

# Intercessions among American architecture students and a Puerto Rican informal settlement

Jean M. Caldieron, Emmanouil Vermisso, Mate Thitisawat

Florida Atlantic University, Fort Lauderdale, Florida

**ABSTRACT:** This paper presents the research and design experiences of American students of architecture working on a research project in the Puerto Rican informal settlement of La Perla. This neighborhood is located adjacent to the historic city of San Juan, Puerto Rico, (a UNESCO World Heritage Site) and has been segregated from the rest of the city since the first settlers invaded a plot of land about 100 years ago. This paper presents part of the experience of faculty members and more than 180 architecture students from the continental United States, who have visited Puerto Rico in the last 6 years, as an attempt to incorporate studies of informal settlements in their academic curriculum (through 14 field trips overall). A large research project has been developed to individually study approximately 400 dwellings in this sector. This experience has allowed students to understand the reality of urban slums in a developing country not as spectators, but through designing real architectural and urban projects with the potential to benefit the community, as well as conduct research on disciplines which are relevant to their future profession. As a result, several architectural proposals have been designed by the students, and presented to the local authorities for consideration and further joint development under social programs that will complement the proposed design interventions.

This study is part of a collaborative effort between Florida Atlantic University, the community of La Perla, and the local government of San Juan and has been partially financed through an ARCC grant. The work aims to integrate La Perla with the rest of San Juan and improve the quality of life through research and design.

**KEYWORDS:** Informal settlements, community design, tourism potential, old San Juan.

## INTRODUCTION

From the discovery of the New World until the independence of Latin America from Spain in the 17<sup>th</sup> century, the founding of Spanish cities in America has been among the most extensive urbanization efforts in world history. Apart from the evangelization of the aboriginal population, the main objectives of the establishment of such urban settlements on the American continent have been the conquest and domination of new territories towards the exploitation of mineral and agricultural resources. Shortly after Columbus discovered Puerto Rico (1493), in the year of 1508, the Spanish Crown started a settlement where today's capital, San Juan, still lies. The urban planning of the Spanish colonial cities was designed according to the principles of the "Laws of the Indies", which mandate everything from treatment of the local population to planning guidelines (i.e. width of streets) (Nuttall, 1573, Stanilawsky, 1947). Although San Juan was founded after the proclamation of the Laws of the Indies, the influence of this legislation still applies today.

The Spanish settlement of "Old San Juan" is strategically located in the small islet of San Juan. The islet topography emerges vertically from the ocean as a natural fortress. The Atlantic Ocean lies towards the north, and San Juan Bay, one of the best natural ports of the Caribbean, lies to the South and West. It is an ideal location for a fortified city, which allows protection from pirates and other invaders.

San Juan has historically been an important exchange center for the Spanish crown. Gold and other resources from South America were transported through Panama and the Caribbean to

San Juan and from there, shipped to Spain. Cargo going to the island is subject to taxation; as a result, San Juan, together with La Habana and Santo Domingo, became one of the richest and most important Caribbean ports during the colonial era. Monuments and buildings were erected using the typical Spanish Colonial architectural style.

Today, unlike the rest of the Spanish territories, Puerto Rico is not a country, but a "Commonwealth" of the United States and is considered the oldest colony in the world (Monge, 1997). Thanks to its ties to the American economy, it features the highest GDP per capita of Latin America (World Bank, 2012). San Juan is a sprawling city with more than 500,000 inhabitants. It has grown consistently, subsequently surrounding neighboring urban centers. It is a city where the old colonial architecture and Spanish culture mix together with American culture. The historic center of San Juan (Old San Juan) has been designated an UNESCO patrimony area since 1983. The area has hundreds of beautifully restored buildings and tourist attractions, including one of the busiest cruise ports in the Caribbean.

One of the most intriguing facts about Old San Juan is at the same time the most paradoxical; what is probably the most valuable piece of land on the whole island, located on a steep rocky slope bordered by the city wall and the ocean, is occupied by a shantytown named 'La Perla'. This area was deemed unsuitable for residential purposes in the past, because it incorporated the old city slaughterhouse and cemetery; it was therefore considered dangerous due to possible health risks associated with the land use.

By the middle of the 19<sup>th</sup> century, poor families started moving into this area. With the decrease of agricultural activity in the countryside, several families without alternative resources illegally invaded the whole area; the invasion took place as a spontaneous process without any urban planning or official regulations. Since then, two neighborhoods have co-existed on the same land separated by a colonial rampart and economical and cultural circumstances. La Perla, like other informal neighborhoods, represents the marginalization of the low-income social class in cities of the developing world. Informal neighborhoods, also known as 'shantytowns', are a typical phenomenon in developing countries, where urban poor invade the land and build groups of improvised shelters or shacks to form a neighborhood; as these settlements lack a design master plan, they are usually considered 'informal'.

In comparison to other informal neighborhoods around the world, la Perla has higher standards and several inhabitants live a relatively comfortable life. This, nevertheless, does not eliminate social problems such as the marginalization of the residents. The settlement's idiosyncrasies make it an attractive case-study for various fields of inquiry; among the studies available, some present a medical focus, while others concentrate on literature related to popular musical expressions because La Perla is home to some famous musicians. From an architectural and urban point of view, however, the only published studies are related to housing satisfaction (Caldieron, 2011), and self-improvement (Caldieron, 2013).

One of the main problems of la Perla is the advanced deterioration of residential structures as well as the lack of adequate infrastructure and public space. There are many abandoned shelters and unused plots; on the other hand, the neighborhood is economically segregated from San Juan and the millions of tourists who visit the city every year. Due to its vernacular architecture and the use of colors and murals throughout the neighborhood, La Perla has the potential of becoming a tourist attraction. In many developed countries, especially in Europe, slums have occasionally been transformed into tourist destinations. The Olympic Games in Athens, for example, helped transform certain areas in the city (Maloutas, 2009). Motivated by the growth of tourism, the restoration of particular cities in Cyprus has received mixed reviews (Akis, Peristianis, & Warner, 1996; Vehbi & Doratli, 2010), (Caldieron 2013). In Argentina, the neighborhood of Caminito, an area with a mythic past (Lacarrieu, M. 2002), was transformed because of its interesting architecture and musical legacy. La Perla may be similarly inserted in the tourist map of Old San Juan without losing its idiosyncrasy. It needs to grow as a permanent community that nurtures on the artistic disposition of its inhabitants.

## **1. OBJECTIVE**

This project's objective is studying the necessary transformation required to integrate la Perla with the rest of San Juan. We will herewith discuss several challenges posed by this informal settlement and propose a series of possible architectural and urban interventions to improve life quality for the inhabitants of La Perla. This study is part of a larger body of research, and only specific factors are herewith addressed: The marginalization of La Perla from the rest of the city, Urban and architectural decay of the shantytown and, the possibility to convert La Perla to a tourist destination. The aforementioned arguments will be further supported by design proposals provided by architecture students.

## **2. METHODOLOGY**

This article is part of a larger study that was conducted employing a combination of methods. Observational surveys and informal conversations were realized by a group of architecture students, researchers and a group of volunteers from the community. Several visits were made to the shantytown between 2008 and 2013. Once the neighbors became aware of this study, several participated in voluntary confidential surveys; they received questionnaires about their housing conditions, social factors and neighborhood characteristics. Responses of those inhabitants who agreed to participate were treated anonymously, by returning an unidentified envelope to a specific address. Observations, local maps and photos of the dwellings' exterior areas were taken to support the questionnaire data.

La Perla is divided in 4 different areas, all of which were included in the study. The research team spoke with community leaders from the neighborhood about the possibility of proposing several architectural projects designed by the students in order to improve the neighborhood. The community expressed some of their necessities and announced the availability of some vacant land plots for such future design interventions (some of which are presented herewith). Two of the projects are under consideration by the city authorities.

## **3. RESULTS**

### **3.1 Urban Structure in la Perla:**

There are big differences between the urban morphology of La Perla and the rest of San Juan. There is a strong difference in the street patterns: streets in Spanish colonial cities are usually laid out on a strict grid. In San Juan the grid was not completely enforced, yet a certain order is visible, and the succession of plazas and streets allow a very attractive urban pattern. La Perla, on the other hand, is a typical self-built neighborhood where dwellings were erected before the planning of streets and integration of services, resulting in constructions that are scattered around any available space. Two main parallel streets run along the large, stretched shape of the neighborhood. The topography between the colonial wall that separates the city and the ocean is very steep, as can be observed in Figure 1. As a result, there are no transverse streets but rather, narrow and long inclined stairs, depriving several residences from any vehicular access. Nevertheless, La Perla features some very interesting spaces; public spaces, for example, intersect with semi-private areas, permitting an easier integration among the community members. The informality of the shantytown design creates interesting spaces for circulation. The building masses and use of bright colors also prove beneficial, giving a vernacular and artistic sense to the overall area. If La Perla is strategically improved, it can be transformed into a model informal settlement able to attract tourists.



**Fig 1.** *The city ramparts and the change of topography separate the colonial city (on the left) from the informal area of “La Perla” (shown on the right).*

Two vehicular access points and two pedestrian stairs provide physical communication between La Perla and San Juan. However, the inclined topography that creates an abrupt change of level between old San Juan and La Perla, as well as the thick colonial city ramparts generate a strong physical separation between the two sectors. Notwithstanding the physical separation, La Perla and San Juan are worlds apart in other ways; the colonial city is a well-maintained urban jewel designed using a modified grid of cobblestone streets and Spanish Colonial buildings that attract millions of tourists annually. La Perla, by contrast, is a low-income neighborhood with social and infrastructural problems. The need to incorporate La Perla with the city’s tourist market is unquestionably fundamental.

### **3.2 Tourism Potential of La Perla**

Although this neighborhood is located on one of the most valuable pieces of the island’s real-estate, (Fig. 2) La Perla displays many signs of urban decay and poverty like many other shantytowns. Land speculators and developers have not been able to bulldoze the dwellings and re-develop the area due to the settlers’ strong positive feelings towards their neighborhood, which unite them in defending their right to remain in the illegally occupied land since the last four generations.

The inhabitants of Puerto Rico consider La Perla a dangerous area, a perception which has been reinforced in the past by the reluctance of police forces to enter the shantytown. Tourist guides and books caution visitors of the danger and strongly recommend avoiding these neighborhoods. During the past year, La Perla has taken steps towards becoming a much safer neighborhood and tourists have increasingly responded positively to its intriguing appearance. Considering the local culture’s strong artistic and musical references present in La Perla, one could discern the potential in transforming this area into a sustainable neighborhood that is attractive to prospective visitors. Unfortunately, members of the younger generations and students in developed countries are apathetic to the realities of the impoverished populations, as some ignore the aesthetic significance of informal architecture and the positive values of their hard-working settlers.



**Fig. 2.** *Partial View of La Perla from the beach area looking East (Photo: Sanders)*

#### **4. PROJECTS**

The main task of the projects discussed is the integration of the neighborhood with the city, a challenging mission from both a psychological and physical perspective. A hurried integration of the city and La Perla is not possible due to the neighborhood's negative reputation. Many inhabitants from San Juan are afraid to visit the shantytown; conversely, some of La Perla's settlers are not interested in having other people walking around their neighborhood for the purpose of entertainment. It is clear that an integration strategy needs to take this reciprocal difficulty into account and allow for a gradual assimilation of the two realities.

The colonial wall that separates the neighborhood from the city constitutes a major physical challenge, as explained earlier. The wall's status as a protected UNESCO monument prevents the execution of any modifications. According to the legislation, no structure to the north of the wall may be higher than the wall itself, making the construction of an elevated pedestrian access unfeasible.



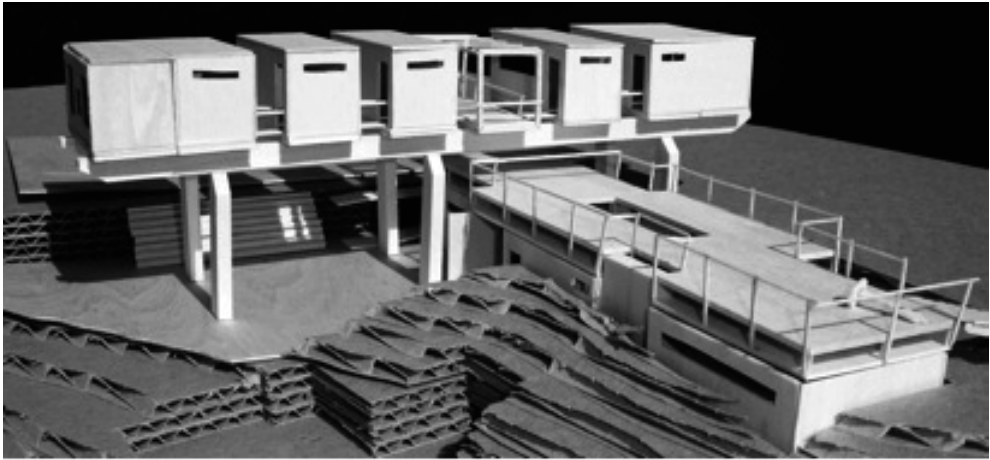
**Fig. 3.** Aerial view of la Perla in the superior area and its contrast between the formal city in the inferior area. Location of proposed projects is indicated as P-1 and P-2 (photo Google maps)

Based on this restriction, a physical connection can only occur through the existing access points or from the ocean side of La Perla. A possibility under consideration is creating a trail next to the ocean, passing through La Perla and connecting the two main fortresses of San Juan: San Cristobal and El Morro. This project is in progress under the supervision of the Agency of the National Park Services.

After studying the neighborhood and analyzing the results of surveys and observations, several improvement plans were proposed by the students. Among the proposals designed during several semesters, we will herewith discuss two solutions that best reflect a prospective integration. Figure 3 shows the location of the two projects. The site for Project 1 is next to the basketball court of the neighborhood while Project 2 negotiates a piece of land located next to the colonial cemetery, and can allow a connection between the city's visitors and the inhabitants of La Perla.

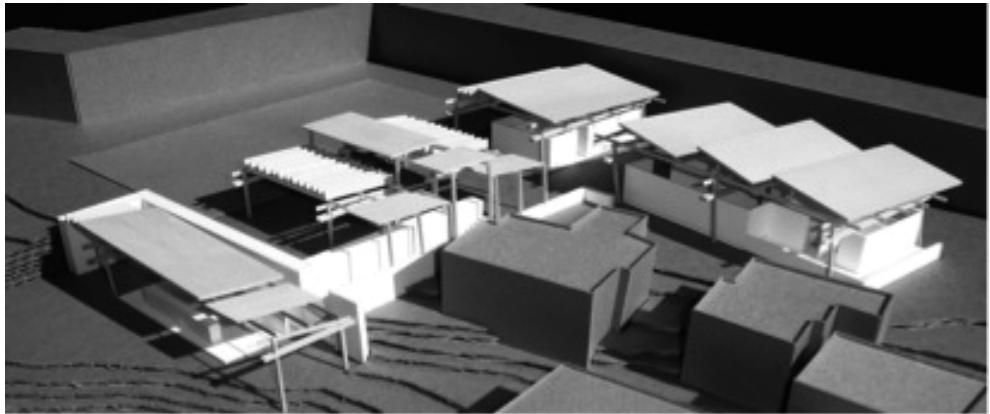
#### **4.1 Project 1. Wellness Center for La Perla**

Although La Perla includes three community centers, mostly dedicated to health services and education of infants, none is dedicated to young adults' activities. One of the most challenging problems of the settlement has been the increased use of recreational drugs, something especially worrisome among the younger generations. Many studies indicate a low level of recreational drugs use among athletes (Naylor 2001) and therefore suggest that sports can diminish the rate of drug abuse in the general population. In conversation with neighbors of La Perla, we have deemed a sports wellness center as a necessary addition for the neighborhood, accepting the prospect of sports related activities as an improvement factor in the well-being of the young generations.



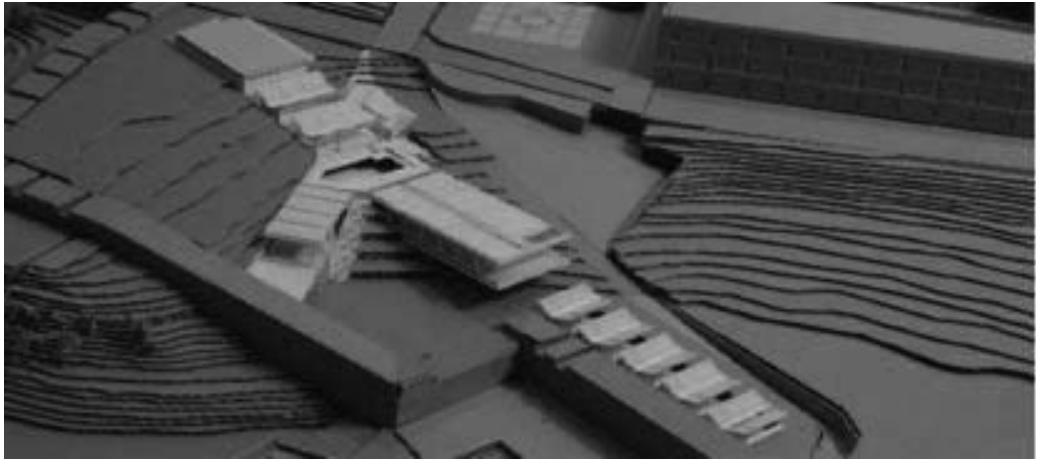
**Fig. 4.** Model of a proposal for La Perla Wellness Center. (Design by M. Gonzalez-Maya)

The only sport installation in La Perla is a basketball court. Because this is located next to the formal city, but on a lower level area, people from San Juan are able to look at the games played in the court. This is an element that can be positive for the necessary interaction between the city and the shantytown. The situation of a wellness center next to the basketball court seems very appropriate: Locals could use the actual stairs as a direct pedestrian access between the formal city and the basketball court and wellness center without passing between the shelters.

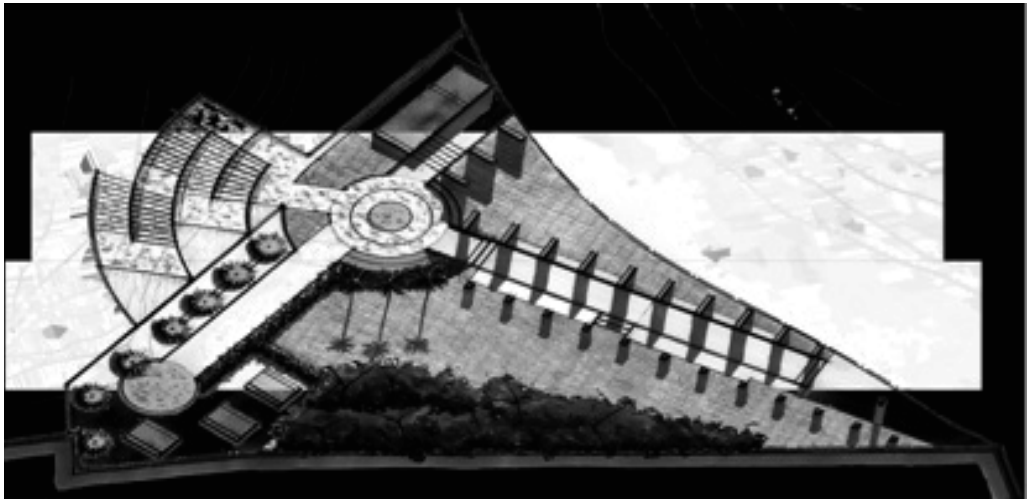


**Fig. 5.** Model of a proposal for La Perla Wellness Center (Design by M. Goodwin)

The authors, who are professors of architecture, developed the program and the students designed the projects with the professors' assistance. The program comprises multi-proposal activity rooms, a gymnasium, administrative office, and a cafeteria. The ideas were proposed for a lot that is currently occupied by two vacant shelters and an old community center. The student projects (Figures 4 and 5) were very successful from an educational point of view, and there is a strong possibility for their implementation.



*Fig. 6. Proposal for La Perla Market (Design by M. Goodwin)*



*Fig. 7. First proposal for La Perla Open Market (Design by T. Chui, M. Goodwin and P. Kondziola)*

#### **4.2 Project 2. Open Market Project. A Place for integration of la Perla and the city**

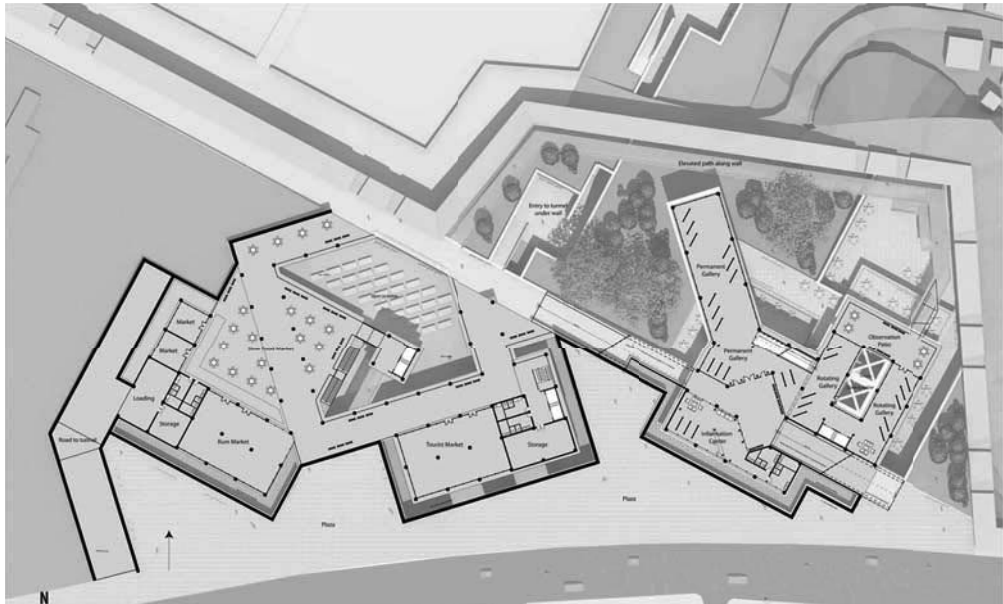
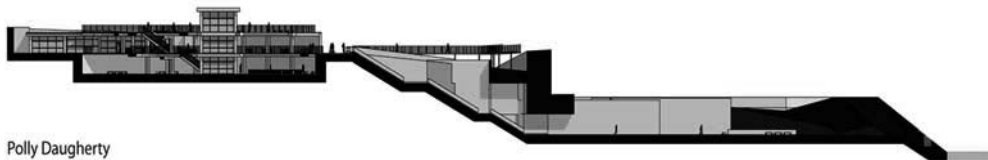
A second proposal was produced by third year architecture students who worked in groups over the course of several weeks to develop their ideas. Some of the projects were repeated with new groups of students during subsequent semesters. The land where the projects are located has a surface area of 1500 sq.m. and is about 18 meters above sea level. Pedestrian and vehicular access is provided via a steep ramp that penetrates the city wall. This is the same access that goes to the colonial cemetery.

As explained, the integration of La Perla to the Fortress area and the rest of the city must take place through one of the two vehicular accesses or two pedestrian accesses, which are already in use. The fortress and the old colonial cemetery form a walking axis that many tourists enjoy and the view of the esplanade surrounding the fortress is very attractive.

The proposal suggests the use of a vacant piece of land next to La Perla to create a space that can attract tourists and benefit all the city's inhabitants. Community leaders have agreed that a small food and handicraft open-air market may be a suitable solution because it will provide

some of La Perla's residents with an additional income. The selected plot for this project is right in front of the ocean, close to the only beach in the old San Juan area. Figure 6 represents a plan of one of the projects. The design consists of two main circulation paths: one from the shantytown on the left and the other from the cemetery to the right. Both circulation axes converge at a stair that allows the people to descend to the beach. The Plaza can also function as an open-air market. Figure 7 represents a Market located on a piece of Land North of La Perla that aims to integrate the neighborhood with the city. Figure 8 is a project that negotiates the combination of the formal city and La Perla through a connector that reaches the beach of La Perla.

Some of the proposals that adopted this idea during different semesters have kept a very simple program, proposing a square with some structures which function as an open market. Stairs allow the community and the rest of the city's inhabitants to access the beach, therefore allowing the intervention to integrate the beach and the city. Other proposals, on the other hand, proposed more complex solutions that involve the erection of buildings on both sides of the city walls; their main objective is creating physical links between the two communities. Although it is not entirely realistic to expect that tourists will visit the shantytown in the short-term, building something on the off-limits side of the colonial wall and next to the entry of the shantytown can be a definitive first step in creating a neutral area where inhabitants of both communities may co-exist.



**Fig. 8.** Plan and section of a proposed idea for La Perla Market. (Design by P. Daugherty)

## CONCLUSIONS

In several metropolitan areas, various reasons have imposed the segregation of informal settlements from the formal city. One such reason is that government bodies find ignoring shantytowns easier than improving them. For the formal inhabitants of the city, it is better to live separated from the “criminality” of the poor neighborhoods. Unfortunately informal settlements are synonymous with poverty, social problems and criminality. However, in most informal settlements inhabitants are honest people, which work hard to survive. Naturally, informal settlements demonstrate a large degree of diversity, which attests to the potential of several communities’ and warrants our identification and consideration of positive factors present therein, from an urban development perspective.

As previously described in the presented case-study, the separation between La Perla and San Juan is not only physical; both communities have been sharing the area but are separated socially. Some residents from San Juan may discriminate against La Perla inhabitants because of the shantytown’s bad reputation. The authors’ experience has indicated that La Perla is no more dangerous than any other low-income neighborhood of San Juan and its inhabitants are mostly good people. The decline of the neighborhood’s bad reputation and its integration with the rest of the city has proved a difficult task. La Perla is situated next to some of the most important tourist attractions of San Juan. As Puerto Rico is the most visited island of the Caribbean, the authors believe tourism can be an important element in the synergetic relationship between La Perla and San Juan. This integration is bound to be a slow process because it is not likely that tourists will start going to La Perla unless the neighborhood image is transformed for the better.

In order to start the integration of this neighborhood with the city of San Juan, the proposed ideas for a wellness center and an open market in the community may constitute a significant first step. Even though some inhabitants of la Perla may not welcome the idea of having visitors in the area, the fact that both projects are kept on one side of la Perla, and not in the middle of the settlement, may help neutralize this feeling. In addition, the market will allow some of the neighbors to have a supplementary income that can be a strong incentive for the community. Furthermore, the wellness center, with the introduction of sport activities, can help diminish the use of recreational drugs in La Perla. The active participation and collaboration of the community, not only in the proposals presented in this article but also in other projects, and in the general research developed by Florida Atlantic University School of Architecture, indicates the locals’ acknowledgment of a mutually beneficial relationship with the rest of the city.

The projects discussed have been already presented to the authorities of the island, including the mayor of San Juan. The authorities are interested in the construction of the proposed open market and the inhabitants of La Perla are excited with this possibility. From a pedagogical perspective, these projects and visits to La Perla have been positive experiences for all parties involved, especially the students. More than 180 architecture students from Florida Atlantic University visited Puerto Rico in the last few years, incorporating the study of La Perla community into their academic curriculum. These field trips have allowed the students to understand the reality of urban slums in a developing country, not as spectators, but through designing real architectural and urban projects benefiting the community, as well as researching disciplines associated with their future profession.

## ACKNOWLEDGEMENTS

This research has been partially funded with the help of the ARCC Architectural Research Consortium Centers and Florida Atlantic University. It is collaboration between Florida Atlantic University students of architecture and faculty members, the people of “La Perla”, the government of the city of San Juan, Puerto Rico and photographer Bill Sanders of Fort Lauderdale.

## REFERENCES

Akis, S., Peristianis, N., & Warner, J. (1996). Residents’ attitudes to tourism development: the case of Cyprus. *Tourism management*, 17(7), 481-494.

Caldieron, J. (2011). Residential satisfaction in la Perla informal neighborhood, San Juan, Puerto Rico. *OIDA International Journal of Sustainable Development*, 2(11), 77-84

Caldieron, J. M. (2013). Land tenure and the self-improvement of two Latin American informal settlements in Puerto Rico and Venezuela. In *Urban Forum* (Vol. 24, No. 1, pp. 49-64). Springer Netherlands.

Griffin, E., & Ford, L. (1980). A model of Latin American city structure. *Geographical Review*, 397-422.

Lacarrieu, M. (2002). "...De todos lados y de ningún lado...": Visibles/visibilizados e invisibles/invisibilizados en busca de un lugar en la Buenos Aires del siglo XXI". *Kairos*, (11).

Maloutas, T., Sayas, J., & Souliotis, N. (2009). Intended and unintended consequences of the 2004 Olympic Games on the sociospatial structure of Athens. In *ISA-RC21 Sao Paulo conference*.

*Inequality, inclusion and the sense of belonging* (pp. 23-25).

Monge, J. T. (1997). *Puerto Rico: The trials of the oldest colony in the world*. Yale University Press.

Naylor, A. H., Gardner, D., & Zaichkowsky, L. (2001). Drug use patterns among high school athletes and nonathletes. *Adolescence*.

Nutall, Zelia, (1573) Royal ordinances for the laying Out of Towns Hispanic American Historic Review Vol 5 1922 pp 249-254

Stanilawsky, Dan, (1947) Early Spanish Town planning in the New World, *Geographical Review*, Vol 37, pp 95-105

World Bank, (2012) The World Bank Data, <http://www.worldbank.org/data/bbsc>