements needed for the students on one hand, and ensuring their safety on the other.

The following cases prove that buildings designed and constructed basically to perform the educational function achieve this requirement, while the reused buildings fail to fulfill them in many aspects.

- Ahmed Abdul Aziz School, Students get their classes break on sequential order as the playground's capacity is not enough for all students. Also it suffers a problem with orientation and lighting because of the narrowness of the surrounding spaces between the school and the neighbouring buildings.
- Talat Harb Al Faneya School , Greenery doesn't achieve the needs of the educational purpose, while the corridors are not wide enough for the passage capacity.

These schools are Commonly lacking emergeny exits , or safety aspects such as the direction of doors openings and the nessecity of having a clear vision on a proper height through glass panels in partitioning doors. Also the structural system appears to be inadequete to the rough conducts of students , resulting in the need to support stairs and ceilings .

#### 5 The effect on users – needs, culture, identity

All previously mentioned observations about the physical harms impacting these buildings resulted into a critical disturbance in the relation between (MEB) from one side and the users and decision makers from the other as regards cultural identity awareness. The disturbance aspects could be mentioned as follows:

User's opinions towards the building - Teachers and students.

- In Saeed Haleem Pasha Palace (Al Nasseria Preparatory School), after being evacuated and closed, one of the side wings of the building was used temporarily as a primary school. The students didn't even know the Arabic word for ornaments "zakharef" naming them as "matahef" which means "museums' in English.
- In Shweekar Hanem Palace, Kasr El Dobara School, one of the teachers was wondering why the researcher has chosen this building as it is not really highly valued because the façade ornaments, in his opinion, are not too many!!

Unfulfilling the student's needs, Maslow



- In el Ibrahimeya School, at the time the heritage building was evacuated and closed, waiting for decision either to demolish or keep it, some students were annoyed that the capacity of the building to which they were transferred isn't enough for them and asked that a fast procedure should be taken even by deciding to demolish the old building.
- As previously mentioned, students are not able to enjoy or fulfill their needs within the present incapable educational environment. In addition, students sometimes suffer from hard living circumstances such as low incomes, poor housing, nourishment, health and streets and traffic difficulties, etc .... According to Maslow all of these could be considered as a great barrier towards perception of the valuable heritage around them.

The question still persists whether the economic status and other surrounding obstructions shall continue to act as hindrances towards developing and promoting heritage awareness, or there is still a possibility to create ways and solutions to benefit from the present status of valuable educational buildings to act as a tool towards raising awareness of the offspring and coming generations to preserve and maintain their heritage instead of misusing it.

The economic factors accumulated through many generations accompanied with negligence towards educating and developing the case of awareness must not be (the unconquerable giant). Solution is very difficult but not impossible. It needs creative thinking, innovative ways of actions and methods, courageous efforts to first surround and then overcome the problem. It is noteworthy that the Egyptian culture was famous of assimilating foreign cultures and civilizations reproducing them as a pure Egyptian product. However, the cultural gap that existed between the public and elite in Egypt during the last 200 years has not yet been fully bridged. This is proven through continuous indifference towards various elite cultural architectural products, represented for this study, in valuable educational buildings. This is the logic outcome of loss of cultural awareness.

Since  $2008 \ till \ 2016$ , the case of MEB was not solved, yet some givens has changed towards a higher complications, as the

#### **Recommendations**

According to real facts , evacuating HVEB will not be available due to economic shortage and the urban narrowing

Reformulation of the existing reuse (indirect methods to spread heritage awarness):

#### Political context (Legislation and coordination level):

- Launch a documentary campaign of the HVEB in which should include different aspects (the building itself and its history, laden values, location to the surrounding urban, relation to the surrounding society, the cultural history and the surrounding changes and others)
- Activate the existing laws and pass new ones needed for conserving the non-monumental heritage buildings in
  order to coordinate dealing with them, set and put dissuasive sanctions for any encroachments to the building.
- Pass laws concerning tax breaks in order to attract investors for further uses to the buildings, conditioned by conserving them.

- A full coordination should take place between different authorities responsible of the case of HVEB, either they are monumental or not in order to avoid any contrariety and to unify the efforts.
- A member of Heritage Conservation Committee should join the consultant committee of the General Authority of Educational Buildings (GAEB).
- Formal codes for reusing monumental and heritage buildings should be produced.
- Find different solutions to reduce the number of students attending MEB , in order to accommodate the buildings' ability to afford loads and motions.

#### Social and cultural aspects:

- Students:
- work on classical conditioning between the youth and the value laden buildings.

#### Students' Appearance and daily activities

- Give a distinctive and a unique character for every school throughout strictly and firmly applied internal regulations concerning the students' behavior towards the building.
- Choose a logo for the school and a sign for the students to distinguish the HVEB's students from others.
- Issuance of a booklet about every school of the case in which includes its history of the building; to boost awareness of users ( students , employees and teachers ), of heritage importance.
- Get benefit of the worldwide researches and experiences of such similar cases and how they dealt with the surrounding environment and organized the meant by activities.
- Unusual suggestions should be adopted:
- If there is a possibility of evacuating some buildings from the educational function, they could be kept as schools still ,but within a different type of education .Or, to accept limited number of students and the priority will be to the students who proved themselves and were distinguished while attending a training course concerning heritage , or mastering a type of art or others. And in return they would get benefits such as scholarships.
- launching an annual festival in order to define the history of this schools and to be supported by media and meant by authorities.

#### Curricula

Set Curricula and activities needed to develop the heritage awareness to the students.

#### Cultural awareness

## Proceedings of the 11th ICCAE-11 Conference, 19-21 April, 2016

- Write Short stories about the original owners of the palace.
- Spread the culture of how to deal with heritage buildings through workshops(identifying different architectural styles, building materials and others).

#### **Teachers**

- Organize training courses and workshops for teachers dealing with HVEB buildings
- Advantages should be offered to whom have the ability to apply such training content in reality.

#### **Decision Makers**

- Organize an annual specialized conference to put together the conservation specialist and the users of such reused buildings as schools, hospitals or others.
- Organize symposiums .
- Workshops about building, intervention and maintenance method.

#### Society

- Organize public symposiums and lectures for the community in order to spread the awareness of conservation issues, under the supervision of the meant by authorities.
- General media support subsidized from the state.
- Outsourcing of scientific researches in different fields as the social, Psychological and other fields.

#### Economic context

• Invest in the HVEB "while being occupied by the educational function":

As the educational buildings are vacant through the summer vacation, midterm vacation and Weekly holidays, in addition to the evening and night times after the school day activities are done.

So, it is possible to allow activities in the building, in order to serve the surrounding community, such as exhibitions, filming television programs, or others, This could afford the school an income as a percentage of the activities' revenue, in which could be used to provide services for students or for the building's maintenance.

#### **Further Researches:**

Finally, a following research took place by the author in order to achieve a balance between benefiting the community throughout the buildings' new uses and conserving them. As in many cases in Egypt, either the concept of museamizing buildings within the absence of visiting museums culture, or reusing the building in a vital function to the community such as this paper's case and all of the negatives actions resulted.

#### References,

- 1. A.H. Maslow, (1943), a Theory in Human Motivation, originally published in Psychological review 50,370-396z.
- 2. David Kincaid, Adapting Buildings for Changing Uses, Guidelines for change of use Refurbishment, Taylor & Francis Group, London and New York, 2002
- 3. Edited by Sandy Isenstasdt and Kishwar Rizv , Modernism and the middle east , Architecture and Politics in the Twentieth Century, university of Washington press, seattle and London.
- 4. Jokilehto Jukka, A history of Architectural Conservation, Elsevier Butterworth-Heinemann, G.B, 1999
- 5. Sedky Ahmed, Living with Heritage in Cairo, the American university in Cairo Press, Egypt, 2009
- 6. Vinas Salvador, Contemporary Theory of Conservation, Elsevier Butterworth-Heinemann, G.B., 2005

#### Websites (last viewed on 29th of Feb 2016)

- 1. http://www.ericdigests.org/pre-9217/built.htm.
- 2. http://www.esc-obog.org/bwschool.html

#### Arabic References

- 1. المركز الفرنسي للثقافه و التعاون التابع لسفارة فرنسا بجمهورية مصر العربية ، ( 2005) ، ذكريات مصر الجديدة، مؤسسة الأهرام
  - 2. أماني السيد عبدالرحمن، (2003)، المواتيق و التوصيات الدولية للتعامل مع التراث المعماري والعمراني،
    - 3. رسالة ماجيستير غير منشورة، كلية الهندسة، جامعة القاهرة.
    - 4. الهيئة العامة للأبنية التعليمية، التعليم المشروع القومي حتى عام 2000، مطابع روز اليوسف الجديدة
      - الهيئة العامة للأبنية التعليمية ، السجل التاريخي للهيئة العامة للأبنية التعليمية . الهيئة العامة للأبنية التعليمية ، 1994 ، الهيئة العامة للأبنية التعليمية ، دار القبس للطباعة .

    - 7. الهيئة العامة للأبنية التعليمية ، 1995 ، استراتيجية الصيانة وأساليب وبرامج التطبيق، الإدارة العامة 8. للبحوث والدر اسات.
    - و. التقارير الفنية الصادرة من الهيئة العامة للأبنية التعليمية .
       10. سامي سليمان محمد السهم ، التعليم والتعيير الاجتماعي في مصر في القرن التاسع عشر ، الهيئة
      - 11. المصرية العامة للكتاب.
  - 12. سامي سيدهم جاد سليمان، منهاجية إعادة توظيف المباني التراثية، رسالة ماجيستير غير منشورة، كلية
    - 13. الهندسة، جامعة عين شمس.
  - 14. سمية بهي الدين محمد، إستراتيجية الترميم والحفاظ على المباني الأثرية والمباني ذات القيمة التاريخية
    - 15. بهدف تنمية الوعى الحضارى القومي، رسالة ماجيستير غير منشورة، كلية
      - 16. الهندسة، جامعة عين شمس.

### Proceedings of the 11th ICCAE-11 Conference, 19-21 April, 2016



- 17. سهير زكى حواس، (2002)، القاهرة الخديوية رصد وتوثيق عمارة وعمران القاهرة، 2002
- 18. سهير زكى حواس، (2002)، القيم التراثية ومدلولها الحضاري حالة القاهرة الخديوية منطقة و الدولى للبناء والتشيد انتربلد ، ورقة بحثية.
- 19. طارق محمد فاروق حسام الدين، فلسفة تصميم البناء التعليمي على ضوء نظم التعليم والمؤثرات الثق غير منشورة، كلية الهندسة، جامعة عين شمس.
- 20. عبد المنصف سالم نجم ، (2002) ، قصور الأمراء والباشاوات في مدينة القاهرة في القرن التاسع عشر
- (دارسة تاريخية وثائقية ) مكتبة زهراء الشرق, 116 شارع محمد فريد القاهرة. .21
  - 22. ماجد محمد، (2003)، جدلية مفهوم المؤسسة التعليمية ما بين الثقافة والعولمة، رسالة ماجيستير غير 23. منشورة، كلية الهندسة، جامعة القاهرة.
    - 24. محمد أحمد عبد القادر، ( 2003)، تقييم الأداء البيئي لمدارس التعليم الأساسي و تأثيره على الأبعاد
    - 25. الوظيفية و الإنسانية، رسالة ماجيستير غير منشورة، كلية الهندسة، جامعة القاهرة.
- 26. نسرين محمد رفيق محمد اللحام، الحفاظ على المبانى التراثية وتوظيفها، رسالة ماجيستير غير منشورة،
  - 27. كلية الهندسة، جامعة عين شمس.
  - 28. نهاد سعيد احمد الملا، توظيف الفراغات المعمارية لتنمية الوعي الثقافي للطفل دراسة حالة في
    - 29. التجمعات العمرانية لذوى الدخل المنخفض ، رسالة ماجيستير غير منشورة، كلية
      - 30. الهندسة، جامعة عين شمس.
  - 31. هناء موسى عيسى ، المبانى التعليمية ذات القيمة كاداة لرفع الوعى التراثي لدى الأجيال القادمة ، ماجيستير غير منشورة، كلية الهندسة، جامعة القاهرة.

المدينة، المؤتمر

رسالة ماجيستير

(2008)، رسالة