UNITED ARCHITECTS OF THE PHILIPPINES

JOURNAL



Uplifting the Practice through Research & Innovations

2018 No. 1

UNITED ARCHITECTS OF THE PHILIPPINES

JOURNAL

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Uplifting the Practice through Research & Innovations

No. 1 2018

ISSN: 2094-5140

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The United Architects of the Philippines (UAP) was born on December 12, 1974 out of the noble vision of unifying the three (3) existing architectural associations at that time - the Philippines Institute of Architects (PIA), the League of Philippine Architects (LPA) and the Association of Philippine Government Architects (APGA). Through the concerted efforts of the officers and members of the three organizations, the vision officially materialized on March 26, 1975, where the UAP was registered with the Philippines' Securities and Exchange Commission (SEC). On May 12, 1975, the UAP was granted Certificate No. 001, the first professional organization to be accredited by the Professional Regulation Commission (PRC). Since its registration, UAP has received many awards, including the highly-acclaimed PRC's Most Outstanding Accredited Professional Organization.

Foreword

GUILLERMO H. HISANCHA, FUAP, APEC AR., AA
2017-2018 National President



Through out-of-the-box ideas, technological innovations and collaboration, planning and architecture has significantly improved in the last century. Globally, best practices are used as benchmark to ensure that design excellence will be achieved. In the pursuit of client satisfaction and ecologically sustainability, Filipino architects are driven to produce designs and build architecture that are relevant, convenient, and comfortable. This is despite various challenges to the Filipino architect: globalization, environmental preservation, and professional practice.

Themed **"Uplifting the Practice through Research & Innovations,"** this year's issue of the UAP Journal is a fitting response to the challenges of the Filipino architect and the architecture practice. Led by the editor-in-chief of the UAP Journal, Felicisimo A. Tejuco, Jr., six research papers from architects and academicians of the United Architects of the Philippines expected to contribute new knowledge in heritage, housing, and education. Incidentally, two of these journal articles are the products of the First Architects' Academe Colloquium, a collaborative event organized by the UAP Professional Development Commission and the UAP Commission on Education.

On a related note, it is with pride and satisfaction that I share with you the double victory of the organization as recipient of the 2018 Most Outstanding Accredited Professional Organization of the Professional Regulation Commission (PRC). This is proof that accepting changes, benchmarking on best practices, and collaboration with others are significant ingredients in the success of any endeavor.

In closing, the Fiscal Year 2017-2018 has been meaningful and productive brought upon by the bountiful harvest of UAP's collective efforts. The UAP Journal, considered the longest standing research publication of architecture, is one its fruits. It is the prayer of the Office of the National President that the UAP Journal will continue to inspire and produce research papers that uplift the profession and promote innovations.

Introduction

BENJAMIN K. PANGANIBAN JR., FUAP, APEC AR., AA
2017-2018 UAP National Executive Vice President



Since it began in 1975, the UAP Journal remains to be the longest standing publication on Architecture and the Architecture profession. It has been acknowledged for its academic contribution to architects, researchers, and students.

It is with a positive note that we present once again the UAP Journal. This Fiscal Year 2017-2018, the UAP Journal has collected various research papers on heritage, housing, and education. Through these contributions, it is the hope of UAP to jumpstart the interest and passion of architects to explore the potential and opportunities of Research.

Morever, some of these works were the product of the First Architects' Academe Colloquium, which is a collaboration of the Professional Development Commission (PDC) and the Commission on Education. Through these similar initiatives, the UAP Journal can indeed be an avenue to promote the Filipino architect as researcher and contributor of new knowledge.

Mabuhay ang Arkitektong Pilipino. Mabuhay ang Arkitektong Tagasaliksik!

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Editorial

FELICISIMO A. TEJUCO, JR., UAP, PIEP, MSArch



Uplifting the Practice through Research & Innovations

Continuing professional development (CPD) is a debated topic among professionals as the Professional Regulatory Commission (PRC) has begun its full implementation of the CPD requirement for the renewal of one's license.

One may argue that the process of design to construction is already a CPD learning activity because architects will also have to engage in research and data gathering. On the other hand, the continuous advancement of building materials and construction technology, will be a constant reminder that professionals will always have something new to learn.

In its truest sense, CPD should uplift the practice by ensuring that architects and designers are equipped on the best practices and trends. For professionals, research work and journal publications can be an opportunity to explore and specialize, not just comply.

In December 2017, the First Architects' Academic Colloquium (AAC) was organized by the UAP Commission on Education and the UAP Journal under the Professional Development Commission. Themed "Uplifting the Practice through Research and Innovation," the 1st AAC aims to provide Filipino architect-researchers a venue for the promotion and the publication of their works. Thirteen papers were presented to an audience of a hundred.

Two of these research papers are published in this issue of the UAP Journal: "The Role of Monuments in Place Identity: A Comparative Analysis between Quezon Memorial Circle, Quezon City (QC) and Azadi Square of Tehran, Iran" by Sepideh P. Ahmadzadeh, uap with her adviser Manuel Maximo Noche, uap; and "Housing Material Loans (HML) for Public Housing in the Philippines Vis-à-Vis Sustainability: The Case of Southville 1 Resettlement Site" by authors Sylvester Shaun David Seño, uap, MArch-CTM and Runddy Ramilo, uap, PhD.

Ahmadzadeh's paper documents similarities of the two monuments and specific areas for improvement of the QC model. Still related on culture and heritage, two other contributions are "Buffer zones for built heritage sites in the Philippine urban setting" by Arnulfo F. Dado, uap; and "Museum exhibition design: Case study of Rizal Shrine Fort Santiago"by Froilan M. Fontecha, uap. Dado emphasized the relevance of buffer zones in heritage conservation while Fontecha presented the positive impacts of collaboration in museum exhibition design.

On housing, Seno's study revealed that built houses did not pass structural integrity in terms of faulty roofing construction and short-changing of materials against NHA-provided minimum design specifications, increasing likelihood of future cyclical natural disaster risks. Similarly, "Estero Housing Project: Redefining the Concept of Affordable Shelter" was done by Gloria B. Teodoro, fuap and Albert S. Zambrano, uap. Their paper discussed the opportunities and challenges of a green settlement for informal settlers.

On teaching and pedagogy, Jonathan V. Manalad, uap shared his dissertation: "Industry Relevance of the B.S. Architecture Program of the University of Santo Tomas: A Triangulated Study." His findings revealed that the present program has been generally useful to the graduates with some areas for improvement.

As a platform for the promotion of research, the UAP Journal remains steadfast to assist the Filipino architect and the architecture profession. In the end, this is for the true and continued improvement of communities, cities, and the country.

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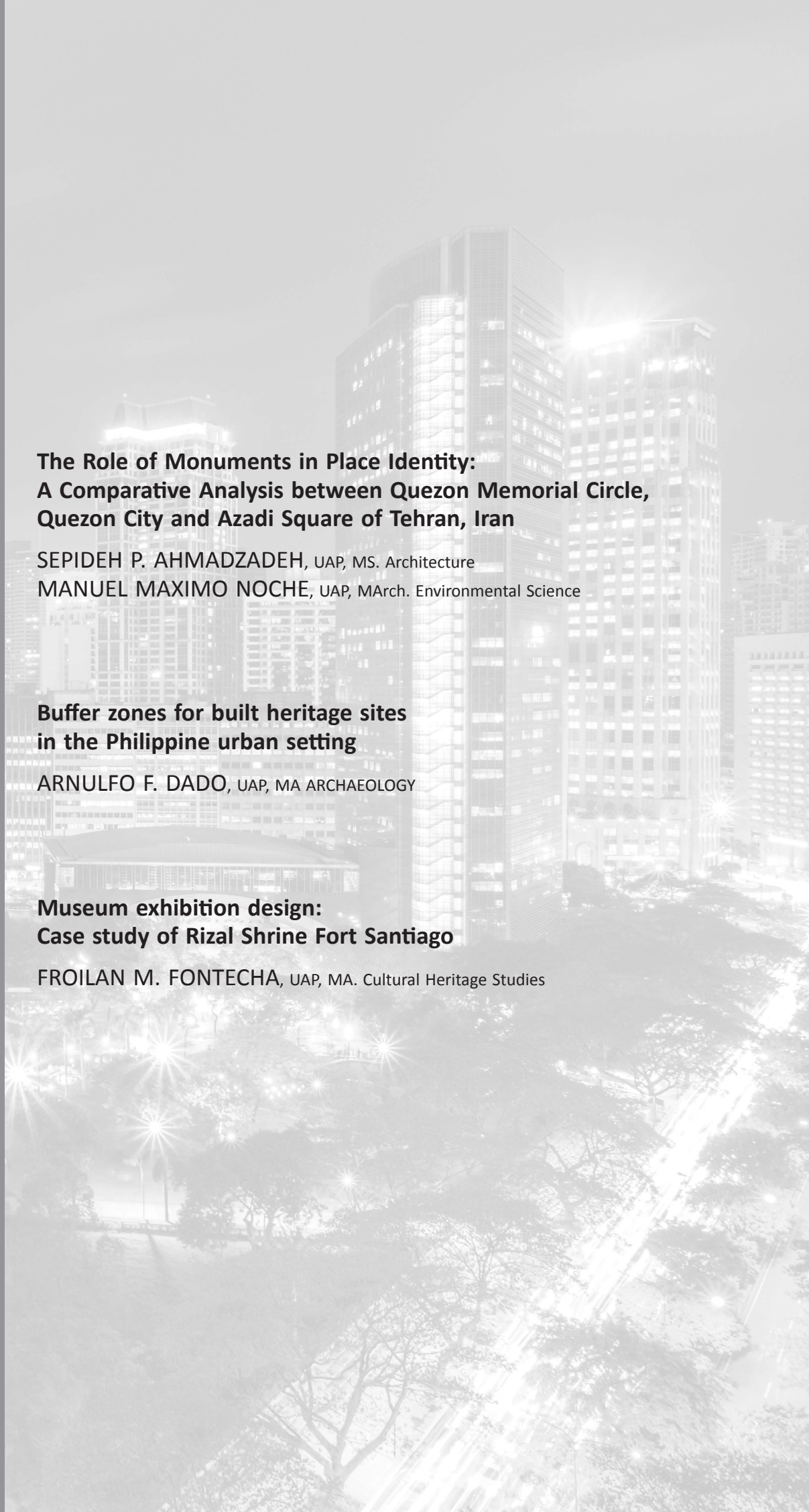
Culture & Heritage



The Role of Monuments in Place Identity: A Comparative Analysis between Quezon Memorial Circle, Quezon City and Azadi Square of Tehran, Iran

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The Role of Monuments in Place Identity: A Comparative Analysis between Quezon Memorial Circle, Quezon City and Azadi Square of Tehran, Iran

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ABSTRACT

Throughout history, monuments have been created as a living reminder of an important event, person or action. They are the tangible forms of history which are made to constantly remind people the importance of a person or an event that has taken place in a particular time and place. The purpose of this paper was to determine the role of monuments in place identity and determine if the monument contributes to local patriotism and national pride. The research compared two monuments: the shrine of President Manuel Quezon in Quezon Memorial Circle, Quezon City completed in 1978 and the Azadi tower of Azadi Square in Tehran completed in 1971. The respondents of this study were the residents of Quezon City for the Quezon Memorial Shrine and Tehran for the Azadi Tower. Using quantitative and qualitative analysis, the result showed that both monuments play a vital role in place identity for their perspective cities. However, the social impact of Azadi Square was significantly high due to its location as the prime area for rallies in Tehran. The study also yielded that both monuments contribute a strong sense of pride and patriotism to their respective cities. However, the percentage of respondents from Tehran presented that the grandness and design of the monument is more important than the historical significance which has taken place in the square. Contrary to the Quezon Memorial Shrine, the results of the survey showed that historical significance is more important than the design of the monument. Both monuments also showed that they are highly accepted as landmarks of their cities. However, the revolution in Tehran, Iran which took place on February 11, 1979 around the square, had a higher impact on its people. The study shows that monuments are vital to the place identity of their locale. Thus, preserving them is vital for they contribute to the memory and identity of its local citizens.

KEYWORDS *historical significance, patriotism, social impact, social significance*

INTRODUCTION

Monuments are structures which have existed throughout history as a way to communicate from one generation to the other important events and people who have played significant roles in the history of a particular place, and time. They also serve as a constant reminder of these people and events (Sturken, 1998).

The birth of a monument's design started from the ancient Egpytians, Greeks, and Romans while in Asia, it was through the Chinese and the Mongolian structures. Monuments were built as a tomb, triumphal arch, war memorial and victory monument (Sturken, 1998).

As national landmarks, monuments give meaning to the place where they are built because they give a unique identity to their location. Proshansky (1978) emphasizes that the place identity is the way people relate themselves to their environment. Place identity then is a part of a person's self identity.

The built environment plays an important role as humans try to create a specific identity and memory. It can be said that it is not only existence and construction which create identity, but also destruction, missing buildings and rebuilding of lost ones shape identity for humans. Buildings are not important by themselves, but they are important to social meanings (Dowell, 2008).

Lynch (1960) also stresses that monuments are landmarks to a certain place and functions as a way finder to the people. These structures create a sense of belongingness to the citizens, and in some cases become the identity to the area they serve.

The built environment creates spaces for people, as an individual or as a social group, to create a memory. The unique feature that the place has to evoke the emotions of an individual or as a social group makes the structure distinctive. Thus, the unique quality of these places becomes its identity.

In the Philippines, the National Historical Commission of the Philippines (NHCP) is the government agency assigned to protect monuments which are considered to be cultural treasures. Under its guidelines, monuments are defined as structures designed to remind the nation of significant people, historic events, or places, and the deeds of heroes of the country (NHCP, 2012).

Quezon City was the urban vision of former President Manuel L. Quezon. He wanted to develop a city where there would be homes with playground and basic needs and that these would be provided at a very low rate by the government (Quezonian Newsletter: A Saga of Continuing Progress, n.d.).

The idea of creating a memorial to commemorate the late President Manuel L. Quezon was created on December 17, 1945 under the Executive Order No. 79 by former President Sergio Osmena (Osmeňa, 1945).

The monumental shrine was designed by Architect Federico Illustre who won the competition design contest in 1951. The construction was completed in 1978 after 26 years due to financial and importation problems of the Carrara marble (Lita, 2014). The Quezon Memorial Circle is an elliptical rotunda, designed to be the core of Quezon City with avenues radiating to the other main parts of the city (Cruz, 2014). Quezon City was a new city that was envisioned by former President Manuel Roxas to be the new capital of the Philippines (Quezonian Newsletter: A Saga of Continuing Progress, n.d.). The Quezon Memorial Circle is a 25-hectare national park with a monument honouring the memory of Manuel Quezon as a great leader of the country and president of the Commonwealth during the American Period (Amarra, Del Castillo, 1988). The monument is the main feature of the Quezon Memorial Circle and houses a museum and the remains of President Manuel L. Quezon with his wife Aurora Quezon (Layug, 2009).

Sharing similarities with the Quezon Memorial Circle is the Azadi Square in Tehran, Iran. Designed by Hussein Amanat who won in a design competition, the Azadi Square is built on a five hectare elliptical rotunda, which serves as the west entry point to the city.

The center of the square is the Azadi Tower which stands as the symbol of Tehran, Iran (Yardumian, 2010).The 45m high tower resembles the Elburz Mountains as it rises from the square. The architectural character is a combination of the Sassanid and Islamic architecture with 8,000 white marble blocks for the exterior finishing of the tower. The museum, which used to house the "Cylinder of Cyrus" known as the first charter of human rights, was located at the basement of the tower (Iran Review, 2010). The monument was designed to commemorate the 2,500th anniversary of the kings of Persia. It was originally named Shahyad Arya-Mehr, which means "The memorial of the kings, the light of the Iranians". It was built in 1971 by the order of Pahlavi in order to remind the new generation of Iran the achievements of the regime. However, in 1977, protest against the Shah of Iran started and the monument became the center of the Islamic revolution protest. In 1979, the shah was overthrown by the Islamic regime and the monument was renamed *Azadi Tower* "Freedom Tower" (Iran Review, 2010).

In order to understand the significance of monuments in creating a place identity, the following questions were asked among the local citizens of Tehran and Quezon City.

a. How can monuments play a vital role in place identity?
b. What is the significance of Quezon Memorial Shrine and Azadi Tower?
c. Why should these monuments be preserved?

This study attempted to analyze the impact Quezon Memorial in Quezon City and Azadi Square in Tehran, Iran to their local citizens. Specifically, it sought to identify the role of Quezon Memorial and Azadi Tower to its citizens as a place identity and to determine if the monument contributes to local patriotism and national pride.

Significance of the Study

The Quezon Memorial Shrine was built to honor the memory of President Manuel Luis Quezon and Azadi Square of Tehran was erected to commemorate 2,500 years of Persian monarchy in Iran. Today, both icons built on an oval form of landscaped area radiating to different parts of the cities have become symbolic historical landmarks of their respective cities. However, through history and particular events, their purpose and meaning can differ from one generation to other generations. The following are the reasons for the importance in uncovering the role of these monuments to its citizens as a place identity.

1. Place-identity is vital to an individual to relate himself to his environment. To identify the connection of monuments to a city, town or a country's identity in relation to self-identity is the key in understanding its purpose.
2. Comparing the two monuments from different countries would determine how time, culture and events can have an effect on the purpose for its establishment.
3. By determining the elements of a monument that led to the place-identity of its city, would help designers perceive important factors in designing monuments.

Monuments are architectural structures that can connect the past and the future. The significance of these structures may differ from one person to another. The Philippines lacks proper guidelines for conserving its built heritage. To date, the NCCA has not been able to protect some of the country's built heritage. Director Jeremy R. Barns of the National Museum wrote his concerns to the Senate over the Torre De Manila, which is being built behind Rizal Monument. He pointed out the Torre project would affect the line of sight of the monument (Sembrano, 2014).

The framework of the Burra charter (Australia ICOMOS Burra Charter, 1999) was used as a tool guide to assess the historical significance of the monuments. Three parameters were used to study place identity: Historical Significance, Visual Impact and Social significance. This led to understanding the role of monuments as to place identity and its importance to society. These parameters were used to create Policy Recommendation on the Preservation of monument.

RESULTS AND DISCUSSION

A place can attain an identity through several factors. The people are the main contributors in giving an identity to their "space." Places were people gather in order to socialize or at times to unite as a community give people a sense of belonging to a particular space.

State of Quezon Memorial

The Quezon Memorial Shrine is home to the remains of the late President Manuel Quezon and his wife Aurora Aragon Quezon. It is surrounded by major government buildings such as the Department of Agriculture, NHA, Philippine Coconut Authority, DAR, Bureau of Agriculture Research and Bureau of Soils and Management. There are two newly renovated pedestrian underpass access to the circle with an elevator from the Quezon City Hall. One is from the Quezon City Hall and the other from Commonwealth Avenue.

The Quezon Memorial Shrine is located at the center of Quezon Memorial Circle. This monument is made of three pylons on top of a triangular base. Access to the top of the monument is through a staircase which is enclosed in one of the pylons. The base houses the mausoleum of Manuel Quezon with a viewing deck that has a circular two-meter diameter wide opening, which allows the sarcophagus to be viewed from above. A statue of Manuel Quezon made by Guillermo Tolentino is placed on one wall of the deck (Amarra, Del Castillo, 1988).

The basement houses the newly renovated museum that opened last 19 August 2015 in time



***Figure 1**:Quezon Memorial (Source: Ahmadzadeh, S.)*

for the commemoration of the 137th birthday of the late President Manuel Quezon (Bacani, 2015). The design of the shrine is filled with symbolic elements.

The design of the monument's base is patterned from the Philippine flags' triangle. The art deco design monument is made of concrete and finished with white Bianco Carrara marble (Amarra, Del Castillo).

The monument is composed of three pylons, each with three-winged lady figures on top. The height of the three pylons is sixty-six meters high, representing the age of Quezon when he passed away.

Dressed in traditional costumes of their respective regions, the three-winged women on each pylon represent Luzon, Visayas, and Mindanao.

On top of the pylons, the three figures with their heads bowed down with flowers indicate their sorrow for the loss of a great leader (Amarra, Del Castillo, 1988). The winged women are in art deco style sculpted by an Italian sculptor named Franceso Riccardo Monti (NHCP, 2015).

The circle is now a national park with roads leading to different parts of the city. The park has been developed several times to enhance the experience of its users. Some amenities of the park are the picnic areas, amphitheater children's playground, zip line, and bicycles can be rented here. One can also shop at the tiangge area. This is also a haven for the foodies since there are variety of restaurants that cater different kinds of taste.

However, the development of the circle has blocked the view shed corridor to the monument. The height and density of the trees, the temporary "flee market" areas, and the pedestrian overpass along Commonwealth and Quezon Avenue are the major elements to the blockage of the visual impact of the Quezon Memorial Shrine.



Figure 2: *View of Manuel Quezon Shrine from Commonwealth Ave Gate (Source: Ahmadzadeh, S.)*



Figure 3: *View of Manuel Quezon Shrine from Quezon Ave. Gate (Source: Ahmadzadeh, S.)*

Under the "Guidelines on Monuments Honouring National Heroes, Illustrious Filipinos and other Personages" of the National Historical Commission of the Philippines letter B and C of the guidelines state the following:

b. Keep vista points and visual corridors to monuments in order to clear unobstructed viewing appreciation and photographic opportunities; and

c. Maintain a simple and environment-friendly landscape. Provide plants and trees wherever appropriate in order to enhance and soften the built areas.

State of Azadi Tower

The Azadi Tower has been strategically located to be the first monument visible, when a person exits the Mehrabad International airport. This has been the International Airport of Tehran until the new airport named Imam Khomeini Airport opened in 28 October 2007. A major intermodal bus terminal still exists at the northwest of the square. Government buildings such as the Tehran Municipality and Cultural Center of Tehran are situated along Azadi Street which leads to the square.

Fortunately, due to the location of the airport no structure can be built higher than 45 meters which is the same height restriction for the Azadi Tower.

Access to the square is through an underpass tunnel along Azadi street. Its design feature is harmonious with the interior of the Azadi tower. A parking area is also provided at the northwest side of the square.

The design of the monument has been inspired from several ancient Persian architecture. The landscape is an inspiration from the dome of Sheikh lotfollah mosque, Esfahan, Iran.

The east and west gates of the tower was taken from arch of Tagh-e Kasra which used to be the capital of the Parthian and the Sassanid empires. The crown of the monument is inspired by the ancient Persian cooling technology, called wind catcher (Baad Gir). The crown of the Azadi monument is design with similar features of the wind catcher. The four sides of the crown were designed with horizontal grooves and a shaft similar to the wind catchers.

The top of the Azadi tower is a design inspired from the Zoroastian fire temple. The ceiling of the of the tower from the exterior of the monument is made of concrete mesh, inspired from ancient Persian ceilings used for mosques and public bath. The third floor of the structure is lited with an oculus while the second floor with light shafts. This type of geometrical pattern is called the Islamic Shamse.

The Azadi Tower has a museum, exhibition hall, library, concert hall, Iran acquaintance hall and a restaurant.

The Azadi Tower was built to commemorate 2,500 years of the monarchy ruling in Iran and to be a gateway to the west entry of the city. However, because of its strategic location a series of important events which was held in Azadi square changed the purpose of this magnificent tower. The square has mainly become the center of political rallies in Tehran, Iran. These events and rallies have changed the political structure of Iran from monarchy ruling to an Islamic republic.



Figure 4: *Azadi Square (Source: Ahmadzadeh, S.)*

Place identification or the identity of a place could be somehow a coincidence from the way a person remember a certain place which then connects the person to the place. In a research on the parameters of place identity, it has been concluded that the main components of place identity the physical features of the place, the "activities and concepts" which depend on the person's point of view. In general, activities and the significance of the place to an individual has

more important effect in creation of place identity (Heidari & Mirzaii, 2013).

The two monuments were analayzed through mixed method research. The tool was used to identify factors contributing to place identity.

In order to define the role of monuments in place identity, a series of qualitative and quantitative survey question was answered by the local citizens of Quezon City with a total of 154 respondents and 101 residents for Tehran.

How can monuments play vital roles in place identity of Quezon City and Tehran?

Results from the survey showed that the monuments are the most important feature of the square/ circle for the people in both cities. This was followed by the open spaces. However, in Quezon City Circle, the percentage of respondent who sees the open space almost as important to the Shrine was also high. This indicates the difference of activities that is being promoted for the benefit of the public users. On the other hand, the clear visual impact of the tower to Tehran has given it more importance to its people. Unlike the Quezon Memorial, were trees, pedestrian bridges and temporary structures are obstructing the view to the monument.

The historical significance, grandness and design are other aspects which are important to the people. The results showed the importance of history to landmarks and monuments. The events that happened at the location of the monuments make them more significant. The Azadi tower was built and strategically located to be the gateway of Tehran, however a new meaning and purpose was given by the people when the anti-shah rallies started until they won the 1357 Revolution. The Quezon City memorial may not have significant rallies after world war two. However, the history that President Manuel Quezon carries with him to his shrine reminds the people of his great efforts for the democracy from the Americans. The main analysis shows that squares become an important social gathering for people. The memories created in these spaces are the link of personal identity or social identity to place identity. To understand why these monuments should be preserved? The results of the survey showed that, the local residents of Q.C. and Tehran view the Quezon Memorial Shrine and Azadi Tower as monuments symbolically representing their respective cities. Both data have also shown that Tehrani's and Quezonians agree that their respective monuments contribute to local patriotism. These monuments give them a sense of pride and sense of belonging to a particular place through this monumental symbol. These results were verified through archival research, interviews, site observation and personal experience.

Recommendations

Azadi Tower

The issues and concerns of the Azadi Tower differ greatly from the Quezon City Memorial. The nearby airport protects any structure that could be built higher than the Azadi Tower. The city planning incorporated the sightline to the tower, in order to impose its great importance to the city. The architecture of the tower incorporated Persian architecture and this brings pride to the people. The Islamic elements create a sense of familiarity through the arches which can be seen in the community's mosque. These two important factors in the design combined with modern architecture created a very high level of pride for the Tehrani's to have such a magnificent tower. However, the views and needs of the new generation have changed. The development of the tower is not in tune with the new generation. One main reason is the location. They view the area as downtown and a "cheap area". Taking pictures with the Tower as a background has become "cheap". Another concern that they have are the drug addicts and the men who come from the province who would harass the women. The underpass has been developed as a small shopping center. However, this has not contributed to the foot traffic. Most of the shops are planning to close because of lack of sales. The items which are being sold here are mainly cultural. This is not sufficient to attract more foot traffic to the square.

Access to the square is also very dangerous. The signage to the underground passageway is not known to its visitors. These main issues have caused the foot traffic of the square to decline.

Quezon City Memorial

It is a monument built to remind the Filipino people of a great president. Today it has turned into the icon of Quezon City. It has a high volume of foot traffic 8000 on weekdays and 12000 on weekends (Quezon City Memorial Circle Management, n.d.).

Unfortunately, due to poor urban design and landscape, one can hardly notice its grandeur. Its greatness can only be seen when passing through Quezon Avenue and Commonwealth Avenue. The monument can also be slightly seen from North Avenue and East Avenue. Human beings' curiosity starts from the eyesight. Therefore, in order to emphasize on the importance of the structure the viewshed corridor should be clear from any obstruction to create a visual impact to the monument. This would then lead to emphasize on the regulation of the guidelines and laws to preserve the monument.

The park does not have a proper direction in its development. This has been the source of chaotic infrastructure development of the park.

It has been stated on the guideline on monuments honoring national heroes, illustrious Filipinos and other personages of the NHCP, that the sight line to a national monument should be unobstructed (National Historic Commission of the Philippines, 2012). A buffer zone should be mandated by the local government to prevent the rise of buildings which could destroy the vista to the monument.

In order to sustain the importance of these monuments for future generations the development shall be done in phases. Phase 1 would be 1-3 years, followed by phase 2 within 3-5 years and lastly phase 3 which should be done within 5 to 10 years.

Recommendations

Azadi Square

Phase 1

1. Directional signages to the underpass
2. Direct access to the square from the Subway. Same as the MRT7 at QCMC.
3. Additional underpass access through Saadi Expressway, Lakhsari expressway and Jenah Expressway should be made for the safety of the visitors.
4. A pick up and drop off point from the Imam Khomeini International Airport can be through the bus terminal located at the northeast of the square, to bring back the intention of the monument as the gateway to Tehran.
5. Additional security personnel to ensure that the square would be free of drug pushers, drug users and those who would like to harass the women.
6. CCTV cameras should be placed for added security.

   However, for future development, the following should be considered.

Phase 2

1. Tehran is home to 750 parks (Tehran Municipality, 2006). The new generation of Tehran nowadays are looking for shopping malls where one can buy everything in asingle place. The development of the underpass should be stretched around the square and turned into an underground shopping center.

Quezon Memorial Circle

Phase 1

1. Clear the line of sight from the roads which leads to the monument. All pedestrian bridges that are obstructing the view shed corridor to the monument should at least be painted in off white to blend with the color of the monument.
2. The trees planted along the street island of Quezon Ave, Kalayaan and North Avenue should be trimmed or balled out. The island along Kalayaan road can be planted with shrubs. The roadside along the Circle can be planted with Ylang Ylang. The fragrance produced by the tree can also reduce the foul smell of pollution and help create a place identity through the sense of smell.
3. The main axis to the monument should be cleared from any obstruction. This includes the tiangge at the Commonwealth entrance and the trees from allowing the monument to be seen without any obstruction.
4. Proper signage's to the underpass should be placed for park goers to reach the park safely.
5. The MRT 7 would be passing under the Circle and this can bring in more foot traffic. However, the station should not add to the structures in the park
6. A fine should be imposed on those who would litter in the park. Trash bins should be added to avoid any reason for the park goers to litter.
7. Vehicles should not be allowed to drive along the interior roads. The road that passes along the restaurant allows private and public vehicles to pass through it. This compromises the safety of the park visitors and pollutes the park as well.
8. A 1-km radius to limit the BHL to 66m high should be created in order to see the monument clearly from a distance.

Phase 2

1. The landscape of the park did not take into consideration the type and location of the trees which were being planted. Today, out of 2,143 trees most of them are Narra and Molave (DENR, 2016). These trees grow up to 30 meters and since they were not properly planned they have become a major obstruction. The axis along Commonwealth and Kalayaan to the monument can be replaced by Ilang Ilang which only grows up to 12 meters. The fragrance of the flower can also reduce the odour from the pollution and create an experience, through the sense of smell.

Figure 4: Quezon Avenue Improvement on the visual corridor to the Quezon Memorial Shrine
(Source: Ahmadzadeh, S.)

2. All pedestrian footbridge blocking the sightline to the monument should be changed into an underpass.
3. The Circle of Fun which caters to the masses should be transferred to Ninoy Aquino Park.
4. A design guideline for the building facades should be created and implemented to compliment the monument. The existing buildings such as the restaurants can implement this on the façade of their structure. Other structures such as the waiting sheds, food stalls, kiosk and other establishments should have a proper design guideline.

Phase 3

Quezon Memorial

A total rezoning based on the types of activities and facilities would be suggested. The goal would be to create a more organized and respectable resting place for a great president.

The park can be divided into 3 areas; namely, Active, Passive and Silent. The active areas are the outdoor recreation facilities mainly for games, active sports and organized events. The passive areas are less developed and mainly for informal games, playground, jogging and fitness. The silent areas would be the landscape and the garden. This is the closest area to the shrine and should be developed with consideration of the respect which should be given to the monument.

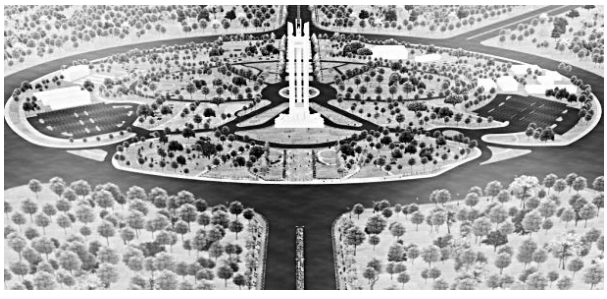

Figure 5: *Proposed Quezon Memorial*



Circle Design
(Source: Ahmadzadeh, S.)

Azadi Tower

The urban planning of Tehran has taken most of the developments towards the north of the city but leaving the middle and the south behind. The government should develop and market the south and the middle part of the city to attract investors. This will also help ease the traffic towards the north. The Azadi Street is the vein that runs through several universities such as Tehran University and the Sharif University. The College of Civil aviation is also along the square. These universities can attract a good market for investors.

Quezon City has already taken its steps in decentralizing its city by creating a CBD between North Avenue and East Avenue which can attract more people to the monument. Tehran can take this as an example to attract more people to the west part of its city.

For both monuments a holistic conservation plan must be done in order to protect the structures for future generations. Aside from clearing the sightline and other developments through urban design, the educational system must highlight the works of their great heroes and leaders. The futures of these countries are in the hands of the next generation. They would only value the existence of these monuments if they understand the reason for which they were built and their meaning to their respective cities. It is important for the future generations to create memories with these monuments in order for them to continue protecting it. Thus, these structures shall tell the histories of their respective cities from generation to generation.

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Buffer zones for built heritage sites in the Philippine urban setting

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ABSTRACT

The protection and conservation of the built heritage in the Philippine urban setting rests mainly upon the national government in partnership with the local government and the community. The state of conservation of our built heritage in selected Philippine towns and cities reflects the ramifications of various agenda (both global and local) in the realms of heritage preservation in these urban territories. The protection and management of Philippine built heritage involve numerous national cultural treasures, national shrines, and/or national historical landmarks, a few have been declared as World Cultural Heritage Sites. In the context of World Cultural Heritage Sites, the buffer zone is considered as an efficient management tool for the protection of World Heritage properties. The recent delineation of buffer areas for the Baroque Churches of the Philippines provides an added layer of protection to the core of the World heritage property. How have local governments and communities responded to the national initiatives for heritage protection, may be gleaned from how the buffer zones, as part of the spatial system of urban areas, deal with transitions from the core to periphery of built heritage sites within the territorial jurisdiction of towns and cities. Selected towns and cities have crafted policies and plans on matters of heritage preservation vis-à-vis with development goals of the locality. The paper will delve on how the buffer zones in the Philippine urban setting bear on the state of conservation of the country's built heritage, with focus on specific cities and municipalities with National Cultural Treasures and/or National Historical Landmarks. Planning aims to optimize the potential of the built heritage sites and its urban setting.

KEYWORDS *Buffer zone, heritage, conservation, protection, historic district*

INTRODUCTION

The Philippines recognizes the value of protecting and preserving the nation's heritage in the spirit of the 1972 UNESCO Convention Concerning the Protection of the World Natural and Cultural Heritage (also referred to as the World Heritage Convention) to which it is one of the States Parties. The protection and conservation of the country's built heritage, as embodied in our Constitution and mandated by laws such as the National Cultural Heritage Act of 2009 (Republic Act No. 10066) and the National Historical Commission of the Philippines Law (Republic Act No. 10086), rests mainly upon three national government cultural agencies: National Historical Commission of the Philippines (NHCP), National Museum (NM), and National Commission for Culture and the Arts (NCCA). Since 1973 the national government through the national government agencies (NHCP and NM) have identified, declared and protected numerous immovable cultural properties and historical landmarks throughout the Philippine archipelago. Six of these immovable cultural properties have been inscribed in the UNESCO List of World Heritage Sites. In line with the policies and objectives of Republic Act No. 10066 the government has formulated a program for the conservation of built heritage. Through the NCCA, the program provides assistance to structures declared as National Cultural Treasures and/or inscribed in the list of UNESCO World Heritage Sites. The Spanish colonial period churches located in the 11 regions of the country have been main beneficiaries of the program.

The state of conservation of our built heritage in selected Philippine towns and cities reflects the ramifications of various local and global agenda in the realms of heritage preservation

in these urban territories. The enactment of the Local Government Code of 1991 (Republic Act No. 7160) empowers every local government for its efficient and effective governance, and which are essential for the promotion of the general welfare. "Within their respective territorial jurisdictions, local governments shall ensure and support among other things the preservation and enrichment of culture." Local governments are enjoined to share with the national government the responsibility in the protection and management of Philippine built heritage involving national cultural treasures, national shrines, and national historical landmarks. How local governments have responded to the national initiatives for heritage protection may be gleaned from the local legislations enacted and administered to address the concerns of heritage preservation in the respective territorial jurisdiction of towns and cities. It may be seen on how buffer zones, as part of the spatial system of urban areas, deal with transitions from the core to periphery of built heritage sites in these urban settings. Selected towns and cities have enacted various local ordinances which embody policies, guidelines, rules and regulations on matters of heritage preservation within the locality.

This research surveys the buffer zones in the Philippine urban setting and how the buffer zones bear on the state of conservation of the country's built heritage. The research examines the various legislations by local government units (LGUs) in response to the initiatives of the national government on the protection of our immovable cultural properties, historic sites and structures. The study focuses on three municipalities where three of the four National Cultural Treasures and/or National Historical Landmarks under the protection of the national government have been recognized among others as part of World Cultural Heritage Sites.

Towns and cities as *loci* for heritage preservation

Four Roman Catholic churches built between the 16th and 18th centuries during the Spanish colonial period comprise the Baroque Churches of the Philippines that were included as a serial inscription on the UNESCO's list of World Cultural Heritage Sites in 1993. The Baroque churches are located in separate areas of the Philippine archipelago: Paoay, Ilocos Norte; Sta. Maria, Ilocos Sur; Intramuros, Manila; and Miagao, Iloilo. The Baroque churches "established a style of building and design that was adapted to the physical conditions in the Philippines which had an important influence on later church architecture in the region." As dominant structures of towns, the Baroque churches "reflect excellent site planning principles following the *Ley de las Indias* (Laws of the Indies) enacted by Philip II in 1563 for all newly-discovered settlements within Spanish colonial territories." The Baroque Churches of the Philippines deserve the highest standards of conservation (as provided for in R.A. 10066) as appropriate to World Heritage properties so that its authenticity, integrity and Outstanding Universal Value (OUV) are not allowed to be compromised.

The international community recognizes the need for a comprehensive approach to urban planning and development of cities. Citing the outcome document of United Nations Conference on Sustainable Development (Rio+20), *The Future We Want*, stressed how dependent communities are on ecosystems for their livelihoods, their economic, social and physical well-being, and their cultural heritage.

> "We recognize that, if they are well planned and developed including through integrated planning and management approaches, cities can promote economically, socially and environmentally sustainable societies. In this regard, we recognize the need for a holistic approach to urban development and human settlements that provides for affordable housing and infrastructure and prioritizes slum upgrading and urban regeneration. We commit to work towards improving the quality of human settlements, including the living and working conditions of both urban and rural dwellers in the context of poverty eradication so that all people have access to basic services, housing and mobility. We also recognize the need for conservation as appropriate of the natural and cultural heritage of human settlements, the revitalization of historic districts, and the rehabilitation of city centers."

The old section or historic district of the city or town can be redeveloped and revitalized by adopting the integrated conservation paradigm. "Urban management should aim to create harmony, avoid undesirable uses and maintain the existing scale of buildings, as well as their functional and cultural values. The methodology of this approach is called integrated conservation." Conservation planning aims to optimize the use of the potential of the historic areas. The basis for planning and conservation is the knowledge and understanding of the historic urban fabric. The integrated conservation of historic urban areas implies an interdisciplinary collaboration under the leadership of a qualified planner sensitive to heritage conservation. Feilden and Jokilehto emphasize that the historic districts' varying ordinances have corresponding technical, social, political or economic motives. Determining the rationale behind these local legislations vis-a-vis with local heritage conservation practices will give an understanding of the explanation

behind the physical plan of the territories and the planning norms for the appropriate urban conservation of subject territories and their built heritage. Towns and cities as loci of history and culture should be the embodiment of how well they value heritage preservation in their planning endeavors to attain sustainable development goals.

The buffer zone

A buffer zone is defined in the UNESCO Operational Guidelines as "an area surrounding the nominated property which has complementary legal and/ or customary restrictions placed on its use and development to give an added layer of protection to the property. This should include the immediate setting of the nominated property, important views and other areas or attributes that are functionally important as a support to the property and its protection. The area constituting the buffer zone should be determined in each case through appropriate mechanisms. Details on the size, characteristics and authorized uses of a buffer zone, as well as a map indicating the precise boundaries of the property and its buffer zone, should be provided in the nomination."

A buffer zone is considered as "an important mechanism for improving care, protection and management of inscribed World Heritage properties." Within the buffer zone, it is understood that "the goal is to manage or control a range of qualities of proposed developments (height, density, use, design (form, image, patterns) etc.) in order to minimize negative impacts" on the OUV of the World Heritage property. A buffer zone is "a management tool to deal with the transition from a site to its surroundings through added protection, which safeguards certain aspects of the site." Apart from the site's setting and views, it has been argued that "there is a much larger range of issues related to use and function, form and design, traditions and techniques, and spirit and feeling that may also need to be protected when setting a buffer zone for a cultural heritage site." The strengths and weaknesses, as well as the advantages and problems concerning buffer zones are explained as follows:

> "Buffer zones can be a very important management tool in protecting World Heritage sites. In controlling the transition between the heightened protection of the World Heritage site and the surrounding territories, a buffer zone may set limits to protect views, settings, land uses, and other aspects, but may also positively encourage developments that would be beneficial to the site and community. Another advantage of a buffer zone is that it can be a very clear and unambiguous tool. The line on the map and the accompanying regulations can make it very clear to all interested parties what is allowed, what isn't allowed, and where. This certainty is very attractive to governments, decision makers, and developers. "
>
> "Unfortunately however, as set up, buffer zones in the World Heritage context often are ambiguous and confusing. This confusion stems from a number of problems. The most serious is that in many cases the buffer zones have no basis in the national or local planning laws. A second problem is that even when the line on the map is clear and enforceable, often there are not the necessary regulations and policies to make them useful."
>
> "When used only to deal with "visual issues" a great opportunity is often missed to positively influence many development decisions in the buffer zone that will both improve protection of the site and the quality of life of the community."

Buffer zones should form part of an integrated urban planning process. As part of the planning process it can negotiate and include the concerns for heritage, the needs of development and improved quality of life. Buffer zones can both protect and enhance the World Heritage Property while bringing benefits to the local community.

In the context of Philippine historic centers and heritage zones, a buffer zone is defined as a "special protective zone around an historic district center, town or property." Planning requirements for the conservation and development of historic centers and heritage zones include the identification and designation of a protective buffer zone.

Buffer zone for the Church of San Agustin in Paoay, Ilocos Norte

The Municipality of Paoay, Ilocos Norte is a fourth class municipality with a population of 23,956 inhabitants and a land area of 7,624 hectares. The Municipality of Paoay has 31 barangays. The Roman Catholic Church of Paoay (a.k.a. the Church of San Agustin in Paoay) was declared a National Cultural Treasure in 1973 by virtue of Presidential Decree 260. The Church of Paoay is a serial component of the Baroque Churches of the Philippines.

There are two complementing ordinances on heritage preservation in the Municipality of Paoay. In 2002 the Sangguniang Bayan of Paoay enacted Municipal Ordinance No. 2002-08: "An ordinance establishing the Paoay Heritage District, adopting a development plan therefor, and providing rules and regulations for its implementation and operation." The 2002 Ordinance was approved by Municipal Mayor Reginita Nenuca V. Evangelista on November 20, 2002, and took effect on January 01, 2003. In 2011 the Sangguniang Bayan

of Paoay enacted Municipal Ordinance No. 2011-04 otherwise known as "An ordinance amending certain provisions of Municipal Ordinance No. 2002-08: An ordinance establishing the Paoay Heritage District, adopting a development plan therefor, and providing rules and regulations for its implementation and operation." The 2011 Ordinance was approved by Municipal Mayor Bonifacio C. Clemente Jr. on November 29, 2011. The Municipal Ordinance No. 2002-08 as amended by the Municipal Ordinance No. 2011-04 were the complementing legislations for the core and buffer zones for the Church of Paoay. The Church of Paoay occupies a core zone with a total land area of 27,547 square meters, and a buffer zone of 138,629 square meters (refer to Figure 1).

The 2002 Ordinance consists of nine articles as follows: Article I Establishment of the Heritage District and definitions; Article II Statement of Policies and Policy Guidelines; Article III Structure or Building Requirements; Article IV Streetscapes and Opens Spaces Improvements; Article V Specific Structural requirements and Designs; Article VI Design Review Board; Article VII Paoay Heritage District Fund; Article VIII Administration and Implementation; and Article IX Final Provisions. The 2002 Ordinance's main purpose is the establishment in the municipality of Paoay



Figure 1 *Map of the core and buffer zone of the Church of San Agustin in Paoay, Ilocos Norte (After NAMRIA, 2011).*

Heritage District based on the physical plan of the 1999 Master Plan prepared, formulated and approved by the Paoay Church Restoration Task Force (23 September 1999). This ordinance intends to maintain the Heritage District as a focus of government, tourism, commerce, religious and educational activities without altering a distinct thematic character. It defines the boundaries of the Paoay Heritage District's core and buffer zone (Section 2). It states general land use policies, specific land uses, building requirements, streetscapes and open space requirements. It provides specific structural requirements and designs, including basic considerations on traffic management. It created a Design Review Board (Article VI) who regulates all design and construction related activities within the Heritage District. It established a Heritage District Fund to be used for programs, projects and activities related to the Heritage District. The special fund is sourced from tax levies or imposed fees on business establishments, building constructions, film activities and use of facilities within the district.

The 2011 Ordinance amended certain provisions in the 2002 Ordinance particularly the boundaries of the core and buffer zones (Section 1), on the prohibited use in the Heritage District (Section 2), on the building height restrictions (Section 3), and on the imposition of user's fees (Section 4). This ordinance redefines the boundaries of the core and buffer zones of the Paoay Heritage District. Although UNESCO referred back to the Philippine government (as State Party) the proposed core and proposed buffer zones for a clarification on the addition of the ruin as part of the core component, it seems favorable to the shared buffer zone for the Church of Paoay as stated in the report. "The shared buffer zone surrounding both components covers an area of 13.86 hectares. Its delimitation appears sufficient to provide adequate protection for the existing property of this serial component."

Buffer zone for the Church of Santo Tomas in Miagao, Iloilo

The Municipality of Miagao, Iloilo is a first class municipality with a population of 64,545 inhabitants and a land area of 15,680 hectares. The Municipality of Miagao has 119 barangays. The Church of Miagao (a.k.a. Church of Santo Tomas de Villanueva in Miagao) was declared a National Historical Landmark in 1973 by virtue of Presidential Decree 260. More than 16 years after the 1993 UNESCO declaration, the Municipality of Miagao came up with a local legislation on heritage preservation within its territorial jurisdiction. On June 23, 2010, the Sangguniang Bayan of Miagao enacted Ordinance No. 03 series of 2010: "An ordinance providing for the protection and preservation of heritage and tourism sites and landmarks within the Municipality of Miagao, and providing funds therefor." The 2010 Ordinance was approved by Municipal Mayor Julieta N. Flores on July 13, 2010. On December 26, 2011 the Municipality of Miagao unanimously adopted Resolution No. 2011-079: "Resolution authorizing the conduct of a survey by the National Mapping and Resource Information Authority (NAMRIA) to determine the actual boundary of the core and buffer zones of the Miagao Church based on the area proposed by the municipality." The 2011 Resolution was attested and certified to be duly adopted by Municipal Vice-Mayor Jose Rey N. Noble. The Municipality of Miagao's Municipal Ordinance No. 2010-03 and Municipal Resolution No. 2011-079 were the complementing legislations and basis concerning the core and buffer zones of Miagao Church. The Church of Miagao has a core zone with a total land area of 9,209 square meters and a buffer zone of 299,443 square meters (refer to Figure 2).

The 2010 Ordinance consists of six articles as follows: Article I Title, Purpose and Intent; Article II Legal Framework and Definition of Terms; Article III The Local Heritage Review Board; Artice IV Inventory, Procedures and Incentives; Article V Miscellaneous and Penal Provisions; and Article VI Final Provisions. This ordinance intends to preserve and protect heritage resources within the municipality that contributes to Miagao's historical development, distinctive character, economic value, tourism and improved quality of life. It created a Local Heritage Review Board (Article III) to take initiatives in the inventory of heritage resources based on defined criteria, raising community awareness, and serve as the Municipality's main resource on matters of history, heritage planning protection and preservation. It provides for a review and permit process involving the demolition or major alteration of a property listed in the inventory (Article IV Section 6 and 7). It provides affected property owners incentives such as financial assistance, and tax credits (Article IV Section 9). It has a special provision concerning height restrictions (Section 10) for buildings within 100 meters radius from the Church of Miagao premises. "There shall be no construction, erection of buildings or structure higher than 15 meters from the ground line of the Miagao Church, within 100 meters radius from the church premises."

The 2011 Resolution defines the boundaries of the core zone of the Church of Miagao, and its buffer zone. However, UNESCO referred back to the Philippine government (as State Party) the proposed buffer zone and sought some clarifications as follows:

> "The boundaries of the serial component of the Church of Santo Tomas de Villanueva in Miagao, Iloilo, remain unchanged at 0.92 hectare. The



Figure 2 *Map of the core and buffer zone of the Church of Sto. Tomas de Villanueva in Miagao, Iloilo. (After NAMRIA, 2011)*

buffer zone surrounding the site provides adequate protection in three directions within an area of 29.94 hectares. However, no buffer zone is proposed towards the south-west of the property and the rationale for the lack of buffer zone in this area has not been given in the documentation provided by the State Party. ICOMOS considers that it would be desirable to establish a buffer zone which surrounds the property in all directions and thereby can offer adequate protection from all potential negative – including visual – impacts."

In line with the intent of the special provision of the 2010 Ordinance, it should have provided at the very least 100 meters of buffer zone on the Southwest of the core zone. It is logical to establish a buffer zone a bit symmetrical in layout as it will adequately protect the Church of Miagao from potential adverse impacts on all directions.

Buffer zone for the Church of Nuestra Señora de la Asuncion in Santa Maria, Ilocos Sur

The Municipality of Santa Maria, Ilocos Sur is a third class municipality with a population of

28,597 inhabitants and a total land area of 6,331 hectares. The Municipality of Santa. Maria has 33 barangays. The Church of Santa Maria (a.k.a. the Church of Nuestra Señora de la Asunción) was declared a National Historical Landmark in 1974 with the issuance of Presidential Decree No. 375 which amended Section 2 of Presidential Decree No. 260. The Municipality of Sta. Maria in Ilocos Sur enacted Municipal Ordinance No. 01 Series of 2012 on January 11, 2012. The ordinance is otherwise known as "An ordinance establishing the Sta. Maria Heritage District, adopting a development plan therefore, and providing rules and regulations for its implementation and operation." The Municipal Ordinance No. 01-2012 was adopted as the complementary local legislation concerning the core and buffer zones of the Church of Santa Maria. The Church of Santa Maria has a core zone with a total land area of 23,579 square meters, and a buffer zone of 268,286 square meters (refer to Figure 3).

The 2012 Ordinance is comprised of four articles: Article I Establishment of the Heritage District and Definitions; Article II Statement of Policies and Policy Guidelines; Article III Administration



Figure 3 *Map of the core and buffer zone of the Church of La Nuestra Senora De La Asuncion in Sta. Maria, Ilocos Sur (After NAMRIA, 2011).*

and Enforcement; and Article IV Final Provisions. Similar with the Paoay 2002 Ordinance, this 2012 Ordinance's main purpose is to establish a heritage district within the municipality with the Church of Santa Maria forming part of the core. This Ordinance intends to maintain a center of government, religion, education, community development and commerce that also serves as a viable tourism zone. It states general land use policies, allowed and disallowed use in the core and buffer zones. It created the Santa Maria Heritage District Council for the administration and enforcement of the ordinance. It created a Design Review Board (Section 9). The boundaries of the core and buffer zones are established. However, UNESCO referred back to the Philippine government (as State Party) the proposed buffer zone and sought some clarifications as follows:

> "Previously slightly larger parts of the historic cemetery and the surrounding green slopes have been excluded from the boundaries. The expanded area extends to the south but no justification was provided for the new inclusions. The area covered by the newly proposed boundaries amounts to 2.36 hectares while the exact size of the previously inscribed area is unclear due to its schematic delimitation on an out-of-scale map sketched in 1993."
>
> "The State Party also proposes boundaries for a buffer zone which has been established and which includes significant parts of the surrounding historic city including the new and old central markets. Whilst this buffer zone seems to offer adequate protection towards the east and west, no buffer zone surrounds the property boundaries towards the north and south and the rationale for this unbalanced buffer zone distribution has not been given in the documentation provided. ICOMOS recommends that a buffer zone should provide protection from all directions and should accordingly be expanded north- and southwards for the property component."

It is but logical to provide a buffer zone a bit symmetrical in layout that allows adequate protection from all directions.

Discussions

At the time of the inscription of the Baroque Churches of the Philippines twenty years ago, its buffer zones were undefined. The buffer zone is considered as an efficient management tool for the protection of World Heritage properties. In 2012, the cartographic maps reflecting the identified core and buffer zones of the four Baroque churches located in the historic districts of Paoay, Santa Maria, Intramuros, and Miagao, were completed and officially transmitted to UNESCO. The respective buffer zones for the sites in Paoay, Santa Maria and Miagao are represented by an area of land around the core and within the territory of the municipality in which the property is situated. The recent delineation of buffer areas for the Baroque Churches of the Philippines were based on the complementing local legislation that hopes to provide added layer of protection to the core of the World heritage property.

The common main underlying purpose of the local ordinances on heritage preservation in the three municipalities is the architectural intent to establish a district that serves as a buffer or transition zone to address potential threats that may adversely affect the OUV of the Baroque Churches of the Philippines. Physical development are restricted and regulated through the municipalities' respective Heritage/ Design Review Boards. There are land use policies, allowed and disallowed uses within the buffer zones. Both Paoay and Miagao have height restrictions for buildings within the buffer zones. Although Paoay has provisions for streetscapes and open space improvements, it has no specific provisions concerning visual corridors and vista points. Specific provisions on the identification and establishment of visual corridors and vista points (as required in the NHCP Guidelines) as well as their development and protection, are not explicitly mentioned nor delineated in the buffer zones of the three municipalities. Incentives to encourage heritage preservation vary among the three municipalities, and are not well established. In the case of Miagao it provides tax credits and financial assistance, while Paoay imposes fees and tax levies to generate revenues for a special Heritage District Fund. The legislations reflect the municipalities' value for heritage preservation, economic development and improved quality of life, in their planning efforts for their respective territorial and administrative jurisdictions.

The local ordinances on heritage preservation reflect how the national government encourages the active involvement of local communities as important stakeholders in the consultative processes of urban planning and local governance. However these planning efforts need to be further strengthened and sustained through the formulation of the Comprehensive Land Use Plan (CLUP) enacted into a Zoning Ordinance that covers a wider time horizon. The CLUP may cover a minimum period of ten years, and serves as the framework for all the other plans of the LGUs. The CLUP and Zoning Ordinance should be periodically reviewed as deemed appropriate by LGUs to ensure the attainment of the municipalities' planned development goals and objectives. The review of the CLUP and Zoning Ordinance should be an opportunity to integrate the pressing global and national agenda on matters dealing

with cultural and natural heritage. It is the appropriate opportunity to revisit the various protocols, declarations and policies set by the international organizations such as UNESCO. It will likewise be an opportunity to incorporate the suitable guidelines, policies and standards set by the national government agencies concerning the conservation of historic centers and heritage zones. The pre-existing heritage conservation plans for the municipalities (as in the case of the 1999 Paoay Heritage District Master Plan) should be integrated in the crafting of an updated CLUP. Disaster risk reduction should be integrated in these plans especially within the zones of the municipalities where built heritage are situated. The LGUs should adopt a risk preparedness program for the protection of historic centers and heritage zones. As part of the local planning and policy making process, the LGUs should generate more data, and transform available data into relevant development indicators that could guide the municipalities to monitor and measure progress towards the "preservation and enrichment of culture."

Buffer zones for built heritage sites in our urban settings should reflect how we could best implement heritage conservation endeavors in an all-inclusive approach to ensure that our towns and cities remain sustainable and meaningful loci of our history and culture.

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Museum exhibition design: Case study of Rizal Shrine Fort Santiago

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ABSTRACT

This article discusses exhibition design with Rizal Shrine Fort Santiago as the subject of the case study. The research questions are *(i)* What was the process used to develop the curatorial design process for this museum, *(ii)* What were the curatorial concepts that went into it?, and *(iii)* How were these concepts interpreted in the museum and in its display galleries?

The case studies included in this paper deal with Rizal Shrine Fort Santiago that recently underwent updating and modernization. Rizal Shrine Fort Santiago explores the final days and the legacy of Dr. Jose Rizal.

Empirical data were gathered by going through the various documents accumulated from the terms of reference, museum storyline, minutes of the meetings, presentation materials, sketches and drawings. Collected empirical evidences were then evaluated qualitatively to form the bulk of this article.

KEYWORDS *museum exhibition, design process, architecture, curatorial design, case study*

INTRODUCTION

Exhibitions are the primary function of a museum and effective curatorial planning and design is necessary for museums to thrive. Thus, a careful and thorough museum exhibition design process plays a critical part in developing an engaging display of objects or information. Exhibition design pertains to the visual appearance and coherence of the exhibit ensuring that the material is set out in an appealing, understandable, and attractive manner.

Museum exhibition design is a collaborative activity that entails the overall design and planning of museum exhibits. Walhimer (2014) defines museum exhibition design as "the making of a plan for the construction of public displays for the purposes of education, study & enjoyment, in the service of society and its development." Museum exhibition design is a process of developing an exhibit which begins with concept development. From an established concept, the idea undergoes an interpretive process resulting in a physical, three-dimensional exhibition. Unlike a book with its pages, the end-product is a story that is told in a three-dimensional setting.

In the past, museums are known as spaces where artifacts are on display and their significance explained on accompanying captions placed in plaques. However, museums of today, both new and updated ones, are being reinvented to be less dependent on that formula by creating interactive and sometimes immersive environments that engage visitors beyond the age-old, "look but don't touch" approach. Museums still display its artifacts but they are being reorganized in a way that tells a story instead of categorizing them together in spaces.

Technology is leading the way in modernizing museums and their exhibition content with the end goal of not only enhancing visitors' overall experience with the museum, but also enhances people's engagement during their visit. Ziamou (2012) in her visit to the American Museum of Natural History's *Beyond Planet Earth: The Future of Space Exploration* observed that technology empowers the viewer, enhances the viewer engagement by enabling the process of discovery, and leverages to create a multi-sensory experience. Furthermore, technology has the perception of being edgy and 'cool' especially for the young visitors which creates the same effect on the museum surroundings.

This "viewer engagement" benefit of integrating technology with how exhibitions are designed resulted in the emergence of interactive museums, a type of museum based on the concept of allowing the visitors to interact with exhibition components that heighten their enjoyment and facilitate their learning process (Zerrudo, 2008). The Museo Pambata and Mind Museum in Manila and Taguig City, respectively are examples of museums that are highly interactive.

The National Historical Commission of the Philippines (NHCP) is the government agency tasked to preserve the country's historical legacies for present and future generations. NHCP is embarked on a program to modernize 22 museums around the country that the Aquino administration intends to upgrade into "digitally-enhanced institutions" (Estrope, 2012). NHCP's Museum modernization involves *(i)* updating the curatorial content, *(ii)* utilizing technology in the way objects and information are displayed, *(iii)* increasing interactive displays, *(iv)* incorporating an "E-learning" room where interactive lessons in Philippine history will be available to the museum visitors, and *(v)* designing the exhibition that is more "child-friendly". The Rizal Shrine Fort Santiago and Bonifacio Trial House in Cavite are two museums that may be visited which recently underwent modernization.

The use of case studies as a tool for better understanding exhibitions is relatively new in the museum field, although cases have been the core of study in a number of other fields including cultural anthropology, law, and sociology (Doering, 2002). In the Philippines, little has been written and documented about museum curatorial design. Thus, this article examines museum exhibition design in the Philippines with the Rizal Shrine Fort Santiago as a case study. This paper has the following objectives *(i)* to identify the process used in developing the curatorial design process, *(ii)* to contribute to a further understanding of the curatorial concepts that went into the Rizal Shrine, and *(iii)* to describe how the curatorial concepts were interpreted through the museum's exhibition designs.

Methodology

Case study research method is an empirical inquiry that investigates a contemporary phenomenon within its real-life context; when the boundaries between phenomenon and context are not clearly evident; and in which multiple sources of evidence are used (Yin, 1984). The research was designed employing the "multiple case study" (Yin, 2003) which enabled this researcher to explore the museum exhibition design of the Rizal Shrine.

Soy (2006) presented the following process when conducting a case study and which became the basis of this descriptive type of research: *(i)* Determine and define the research questions which establishes a firm research focus to which the researcher can refer over the course of study, *(ii)* Select the cases and determine data gathering and analysis techniques, *(iii)* Prepare to collect the data, *(iv)* Collect data in the field, *(v)* Evaluate and analyze data, and lastly *(vi)* Prepare the report.

Results

Jose Rizal met an untimely death but his dream for freedom did not end with the bullet. His legacy continues to inspire many generations after death. It is for these reasons that the Rizal Shrine Fort Santiago is historically and culturally important. The modernized museum provides many visitors deeper appreciation of Rizal and what his martyrdom was all about.

The architectural firm of Arce-Bailon Arce Architects (ABAA) was, through public bidding, selected by NHCP for the Rizal Shrine museum modernization project in March 21, 2013. The projects calls, as embodied in the NHCP's terms of reference, for the selected consulting firm to "conceptualize, research, curate and implement an exhibition" that will be the core of the modernization project of these museums.

The museum exhibition design process employed by ABAA for the Rizal Shrine is as follows (ABAA, 2013):

1. *Conceptualization Phase.* ABAA commenced its conceptualization upon receipt of notice from NHCP. This phase involved the polishing of the curatorial concepts and integration of initial feedback, if any, from the NHCP.

2. *Research Phase.* Data were gathered and verified in this phase. Permits and high-resolution scanning of archival images to be used for the exhibit were secured. Object list was finalized; purchase, loan, and commission of artworks and objects were made in this phase.

3. *Curatorial Design and Exhibition Writing Phase.* This phase involved the finalization of the exhibit master layout; placement and manner of exhibition of all objects and elements to be included; and writing, translation, and editing of all museum texts.

4. *Implementation Phase.* This involved the fabrication of display cases, wall panels, and furniture; ingress of objects and all support materials; the layout and printing of texts and the boards; the hanging or installation of the exhibition objects; the testing of lighting and other electronic devices; and the cleaning and preparation of exhibition area for the formal opening.

Dambana ni Rizal Fort Santiago

Introduction. The Rizal Shrine Fort Santiago (Rizal Shrine) is a 577 — square meter museum exhibition at Fort Santiago, Intramuros, Manila. The modernized museum was inaugurated in March 21, 2014 coinciding with the anniversary of *Noli Me Tangere's* first publication in 1887 (Purino, 2008). The exhibition highlights the final days of Jose Rizal and his legacies that continue to inspire present and future generations through his heroism and writings, among others.

Rizal Shrine is Fort Santiago's centerpiece attraction and is housed in a two-story structure built and used during the Spanish colonial period as barracks for two artillery companies. It was in one of the ground floor corners at the eastern side of the building where a *cuarto de repuesto* or storage for military supplies and equipment was converted into a prison cell (NHCP, 2013). This is where Jose Rizal was detained for two months, from November 3 to December 29, 1896, prior to his execution the following day in Bagumbayan. Rizal also wrote his *"Mi Ultimo Adios"* ("My Last Farewell") in this cell.

The building was first restored in 1953, where it was renamed as the Rizal Shrine. It remains under the supervision of the NHCP. An update of the museum exhibition, showcasing Rizal's memorabilia, was done in 1996 as part of the centennial celebration of his martyrdom and the Philippine revolution. The exhibition was closed to the public in 2013 paving the way for the modernization of the museum and restoration of the building.

The modernized museum exhibition at Rizal Shrine features artifacts, majority of which were already displayed in the previous exhibition or were already in the custody of the NHCP. The collection is a mix of original objects, reproductions, and facsimiles. Salient among the original objects on display is a piece of Jose Rizal's vertebra where the bullet hit him during execution. In addition, the museum features an impressive collection of paintings on Rizal, most notably the painting entitled "The Martyrdom of Rizal" by National Artist Carlos 'Botong' V. Francisco and the three winning paintings during the Rizal Centennial Art Contest in 1960 (Penales, 2014).

Complementing the static displays are two touchscreen kiosks, four audio-visual screens, and a light-and-sound tableau. Other interactive displays include a 'flip-wall' featuring stamps, cigarettes, streets, etc. bearing the 'Rizal' name; a jigsaw puzzle of one of Rizal's comic sketches; a 'photowall' where visitors could have their photos taken with the three *Illustrados*; and a cluster of niches where visitors guess the concealed animals using their sense of touch.

The design and implementation of the recently updated exhibition at the Rizal Shrine Fort Santiago officially known as *Dambana ni Rizal Fort Santiago* was a collaboration spanning close to a year from conceptual development to its inauguration in March 2014.

Museum Curatorial Design Concept. The museum exhibition project was guided by the theme "Jose Rizal's Martyrdom and the Building of the Filipino Nation" as formulated by the client. Furthermore, the client provided the consulting group a guiding storyline which was the basis of each gallery's curatorial content. From the initial Rizal Shrine museum concept, the consultants developed the following curatorial objectives: *(i)* to present and interpret the life and legacy of Jose Rizal and his relevance then and today, *(ii)* to present Rizal within the proper historical context and how such influenced his development into a reformist, *(iii)* to focus on the events of his martyrdom and how this served as inspiration and catalyst in the Filipino struggle for independence, *(iv)* to emphasize the significance of Fort Santiago in the life of Jose Rizal, thus, the site's recognition as a National Shrine, and *(v)* to bring Rizal closer to the public and masses through an enriching an educational experience that features a creative interplay of various sensory media and appropriate language, artistic design of space and innovative use of technology (ABAA, 2013).

The museum flow is principally influenced by the existing spatial layout and circulation as the introduction of new wall openings were out of the question. Thus, visitors at some occasion need to pass through an earlier viewed gallery in order to see the next gallery in the exhibit storyline. This is contrary to the ideal setup wherein the visitor always "move forward" to the next gallery.

The former curator's office was relocated to the second floor in order to give way to the new museum *Entrance*. From the entrance, visitors will be directed to the left where the *Gallery to Rizal's Life* is located. The timeline, the centerpiece of this gallery, is displayed to be read from right to left. This is succeeded by the *Entrance to Contemplation* - a transition exhibit before visitors enter the *Contemplation Room*. Adjacent to this is Rizal's *Prison Cell* which is cordoned-off by a chain link.

Based on the museum storyline the Contemplation Room display is followed by the that of the *Trial Room*. These two galleries are not adjacent to each other so visitors have to pass through the already seen Gallery to Rizal's Life. The Trial Room is divided into the Ante Room (where the case against Rizal is explained) and the Light and Sound Tableau (where excerpts from the trial proceedings are dubbed in Filipino and English). Following the Trial Room is the *Main Gallery* where visitors can take a different view of Rizal's

prison cell. The Main Gallery has the same entry/ exit doorway and visitors once again pass through the Trial Ante Room to take the stairway to the galleries located at the second floor.

The *Postscript to Rizal's Life* display are in the stairwell area where portraits of different personalities adorn its walls. This is followed by the *Audio-Visual Room*, the *Memento Room*, and lastly the semi-outdoor exhibit Verandah. From the *Verandah* visitors may proceed to the E-Learning Room or to the Rizaliana furniture collection at the Baluarte de St. Barbara or, in the case of the handicapped, take the elevator down to the garden at the ground level. Wayfinding within the museum is complemented by museum plans, wall-mounted gallery signage, and floor mounted directional signs.

Save for the stairwell area, the interior walls are dominated by adobe and marble. The thematic colors designated for each gallery are therefore applied to the wall graphic panels instead. The inspirations for the color concept for Rizal Shrine are the "colors of night" which was a take-off from an excerpt of *Noli me tangere* written by Jose Rizal (1887):

> *"I die without seeing the dawn brighten over my native land. You who have it to see, welcome it--and forget not those who have fallen during the night!"*

The following table shows the color schedule for the different museum galleries and their associated meanings:

Table 1. *Color Concepts for Rizal Shrine Fort Santiago*
ABAA, 2013

Area	Color
Entrance	Brown (denoting the Filipino as the "brown race")
Gallery About Rizal's Life	Red Orange (denoting sunset)
Entrance to Contemplation Room	Light Blue (denoting twilight)
Contemplation Room	Midnight Blue (denoting dusk)
Prison Cell	Dark Grey (denoting midnight)
Trial Room	Dark Red
Main Gallery	Deep Purple (denoting dawn)
Postscript to Rizal's Life	White
Memento Room	Teal (denoting morning)

The display cases are lined with red velvet and covered by clear glass. The wooden pedestals are finished in either painted matte black (for the ground floor galleries and AVP room) or in wood stain (for the Memento Room). All display cases are stenciled in gold paint with a stylized Rizal's insignia "JR". This insignia was drawn by Rizal himself as this is seen in some of Jose Rizal's letters. ABAA thought that its inclusion will contribute in creating a unique visual identity to the Rizal Shrine museum. Same insignia is used as end borders to the gallery infotexts. An enlarged "JR" cutout serves as a focal point when one enters the museum.

Object captions inside cases or on walls are bilingual and printed on black background. The Filipino text is written in white while the English translation adopts the color of the gallery but at a much lighter shade. A horizontal line representing the gallery's thematic color separates the object caption and the name of the museum in English and Filipino.

Garamond Premr Pro was the font extensively used in museum texts except in the Trial Room Light and Sound Tableau where the cutout texts were in Helvetica. Furthermore, the graphic panels inside the tableau, in order to give a newsprint feel, are in Courier New.

All the texts were bilingual with Filipino as the principal language. Both Filipino and English texts are presented in similar text sizes, however the distinction is in either the positioning or the color of the English translation. Example is the infotexts. When the Filipino and English translations are in one infotext panel, the former is above the latter in the layout. When the translations are in two separate infotext panels, the Filipino translation should be on the left of the English text.

LED track lights were used throughout the museum. Except for the Entrance, Timeline, Postscript, Memento Room, and Verandah galleries, which are bright and complemented by daylighting, the remaining rooms are dimly lit, with one fixture per object ratio. Some of the lighting fixtures were reconfigured to create more concentrated and directional effect.

Gallery Descriptions. Two wall mounted panels adorn the *Pasukan* or Entrance which provides an overview of Rizal's life and heroism. On the right is a rasterized image of the Rizal Monument at Luneta in frosted sticker and mounted on framed mirror panels. The black and white rasterized image was conceptualized by this author and finalized by Given Dizon, an Architecture student of UST. An antique chandelier provides general lighting to the entrance area. On the left side is the museum's main infotext with the title "Jose Rizal". This panel is printed in sintra with a rasterized illustration of a falling Jose Rizal in the background.

The *Galeriya ng Buhay ni Rizal* or Gallery About Rizal's Life features the twilight of Rizal which begins when he left Dapitan en route to Spain bringing with him documents recommending him as doctor to Cuba. A wall mounted infotext, printed in photo canvas, provides an overview

of the gallery's highlight: a wall-mounted 1896 timeline that begins with Rizal's departure to Spain and ends with his execution. Bilingual texts are interspersed with images for the 19 events that comprise this sintra-mounted panel.

A prelude to the main display are 40 chronology events about Rizal, from his birth to his exile in Dapitan. Each event is printed on metallic paper, also mounted on sintra, and arranged at ten columns and four rows on the floor mounted wall panel. In the next wall an enlarged stylized "JR" insignia is mounted in cutout sintra.

Succeeding the timeline is a wall panel that shows six significant events after Rizal's death which includes, among others, his unmarked burial at Paco cemetery and the inauguration of the Rizal Monument at Luneta on December 30, 1913.

Lastly, the first of two interactive touchscreen kiosks are found in this gallery. The kiosk contains information about Rizal's childhood, friends and acquaintances, and views of 19th century Philippines.

The *Silid Pagnilay* or Contemplation Room features Rizal's 56 days of incarceration including the visitors he received and the letters he wrote. This gallery is divided into two sections, the first of which is the introductory display located before the Contemplation Room. This ante area consists of a wall mounted infotext providing an overview of Rizal's repatriation from Spain and transfer to Fort Santiago; an excerpt of Rizal's letter of apology to his family for the pain he caused them; and a portrait of Rizal in woodcut which appeared in the magazine *Internationales Archiv fur Ethnographie.*

The second section is the main Contemplation Room where Rod Herrera's 1961 "Huling Paalam" is prominently hung. In the room are three display cases which are provided with captions and extended texts. Inside the first case is a reproduction of Ferdinand Blumentritt's photo and a facsimile of Rizal's last letter to Blumentritt dated Decenber 29, 1896. The second case contains a facsimile of Rizal's undated letter to his family and a reproduction of a photo of Saturnina Rizal together with her daughters and nieces. While the last case contains a facsimile of Rizal's letter addressed to his father and mother dated 30 December 1896 and portrait reproductions of his parents Francisco and Saturnina.

An infotext panel describes this room where Rizal received his visitors and wrote his letters. It was here where the Special Judge Advocate of the Council of War read the death sentence in December 29, 1896. A National Historic Institute (NHI) marker is placed before the entrance to this room to note the room's historical significance. Lastly, a wall-hung monitor displays related information about Rizal's stay in his prison cell.

The *Silid Piitan* recreates the prison cell where Rizal stayed until December 29, 1896 before he was transferred to the adobe barracks where he awaited execution. Since the Prison Cell can be viewed from this area, its infotext is placed inside the Contemplation Room. The infotext describes the room's use before it was converted into Rizal's cell. The infotext also refers to the locked door which was only opened after Rizal was read his death sentence and transferred to the adobe barracks where he awaited his execution.

The objects placed here recreate Rizal's time as a prisoner, the most important of which is Guillermo Tolentino's life-size wax figure of Rizal. A quill, an ink bottle, a reproduction of the alcohol stove, a writing table and chair, a bed, a chest, and a washbasin comprise the rest of the objects in the Prison Cell. Flickering LED light simulates the flame from the alcohol stove while the lone directional light is focused on the wax statue.

Silid Paglitis or Trial Room is a reenactment of Rizal's trial where it was held at the Hall of Banners at the Cuartel de Espana on December 26, 1896. The trial room recreates, in light and sound tableau, when Rizal was sentenced for the crimes of rebellion, sedition, and organizing an illicit association.

The infotext for the Trial Room is located at the stairwell area before passing through this gallery's doors. There are two bilingual infotext panels, with the principal Filipino text placed on the left panel. The infotext provides a summary of Rizal's trial of December 26, 1896 and the events that lead to his execution four days after. Hung nearby is a reproduction of Rizal's portrait by Juan Luna.

The Trial Room gallery is divided into two sections by a wall with two arched openings created by ABAA. The first section, the anteroom, contains various wall mounted panels about the following: *(i)* Case against Rizal, *(ii)* The Council of War that tried Rizal, *(iii)* Luis Taviel de Andrade as his Defense Counsel, *(iv)* Persons Interrogated, *(v)* Testimonies Used, *(vi)* Details of the Penalty, *(vii)* Confirmation of the Death Sentence, and *(viii)* Disposition of Property. A 1954 oil on canvas painting of Rizal as a Mason serves as the focal point of the Trial Ante Room. Placed at the right side of the painting is the English translation of Rizal's *Adiciones a Mi Defensa* or "Addition to My Defense", notes submitted by Rizal to his counsel as part of his defense. Lastly, excerpts from a news article from *Diario de Manila* giving account of the trial at the *Cuartel de Espana* are wall mounted in Filipino, Spanish and English.

The light-and-sound tableau is the second section in the Trial Room Gallery. The setup is an interpretation of *Cuartel de Espana*, the building where the trial actually took place. The Spanish

colonial coat-of-arms is hung high behind the raised Council of War table. Two small tables flank the long table, one for the defense and for the prosecution. A statue of Luis Taviel de Andrade, stands beside the defense counsel table while a life-size statue of Jose Rizal seats at the middle of the set-up. Wooden balusters separate the tableau from the visitors. The floor is re-tiled in checkered black in white vinyl as a 1957 illustration by C. Salonga shows the trial room with the same floor pattern.

Surrounding the tableau room are wall mounted panels with excerpts from the defense, the prosecution, Polavieja's confirmation of the sentence, and Rizal's own defense. The light-and-sound tableau is supposed to be self-operated by the visitor, however the location of the switch is inconspicuous.

Silid Kabayanihan or Main Gallery features the events of December 30, 1896 from Rizal's final walk from the Chapel cell in Fort Santiago to the firing squad in Bagumbayan, the final shot or tira de gracia, ending with the pronouncement of his death at 7:03AM. The infotext for the Main Gallery is the first thing visitors see as soon as they enter this area. The infotext provides a general account of the events of December 30, 1896, the day Rizal was executed.

There are a number of important objects displayed in the Main Gallery, foremost of which is Rizal's vertebra where he was hit by the bullet that felled him. This object is displayed in a hexagonal-shaped clear glass case and is mounted in a slowly moving turntable. Botong Francisco's painting entitled "The Martyrdom of Jose Rizal" is prominently displayed at the left side. The painting is detached from visitors by art nouveau inspired steel stanchions. Lighting of the painting is minimal; three led directional lights are focused on the faces of Rizal in this Botong masterpiece. At the opposite wall is a blow up of an archival photograph of Rizal's execution. A facsimile of the photo printed in its actual size is provided for comparison. Reproduction of this photograph was a challenge for ABAA; a small image scanned to the desired large format will result in pixelation, no matter what enhancement is done on the image file. The curatorial design team opted to limit the lighting on the enlarged execution image by having a single directional light focused on the image of Rizal.

Also in the Main Gallery is a glass case containing a replica of the alcohol stove given by the Pardo de Tavera family to Rizal with a facsimile of *Mi Ultimo Adios* beside it. Above the glass case are back lit panels showing excerpts of the poem in Spanish, Filipino, and English translations. Other objects include a drawing of Rizal's execution which came out in *El Motin* in 1911; Rizal's traveling overcoat, hat and case; facsimile of De la *Imitacion de Cristo* which was Rizal's last gift to Josephine Bracken; facsimile of a letter of Teodora Alonso to Governor Polavieja pleading pardon for her son; and a doctor's certificate and other documents attesting to Rizal's death after execution.

A Rizaliana wall clock is set at 7:03AM, the time when the execution was over. Mounted on panels and hung on walls were photos showing the remains of Rizal's shoes and hat which he wore when he was executed; an 1896 news article from *Diario de Manila* entitled "The Failure of Law" giving account of Rizal's execution at Bagumbayan, his retraction from masonry and his marriage to Josephine Bracken; another 1896 news article from *El Comercio* entitled "Events of the Day" stating the manner by which Rizal would be executed.

A semi-circular panel which gives an overview account of Rizal's burial at the Paco Cemetery serves as a background to Rizal's displayed vertebra. Furthermore, a life-size cutout of Jose Rizal is placed on the wall beside his overcoats. Lastly, a bench is placed in between Botong Francisco's painting and the enlarged photo of the execution for the weary visitors.

Mga Pahabol sa Buhay ni Rizal or Postscript to Rizal's Life presents key people who figured in the world of Rizal and who, after his death, moved on with their lives, pursued the cause of freedom, and received the judgment of history. The infotext, placed at the ground floor stairwell area, writes about Rizal's execution which rippled through to those whole lives were touched by his persona and ideals. Placed at the stairwell is a 1961 Rizal bust by Guillermo Tolentino, a photo of Katipuneros holding a photo of Rizal, and an oil on canvas portrait of Rizal donated by the Knights of Rizal. Mounted on the stairwell walls are portraits printed in canvas of Juan Luna, Antonio Luna, Emilio Aguinaldo, Andres Bonifacio, Ang Katipunan, Paciano Rizal, Josephine Bracken, Thirteen Martyrs of Bagumbayan, Bernardino Nozaleda, and Camilo de Polavieja. Two extended captions printed on sintra board are mounted on the second floor landing area.

Silid Audio-visual or Audio-visual Room, as the name suggests presents the museum exhibition in audio-visual experience. Here, existing windows were painted black to block off daylight and totally create the gallery's desired ambiance. A large LED TV continuously plays a short documentary on Rizal and the Rizal Shrine. Visitors may watch while seated in one of four wooden benches. Hung on the marble walls are four oil paintings namely; "The Last Day of Rizal", artist unknown; "Rizal Treating His Mother, 1960", by Romeo Enriquez, 2nd Prize in the Rizal Centennial Painting Competition; "Rizal Writing *Mi Ultimo Adios*, 1961", and 3rd

Prize in the same competition. The last painting, "Portrait of Jose Rizal, 1891" by Telesforo Sucgang is considered to be the one of the best and truest likeness of Rizal (NHCP, 2014). The lone display case in this gallery contains Rizal's fencing vest & fencing foils and facsimile of a photo taken in Paris of Rizal and Juan Luna in the act of fencing.

After the Audio-visual Room is the teal color dominated *Silid Pamana* or Memento Room. The gallery features objects, photos, and facsimiles that mark the legacy of Jose Rizal in education, culture, national identity, economic growth, environment, social equality. where visitors are greeted by an infotext, a large oil portrait of Jose Rizal, and a quote from Rizal. The Memento Room is divided into five sub-galleries which are the legacies of Rizal: Education and Culture, National Identity, Social Equality, Environment, and Economic Growth. Common to all sub-galleries are an infotext and a quotation by or about Rizal. Compared to the infotexts of earlier galleries, those in the Memento Room are designed with a more modern look. White Garamond Premr Pro texts over blue background were used. Likewise, the infotexts were framed with white border and stylized by the JR insignia.

The first legacy, Education and Culture were further divided to provide emphasis to each. The Education display's message is that Jose Rizal is a role model to be emulated by students. Displayed on the walls are archival images and narratives showing Rizal's education; from his mother, to his time at Ateneo, University of Santo Tomas, and Madrid. That Rizal believed in exploring and using one's good potentials and using them for the benefit of others is better understood by looking through a drawer display showing facsimiles of Rizal's grades, diplomas, certificates, journals, and essays.

Rizal used his talents and expertise to help society as a doctor and a teacher. This facet of Rizal as a teacher is displayed in the wall displaying archival photos of the hut where he taught while in exile in Dapitan and two of his students. Furthermore, a painting showing Rizal teaching kids in Dapitan was commissioned for this sub-gallery. Also, an architectural elevation of a Hong Kong school building that Rizal drew is displayed. While a couple of glass cases containing his Hong Kong calling cards, dry seal, and surgical instruments complete this display.

The Culture sub-gallery's message is that Rizal was an artist who drew, painted and sculpted. In his travels, he sketched landscapes and people. He was a good poet and writer. In his writings, he promoted the rich culture of prehispanic Filipinos, their legends and their tradition. A video monitor shows an animation of Rizal's "The Monkey and the Tortoise", one of few comic strips that Rizal created. Some of his landscape and portrait sketches were blown up and printed on photo canvas.

In the middle of the Culture sub-gallery are reproduction of six of Rizal's sculptural works such as *Mother's Revenge, Oyang Dapitana* and *Triumph of Science over Death*. Each object is encased in glass of varying heights.

One of Rizal's poems are mounted on a wall panel near the window. Rizal. Likewise, invented a fortune telling board game called *La Sibila Cumana*, a recent reproduction of which is displayed in a glass case and an interactive jigsaw puzzle is available for visitors to play, with the board game's principal character as the image the player has to complete.

The message of the National Identity sub-gallery is that Jose Rizal's acclamation as a hero has raised him to the level of a national icon. His name has graced a province and most main streets of every town and city. He is honored by countless monuments and remembered in various films and plays. Filipinos name their businesses and even children after him. Organizations are created to emulate his values. He has even reached the realm of the supernatural as some groups have revered him as a god, a saint or just a spiritual person.

In the middle of this sub-gallery are display cases containing stamps, peso bills, memorabilia from his centenary and 150th birth anniversary. A wall presenting the monuments built in honor of Jose Rizal is complemented by a video loop showing the various Rizal monuments around the country. A flip-wall interactive panel features 45 objects, places, and structures named after him. A wall where framed portraits of Jose Rizal are hung is placed beside the second interactive touchscreen kiosk which features Rizaliana trivia and more information about Rizal and national identity.

In the Social Equality subgallery Rizal advocated for social reforms in the Philippines. Together with fellow reformists, he sought for equal rights for all under Spain. He wrote articles for *La Solidaridad,* a propaganda newspaper, and the social novels *Noli Me Tangere* and *El Filibusterismo* to awaken consciousness of the social ills in the colony. He founded the *La Liga Filipina*, which advocated for reforms in the Philippines. He also supported the women of Malolos in their right to education. His writings and the organization he founded awakened national consciousness. This prepared the ground for the future reformists and revolutionists when the Katipunan was founded in 1892.

Among the objects on display in this subgallery are a 1961 oil painting by D. Caparas entitled "La Liga Filipina"; a glass display case containing

1887 and 1909 copies of *Noli me tangere*, a copy of a 1525 book by Antonio Correggio with the same title which was Rizal's title inspiration, and sketches of characters in the *Noli* by Juan Luna.

The message of the Environment subgallery is that Rizal's contribution to science is seen in his specimen collections of insects, reptiles, shells and plants, many of which came from Dapitan through the help of the students. His new discovered specimens were named after him – *draco rizali, apogonia rizali, and rhacophorus rizal.* Examples of which are displayed in glass cases at the sub-gallery. Rizal's shell collection are also shown in two display cases while an interactive display where visitors guess what objects are hidden inside niches provide curiosity.

The last sub-gallery, Economic Growth a wall display speaks about the time he purchased a piece of estate in Talisay which he planted to various crops like cacao, sugar, cane, coconuts, abaca and fruit trees. He developed the land from his earnings as a doctor. He introduced new farming machinery and methods. He became a merchant and profited from his efforts. As a farmer-businessman, he also sought to improve the conditions of the farmers in Dapitan where he helped develop by designing a waterworks system and a dam for the town.

The last display in the Memento Room enables visitors to wear a hat and take their photos alongside the three illustrados: Rizal, Marcelo H. del Pilar and Mariano Ponce. Life-size image of their 1890 Paris photo were cut out and mounted as background. An elevated platform, a chair, and a rack of hats, cane, and shawl complete the photo booth setup.

Finally, at the lone semi outdoor display of the Rizal Shrine museum are three maps. The first is an Intramuros map that documents Rizal's final walk from Fort Santiago to Bagumbayan. The second is a world map that marks the places that Rizal visited in his brief lifetime. The last is a Philippine map showing the locations where historical markers related to Rizal are found.

Discussion

Today's Rizal Shrine in Fort Santiago mirrors the last days and defining moments of Jose Rizal. These exhibits reaffirms Jose Rizal's significance in Philippine history -- how his strongly-held desires, although not realized during his time, served as catalyst and moving spirit in the struggle for Philippine independence and the birth of the Filipino nation. Within this framework, the museum presents in retrospect Rizal's last days, his unquestionable love for country and enduring legacy to the Filipino people. Through this newly modernized museum, Filipinos of today and of the future are privileged to be able to know more about Rizal's life and legacy presented in an educational and engaging setting.

Death as a museum topic usually are provided a serious and gloomy interpretation. But in this case ABAA interpreted this museum that highlights the final days of Rizal in a sombre, interactive, experiential, and child-friendly approach. Every detail of the museum exhibition design, from layout, graphics, lighting, colors, display design have these concepts always in mind.

The Rizal Shrine Fort Santiago was the first museum collaboration of the consultants assembled by ABAA. To date, the same team completed the Bonifacio Trial House and is currently in implementation phase for the Pamintuan House Museum of Social History in Angeles City, Pampanga. All three are under the NHCP. The responsibility of each consultant is well delineated in the respective contract of services. Despite the fact that the consultants are mostly architects, each architect were selected by ABAA based on their field of expertise and their body of work.

As the museum exhibition design consultant, it is important that principal designers concepts are carried through the implementation stage. This is highly dependent on assembling a design team where each individual understands, agrees, and has the ability to translate museum exhibition ideas whether it be in graphics, lighting, audio-visual and other design aspects. It is important that designers are aware the museum exhibition design process undergoes many iterations. At some point in the museum exhibition design process clashes between the exhibition lead designer and, for example, the graphic designer, may occur. However, this should not have any effect in the way the implementation is carried out. Communication among the team is very important.

The Rizal Shrine Fort Santiago was carried out from concept development to implementation with very little difficulties. No major difficulties arose since these consultants brought with them not only their experience but also their network of historians, designers, researchers, fabricators, graphic artists, etc.

Instead, the following may be considered as issues that ABAA encountered while undertaking the museum project *(i)* Considering that modernization entails use of technology the project's budget could have been better. *(ii)* There is a need of a better coordination between the contractor assigned with the building restoration and the contractor doing the museum modernization. The consultants encountered situations wherein the lighting layout implemented by the building contractor does not conform with the museum

lighting layout, thus the need to redo much of the completed work. Also, air conditioning units were located in areas that are conspicuous and could have been better if used for display. *(iii)* Enhancement of archival images and documents. Majority of the photographs and documents, both originals and facsimiles were lacking in conservation or the manner of developing and processing photographs during Rizal's time was different, not necessarily inferior, than today.

The new Rizal Shrine Fort Santiago continue to receive good feedback based on interviews during the inauguration, from comments posted on the feedback wall at the museum or on social media such as *Twitter and Instagram.* Ramon Jimenez, Secretary of the Department of Tourism commended the NHCP during the inauguration for "turning the museum into what it's meant to be, not just a preserved place and not just to honor someone but to instruct the future and, in effect, direct it" (Sauler, 2014).

Janice Tambo, Rizal Shrine Museum's curator has the following to say (Esguerra, 2014):

> "Before, the museum was very dimly lit and bare. It was a mishmash of different exhibits. But now, when you take a tour, you can see that there's a definite theme already. We added narratives because we wanted the feel to be more child-friendly. Splashes of color were added to panels and interactive features were incorporated in the museum to make it more visually appealing for young guests eager to learn more about the famous martyr. We have puzzles and a photo booth, featuring a background as if you were with some of Philippine history's most notable ilustrados. It's like you were actually there, a witness to the unfolding of history's events. We want you to go back to the past, to relive our hero's life."

Finally, Dr. Maria Serena Diokno, NHCP Chairperson, talked about the newly interactive museum with the young visitors in mind (Takumi, 2014):

> "The primary target audience of the display was the youth—hence, the tech—and gimmick-laden displays of the museum. *Importante talaga yung paraan ng pag-display o pag-presenta ng impormasyon.* A lot of museums can be very boring. This is a very interactive museum. It was designed with young people in mind.
>
> Historical tourism in the region is also expected to get a boost with the new attraction, with the display already attracting an influx of new local and foreign tourists. The Philippines is, in fact, one of the primary sites for historical tourism in Southeast Asia *dahil napakalalim po ng ating kasaysayan at ang ating kultura.* In fact, it is unique in this part of the world."

Positive reviews about the modernized Rizal Shrine Fort Santiago can also be seen on Twitter and Facebook:

> *"My first visit today at the new and improved Rizal Shrine at Fort Santiago was a television interview. Sobrang ganda, Congrats National Historical Commission of the Philippines, Janice Manipon-Tambo".* - Historian Xiao Chua's Facebook
>
> *"Spent time with my cousins and nephews last saturday exploring Rizal Shrine in Fort Santiago. Learned a lot while enjoying my time with my family"* – Meg Querubin @megquerubin on Twitter
>
> *"The Urban Roamer revisits the Fort Santiago Rizal Shrine and it looked better than ever!"* -Karl Aguilar @urbanroamer

An understanding of creating a visitor-centered museum design experience, in general, ensures the emotional and sensory effectiveness of the story any museum wants to tell. This makes a museum not only educational and engaging but an important medium of our heritage for our and future generations. Since it opened, the modernized museum is likewise receiving overwhelming positive reactions from the visiting public, most especially the students who leave their comments in the feedback wall.

One conclusion of this study is that any museum exhibition offers an exciting potential to explore the relationship of the designer and end-user. The design process used by ABAA for these two museums, which involves collaboration of various disciplines, is a good model for future museum exhibition designers to consider. Further research could be undertaken on exhibition design on other types of museums public or private, not necessarily placed on a historical structure. When a good number of museum case studies are completed, a workbook for a museum exhibition design in a Philippine-setting could be created which may be a very useful reference for future museums and exhibition designers.

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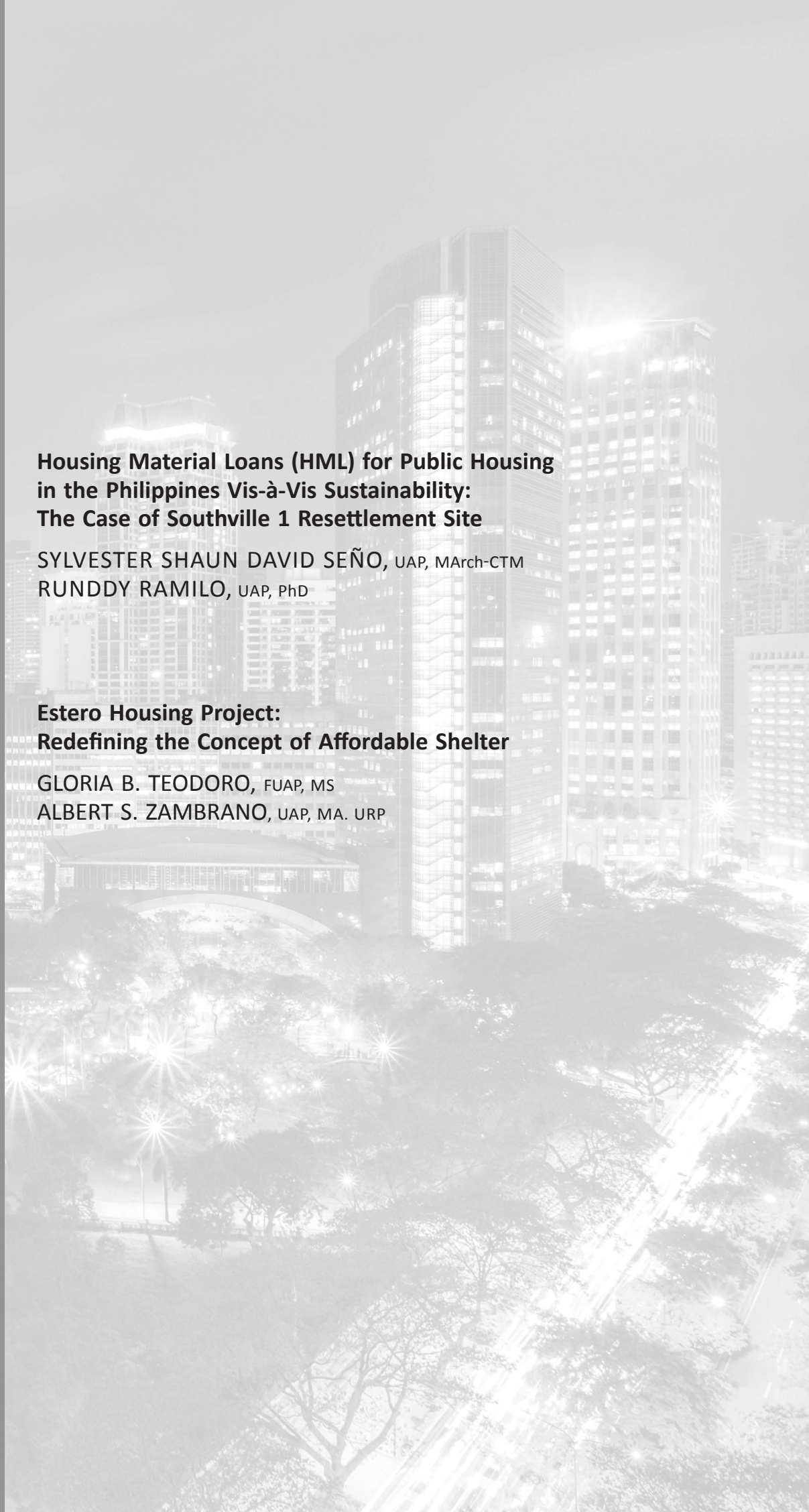
Community Development



Housing Material Loans (HML) for Public Housing in the Philippines Vis-à-Vis Sustainability: The Case of Southville 1 Resettlement Site

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Estero Housing Project: Redefining the Concept of Affordable Shelter

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ABSTRACT

The Philippines' National Housing Authority (NHA) offers various modes of housing delivery for the lowest 30% income Filipino earners. One of these is housing material loans (HML) awarding. The study locus is in Southville 1 Cabuyao Resettlement site built in 2007 which was heavily flooded and affected by typhoons *Ketsana, Haiyan* and *Ramassun*. This study sought to determine if the standard NHA housing design was strictly followed and if the HML was maximized by beneficiaries. The HML concept enables beneficiaries to use the HML money, given in two staggered payments in building their shelters under technical supervision and following design of and by the NHA. Findings indicate that HML was not used efficiently evidenced by faulty construction and shortchanging thereby increasing future disaster risks.

KEYWORDS *future disaster risk, housing material loan (HML), faulty construction*

INTRODUCTION

The Philippines is one of the natural disaster hotspots in the world, ranking 12th out of 200 countries, in terms of MRI (mortality rate index) when it comes to exposure of the human population to natural disasters (Turner, 2003). With almost 70% of its citizens living below annual poverty threshold, has more of its lower-income residents exposed to natural disasters, compared to those with higher-income citizens due to lower adaptive capacities (per capita GDP and availability of resources which can be used to enable immediate recovery after a disaster) and socio-economic sensitivities (people per city, wealth or Gross Domestic Product (GDP) and contribution to national GDP) (World Wide Fund, 2009). This is congruent with the findings that 97% of the global disaster mortality risk is concentrated in low-and middle-income countries (UN/IDR. 2010) which includes the Philippines, where only 43.4% of the lower income residents have access to decent dwellings of "strong" materials (NSO, 2005).

Thus, the National Housing Authority (NHA) guided by the National Shelter Program of 1986 of the Philippine government and its Constitution, was tasked to provide public housing units for the lowest thirty percentile (30%) income-earners in the country - which includes the homeless, informal settlers and economically and politically-displaced citizens. Last 2007, under the tutelage of then Philippine National Vice President and concurrent Housing and Urban Development Coordinating Council (HUDCC) Chairman Manuel Leuterio "Noli" de Castro, spearheaded the North Rail relocation program towards the peaceful relocation of 38,206 families and that of the South Rail part (55,632 inhabitants, or more than 20,000 families) who were then living along the Philippine National Railway (PNR) right-of-way to safer government-provided mass housing relocation sites in Bulacan and Laguna, one of which was the Southville 1 resettlement site in Cabuyao, Laguna (see Fig 1.) A typical resettlement program, according to the National Housing Authority (NHA), involves the acquisition and development of large tracts of raw land to generate serviced lots and/or housing units for families displaced from sites earmarked for government infrastructure projects and those occupying danger areas such as waterways (rivers, creeks and canals), and railroad tracks (NHA, 2014). It was also during this time, that Integrated Community Extension Services (ICES) Director Fr. Atilano "Nonong" Fajardo, considered adopting Southville 1 as its centerpiece Vincentian Corporate Social Responsibility (VCSR) beneficiary then for the Adamson University's pro-poor-oriented programs and activities.

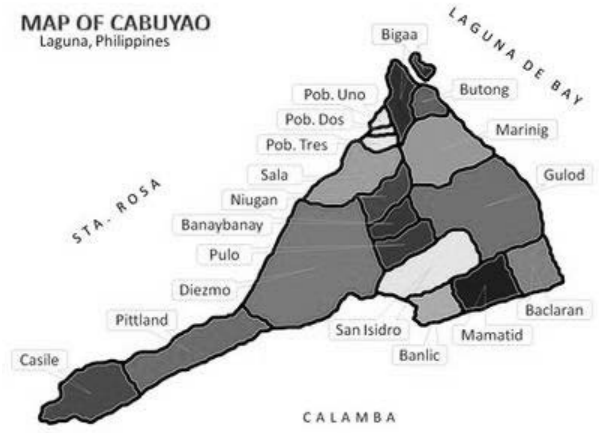


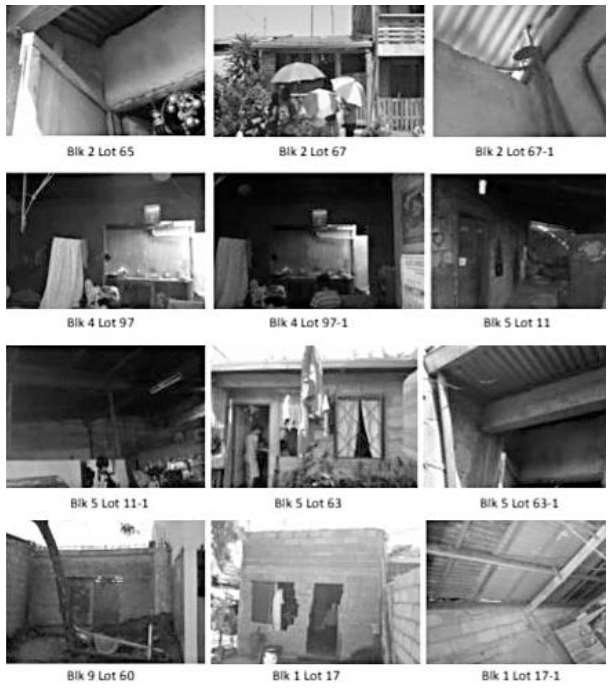
Figure 1. *Geographical map of Cabuyao, Laguna*

Southville 1 is one of the major NHA relocation sites (South Rail Relocation project) in Philippine territorial Region IV-A, particularly involving *three barangays*[1] - Marinig, Niugan and Banay-Banay in Cabuyao, Laguna, shown in Fig. 1. Barangay Marinig, with a 2010 population of 37,610 and population density 9,494 per square meter, has the highest annual population growth rate in the newly-instituted City of Cabuyao (at 5.01%) and its second largest barangay in terms of population. It is also located along the fringes of a body of water - *Laguna de Bay*, which is predominantly a source of freshwater species for fisher folks in the said region, which places it as one of the most directly affected during the 2009 typhoon *Ondoy* (Ketsana) flooding onslaught (De Vera, 2009), the super-cyclone *Yolanda* (Haiyan) last 2013, and the typhoon *Glenda* (Ramassun) last July 2014. For this reason, Southville 1 particularly Barangay Marinig was chosen as the locus of this study. For the past seven years since the relocatees' transfer to Southville 1, it suffered heavily from the ravages of typhoons, blowing off some of the relocatees' roofing and causing severe flooding in some parts of the study locus. Being situated along the edge of the bay, makes Southville 1 prone to natural diseases due to the slow subsidence of the said bay's flooding due to water stagnation and rotting of the dead fishes. This was particularly evident during the monsoon seasons of 2009 and 2012.

The housing relocates, based on focus group discussion (FGD), were awarded identical empty plots of land by the NHA by drawing of lots in 2007. Each of the awarded family-beneficiary was allotted with Php100,000 lot purchase loan (payable in monthly amortizations for a period of twenty-five to thirty years) and given Php50,000 outright housing material loan (HML), totalling Php150,000.00 (2007 figures). Each rectangular lot measures uniformly plus/minus forty (40.00) square meters, with 4.00 meters as frontage and 10.00 meters as depth while the HML was allotted for the construction of a single-storey dwelling unit consisting of a combined living - dining - kitchen (LDK) areas without any room partition, an enclosed toilet and bath room and an enclosed bedroom employing the reinforced concrete structural frame with concrete hollow block wall construction. Then Philippine President Her Excellency Gloria Macapagal-Arroyo subsidized Php25,000 from the Php150,000 total amount, under her livelihood programs. For the Php50,000 HML, these were given into two (2) successive tranches - Php25,000 was given as outright cash downpayment for the purchase of the construction materials by the beneficiaries, and when the house was partially built (with fifty percent of the walls and columns already built as required and inspected by NHA field engineering division), the balance amount was given in staggered payments, following the housing design template given by the said housing agency. The distribution of these housing units were laid out in typical subdivision plan pattern, except that for every ten (10) dwelling units, they were oriented in a U-arrangement with a small open space with an artesian deep well inside the "U," with the open end facing the street. This falls within the category of aided self-help housing (Pugh, 2001) where the government provides for the sites and services while the housing beneficiaries take charge with the construction of their dwelling units.

However, an ocular inspection indicated inconsistent dwelling appearances among the VCSR and non-VCSR residents deviating from the prescribed government design (Fig. 2). This predicament led to this study. A structural investigation of the standard NHA design for Southville 1 was made which was found to meet minimum structural parameters, and a physical disaster resistance assessment survey of the existing dwelling units built in the said site, aside from homeowners' actual experience were carried out. These methods would in turn determine if the housing material loans (HML) mode of housing delivery translated to a disaster-resistant design (based from materials used).

Figure 2. *Portion of actual physical appearances of sampled Southville 1 dwelling units*



1 smallest politico-geographical unit

RELATED LITERATURE REVIEW

In this study, the terms housing and shelter are used interchangeably to avoid confusion, though both were defined differently (Quarantelli, 1995). Disaster risks for the dwelling unit include possible physical damage, livelihood disruption and loss of human lives caused by materials shortchanging or faulty engineering design on the housing donor's side, considered as one of technological hazards (Turner, 1986; UN/ISDR, 2007) or depends on the housing recipient's side (Bosher, 2011; Turner, 1986; Bencze, 2010), United Nations – Office for the Coordination of Humanitarian Affairs (UN/OCHA, 2006; Sinha, 2007) where the outcome of a disaster is shaped both by the physical nature of the hazard and the vulnerability of people who are involved like those residing in hazard-prone locations, substandard housing quality and lack of disaster preparedness (Choguill, 2007). Any lapses in the conduct of post-disaster housing programs will give way to possible risks to future natural calamities as well (UN/ISDR, 2004a). In terms of vulnerability in the context of disaster risk management, this was originally oriented towards the level of physical resistance of engineering structures to natural disasters (UN/DHA, 1992), but has evolved to more recent views which already included the make-up and profile of environmental and socio-political processes and interactions. Vulnerability refers to the characteristics and circumstances of a community, system or asset that make it susceptible to the damaging effects of a hazard (Patton, 2017). A structure is said to be 'at-risk' or 'vulnerable', when it is exposed to known hazards and is likely to be adversely affected by the impact of those hazards if and when they occur (UN/DHA, 1992) At a global perspective, the root causes of vulnerability to natural disasters include population explosion, rapid urbanization and poverty incidence (UN/OCHA, 2006) while at the local levels, the causes are due to the unsafe pre-disaster housing on a danger zone, with minimal understanding of the risks they face from hazards, and limited options to protect themselves (Wisner, 2004). Vulnerability can cover internal risk factors (within a person itself) (Bohle, 2001),up to a multi-dimensional form which encompasses physical, social, economic, environmental, and institutional aspects (NSO 2005)while UN/ISDR (Turner, 2003) classifies vulnerability into social, economic, physical and environmental components. However, the scope of this study was limited to the physical (in terms of the disaster-resistance of both the NHA housing design and that of the built dwelling units in terms of their respective unique housing design profile and actual condition) and economic aspects (determining if the housing material loan mode of housing delivery translate to a disaster-resistant shelter). However, if a particular mass housing project is not properly carried out, in terms of project implementation (Mukhtar, 2016) and stricter quality control in the physical construction of the dwelling units, this might lead to greater vulnerability to future natural calamities (Wamsler, 2006) leading to a vicious cycle of reconstruction after each calamity, leading to waste of limited resources both by the government and that by the indigent dwelling beneficiaries, which in turn undermines the sustainability of a housing program. The sustainability of a housing program also depends on community involvement, ready access to good quality materials to which homeowners can afford, building standards, housing finance mechanisms and land availability (Choguill, 2007) thus assessment of possible disaster risks is necessary to ensure sustainability (Krysiak, 2009; Obeyanji, 2017).

METHOD

Generally, the study, involved a mixed methods approach (Creswell, 2002) in chronological order, namely: 1) ocular site inspection, 2) a cartographical analysis in terms of flood and earthquake fault line, 3) a materials cost estimate of the NHA housing design, 4) a focus group discussion among housing beneficiaries representing all community phases regarding their experiences with natural calamities in the resettlement site for the period 2007-2014, 5) a structural investigation of the model housing design by the NHA for Southville 1 resettlement site with a structural engineer-external consultant as basis for the two test instruments on dwelling disaster resistance, namely - a) conduct of disaster risk assessment of both the existing built housing units based on their unique design profiles and b) their respective actual shelter conditions based on housing beneficiaries' actual experiences.

The locus of the study covered only Barangay Marinig (upper portion of) Southville 1 NHA Resettlement Site in Cabuyao, Laguna. The said barangay covers five (5) phases, namely I, II, III, IV and V, in terms of geographical subdivision. The entire study intermittently took 14 months, within a span of more than two-and-a-half (2 1/2) years from February 2012 to August 2014. Since this study was funded by Adamson University, its first corporate social responsibility (CSR) beneficiary community Southville 1 was chosen as its study locus.

As above-mentioned, the administered two test instruments were as follows: *Instrument 1: Structural Description of Housing Donor's Housing Design Assessment Form and Instrument 2: Actual Housing Damage Level Self-Assessment Survey*

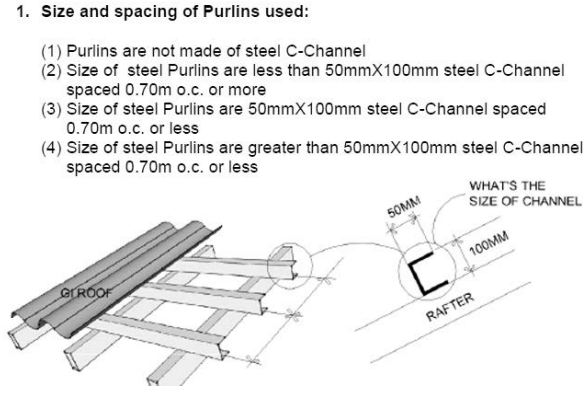
Test Instrument No. 1 was distributed among 100 randomly-sampled housing units, or within the study locus (or 10) housing units owned by each of the VCSR and non-VCSR members, or 20 per

phase) (see Fig. 3), to be answered by their original residents who relocated last 2007, and assisted by trained Architecture student-volunteers from Adamson University using the form as shown in Fig 4. The sampled households represented roughly less than 1% of Barangay Marinig population. This instrument is a *Likert*-coded (from 1 to 4) descriptive assessment survey form, represented by four descriptive sub-statements, with increasing structural resistance to natural disasters for each descriptive sub-statements 1 to 4. Each of the four descriptive sub-statements made up to one descriptive general statement, and the entire survey kit consisted of 50 descriptive general statements, covering practically every part of the dwelling units that was divided into four major parts; namely, foundation, structural frames (beams, columns and walls), trusses or rafters with purlins, and environmental factors (typhoons, earthquakes and floods). These four major parts considered both (a) the structural profile description of the structure itself (24 descriptive general statements) and (b) the environmental conditions (26 general descriptive statements) where the said structure is situated, totalling 50 in all. A basic design template for a single-story family dwelling unit that was provided for by the NHA for Southville 1 resettlement site was structurally analyzed and from which any lapses to intended structural resiliency to Intensity 8 earthquake and 250 KpH typhoon and one-meter high flooding were taken into account towards the production of these 56 descriptive statements, with the baseline Likert value of 3.0 (disaster-resistant). Thus, short-changing or the lapses in any of the statements will be lower than 3.0. Graphic images were also provided for most of the descriptive statements. These 50 general descriptive statements were adapted from the United Nations International Strategy for Disaster Reduction Guidance Notes on Safer School Construction Checklist (UN-IBRD, 2009), the Philippines' National Building Code (Presidential Decree 1096), the National Structural Code of the Philippines (NSCP), Association of Structural Engineers of the Philippines (ASEP) Manuals (Agoncillo, 2004), the Unified Soil Classification (USC) system and other relevant literature for structural engineering. The minimum baseline average score is 3.0, interpreted as disaster-resistant, from the combined scores of all 56 general statements where it is assumed that the minimum structural requirements for Intensity 8.0 Earthquake, NSCP Zone IV (250 Kph) wind load and 3.0 meter high flooding were satisfactorily met, supported by complete structural computations that were prepared by the external consultant (structural engineer). The numerical figures indicated from the Test Instrument No. 1 only indicate level of disaster risk based on the physical (extrinsic) housing design profile based from the baseline NHA housing design, and not the actual performance of the selected structures in the face of future natural disasters. This is due to the rather dynamic nature of all the fifty (50) variables (descriptive statements) interacting with each other in the said test instrument. It is imperative to include environmental conditions (like presence and location of water table, soil liquefaction, distance from earthquake fault lines, etc.), not only the building's physical make-up, in this assessment form since this also critically affect building damage during natural calamities (IAEE, UNESCO & IISEE, 2010). This form, as shown in Fig. 4, was utilized only by the researcher, in coordination with the external consultant-structural engineer, after accomplishing and summarizing the more detailed one that was used by the student-volunteers, as shown in Fig 5.

Figure 3. *Existing Site Development Map showing Barangay Marinig (with shaded VCSR and NON-VCSR study respondents) showing demarcation of Phases I to V.*



Figure 4: *A portion of Test Instrument No.2 (summarized version) which shows Likert-coded Structural Description of Housing Donor's Housing Design Assessment*



Moreover, Test Instrument No. 2, with a similar *Likert* set-up (1 to 4) with that of the Structural Description Assessment Form with the same households, however, contains three major parts, namely typhoon (with three statements), earthquake (with four statements) and flooding (two statements). Each part was treated separately in obtaining their mean Likert scores.

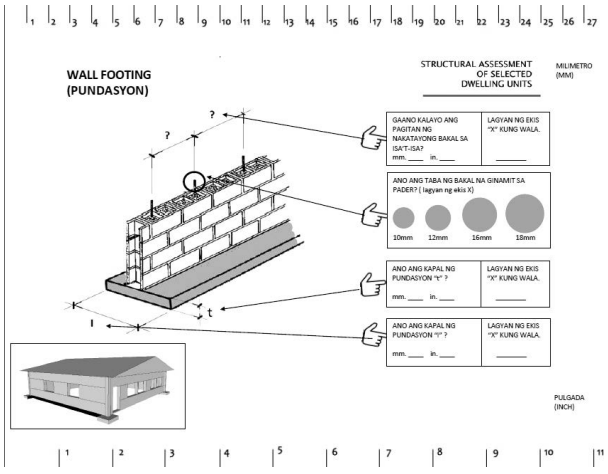


Figure 5: *A portion of Test Instrument No. 1. Structural Description of Housing Donor's Design Assessment (Detailed version) Form which was used by Adamson University students during ocular survey*

Each of the natural calamity (typhoon, earthquake and flooding) had their own respective descriptive statements for each part of dwelling (roof, walls, windows/doors, columns, beams, entire dwelling unit), assigned with Likert coded values from 1 to 4. Graphical images were provided for each of the Likert-coded statement. The minimum baseline average score per part (calamity) was 3.0 interpreted as not vulnerable to damage, while scores lower than 3.0 were regarded increasingly from vulnerable to highly vulnerable to damage.

Table 1: *Over-all Summary of Results for Test Instrument No. 1: Mean Scores from Structural Description of Housing Donor's Housing Design Assessment Form (as shown in Fig 4 and Fig. 5)*

INTERPRETATION:
1.00 - 1.99 Highly Disaster Prone
2.00 - 2.99 Disaster-Prone
3.00 - 4.00 Disaster-Resistant

Average from randomly sampled 10 dwelling units per VCSR / non-VCSR members per phase (P)	**P1** VCSR	**P1** NON-VCSR	**P2** VCSR	**P2** NON-VCSR	**P3** VCSR	**P3** NON-VCSR	**P4** VCSR	**P4** NON-VCSR	**P5** VCSR	**P5** NON-VCSR
A. Dwelling Structure Only										
I. Foundation										
I.A. RC Footing Slab	2.83	3.03	2.70	3.10	2.90	2.67	2.80	2.53	2.74	2.27
I.B. Exterior RC Wall Footing	2.40	2.08	1.64	2.38	2.13	1.93	1.53	2.05	2.03	2.15
I.C.Footing Slab	2.95	2.58	1.73	2.48	2.08	1.95	1.80	2.15	2.00	2.23
II. Structural Frames										
II.A. Structural Column	2.50	2.58	2.55	2.90	2.43	2.40	2.45	2.40	2.40	2.43
II.B. RC Beam	2.60	2.70	2.38	2.75	2.10	2.03	2.43	2.10	2.55	2.30
II.C. RC Exterior Walls	3.10	3.10	2.37	2.80	2.67	2.90	2.97	2.94	2.83	2.57
III. Trusses or Rafters	2.30	2.55	1.70	2.00	1.40	1.70	1.83	1.65	2.15	2.00
AVERAGE (Structure Only)	***2.68***	***2.64***	***2.26***	***2.76***	***2.32***	***2.22***	***2.21***	***2.27***	***2.37***	***2.29***
B. Environmental Factors Only										
IV.1. Earthquake	2.78	2.81	2.71	2.78	2.64	2.66	2.92	2.79	2.58	2.48
IV.2. Windstorm	2.68	2.72	2.73	2.73	2.68	2.60	2.66	2.63	2.44	2.20
IV.3 Floods	1.87	2.15	2.08	2.02	2.07	1.95	1.98	1.93	2.08	2.20
AVERAGE (Environmental Site Conditions only)	***2.53***	***2.62***	***2.58***	***2.58***	***2.53***	***2.47***	***2.60***	***2.53***	***2.41***	***2.43***
OVERALL AVERAGE (Structure + Site) (Per Phase - STRUCTURAL DESCRIPTION)	**2.60**	**2.53**	**2.42**	**2.62**	**2.42**	**2.35**	**2.42**	**2.41**	**2.39**	**2.36**

This self-assessment survey form was answered by the housing beneficiaries based from their experiences on any subsequent actual damage on their donor-provided housing units upon their relocation to the resettlement sites for the past seven years.

RESULTS AND DISCUSSION

Discussed below are the results of this study. Focus group discussions indicate that Phase 1 - Blocks 1, 2 and Phase 2 - Blocks 9 and 10 were heavily flooded last 2009 *(Ondoy)* while the entire study locus suffered flooding for that same year, based from cartographical analysis. On the other hand, the three Southville 1 Barangays *(Marinig, Niugan and Banay-Banay)* were plotted by the researchers in the scaled earthquake fault line and liquefaction map provided by the Department of Science and Technology (DOST, 2009). The resettlement site in *Cabuyao* is not prone to liquefaction, and is located 17 kilometers from the Philippine Valley Fault System (earthquake).

Meanwhile, Table 1 shows that a significant majority among 100 randomly-sampled dwelling units among Phases I, II, III, IV and V were considered *prone to disaster risk over-all,* covering both the dwelling's physical profile based from this study's criteria and the site where these houses are located, having not reached the minimum average score of 3.0, with average scores ranging from the lowest 2.36 among Phase V VCSR households and highest 2.62 among Phase 2 non-VCSR households. Excluding site profile, the roofing system (Part III. Trusses or Rafters) posed the highest vulnerability to disaster risks, with scores among Phases I to V ranging between 1.40 to 2.55, still way below the minimum 3.0 baseline score. On the other hand, in terms of environmental factors, the dwelling units in relation with the existing conditions were most vulnerable to disaster risks due to floods, followed by windstorm and earthquake.

These also indicate the homeowners did not strictly follow the minimum material and quantity specifications (like number of structural rebars) based from a dwelling design set forth by the NHA, using less amount of materials in order to properly maximize the Php50,000.00 housing material loan (HML) given by the government for each household for house construction. Also, based from the FGD, reason for non-compliance were lack of trained personnel to handle construction tasks during that time which led to some families hiring skilled personnel who charged higher labor costs leading to deviation from original housing design, and economic hardships.

Table 2 below are based from beneficiaries' actual experiences in their dwelling units, generally indicate natural calamities have not damaged their houses that visited the resettlement site - having an over-all score of 3.50 out of 4.00 based for the period 2007-2013, which indicates that the intensity of these calamities were not that strong enough as to inflict heavy damage. However, examining further, it was the typhoon which has the biggest impact (3.16 out of 4.00) on these dwelling units. This corroborates the previous homeowners' reports during the FGD that some of their roofs were "blown apart" by strong winds during previous typhoons.

Actual Housing Damage Level	VCSR M/F	COMBINED (M/F, both VCSR - NON-VCSR)	NON-VCSR M/F
Typhoon (Bagyo)	2.79	**3.16**	3.52
Earthquake (Lindol)	3.78	**3.73**	3.69
Flooding (Baha)	3.59	**3.60**	3.62
AVERAGE (VCSR / NON-VCSR)	**3.39**		**3.61**
OVERALL AVE (Actual Housing Damage Level)		M/F **3.50**	

Table 2: *Over-all Summary of Results for Test Instrument No.2: Actual Housing Damage Level Self-Assessment Survey*

INTERPRETATION:

1.00-1.99 Highly Vulnerable to Damage
2.00-2.99 Vulnerable to Damage
3.00-4.00 Not Vulnerable to damage

CONCLUSIONS AND RECOMMENDATIONS

The results therefore indicate the following: a) the overall general average score results of Test Instrument No.1 ranging from 2.36 to 2.62 (way below the minimum baseline average of 3.0) among all community phases indicate that strict compliance by housing beneficiaries with the minimum design specifications set forth by the NHA generally fell short, which b) might indicate that the Php50,000 HML amount is not sufficient enough to complete such structure, based from both focus group discussion and independent cost estimates conducted by the researcher. This also indicates that c) there were lax monitoring by the government with regards to the two-part release of the HML during the construction phase. Summing all of these, these current scenarios might possibly lead to the last conclusion d) increasing disaster risk to future natural calamities especially typhoons since the existing built structures fell short of minimum design specifications.

Even though the results of Test Instrument No.2 Actual Housing Damage level showed that these dwelling units only suffered relatively minor damages (up to roofs being blown apart, corroborating the results of Test Instrument No.1,-Part III: Trusses or Rafters with scores ranging between 1.40 to

2.55, still below the 3.0 baseline score) during typhoons, these imperiled the longevity of the said housing programme since the housing beneficiaries generally lacked the financial capacity to repair nor reinforce their dwelling units, which would also entail additional expenses for the government in the long-term. Combining all these factors (physical, economic and social) (Turner, 2003), these might lead to a cyclical disaster risk (Wamsler, 2006).

In order to address these issues, the following are therefore recommended: Firstly, the NHA should enforce stricter monitoring during the construction phase for this mode of housing delivery HML to more than one ocular site inspection while the houses are being constructed. Secondly, the NHA should improve the roofing design of its housing design to meet the 250 Kph typhoon winds by reinforcing with additional materials, as shown in Fig. 6 below.

Thirdly, NHA should review and update its funding allocation for the HML which was at Php50,000.00 last 2007, and consider the use of alternative indigenous materials to make it more cost-effective. Next, the NHA should make a simple user-friendly house maintenance checklist that is highly graphic for the housing beneficiaries to clearly follow through and understand, or this particularly can be done by the researcher in a separate study, in collaboration with the General Education department (Linguistics, Filipino) and a structural engineer. Lastly, further studies have to be made on coming up with house designs that both address disaster resistance and flexibility of usage for the ever-growing typical Filipino households with a sense of individuality. And lastly, NHA regulations should be instituted in requiring homeowners to comply that the maximum number of storeys per dwelling should be no more than one storey, unless a new design which anticipates future vertical expansion due to emerging family needs is to be prepared by the government.

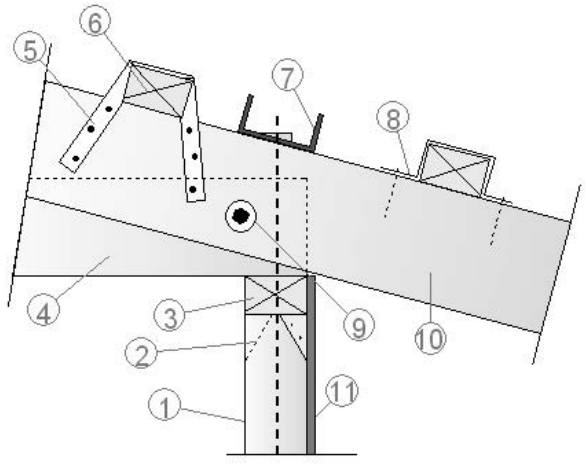


Figure 6. *Example of Hurricane strap connection shown in No. 5, securing the purlins (no.6) to the rafters or truss top chord (No. 10). (Bradley, 2012)*

ACKNOWLEDGMENT

This study would not be possible without the critical endorsement of the past College Dean of Architecture Arch. Peter A. Villanueva, Integrated Community Extension Services (ICES) Director Fr. Atilano Fajardo, C.M. and his assistant Ms. Joy Pantia, all from Adamson University. Logistical support for the actual conduct of survey and arrangement of meetings with Southville 1 community leaders were arranged thru the support of Phase IV Community leader and Southville 1 contact person of Adamson University, Mrs. Winnifreda Esguerra. Lastly, the expenses of this timely study were taken cared of by the Center for Research Evaluation and Continuing Education (CRECE, now Center for Research and Development (CRD)) of the same university, under then Director and currently Vice President for Administration Engr. Venusmar Quevedo and past CRECE Director Dr. Belinda Conde.

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Estero Housing Project: Redefining the Concept of Affordable Shelter

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ABSTRACT

The full awareness of climate change raised the possibility of entirely new city models and housing typologies (Lehman, 2011). To guide urban designers and decision-makers, Steffen Lehmann introduced the 15 principles of Green Urbanism. But the difficult tasks of addressing climate change issues in cities have been made all the more challenging by rapid urbanization and the increase in the number of densely populated informal settlements in developing countries. The marginalized sector is often the most severely affected by natural disasters largely because of the poor location and lack of physical planning of their communities. Many of the old cities in the Philippines developed with little consideration for the geophysical and hydro-meteorological hazards of their settlement sites and therefore were not able to avoid or mitigate the potential risks brought about by natural calamities. The challenge of green development is more difficult in these poor communities. This paper discusses the issues and challenges in developing a green settlement for informal settlers along the esteros of Manila.

KEYWORDS *socialized housing, green urbanism, informal settlements, human settlements, Manila*

Debates on theory of ecological cities emerged more than 35 years ago and developed as a relevant research field concerning the future of urbanism and the cities. But even as early as 1902, Ebenezer Howard has written about green urbanism in his book entitled Garden City of Tomorrow. Some other early significant writings on green urbanism have come from noted planners such as Lewis Mumford and Jane Jacobs. Through the years, various authors reconnected urbanism with climatic condition that *"the field of sustainable city theories and climate responsive urbanism has constantly been expanded"* (Lehmann, 2011).

The 21st century, however, ushers in 'a new era of uncertainty,' where energy, water and food supply are critical. 'We live in a world of increasingly non-calculable uncertainty that we create with the same speed of its technological developments' (Beck, 2000). More recent theories for 'Compact Cities' (Burton, 1997) and 'Solar Cities' (Jenks and Burgess, 2000; Lehmann, 2011) encapsulate the visions based on the belief that urban revitalization and the future of the city can only be achieved through 're-compacting' and using clearly formulated sustainable urban design principles(Lehmann, 2011). These principles for achieving green urbanism have to be clearly defined and adjusted to an era of rapid urbanization, especially in the Asia-Pacific Region.

In 2000, the term 'Climate Change' has been widely introduced. The Green Urbanism theory for the 21st century, which aims to transform existing cities from fragmentation to compaction, started to emerge. Eco-city theory focuses on adjusting the relationship between city and nature. Leading sociologists and urban theorists began to explore wider areas such as globalization, urban sustainability, ecology, network systems, information and communication technologies, and other related fields (Lehmann, 2011).

'Sustainability Science' has emerged as a conceptual and theoretical basis for a new planning paradigm (Lehmann, 2011). The full awareness of climate change raised the possibility of entirely new city models and typologies that are likely to emerge: Green Urbanism. Cities can and must become the most environmentally-friendly model for inhabiting our earth. It is more important than ever to re-conceptualize existing cities and their systems of infrastructure, to be compact, mixed-use and polycentric cities.

The difficult tasks of addressing climate change issues in cities have been made all the more challenging by rapid urbanization and the increase in the number

of densely populated informal settlements in developing countries. The marginalized sector is often the most severely affected by natural disasters largely because of the poor location and lack of physical planning of their communities. Many areas in the Philippines, whether urban or rural, are known to be vulnerable to natural hazards such as typhoons, floods, landslides, volcanoes, earthquakes, and tsunamis. Many of the old cities in the Philippines developed with little consideration for the geophysical and hydro-meteorological hazards of their settlement sites and therefore were not able to avoid or mitigate the potential risks brought about by natural calamities. The challenge of green development is more difficult in these poor communities. This paper discusses the issues and challenges in developing a green settlement for informal settlers along the *esteros* of Manila.

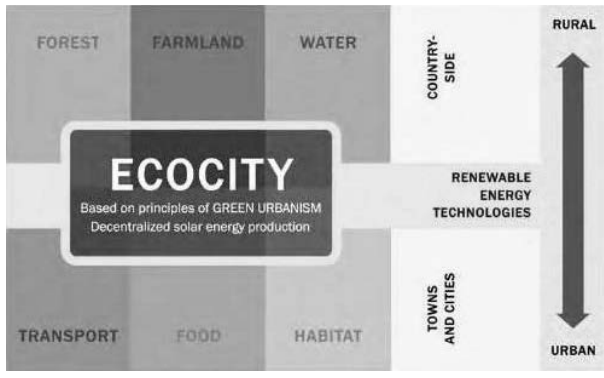
Green Urbanism

Green Urbanism, according to Steffen Lehmann in his book, *The Principles of Green Urbanism: Transforming the City from Sustainability*, makes every effort to minimize the use of energy, water and materials at each stage of the city's or district's life-cycle, including the embodied energy in the extraction and transportation of materials, their fabrication, their assembly into the buildings and, ultimately, the ease and value of their recycling when an individual building's life is over. It requires the collaboration of landscape architects, engineers, urban planners, ecologists, transport planners, physicists, psychologists, sociologists, economists and other specialists, in addition to architects and urban designers. Today, urban design also has to take into consideration the use of energy in the district's or building's maintenance and changes in its use. The following diagrams identify the inter-connectedness of issues impacting on urban development decisions. (Figures 1 & 2).

Figure 1. *The three pillars of Green Urbanism, and the interaction between these pillars.*
Diagram by: Steffen Lehmann



Figure 2. *The holistic concept of Eco-City has again a balanced relationship between the urban (city) and the rural (countryside).*
Diagram by: Steffen Lehmann



To achieve more sustainable cities, urban designers must understand and apply the core principles of Green Urbanism in a systematic and adapted way. These principles can be effective in a wide variety of urban situations, but they almost always need to be adapted to the context and the project's scale, to the site's constraints and opportunities. It is an approach to urban design that requires an optimization process and a solid understanding of the development's wider context and its many dimensions before the designer can produce an effective outcome. But a key component in any society's sustainability is more than its carbon footprint but of holistic social sustainability and identifying principles for healthy communities.

Lehmann also expounded on criteria for districts and cities where the Principles of Green Urbanism have been applied and integrated in every aspect of the urban environments. It is clear that the focus should be on the neighborhood and district scale, with projects on urban infill or redevelopment sites, adjacent to existing developed areas and transport nodes.

The 15 Guiding Principles of Green Urbanism

Lehmann (2011) further enumerated the 15 guiding principles of Urbanism (Table 1). According to him, in order to enable sustainable urban development and to ensure that ecodistricts are successful on many levels, all urban design components need to work interactively and cannot be looked at separately. The principles are based on the triple-zero frame of: zero fossil-fuel energy use, zero waste, zero emissions (aiming for low-to-no-carbon emissions).

"Zero waste" means that buildings are fully demountable and fully recyclable at the end of their life-cycle, so that the site can return to being a greenfield site after use.

Table 1: *15 Guiding Principles of Green Urbanism*
Based on: Lehman, 2011

Principle 1: Climate and Context	Based on climatic condition prior to selected city, every sustainable design project needs to maintain a complexity within biodiversity, eco-system or neighborhood layout. Enhance the opportunities offered by topographies and natural settings and use of the buildings' envelope to filter temperature, humidity, light, wind and noise.
Principle 2: Renewable Energy for Zero CO2 Emissions	Transform city districts into local power stations of renewable energy sources including solar PV, solar thermal, wind on-and-off-shore, biomass, geothermal power, mini-hydro energy and other new technologies. Some most promising technologies are in building – integrated PV, urban wind turbines, micro CHP and solar cooling.
Principle 3: Zero Waste City	Waste prevention is way better than the treatment or cleaning-up after waste is formed. So cities should adopt zero-waste urban planning in line with the manufacturing of metals, glass, plastics, paper into new products and better understanding of nutrient flows is needed to control global nitrogen cycle.
Principle 4: Water	Cities can be used as a water catchment area by educating the inhabitants in water efficiency, promoting rainwater collection and using waste water recycling and storm water harvesting techniques. In terms of food yielding level, less water needed and drought resistant crops can be developed.
Principle 5: Landscape, Gardens and Biodiversity	Introduce inner-city gardens, urban farming/agriculture and green roofs to maximize the resilience of the eco-system through urban landscape thus to mitigate UHI effect. Plants can be used for air-purification and narrowing of roads for urban cooling. Moreover, preserving green space, gardens and farmland, maintaining a green belt around the city is necessity to absorb CO2.
Principle 6: Sustainable Transport and Good Public Space: Compact and Poly-Centric Cities	An integration of non-motorized transport, such as, cycling or walking and bi-cycle or pedestrian-friendly environment with safe bicycle ways, eco-mobility concepts and smart infrastructure that is electric vehicles, integrated transport system of bus transit, railway and bike stations, improved public space networks and connectivity and a focus on transport-oriented development (Green TODs).
Principle 7: Local and Sustainable Materials with Less Embodied Energy	City construction by using regional, local materials with less embodied energy and applying prefabricated modular systems.
Principle 8: Density and Retrofitting of Existing Districts	The city is with retrofitted districts, urban infill, and densification/ intensification strategies for existing neighborhoods.
Principle 9: Green Buildings and Districts, Using Passive Design Principles	The city, here, applies deep green building design strategies and offers solar access for all new buildings.
Principle 10: Liveability, Healthy Communities and Mixed-Use Programs	The prime concern of the city is for affordable housing, mixed-use programs and a healthy community.
Principle 11: Local Food and Short Supply Chains	High food security and urban agriculture by introducing 'eat local' and 'slow food' initiatives.
Principle 12: Cultural Heritage, Identity and Sense of Place	A sustainable city with high air quality, no pollution for good health, fosters resilient communities having public space networks and modern community facilities.
Principle 13: Urban Governance, Leadership and Best Practices	The city applies best practice for good urban governance through combined management and governance approaches and sustainable procurement methods, such as, environmental budgeting.
Principle 14: Education, Research and Knowledge	The city with education includes technical training and up-skilling, research, exchange of experiences and knowledge dissemination for all in sustainable urban development.
Principle 15: Strategies for cities in developing countries	Particular sustainability strategies are needed for cities in developing countries, such as, train local people to empower communities, creating new jobs and diversifying new job structures to harmonize the impacts of rapid urbanization and globalization.

The Housing Situation

The Philippines has a rapidly increasing urbanization, today almost 60% of the population live in urban areas. The annual rate of urbanization has been 5% from the 1960's and slowed down to around 3% in the mid-90's. This matches the rate of urbanization in East Asia, although the Philippines has not experienced the same level of economic development that usually follows increased urbanization (The World Bank, 2002).

The level of urbanization can be explained with a high national birth rate, which is higher in urban areas and with the migration from rural areas to urban that occurs when people move into the cities from the countryside in search of better opportunities. The rapid urbanization presents several problems as land becomes scarce and more expensive and the rate of urban development does not match the growth of the population. The government aims at providing 1.2 million new households although there would still be a need for 3.3 million additional housing units (Philippine-Canada Local Government Support Program). (Table 2)

Table 2: *Housing Backlog, 2007 – 2016*
Source: HUDCC

Components of Housing Needs	Initial Needs (As of Jan 1, 2007)	Incremental Needs										Total Housing Needs CY 2007-2010
		CY2007	CY2008	CY2009	CY2010	CY2011	CY2012	CY2013	CY2014	CY2015	CY2016	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Total Housing Needs	1,273,395	572,388	584,067	595,981	608,141	620,548	633,209	646,128	659,306	672,763	686,484	3,633,972
A. Accumulated Needs	1,273,395	25,981	26,507	27,051	27,603	28,165	28,740	29,326	29,925	30,535	31,158	1,380,537
1. HH in Unacceptable Housing	859,310	17,532	17,888	18,254	18,627	19,006	19,394	19,790	20,194	20,606	21,026	931,611
a. Homeless	11,937	244	248	254	259	264	269	275	281	286	292	12,942
b. Dilapidated/condemned	134,931	2,753	2,809	2,866	2,925	2,984	3,045	3,107	3,171	3,236	3,302	146,284
c. Marginal Housing (including informal settlers)	712,442	14,535	14,831	15,134	15,443	15,758	16,080	16,408	16,742	17,084	17,432	772,385
2. Doubled-up HH in Acceptable HU	414,085	8,499	8,619	8,797	8,976	9,159	9,346	9,536	9,731	9,930	10,132	448,926
B. Future/Recurrent Needs		546,407	557,560	568,930	580,538	592,383	604,470	616,801	629,381	642,228	655,326	2,253,435
1. Allowance for Inventory losses		215,958	220,364	224,859	229,447	234,128	238,905	243,779	248,752	253,827	259,006	890,628
2. Increase in HHs (likely to afford to own acceptable HU)		330,449	337,196	344,071	351,091	358,255	365,565	373,023	380,629	388,401	396,320	1,362,807

The emergent need for housing has produced large amounts of "spontaneous settlements" or slums. Slum areas are typically low-rise buildings and the tradition of landownership results in very small lot sizes, packed together tightly with small and irregular pathways between. Since slums develop without any official planning, basic services like electricity, water and sanitation is lacking. They are also more prone to fires due to the poor construction and fire apparatuses and rescue vehicles usually have a hard time entering. Although slums can be found in forgotten or unused areas of the city, many slums often develop on unsuitable and hazardous sites. It might be along esteros, railways or motorways, on dumpsites or in areas prone to natural disasters such as landslides and floods.

Housing Policies and Actors

According to the 1976 United Nations Conference on Human Settlements, housing is a basic human right. United Nations Millennium Development Goals (MDG) aims to "achieve significant improvement in lives of at least 100 million slum dwellers, by 2020. In the Philippines, this obligation of the government to provide housing is enshrined in Section 9 Article VIII of the 1987 Philippine Constitution.

The earliest method of solving the issues with squatters was simply to evict them and relocate them to resettlement sites. The resettlement was problematic as the sites often lacked basic facilities and infrastructure and the distance to their workplace grew. The legal framework of urban land reform and the provision of decent housing for the urban poor began with the Urban Land Reform Act of 1978 or Presidential Decree No. 1517. The first programs for on-site development took place. Slum upgrading has the benefit that people do not have to move to new areas. But the government was criticized for failing to benefit the poorest of the poor. Working with limited budget and inept housing agencies, the government can barely address the housing backlog.

Republic Act 7160, or the Local Government Code of 1991, has strengthened the role of the LGUs in housing. It mandated the LGUs to put up low cost and mass housing for their inhabitants (Section 17). Another landmark bill, Republic Act 7279 or the Urban Development and Housing Act (UDHA), was signed into law in 1992. RA 7279 laid down the policies and mechanisms for the implementation of a comprehensive urban development and housing program for the country. During Pres. Corazon Aquino administration, the government adapted the United Nations Global Shelter Strategy (GSS 2000) with the standing point that shelter needs to be affordable even for the lowest income group.

The Housing and Urban Development Coordination Council (HUDCC) was established to synchronize the housing efforts. Focus shifted to socialized housing and a number of adjustments was made on how to address the housing problem, including beneficiary participation and the involvement of NGOs (Rebullida and Endriga, 1999).Relocations are still used when the site is clearly unsuitable or if it is not possible to acquire legal rights to it. But other solutions such as re-blocking and slum upgrading are being used, where the squatters acquire the legal rights to stay where they are and the necessary adjustments are made to provide descent infrastructure and shelter.

The HUDCC is the "highest policy making body for housing and coordinate the activities of the government housing agencies to ensure the accomplishment of the National Shelter Program". It is coordinating the efforts of 4 shelter agencies, 3 funding agencies, 7 government support agencies and 2 private sector representatives from NGOs and private developers (www.hudcc.gov.ph).

In 2002, another move by the national government was geared towards the improvement of an LGU's thrust in Housing. On 13 September 2002, President Gloria Arroyo issued Memorandum #74, Section 5 of which provides that *"The LGUs without local housing boards shall create their respective*

housing boards, or their equivalent, within 30 days from effectivity of this Order".

According to *Statistical Indicators on Philippine Development of 2006* the governmental housing sector has produced mixed results. The number of shelter security units produced has declined since 2004 as has the value of shelter security units constructed, financed and/or administered by the government. It is worth mentioning that licenses issued for residential units have been above the target for each year. Also the number of days required for processing loan applications has been reduced by half from 2004 to 2006, from 30 days to 15, which indicates that the process of acquiring improved housing has become smoother (www.nscb.gov.ph, 2008).

In response to climate change challenges, the Climate Change Act of 2009 was enacted last Oct. 23, 2009. The Republic Act 9729 promotes a gender-sensitive, pro-children and pro-poor perspective in all climate change and renewable energy efforts, plans and programs and shall strengthen, integrate, consolidate and institutionalize government initiatives to achieve coordination in the implementation of plans and programs to address climate change in the context of sustainable development. It shall also *"systematically integrate the concept of climate change in various phases of policy formulation, development plans, poverty reduction strategies and other development tools and techniques by all agencies and instrumentalities of the government."* This Act also established the Climate Change Commission and also ordered the formulation of a Framework Strategy on Climate Change and a National Climate Change Action Plan.

Table 3: *PNOY Fund number of housing units*
Source: NHA

DESCRIPTION	NO. OF UNITS
IN-CITY RESETTLEMENT	
A. NHA Properties	
1. Smokey Mountain Development Project, Manila	970
2. Tala 2, Caloocan	480
3. Camarin, Caloocan City	1200
4. Pleasant Hills, San Jose Del Monte City, Bulacan	1440
5. Gulayan, Navotas City	120
6. Tanglaw, Navotas City	60
7. MMDA Depot, Pasig City	120
8. NGC, Brgy. Holy Spirit, Quezon City	360
B. LGU Properties	
1. Disiplina, Valenzuela City	594
2. Tanza, Navotas City	680
3. Silverio Compound, Parañaque City	600
4. Las Piñas proposal with iHomes	710
5. Cobey Property, Mandaluyong City	68
6. NFS Property, Pasay City	200
C. CSO PROPOSALS	
1. King's Point, Brgy. Bagbag, Quezon City	1066
2. Brgy. Doña Imelda, Quezon City	450
3. Brgy. San Agustin, Novaliches, Quezon City	72
4. Brgy. Sto. Niño, Parañaque City	586
5. Estero de San Miguel, Manila	60
6. Tullahan River, Caloocan and Valenzuela Cities	1394
OFF-CITY RESETTLEMENT	
1. Maricaban, Tripa de Galina, Pasay	800
2. Manggahan, Pasig City	1000
3. Various sites of Quezon City	2361
4. Marikina City	830
5. Various sites of Manila City	300
6. Pateros	164
7. Parañaque City	1000
8. PPA, Isla Puting Bato, Manila	1000
9. Navotas City waterways	1000
10. Malabon City (typhoon Pedring victims)	700

Recognizing that climate change and disaster risk reduction are closely interrelated and effective disaster risk reduction will enhance climate change adaptive capacity, the Republic Act 10121 or the Philippine Disaster Risk Reduction and Management Act of 2010 was signed into law. The Act acknowledged that there was a need to "adopt a disaster risk reduction and management approach that is holistic, comprehensive, integrated, and proactive in lessening the socio-economic and environmental impacts of disasters including climate change, and promote the involvement and participation of all sectors and all stakeholders concerned, at all levels, especially the local community."

The National Disaster Coordinating Council (NDCC) was reorganized into the National Disaster Risk Reduction and Management Council (NDRMC), empowered with policy-making, coordination, integration, supervision, monitoring and evaluation. The Barangay Disaster Coordinating Councils were replaced by the existing barangay development councils which shall serve as Local Disaster Risk Reduction and Management Councils (LDRRMC) to ensure the integration of disaster risk reduction and climate change adaptation into local development plans, programs and budgets as a strategy in sustainable development and poverty reduction.

Former Pres. Benigno Aquino issued Memorandum Order No. 57 ordering the DILG to immediately lead the relocation of informal settlers living in danger and high-risk areas to decent housing sites. A Php 10-Billion called PNOY Fund was placed under the administration of the National Housing Authority (NHA) on November 23, 2011 through Special Allotment Release Order No. F-01836 for the relocation of informal settler-families (ISFs) in Metro Manila danger areas particularly along waterways (Table 3). The In-City Housing Program aims to address the housing needs of the ISFs, particularly in water ways, in compliance with the Supreme Court ruling to clean up the 3.0-meter easement of the Pasig River and its tributaries by 2015 under Memorandum Circular 2420 dated March 17, 2012.

Manila Informal Settlements

The City of Manila is the capital city of the Philippines, one of the 16 cities that make up Metro Manila, the National Capital Region. It is located on the eastern shore of Manila Bay and is bordered by the cities of Navotas and Caloocan to the north; Quezon City and San Juan to the

northeast; Mandaluyong to the east; Makati to the southeast, and Pasay to the south (Figure 3).The total population of 1,652,171 according to the 2010 census, inhabit an area of only 38.55 square kilometers, making Manila the most densely populated city in the world (Carbone, 2011).

Figure 3. *The City of Manila.*
Source: Google 2010



The City of Manila is the seat of the executive and judicial branches of the government. Manila is listed as a global city, containing many scientific and educational institutions, numerous sport facilities, and other culturally and historically significant venues.

In the 1700s, Manila was already the center of Spanish activity in the Far East and one end of the Manila-Acapulco Galleon trade route linking Europe, Latin America and Asia. Manila also saw the rise of the Philippine Revolution which was followed by the arrival of the Americans who made contributions to the city's urban planning and development only to have most of those improvements lost in the devastation of World War II (MCLUP, 2006).

During the Second World War, Manila was occupied by Japan using Intramuros as headquarters. The ensuing bombing for the Liberation of Manila from the Japanese resulted in the devastation of most of Manila and environs with the countryside still recovering from the aftermath of war, migrants in search of better work opportunities moved in to Manila. Since then the city has been rebuilt and has rapidly grown. Squatter settlements started to proliferate and expand as more migrants and natural population growth occurred, while the government pondered on how best to respond to the problem.

The City of Manila based on its City Charter (R.A. 409) covers a land area of 7,696.65 hectares. Administratively, the city is divided into six congressional districts. District IV is comprise of Sampaloc District. The Estero Housing Project is located in Barangay 412, in Zone 42 in Legarda, Sampaloc. The land use map indicates as university cluster zone (Figure 4).

The number of Informal Settlers as of July 2007 is 85,957 or 5.41% of Manila population of 1,581,082 (Figures 5, 6,&7).

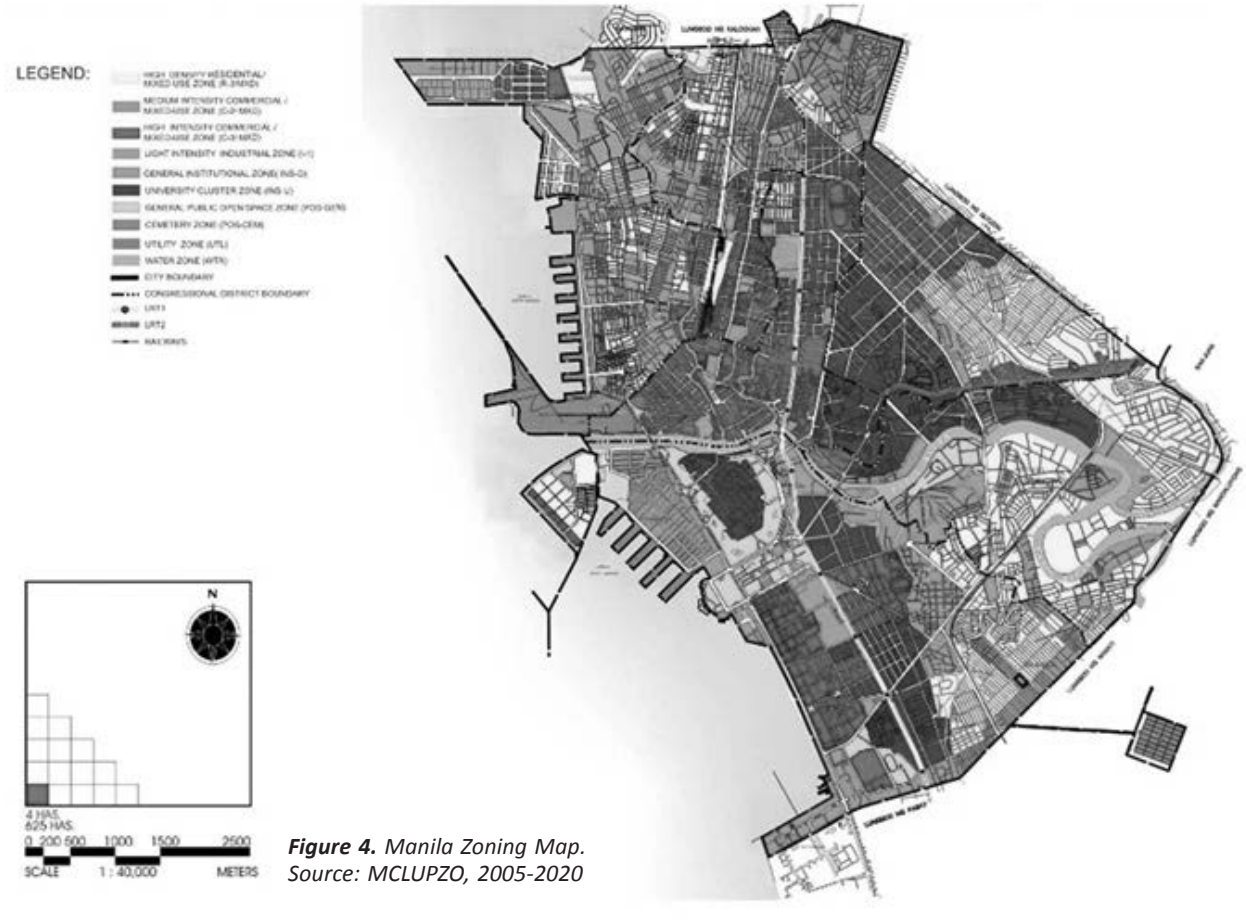


Figure 4. *Manila Zoning Map.*
Source: MCLUPZO, 2005-2020

Figure 5. *Informal Settlers Per District.*
Source: MCLUPZO, 2005-2020

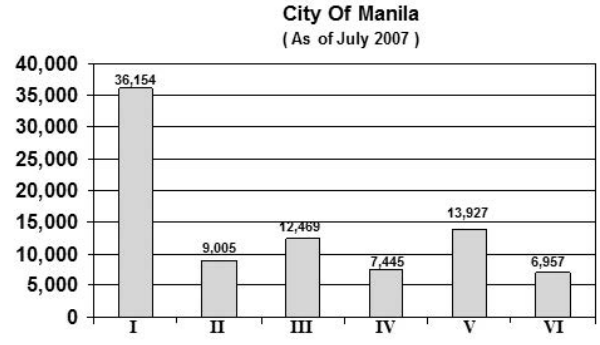
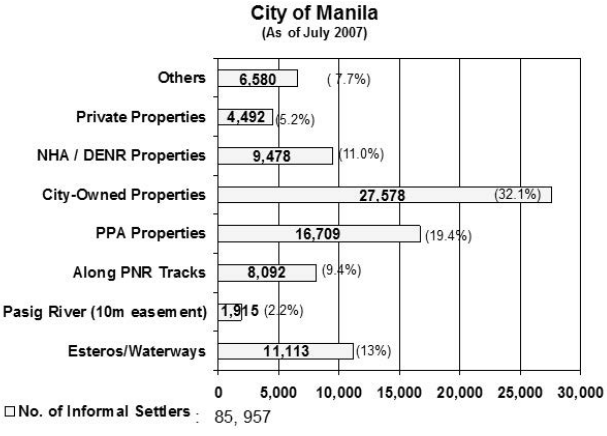


Figure 6. *Locations of Informal Settlers.*
Source: MCLUPZO, 2005-2020



Housing Development Programs

Housing, being an important component of urban development, is integrated in Manila's top sub-sector agenda for immediate implementation for the benefit of landless/homeless segment of Manila Society. Excerpts from the MCLUPZO relative to slum upgrading and informal settlements reveal that while upgrading is prioritized, the MCLUPZO explicitly states that other approaches may be employed other than upgrading in dealing with the slum problem (Table 4).

Table 4: *Sectoral housing plans of Manila on upgrading*
Source: MCLUPZO, 2005-2020

A. Emerging Issues and Concerns	*High susceptibility to destruction from disaster because of the condition of housing structures and materials*
B. Goals	*Upgrade and rehabilitate blighted areas, with provisions for basic services.*
C. Objectives	*To rehabilitate structures that are dilapidated, obsolete and unsanitary*
D. Strategies	*Prioritize in-city relocation and on-site development as much as possible, but relocate households in danger areas, ensuring that residents are still near their source of livelihood. On-site development refers to the process of upgrading and rehabilitation of blighted and slum urban areas with a view of minimizing displacement of dwellers in the said areas and with provisions for basic services.*
E. Plans and Programs	*On-site development of blighted areas – This involves the rehabilitation of structures that are dilapidated, obsolete and unsanitary, tending to depreciate the land value and to prevent normal use and development of the area. The first step in on-site development is to identify such blighted areas and map them. Settlers in danger zones will have to be resettled according to UDHA guidelines. The areas for on-site are prioritized according to their need for development guidelines (sic). The areas for on-site are prioritized according to their need for development. Like the construction of new shelter, on-site development will be more effective with the participation and involvement of the legitimate settlers themselves. A good incentive for their involvement in rehabilitating their own dwelling is security of tenure (that is, the residents will be more willing to collaborate with the government if they are assured that they will not be relocated at random or without due process). The Urban Settlements Office will work with the National Housing Authority in its on-site development programs.*

There are other legal bases for the Housing program of Manila. R.A 409 (June 18, 1949) authorizes the City to acquire land for sale on easy terms to qualified Manila residents. MMC Executive Order 81-03 (June 8, 1981) also created Urban Settlements Office to administer Land-for-the-Landless Program of the City (LLP).

Land for the Landless Program

The Land-for-the-Landless Program (LLP) provides adequate housing assistance to qualified actual occupants of the area. As of 2008, there were a total of 86 Estates under LLP covering a total of 66.8 hectares. 99.24% or 66.37 hectares had been awarded already to 6,325 beneficiaries (Figures 8 & 9).

Socialized Housing Program

As of 2008, there were a total 3,421 Awardees of the Socialized Housing Program in eight locations within the city (Table 5).

Figure 8. *Number of Awardees of "Land for the Landless Program."*
Source: LLP

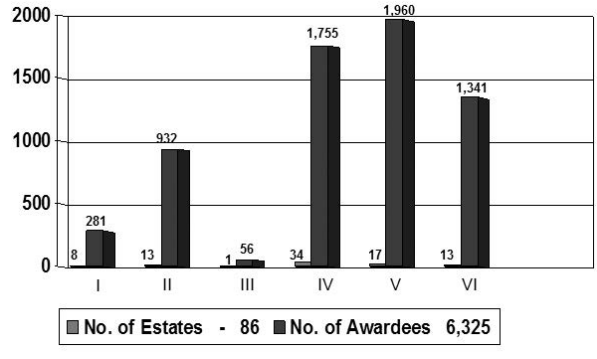


Figure 9. *Number of Awardees Under Land-for-The Landless Program Per District City of Manila, as of March 2008. Source: LLP*

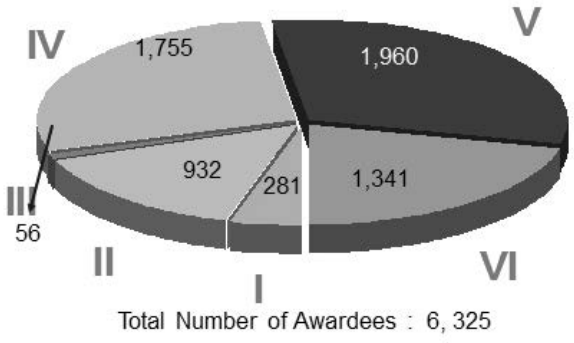


Table 5: *Number of Awardees of "Socialized Housing Program," 2007*
Source: NHA

Project	No. of awardees / units
Dagupan Medium Housing Project	93
U.N Gardens	366
Sambahayan sa Rawis	166
Sambahayan sa Moriones	142
Vitas Katuparan Condominium	200
Habitat for Humanity, BASECO Compound	1,000
Gawad Kalinga, BASECO Compound	956
Residencias de Manila, Jesus St. Pandacan	495

Land Acquisition

Under the land acquisition program, 58 estates or 3.29 hectares were under expropriation cases in court in 2007. This program is targeted to serve about 35,000 beneficiaries.

A survey was conducted on the beneficiary source sites of Anakbayan, Arroceros and Vito Cruz-Balagtas last December 2007 to determine the household income levels of the project beneficiaries. From the derived monthly household income data, the borrowing capacity of each income range was calculated based on the prevailing assumption that 20% of the monthly household income would be used to finance rental cost or housing loan amortization. The following borrowing capacity was derived (Table 6), showing the maximum loan amount a household can avail of based on its maximum monthly payment capacity.

Based on the borrowing capacity, several shelter packages were recommended in 2008 (Table 7).

Relocation of Informal Settlers in Coordination with Local Inter-Agency Committee (LIAC)

As of 2007, a total of 5,242 households were relocated coming from the following Informal Settlements: Estero de San Miguel, Estero de Balete, GMA Barangayan, Sta. Cruz, and PNR Rail Tracks (Table 8).

In 2008, 10,074 more families need to be relocated from 13 locations. Among these are 1,720 families that are to be affected by Slum upgrading.

For 2012, the MUPO identified more informal settlements to be relocated. In Tondo: Islang Puting Bato, Happy Land, Sitio Damayan, North Harbor, and R-10. Three bridge settlements: under Nagtahan Bridge in Sta. Mesa, under Delpan Bridge and under P. Casal Bridge in Brgy 385. Near three esteros: Estero de Valencia, Estero de Pandacan, and Estero de San Miguel. And in various areas in Manila: Punta Sta. Ana Tenement, Mindoro Street in Sampaloc, Almeda Street in Sta. Cruz, Barcelona Street in Binondo (Table 9).

Slum Upgrading

Based from the Strategic Plan of Manila in 2008, 10 areas were selected for slum upgrading in 2008 with over 1,700 displaced families (Table 10).

THE ESTERO HOUSING PROJECT: Barangay 412

The Estero Housing Project is located in Barangay 412, Legarda Street, Sampaloc, District IV of Manila with boundaries in the North by Lardizabal Street (Barangay 413), Manrique and Exterior Legarda Streets (Barangay 416) in the East, Interior Legarda Street (Barangay 638) in the South and M.F. Jocson and Exterior Legarda Streets (Barangay 410) in the West. It has a land area of 4,700 sq. m. Estero de San Miguel traverses the edge of the barangay in the south (Figures 10, 11, & 12).

Table 6: *Monthly Household Income and Borrowing Capacity (Php), MUPO 2008*
Source: Anakbayan, Arroceros and Vito Cruz-Balagtas

Decile	Household Income Range (Php)		Frequency	%	Monthly Payment[2]	Borrowing Capacity at 6%[3]	Borrowing Capacity at 8.67%[3]
					20.0%	20.0%	20.0%
1	0	5664	34	23%	566	94,404	72,471
2	5665	8154	34	23%	1,381	230,339	176,826
3	8155	10397	26	17%	1,855	309,398	237,517
4	10398	12950	17	11%	2,334	389,291	298,850
5	12951	15737	14	9%	2,868	478,358	367,224
6	15738	19705	12	8%	3,544	591,109	453,780
7	19706	26194	4	3%	4,590	765,573	587,712
8	26195	32689	4	3%	5,888	982,069	753,911
9	32690	49846	4	3%	8,253	1,376,531	1,056,730
10	49847	over	2	1%	9,969	1,662,745	1,276,450

Table 7: *Recommended Shelter Package based on Computed Loan Requirement / Income Level, MUPO 2008*

Income Level	MRB type	Size (sqm)	No. of units per MRB/ Condo	Unit Cost (PhP)	Open Space Allocation
1st decile (Below 6,000)	3-storey Atrium	22	36	150,000 to 200,000	30%
2nd decile (6 to 7,999)	5-storey Cluster Rowhouse (3-module)	25	60	180,000 to 230,000	50%
3rd decile (8 to 12,999)	"	"	"	250,000 to 300,000	50%
4th decile (13 to 18,999)	5-storey Cluster Rowhouse (2-module)	25	40	350,000 to 450,000	50%
5th decile (19,000 and above	Condominiums (MXD)	30 to 40	288 (resid'l)	700,000 to 1,000,000	As prescribed

Note: Product differentiation is in terms of unit features (loft provision), building location, quality of land development and open space area and amenities allocation

Table 8: *Number of households relocated*
Source: NHA

Site	No. of households relocated
Estero de San Miguel (Little Vietnam)	36
Estero de Balete	48
GMA Barangayan	101
Sta. Cruz, Manila	242
PNR Rail Tracks (North Rail South Rail Linkage Program)	5,000 (estimated)

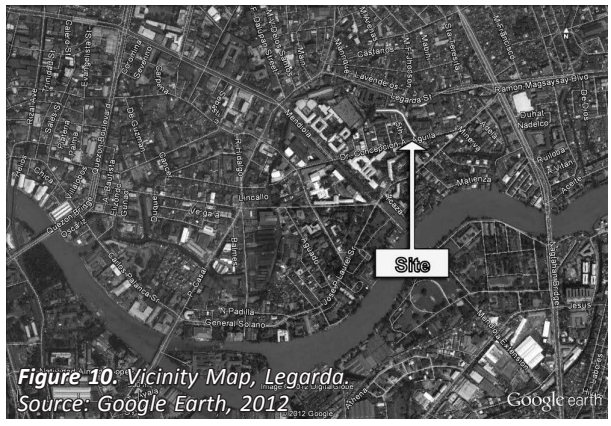


Figure 10. *Vicinity Map, Legarda.*
Source: Google Earth, 2012

Table 9: *Manila Informal Settlements, MUPO 2012*

Area / Location	No. of Censused ISFS	Relocated	For Relo-cation	Remarks
Islang Puting Bato, Tondo, Manila	930 (fire/flood victims)	352 (Montalban, Rizal, Baras)	578	- Lead Agency – NHA - Voluntary relocation activities on-going
Under Nagtahan Bridge, Sta. Mesa, Manila	116 (fire victims)	45 (Brgy. Gaya-Gaya, San Jose Del Monte, Bulacan	71	- Lead Agencies – DPWH, NHA
Happy Land Tondo	150 (flood victims)	59 (Baras, Rizal)	91	- Lead Agencies – NHA, MDSW - Voluntary relocation activities on-going
Sitio Damayan, Tondo	150 (flood victims)	-	150	- Lead Agencies – NHA, MDSW - Social preparations on-going
North Harbor, Tondo	768	-	768	- Lead Agencies – PPA, NHA - Social preparations on-going
R-10, Tondo, Manila	2 330	133 (Brgy. Gaya-Gaya, San Jose Del Monte, Bulacan)	2 197	- Lead Agencies – DPWH, NHA - Voluntary Relocation Activities on-going
Punta Sta. Ana Tenement, Sta. Ana, Manila	1 096	72 (Brgy. Gaya-Gaya San Jose Del Monte Bulacan)	1 019	- Lead Agency – NHA - Voluntary Relocation Activities on-going
Mindoro Street, Sampaloc, Manila	25	-	25	- Social preparations completed - Relocation Site for approval of NHA
Almeda Street, Sta. Cruz, Manila	170	-	170	- Social preparations completed - Relocation Site for approval of NHA
Barcelona Street, Binondo, Manila	40	-	40	- Social preparations on-going
Under delpan Bridge	41	-	41	- Lead Agency – PRRC Social preparations on-going
Estero de Valencia	281			- Lead Agency – PRRC Voluntary Relocation Activities on-going
Estero de Pandacan	1 226	181	1 045	- Lead Agencies – Kapit Bisig Para Sa Ilog Pasig, PRRC, MMDA - Voluntary relocation activities on-going
Estero de san Miguel, Bgy. 647 Casal St., Bgy. 385 under P. Casal Bridge	26 200	6	26 194	- For voluntary relocation on October 29, 2012 at Brgy. Gaya-Gaya, San Jose Del Monte, Bulacan

Figure 11. *Barangay Boundary, Barangay 412, Legarda.*
Source: Open Street, 2013

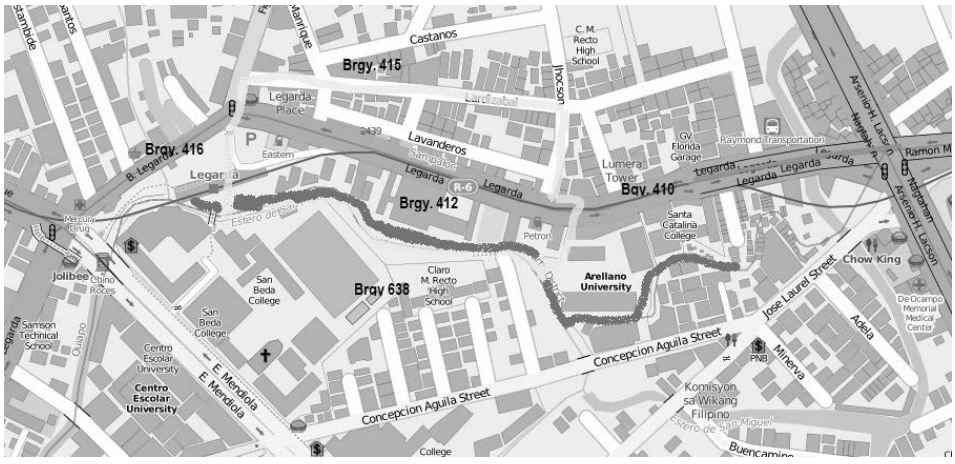


Figure 12. *Location Map.*
Based on: Google Earth

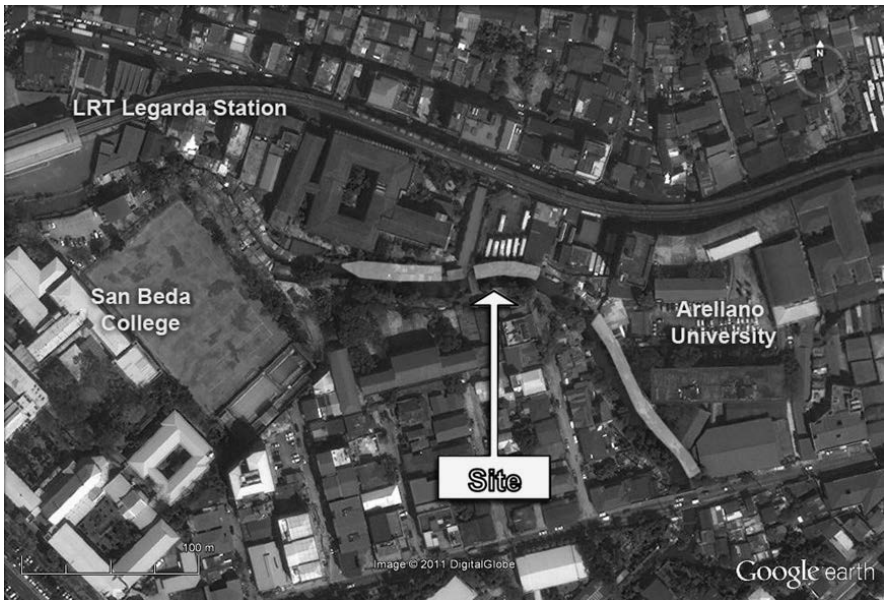


Table 10: *Estates for Slum Upgrading, MUPO 2008*

Estate	District	Exact Location	Lot Area (sqm)	Lot Owner (City of Manila)	Subd. Plan	Displaced Families (Estimated)
Ampil Gorospe	II	Juan Luna, Bulacan, Fernandez, Tondo, Manila	6,192.80	Ord. 4190 & 6880	YES	57
Samia I, II & III	II	J. Basa, Mercado, Nicodemus, Prudencio and G. Perfecto Sts. Tondo,	12,205.85	Ord. 5332	YES	249
Isla San Juan	II	Estero de Maypajo (Benita Ext)	4,563.40	Ord. 8003	NO	67
Amarlanhagui	I	Amarlanhagui, Baltazar, Tondo	890.70	Ord. 6521 and 7003	NO	14
Framaceda	I	Francisco-Esguerra-Dandan	4,842.00	Ord. 7704	NO	714
Torbuja	II	Abad Santos-F. Torres, Tondo	2,630	City Property	NO	51
Rita Legarda X & XI	IV	Felina St. Sampaloc, Mla	11,191.42	Ord. 79-1	YES	142
Alfonso Tuazon	IV	G. Tuazon, Loreto & Lacson St., Sampaloc,	27,809.30	Special Proclamation Augist 20, 1985	YES	235
Alfonso and Ramon Fabie	V	Zamora and P. Gomez Sts., Paco, Manila	10,794.50	Ord. 148	YES	85
Kaunlaran	VI	Estrada, Chromium, Sta. Ana	9,926	Res. 537-67	NO	33
Glori-Mart	VI	Tejeron, A. Francisco Sts., Sta. Ana	5,085.20	Ord. 6171	YES	73

In 2012, the estimated barangay population was 3,252,209 of which are children (1 to 6 years old), 98 are senior citizens and six are persons with disability, the most vulnerable to natural disasters. Their families comprise the lowest income earners and are 'poorest of the poor" having a monthly income of 5,000 to 10000 per month. They had been residing along the estero for 16 to 25 years already. Their usual source of income is vending (newspapers, sari-sari store, and balut). 78.9 % of the families owns their dwelling, 14.6 % are sharers of the housing unit while 6.4 % of them are renters.

With the exception of a few programs, notably the Department of Social Welfare and Development (DSWD) core shelter program, the community has hardly been touched by the government Shelter Program. Even the core shelter program is purely reactive and is activated only when the actual disaster is already facing the communities or as a postscript after the loss of lives, meager assets and makeshift hovels. These 160 families organized themselves to form "Nagkakaisang Mamamayan ng Legarda" and searched for a solution to their tenurial situation.

When Urban Poor Associates (UPA) workers came to link up with community leaders in 2009, they helped residents dialogue with mayors. Later the Legarda organization joined UPA, different groups around the country fighting for housing and other rights of landless people in cities – people living on land they have no legal right to.

The organization, with the help of UPA, identified a parcel of land created by accretion within the informal settlement as well as possible privately owned parcels of land near the area for those settlers that would not be accommodated in the site. Forty nine families were relocated in Bulacan. Through the intervention of Department of the Interior and Local Government (DILG) Secretary Mar Roxas, DSWD Secretary Dinky Soliman and Budget Secretary Butch Abad, the project was approved with funds to be sourced from an allocation above the first P10 billion committed by President Benigno C. Aquino for housing of ISF along waterways. DWSD was allowed to purchase a private land for settlers that would not be accommodated on site while Department of Environment and Natural Resources (DENR) has cleared the release of the accretion. Department of Public Works and Highways (DPWH) was appointed to implement the project as DSWD has no technical expertise on implementing housing projects.

Sustainable Concept of Affordable Housing

The Estero housing project is an urban mixed-use infill and transit oriented development; it is directly accessible by walking from Light Rail Transit (LRT) terminal in Legarda and combines residential and commercial uses to make goods and services accessible by foot or bicycle. This reduces transport demand and transport expenses of the poor.

The housing project was constructed through the People's Plan, a program which allows urban informal settlers to identify in-city relocation sites as an alternative to distant or off-city relocation. The model units in Estero de San Miguel will have six micro-Medium Rise Buildings (MRBs) on proclaimed land and could accommodate 16 informal settler families. Each building is very compact occupying a 24 sq. m lot and each structure can house two families in with approximately 18 sq. m unit each.

The plan respects the three-meter easement needed by the DPWH for access to the waterway and the design of the proposed structures takes cognizance of the flooding which occurs in the area.

The Micro-MRB is designed with the application of green building principles and concepts, such as natural light and ventilation, rain water harvesting, grey water re-use which can reduce electricity and water bills. Conventional MRBs cannot fit into the narrow available lot outside the three meter easement along the *estero*. The building also applied disaster resilient building features and principles to make it more resistant to fires, floods, strong winds, and earthquakes. The matt foundation is 1.5 meters deep to avoid liquefaction. The materials used are also complaint of the building code and it can withstand an intensity 7 earthquake.

Green walls are also incorporated, allowing residents to engage in urban farming to help achieve food security and reduce 'food miles' while improving the urban biodiversity and helping mitigate the urban heat island effect.

The Micro-MRB is three stories; the ground floor serves as flood buffer and may be used for income generating activities. The dwellings are located at the second and third floors. It maximizes the use of urban land, easier to construct thereby allowing small contractors to participate in the construction. Micro-MRBs are also easier to maintain, healthier, safer, more resistant to floods, more resistant to earthquakes and allows the dwellers to engage in income generating activities that would help lift the occupants out of poverty. (Figures 13 & 14a).

A material recovery facility and sewage treatment plant were also incorporated in the plan. This project clears the three meter easement of the *esteros*, create parks and open spaces, mitigate the effects of disasters and climate change. The development therefore allowed densification of the district but also created a vibrant sense of place in the otherwise blighted community.

The payment for the amortization of the housing is also flexible and depends on the capacity of the beneficiaries to pay. Under the "People's Proposal" that was approved by the DILG and DSWD, the payment for the amortization of the housing is

Figure 13. *Site Development Plan.*
Based on: Google Earth



Figure 14a. *Aerial Perspective.*



Figure 14b. *Exterior Perspective.*



flexible. The beneficiaries could pay 300 pesos or 500 pesos or even 1000 pesos per month depending on their income for 25 to 30 years.

The relocation of informal settlers from so-called danger zones and high risk areas to better, safer communities, will also pave the way for the clearing of clogged waterways that will help address the perennial flooding woes in Metro Manila. The first environment-friendly housing project was spearheaded by the DILG and the DSWD in partnership with the DPWH and DENR. (PIA-NCR/RJB/SDL). (See Figures 14b – 14f).

Economic Impact of the Estero Housing

The Micro-MRB design is linked with economic development. The construction methods and systems can be done by unskilled workers, providing job opportunities to those unskilled or have little skill in construction. The construction is still labor intensive, creating opportunities for jobs, it depends less on mechanized equipment that emits carbon dioxide in the atmosphere when operated. The building uses local materials at every opportunity, stimulating demand for local products.

Figure 14c. *Floor Plan.*

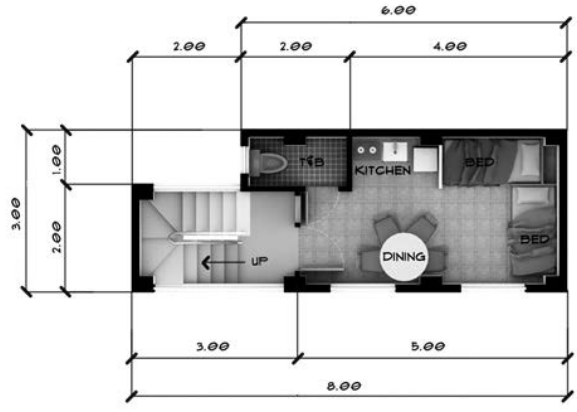


Figure 14d. *Interior Perspective.*



Figure 14e. *Building Section.*



Figure 14f. *Constructed Model Unit of the Estero Housing Project.*



The Micro-MRB can be built by small or informal contractors. This can spread the benefits of development by allowing such small contractors to participate in housing development that is usually monopolized by large contractors building large housing estates or large buildings. It creates opportunities for the poor to engage in micro-enterprises that will help them get out of poverty (Figure 15).

The construction of Micro-MRBs will have multiplier effects on the community itself, stimulating other Micro-Enterprises and eventually will have a positive effect on the local economy. Increase in income of the poor can also translate to increase in Government revenue. The poor, when their lives improve can afford to pay for goods and services of big business, thereby stimulating the general economy.

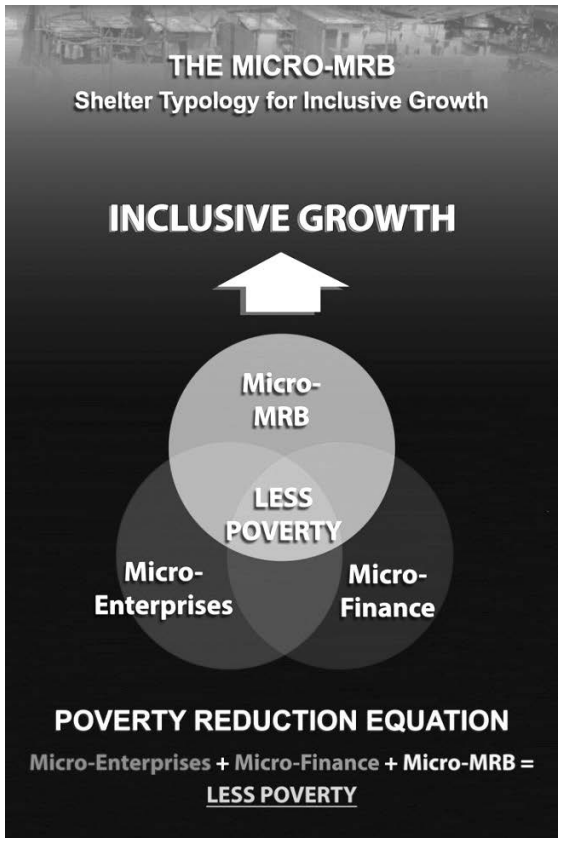
The project is set to be replicated in other esteros in Sampaloc and adjoining districts (Figures 16 and 17). The DILG has listed, as beneficiaries of the program, a total of 105 ISFs on Legarda Street and 260 ISFs on P. Casal Street, both along Estero de San Miguel; 149 ISFs in Estero de San Sebastian; and 63 in Estero de Quiapo.

Issues and Concerns

Pushing for on-site housing took a lot of hard work and people's organization according to the Alicia Murphy, UPA field director. The community was not prioritized in the LGU Housing program of the previous administration probably due to the level of risk that the community is exposed to and the number of the families involved which is relatively small compared to other settlements. Barangay 412 was neither prioritized for relocation nor for site improvement. For every change of local public officials, the community will have to start the lobbying to the new Mayor to avoid eviction.

It would be noted that DSWD and DILG are handling the Estero Housing Project with the assistance of DPWH, not NHA. It has been a struggle for the community to be recognized as qualified

Figure 15. *The Micro-MRB Model Concept for Inclusive Growth.*



beneficieries of NHA housing program due to the location of the settlement and due to the capacity of the residents to pay for monthly amortization. With the support of then DILG Secretary Robriedo and later Secretary Mar Roxas, the community was able to access budget for housing that was coursed through DSWD and DPWH when in fact,the housing program is under the mandate of HUDCC and NHA.

It has been more than two years since the release of 10 billion pesos PNOY fund but the implementation of projects (Table 3) is very slow. The Estero Housing Project which is not part of PNOY Fund took several years under the Aquino administration to realize the construction of the model unit. Part of the difficulty is getting the approval of DENR to allow building on accretion land. Despite the availability of funds, the community is finding it difficult to purchase land near the site to relocate the other ISFs. Alhough the projects had been bidded out, there are no more available relocation sites to ISFs who agreed to voluntary relocation.

There are also some concers with regards to architectural design and site planning. Due to narrow strip of land available, not all buildings of the project were laid-out and oriented in a way that keeps the buildings cool in summer. Because of narrow foot paths in some areas along the estero strip, there is difficulty of access of emergency vehicles. A series of fires had occurred in the area and families were affected each time as the fire truck could not get through. It is also difficult for dredging facilities to enter the area.

Recommendation

The impacts of climate change on land, energy, water, open spaces and on broader environmental aspects should be considered in urban planning. To reduce the severity of impact new planning policies should be in place to regulate the city growth, use of land, spatial distribution of uses, intensity of development on land, new developments on flood prone low land areas, developments on water bodies, use of natural resources and energy, and building materials and design through more resilient physical and institutional planning measures.

To achieve green urbanism, compact development should be promoted to reduce urban sprawl. This approach will protect low lands, water bodies and urban open green spaces and green belts. Provision of more parks and open spaces and creation of green belts around the city and green corridors are also necessary.

Provisions in building regulations to reduce the effect of hot weather should be implemented. This includes the use of natural ventilation, the buildings mass to moderate temperature, color and roof coating as cooling agent, provision of certain amount of greeneries and hard surfacing materials. Practical building guidelines should be adopted to include climate change issues in procedures of planning and design. Climate change impact assessment should also be required in securing development and building permits.

By practical planning guidelines on climate change issues, it is possible to meet the fresh water demand. To meet the growing need of fresh water, it is necessary to recover the increasing local storage of fresh surface water or rainwater. The national building code should be reviewed to include provision of rain water reservoirs and use of water saving appliances. Also, there is an urgent need for grey water recycling, drought resistant plants in landscaping, low flush water closets. Different water treatment processes are also needed to address increase in water salinity. Maintenance and operation of sluices and other regulators, groundwater management tools, land use management and density control techniques. Mandating the use of porous paving materials would also reduce the effect of flooding and shortage of ground water.

As Institutional adaptations, there should be cooperation among related organization on developing new design criteria and regulations on drainage and embankments capacity and their durability. To improve the run-off from land after heavy rain and storm surge, a well-maintained drainage network with high carrying capacity, appropriate embankments, water regulators and sluice gates are required in

Figure 16. *Proposed Locations of Estero Housing Projects. Source: Google Earth*

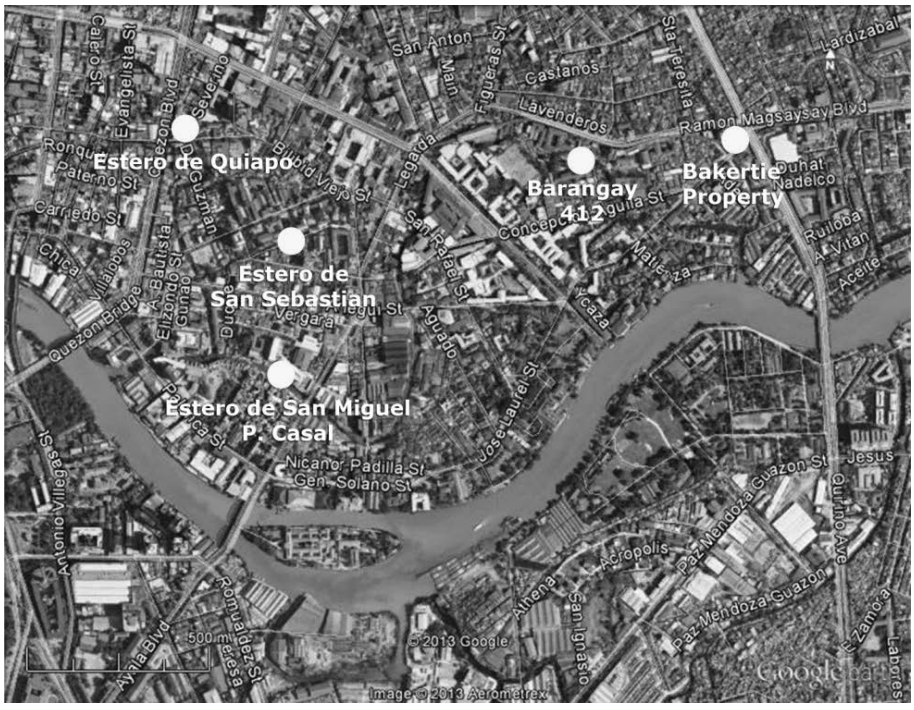


Figure 17. *Model of Estero Housing Project along Estero de San Miguelin P. Casal Street*



various locations in Manila.

Improvement of the Green Features

Due to limited budget, the structures are not self-sufficient energy producers. Although green passive design strategies and compact massing for reduced heat gain in summer were used,solar architecture concepts should be studied. Low lost solar lamps in the top floor and at the streets may be installed. More solar shading devices should be installed where necessary. The flow of water in the estero may be harnessed as renewable energy source as well. The use of white paint on the roof would also greatly reduce indoor temperature during sunny days.

The building components may be furthered studied to utilize more recycled materials. Although an MRF was identified, other strategies to eliminate the concept of waste such as composting should be implemented by the barangay,

The project used regional and local materials but refused to apply prefabricated modular construction systems to provide more local jobs. A study on the economic viability of prefabricated building components and comparative analysis of the carbon footprint reduction they offer in the long run should be conducted.

The use of multi-disciplinary approach, best practice for urban governance and sustainable procurement methods should be further explored by project proponents and the barangay officials.

Conclusion

There is now a growing interest in understanding the complex interactions and feedbacks between urbanization, material consumption, energy and water efficiency and the depletion of our resources. The question on how far urban form and population density impact on resource consumption is important but still not fully understood. The presented Principles of Green Urbanism are practical and holistic (Lehmann, 2011), offering an integrated framework, encompassing all the key aspects needed to establish sustainable development and encouraging best practice models. However, more research in these principles and their interconnectedness is necessary, to give better guidance for urban designers and decision-makers.

The Estero Housing Project clearly followed most of the green urbanism principles as it responds well to local climate, location, orientation and context, optimizing daylighting and passive cooling. As of now, the development is quiet, clean and effective and a healthy microclimate, despite the adjacency to *estero* due to weekly cleaning of the waterways by the barangay. But other areas could still be improved to eliminate the concept of waste, to further reduce or have no CO_2 emissions, and to apply new technologies

such as co-generation, solar energy, and prefabricated modular construction systems.

Designing a city requires holistic, multi dimensional approaches, and each time the adaptation of strategies to a unique context: the integration and combination of qualitative and quantitative knowledge is essential. The Estero Housing Project is a brave attempt to go beyond the usual relocation site for informal settlers that is more concerned in lowering the cost of development to make it affordable. The sustainability of the project remains to be seen but it is encouraging to note that even as the first class private developments are riding on the green urbanism movement, the government is likewise developing their counterpart in the most marginalized areas and sectors of the city. Slowly but surely, Green Urbanism will become the norm for all urban development projects even for on-site improvement of informal settlement such as those along Manila *esteros*.

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Education

Industry Relevance of the B.S. Architecture Program of the University of Santo Tomas: A Triangulated Study

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Industry Relevance of the B.S. Architecture Program of the University of Santo Tomas: A Triangulated Study

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ABSTRACT

The industry relevance of the B. S. Architecture Program of the University of Santo Tomas is at the forefront of discourse now more than ever as the university gears up for globalization that are inevitably transforming the academic landscape (Carillo, 2017). This is in recognition of the changes in the world that have led to a rise of a society that is complex and this has increased the need for people to work and produce the most efficient techniques of incorporating to the young generations the concept of a community that is dynamic and complex at the same time. Developing an industry-relevant program such as in architecture is essential as it is ever-evolving and requires a lot of commitment, thus, a quality curriculum in the program should promote differentiation in learning.

The subject of the study were the alumni of the UST College of Architecture who graduated from the Academic Years 2012-2013 to 2016-2017. These alumni were under B.S. Architecture Program based on Curriculum 4 (UST Registrar, 2012) which is an exclusive curriculum designed by UST College of Architecture, the university being autonomous higher learning institution. They were surveyed on the general usefulness, content sufficiency and industry relevance of the UST program in their current work.

Based on the findings of the study, it was revealed that the UST Architecture Program was observed to be generally useful to the graduates in their workplace. They have seen the value of the courses offered by the program and that it was serving as their tool to perform in their respective jobs. In terms of content sufficiency, the result most likely suggested that all courses in the program need improvements in varying degrees in order to make it more industry-relevant as there were things in the workplace that were not sufficiently provided within the 5-year program. At present, the UST Architecture Program was accepted by the respondents to be industry-relevant while there was a need to enhance the curriculum of the program to make it even more industry-relevant. Lastly, there was a very strong congruency between the primary data result with that of the result of the round table discussion organized by the United Architects of the Philippines as to the specific knowledge and skills necessary for new industry players to be able to perform well specifically in the architecture industry and in the built environment trade in general.

KEYWORDS *Experiential learning, general program usefulness, content sufficiency, industry relevance*

INTRODUCTION

The industry relevance of the B. S. Architecture Program of the University of Santo Tomas is at the forefront of discourse now more than ever as the university gears up for globalization that are inevitably transforming the academic landscape (Carillo, 2017). This is in recognition of the changes in the world that have led to a rise of a society that is complex and this has increased the need for people to work and produce the most efficient techniques of incorporating to the young generations the concept of a community that is dynamic and complex at the same time. Through education, the society looks forward to reproducing itself, and through architecture the society is able to show its values, norms, aspirations as well as its cultural structure by the built environment. It is therefore the role of the education system to address the cultural ideals of a country. It must fulfill the needs of the socially and economically disadvantaged. For a profession that is regarded as leading in the training of people in its field, it should seek relevance by teaching and training professionals that were capable of solving the economic challenges and the social

tribulations of the society. Getting to understand this knowledge and enabling it would require that the architects in the academe to revisit their techniques of teaching the program.

Developing an industry-relevant program such as in architecture is essential as it is ever-evolving and requires a lot of commitment, thus, a quality curriculum in the program should promote differentiation in learning. With this approach, the curriculum acknowledges that the students learn in varying and personal ways with their own styles of learning and with their own strategies.

1.1 Statement of the Problem

The architecture program of the University of Santo Tomas is intended contribute to the growth and development of students' competence in the field of built environment. As a premier Philippine architectural institution, it is committed to produce competent, committed, and compassionate architects as declared in its Mission Statement (USTCA, 2012). However, there was a pressing need to analyze its relevance to the industry since the program could not be static, thus it should be a process that is continuous in monitoring, evaluating and updating with time. There is emphasis across the globe of the need for systems of education that should prepare the architectural students to be trained on broad or general competencies that were required in the real-world scenario. There was a need to examine if the program provides the right knowledge, skills and attitude needed in the built environment industry; and whether its content was sequenced in a way that was appropriate and progressive.

This study was conducted to determine if the current program had been relevant to the built environment industry as how it was intended. It investigated the general usefulness of the UST Architecture Courses in the workplace because it is the firm belief of the researcher that the courses, being an integral part of the curriculum must first and foremost be useful to the population that it serves. Another aspect that was tackled in this research endeavor was the content sufficiency of the courses in the current curriculum to know whether the coverage of the courses had been sufficient or excessive, or if the content of the courses had been insufficient and therefore would need the addition of course topics to strengthen the content of the courses. This likewise ascertained the industry significance of the courses in the said curriculum of the UST B.S. Architecture Program.

1.2 Objectives of the Study

The general objective of the study was to determine the industry relevance of the current program being used by the University of Santo Tomas College of Architecture in its Bachelor of Science in Architecture program and thereupon contribute to the overall professional growth of its alumni. Specifically, it aims to:

1. describe the respondents' demographic details in terms of sex, age, year of graduation, time taken to secure employment after graduating, reason for immediate and non-immediate employment, examination details prior to employment as to type, difficulty, language and confidence in responding to the interview, work details as to nature of office where graduates were employed, size of company where employed and work exposure of the graduates;
2. characterize the general usefulness of the UST Architecture Courses in the job / workplace; the content sufficiency of the courses in UST Architecture curriculum; and the industry relevance of the courses in the said curriculum;
3. triangulate the congruency of the primary data to the secondary data of the study.

1.3 Significance of the Study

The learning and working environments were both changing rapidly, and this has implications on the various stakeholders of the industry.

The Built Environment and the Architecture Industry. This research would be of great use to the built environment in general and to the architecture industry in particular. The United Architects of the Philippines, the integrated and accredited professional organization of architects in the country, would find this research significant in their pursuit of a strong linkage with the architects, especially the young ones who are relatively new in the industry. Professional linkages or long-term relationships produce long term benefits for the industry and the higher institutions of learning (Kuang, Meng, Zhang, & Lin, 2014).

The Employers. This research would benefit the architects, civil engineers, interior designers and other employers of companies involved in design and construction who are in continuous search for employees that would pass their company standards. Understanding the synergy that goes between their company needs and the academic training of graduates would be a significant help in their recruitment of their staff.

Higher Education Institution. The Commission on Higher Education (CHED) Technical Panel on Architecture Education could use this research for benchmarking purposes particularly on how to study the industry relevance of the architecture program of the country.

The Learners. The findings of the study would allow current students to understand the importance of the courses in the program and how it is applied in the industry. This, in the process, would motivate the young adults to learn.

Future Researchers. This research could rightfully serve as reference to other individuals or institutions who would like to embark on similar researches or studies about the curriculum particularly its relevance to the industry that it caters.

1.4 Scope and Limitation of the Study

The general purpose of this study focused in finding out the relevance of the UST B.S. Architecture program in the built environment industry and whether there was a need to update it and which area necessitates improvement or enhancement. As such, it was important that the researcher's chief data would be coming from the research respondents that include the UST College of Architecture alumni who graduated from 2013 to 2017. These respondents were the alumni covered by the currently running curriculum of the UST College of Architecture. The primary data would be limited to the alumni's socio-demographic characteristics such as sex and age, their year of graduation, the nature of their workplaces as well as the size of the firm where they work. The data that were gathered from the respondents focused on the applicability of the architecture courses in their current jobs, the usefulness of the content of the course coverage, and the most significant and the least significant courses as applied to their current jobs. It also helped in the analysis of the study as the respondents were asked about their overall acceptability of the program as well as their recommendations so that the B.S. Architecture program becomes genuinely relevant in the built environment industry. This was done during the academic year 2017-2018, beginning with initial data gathering during the first term (August to December, 2017), and the data analysis and research conclusion were accomplished during the second term (January to March, 2018).

Meanwhile, the secondary data were based on a recent round table discussion between the Council of Deans and Heads of Architecture Schools in the Philippines (CODHASP), the Commission on Higher Education (CHED), and architects who were leading practitioners in the built environment industry. This discussion covered the knowledge, skills, and attitudes (KSA) obtained by the recent graduates of architecture. The industry gave the academic sector a feedback on the performance of the graduates under their employment.

REVIEW OF RELATED LITERATURE

This chapter basically highlighted the importance of being able to clearly connect the formal education into the real-world scenario present in the industry. The discussions were categorized into three themes: General Usefulness, Content Sufficiency and Industry Relevance of the various programs that were cited.

2.1 General Usefulness of Programs

Industry-Based Curriculum for Vocational School Students. In terms of soft skills competencies industries were in need of alumni who have got more complex characteristics. This was because, in the work environment, employees or workers were forced to work as teams, and here the soft skills were essential for the workers to blend with other workers and the industry target. Soft skills were also prioritized because industries have already known the standards of certificate quality and as a result, industries have implemented their own training method or hard skills and training methods. Telkom polytechnic, therefore, improves hard skills through empowerment and training of students in a real working environment.

It was recommended that high learning institutions and at this case Telkom Polytechnic, curriculums should be developed to suit industry needs which could be derived from a research-based curriculum to bring into concept the industry knowledge and skills needs. The curriculum should also be designed to encourage the application of theoretical learning in real-life scenarios. Real life scenarios should include case studies, events, and live projects which in this case should in an organization where the course applies (Wijayanto, 2011).

2.2 Content Sufficiency

The Wealth and Poverty of a Nation Squarely Depends on the Content of the Curriculum. As content sufficiency is one of the core issues of the research, it is necessary to know its significance in the educational setting. Vallinks (2014) cited that the content of a curriculum is a vital actor in the economic success of a nation. He stressed that "the relationship between education and national development in terms of wealth and poverty of the nation depends largely on the content of the curriculum and is a matter of critical interest to present and past governments of the country (Vallinks, 2014). This was their experience in the country of Nigeria. "The fundamental beliefs and principles underlying a curriculum are very important. Traditionally high school prepared students for college. Those students who did not intend to go to college often dropped out of high school". He further detailed that in Nigeria, educational policy at independence was most concerned

with using schools to develop manpower for economic development and Africanisation of the civil service, as cited in Woolman (2001). It emphasized that the legacies of colonialism underline the many problems of nation building facing the Republic of Nigeria since its independence in 1960 which led to a shaky democratic foundation which resulted in the first military coup in 1966 and three counter coups during the period in focus. It stressed that the educational policy was narrow in scope and did not meet the hopes and aspirations of the Nigerians (Vallinks, 2014).

2.3 Industry Relevance

Industry Relevance and its Role in Student Success Corporate Training. In a recent study of ShaulKuper (2012) Universities and colleges which were not shy of responding to the industry needs, they would not only attract individual seeking employment, but they would also attract the corporations which were in dire need for professional development opportunities for their employees. Approximately $172 billion could spent annually in support of ongoing education by about 95 percent of corporations.

The article indicated that instead of focusing solely on support services, universities and colleges all need to shift their focus towards giving students the exact skills that they need for them to find rewarding jobs and long-term success for their students. Skills remain the most important compared to credentials in the majority of industrial sectors. When students were not equipped with the appropriate skills, their qualifications or degree would be of little practical use regardless of how supported they were during the learning process

Higher learning institutions were going to open up new revenue sources when they partner with industries such as architectural industry which highly seeks tailored programs based on industry needs to make effective working environments. Closer bonds between the architectural industry and the high learning institutions remain the key to success in corporate training markets by curriculum or programs offering lineups needed by potential customers (Kuper, 2012).

2.4 Summary

The literatures reviewed highlighted the importance of a strong connection between the industry practices and what is taught in learning institutions. It emphasized the need for schools to connect with industry needs in order to make the school program relevant.

In terms of content sufficiency, it mentioned that the economic development of a country such as Nigeria depended on the content of the curriculum. Project-based learning meanwhile supports the idea that companies look for skills in real-life-solving problems from their new recruits. And finally, it emphasized that collaboration is needed between the higher learning institutions, government and industries so that there can be relevant curriculum needed for skills, knowledge and competence in the field of architecture.

METHODOLOGY

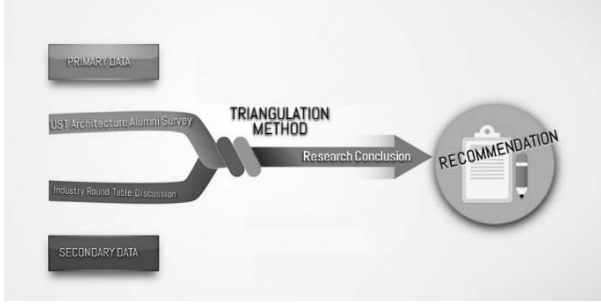

Figure 1: *The Research Paradigm showing the primary data and the secondary data of the study (Source: Author)*

The researcher gathered primary and secondary data to answer the question of the architecture program's industry relevance. The primary data used was the alumni survey that was conducted by the researcher from the school's alumni who were the beneficiaries of the existing curriculum. The survey questions were of mixed method format which refers to an emergent methodology of research that advances the systematic integration, or "mixing," of quantitative and qualitative data within a single investigation or sustained program of inquiry. The basic premise of this methodology was that such integration permits a more complete and synergistic utilization of data than do separate quantitative and qualitative data collection and analysis (Wisdom & Creswell, 2013).

As a descriptive research, this also considered to study the result of a recently-concluded round table discussion which was of qualitative methodology in nature and represents the secondary data of this dissertation. This was held on 5th of August 2015, which falls within the same time coverage of the architecture curriculum in question about its industry relevance. There has been no recent round table discussion held among the said parties and therefore this 2015 activity was considered the most recent discussion of industry practitioners and the academicians about this particular topic.

LOCALE AND TIME OF STUDY

The study locale was the College of Architecture of the University of Santo Tomas located in Sampaloc, Manila. It was one of the only 2 among the 100 architecture schools in the country that has the distinction of being a Center of Excellence as declared by the Commission on Higher Education in the year 2000 (UST, 2015). This architecture

school was a consistent top performing school in the national licensure exam for architects based on the record of the Professional Regulation Commission (PRC, 2017). This institution has been in existence for the last 88 years (est. 1930) with an annual student population of typically between 2,000 to 2,200 students from 1st Year to 5th Year.

The study was conducted within the Second Semester of School Year 2017-2018, particularly January, 2018 to April, 2018.



Figure 2: *The Research Locale – The University of Santo Tomas (Source: Author)*

SUMMARY OF KEY FINDINGS

5.1 General Usefulness of the UST Architecture Courses

Twelve percent (12 percent) strongly agreed that the UST Architecture courses were useful in their current job while 20 percent agreed. However, a majority of the alumni 60 percent neither agreed or disagreed, and the combined respondents representing 7.7 percent either disagreed or strongly disagreed as to the courses' usefulness in their current jobs. Although the respondents who found the subjects to be not useful at all may have been placed in departments that did not match their training. Overall, the mean value yielded $\bar{x}$ = 2.68 which represents they neither agree or disagree as to the courses' general usefulness.

Architectural Design, Building Technology and Building Utilities were the subjects that the alumni found to be most useful, followed by Planning, Professional Practice and Visual Communication. Theory and Math/Structural were seldom used compared to the other subjects. Math/Structural had the highest percentage of alumni who considered it completely not useful at the workplace.

The earlier indication of the alumni response was that 75.6 percent of the taught courses were sometimes useful and sometimes not useful. That implies that although their college training was useful to some extent, they had to learn and acquire more skills at the workplace so as to effectively perform their jobs. Below was a summary of the things that the alumni said to have learnt at the workplace and not taught at UST College of Architecture.

5.2 Content Sufficiency of the Courses

Building Technology has been found to be the most insufficient course in terms of content coverage. This was followed by Building Utility, Professional Practice, Planning and Architectural Design which were all found to be insufficient by the respondents. The alumni felt that those courses needed to be taught in more details and more hours ought to have been spent on them.

The alumni felt that the content of Visual Communication and Theory of Architecture courses were moderately sufficient, i.e., given just enough time and the coverage was just enough. Of all the courses, Math/Structural courses were judged to be sufficient in terms of content. Overall, the pooled mean of $\bar{x}$ = 3.323 which was Moderately Sufficient sends the clear message that indeed all courses in the program, in varying degrees, that need to improve in order to make it industry-relevant.

5.3 Industry Relevance of the Courses

The most relevant courses among most of the alumni was found to be Building Technology, with a registered mean of $\bar{x}$ = 1.179 (Strongly Agree). A high 81.85 percent of the alumni asserted that they found it to be very relevant. Cumulatively, only 1.23 percent of the alumni felt that the course was sometimes or seldom or never important.

The course that alumni found second most relevant in their practice was Building Utilities, with $\bar{x}$ = 1.304 registered mean. A significant 74.77 percent of the respondents indicated that the course was very relevant and another 19.69 percent saying the course was relevant. Only 4 percent and 1.54 percent of them said that building utilities was sometimes relevant or seldom relevant respectively.

Architectural Design was the third most important relevant in the practice of the alumni with a registered mean of $\bar{x}$ = 1.40. Almost sixty-nine percent (68.92 percent) of the surveyed alumni said that Architectural Design was very relevant while 24.62 percent said it was relevant. 5.54 percent observed that design was sometimes relevant while only 0.31 percent said it was seldom relevant.

Planning ($\bar{x}$ = 1.625) and Professional Practice ($\bar{x}$ = 1.632) came in fourth and fifth respectively, in the relevance ranking. 54.46 percent of the respondents felt that planning was very relevant to their practice while 31.69 felt that it was relevant. On the other hand, 52.31 percent of

the alumni felt that Professional Practice was very important to their practice, while 31.38 percent noted it was relevant.

Visual Communications ($\bar{x}$ = 21.09) and Theory of Architecture ($\bar{x}$ = 22.89) courses were relatively less relevant than the first five courses. Twenty-seven and sixty-nine hundredths percent (27.69%) of the alumni had the opinion that Visual Communication courses were very relevant to their practice, while 42.77 percent said it was relevant and 21.54 percent indicating it was only sometimes relevant. In the case of Theory of Architecture, 23.38 percent felt it was very relevant, 38.46 percent felt it was relevant and 29.23 percent felt it was sometimes relevant to their practice.

The response from the alumni indicated that Math/Structural as the least important course of all the eight architecture courses. Only 14.46 percent of the respondents held the opinion that Math/Structural course was very relevant to their practice and 29.85 percent opined that it was relevant. On the contrary a majority of 38.77 percent felt that it was only sometimes relevant to their practice and another 14.77 percent said it was seldom relevant to their practice.

In general, all the courses had very few or none of the respondents indicating that they were never relevant to their practice. This finding validates the courses of architecture at the workplace. Although the relative importance of some courses was found to be higher in some courses than in others, they were all relevant to various extents. This was confirmed by the overall pooled mean $\bar{x}$ = 1.773 which was "Strongly Agree" as to the relevance of the architectural courses in their practice.

Overall Assessment of the UST Architecture Program – Twenty percent (20%) of the respondents indicated that the courses have very substantial content and very useful to their personal career (Strongly Agree). Twenty-four and sixty-two hundredths percent (24.62%) registered as "Agree"; 36.00 percent said they "Neither agree nor Disagree"; 18.46 percent posted a "Disagree" response and "Strongly Disagree" only had a meager 0.92 percent response. Overall, this particular question had a $\bar{x}$ = 2.179 mean which means generally more graduates agree that the program was substantial and was used and relevant in their current professional career as they "Agree" as to the College of Architecture Program's content substantiality and usefulness in the professional career.

CONCLUSIONS

This research has served as a platform to formalize his informal research questions about the industry relevance of the architecture program particularly that of the University of Santo Tomas. The researcher has itemized his conclusions below:

1. Based on the findings of the study, it was revealed that the UST Architecture Program was observed to be generally useful to the graduates of UST College of Architecture in their workplace. They have seen the value of the courses offered by the program and that it was serving as their tool to perform in their respective jobs.

2. In terms of content sufficiency, the result most likely suggested that all courses in the program need improvements in varying degrees in order to make it more industry-relevant as there were things in the workplace that were not sufficiently provided within the 5-year program.

3. At present, the UST Architecture Program was accepted by the respondents to be industry-relevant while there was a need to enhance the curriculum of the program to make it even more industry-relevant.

4. Lastly, there was a very strong congruency between the primary data result with that of the result of the round table discussion organized by the United Architects of the Philippines as to the specific knowledge and skills necessary for new industry players to be able to perform well specifically in the architecture industry and in the built environment trade in general.

RECOMMENDATIONS

Based on the findings and conclusion, the following were recommended:

1. Perform a regular formative and summative evaluation of the Architecture Program of the University of Santo Tomas led by the Dean of the College and his Cluster Chairpersons for Architectural Design, Theory & History, Planning, Building Technology, Building Utilities, Engineering Science, Professional Practice and Visual Communication Clusters. If done on a regular basis, the suggested improvements in the program and curricular offering would be debated upon and discussed more seriously given the reasonable amount of time dedicated for its discussion. This was to correct the current practice in the College of convening a special committee who was given only a few months to review and improve a 5-year old curriculum.

2. Establish a stronger linkage with the alumni of the College through the Alumni Association in order to solicit a more orderly feedback of continuously evolving industry practices that were being applied in the workplace. The Professional Practice cluster chairperson could

be a representative in the Alumni Association as they formulate specific programs that would establish a stronger feedback mechanism from graduates especially the young ones who were relatively new in the workforce. By establishing a stronger linkage with the alumni, the College would be able to come up with substantial recommendations to the administrators how to further ensure the formulation of program enhancements that were truly industry-relevant.

3. Maintain a constant dialogue with current architecture students who were under the current Architecture Program. This may be done through the current Student Survey System where the students were able to record all their sentiments about the Program. While this system was in place, there was a need to improve this mode of reaching out to the stakeholders of the program by providing a mechanism whereby the students would know that their opinions have been received, were being considered and most importantly, were being valued.

4. Encourage faculty members to explore other modes of delivering their lessons apart from the traditional lecture method. The 21st Century educational environment calls for innovative ways to reach out to the 21st century learners. Course facilitators should explore the use of technology in their classrooms; they must encourage collaboration; they must also nurture students to be critical thinkers, among other means to deliver the course contents in the current modern-day settings. This would encourage students and future architecture practitioners to be more creative and critical in experiencing the architecture program.

5. Implement the Architecture Laboratory facilities as prescribed by the Commission on Higher Education Technical Panel for Architecture Education. These facilities were meant to simulate actual construction scenarios in the various disciplines such as Structural Design (display of structural foundations and footings, different kinds of wall footings, among others). As for Building Utilities, it would show actual examples of how water and sewer pipes were laid out, basic electrical installations, among others. These laboratory facilities would allow students to learn the various construction principles with deeper understanding and appreciation. Currently, the UST College of Architecture has built the “Bahay BT” or the “Building Technology House” exactly for this purpose. However, it was further recommended to require course facilitators to maximize its usage and exposure to the students.

6. Strengthen the Apprenticeship Program which was found to be one of the things they appreciate in the current Architecture Program of the University of Santo Tomas. Apprenticeship Program was an on-the-job training program for 4th year students of the College. They were deployed in various architectural firms within Metro Manila during their semestral break and it forms part of their program requirement. While it was already in place, strengthening it would further boost the chances of the alumni to perform well in the industry in the near future as they were already introduced while still completing their architecture program. Some ways to further strengthen it was by providing a clearer guideline as to the students’ deployments, creating a better monitoring system and assessment instruments.

7. A similar study may also be undertaken by other universities offering the B.S. Architecture Program to determine its industry relevance so collectively this may help in the promotion of a truly relevant architecture program in the country.

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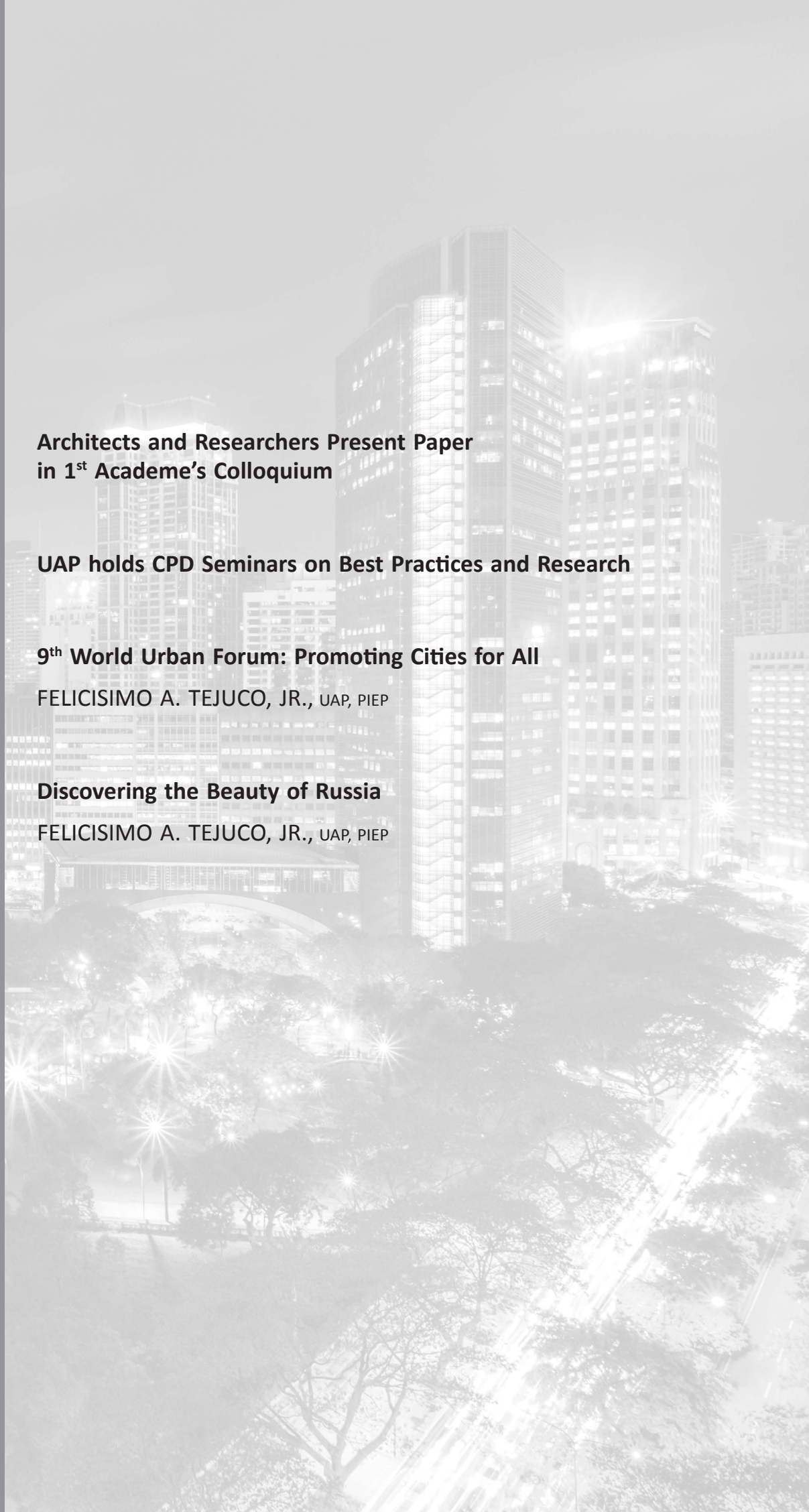
Feature Articles



Architects and Researchers Present Paper in 1st Academe's Colloquium

UAP holds CPD Seminars on Best Practices and Research

9th World Urban Forum: Promoting Cities for All

FELICISIMO A. TEJUCO, JR., UAP, PIEP

Discovering the Beauty of Russia

FELICISIMO A. TEJUCO, JR., UAP, PIEP

Architects and Researchers Present Paper in 1st Academe's Colloquium

The 2018 National Architecture Week (NAW) culminated with 13 paper presentations on sustainability, heritage, and education last 15-16 December 2017. At least 70 architects from the practice and academe attended the research event.

Themed "Uplifting the Practice through Research and Innovation," the First Architects' Academic Colloquium (AAC) was organized by the UAP Commission on Education led by Wilfredo Gacutan, FUAP, and the UAP Journal under the Professional Development Commission at the UAP Headquarters. Because of the diversity of the researches, the presentations were classified into four categories. Selected papers of the AAC were published in the UAP Journal, subject to peer review.

"Innovations in Sustainability"

Runddy D. Ramilo, RIBA, AIA, UAP, PhD in Architecture and Sylvester Shaun D. Seno, UAP, PIEP who are research partners in numerous works both presented their studies. Titled *"Parametric Study of Performative Building Skins for Energy Efficient Office Building Retrofit in the Tropics,"* Ramilo shared the benefits of building performance modelling. Through 5d digital technology, architects can be guided in designing or retrofitting an office building to achieve energy savings. Ramilo was assisted by researchers Seno, Sambit Datta, PhD and Mohamed Rashid Embi, PhD.

On the other hand, Sylvester Shaun D. Seno, UAP, PIEP, together with Ramilo, discussed *"The Sustainability Issue of Housing Material Loans (HML) for Public Housing in the Philippines: Recipe for Cyclical Disaster Risk?"* The Philippines' pilot housing agency, the National Housing Authority (NHA), offers various modes of housing delivery for the lowest thirty percent income Filipino earners. One of these modes is the awarding of the housing material loans (HML).

The study intended to investigate if the housing material loans (HML) mode of the National Housing Authority (NHA) translate to a disaster-resistant design. The study area covered former residents along the Philippine National Railways (PNR) who were relocated to Southville 1 Cabuyao, Laguna last 2007. Findings indicate that the built houses did not pass structural integrity in terms of faulty roofing construction and short-changing of materials against NHA-provided minimum design specifications, increasing likelihood of future cyclical natural disaster risks.

Ramilo is the Managing Director of International Design Associates (IDA), a Singapore based company with offices in the Philippines, Pakistan and representative in Malaysia. He holds a Masters and Bachelor of Science in Architecture Degree and his Doctor of Philosophy in Architecture (Digital Innovation).

Seño is a full-time faculty member of Adamson University (AdU) and a part time professorial lecturer for De La Salle-College of Saint Benilde (DLS-CSB) – both for BS Architecture courses, with a Master's Degree for Architecture-Major in Construction Technology Management (March-CTM).

With the rapid densification of the city and the continued influx of people living in the urban centers, much of the demographics of these urban dwellers will go to school to get an education. In response, Noel E. Nicolas, UAP, presented *"The Formulation of Guidelines for a Sustainable Vertical Learning Facilities for Higher Education."* Nicolas noted that despite the rise of vertical campuses, they lack the layers and the elements present in a horizontal campus development. The findings of his study resulted to the formulation and the creation of a design guideline for a sustainable vertical learning facility.

Nicolas is a fulltime faculty in the Architecture Program of the De La Salle College of Saint Benilde, School of Design and Arts. He holds a Bachelor of Science degree in the University of Sto Tomas and his Master of Science in Architecture Major in Vertical Urbanism in the Mapua University.



"Place making and Heritage in the Community"

During the second session, selected case studies on architectural and heritage significance were presented. These include *"Repurposing Historic Hidalgo: Strategies to Make Historic Properties Vital Community Assets"* by Ronnie R. Yumang, UAP, PIEP, ASEAN Ar.

By thinking 'inside the box', the paper aims to give a fresh outlook on regenerating a non-performing property asset like Old Hidalgo. Through new business models, the area can capitalize on its strengths and opportunities to create a competitive sustainable advantage.

Ronnie Yumang is a practicing eco-Architect, Environmental Planner and native landscape advocate. This paper has been presented as partial requirement for his architecture graduate program in 2000.

Gene Lambert R. Giron, UAP, PIEP, rmp, presented two papers: *"The Impact of Urbanization to Culturally and Architecturally Significant Structures: the Case of Philippine Normal University-Normal Hall,"* and *"The Significance and Impact of Non-Motorized Planning Focused on Pedicabs as a form of Non-Motorized Transportation in an Urban Setting; The Case of University Belt District 1."*

The first paper was a discussion of one of the earliest buildings constructed in the city of Manila by William Parsons along Taft Avenue. It is also considered the first State University in the Country. The researcher suggested adaptive reuse as a solution to salvage the structure. On the other hand, Giron's second research assessed the benefits and impacts of alternative transportation to the community.

Giron is a practicing registered and licensed architect, master plumber, and environmental planner and is currently a part-time faculty member of National University.

"The Filipino Living Space"

From architecture, the third set of research presentation delved on urban design and planning.

On "the Filipino Living Space," Mary Rajelyn J. Busmente, UAP, MS in Architecture shared her insights on *"Heritage and Technology."* Today, documenting of heritage buildings can still be done manually. Moreover, many tools, gadgets, equipment and applications make the tasks easier for architects and heritage planners.

Sepideh P. Ahmadzadeh, UAP, MS in Architecture presented *"The Role of Monuments in Place Identity: A Comparative Analysis between Quezon City Memorial, Quezon City and Azadi Square, Tehran Iran."* The author shared similarities of these two monuments, which includes its role as city landmark and how they affected their nations, and vice-versa. Highlights of the research were recommendations on urban streetscapes, pedestrianziation and landscaping of the Quezon City Memorial.

Two complementing papers were *"Revitalizing the Sidewalks of Espana Boulevard (Welcome Rotunda to Lerma/ Morayta) through a Street Management Plan vis-à-vis Community Empowerment"* and "Sampaloc Skywalk, An Innovative and Alternative Pedestrianization Strategy Along España Boulevard." Authors were Felicisimo A. Tejuco, Jr., UAP, PIEP, MS in Architecture and Henry Felix E. Herrera, UAP, PIEP MEM-CM, respectively.

Heavy vehicular traffic, obstructed streets, and flooding are common urban problems, which

affect España Boulevard. The scope of their study is the stretch of Espana Boulevard, starting from Mabuhay (Welcome) Rotunda (near the United Doctors Medical Center) to Morayta, which includes Lerma and Nicanor Reyes Street (near the office building of the Professional Regulatory Commission).

To address the problem, Herrera proposed an elevated walkway while Tejuco recommended a street management plan with responsibilities and roles assigned to the private and public sector.

Ahmadzadeh, Busmente, Herrera, and Tejuco are faculty members of the UST College of Architecture. Ahmadzadeh is involved in design-build projects while Busmente is presently involved with the restoration of the Manila Metropolitan Theater. Herrera is the Chair, UAP Committee on Academe & Industry Linkage while Tejuco is the Chair of the UAP Journal and Vice Chair of the Commission on Professional Development.

"Architecture: Education, Culture & Heritage"

On education, Creselda M. Roldan, UAP presented *"The Pedagogy and Andragogy in Architecture Education."* Pedagogy can be defined as the teacher-centered model while andragogy is student- centered model of teaching and learning in Architecture education. Through her school, the Divine Word College of Calapan, Roldan reconciles the transmittal of knowledge through lectures and the development of skills through conceptualization and problem solving.

On a related topic, Fredinel F. Banaag, UAP, Master of Architecture presented *"The Cross-Pollination from the Arts to Architecture – an Approach for Newer Expression."* His paper presented the transparent area between architecture and the arts and how they can result into hybrid architecture. He also presented case studies on the fusion of arts into architecture.

Roldan, is currently the Program Coordinator of B.S. Architecture in Divine Word College of Calapan (DWCC), Or. Mindoro. She earned her MS in Architecture, Major in Architectural Education at MIT, and PhD in Educational Management at DWCC. Incidentally, Roldan was a student of Banaag.

Banaag obtained his Bachelor of Science in Architecture from the Mapua Institute of Technology and his Master of Architecture from the Royal Melbourne Institute of Technology-University. Arch. Banaag has taught at many educational institutions in the Philippines, Vietnam and Mongolia in the architecture, interior design, industrial design, graphic design and multi-media arts programs.

With the pervading climate conditions and transcending culture, Alwin S. Calig, UAP and Reynaldo O. Nacional, UAP authored "Kurob: The Indigenous Architecture of the "Pulang-Agtas" of the Bicol Region." It surmises the design and construction philosophies as rendered by the Indigenous Peoples (IPs) of Lidong, Polangui, Albay literally coined the "Pulang-Agtas" as the demographic observatory unit. Highlight of the presentation was the video animation showing how the indigenous house was constructed.

Tejuco's second paper, *"Commemorating the Heroes of the Second World War through a Heritage Tourism Trail"* proposes study a trail, which will map out the relevant sites to strengthen and promote the national tribute to all those who have died. Through this, the lessons and legacy of the unsung heroes of the Japanese occupation will remain alive.

Panel reviewers of the two-day event included architects in the academe John Joseph T. Fernandez (UST) and Lorelei DC de Viana (Far Eastern University-Institute of Architecture and Fine Arts); and UAP fellows Norma I. Alarcon, and Tobias A. Bonaobra, (UST); and Jocelyn T. Lutap (UST and PUP), Maria Elena E. Cayanan (Perpetual Help), Chona E. Ponce (National University), and Gloria B. Teodoro (Mapua Institute of Technology).

UAP holds CPD Seminars on Best Practices and Research

On 21 July 2016, the Republic Act (RA) 10912 or the Continuing Professional Development (CPD) Act of 2016 was released and took effect 16 August of the same year. To ensure continued skills upgrading, all licensed Filipino professionals are required to secure CPD points for the renewal of their licenses.

Architects are required to secure a minimum of 45 CPD points per renewal cycle or every three years.It is further broken down under five (5) major areas: Design, Practice, Building Science, Environmental and Sustainability, and Others.

The Professional Regulatory Board of Architecture (PrBOA) – CPD Council for Architecture is a three-man committee which is tasked to regulate and approve credit units for CPD providers and professionals. It is led by PRBOA Member Hon. Robert M. Mirafuente, FUAP as Chairman, together with Chona E. Ponce, FUAP and Lorelei DC De Viana, UAP. Ponce is representing UAP while De Vianais for the Council of Deans and Heads of Architectural Schools of the Philippines (CODHASP).

A register and licensed architect, architectural firm, educational institutionor professional group may apply as CPD provider. The United Architects of the Philippines (UAP), through the Professional Development Commission (PDC), is one of the leading accredited CPD providers. In response, UAP-PDC has launched various CPD-accredited activities, which include the UAP Piso Fair and week-long CPD seminars on Hospital Design and Environmental Planning.

Affordable CPD points

Launched in May 2018, the UAP Piso Fair is a series of CPD seminars,which runs every Saturday afternoon at the Teatro Arkitekto of the UAP National Headquarters.Each UAP PDC-CPD activity has been awarded at least three (3) CPD points. Participants are only charged one peso for one credit unit or a total of P3 per seminar. Topics have been diverse, which includes research-based presentations and success stories of best practices.

Some of the Piso Fair seminar topics focused on architectural heritage. by Rino Fernandez, FUAP; Gerard Lico, FUAP; and Ronnie Yumang, FUAP. On the other hand, Hernando Advento, FUAP and Edison Ching Padilla, FUAP, shared their knowledge and expertise on design-build services and fire safety, respectively.

Upcoming topics next fiscal year will include building utilities, mixed-use development, and the Accessibility Law.

Specializations on hospital and city planning

UAP-PDC also holds annual activities like the Hospital Planning and Design: A Foundation Course for Architects, a week-long seminar accredited also by the Department of Health (DOH).Already on its 10th year, this CPD lecture has always been well-attended because of its resource persons and hospital tours. Facilitator-speakers include its founders Prosperidad Luis, FUAP; Elda Shina S. Samoza, UAP; and Rebecca M. Peñafiel, UAP.In FY 2017-2018, two hospital seminars were held: in Baguio City on 14-18 August 2017 and in Bacolod City on 18-22 June 2018. At least 50 participants registered in both activities. Next fiscal year, two seminars are being planned in Manila and Davao City.

For aspiring urban planners, UAP collaborated with the Philippine Institute of Environmental Planners (PIEP) to organize two sets of Environmental Planning Capability Building Seminar. It was also a five-day seminar held on 8-12 January 2018 and 22-26 April 2018. It was followed by a two-day coaching session on 18-19 May 2018. Close to half of the 100 participants passed the June 2018 Environmental Planning Licensure Exams.

With the need to assist the general membership, the incoming administration of National President Benjamin K. Panganiban, Jr. FUAP, is expected to continue the UAP Piso Fair and the other week-long seminars. The PDC is headed by Virgilio Andres, Jr., FUAP, Executive Director together with Ma. Cecilia S. Viray and Felicisimo A. Tejuco, Jr., chair and co-chair, respectively.

9th World Urban Forum: Promoting Cities for All

FELICISIMO A. TEJUCO, JR., UAP, PIEP

After renewing its global commitment on urban sustainability during the UN Habitat III in Quito, Ecuador, the ninth session of the World Urban Forum (WUF) was held last 7-13 February 2018 in Kuala Lumpur, Malaysia. More than 20,000 participants from 165 nations gathered for WUF 9: "Cities 2030, Cities for All." The WUF has been organized and run by the United Nations (UN) Human Settlements Programme. The First WUF was held in Nairobi Kenya in 2002. Abu Dhabi, United Arab Emirates will hold the next WUF in 2020.



WUF 9 is a follow-up to the commitment of nations to address global challenges which include poverty, illiteracy, and environmental degradation. The five-day eventwas a platform for cultural exchange, partnership, and exhibitions. Philippine presenters include city mayors, who include, Hon. Mary Jane C. Ortega of San Fernando, La Union and the League of Cities; and Hon. Stephany Uy Tan of Catbalogan, Leyte.



A universal public concern is walkability. During one of the sessions, several successful stories on pedestrianization strategies in Asia and Europe were presented.

For any urban problem, it was reasserted that defining the problem through research and data analysis is expected. In one of the presented case studies, the Jianghan district, the identified concerns were accessibility, proximity, and safety were assessed by the researchers. The summary findings include gaps in inclusivity, accessibility and safety. To help in the implementation of the New Urban Agenda (UA), the community has decided to design "of high quality, more accessible, unique and diverse" public spaces.



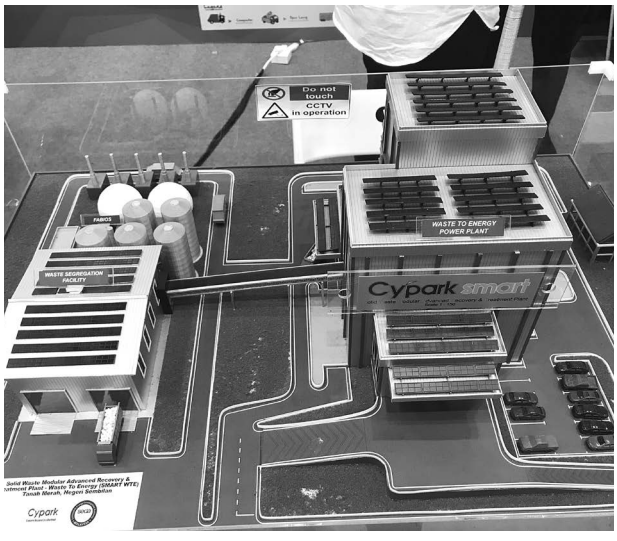
In another discussion, three case studies were presented: the Wuhan East Lake Greenway, the Block by Block Project in Jiaghian Distrct, and the Block by Block Project in Eryalou Community. Wuhan is considered the largest city lake in Asia with 102 kilometers of man-made greenway. The area has been redeveloped as a public attraction

using bikeways and linear parks. In 2017, the area has recorded more than 10 million tourist arrivals with daily average of 800,000 visitors.

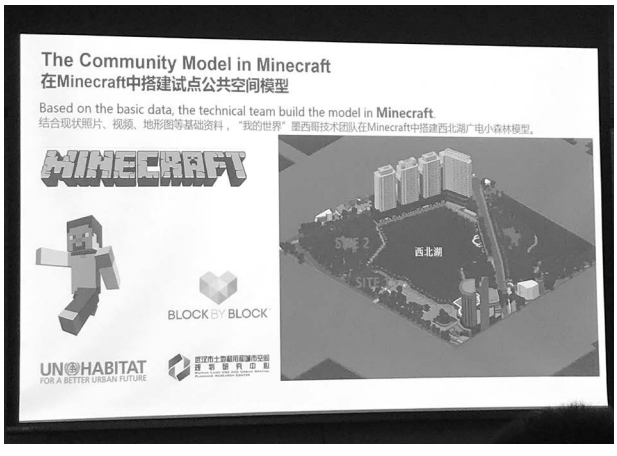
Interestingly, aside from the usual community participatory strategies, an unusual tool of the study was the use of Minecraft technology. It involved around 120 stakeholders from different social classes, which included children, students and professionals. Through the workshop, 21 design models were producedusing the Minecraft software. Several sites were initially identified which included playgrounds, lake landscape, and natural elements. From these, the community identified its priority developments which included walkways and signages, benches, lighting, water features, and gardens.

Aside from the seminars, exhibits and expositions were also held within the conference venue. Different countries, private institutions, and non-government organizations showcased innovations and best practices in planning and design.

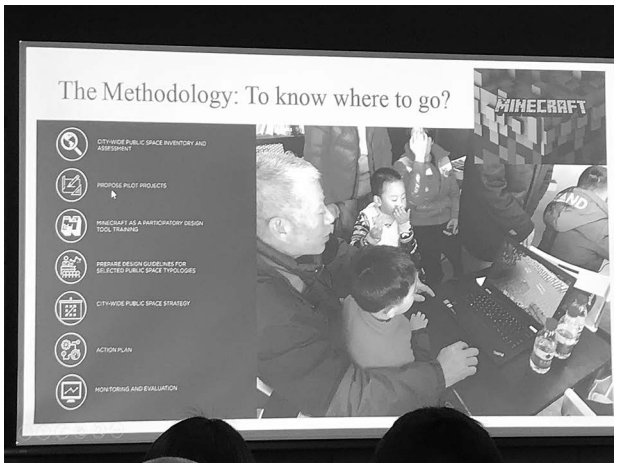
Filipino architects and planners also joined the event which included Chona E. Ponce of the UAP-CPD Council of Architecture and dean of the College of Architecture of National University; Sylvia Clemente, Sepideh Ahmadzadeh, Ruth Marie I. Equipaje, and Felicisimo A. Tejuco, Jr., faculty members of the UST College of Architecture.

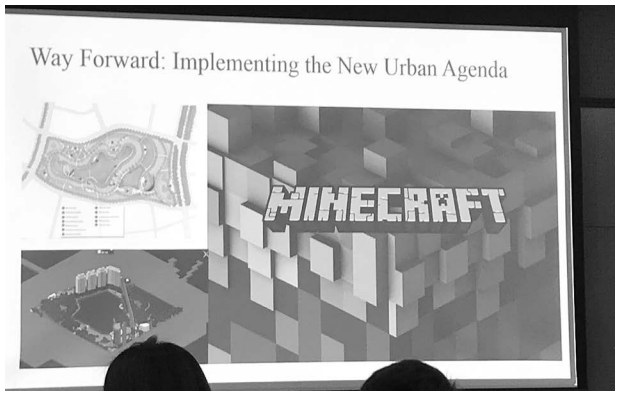


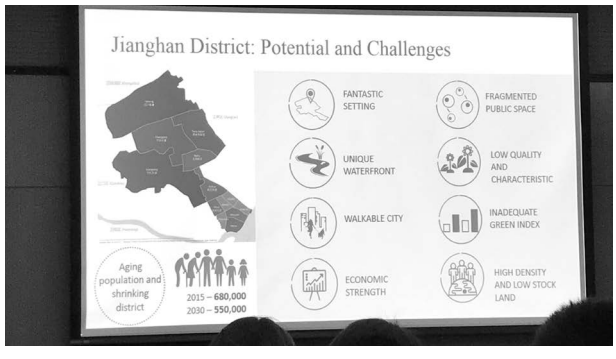












Discovering the Beauty of Russia

FELICISIMO A. TEJUCO, JR., UAP, PIEP

Vladimir Putin. Princess Anastasia. The Avenger's Black Widow. Pop culture has symbolized or stereotyped this Soviet state as land of tsars or czars, spies, and Socialism.

The name Russia is derived from Rus, a medieval state known to be East Slavs. Hence Russia is also known as Land of Rus or Russian Land. History traces its origin as a collection of cities that grew to be an empire. Believed to have started from Scandiavian ancestry, the kingdom of Greek Orthodoxy grew under Vladimir I. Although invaders like the Mongols threatened the expansion of Russia, other cities like Tver and Moscow were slowly developing as well as the rise of leaders like Ivan the Great and eventually his grandson, Ivan the Terrible. Eventually, politics was significant in the nation's direction as the leadership changed: the Romanov dynasty (1613-1825), Peter the Great (1682-1725), and Catherine the Great (1762-1796). And eventually, the Soviet Era.

Presently, the country of Russia is considered the largest in terms of land area with 17 million square kilometers or almost twice the size of the United States or Canada. It also has 11 time zones, ranging from coordinated universal time (UTC)+02:00 to UTC+12:00. It also placed ninth as most densely populated country, totaling to 146 million residents.

With its rich history, Russia takes pride of its natural and built treasures, including 23 World Heritage Sites of the United Nations Educational, Scientific and Cultural Organization (UNESCO). Most notable of them include the Moscow Kremlin and Kremlin Square.

In 2018, the Socialist land hosted the Fédération Internationale de Football Association (FIFA)World Cup. Although Russia only made it to the semifinals, losing to Croatia, the Socialist motherland was expected to earn $6.1B (or equivalent to Php313B). Tourist arrivals have been recorded to 5 million, including 2.9 million foreigners. Incidentally, France won the championship against Crotia.



On July to August 2018, faculty and student of the University of Santo Tomas participated in an architectural tour of three Russian cities: Moscow, Tver, and St. Petersburg.

The City of Moscow is a significant political, economic, and cultural center of Russia and Eastern Europe. Its name may have been derived from the word meu or "wetland" or "marsh." Situated on the Moskva River, Moscow is the seat of power, a megacity and among the most expensive in the world, and home to heritage and modern architecture like Saint Basil's Cathedral and the Ostankino Tower.

The Cathedral of Vasily the Blessed: Moscow's iconic flames

The Moscow Kremlin or the Kremlin is a fortified complex in the heart of Moscow. At its center is the Cathedral Square, which is surrounded by six buildings, including three cathedrals. It also enjoys a view of the Alexander Garden to the west, Saint Basil's Cathedral and Red Square to the east, and the Moskva River to the south.

The Saint Basil's Cathedral or Cathedral of the Protection of Most Holy Theotokos on the Moat is one of the most iconic symbols of Russia.It was named after Vasily or Basil the Blessed, who

predicted the fire of 1547, which consumed a third of Moscow. Incidentally, the Byzantine church is shaped like onions or flames reaching for the skies. The original building started as Trinity Church, eventually becoming Trinity Cathedral. It was popularly known as "Jerusalem" and frequently visited every Palm Sunday.

Architects of Saint Basil's Cathedral were believed to be Barma and Postik Yakolev. Built between 1555 to 1561 under Ivan the Terrible, the original plan of the building had a main church surrounded by eight churches. Its core and four churches along the major compass points have octagonal plans. The remaining diagonal churches are cuboid. After Basil was canonized in 1588, a tenth church was added to house his relics, and the entire structure was named after him. Its side churches are arranged in perfect symmetry but the central church was deliberately offset to the west to accommodate its larger apse.

Colors of the church were also believed to be white to match the white stones of Kremlim, while the domes were to be gold. It was during the late 17th century that it became splashes of vibrant color. Presumably, it was believed to be a representation of the Kingdom of Heaven, from the Book of Revelations. Unconfirmed stories also told that Ivan the Great had the architects blinded so that the architectural wonder cannot be replicated.

At present, restoration works of the cathedral are estimated at $US14M, which includes reinforcements of its walls and the pile of brightly colored onion-shaped domes.

Nilov Monastery: For the faithful and feline lovers

The City of Tver was former capital located along the Volga and Tvretsa Rivers. The city began as woodlands before developing into one of the richest Russian states. It survived numerous invasions, devastating fires and political struggles. Currently,



Tverhas a population of more than 400,000 and is a major region and industrial center.

A known pilgrimage area and tourist destination is the Nilov Monastery, located in Stolobny Island.





Founded by Saint Nilus in 1597, it was believed that the hermit was protected by the Blessed Mother against robbers and the devil who threatened to harm him. The monastery complex is of Neoclassical architecture and has endured the Second World War.

After the War, the use of the monastery changed. It became a hospital, camp for minor and orphans, retirement home and even a hostel, until it reverted back as monastery in 195. Current amenities include an apiary or bee yard and special hotel. Feline lovers will also appreciate its advocacy to care for stray cats.

St. Petersburg: Cultural center of Russia

The State Hermitage Museum is home to the largest collection of artifacts dating back to the Egyptians. It occupies a large complex of six heritage structures, which includes the Winter Palace, former residence of Russian monarchs. It was Catherine the Great, a known art enthusiast who began the acquisition



starting with paintings. Eventually, the collection outgrew the building.

Among the famous artworks include the “Return of the Prodigal Son” by Rembrandt, “Apostles Peter and Paul” by El Greko, and “Boulevard Montmartre in Paris”by Pissarro. Interestingly, a good number of cats also reside in the museum grounds, and have been considered tourist attractions.

Another known destination is the Church of the Savior on Spilled Blood, which is predominantly Baroque and Neoclassical bearing similarities from St. Basil’s Cathedral and Yaroslavl churches. It was designed by Alfred Alexandrovich. In 1883, the building was constructed in honor of the assassinated ruler Alexander II. Although his heir Alexander III initiated this, it was Nicholas who completed it in 1907.

The church boasts of the second largest mosaic, spreading an area of 7,500 square meters. The intricate mosaics of Biblical context were meticulously laid out by the designers Viktor Vasnetsov, Mikhail Nesterov, and Mikhail Vrubel. After the Russian Revolution, the church suffered under the hands of thieves and looters. In July 1970, the Saint Isaacs Cathedal has taken responsibility in the management of the Church. It now functions as a museum and one of the main tourist attractions of St. Petersburg.

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Through the years, its subjects and themes have been diverse written by contributors from various disciplines. Articles and essays published have dealt with Building Science, Design, Professional Practice, Sustainability, Teaching and Pedagogy, Urbanism and other related fields. At present, the UAP Journal is under the Committee on Publications of the Professional Development Commission (PDC).

All materials submitted to the UAP Journal are subject to peer review. Articles submitted will be evaluated based on the following criteria:

1. the work contributes to the body of architectural knowledge;
2. the intentions are well articulated and their achievements are substantiated through intellectual and academic rigor;
3. outcomes are identified and there is evidence of scholarly reflection on their significance; and
4. the work has not been published or is in the process of being refereed for another publication.

Registration of Interest

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ISSN 2094-5140