The impact of a frozen architectural heritage power on a local architecture

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Abstract. The frozen architectural heritage products refer to the products that cannot be repeated or continued for more time. This phenomenon caused by many factors such as inability to use, inadaptability, unrepeatability, collapsibility and the products classified as masterpiece. This paper addresses this phenomenon as a negative power inside the traditional urban fabrics. The main question is how the impact of this negative power could be reduced. This paper conducted a questionnaire to evaluate the architectural heritage products in Alkadhemia city in Baghdad. A large part of its fabric has been removed and the local architecture of Alkadhemia city has been affected negatively. The results obtained showed that the loss of this heritage fabric could have been avoided.

1. Introduction
The architectural heritage refers to the valuable and perfect products that were continued throughout the ages and it is considered as a resource of the local architecture. So, any lack occurs in the heritage products causes a weakness in the local architecture.
The biggest danger on the architectural heritage is the frozen product as a negative power that leads to decrease the heritage products gradually. This power stops the heritage continuity and losing its values and leads to remove it later and weakens the local architecture.

2. The heritage and architectural products
2.1 The heritage concept
Heritage is something that can be passed from one generation to the next (Harrison, 2017). It is a product that stays continuous for long time under different circumstances. Heritage could be understood as a physical object such as a piece of property, a building or a place that is able to be owned and passed on to someone else(Harrison, 2017).

The term heritage refers to the property and the valuable perfect products. It includes many things that are playing a necessary role in achieving the belonging and authenticity to establish the local identity. It always deals with the past and its products that have been classified as historical products.
Many of the heritage products may be singular products and they have become popular later and they belong to the local consciousness. Heritage has the agreed values by the common sense as explicit active values. They have multi responses to the contemporary circumstances that contribute in the product’s integration to be valuable and perfect.

2.2 Architectural and urban heritage
Architectural heritage is a unique resource, an irreplaceable expression of the richness and diversity of our past such as structures and places (Roche & Dick, 2004). On the other hand, the large scale urban
heritage represents a social, cultural and economic asset. It is a reflecting resource of a dynamic historical layering of values that have been developed with architectural elements such as monuments, buildings and other intangible elements (Habitat, 2015).
In a city of old fabric, many heritage characteristics were established as a result of the mutual common sense. They have many responses to the environmental, social, economic, functional, technological requirements and aesthetic dimensions. These responses try to create many groups of perfect products. This old fabric has traditional buildings and active places. So, the old city fabric represents images of the place and community memory.

2.3 The heritage kinds
The heritage could be classified into two kinds which are:
A-Intangible heritage: It is a cultural heritage and invisible elements. It means the practices, representations, expressions, knowledge, skills – as well as the instruments, objects, artifacts and cultural spaces associated that communities, groups and, in some cases, individuals recognize as part of their cultural heritage (Jokilehto, 2005). It should consider cultural heritage elements as strong tension variables between tradition and modernity (Maria, 2010) These variables could be seen in the following:
a. Oral traditions and expressions including language as a vehicle of the intangible cultural heritage
b. Performing arts
c. Social practices, rituals and festive events
d. Knowledge and practices concerning nature and the universe
e. Traditional craftsmanship (Jokilehto, 2005).
B-Tangible heritage: It consists of visible elements especially physical elements and measurable things. In 1999, UNESCO clarified the scope of tangible heritage's values as cultural properties such as monuments, groups of buildings. I addition, it clarified site and the scope of environments as natural properties (Ahmad, 2006).
The two kinds of the heritage (Tangible and intangible) have different elements such as history, culture, collective identity, memory, documentation, management, communication for cultural heritage (Guida, 2014), buildings, environmental elements, and crafts.

3. The architectural heritage as a perfect product
The term value may mean the amount, the price and the importance of a thing. So, the perfect/integrated product means the valuable product that has value of respect and the active role in forming the heritage basically. It also represents many gained values that are come from multi-responses activities. Thus, the valuable product depends on three bases which are:
A- Authenticity: it means real or genuine product not copied or false but true and accurate or made to be and look just like an original (Merriam, 2017). It refers to genuineness, realness, truthfulness, validity (The free dictionary, 2017). Accordingly, the authentic architectural product came from realistic and actual circumstances. It seeks to solve a real problem, to get original values and treats with the existing abilities and determinants. It is necessary to produce perfect unique product. All of these actions participate in the process of making heritage.
It could be concluded that the origin architectural product comes from the real-world conditions. It works on solving a real problem and it deals with abilities and limits. It produces original values. So, it is essential for this product to be unique also in order to produce the local heritage.
B- The belonging and property: the belonging means the condition of having or owning something (Merriam, 2017). It may be a feeling of a close connection with something such as place, culture and society. Property means the real ownership of things which gives the right to control and direct them. This paper supports that each of the belonging and the property
represents the basic core of the architectural identity. They give the necessary values to the architectural heritage product to be upscale and continuous.

C- Other values: any value comes from multi activities and responses to the contemporary conditions.

3.1 The relation between the perfect product and the architectural heritage

There is a strong relation between the perfect product and the architectural heritage. Generally, Architects consider the architectural heritage as a perfect product because it has many positive values such as authenticity, belonging. So, if a product has these basic values, it will be hold as a perfect product and it could be classified as an architectural heritage.

The architectural heritage flows into two stages which are appearing stage and continuity stage. The first means that the architectural product tries to prove itself as a perfect product and to declare itself as a heritage product. The second stage starts when the product is classified as a local perfect product. In fact, products’ values have the main role in the appearing stage. On the other hand, the interaction of these values with the context, society and the contemporary changes has the basic role in the continuity/sustainable stage.

There are six resources and processes that have the main impact in creating and changing the architectural products' values which are:

1. Process of architectural design which includes the concept and primary sketches preparing for the implementation stage.
2. The implementation process which includes the production period when the product may gain or lose values after its appearing.
3. Process of interaction between the product and the context.
4. Process of the impact of events through time.
5. Process of promotional values such as advertising, marketing and media.
6. Process of additional values that are added by the audience who add new values to the original product' values. These values are given by people either individually or collectively and at local, national or international level (Jokilehto, 2005).

3.2 The relation between the architectural heritage and the local architecture

Local architecture is defining as many characteristics that are forming spatial and cultural identity. In architecture, the criteria include habits, crafts, materials, environmental treatments, valuable / perfect products, models, patterns and styles. These characteristics depend on the traditional and vernacular architecture. Traditional architecture means the frequent buildings that improve their validity across time. It involves typical solutions for houses. Houses are the most common used buildings and they form the living space for people (Ulusoy & Kuyrukcu, 2012). On the other hand, vernacular architecture refers to an architectural style that is designed based on local needs, availability of construction materials and it is reflecting local traditions. It is not designed by formally-schooled architects, but it relied on design skills and tradition of local builders (wikapedia, 2017). This paper addresses two issues which are:

1- The value of an architectural product follows the multi-responses context to be known as a local architecture.
2- The strength of forming a local architecture is represented by the power of the perfect product value.

As a result, the research refers to that the power of the architectural heritage product depends on the architectural product's values and the local common sense. Therefore, the perfect architectural product is a heritage product which produces the local architecture as shown in figure (1) and the following statements:

a. Perfect architectural product and the local common sense produce the architectural heritage
b. Architectural heritage produces the local architecture. As a result, a perfect product and local common sense produce the local architecture
3.3 The cycle of local architecture product.
If the multi-responses to the context are involved in the architectural and the urban products, these products will be hold as perfect, authentic products. In addition, they will be belonged to the spatial and cultural memory. These responses qualify the products to be an architectural heritage. This stage represents the beginning of the perfect production life. It could be called the appearing stage which qualifies the architectural product to be a local architecture.
The second stage is the continuity stage which represents the flexibility of a product. It refers to the ability of transforming from the individual product's scope to the local architecture in a wide public scope. This stage has many characteristics and conditions that are interacting with each other to form the flexible product. Therefore, the product should be diffusible, repeatable, sustainable, and has the ability to be adaptive in order to produce the pattern and style. This stage involves the ability of producing and continuity of values through the multi responses to the context, society and the contemporary conditions. It participates in a new cycle of appearing stage as it is shown in figure (2).

Figure 1. The relation between the multi- responses and the perfect product to produce the local architecture.

Figure 2. The cycle of a Local architecture production
3.4 Fundamental properties of the architectural heritage

The research supposes two fundamental properties of the architectural heritage. These properties could be generalized for most dimensions of the architectural and urban heritage. They could be called the two poles of a perfect/integrated product; these are:

a. The architectural heritage between the memory of place and the common sense

The community memory has many descriptions such as social activity, expression, and active binding force of group identity. The term refers to collective memory, social memory, public memory, historical memory and popular memory (Hoelscher & Alderman, 2004). It depends on the collective consciousness or the common sense. It is an archive of events, feelings, persons, cultures and mental images that are classified according to a system of values. It also includes pop-culture, stories, myths, legends, habits, traditions, crises and achievements. All of these factors promote the legacy and cultural belonging. So, it could be concluded that the memory of community enhances and serves the local cultural identity.

The community's memory refers to its cultural memory which is defined as fixed points and fateful events of the past. This memory is maintained through cultural formation such as texts, w rites, monuments and institutional communication such as recitation, practice, observance that are called figures of memory (Assmann, 1988). Intangible elements are important in creating the cultural heritage. The UNESCO in the 2003 Convention defined them as a characteristic dynamic evolution, marked by tradition and innovation. The communities are responsible for preserving this fragile balance inherit certain skills from their ancestors and transmit them to the new generations in a living and changing process (Maria, 2010). Although the memory of place means the images of the tangible elements at the place history, the term place refers to the physical elements such as historic monuments and buildings, groups of buildings, historic urban and rural centers and historic gardens (Ahmad, 2006). The concept of place in Aristotle view was the “where” dimension in people’s relationship to the physical environment, conjuring up a feeling of “belonging” (Assi, 2017). So, the concept of place could be represented as the certain zone that has activities, relations, interactions and human events. Memory could be defined as a mental image of a place or as a relation between physical elements of place and its events. It always focuses on what was happened. Generally, it could be concluded that:

1- There is no big difference between the two memories. On the other hand, the place memory is more comprehensive than the community memory because it involves physical elements, moral values and events.
2- Each of the two memories is necessary for creating the perfect product, the architectural heritage and the local architecture.
3- Each of them contributes in establishing and creating the base of the local identity which is necessary for producing the local architecture.
4- Each of them has a main role in proving the perfect product as an architectural heritage.
b. The flexibility of the architectural heritage

Flexibility means the ability to adapt and continue with a reality or circumstances over the time. Some writers define it as the ability of a system to respond effectively to changing circumstances (Suarez, et al. 1991). It has three dimensions that are functionality, performance and Capacity (Banerjee & deWeck, 2004). In architecture, flexibility is necessary for continuity of the buildings’ usability and achieving the local community desires. Walter Gropius said the building should be flexible enough to create a background fit to absorb the dynamic features of our modern life (Larissa, 2013). Thus, the main purpose of this property is to find out how flexibility grants the opportunity for the designers to produce creative options that will respond to changing demands of the users (Inani & Ashok, 2009). It could be seen in the architecture principles. Vitruvius put the trilogy principles of architecture that are considered as the bases of the architectural values. These principles are utilitas, firmitas, and venustas. They mean function, commodity and utility respectively. They involve solidity, materiality and beauty/delight/desire (art3idea, 2017). So, it could be supposed that based on Vitruvius's trilogy, similar principles could be relied to achieve flexibility in architectural products as it is shown in figure (3). This paper suggests that the flexibility in architecture could be achieved by the following four points:

1- Use and re-use the product: it means the functional dimension (utilitas).
2- Built / renovate and re-design the building: it means the ability to add or delete a part of building and re-design the plan across the time in terms of structure, materials, span and spaces (firmitas).
3- Re-evaluation (new values add or delete values): it means the ability to interact with the surrounding to enhance the local architecture and to get the suspense delightful over time (venustas).
4- Repeatability: it means the possibility of repeating a product to be considered as a local pattern.

4. The frozen architectural heritage product

If it is believed that every architectural heritage product is considered as a local architecture, then any defect or lack in the architectural heritage product will weaken the local architecture. So, the architectural heritage product flows through two stages which are appearing and continuity. Both stages depend on the fundamental properties of the architectural heritage. For example, the appearing
stage basically depends on the linkage with the memory and the product's characteristics. On the other hand, the continuity stage depends on the integration with the context and the flexibility (figure (4)).

So, it could be concluded that:

a- The architectural heritage must have two stages which are appearing and continuity.

b- Architects can address the defect in the architectural heritage properties easily. Usually, the defect emerges in the continuity stage more than in the appearing stage as an inevitable result of the perfect/integrated product. The product is evaluated early as original and local connected with spatial and community memory with achieving important values. The clearer defect in the architectural heritage could be seen when a product has been frozen. It will be the most dangerous element on the local architecture because the architectural heritage is the main provider of the local architecture. Architects should know that the frozen architectural heritage product could be happened through two indicators. Firstly, consider the architectural product as a masterpiece. Secondly, the product reaches a recession stage and inactivity and then being stopped encumbrance on its context. In summarized, the frozen architectural heritage means that the product has become unable to continue and adapt with its context across the time. In addition, it has become a barrier in front of usage, design, construction, type, form and singular value. It lost the power of flexibility and the continuity stage (Figure (5)).

![Figure 4](image1.png)

**Figure 4.** The relation between the perfect product, the frozen (static) architectural heritage product and the local architecture.

![Figure 5](image2.png)

**Figure 5.** The relation between the frozen architectural heritage and the local architecture.

However, the frozen architectural heritage represents a main destroying direction against the multi-responses to the context directions that establish the local architecture. This heritage has many characteristics such as: (figure (6)).

1. A valuable image only (just an iconic dimension).
2- The product is inadaptable.
3- The product is unusable.
4- The product is unrepeatable.
5- The product may consider as a masterpiece.
6- The product is in a collapse stage

**Figure 6.** The effects of the frozen architectural heritage in breaking the local architecture life.

### 4.1 The Traditional Baghdadi courtyard houses (Al Kadhemiaa as a case study)
There are many studies that were dealt with the Traditional Baghdadi courtyard house. It is known that the courtyard house represents an architectural model initially, but it has become a pattern of the house design. The Traditional Baghdadi courtyard house could be seen as a result of multi- responses to the context. For example, Warren's study in 1982 argued that most of the Baghdadi house features have climatic value (Alsayyed, 2012). Hassan Fathy referred to the Arab architecture as a courtyard pattern which means that it is architecture of inside more than of outside. It achieves the mental and visual comfort in human scale which leads to the spiritual belonging to the built environment (Ibrahim, 1986). The traditional courtyard house reflects the cultural and social needs. The most appropriate courtyard house design simultaneously creates a private and comfortable space (Kodmany, 1999). So, it meets the social, spiritual and environmental responses. It expresses the privacy, habits and nature of the Arabic personality. It is a part of the belonging to the place, community memories and other context's elements. That’s why the Baghdadi courtyard house considered as authentic perfect product and then it has been a heritage product belonged to the local architecture of the past.

### 4.2 Description of old city in Al Kadhemiaa
The old fabric of Al kadhemiaa and its buildings are belonging to the vernacular and the traditional architecture. They represent heritage products because of the existence of Al- Imamain Al-Kadhemain the main reason of the city foundation. Today, the problem faces this old zone is that there is a large part of the traditional fabric has been removed. So, the question arises here is: why this large number of traditional houses has been removed and what mechanism of this decision has been relied? As it is shown in Figure (7)
Table 1. Evaluation of An architectural and urban heritage power

| No. | Evaluation of An architectural and urban heritage power | Notes |
|-----|--------------------------------------------------------|-------|
|     | Positive power                                         |       |
| B   | Basic properties                                       |       |
| (B1)| Authentic product                                     |       |
| (B2)| Achieve belonging                                     |       |
| (B3)| Other important values                                 |       |
| A   | Appearing stage (stability)                            |       |
| (A1)| Achieve place memory                                  |       |
| (A2)| Achieve community’s memory                             |       |
| C   | Continuous stage (flexibility)                         |       |
| (C1)| Flexible to be reusable                                |       |
| (C2)| Flexible to add or delete area                         |       |
| (C3)| Flexible to redesign                                   |       |
| (C4)| Flexible construction to change                        |       |
| (C5)| Flexible to add or delete values                       |       |
| F   | Frozen power of heritage product (Negative power)      |       |
| (F1)| Unusable                                               |       |
| (F2)| Infrequent                                             |       |
| (F3)| Collapsible                                           |       |
| (F4)| Masterpiece                                            |       |
| (F5)| Inadaptable                                           |       |

4.3 The model of questionnaire

4.3.1 The nature of the chosen sample and questionnaire

The research sample involved twenty specialists in the field of urban design and architecture. They are a group of academic researchers, professors, consultants and experts. The size of this chosen sample is appropriate base on the nature of this research and questionnaire requirements. Scientific and direct answers are important to evaluate the architectural products sufficiently.

The questions inside this questionnaire have been extracted from the research theoretical framework that is explored initially. This framework came first to understand the whole research problem which deals with the architectural heritage removal and the local architecture weakness.

4.3.2 The results of questionnaire

Table 2. Evaluation of An architectural and urban heritage power (Alkadhemiaa courtyard houses)

| No. | Evaluation of An architectural and urban heritage power (Alkadhemiaa courtyard houses) | *evaluation | Total and average |
|-----|---------------------------------------------------------------------------------------|-------------|------------------|
|     | No effect  | Weak | Medium | strong |                   |
| B   | Basic properties                                      | 0 1 2 3 4 5 |             |                   |
| (B1)| Authentic product                                    | 1 4 9 6     | 80            |                   |
| (B2)| Achieve belonging                                   | 5 8 7       | 82            |                   |
### Notes:

- The power of basic properties of courtyard houses under review equals 72.3%. It achieves the medium level which is an important level for the status of a perfect production.
- The power of appearing stage equals 81% which is a high level. Therefore, the courtyard houses that achieved this level have a strong place and community memories.
- The power of flexibility (continuous stage) equals 54%. It refers to the frozen product which is negative but it is necessary for the present and the future. The products at this status are in a critical situation but they are still stay inside the acceptable range.
3.3 The decision makers should consider the average value of the appearance and the continuous stages power and the average of the frozen power.

4.3.3 Explaining and analyzing the results

1. The basic characteristics:
   - The results lead to conclude that the courtyard houses have strong characteristics of belonging and authenticity. In addition, they have many accepted values.
   - The courtyard houses need to reinforce more important values that could be improved in order to be considered as perfect products.
   - The total power of the basic characteristics is 72.3% which indicates a good ratio of a products' acceptability.

2. The appearing stage (stability):
   - The place and community memories have a strong power of 81%.
   - The courtyard houses have a strong relationship with the place and traditional culture. They could be considered as a positive power.

3. Continuity stage (flexibility)
   - The flexibility of the built area; rehabilitation is the right policy for the products of the strongest power to be continue.
   - The flexibility of the reusability is achieved by the products of a medium power.
   - The flexibility of adding and deleting values is available in the houses of an accepted power. They need reinforcing and covering the defects.
   - The flexibility of redesigning and changing construction showed a weak power. Both of them need a wide intervention, reinforcement and improvement.

4. The frozen power of the heritage product
   - The average of the frozen power represents a negative force.
   - The courtyard houses are unable to be repeated / infrequent at the present time. This status forms the biggest problem for these products to continue for more time in the future.
   - The collapsed courtyard houses give the required permission for their removals.
   - The masterpiece and the unusable houses represent threats of the frozen heritage products.
   - The inadaptable houses have as a less dangerous negative power than others.

5. The positive power refers to the average power of appearance and continuity stages. This means that the actual abilities and opportunities to develop the architectural heritage products.

6. The decision makers should consider the average value of the appearance and the continuous stages power and the average of the frozen power.

7. It could be concluded that:
   a. The decision of removing many courtyard houses and a large part of Alkadhimiaaa old fabric is a wrong decision.
   b. The process of removing was happened because of the power of the frozen architectural heritage. So, it is clear that the frozen architectural heritage products weaken the local architecture.

5. Conclusions

1. The architectural heritage is a perfect/integrated product.
2. The architectural heritage is a resource of the local architecture.
3. The heritage products have a background of basic characteristics of authenticity and belonging to the context with important values.
4. The heritage products have two stages in their life which are appearing (stability) and continuity (flexibility).
5. The heritage products' stages represent a positive power.
6. The frozen architectural heritage causes weakness in the local architecture.
7. The frozen power is a negative power.
8. The frozen power caused by many factors such as inability to use, inadaptability, unrepeatability, collapsibility, classified as masterpiece.
9. A large part of the architectural heritage fabric has been removed because of the negative power of the frozen heritage.

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