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## **Unlocking the Potentials of Urban Architecture in Enhancing the Quality of Urban Life in Urban Poverty Areas through Community Projects**

**Ahmed Khaled Ahmed Elewa<sup>1</sup>**

*<sup>1</sup>Associate Professor of Town planning and Architecture Design, Department of Architecture, Faculty of Fine Arts, Helwan University, Egypt*

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### **Abstract**

Currently more than half of world population are living in cities, while world is witnessing a rapid urbanization process particularly in cities of the developing and emerging countries, where urban poverty areas (UPA) with low quality of urban life (QUL) and lack of the usual urban spaces are the most significant urban phenomena that characterized those cities. In such an urban context there is a need for an efficient tool that contributes positively to the enhancement of the QUL, meanwhile to provide the best use of the rare vacant lands.

This study argues that urban architecture as a design field offers a distinctive approach to a special type of buildings made for an urban setting, thus it can enhance the QUL in UPA through community projects.

The study is based on an analytical study of selected cases of community projects in UPA that represents examples of how urban architecture through its potentials has a positive impact on its urban context, notably through community projects that strongly linked to real community needs. The results showed that urban architecture as a design approach for community projects have multiple roles that boost the socio-economic daily life, as well it supports various environmental issues towards better QUL.

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### **Keywords**

Urban architecture; Quality of urban life; Urban poverty areas; Community projects

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### **1. Introduction**

The fact that more than half of the world population already lives in cities (UN, 2016) explains why cities are gaining more attention from urban specialists and researchers among other types of human settlements. Meanwhile the World is witnessing a continuous process of urbanization, which accompanied with a vast growth in urban population, where cities of the global south - cities of developing and emerging countries (CDE) - are leading both the urbanization process and the urban population growth of the World for more than four decades, according to the UN Most of the world's fastest-growing cities are located in Asia and Africa. CDEs already have socio-economic obstacles, this is why they represent a special case of World cities that face a real challenge regarding how to deal with the impact of the chaotic urbanization process and the rapid urban population growth, meanwhile to deal

with their socio-economic and environmental obstacles. These challenges have produced cities with urban defects, where urban poverty areas (UPAs) are the most significant urban phenomenon that characterizes the majority of CDEs.

This study concerning a specified type of UPAs which cannot be considered as shantytowns, as these areas basically consist of permanent buildings and have the potentials to be improved and upgraded (will be discussed later in another section of this study), this type of UPAs exist in many CDEs, the majority of cases are in Latin America such as Rio de Janeiro, Sao Paulo, Bogota, Medellin, also there are some cases in Asia and Africa such as Cairo in Egypt. It is expected that through the next three decades more UPAs will appear as well as the growth of the existing ones "By 2030, projections indicate that two billion of the global urban population will live in slums, mostly in Africa and Asia" (Ezeh, et al., 2016), also according to UN-Habitat: the absolute numbers of slums continue to grow and the slum challenge remains a critical factor for the persistence of poverty in the world (UN-Habitat, 2016).

This study argued that under the influence of the continuity of chaotic urbanization and the urban population growth in CDEs, there is still a need for new and smart solutions to cope with UPAs, particularly regarding those areas that can be considered as meaningful UPAs that have the potentials to be upgraded. The study discusses how urban architecture as a design domain can provide multi-dimensional solutions that contribute to the enhancement of the quality of urban life, as well as to unlock the potentials of the urban architecture product which represents a distinctive type of buildings. Also to elaborate definitions to some terms that are in the core of the scope of this study, such as UPAs, urban architecture to a more comprehensive and broader understanding of these terms.

## **2. Urban architecture, towards a broader understanding**

Urban architecture is a term that is wildly used in the practical domain of both architecture and urban design by architects and urban designers to refer to a specific type of buildings that was designed in coordinates with its urban context. In other words, urban architecture aims at integrating the architectural project with its urban context (Komez, 2011). This understanding of the term is what this study is looking for, to a broader understanding of urban architecture, to a more comprehensive understanding that is not limited to the patchy imperfection understanding that urban architecture is only comprised of buildings made for an urban setting, (Harris, 2018) as it is not designed for a rural setting. However, this understanding of the term has a few scholar research that coped with this definition from a theoretical point of view.

Here are some definitions that consistent with the intended understanding in this study. This actually broadens the understanding of urban architecture is not relatively a contemporary concept. Doxiades in his book "Architecture in Transition" published in 1963, realized early how an architect needs in architecture design process to be not limited to the building itself, but must extend to its surrounding environment. He also explained that the architect must deal with the building environment at the local level, the other surrounding buildings, streets, squares, traffic, and moreover at a broader level with other similar activities (Doxiades, 1963). However, Doxiades literally used the term urban as oppose to rural which somehow makes his definition not very relevant to the broader intended meaning in this study (Komez, 2011).

However, the contemporary birth of the scholar research regarding urban architecture from a theoretical perspective and as a standalone design approach that engages between architectural design and urban design was in the USA during the 1970s and 1980s. In 1981, the second volume of the Harvard Architecture Review was titled Urban Architecture, it defined urban architecture as a design approach, which promotes architectural design that is responsive to variables of its urban context; city, street pattern, building character, open spaces and communities (The Harvard Architecture Review, 1981). This definition comprises the contemporary understanding of the term urban architecture in this study, another example from the USA during the same period, Attoe, and Donn in their book: "American Urban Architecture, Catalysts in the Design of Cities", published in 1989 the term urban architecture was mentioned in the title. However, they identified urban architecture in a metaphoric way as it rep-

resents a theory called catalytic architecture, which describes the positive impact of an individual urban building or project on the surrounding urban context and the whole city. Urban architecture according to this definition have a broader understanding to include not only individual buildings, but it could also be a project that consists of several buildings (Attoe, & Donn, 1989).

Besides the preceding definitions, here are some contemporary definitions which correspond to the context of this study. In 2003, Matthew Carmona defined urban architecture as *"architecture that responds and contributes positively to its context and to the definition of the public realm,"* (Carmona, Heath, Oc & Tiesdell, 2003). This definition is in line with the intended meaning in this study as well it highlights the positive impact of urban architecture on its urban realm, also Robert Cowan in 2005 defend it as *"buildings in an urban setting" or "the overall design of an urban area."* (Cowan, 2005), according to Cowan the main concept of urban architecture is to design buildings in harmony and unitary with its urban context. Lastly, in 2009, Komez defined urban architecture as *a holistic architectural design approach that operates beyond the boundaries of the fields, Opposing to the architectural projects that are designed and perceived as objects, urban architecture aims at integrating the architectural project with its urban environment, namely its context* (Komez, 2011). In light of the previous discussion, urban architecture in this study is a standing architecture design approach that engages between architecture design and urban design in one process. It aims to produce a unique type of buildings in harmony and integration with its urban context, so it generates the potentials to enhance the urban environment by boosting the interactions between users, their socio-economic activities and the urban realm which contributes to a better QUL.

## **2.1. Urban Architecture as a catalyst for the urban enhancement**

This study argues that urban architecture through its potentials has a positive impact on its urban context that can enhance its QUL, these potentials emerge from the final product of urban architecture as it represents a distinctive design process that gathering the advantages of both the architecture and urban characteristic.

Accordingly, this argument has a crucial twofold:

- The first fold regarding the need to determine what is the product and its characteristics of an urban architecture process? As it produced through a holistic design approach that combining architectural design and urban design.
- The second fold regarding how urban architecture contributes to the enhancement of its urban context.

### **2.1.1. The characteristics of urban architecture product**

The determining of the architectural and urban characteristics of the urban architecture product is playing a key role in the understanding of how to use urban architecture as a tool for enhancing the QUL. It is logical and rational to expect a distinctive product that has the advantages of both architectural design and urban design, based on the reached definition. In this study, the product is a specific type of buildings, which have unique architectural and urban characteristics. Attoe, Wayne, and Donn Logan clarified the types and characteristics of the product of urban architecture as a design approach, this product is not only limited to individual buildings, but it includes also projects that consist of buildings and urban spaces (Attoe, & Donn, (1989). Thus, the product may be a single building or several buildings gathered in an urban space within a project. They also determine a large list of buildings that can be considered as urban buildings, said urban buildings include a large list of different types, according to Attoe, and Donn : It includes a large list of various building types, for example, it might be a shopping mall, in another case a transportation hub and in a third a museum. It could be a designed open space or, at the smallest scale, a special feature like a colonnade or a fountain (Attoe, & Donn, 1989).

In other words, the product of urban architecture whether it is an urban building or a project must be settled for public usage and have functions which operate for their sake. It could even just be an urban space with a landscape feature that has the potential to gather public users. It consists of distinctive types of buildings or projects that

combine both the advantages of architectural and urban characteristics; thus, it generates livability to its urban context, as it boosts the daily socio-economic activities of its urban community. Komez in his notion about urban architecture explained that urban architecture is not a new phenomenon and that its contemporary definition is concerning the urban design, urbanism, and landscape. Urbanism provides new ways for integrating buildings with their contexts by adapting strategies developed in these fields (Komez, 2011). Furthermore, Attoe and Donn represented a similar concept regarding the characteristics of the product of urban architecture in which they emphasized that the final product of urban architecture (Building or project) contributes to the shaping of their city (Attoe, & Donn, 1989). To be put simply, an urban architecture product is physically and functionally connected and integrated with its urban context.

### 2.1.2. The catalytic role of urban architecture in urban poverty areas

This study claims that urban architecture has positive potentials that can enhance the QUL generally in a diverse urban context and particularly in UPA cases. In other words, urban architecture, through its products (Buildings or projects), acts as an urban catalyst that has roles and functions that go beyond those of ordinary common buildings. Many authors promote the crucial role of urban catalysts in enhancing the QUL and as a dynamic tool that positively impacts the urban context.

In her book, "Urban Catalysts in Theory and Practice", Juliet Davis discusses the role of architectural projects which can be defined as 'catalysts' to urban renewal, she clarified the meaning of the catalytic role of urban architecture through both the theoretical views of a number of urban and architectural thinkers, as well as through a practical example of an urban architecture project (*a specific project – the Thames Barrier Park – that has been referred to as a 'catalyst' to the urban renewal of London's Royal Docks*). She managed to prove the catalytic role of urban architecture that can act effectively as an urban renewal tool (Davis, 2010). Moreover, according to Kate-Issima Francin: "*Urban catalysts appear to be interesting tools to improve the quality of the built environment, and hence, the quality of life, by jumpstarting and shaping the urban transformation process of underutilized areas*" (Francin, 2015). These contemporary views of urban architecture and its catalytic role in urban development as a tool that can improve the QUL is in line with the what Attoe and Donn in 1989 wrote regarding urban architecture as an urban catalyst, they described the product of urban architecture as an urban catalyst which has a positive impact in the urban context and act as an incremental urban regeneration tool. It has a greater purpose than just to solve a functional problem, create an investment or to provide an amenity, it represents "*an urban element that is shaped by the city (its "laboratory" setting) and then, in turn, shapes its context. Its purpose is the incremental, continuous regeneration of the urban fabric*" (Attoe, & Donn, 1989). Moreover, urban architecture produces urban buildings with public functions; thus, they ensure and support the validity and rationalistic of this study's claim regarding its role in enhancing the QUL. Ernest Sternberg described how some types of public buildings such as stadiums, museums and other facilities could be considered as urban catalysts, as they receive public support in order to spur development in the immediate surrounding area (Ernest, 2002).

### 3. Urban poverty areas, the intended meaning in this study

Urban poverty areas (UPAs) in this study are defined from an urban perspective; thus, it refers to a type of urban areas that suffer from bad quality of urban life (Elewa, 2018). According to this definition, UPAs include not only informal urbanization areas but also formal areas that have a bad QUL, so UPA as a term has a broader scope than to be limited only to informal urbanization and of course slums, shantytowns, favelas (in South America), or any other similar terms can be considered as UPAs.

UPAs are often linked to informal urbanism which is the product of the rapid urbanization process in the cities of developing and emerging countries. According to the UN: Rapid urbanization, if not well managed, will lead to more informal settlements and poverty (UN, 2014). Therefore, these areas represent the urban product of informality, they are characterized by the low-quality buildings as well as low-quality urban context but even so,

these low-quality urbanism areas as UPAs can be easily classified into two main categories regarding their quality of buildings and urbanism. The first type of UPAs is the type that consists of permanent buildings, and the other type is the type that consists of temporary buildings which often consists of shelters and huts that lack the main infrastructure and represent the worst case of slums which are also called squatter areas or shanty towns (Elewa, 2018). However, in this study, the focus is on the first type which is a specific type of UPAs with architectural and urban criteria that according to the hypothesis of the study, these specific areas can be improved and upgraded through the usual and common upgrading approaches.

### 3.1. The architectural and urban characteristics of the permanent building type of UPAs

This type of UPAs often spread in the CDEs, witnesses a growing economy, this growing economy is usually accompanied by domestic immigration for socio-economic opportunities. These UPAs differ in many ways from the usual slums that consist mainly of temporary huts and tin ashes, they are not shantytowns since they consist of permanent buildings. This special type of UPAs have some potential that makes them meaningful places, in other words, and from an upgraded urban perspective, these areas have the capability to be improved regarding their quality of urban life. This specified type of UPAs spreads in the major cities of Latin America such as Mexico City, Caracas, Bogota, Madeline, Sao Paolo, Rio De Janeiro and other similar cases. This type also exists in some cases outside South America in Africa such as the case of slums in Greater Cairo which is significantly marked by the red bricks buildings (Elewa, 2018), see Figure 1.

The most significant architectural and urban characteristics of the permanent building type of UPAs Include the following:

- The majority of buildings are residential, they were designed to meet the basic needs of the dwellers. They represent the power of the informal socio-economic sector in developing and emerging countries. These buildings mainly consist of multi-story structural buildings with bricks walls.
- The urban context is characterized by the high density of the built-up area, and of course, this means less urban spaces and lack of public spaces which is a significant urban defect in these areas.
- The urban context in these areas is the product of informality, the available urban spaces were occupied by the basic needs, and in other words, the other usual social spaces in the formal areas were neglected. According to Satterthwaite they represent household livelihood or survival strategies (Satterthwaite, 1995).
- The street and alleys network in the majority of cases represent the original features of the topography of the site or the geometric divisions that is related to the former land use such as the agricultural divisions in some cases of UPAs in Greater Cairo. However, in most cases, inaccessibility and irregularity is a common defect.



Figure 1. Examples of the permanent buildings type of UPAs from Cairo, Egypt and Rio de Janeiro, Brazil. Notice the similarity in the urban tissue and buildings type. Source: google earth maps edited by the author.

## 4. Practical cases

The selected cases share the same characteristics regarding urban context and socio-economic aspects. They are all permanent building types of UPAs in CDEs. As well as the fact that all the cases represent community projects (in terms of community participatory during the design process, decision making and implementing the project), and were designed through an urban architecture type of design approach. The analytical study aimed at clarifying the role of the potentials of urban architecture as a design approach in the enhancement of the QUL in UPAs.

The study based on the hereunder specified criteria:

- Introduction (a brief description of the basic demographic data of the case, the characteristics of the urban context).
- The community participatory
- The concept and the strategies (urban architecture as a design approach).
- The program and the objectives: (The description of the project components, and the objectives).
- The learned lessons.

### 4.1. Tapis Rouge, a public space in the informal neighborhood, Port-au-Prince, Haiti.

The case of Tapis Rouge represents an example of the urban architecture's project as it was described in this study, it has an urban catalytic act that contributes positively to the socio-economic activities in urban communities particularly in the case of UPAs. Also, the project is an example of a community project that delivers the actual needs of the community through their participatory role. The case is about a public space that delivers multi socio-economic functions for the poor dwellers of a UPA.

#### 4.1.1. Introduction

The proposed case 'Tapis Rouge' is located in Carrefour-Feuilles, an informal UPA in the Southern outskirts of Port-au-Prince, Haiti. During the last three decades the metropolitan area of Haiti was developed informally, the spread of informal chaotic urbanization is a significant phenomenon that marks the city. According to WHO, about 74% of the urban population lives in informal neighborhoods (UNHABITAT, 2017). Tapis Rouge was one of the most damaged informal neighborhoods during the 2010 earthquake. After the disaster, the site of Tapis Rouge turned into a tent camp for displaced dwellers. The site occupied the top of a slope overlooking the ravines where the houses cling to the slopes of the ravine. Tapis Rouge is a landmark all they way from the entrance to the narrow passages, the alleys, and the homes below (Archdaily, 2017), see Figure 2.



Figure 2. (a) Port-au-Prince Map. Figure 2, (b) The dense urbanization of Carrefour-Feuilles. Source: Port-au-Prince, Haiti.

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The characteristics of the urban context of Tapis Rouge reflect the urban product of informality, extreme poverty is a remarkable phenomenon. The homes lack the basic infrastructure, in particular the neighborhood has limited access to electricity. Moreover, the neighborhood suffers from inaccessibility, it can hardly be accessed by vehicles and pedestrians due to the narrow alleys and the downhill corridors' network. As well as the urban fabric remarkably characterized by the lack of public spaces. Moreover, the available public spaces lack safety and are predominately crowded due to the high density population, that is why the social life takes place among the tight corners and between the walls of the buildings. The project 'Tapis Rouge' is in one of several public spaces in Carrefour-Feuilles, acting as an initiative under the program of LAMIKA, the abbreviation for the phrase 'A better life in my neighborhood' for the native people of Haiti (Archdaily, 2017). The Design and the construction supervision conducted by Emergent Vernacular Architecture (EVA Studio). According to the UN-HABITAT: The construction process depended on local contractors, and by using locally available resources. All the construction materials are sourced from the local market and all the pavers are manufactured in Haiti. (UN-HABITAT, 2017). The project was funded by The American Red Cross, which was implemented by the Global Communities (an international development and humanitarian aid organization) in 2016.

#### 4.1.2. A community project

The case represents a community-oriented project that was designed by EVA – Emergent Vernacular Architecture – to respond to the real socio-economic needs of the local community through a participatory approach that allowed the community members to participate in the decision making of the design concept and program. The tasks of the EVA studio included the arrangement of workshops with the local dwellers in order to determine the uses of the project and other related issues to the design components. According to the UN-HABITAT: The final project represented suitable and effective design solutions that could address the most urgent needs, ambitions and goals identified by community members. The program of the space and the architectural design have been therefore established in different stages directly with the community (UN-HABITAT, 2017).

#### 4.1.3. The concept and the strategies (urban architecture as a design approach)

The design concept was strongly linked to the project's objectives that were reached through a community's participatory approach. The concept focused on how to enhance the urban context of the informal neighborhood; meanwhile, in order to respond to the urgent social needs of the community (Archdaily, 2017). Thus, the design concept was to provide a multi-functional public space that was designed through urban architecture as a design approach. The design concept based on the usage of the potentials of urban architecture through its catalytic role in enhancing the QUL in the informal neighborhood. Besides the achievement of multi-socioeconomic benefits for the society, according to the UN-HABITAT: The project aimed at exploring the unexpected impact boundaries of architecture, in a context where the values of architecture are unexpected and unfamiliar (UN-HABITAT, 2017). The architecture here refers to urban architecture and its hidden and unexpected potential, particularly in such an urban context. The usage of urban architecture as a design approach in 'Tapis Rouge' is in line with the targeted placemaking strategies that is aimed at making the dwellers proud of their neighborhood and to give them a sense of ownership towards the project (UNHABITAT, 2017).

The characteristics of the urban architecture product allowed the users of the project (the neighborhood's dwellers) to have full accessibility to the entire public space and to make it integrated with the urban context of the informal neighborhood. Thus, the project can positively impact both the physical surrounding urban context and the social life of the community as well. For instance, the project included a wall that surrounds the circular borders of the main arena (The amphitheater) which has been transformed into a popular colorful mural by the local artists, the dwellers and their children. The idea emerged as a result of one of the participatory workshops that gathered the designers with the local dwellers (Archdaily, 2017).

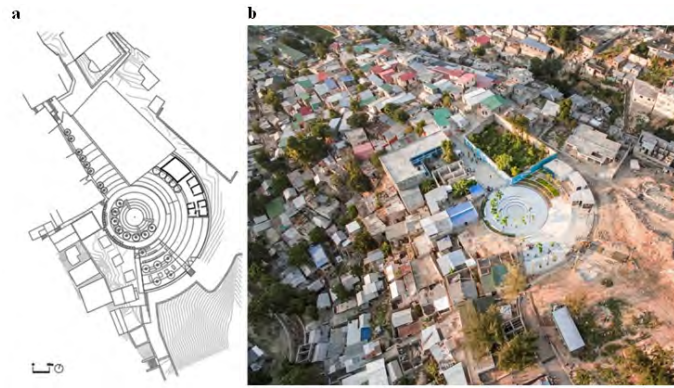


Figure 3. (a) General layout of the project. Source: Wilkinson, T., 2017. (b) Ariel view of the project and the urban context. Source: EVA studio, <http://www.evastudio.co.uk/tapis-rouge/>

#### 4.1.4. The program and the objectives

The project's program and objectives reflected the essential role of the usage of urban architecture as a design approach. The project main objective was to meet both the community really needs and to achieve the enhancement of the QUL in an informal neighborhood (Wilkinson, 2017). The designers aimed at providing a multifunctional public space that provides societal facilities for the local community. The project was shaped to form an amphitheater as a community's social arena, this central area has been marked as the heart of the project. The edges of the seating steps of the amphitheater are surrounded by small trees which when fully grown will provide shade for the users from the sun. The project contains an open area equipped as an open gym and another area near the colorful mural hosts open greenery terraces, each one is characterized by different plants.

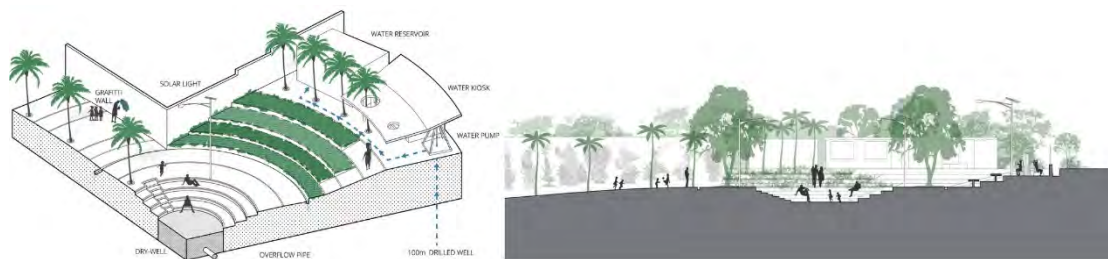


Figure 4. Cross-section and section in the main plaza of the project. Source: Archdaily, 2017

The project aimed to achieve the following goals:

- The provision of a public space that acts as an urban catalyst to unfold an incremental urban reform and enhancement process. This public space compensates for both the lack of public spaces on the urban context level as well as the lack of adequate indoor spaces in the dwellers' housing.
- The public space has social functions to contribute to transform the community from social exclusion and informality towards social cohesion by giving the power for community participation of different population groups to urban life. As well as to give the dwellers the pride of their neighborhood and identity through the community participatory role that provides them with the sense of ownership (Archdaily, 2017).
- The open public spaces of the project were designed to fit the whole community's dwellers of different ages. For instance, larger designed playground spaces for children, a green gym for youth and adults, outdoor workout equipment, as well as to provide spaces for relaxation with more comfortable equipment (UNHABITAT, 2017).
- To mitigate the sources of environmental risks in the open public spaces such as floods and landslides, to improve urban accessibility and other needed infrastructure such as lighting for pedestrians' network. As a result, reducing violence, crime, and other undesired social behavior (Archdaily, 2017).

- The project was designed to cope with the lack of basic infrastructure in Carrefour-Feuilles, the informal neighborhood suffered from extreme urban poverty, limited access to electricity and clean water. The project provided Green Energy Solutions through the installation of solar lights for public spaces and pedestrians' network. There was also a well incorporated through the project, according to UN-HABITAT: *There are storage tanks for the adjacent water distribution station. The well that feeds the tanks and station brings water from 100m below ground. The revenue generated from the sales of water will be reinvested into maintaining the public space* (UNHABITAT, 2017).



Figure 5. Shots showing the project's urban spaces. Source: Archdaily, 2017

#### 4.1.5. The results and learned lessons

The case of Tapis Rouge showed several results and lessons extracted from practice; these lessons proved practically the argument of this study.

These results and learned lessons include the hereunder:

- The establishing of a community's public space based on an urban architecture approach was a successful decision, the project managed to build a strong connection and interaction with the surrounding urban context. Moreover, the project was a way to connect the informal neighborhood physically with the rest of the city, a step towards formality notably that the presence of the local authorities is weak and the urban growth process is chaotic and uncontrolled.
- A well designed and quality constructed community's project in an informal UPA means to make a deeper urban impact for a low extra investment (UNHABITAT, 2017). In the case of the Tapis Rouge project, it has proved that urban architectural design can merge well designed and functional public spaces with mitigating infrastructures. So simply, a high-quality community's project does not always mean high financing.
- The project supported the sustainability of the local socio-economic system through the facilitating of livelihoods, the project managed to facilitate commercial and exchange between the neighborhood and the rest of the city by improving its image. Moreover, the construction of the project relied mainly on local resources, products and workforce. Eva studio's design depended only on local contractors, local materials and available local plants, which resulted in strengthening the local construction chain and of course the entire socio-economic system.
- The project supported environmental sustainability, the lighting of the public spaces and the pedestrian's network relied on solar lamps. These lamps allowed children and their families to use the public spaces after sunset and to make these spaces safer. As well as in such an informal urban context that suffers from the discontinuously of electric supply and is not accessible to everybody, the installation of solar lamps in public spaces simply means to afford equal opportunity for all the community members.
- The case highlighted the pivotal role of the active participation of the community members in both the design and construction of community projects in order to deal with the commonly expected issues, particularly in the case of informal UPAs. Issues such as site safety, land tenure and the durability of the project can

be handled by the community active participatory. According to the UN-HABITAT: *The post-occupancy evaluation of public spaces in Carrefour-Feuilles, have highlighted that in Haiti, the more public places provide space and comfort for outdoor activities, the more they acquire value for community members and the more they will provide unsolicited maintenance* (UNHABITAT, 2017).

#### 4.2. A Vertical Gym for the informal UPAs of Caracas

This case also represents the intended meaning by a building that was designed through urban architecture as a design approach, a creative case that showed how buildings can be adapted through urban architecture to deliver more opportunities and more functional spaces under the impact of space shortage in informal UPA.

##### 4.2.1. Introduction

This case represents an innovative idea that was explored through the potentials of urban architecture, it is a case of a vertical gym that was established in 2004 as a pilot project in La Cruz an informal UPA in Chacao, Caracas, the capital city of Venezuela. Caracas is an example of the CDEs that suffers from the chaotic uncontrolled urbanization and the existence of informal UPAs (slums, locally known as Barrios). According to Brillembourg and Klumpner: currently in Caracas, about 60% of the city's inhabitants are living in informal UPAs and the spreading of these informal districts is a continuous process. Despite the continuing urban population growth, only 50,000 to 80,000 social units are being built annually, while at least a million units are needed. The result is more informal buildings and UPAs (Brillembourg, & Klumpner, 2011).

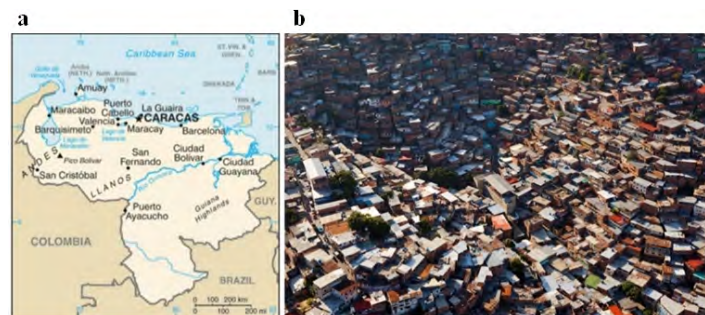


Figure 6. (a) Caracas Map. (b) The dense urbanization of Chacao, Caracas. Source: Aerial view of slums in Caracas, Venezuela. Source Urban-Think Tank, 2011.

Like other informal UPAs in CDEs, La Cruz suffers from informality that impacted the socio-economic activities and other aspects of urban life negatively. Crime is a challenging and frightening aspect that makes public spaces dangerous particularly at night, the murder rate in Caracas is the highest in the whole of Latin America. (Brillembourg, & Klumpner, 2011). The lack of social amenities is another problem that faces dwellers particularly children and youth, they lack alternatives. However, the most significant urban defect that characterized La Cruz is the extreme shortage of vacant lands for community facilities. The vertical gym in La Cruz is a pilot project that deals with the problem of the urban space shortage by expanding vertically. The project was designed by architects Alfredo Brillembourg and Hubert Klumpner from the interdisciplinary design practice Urban-Think Tank (U-TT), the project was implemented in 2004. The project forms part of the U-TT's ambitions to create 100 vertical gyms for the informal UPAs in Caracas. The Municipality of Chacao, where La Cruz is located was the client, the project was implemented at a cost of 1.5 million USD. A German foundation donated a seed funding that was received by U-TT (Schwartz, 2012).

#### 4.2.2. A community project

The designers' team of U-TT views themselves as an agency for research and development and an instrument for social change which aims at empowering the poor through design (Brillembourg & Klumpner, 2011). Moreover, this project's case like all U-TT's projects was self-initiated. That is why relationships with the local community in La Cruz played a pivotal role in the decision making during the design process, according to Amanda Hurley: All U-TT's projects were self-initiated. Relationships were what got it built (Hurley, 2014).

Therefore, the vertical gym represents a community project in terms of community participatory. The designers interacted with the community's dwellers and managed to win them over, the project program and the final concept and ideas were developed by several workshops that gathered the design team and the community members (Hurley, 2014). Brillembourg and Klumpner the project designers commented on the community role in the design process as *the key to maximizing the use of the facility is to engage in community involvement from the beginning of the design process. We were on the ground asking residents of the barrio exactly what they wanted and what their neighborhood needed most. This practice gives the community a stake in the construction and design of the structure* (Cracknell, 2013). Moreover, according to Justin McGuirk in his book titled "Radical Cities": his first meeting with Brillembourg and Klumpner (the architects of the project and U-TT owners) was in La Cruz, the informal UPA in Caracas. He described this meeting: *"Inaction" in a Caracas barrio, striking up conversations, playing a game of basketball with some kids. It is not a job for the shy or ill-at-ease. "The activist architect is an extrovert or he is nothing"* (Hurley, 2014).

#### 4.2.3. The concept and the strategies (urban architecture as a design approach)

- La Cruz as an informal UPA was characterized by a very dense urban context that witnesses a continuous dynamic spatial change. The available buildable land is often claimed for housing as a priority, considering community facilities as a type of luxury needs that can be dispensed. Therefore, the designers had to redraw and to redesign key elements to accommodate the shifting dimensions of available land. The design concept was based on maximizing the area of the small available land by expanding vertically to accommodate more spaces for diverse activities and making a combination between open outdoor space and inner spaces. Moreover, to create innovative outdoor spaces within the building. For instance, the rooftop court to provide a building that is strongly linked to its urban context and to be well accessed to the community (Brillembourg, & Klumpner, 2011).
- The designers tend to simplify the design, in other words, they used urban architecture tools to overcome the difficult financial, social and political obstacles. According to Brillembourg and Klumpner: Urban-Think Tank shares their approach to working in complex environments that call for simple solutions (Brillembourg, & Klumpner, 2011). For instance, the U-TT designers' team developed an innovative ramp to connect the several floors and to provide a smooth vertical circulation with affordable cost instead of the costly elevators.
- The project was designed to be a replicable prototype that can be assembled in other UPAs with the diverse urban context, thus, the designers followed design strategies that seek achieving a low-cost flexible modular design that provides more effective spaces within the small available land. According to Hurley: *The consummate U-TT idea, the gym is tactical, replicable, and programmed to the max—to make the most of scarce land in a dense city* (Hurley, 2014). Moreover, this prototype can be easily modified to adapt and fit different programs, social, financial and ecological demands (Cracknell, 2013).

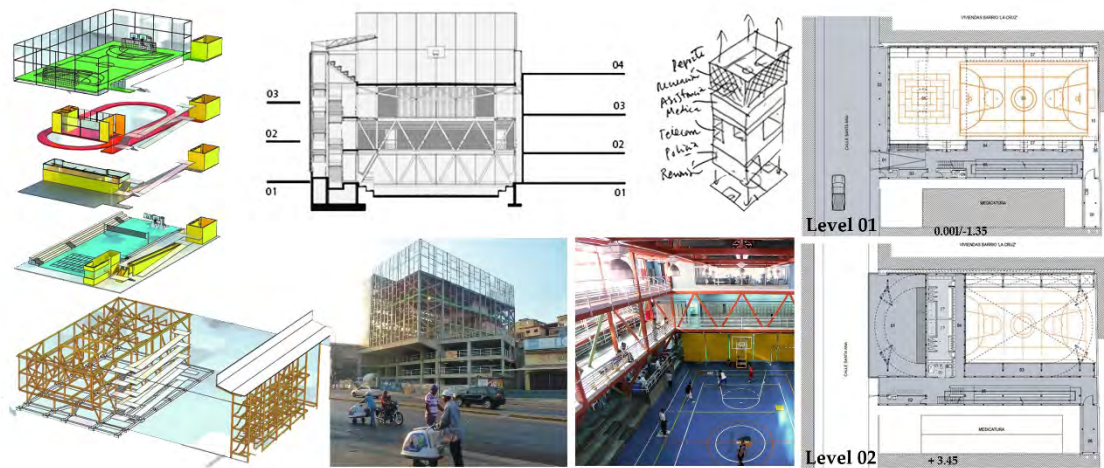


Figure 7. The vertical gym drawings showed how the project is a replicable prototype and the project after implantation.

Source U-TT. Brillembourg, A. & Klumpner, H., 2011.

#### 4.2.4. The program and the objectives

The project is more than a building as it was designed through urban architecture, the vertical gym is a public project that is well connected with society and positively interacted with the societal activities. In other words, the project is a piece of social infrastructure. The vertical gym occupied a ground area of about 1,000 square meters and through the vertically stacked three floors and an open roof, it provides facilities covering 3,800 square meters (Cracknell, 2013). The program aimed at providing an extremely efficient variety of spaces for different recreational activities that targets mainly children and youth through after-school programs, summer camps and sports leagues. This include the following activities: Vertically stacked basketball courts, a running track, a dance studio, weightlifting areas, an open-air soccer field., climbing wall, a café and relevant athletic facilities (Brillembourg, & Klumpner, 2011), (Cracknell, 2013).

The project aimed towards achieving the following objectives:

- To solve space shortage in La Cruz and UPAs of Caracas that leads to the phenomenon of lacking social amenities. According to Hurley: *The consummate U-TT idea, the gym is tactical, replicable, and programmed to the max—to make the most of scarce land in a dense city* (Hurley, 2014); as well as to provide a piece of social infrastructure that aimed through sports and healthy activities at reducing crime rates amongst the youth and adults in La Cruz and surrounding UPAs in Caracas. And to also promote healthy lifestyles and strengthened social capital.
- To enhance the QUL in La Cruz by providing a community urban architecture project that would bring socio-economic opportunities for the local community.
- The project supports the local environment to be more sustainable. The project was designed to depend on renewable energy technology where ecological conditions allow them to, the project can also be outfitted with solar cells, wind turbines and rainwater collection infrastructure (Brillembourg, & Klumpner, 2011).



Figure 8. The vertical gym in La Cruz during construction and after implementation. Source: (Brillembourg, & Klumpner, 2011), (Hurley, 2014).

#### 4.2.5. The results and learned lessons

The case showed how community projects through urban architecture as a design approach can deliver more opportunities that support the enhancement of the QUL in UPAs.

The results and learned lessons from practice include the hereunder:

- The architects have managed to accommodate public outdoor recreational areas into a small limited area through an innovative urban architecture design of a vertical gym. This is a lesson on how to design in small spaces in a deeply needy UPA that is located in a very dense urban context.
- The project clarified the essential role of community participatory in making the success of any project, the project managed to give the dwellers a sense of collective ownership and responsibility. Thus, the project contributes positively to reducing crime rates and to attract high-frequency use. According to Kate Cracknell: The project helped lower the crime rate in this barrio by more than 30 percent since its inauguration (Cracknell, 2013).
- The vertical gym in La Cruz as a pilot initial project provides some important lessons, U-TT's designers relied on these lessons in standardizing the dimensions and to develop a prefabricated construction system that reduced the construction time and cost (Cracknell, 2013).

## 5. Conclusion

The argument of this study dealt with urban architecture as an urban design approach that provides a distinctive architectural product made for an urban setting; therefore, it can enhance the QUL in UPA through community projects. This argument initiated a discussion aimed towards investigating the intended meaning by urban architecture and other related terms that are strongly linked to the study hypothesis.

The study defined urban architecture from a broader perspective as a standing domain of architecture design that engages between architectural design and urban design in an integrated design process, it aims at producing a unique type of building that completely merges with the surrounding urban context. Moreover, the study discussed the catalytic role of urban architecture in order to clarify, theoretically, how urban architecture can enhance the QUL. Simply, an urban architecture product is a public project that is physically and functionally connected and integrated with its urban context and delivers multi socio-economic benefits for its urban community. The study highlighted the importance to determine a specific type of UPAs which is intended in this study to be enhanced by community projects that were designed through urban architecture principals, which is a specific type of UPAs consisting of permanent buildings with architectural and urban criteria that have the capability to be improved and upgraded through the usual and common upgrading approaches, they are not the worst case of slums and shantytowns.

Finally, the study through an analytical study of two selected cases aims to prove and illustrate the study's validity. The two cases provide various lessons from actual practices that clarified how community projects that were designed through urban architecture can positively enhance the QUL in UPAs.

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