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## TOWARDS ADAPTIVE REUSE OF THE INDUSTRIAL HERITAGE IN MINET EL-BASSAL DISTRICT AT ALEXANDRIA

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## Abstract

Industrial properties are functional buildings. They are not built to fulfill the aesthetic needs of their users or communities. In urban areas of large cities, they are unlikely to have the privilege of attracting kudos for the communities in which they are situated. In Egypt, and precisely in the metropolitan city of Alexandria, Minet El-Bassal district was once a famous Alexandrian Industrial district. It was built around 1810 overlooking the only seaport in Egypt at that time. It consisted of headquarters of international trading companies, large store-houses, workers housing and "the bourse de cotton" an international marketing center for Egyptian cotton". Brokers came from all over the world to this area; cotton was a major agriculture crop, totally for export under the British occupation in Egypt (1882-1956). The district was -and still is supported by a well designed transportation network either for people or goods, this network helped connecting the district with all vital spots of local production and marketing in Egypt. By the early 90s, the Egyptian government followed a new policy of liberalization. The immediate impact was a reduction in cotton cultivated area, total production and manufacturing. An industry, which had sustained large communities of people, became redundant. Many of the cotton factory buildings in Minet El-Bassal district are on their way to be demolished and the sites will be cleared for new apartment blocks. It is essential to create awareness of the heritage value of Minet El-Bassal district's industrial buildings -particularly of its cotton factories before they are demolished. This paper aims to document Minet El-Bassal district as an industrial coastal region and to discuss the various options to revitalize the neglected old industrial properties in the area, thus preserve the identity of the place and improve quality of life. The work proposed in this paper is based on the steps of a design studio course offered for fourth level architecture students at Pharos University in Alexandria, where the authors, as demonstrators of the course supervised the documentation work and suggested the rehabilitation of a group of industrial buildings in the study area.

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## **Abstract**

*Industrial properties are functional buildings. They are not built to fulfill the aesthetic needs of their users or communities. In urban areas of large cities, they are unlikely to have the privilege of attracting kudos for the communities in which they are situated. In Egypt, and precisely in the metropolitan city of Alexandria, Minet El-Bassal district was once a famous Alexandrian Industrial district. It was built around 1810 overlooking the only seaport in Egypt at that time. It consisted of headquarters of international trading companies, large store-houses, workers housing and "the bourse de cotton" an international marketing center for Egyptian cotton". Brokers came from all over the world to this area; cotton was a major agriculture crop, totally for export under the British occupation in Egypt (1882-1956). The district was -and still is supported by a well designed transportation network either for people or goods, this network helped connecting the district with all vital spots of local production and marketing in Egypt. By the early 90s, the Egyptian government followed a new policy of liberalization. The immediate impact was a reduction in cotton cultivated area, total production and manufacturing. An industry, which had sustained large communities of people, became redundant. Many of the cotton factory buildings in Minet El-Bassal district are on their way to be demolished and the sites will be cleared for new apartment blocks. It is essential to create awareness of the heritage value of Minet El-Bassal district's industrial buildings -particularly of its cotton factories before they are demolished. This paper aims to document Minet El-Bassal district as an industrial coastal region and to discuss the various options to revitalize the neglected old industrial properties in the area, thus preserve the identity of the place and improve quality of life. The work proposed in this paper is based on the steps of a design studio course offered for fourth level architecture students at Pharos University in Alexandria, where the authors, as demonstrators of the course supervised the documentation work and suggested the rehabilitation of a group of industrial buildings in the study area.*

## **KEY WORDS:**

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## **INTRODUCTION**

The creative reuse of existing resources has the advantage of community acceptance, avoiding the opposition often faced by new construction. Industrial properties, particularly in urban areas of large cities, are unlikely to enjoy the privilege to attract neither investors nor citizens to the communities in which they are situated. But at the same time communities need to preserve their natural integrity of historic resources which builds a unique sense of place to which people are naturally drawn to live, work and play. The importance of this research paper lies within the framework of promoting cultural awareness among Alexandrians, to become acquainted with the stock of civilization and cultural heritage of their city.

Recycling derelict industrial areas is a necessity for sustainable city development in the optic of conservation of industrial heritage. (Loures Luis and Thomas Panagopoulos 2007, 180) It is important to investigate how to preserve buildings and areas which are no more capable of securing their future, due to the decline of their need, and which resulted in creating an abandoned unsafe environment, that encouraged the appearance and breeding of unhealthy communities.

Minet El-Bassal is an underdeveloped urban area, close to the Central Business District (CBD) of the city of Alexandria. It became over time un-inhabitable, which makes its industrial buildings venerable to demolition. Such heritage faces the unviable future of becoming one of the city's cement residential blocks, so the past and history of such areas will be forgotten and extinct. For example; new projects which adapts heritage buildings, such as; Albert

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Dock in Liverpool Westergasfabriek in Amsterdam and Zollverein in Essen (Ebert Ralf, ed. *Kreative Ökonomie und kreative Räume* 2008, 120) present genuine challenge to architects and designers to find innovative adaptive reuse solutions for such heritage. In the case of Alexandria, as Real Estate Investment pressures increases, toppling any attempt to conserve the culture heritage of the city, industrial heritage buildings has to be adaptively reused, producing some examples of creative designs that retain their history and significance and at the same time give benefits to the city and its inhabitants. By this kind of transformation project for the redundant industrial site of Minet El-Bassal into cultural, commercial, public spaces and uses, it can mark as a new proposal to the local authorities for the transformation of once-industrial sites to new cultural and environmental uses. But to apply this transformation, it requires a new urban planning approach in Alexandria based on collaborative design, knowledge of the cultural and historical importance of this industrial heritage area and the possibilities it can give to the city of Alexandria. Besides promoting culture awareness, his type of proposed project, presented in this paper, which resulted from architects' work, can encourage decision makers and investors to re-use and revitalize these neglected areas. The main focus of this paper is to give a new life to an industrial neglected district in Alexandria- Egypt, through revitalization of a group of old neglected industrial buildings.

The authors of this paper were instructors of the design studio course offered for 4<sup>th</sup> level students in spring 2012, at the architecture department- Pharos University in Alexandria (PUA). Authors directed course work plan on studying Minet El-Bassal area, to document its industrial heritage and to suggest adaptive re-use projects for a group of industrial buildings for "Pressing & Storing Cotton" located at the old industrial area of Minet-El-Bassal (fig. 1). Seven industrial buildings were investigated in the district and selected for possible adaptive reuse projects. These buildings are owned by the Egyptian Company for pressing cotton established in 1889. This research paper used the information obtained from site surveys and the collected information about the historical background of the studied area. Also, the created proposals for development through re-using industrial buildings followed the standards published by the National Organization for Urban Harmony in Egypt for buildings and heritage areas of excellent value, and approved by the Supreme Council for Planning and Urban Development, according to Law No. 119 of 2008. The main purpose of this research paper is to put this conservation project within the future of Alexandria's cultural, recreational and tourism plan. The case study approach used in this research suggests possible adaptive reuse projects. Detailed information about the suggested project and its steps will be discussed later in this paper.



Figure 1 : 4<sup>th</sup> level architecture students of PUA in one of the investigated buildings at Minet El-Bassal. (source: picture taken by the authors).

## CONCEPTS OF ADAPTIVE REUSE

Adaptive reuse, according to *Burchell and Listokin*, (Robert Burchell and David Listokin 1981, 58) is defined as a revitalization strategy which employs a series of linked procedures to plan for, inventory, acquire, manage and reuse surplus or abandoned real estate. An imperative aspect of adaptive reuse projects is that the land or building which is being considered for, had a previous use that is no longer suitable in that type of building or location, and therefore the potential value of the property will be maximized by adapting the space. The adaptive reuse of buildings can include modifications that are purely aesthetic, and are made to the building while retaining its structure and character. Infill development, including the reuse of vacant and derelict industrial buildings, is a desirable form of development as municipalities face the pressure of continuous growth.

Oscar Newman (Newman 1996, 112) proposed and studied a concept known as "defensible space" where inhabitants of a location adopt a place and care for it as their own, resulting in less crime. A reduction in the quantity of vacant or derelict buildings assists in reducing the crime rate and other antisocial behaviors in an area. As well, it can facilitate the revitalization of the surrounding neighborhood.

Adaptive reuse projects provide a different environment than traditional building spaces. The market for industrial buildings being adaptively reused for residential or office use is strong, overall given their desirable location in the downtown area and their demonstrated success because of their uniqueness and the benefits they have to offer. (Heath 2001, 173)

In Minet El-Bassal district all of the industrial buildings are owned by the Egyptian cotton pressing company and national banks. By adaptively reusing buildings, these governmental organizations have the advantage that would produce the greatest financial gain. Reusing these industrial buildings can be attractive for several reasons. First, if the developer owned the building, which in this case is the Egyptian cotton pressing company, during its prior use that eventually became redundant; a change of use of the building may be the only method in which they can attain liquidity from the land and building. (Bullen 2007, 20) Another reason is the possibility of lower construction costs as compared to new build projects. The developer may benefit from potential cost savings associated with construction and materials by reusing many of the existing elements rather than incurring the expense of demolishing an old building, disposing of old materials, and then constructing a new structure (Vangelis, Malte Fuhrmann and Kechriotis 2009, 71) In this paper, the studied cases of industrial buildings are huge, massive structures, the ground floor area of each range from 1500- 3500 m<sup>2</sup>, which makes them very costly to demolish and re-construct.

In addition, the cost may be reduced due to a shorter timeline for the project, given that the main structure is already constructed. The attributes associated with adaptive reuse projects, such as the physical conditions and locations of the buildings, are also generally highly desirable to developers. These attributes transfer into attractive aspects for potential tenants. Lastly, certain developers value history and the environment, and adaptive reuse projects can incorporate these elements through the retention of notable buildings and elements in various sustainable forms (Wilson 2010, 24).

Environmental benefits of adaptive re-use are experienced through the reuse and recycling of the existing materials and structures, reducing the amount of waste entering landfills. The ability to reuse these materials is mainly due to the fact that older buildings are often constructed with materials of a higher grade and quality that therefore have a longer lifespan than those used in current construction.

The social benefits of reuse projects include revitalizing the heritage, upgrading and re-identifying places and cultural value of building. During the time when these buildings were originally in use, they served for industrial purposes in this industrial neighborhood. They provided character to an area and created a '*sense of place*'; acting as a link to the past, when Egyptian cotton was number One worldwide. Retaining and improving these buildings to highlight their important features and history instead of demolishing them, helps create a rich, diverse community through varying building types and ages. This adaptive reuse project can be used as a "general development concept" to regenerate old urban industrial areas.

## **SITE SELECTION AND IMPORTANCE**

The reasons for choosing Minet El-Bassal District as an example for documentation and rehabilitation of industrial heritage in Egypt resulted from many historical, legislative, economical and location factors. These factors will be elaborately discussed in the following section.

In terms of administrative, legal and historical factors and although this district's long history of industrialization, no accurate architecture documentation was accomplished for its industrial building's heritage due to neglect and lack of knowledge of its heritage value.

However, it was not until about 2005-2006 that Alexandria's Local Authorities have realized the historical quality and social importance of many of the city's heritage buildings, streets, and areas, as well as the industrial heritage of Minet El-Bassal district, particularly its cotton mills, and published them all in the National Registered Heritage Buildings' List of Alexandria. (Governorate 2007, 196) Minet El-Bassal was registered as a Heritage Area under code 6040 "Warehouse" (Fig. 2). What makes the area more special is that it also holds "the Cotton Bourse", or cotton stock exchange. It is a city level registered 140 years old building under code no. 535 as a Distinguished Building (Fig. 3) which represents one of the investigated buildings in the area. The importance of this building goes mainly to its unique use as a stock exchange house for cotton.



**Figure 2: Map number 16 in the National Registered Heritage Buildings' List of Alexandria, representing on the lower left corner the highlighted area of the registered heritage area at Minet El-Bassal under code 6040 "Warehouse". (Governorate 2007) These areas have special building requirements.**



**Figure 3: Left: old photo of the Bourse of Minet El-Bassal, designed by P. Avoscani (Awad 2008, 78) and Right: new photo of the Bourse of Minet El-Bassal. (Source: authors, 2012).**

But since then these buildings were not architecturally documented, and there has never been a proposed rehabilitation project concerning reusing of such immense buildings. This neglect towards architectural heritage in Egypt is due to the lack of a detailed, fair and equitable policy towards owners of listed buildings. In Egypt law No. 114 for the year 2006 regulates dealing with heritage building; it also mentions that heritage building owners must be recompensed by the government (Egypt 2006) but such financial issues have not been activated in general.

On the other hand, the *location* of Minet El-Bassal industrial buildings is very unique. The investigated buildings are located right in front of the western harbor and next to the city center of Alexandria, which makes their location the perfect setting to become the new mixed use area at the western harbor. Alexandria port consists of two harbors on the Mediterranean Sea (east and west) separated by a "T" shaped peninsula. The west harbor is used for commercial shipping. Alexandria is considered the main port in Egypt. The harbor also contains a new passenger terminal, through it thousands of tourists entire Egypt every year. The Mahmoudia Canal, which runs through the study area, is a manmade waterway constructed by Mohamed Ali Pasha in the 19<sup>th</sup> century, to supply Alexandria with fresh water from the Nile. It runs down from the Nile River Delta to the Mediterranean Sea. It was also previously used for transportation of crops and cotton for exportation to Europe through the west harbor. Now this waterway is in serious need of redevelopment. However, the tail end of the canal is embraced between the middle of the investigated industrial buildings of Minet El-Basal, right before it reaches the harbor. This unique location is an asset that can enhance the district's environment quality and revitalize the city's waterfront (Fig. 4,5).

**Figure 4:** Google satellite image showing vital elements in the city center of Alexandria. The arrow points to the study area in Minet-El-Basal district. (Source: internet adapted by authors, 2012)



**Figure 5:** Panoramic view facing the harbor of the study area on both sides of the canal (Source: authors, 2012).

The study area also hosts an old and well known street market to the Alexandrians' for selling used goods called "Souk El-Gomaa", in English; Friday market. It is a locally popular market for selling used goods which used to be a tourist destination before the Egyptian revolution of 25<sup>th</sup> of January 2011. Recently, these street vendors increased, and occupied the area all week long. They became a threat to local workers at the harbor and warehouses, due to becoming permanent street settlers (Fig. 6). The suggested adaptive re-use project proposed in this paper took into account the need to find a legal place for these street vendors to be established and at the same time improve their situation socially and economically.



**Figure 6:** Left: Makbas El-Nile building, with Friday street Market. Right: the Cotton Bourse building during Friday street Market. (Source: authors, 2012).

## THE HISTORY OF MINET EL BASSAL

The *historical factor* for choosing this area for the industrial heritage conservation project is very important. Minet El-Bassal district is an important old industrial area. It administratively belongs to the neighborhood of West Alexandria. It is located near the end of the Mahmoudia Canal in front of the Western Harbor gate at Alexandria Port (Fig. 4).

The District history begins when the Ottoman ruler Mohammed Ali Pasha (1805-1840) who recognized the importance of the Industrial revolution happening in Europe. He worked to industrialize Egypt and in particular, to industrialize the military. In order to finance imports of European factories and advisers, the government exported first food grains, sugar and long-staple cotton.

Minet El-Bassal district was built (around 1810) overlooking the only seaport in the Egyptian land "The Western Harbor" in order to form a trade center for all Egyptian products exported to European countries. It consisted of headquarters of the international trading companies, large store-houses, workers housing and "Bourse de Cotton" an international marketing center for Egyptian cotton. The district was, and still is, supported by a well designed transportation network either for people or goods. In Alexandria, a freight railway was built in the 1850s to serve the western port, together with the adjacent Mahmoudia Canal already built under Muhammad Ali's era. Alexandria became the commercial harbor of Egypt, which triggered extensive industrial development in this area. This network helped connect the district with all vital spots of local production and marketing. It could therefore be said that the city controlled virtually the whole of the cotton industry of Egypt. Its warehouses, processing units and its canal, roads, tram line and railway systems grew to match this influence and the resulting demand. By 1870, Alexandria was the fourth leading Mediterranean port after Istanbul, Marseilles, and Genoa. (Vangelis, Malte Fuhrmann and Kechriotis 2009, 71, Vangelis, Malte Fuhrmann and Kechriotis 2009)

All the industrial buildings in this district used to be owned by the Société Générale de Pressage et de Dépôts (Fig. 7), which was the oldest establishment in Egypt specialized in the storage and trading of Egyptian cotton since 1889. The buildings were prosperous in the era where European companies, especially British, were benefiting from cotton cultivation in Egypt by exporting all the production to be processed in British mills. After the 1952 revolution in Egypt, many of these buildings were out of work, as for the new national régime focused on manufacturing cotton locally, which took place mainly in the Delta, right beside agriculture land. By time, market liberalization led to neglecting cotton cultivation and farmers went on to grow fruits and vegetables to meet the needs of the local market. Now, these industrial heritage buildings are owned by the Egyptian company for pressing cotton, it is a subsidiary of the Egyptian joint stock, which is owned by the Holding Company for Spinning, Weaving and Clothing. (<http://www.textileholding-gov-eg.com> n.d.).

Throughout the field survey, many interviews with company Engineers and workers were undertaken to identify the current situation of these buildings. (Abd Allah 2012) and (Hendy 2012) It came to the authors' attention that some of these industrial buildings were recently sold to national banks due to the company's need for funds to cover the deficit resulting from the reduction of cotton cultivation for exporting. This meant that buildings and machinery, which were already suffering from neglect because of lack of investment, became almost completely redundant. Unemployment of old factory workers became a major problem in the district; as cotton industry, which had sustained large communities of people, was vilified. Communities and their civic leaders turned their backs on this large industrial and immensely impressive heritage. This was because cotton was seen as a failed industry with its recent history of closures and redundancy. Some of the machinery was stripped out and sent for scrap. Many of them are on their way to be demolished and their sites will be clear for "new enterprises".

The encouraging *economical factor* of choosing these buildings for adaptive re-use is the fact that they are nationally owned. The Egyptian Company for Pressing Cotton, which still owns most of the buildings, needs to solve its financial problems. By realizing the quality, history and social importance of this local industrial heritage, particularly the cotton factories, Local Authorities and Alexandria's community can come together to promote the idea of changing the land use from industrial to mixed use, thus make way for conservation projects. Therefore, this paper intends to create awareness of the heritage value of Minet El-Bassal district's historic industrial buildings before being demolished to make way for new investments and at the same time find solutions that will help sustain their conservation.



(Fig. 7) Right: map dated 1947 presented to the insurance companies operating in Egypt at that time from the Société Générale de Pressage et de Dépôts. The map shows the ownership of the company. (Source: photographed from the cotton company, by authors)

Below: an old picture of the area and Mahmoudiya Canal. Source: (Awad



2008)



## DESCRIPTION OF THE SELECTED BUILDINGS FOR ADAPTIVE RE-USE

Site visits were accomplished to take an overview of the selected industrial buildings status. Building selection, as mentioned earlier, is based on the location and history, as well as the architecture style and significance of these buildings, which is fully described in this text. These selected buildings were subject for architecture investigation and adaptive re-use. Maps in (Fig. 8) show the distribution of the seven investigated building. Following are architecture demonstration of the buildings and heritage restrictions of the suggested project.



(Fig. 8) Left; names and locations of studied buildings.

Down: map in Arabic presenting current situation of the seven studied buildings surrounding the canal. (Source: authors, 2012)



- **Building no. 1** is a re-constructed building (Fig. 9). It used to be an industrial cotton warehouse and pressing unit, but it was re-constructed in the 70s. Now it hosts the Bank of Alexandria "Minet-El-Bassal branch". This new international style building replaced the old warehouse.
- **Building no. 2** is the cotton stock exchange of Alexandria "Cotton Bourse" (Fig. 10). The building was built in 1872 in a neo classical style. It was one of the oldest, most active stock exchange houses for cotton in the world. It specialized in the trade of cotton and agricultural grains and remained prosperous until the revolution of July 23rd -1952. Now, it is unoccupied.



Figure 9: Bank of Alexandria, Minet El-Basal branch



Figure 10: The Cotton Bourse of Alexandria

- **Buildings no. 3, 4, and 7** are cotton pressing units and warehouses owned by the Egyptian Company for pressing cotton. Their local names are "Makbas El-Nile, Makbas Misr, and Makbas El-Tarekh" respectively (Fig. 11 – 13). The two first buildings lining the canal's eastern side were completed in 1936 by foreign engineers. The third building replaced an older building that was structurally damaged due to ground settlement. It was built in 1956 on the western side of the canal following the same plan and design by Egyptian engineers after the company had been nationalized. These buildings are partially still in use, as there is still a limited amount of cotton cultivated for export. Some of their vast areas are rented for import and export companies working at the harbor to be used as storage spaces.



Figure 11: Makbas El-Nile with Friday street Market



Figure 12: Mahbas bank Misr

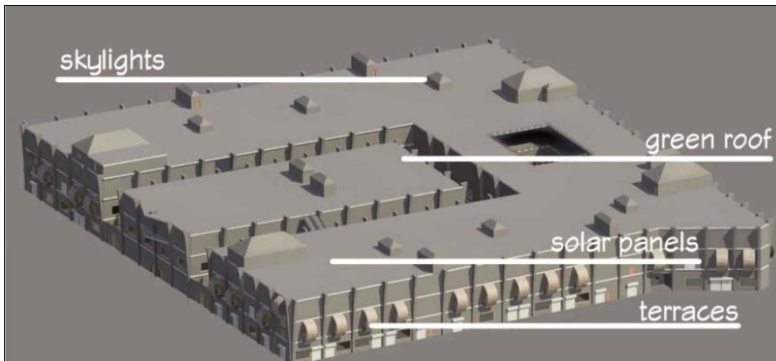


Figure 13: Makbas El tarekh

These three buildings are characterized by their red brick walls, chimneys, steel water tanks and steel vats with vertical steel tracks for loading cotton. Some of these buildings were illustrated in Bodestein's publications as follows:

"The architecture, which is straightforward and utilitarian, and features no embellishment, is probably the work of civil engineers of British or German background". (Bodenstein 2010) "From the exterior, however, one observes three-story blocks in concrete-frame construction, with visible columns and girders articulating the façade as a grid filled with red-brick walls. Instead of window ribbons, the complex includes evenly-spaced small transverse rectangular windows on the lower floors and upright oblong windows on the upper floor".

Observations on the field survey revealed that these massive industrial buildings are composed of two to three parts with internal courts and connected with bridges (fig. 14). By visiting these buildings internally, it can be perceived that each complex consists of two buildings with internal and external courtyards. One of them is an administration building connected by vertical and horizontal circulation to the cotton storage areas in the other building, which contains vast storage areas and pressing units connected with steel bridges. Spaces were separated by iron doors with special designs and techniques to isolate them in case of fire.



**Figure 14:** A computer model illustrating building no. 3 showing the building's composition. On the right is a picture from the roof of building no. 7 showing the connection with bridges. (Source: PUA students)

- **Buildings no. 5** is warehouse Bank Misr (Fig. 15, 16). It used to be a cotton storage warehouse. It is now owned by Bank Misr -an Egyptian national bank- it is now vacant due to its decaying roof. The external characteristics of the building are similar to those of the previous ones, but the decayed timber slabs suggests that this building is older (more than 100 years).



**Figure 15:** Warehouse Bank Misr, facing the Canal



**Figure 16:** Warehouse bank Misr, side elevation

- **Buildings no. 6** is the oldest building among the group with a remarkable façade (Fig. 17, 18). This building is now vacant due to the instability of the vestiges. It is exposed for sale for quite a long time. It possesses an exceptional façade that makes it unique in its surrounding. The timber roof of the building complex is destroyed over time. The architecture description of the building's remaining façade as in previous literature is as follows: "*Judging from the surviving remains, this factory was not conceived as mere utilitarian buildings, but also as an architectural monument built to impress and to visually communicate the industrial ambitions Mohamed Ali Pasha. This architectural quality was acknowledged by observers of the time.*" (John 1834, 27)

"The date and the function of the building remain unclear at this point. Construction techniques and decoration allow a dating to sometime between the first half and the third quarter of the 19<sup>th</sup> century. The stylistic features of this two-story building suggest a dating to the 1860s or 1870s."

Other characteristics of this building are provided by a map of Alexandria drawn by Charles Muller in 1855. (Ilbert 1996, 776) It shows building activity in this area- including a shape that could be the building -and summarily identifies structures as "magazines," i.e., stores. It is very possible that this building is the last remnant of these stores, and this could explain its unique arcaded architecture.



Figure 17: Pictures of Makbas 45 side elevation, roof and on the right the remaining remarkable façade facing the canal (Source: authors, 2012).

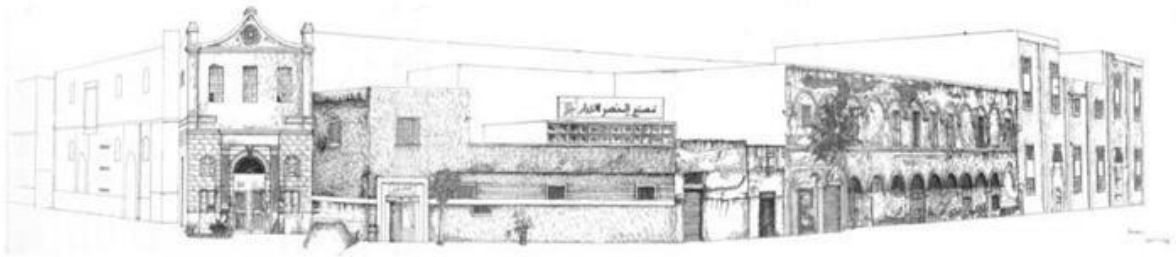


Figure 18: Sketch drawing of elevation facing the canal (Source: PUA student, 2012).

These seven buildings were recorded under researchers' instructions and guidance, then documented by Auto CAD drawings, written explanatory information, photographs and a three dimensional model of the current status of the site which is now exposed in the architecture department at PUA (Fig. 19).



Figure 19: Pictures of the 3D model presenting the current situation of the buildings in scale 1:200. Now placed on the wall of the Arch. Dpt. At PUA. (Source: authors, 2012).

All significant external elevations and floor plans were drawn. Examples are presented in (Fig. 20, 21). The documentation included general and detailed views of all external and main internal elevations, with any unusual and/or important details and elements of the structure additionally being recorded photographically. This detailed description and documentation of the seven building is very important to identify possible re-use projects. Five of the seven studied buildings at Menit El-Bassal, were found to be in very good shape, and the other two have strong outside walls, but their wooden ceilings have deteriorated.

Authors suggested a group of new uses for the buildings that will suit their mass and location, in order to produce social and economical benefits to the local community and the owner. To analyze the suggested new uses, it will be important to point out the restrictions and heritage conservation standards that must be applied on these buildings according to the Egyptian Heritage conservation law (Egypt 2006).



Figure 20: CAD recording of Cotton Bourse  
(Source: PUA student, 2012).



Figure 21: CAD recording of Makbas El-Nile, (Source: PUA student, 2012).

## DESIGN STRATEGIES OF ADAPTIVE RE-USE PROPOSALS

The selected seven industrial buildings have typical industrial features which attract special kind of users and investors who seek living and working in an industrial old site. They have high ceilings, exposed bricks, tall windows, huge chimneys, steel water tanks, exposed beams or structural elements and steel vats with vertical steel tracks for loading cotton. Their heights allow for horizontal subdivision through various means such as the construction of mezzanine floors. Although some have thick, load-bearing outer walls, the majority have skeletal structural systems, which allows the building envelope to be adapted to a wide variety of design possibilities in line with the requirements of the new utilization. This old industrial atmosphere differing from standard developments built today, with the enormous surface area they occupy, makes them highly suitable for conversion to other functions and to a variety of spatial organizational schemes. (Fingers 22, 23). The flexibility of the space within these industrial building is a characteristic that was identified by all developers in such areas -world wide- as being important to re-use projects.



Figure 22: Current situation inside courtyard of Makbas Elnile showing linking bridges (Source: authors, 2012).



Figure 23: Current situation inside cotton storage space of Makbas Eltarekk (Source: authors, 2012).

As a result many uses were suggested for the cotton industrial buildings in Minet El-Bassal. These new uses varied from commercial, recreational, cultural, administrative and touristic uses. Handling and interventions in these buildings followed the special urban planning requirements of the National Organization for Urban Harmony in Egypt. (Harmony 2012) As mentioned earlier the study area is listed as an old warehouse area, therefore interventions can be preceded inside the buildings, but must not intervene with the heights, facades, and external volumes of the buildings to preserve the general character of the area and experience the ambiance of the cotton industrial heritage in Egypt.

The suggested new uses will help maintain the quality and setting of the buildings and at the same time guaranty revenue for maintenance. Uses were selected by the researchers to serve the waterfront and harbor facilities, and at the same time conserve the cotton industrial heritage. Many other similar sites worldwide have gone through such conservation and conversion projects; Massachusetts Mills- USA, Bankside Power Station- UK, and the famous Aldo Rossi conversion of a former industrial site named 'C eramique' into The Bonnefanten Museum in Maastricht, Netherlands. (Homburg Ernst and Simone Schleper 2011)

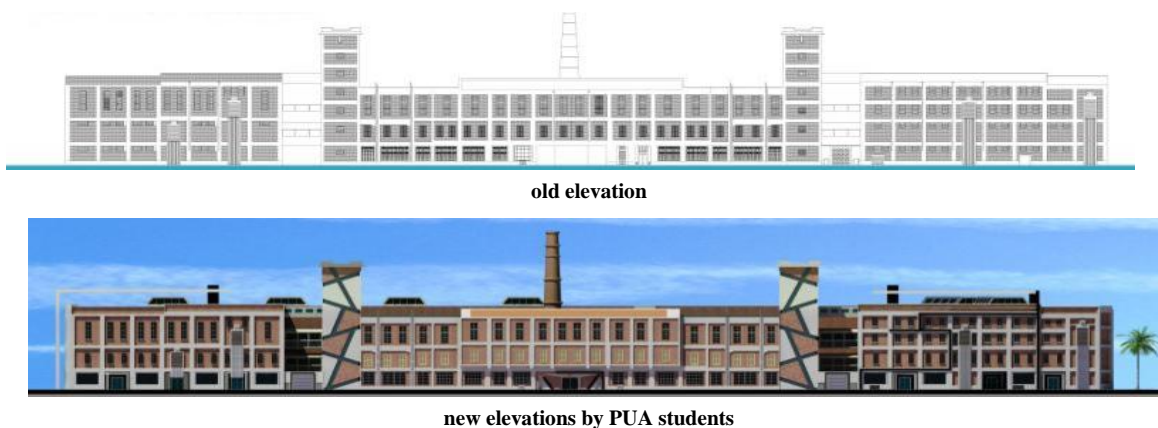
Although the study area doesn't contain any inhabitants, except the illegal occupation of the streets in the Friday market, the re-use suggests rental apartments, motels and cafes to insure the occupation of this area, thus providing security at night. At the same time, spaces inside one of the buildings were suggested to be used for the Friday market, a technical school and daycare unit for rehabilitating the street vendors was also a project proposal.

## SUGGESTIONS OF NEW USES

- All ground floors along the canal- on both sides- can be converted to cafes, and shops which can increase the economy in the district and provide revenue for maintenance.
- Buildings no. 3, 4 & 7 will serve as "multi use"; each -already- contains' more than one building, the office building will remain in its use with minor changes, but can be rented to shipping companies, import & export offices, tourism offices, and any other businesses related to the harbor.
- On the upper top floors of these buildings can be used as art galleries and exhibitions. The rest of the floors (2<sup>nd</sup> and 3<sup>rd</sup> floors-intermediate) can be converted into residential units such as studios and small apartments, but only for rent.

- Building no. 1 is the Cotton Bourse, it is a listed building (city level), therefore it cannot get any external changes; it must be completely brought back to its original status. But regarding the inside, it can become the new stock exchange market of Alexandria. Regarding the back of the building, it consists of storage areas that can be re-designed as cafes and shops.
- Building no. 2 is now Bank of Alexandria, the style, age and architecture of this building doesn't match the other buildings, therefore it can be re-built or the façades can be re-designed to match the character of the area, and also serve as the Bank of Alexandria.
- Building no. 5 consists of two old warehouses that have sound exterior red brick walls, but are damaged from the inside, therefore the walls can be preserved, but the whole inside of the building can become an artifact school and day center for local street vendors. It will also contain a large space for "the Friday market".
- Building no. 6 has a historical facade mentioned earlier, which must be preserved. Façadism will be the suggested way of intervention. The facades can be kept and the buildings will be converted into a library & a cotton museum to display the history of cultivation, pressing, storing and export of cotton.
- All streets and areas surrounding the canal can become pedestrian friendly public spaces (no private cars are allowed). Therefore, it will require a new project of urban space redevelopment and upgrade.
- Some elements that can be add to the elevations such as: Stairs, elevators, handrail, metal bars, pergolas, shading devices, curtain walls or any objects needed to define entrances or to enhance any part of the elevations must be safe to disassemble without harming the buildings. Cafés and shops in the ground floors facing the canal can be extended to the streets, by adding new removable parts that will not harm the buildings. Changs inside the buildings can also be permitted, but it must serve the new use, i.e split levels, atriums, adding or removing walls, but the less changes the better.
- No demolition of any part of the exterior elevations is permitted, nor blocking any of any of the windows or openings or changing the color or appearance of the Red Bricks.

As mentioned earlier, these suggested levels of intervention clearly follows the special urban planning requirements of the "National Organization for Urban Harmony" in Egypt. (Harmony 2012). Some of these new proposed designs by PUA students are shown in (Fig. 24, 25). These projects were exposed in an exhibition attended by educated and governmental personnel at PUA to support the revitalization case in November 2012.



**Figure 24: old and new suggested elevations of building no. 7 converted into residential and commercial**  
(Source: PUA student, 2012).



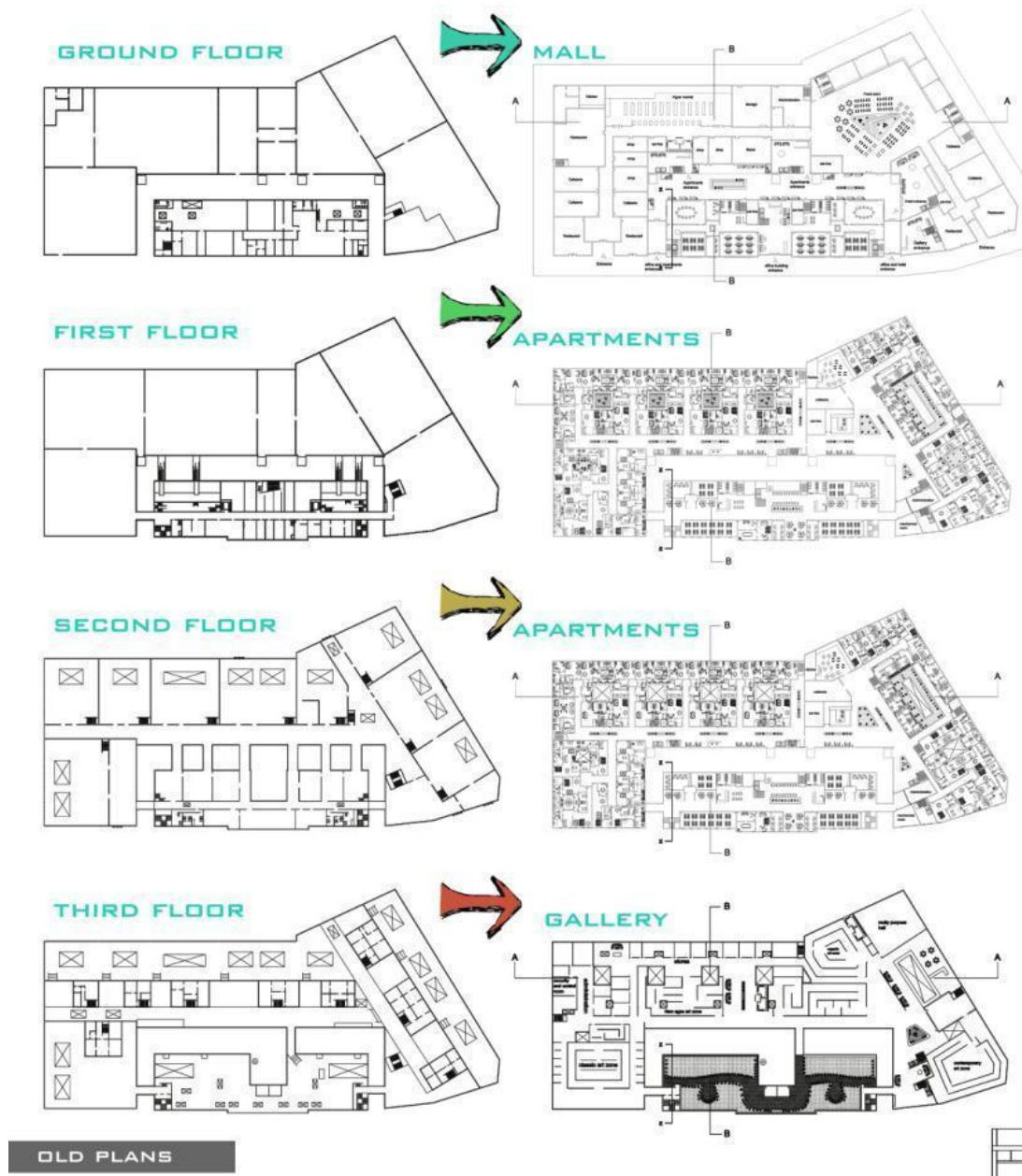


Figure 25: Building no. 7 conversion into residential and commercial (Source: PUA student, 2012).

## PROPOSED LANDSCAPE PROJECTS:

In order to create a successful and sustainable new design, it is important to recognize and interpret the historic and cultural significance of the landscape and to understand how landscape ecology and design can invent alternative forms of relationships between people, place, and outer space so that landscape architectural projects become more innovative. New design strategies to reclaim derelict industrial sites have been devised in recent years, focusing on the sustainability, quality and multi-functionality of the space, with attention to historic, socioeconomic and cultural aspects.

This architecture design project also proposed a re-development project of the urban spaces and external landscaping, with the development of the waterway of the canal. Small retail shops and cafes should be encouraged to cater promenades. Any attempt to define principles for good design must embody the principles of sustainable development. Therefore, all streets around the canal area were suggested to become pedestrian friendly public spaces. The site is a complex matrix of buildings and landscapes, and the designers' goal was to utilize the existing fragments of industry as layers that are recombined through the lens of landscape design promoting sustainable development and maintaining the spirit of the place (Fig. 26).

This complementary, yet important landscape project must come with the proposed re-use project to complete and redevelop the external spaces along the canal and between the buildings. It is recommended to further investigate the site to accomplish landscape redevelopment, which can be fully studied in future researches.

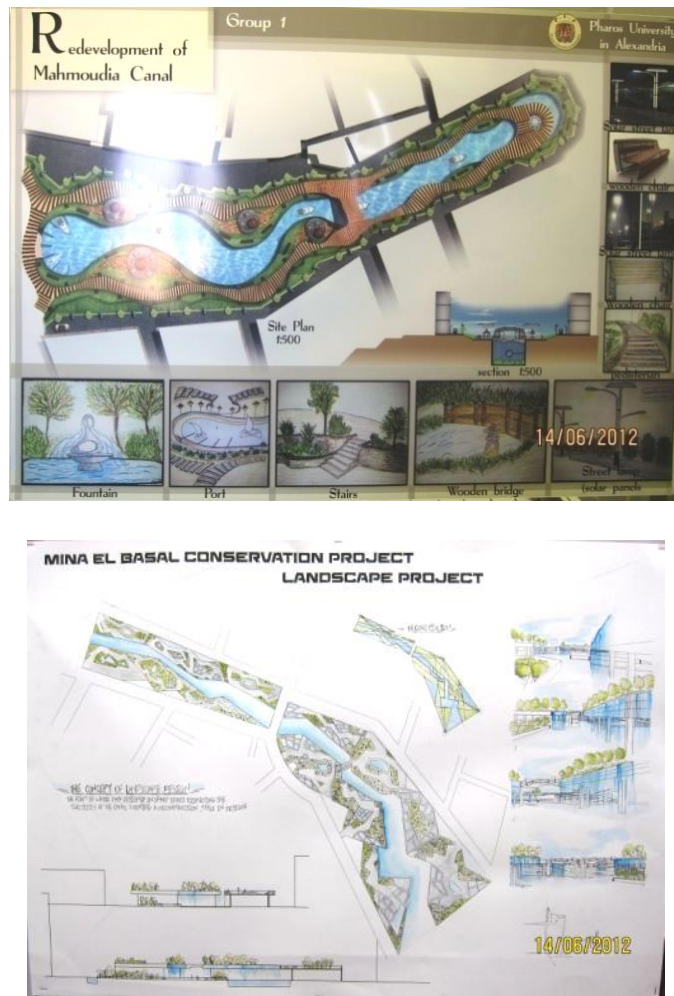


Figure 26: Proposed landscape design for the redevelopment of the canal embraced between the studied buildings (Source: PUA student, 2012).

## CONCLUSION

Old industrial buildings possess many initial qualities for developers as mentioned earlier. Buildings without these characteristics are not as unique and desirable for redevelopment. It has been cleared out in this paper the flexibility of industrial buildings to adapt to new uses, although challenging for certain projects. The most successful built heritage adaptive reuse projects are those that best respect and retain the building's heritage significance and add a contemporary layer that provides value for the future.

The protection of industrial buildings is an important cultural objective and is inherently sustainable in that it encourages the positive re-use of redundant buildings that are part of our industrial and commercial heritage. Also, conservation work and adaptive re-use can play a very important role in raising the quality of the local environment, preserving local distinctiveness, and attracting visitors and new business.

Menit El-Bassal is a locally registered industrial heritage area where adaptive reuse is the only way that the building's fabric will be properly cared for, revealed or interpreted, while making better use of the buildings itself. The first step towards applying this approach is carefully documenting the current situation of the buildings and their surrounding open spaces and activities, which is done for the first time in the represented project. Also, this type of proposed project, resulted from architecture students studio work, helps built up public awareness of such heritage, which can help decision makers and investors to re-use and revitalize this neglected area, thus grant the city the power to preserve and present the cotton industrial heritage of Menitt El-Bassal to Alexandrians and tourists.

The case study presented in this paper is an approach towards dealing with derelict and degraded industrial areas in Egypt, which can be filled with new spirits and can be made worth living by keeping visible the atmosphere of the existing industrial site. The paper proposed selecting a group of industrial buildings for documentation and rehabilitation, by applying design strategies that contribute to economic prosperity, social cohesion and environmental quality. The process of heritage conservation by adaptive re-use may remain the same although the characteristics may change given the trends of the market and the successful changing form of industrial buildings. Actually, enabling this type of project requires the right skills, attributes and knowledge.

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