

INFORMAL SETTLEMENTS IN METRO-MANILA: RELOCATION COMMUNITY PROGRAM AND DESIGN

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We certify that we have read this Doctorate Project and that, in our opinion, it is satisfactory in scope and quality in partial fulfillment for the degree of Doctor of Architecture in the School of Architecture, University of Hawai'i at Manoa.

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Abstract

This paper investigates the development of informal settlements in Metro Manila, Philippines within the context of urbanization, globalization and their effects. A relocation strategy for a portion of urban settlers has recently been initiated and planned by administrators and policy makers. Relocation site builders have the potential tasks of creating not just homes and communities, but improved livelihood, lifestyle and societal roles for a marginalized population. Along with appropriate site and housing design, a community program is rationalized through interrelated benefits of improved economic, environmental and societal conditions. For a proposed relocation community in Quezon City, the study focuses on creating collective goals and conveying associated values to new homeowners and an important segment of civil society.

INTRODUCTION: Filipino Adaptation and Migration

The first wave of foreign influence to the Philippines began with the arrival of Ferdinand Magellan in 1521. Through 300 years of Spanish colonialism, 50 years of American interventionism and today's period of globalization, the people of the Philippines have had to become one of the most adaptable. Today, the Filipino culture has evolved into a hybrid of Eastern and Western value systems. Having embraced capitalism, the people desire foreign products and styles of living while still trying to preserve a strong pride for country and what makes them uniquely Filipino. Plagued by previous bouts of government instability, continuing battles with poverty and its symptoms, and ever-worsening natural disasters, the country aims to increase efforts to tackle innate problems and adjust to newfound challenges. In doing so, the country is better able to present a positive image to the rest of the world and advance the national identity. The Philippines was once referred to as the poor man of Asia. Today, it has slowly caught up economically to other developing nations in the region by adapting to the requirements of globalization, the global economy and the global workplace.

During the last few decades, opportunities to earn higher income and live a better life abroad have fueled the rise of emigration. This has allowed Filipinos to be well represented in populations abroad. Whether as eventual immigrants or temporary overseas workers, Filipinos seek to improve their lives as well as the lives of families back home. At the cost of separation from loved ones, Filipinos migrate and adapt to new places where a period of higher income allows them to send remittances home, someday to travel back home or relocate their families abroad. Being English speakers and having adapted to many cultural infusions in the past, perhaps Filipinos are the most adaptable global migrants.

Before migration abroad, the initial wave of migration for Filipinos started with the movement into the cities, specifically the mega city that now make up Metropolitan Manila, better known as Metro Manila. Traditional agricultural economies and rural lifestyles transitioned into industrial ones during post colonization. With globalization, Metro Manila increasingly developed into both a

national and regional trading center, a magnet for the country's industrialists, entrepreneurs, and educators. Labor migrants from the country's provinces hoping to make a better living in Metro Manila and/or abroad also joined the movement into the cities. In the last two decades, post-Marcos, continued economic growth in the country's capital region has resulted in modernization of its urban landscape and the accompanying lifestyle improvements for the privileged elite in Metro Manila. The economic model of capitalism and contemporary culture of consumerism has been widely accepted. More commonplace today, many privileged Filipinos work abroad to earn higher incomes and are increasingly employment in multinational firms using Metro Manila as an outsource service center. The various products of globalization for Metro Manila have not come without costs, however. A substantial number of city dwellers live in substandard housing in informal settlements, slum areas. This population contributes as service laborers and, particularly, to the large informal economy of Metro Manila. In mass, they are not to be undervalued in their contribution to the cities' economic growth.

This paper takes the position the economic benefits of industrialization have not been shared equally by Metro Manila's inhabitants. Development of a highly urbanized landscape costs all residents adequate public spaces, a clean urban environment, and satisfactory housing. This paper discusses the urbanization of Metro Manila and examines its effects as it relates to options in affordable housing and community living for lower-income residents, specifically those living in informal settlements. Past and current government strategies to reduce informal settlements are discussed. Affordable housing strategies and solutions are proposed in the framework of a relocation community within Metro Manila's border. A slated relocation community in Quezon City serves as a community planning and design study. The overall issue is the ongoing issue of informal settlements and what to do with them, a concern in globalizing cities and amplified in Metro Manila, one of the largest megacities in one of the most populated places on earth.

METHODOLOGY

The methodology of this research study into affordable housing solutions for Metro Manila relies on information gathered through various sources, a predominant of which will be current published papers from various Non Government Organizations, academic journals, Philippine government agencies, e.g. Metro Manila Development Authority (MMDA), Housing and Urban Development and Coordinating Council (HUDCC), and National Housing Authority (NHA), in addition to selected case studies of public housing practices in the region. In order to prepare for a regional specific project study in Metro Manila, a semester of preparatory research into the development of Metro Manila as an urban center and its current housing strategies was performed during phase I of doctoral study. Phase II was planned as an observation and participation period with a firm in Metro Manila. Habitat for Humanity Philippines (HFHP), with headquarters in Makati, Metro Manila, was chosen for its direct involvement in building relocation communities. The internship period helped to further evaluate the current model of relocation plans for Metro Manila's informal settlers from the perspective of a non-profit, design-build organization. A planned relocation community to be developed by HFHP was chosen during the internship period to be the design project. In Phase III, a site design of a four-acre community was developed in plans, sections, and other various drawings to support the spatial and social programs adapted for the particular location. The three-phase thesis study combines academic research, internship experience, and applied community and architectural design as documented in this paper.

METRO MANILA: Development of Hyper-Urban Cities

Metro Manila as Hub of Urban Migration

In the Philippines, urban migration is concentrated towards its largest cities in Metro Manila. It is the heart of urban life, politics, art, commerce, and religion. It always has been. The City of Manila, itself, was the historical center of trade, having served as Spanish and American colonial capitals. Manila Bay served as the main port of trade and entry. It was also the geographic center of military campaigns. Thus, any infrastructure developments during the colonial periods favored the central Luzon region, particularly Manila. The geographic basin became a region where water, people, power and urban life congregated. As the country's current capital, Manila is today one of 17 cities forming Metro Manila or the National Capital Region (NCR). The largest and best universities are located in Metro Manila. The bulk of the nation's economy is derived from the major commercial industries, shopping malls, financial hubs, and international seaports and airports all located in a land area just shy of 250 square miles. This is equal in area to the city-state of Singapore or about half the area of Honolulu County of Hawaii. With the smallest land area of the country's seventeen regions, Metro Manila's vital role in educating and creating industrial labor for an entire nation helped transform the Philippines from its predominantly agrarian past and rural lifestyles. The resulting labor migration into Metro Manila has led to remarkable population shifts for the Philippines.

Figure 1: Map of the Philippines



Metro Manila, indicated in red along Manila Bay, is the Philippines' urban and economic core.

Population Density

Metro Manila is entirely urban. According to a United Nations estimate, Metro Manila is the 15th most populated urban area in the world with more than 11.5 million people. If adjacent provinces are included, the Greater Metro Manila population count is over 20 million residents.¹ Quezon city is the most populated city in Metro Manila with over 2.5 million residents. However, the most densely populated (highest residents per area) city is Manila. With a population of 41,014 residents per square kilometer, the capital city of the Philippines is also the most densely populated city in the world according to a 2006 survey.²

¹ "Demographic World Urban Areas: Population & Projections: Edition 6.1", <http://www.demographia.com/db-worldua.pdf> (accessed 10/09/2010).

² "World's Densest Cities", *Forbes Website*, http://www.forbes.com/2006/12/20/worlds-most-congested-cities-biz-energy-cx_rm_1221congested_slide_2.html?thisSpeed=15000 (accessed 10/10/2010)

Characteristics of Hyper Urbanization

Urbanization is a process of economic growth and social change. In the context of developing countries like the Philippines, the process also signifies nation-building and strategic growth as an emerging participant in a global society.³ Even with an increasing status as a region for outsourcing services, Metro Manila lacks a true global identity. The city region is most notorious for its traffic congestions and poverty stricken urban landscape. Not much different from other megacities, urbanization has produced growth problems related to supporting larger and denser populations and its associated requirements for city infrastructure, housing stock, and various other resources. Metro Manila's extreme urban population growth in the past several decades required equivalent capital investments, which its cities did not match. In the Philippines, the population shift from rural to urban areas has come with much social sacrifice to be discussed in subsequent sections. These include unmet demands in spatial, infrastructure and housing developments.

The land composition of Metro Manila has not been modified since it was formed into the National Capital Region in 1975.⁴ This means the total land area has not increased during a period (since 1975) when the population more than doubled. Among the various studies describing the symptoms of population growth over the years, a Philippine government report back in 1999 summarized the major issues accurately. The report identified four of the most critical challenges facing the city: deterioration of traffic conditions, lack of appropriate flood controls, solid waste management, along with the interconnected issues in land use, housing, and urban poverty.⁵ These are the main features of hyper urbanization for Metro Manila. Accordingly, hyper urbanization is defined in this paper as the process of rapid growth in an urban population with infrastructure and housing availabilities not able to support the well being of the people, place and environment of the city.

³ Aprodicio Laquain, *The City in Nation-Building*. Manila: University of the Philippines, 1966, 3.

⁴ Philippine Institute for Development Studies, *Governance and Urban Development: Case Study of Metro Manila*, Discussion Paper Series No. 99-03, 1999, 9.

⁵ Philippine Institute for Development Studies, *Governance and Urban Development: Case Study of Metro Manila*, Discussion Paper Series No. 99-03, 1999, 20-26.

Metro Manila in the Age of Globalization

The Philippines is generally categorized as a newly industrialized country (NIC). A socioeconomic classification, NICs play the role as outsourcing partners to the developed nations. Through the benefits of a low-cost labor pool, the Philippines produce goods and services previously made and performed in the United States and other western nations prior to the age of globalization and free trade. Primarily within the last two decades, the Philippines' economic development has increased substantially through international trade of goods and services. Today, the country is one of the recognized leaders in call center services within the outsourced industries. As one of the two official languages of the country, English has benefitted residents looking to work for foreign corporations with human resource needs in Metro Manila as well as Filipinos looking to fulfill the need for human resources abroad. The Philippines is famously known for its millions of residents living abroad as maids, caregivers, nurses and entertainers among other professions.

Filipinos abroad are an important factor in Metro Manila's economic growth. Overseas Contract Workers (OCWs) also known as Overseas Foreign Workers (OFWs) regularly send earnings back to families in Metro Manila and the other regions of the Philippines as cash remittances to serve as gifts, tuition payments, real estate investments, etc. When Filipinos return as *Balikbayans* (Filipinos temporarily or permanently living abroad), they effectively support the economy by spending their earnings from abroad in the Philippine marketplace. Without the remittances from OCWs and *Balikbayans*, the Philippines would lose about ten percent of the country's GDP⁶ If the over 8.7 million overseas Filipinos returned to the Philippines, the total population of the Philippines would be expected to increase by about 11%.⁷ Filipinos play a vital role as laborers well suited in the age of globalization.

⁶ "Remittances and the Philippines' Economy: the Elephant in the Room", World Bank Blog site, <http://blogs.worldbank.org/eastasiapacific/remittances-and-the-philippines-economy-the-elephant-in-the-room> (accessed 10/10/2010).

⁷ "Stock Estimate of Overseas Filipinos As of December 2007", Philippine Overseas Employment Administration. <http://www.poea.gov.ph/stats/stats2007.pdf>. (Retrieved 10/10/2010).

Urban Dwelling in Informal Settlements

A familiar result of globalization, concentrated workforce migration into cities such as Metro Manila has had a profound effect in the capital region's socioeconomics of housing. As property values increase when city centers develop office buildings and shopping malls, low-income residents find it more difficult to afford rent, let alone purchase, property. In certain areas of Metro Manila, central Makati and Ortigas, land prices skyrocketed 6 and 8-fold, respectively, between 1987 and 1996.⁸ The economic pressure of finding a home close to urban centers limits the choices of many to informal housing settlements. Those who settle there are better located to be able to make a living based on the urban economic system but have to adapt to the living situation shaped by that same system.

Metro Manila is a microcosm of the global population of urban dwellers. It is estimated one in three urban dwellers in the world live in insufficient housing with minimal resources.⁹ The informal settlements are defined by their lack of basic public services and infrastructure and house the landless and those who cannot afford the rental prices outside the settlements.¹¹ Overcrowding, poor sanitation, health and social services plague the resulting disorganized communities. The unplanned informal settlements add stress to the city's infrastructure, negatively impact its surrounding communities and become a hazardous living situation for countless of residents above all.

What has been described as the "the poverty of urbanization"¹² exists today in developing countries much in the same way it existed in cities of developed nations during their periods of industrialization and urbanization. The circumstances of the urban poor today continue to remain

⁸ Gavin Shatkin, "Planning to Forget: Informal Settlements as 'Forgotten Places' in Globalising Metro Manila", *Urban Studies*, vol. 41 no. 12 (2004): 2474.

⁹ SF Rashid. "Strategies to Reduce Exclusion Among Populations Living in Urban Slum Settlements in Bangladesh", *Journal of Health and Popular Nutrition*. Issue 4 (2009): 574-86.
<http://www.ncbi.nlm.nih.gov/pubmed/19761090> (Accessed 10/10/2010).

¹¹ M. Lindfield and F. Steinberg. "Technical Assistance to the Republic of the Philippines for Preparing the Metro Manila Urban Services for the Poor Project", Asian Development Bank (2005), 1.

¹² Lou Antolihao. *Culture of Improvisation: Informal Settlements and Slum Upgrading in a Metro Manila Locality*. Quezon City: Institute of Philippine Culture (Ateneo de Manila University, 2004), 1.

the same. People deal with poverty through a “culture of improvisation”.¹³ People manage life with little space and material wealth. The urban poor deal with their limited resources by living in overcrowded housing units and sharing a habitation characterized by physical closeness, intimate spaces, and compact social spaces mandated by those conditions.¹⁴ These spatial conditions influences social behaviors, accordingly.

Communal relationships and collective affiliations become more important in informal settlements as both private and public spaces are at a premium. Sharing of spaces becomes a common strategy. As a result, it becomes advantageous to know neighbors whom you share a common bathroom. In crowded pathways and alleys, sometimes the only form of public space in informal communities, social interaction is more common and necessary. Living in crime-ridden areas with limited police access, residents’ wellbeing and safety relies on social relationships even more. Communication and close relationships with your neighbors affords informal settlers greater access to community dialogue, including status updates of neighborhood crime. For Filipino urban dwellers, particularly those living in informal settlements, information gathering through social networking and interaction becomes valuable. In these dense communities, they adapt to a more communal lifestyle in compact, resource-limited spaces.

Concerns and Consequences of Informal Settlements

Hyper Urbanization has changed the urbanscape of Metro Manila from largely open spaces in the 1970s to one dominated by extensive growth in financial and commercial districts clustered along major roadways with vast areas of low-rise residential zones in between.¹⁵ Population growth has necessitated new or wider roadways and, built in the past decade, elevated rail systems to move the commuters. During the past decades, public parks and green spaces shrank or were redeveloped as land became too valuable. Today, there are few open spaces left in Metro Manila. The University of Philippines campus at Diliman is one of the few urban areas where limits in

¹³ Antolihao, 2004, 11.

¹⁴ Antolihao, 2004, 16.

¹⁵ Philippine Institute for Development Studies, *Governance and Urban Development: Case Study of Metro Manila*, Discussion Paper Series No. 99-03, 1999, 25.

development keep the landscape close to the original scenes of the 1970s. However, even on campus, there is a growing presence of informal settlers.

Many informal settlements in Metro Manila reside on public land, by riverbanks and railroad tracks, some in parks, playgrounds and cemeteries.¹⁶ Because informal slum settlements are often located in the most undesirable, infrastructure-less areas of the city, the people who live there are the most susceptible to the effects of flooding and other natural disasters. Informal settlers reside wherever they can find a means of living in the city, even if not safe. Often, the working poor will live and work on sidewalks, by dangerous roadways and train tracks. Unplanned informal settlements can worsen traffic problems, untreated waste pollution on waterways and block sewage lines because of deficient infrastructure. Moreover, makeshift houses of informal settlements are a potential fire hazard. Close and dense living situations can lead to rapid spread of highly communicable diseases prevalent in the region. Without proper walkways and street lighting at night, informal settlements have higher risks of criminal activities. Informal settlements are dangerous places to live, for a variety of reasons.

With widespread pockets of informal settlements having existed for years, some for decades, it can be argued city planners and administrators have largely ignored informal settlements. Infrastructure developments in these urban spaces have been insufficient or nonexistent until there becomes a need to do so when surrounding areas are to be commercially redeveloped, in which case, informal settlements are demolished. In other cases, it takes natural or unexpected disasters such as mudslides and fires to observe concerns and substantial actions by planners and policy-makers. Informal settlements as “forgotten places” by city planners are described as a result of globalization and the neo-liberalization agendas accepted by the Philippines since the

¹⁶ M. Lindfield and F. Steinberg. “Technical Assistance to the Republic of the Philippines for Preparing the Metro Manila Urban Services for the Poor Project”, Asian Development Bank (2005), 1.

¹⁶ Philippine Institute for Development Studies, *Governance and Urban Development: Case Study of Metro Manila*, Discussion Paper Series No. 99-03, 1999, 26.

1980's.¹⁷ While most governments and international aid organizations view free trade, the major driver of globalization, as having led to improved general economic conditions in developing nations like the Philippines, the social inequality and “shelter crisis” observed in globalizing cities like Metro Manila is growing.¹⁸ Like marginalized populations in societies all over the world, Metro Manila's urban poor require government as well as non-governmental advocates to help organize and advance their causes, thereby representing them as valuable members and contributors in society. The following chapters describe the key players and their strategies to reduce urban poverty through the reduction of informal settlements and increase in legal tenure of homes.

¹⁷ Gavin Shatkin, “Planning to Forget: Informal Settlements as ‘Forgotten Places’ in Globalising Metro Manila”, *Urban Studies*, vol. 41 no. 12 (2004): 2473-2475.

¹⁸ Gavin Shatkin, “Planning to Forget: Informal Settlements as ‘Forgotten Places’ in Globalising Metro Manila”, *Urban Studies*, vol. 41 no. 12 (2004): 2470.

INFORMAL SETTLEMENTS: Ongoing Government Programs

Scale and Scope

One of the more recent studies in informal settlements completed in 2009 by the Metro Manila Inter-Agency Committee on Informal Settlers (MMIAC)¹⁹ describes the current condition of informal settlers with a few central figures. Twenty-one percent (544,609 of 2.6 million) of families in Metro Manila are informal settlers. Of those families, 13% or approximately 75,000 families live in areas considered unsafe or hazardous. Furthermore, the MMIAC, established in 2007 to find housing solutions for informal settlers, estimates 23,000 public housing units per year need to be constructed over a 10-year time frame to relocate about half of the informal settlement population. At the current production rate of 7,767 units per year, the government would have to increase its output by 3 fold to meet public housing requirements as recommended by the MMIAC.²⁰ Viewed in basic numerical data, the clear and present dilemma facing Metro Manila is an overwhelming one. In addition and related to planning for the appropriate relocation policy, the minimal cost estimates of the study must be met if the goals of the public housing sector and the government is to have a chance to be met.

In the framework of a 10-year resettlement program declared in 2009, the public housing sector estimate a P3.23 billion (or US\$72 million, P45: \$1 exchange rate) per year cost estimate. These costs in land acquisition and subsidized housing programs are estimated to equate to about P200,000 (or \$4,445) per family relocated from Metro Manila to its periphery and adjacent regions on planned resettlement sites.²¹ The construction costs of the housing units at the resettlement sites are variable and depend on the type of public mass housing to be built. Mass housing is classified into three divisions (Figure 2) by the inter-agency Housing and Urban Development Coordinating Council (HUDCC) based on the anticipated cost of a housing unit. A unit costing

¹⁹ The MMIAC is a government-mandated coalition of representatives from the Metro Manila Development Authority, Housing and Urban Development and Coordinating Council, National Housing Authority, Presidential Commission on Urban Poor, Commission on Human Rights, Office of the Undersecretary for Religious Urban, Caritas Manila, and various urban poor offices in Metro Manila.

²⁰ "10 years, P30-B needed for relocation of Metro squatters," (2009), <http://www.abs-cbnnews.com/nation/10/18/09/10-years-p10-b-needed-relocation-05-m-squatters> (accessed 10/15/2010).

²¹ "10 years, P30-B needed for relocation of Metro squatters," (2009), <http://www.abs-cbnnews.com/nation/10/18/09/10-years-p10-b-needed-relocation-05-m-squatters> (accessed 10/15/2010).

P400,000 (\$9,000) or less is defined as 'socialized housing'; P401,000 to P750,000 (\$17,000) is 'economic housing'; and P751,000 to P3 million (\$67,000) is labeled 'low cost housing'.²² Another housing option mentioned in the MMIAC study, medium rise housing will cost between P800,000 to P1 million (\$17,778 to \$22,222) per unit. Not provided in this government relocation study, there are likely indirect costs burdened by those relocating that are immeasurable. Costs of new housewares, additional transportation requirements, and lost economic productivity and other possible expenses associated with looking for new work are a few of the additional costs for those transplanted. These financial costs are in addition to the incalculable social and cultural burdens of a relocation strategy.

Figure 2: Mass Housing Types

Classification	Maximum Cost
<ul style="list-style-type: none"> • Socialized • Economic • Low-cost 	<ul style="list-style-type: none"> • \$9000 • \$17,000 • \$67,000

HUDCC lists 3 levels of government-subsidized housing.

In total, the total government budget for the initiated 2009 10-year relocation program is upwards of P30 billion (US\$670 million). With the estimated GDP in 2009 for the entire country near US\$160 billion, the total budget burden of the relocation program equates to less than 0.5% of the country's GDP in one year. As compared to the total economic aid received by the country in 2007, \$562 million (Official Development Assistance) is nearly equivalent to the total cost estimates of the 10-year relocation program. To place the government program's budget in context of the country's yearly production and foreign aid value shows how the cost estimates are highly achievable yet miniscule in terms of government participation. The financial burden of a relocation strategy is a shared one. In current public-private partnership efforts, the other

²² Ben Arnold O. De Vera. "Govt to review mass housing policy," (2010), <http://www.manilatimes.net/index.php/business-columns/28734-govt-to-review-mass-housing-policy> (accessed 10/15/2010).

participants include Non-governmental Organizations (NGO), Non-profit Organizations (NPO) and the like, along with corporations and individuals from the private sector.

Further examining the itemized costs associated in relocating and housing the informal settlers of Metro Manila reveal various social issues in the government's strategy to greatly reduce urban slum settlements. For example, the government is relying on a large-scale resettlement site such as Calauan town in Laguna province to build homes for an estimated population of up to 10,000 families when completed. Usually more than an hour commute into Metro Manila, the provincial location can accommodate a large resettlement population with available and relatively inexpensive real estate. But, as past provincial resettlement projects has previously established, the migration back to Metro Manila is inevitable for many because of greater job and income opportunities in the country's urban center of trade and industry. Family breadwinners will likely choose a work opportunity back in Metro Manila. This could also result in greater familial separation at relocation sites, a similar experience seen in the country's paradigm of global labor migration.

Another issue is fully funding these resettlement projects beyond declaring the program's budgetary goals and cost estimates. The 10-year government goal is to arrange public-private partnerships to finance about 50,000 housing units, about 10% of total housing required. The private investors are currently relying on generous tax incentives to fund and invest in mass housing projects. However, despite the high number of potential investor applicants for these projects, the number of actual completed projects has been falling short of the initial target. Additionally, with a category of mass urban housing units at the price level between P751,000 to P3 (\$16,667 to \$66,667) million, there is credible debate whether this particular category of housing should be considered low cost and eligible for the tax incentives.²³

²³ Ben Arnold O. De Vera. "Govt to review mass housing policy," (2010), <http://www.manilatimes.net/index.php/business-columns/28734-govt-to-review-mass-housing-policy> (accessed 10/15/2010)

In June 2010, Benigno Aquino III became the 15th president of the Philippines. Like many administrations before him, promises of poverty alleviation for the country's poorest citizens were part of his political platform. Still early in his term, he has increased the portion of government funding for the relocation of Metro Manila's informal settlers to P38 billion (US\$860 million) over a 5-year span starting in 2011.²⁴ Although this is a significant yearly increase, over 2-fold, from the previous 10-year budget, it is still far short of the substantial costs estimated to properly house a majority of the informal settlement population. At the very minimum, a relocation budget of P200,000 (or \$4,445) per family would involve raising closer to \$2.5 billion for the estimated 545,000 families living in informal settlements. And even with the appropriate government budget met, the private-public housing development strategy would have to successfully implement the relocation plans. Relocation, a planned mix of city and rural resettlement, is not a one-size-fit-all for all the informal sites in the cities.

In its most current form today, the government strategy is shifting away from rural relocation and becoming more accepting to in-city relocation. The Aquino administration is closely looking at relocation strategies that might be most costly, but might to be more acceptable to those affected. The 5-year goal is to initially focus on housing close to 100,000 families living in so called "danger areas", low lying and prone to flooding and natural disasters brought about by climate change.²⁵ Described as the most significant policy change, the administration will also emphasize relocation to on-site or in-city locations. When housing projects near the original informal settlement site is not an option, then relocation options away from the urban core will be have to be planned. Still early in development, whether this pronounced government relocation policy would eventually be reflected in practice remains to be seen.

²⁴ David Dizon, "Govt allots P38B to relocate informal settlers," (2011), <http://www.abs-cbnnews.com/nation/metro-manila/10/24/11/govt-allots-p38b-relocate-informal-settlers> (accessed 11/15/2011)

²⁵ TJ Burgonio, "Govt to give in-city housing to over 100,000 urban poor families," (2011), <http://newsinfo.inquirer.net/86099/gov%E2%80%99t-to-give-in-city-housing-to-over-100000-urban-poor-families> (accessed 11/15/2011)

An in-city plan to house about a fifth of the informal settlement population does seem to be a recommitment to cater to the ongoing demands of the residents affected most by relocation. Informal settlers prefer to be close to their original home and work locations. Moreover, some families will be financially compensated to choose relocation. In describing the planned relocation of the North Triangle informal settlers, the Chairman of the National Anti-Poverty Commission, Joel Rocamora, states there will be payments made to settlers who will be organized to sign a relocation contract agreement.²⁶ They will be reimbursed for relocation and transportation costs in addition to a housing improvement budget. And most vital, the goal is to offer settlers preferred options for an in-city relocation site. Still, this refinement of the government relocation strategy does face greater costs in the eventual need to purchase urban real estate.

Acquiring appropriate relocation sites in Metro Manila within budget will be the one of the greatest concerns. Based on recent data, residential real estate prices in the Philippines are back on the rise after a recent dip the past couple of years and moving to near record levels.²⁷ The government, via an increase in taxes, and property investors both benefit from rising levels in the real estate market. The overall favorable economic conditions present in the country should respect sustainable growth trends and not allow an artificial bubble and its associated complications. As importantly, the economic gains of the country should be experienced by most of citizens. Shared economic development is most sustainable in the long-term.

The Bigger Picture

While attempting to improve symptoms of urban poverty, the government program's resettlement plans do not effectively address the interrelated socioeconomic and political issues resulting in inadequate housing for Metro Manila. The regional and urban planning problems are systemic in nature and predominantly stem from decades of mismanagement from the highest levels of

²⁶ David Dizon, "Govt allots P38B to relocate informal settlers," (2011), <http://www.abs-cbnnews.com/nation/metro-manila/10/24/11/govt-allots-p38b-relocate-informal-settlers> (accessed 11/15/2011)

²⁷ Global Property Guide "Price rises resume in the Philippine housing market", <http://www.globalpropertyguide.com/Asia/Philippines/Price-History> (accessed 11/18/11)

government, which allowed the massive scales of informal housing communities to continue to grow without an effective solution. The economic development strategy of administrations since Marcos have relied on “macroeconomic stability and sustained growth of income” within widely accepted neo-liberalism policies to alleviate poverty.²⁸ Thus, the strategy effectively transfers much of the function of poverty alleviation from the central government as public housing creators to the private sector as improvers of housing market conditions through efficient production and financing. With decentralization of administration and smaller budgets, the local government, specifically the elected officials at the city and barangay levels, are today responsible for planning and executing any efforts in local poverty alleviation including the relocation of informal settlers from hazardous areas or areas of state-sponsored infrastructure developments. Concerning private market participation, it seems unlikely developers will choose to focus their products towards the bottom income spectrum of the housing market with slimmer profit margins. The firms who do, however, will find a fairly sizable and underrepresented market. The private business sector, including many international firms and developers, have benefitted greatly from the economic and real estate growth of Metro Manila in large part due to low cost labor pools of the region. As the largest benefitters of globalization and hyper-urbanization policies and most able to financially contribute towards poverty alleviation, they should.

Given the public mistrust of politics and politicians in the Philippines, the more limited and decentralized role of government today in urban housing is intentional and could be beneficial. The more facilitative role of central governments in the building of relocation communities will strengthen the NGOs and other non-profits as participatory decision-makers and builders of not just housing units but social programs within these communities. In addition, proposed solutions in urban housing developments, including relocation when necessary, can evolve and be disseminated not only at the state but also the community level. Community-based organizations (CBOs), as grassroots representatives of informal communities, should be viewed by the state as collaborators in the effort of shelter delivery, not as a threat to potential private and economic

²⁸ Gavin Shatkin, “Planning to Forget: Informal Settlements as ‘Forgotten Places’ in Globalising Metro Manila”, *Urban Studies*, vol. 41 no. 12 (2004): 2479.

development.²⁹ This new paradigm is evident in other slum upgrading and housing programs in progress around South East Asia. Thailand's urban renewal process encourages community organizations and their local networks to be the primary planners and builders whether on-site housing improvements or relocation strategies are selected.³⁰ In a case study of Hanoi, Vietnam, planning and design of public spaces in poor housing communities is described as best performed with collaboration and support of the residents, the people who will have the most at stake and will eventually define their local community.³¹ Collaboration between public entities, federal and city governments, cooperating and collaborating with local communities and their advocates is an essential first step in the process of planning and decision making to improve urban housing settlements.

The current government strategy of relocation when necessary to substantially decrease informal settlement communities along the Pasig River and its estuaries relies on a public-private partnership. The government supplies the relocation site along with subsidized financing options for informal settlers. The informal settlers have little influence on the decision making process, the timeline for relocation and where to relocate including the design of their new housing community. The for-profit sectors are relied upon to supply the housing markets with new developments above the socialized and economic housing levels. Thus, the government, itself, will still have to be involved in the production of new housing communities for the lower housing strata. This is the reality on the ground as observed in the largest relocation site today in Calauan, Laguna. The state, through the National Housing Authority and its divisions, along with corporate sponsorships (ABS-CBN and PureFoods), and with a minority role, and NGO (Habitat for Humanity Philippines) have partnered in the development, planning and building of homes, for a community of 10,000 thousand families.

²⁹ Gavin Shatkin, "Community-Based Organizations, Local Politics and Shelter Delivery in Metro Manila", *Kasarinlan: Philippine Journal of Third World Studies*, vol. 14 no. 3 (1999): 36.

³⁰ Somsook Boonyabancha. "Baan Mankong: going to scale with 'slum' and squatter upgrading in Thailand". *Environment & Urbanization*, Vol. 17 No. 1 (2005): 21

³¹ Nguyen Thi Hien Nghiem Thi Thuy. "Community Spaces in Low-Income Housing Areas – A Case Study of Hanoi, Vietnam". *Globalization Research Center – University of Hawaii*. (2007)

The Calauan relocation site is a study of labor migration outside Metro Manila's industrial capital. Informal settlers provide an essential source of low-cost labor in Metro Manila, a driver of economic growth in globalizing cities. Urban emigration, due to relocation of informal settlers, performed in large scale should be analyzed in the context of sustainable economic growth. Part of the study should take into evaluation the income disparity in Metro Manila's population. Globalization and its promises of economic growth are supposed to lead to higher standards of living. However, if high economic growth as measure by GDP is achieved by sacrificing income for a substantial section of the population widening income and social equality, resettlement plans and increased housing stocks will never lead to a complete and sustainable solution.

Over the decades of urban housing policy development, the Philippine government has gradually added more comprehensive programs in socialized housing. For example, the policy framework of the National Housing Authority now includes language to provide not just shelter, but basic site services and facilities, long-term financing, access to primary road and transportation services.³² Reducing income disparity and increasing standards of living for all income strata through socioeconomic policy reforms and proper enforcement of the policies move toward a long-term solution. One of the policies is to include as many as possible, small farmers to informal settlers, in capital asset accumulation, the component required to secure loans for their businesses. One of the best long-term investments and capital accumulation vehicles is to own your own home. Housing tenure is a direct pathway to enter capital investment markets. Extending housing affordability to all follows the same societal context as increasing labor rights, the minimum wage, and educational opportunities for those disenfranchised. Socialized and low-cost housing options are an empowerment tool for many in Metro Manila.

³² Enriga, Marguez, Velmonte 1996, 17.

DESIGNERS & BUILDERS for the Poor

Makeshift Homes

During a 2010 riot in North Triangle area of Quezon City, urban squatters protested the demolition of their homes in informal settlements. The city government managed the land and planned to develop the area, home to 3,000 squatter families, into Metro Manila's second financial center.³³ The families being relocated to Rodriguez, Rizal are required to move from homes they have resided in for years. For many, a good percentage of income and time was invested in building their makeshift homes. It is understandable why they are reluctant to move and relocate. For the thousands of squatter families, the makeshift homes represent more than shelters. It's the place and community they identify as home.

Even with the strong identification of home, the informal settlements are still predominantly inadequate forms of shelter. The communities lack basic infrastructure, plumbing for every unit and legal connection to the city's electricity grid. Makeshift homes express the general lack of facilities, resources and facilitate conditions of poverty.³⁴ The basic shelters are built from scrap wood and metal, found and reused objects, and the most economical building materials available. The relative affordability of the makeshift shelters does make it attainable to Metro Manila's poorest population. The makeshift shelters allow the basic necessities of life, a place to sleep and as much sense of security and privacy possible in an unplanned dense urban community. However limited the function of a makeshift shelter, they provide the minimum of protection from the natural elements. When typhoon season arrives, families rely on these shelters to keep them safe from the threat of high winds and heavy rains. During the hottest months of the year, the shelters are expected to serve some protection from the heat of the tropics. Nevertheless, the reality of makeshift housing does not present the ideal concept for housing as home and shelter. Makeshift houses are inadequately designed for the poorest population of Metro Manila.

Unofficial Builders

³³ Jerry Botial. "Squatters shut down EDSA," (2010), <http://www.philstar.com/Article.aspx?articleid=614779> (accessed 10/19/2010)

³⁴ Rebullida, Endriga, and Santos 1999, 11.

Without a proper background in architecture or engineering, the builders of informal settlers are people who possess little practical construction experience. Many of the designers and builders of makeshift homes are unlicensed and unqualified to build safe, reliable shelters. They do not involve the city planners or trained experts in building housing units and are thus uncertified by the city. Some informal settlement areas are potentially hazardous locations near rivers and estuaries, next to busy railroads and roadways. No licensed professional contractor would build on these lots. There are no design and construction codes to follow in building informal settlement housing. Building homes is the job of trained professionals working in accordance with city building guidelines.

Acceptable Builders

There have been a number of approaches to housing the urban poor in past decades. The government efforts to build public housing have its origins prior and during the Marcos administration. Natural disasters, major fires, and the increasing flow of new migrants into Metro Manila hampered any significant efforts. Lessons learned during the Marcos years expanded the relocation and slum upgrading strategies to incorporate housing loans such as the Community Mortgage Program (CMP) and other government financial initiatives and developer incentives.³⁵ Subsequent administrations to Marcos experimented with several approaches in relocation and resettlement, site and service improvements, production of housing units, and housing finance for land tenure.³⁶ Today, the main strategies are government-backed housing finance and relocation of informal settlements. Slum upgrading and land banking, World Bank shelter strategies during the 1970's and 80's, are no longer the primary options.³⁷ When relocation communities are planned within their border, city administrators act as facilitators, not builders. The governments are still the primary planners and drivers of housing units for the poor. However, private foundations and other non-profit entities have taken a larger role in the process of building homes for socialized housing. Government housing policies today assign itself the role of "enabler", not

³⁵ Rebullida, Endriga, and Santos 1999, 41.

³⁶ Rebullida, Endriga, and Santos 1999, 39.

³⁷ Gavin Shatkin, "Planning to Forget: Informal Settlements as 'Forgotten Places' in Globalising Metro Manila", *Urban Studies*, vol. 41 no. 12 (2004): 2476.

“provider”. Facilitating affordable housing options to the lower income population is the guiding principle.³⁹

Because a major element of the government strategy to reduce informal settlements in Manila is new housing creation, there is an opportunity to properly design the future homes and communities of Metro Manila’s lower income population. Various stakeholders in government administration are actively participating in general urban development to improve basic infrastructure and vehicular traffic in the cities’ most congested and polluted areas. Today, the government division of Metro Manila Development Authority (MMDA) is the lead organization for the government’s development programs concerning relocation and resettlement, housing and infrastructure improvements, waste management, and disaster prevention. The Housing and Urban Development Coordinating Council (HUDCC) more specifically directs the government strategies in affordable and sustainable housing settlements working with several attached agencies including the National Housing Authority (NHA), National Home Mortgage Finance Corporation (NHMFC), and other finance and regulatory units. The government resources to deal with the challenges of urban and housing development is not lacking in bureaucracy, policy and planning.

The National Urban Development and Housing Framework (NUDHF) for 2009 to 2016 is an updated report on Metro Manila’s urban issues and problems and includes specific recommendations on poverty alleviation, housing affordability and delivery, and sustainable communities. The report states the vision of urban development in the Philippines involves a significant improvement in the quality of life for its residents. This equates to more parks, promenades, and other pedestrian-oriented spaces. Within the scale of housing and community, the long-term goal is to increase affordability levels of homes by increasing employment and wages in the long-term and housing credit and financial resources in the short-term. Another specific strategy includes incorporation of employment access in local land use plans. In other

³⁹ Rebullida, Endriga, and Santos 1999, 37.

words, mix-use communities are to be considered and integrated, if possible, in new social housing developments. In the scale of the urban planning, improvements in housing affordability and delivery are expected to improve poverty alleviation overall. Not to be overlooked, the planning report also asserts the need of individual neighborhoods and entire cities to be functionally sustainable in the context of global climate change.⁴⁰

The overall mission and goals of NUDHF are admirable but lack a detailed pathway for housing affordability and delivery and sustainable communities, as loosely defined. The policies are still too broad and do not discuss more specific strategies on local-based employment access in planned mix-use communities, especially for those in informal sectors. Delivery of low-income housing has shifted to private markets and NGOs. But, there is still no mention of how community organizations, specifically informal settlers, will have a role in deciding their own future. If the vision is more urban parks and public spaces, the planning paper should identify potential areas for redevelopment including what type of conversion. If Metro Manila is to be more environmentally sustainable, there should be specific planning focused on bioremediation of not just its waterways but development of wildlife sanctuaries and open land preservation along the cities periphery. Lastly, advocates and lobbying groups for this vision needs to be empowered to successfully execute them in a market-based development system.

In supplementing the government role in urban housing for the poor, local and international NGOs have become the major advocates, sponsorship organizers, and builders. Habitat for Humanity Philippines and Gawad Kalinga are two of the largest and most active NGOs involved in promoting land acquisition and new housing production in various relocation sites in Metro Manila's periphery. Urban Poor Associates (UPA) are focused in community organization and education related to housing rights, serving families facing eviction. Various other non-profits such as United Architects of the Philippines and My Shelter Foundation play minor roles,

⁴⁰ Housing and Urban Development Coordinating Council and Philippine Institute for Development Studies, *National Urban Development and Housing Framework (NUDHF 2009-2016)*, 2009.

increasing social awareness and public engagement in urban housing issues and community development.

Habitat for Humanity Philippines (HFHP) focuses its mission on housing the bottom thirty percent (30%) of wage earners in the country. Their principal methods of home building are based primarily on voluntarism fulfilled through the “sweat equity” requirements for each housing partner or client in their housing credit program, which enables the housing costs to maintain an affordable level. The organization also develops cost and regional-appropriate building technology, concrete interlocking blocks and other pre-fabricated building materials, to reduce the costs of their single homes, row houses and higher-density projects. More than just home construction, HFHP also partners with micro-financing institutions, community groups, and local government agencies to financially enable delivery of homes to partner families, the recipient of the homes. In more recent years, HFHP has worked with community leaders to encourage development of social programs for income generation and entrepreneurship skills building within housing settlements. However, most of these programs are pilot studies and have not been scaled to comprehensive use. HFHP nonetheless exemplifies a housing cooperative, whereby shared home building, skill building and financing for each partner family is integrated into a social development package to benefit the entire community. Habitat for Humanity Philippines has become a significant partner in housing the urban poor throughout the Philippines.

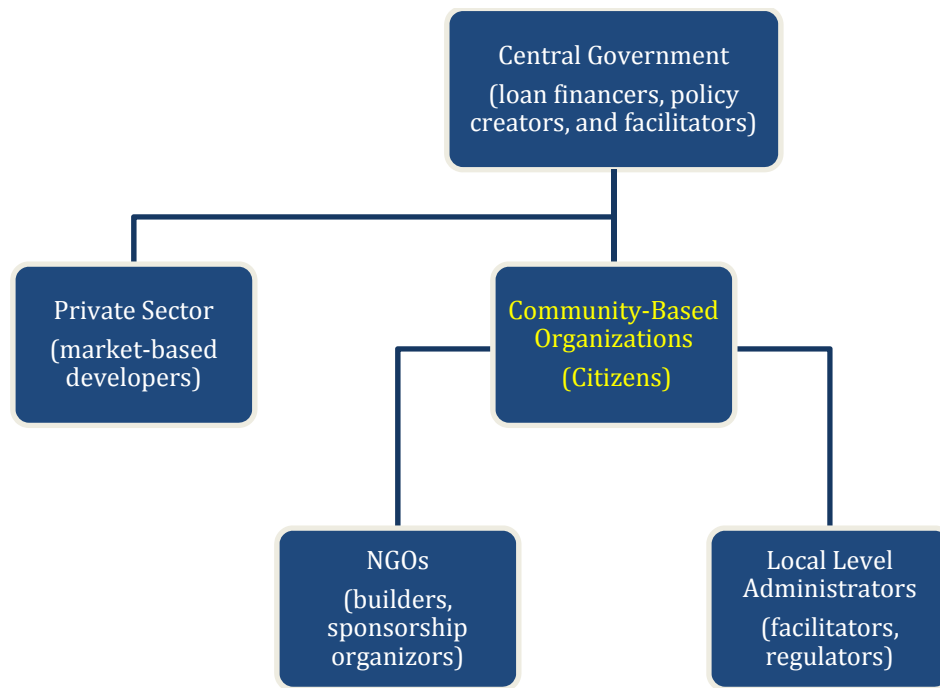
Started in 2006, Gawad Kalinga (GK) is a recent entrant as builder of communities and social programs for the poor. In GK communities, the land and labor of building detached single-family units are both donated which makes the homes highly affordable. The walls and roof of the standard Gawad Kalinga home are commonly composed of the most inexpensive and dependable building materials in the Philippines, concrete masonry units and corrugated aluminum. The site plans of Gawad Kalinga communities aim to reflect their ideas of communal living and uniformity, housing units of similar size and style arranged in linear rows. The site program might include a community center, shared workspaces, and recreational facilities. The

overall mission of the organization is the empowerment of the poor through home ownership rights. The community residents are given a hundred year lease on their property and employment programs administered by Gawad Kalinga are usually available on-site to improve the community's capacity to sustain themselves financially. Similar to program trends of other NGOs today, Gawad Kainga's progressive views on poverty alleviation gives most value to a comprehensive and holistic approach of housing Metro Manila's poor. [Interview with Sonny Perez, GK volunteer]⁴¹

Individual and corporate sponsorship of NGO's is a growing and significant trend in Metro Manila's relocation programs. The individuals are from the country's most influential ruling families operating through their corporate foundations. ABS-CBN Foundation's Gina Lopez is well known for her leadership and sponsorship efforts on the Pasig River cleanup projects and the Calauan relocation site while Fernando Zobel de Ayala leads corporate sponsorship efforts through his personal involvement with Habitat for Humanity Philippines. Along with numerous corporate sponsors, these individuals and their corporations donate volunteer time and effort as well as money in relocation and city rehabilitation programs. Multi-media advertisements, television, billboards, and websites showcase the partnerships between corporations and NGO's. Both benefit from the advertisement and event campaigns in terms of the positive publicity generated. Among the local population, awareness, volunteerism and activism for ongoing urban cleanup projects tend to rise along with the increased activities of NGOs working in partnership with individual and corporate sponsors.

⁴¹ Telephone interview with Sonny Perez in Honolulu, (October 2010)

Figure 3: Key Players in Housing the Urban Poor



The central government has decentralized the process of and minimized their role in building low-income urban housing. Private developers who wish to take advantage of subsidized loans for lower income levels are more independent. NGOs and city (or barangay) administrators partner to develop acquired land, plan and build homes and communities. Community-Based Organizations representing the residents affected are the supposed intermediary, although their role is often diminished in the process.

The MASSES

Essential Facts:

- 60% of Filipinos live in urban areas today. At a rate of over 3% yearly, the estimate is 80% by 2050.⁴²
- About 20% of urban households live under the poverty income line of under \$2 per day.⁴³ The average household size ranges between 5 to 7 with 2-3 members employed. The household income per month is between US\$245 to \$368.⁴⁴
- Today, there are close to 526 informal settlements in Metro Manila housing 2.6 million or around 1/5 of the population.⁴⁵
- A majority of jobs in “depressed settlements” are based on self-employment with half the residents working in the informal sector.⁴⁶
- Unofficial labor usually consists of domestic help, tricycle drivers, construction, handicrafts, factory labor and vending while formal jobs include government, factory, and shipping positions.⁴⁷

Defining the Masses

The Masses, as defined in this paper, include Filipinos in the lower income brackets. In terms of housing, they are the population eligible for subsidized socialized and economic housing.⁴⁹ It comprises those living in poverty and above the poverty level but without land title or tangible capital asset. They are the uneducated poor living in squatter settlements. They are also the educated class, those with a college education but do not necessarily have a white-collar job. The Masses strive to climb the socioeconomic hierarchy in a developing country with relatively few opportunities. The Masses most represent those who are able to live on the per capita income

⁴² Asian Development Bank, “Development of Poor Urban Communities Sector: Philippines,” (2008), <http://www.evd.nl/zoeken/showbouwsteen.asp?bstnum=122564> (accessed 12/5/2010)

⁴³ Asian Development Bank, “Development of Poor Urban Communities Sector: Philippines,” (2008), <http://www.evd.nl/zoeken/showbouwsteen.asp?bstnum=122564> (accessed 12/5/2010)

⁴⁴ Junio M. Ragragio. “Urban Slums Reports: The Case of Metro Manila, Philippines,” (2003), www.ucl.ac.uk/dpu-projects/Global_Report/pdfs/Manila.pdf (accessed 12/5/2010)

⁴⁵ “10 years, P30-B needed for relocation of Metro squatters,” (2009), <http://www.abs-cbnnews.com/nation/10/18/09/10-years-p10-b-needed-relocation-05-m-squatters> (accessed 10/15/2010).

⁴⁶ Junio M. Ragragio. “Urban Slums Reports: The Case of Metro Manila, Philippines,” (2003), www.ucl.ac.uk/dpu-projects/Global_Report/pdfs/Manila.pdf (accessed 12/5/2010)

⁴⁷ Junio M. Ragragio. “Urban Slums Reports: The Case of Metro Manila, Philippines,” (2003), www.ucl.ac.uk/dpu-projects/Global_Report/pdfs/Manila.pdf (accessed 12/5/2010)

⁴⁹ Community Mortgage Program eligibility also determined by affordability level or 30% of gross family income

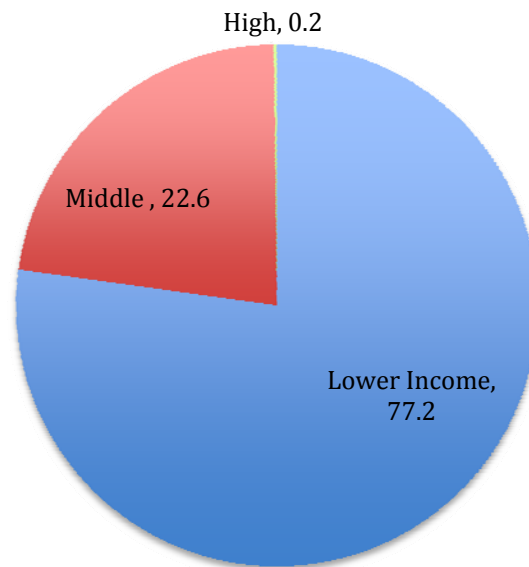
mean of \$3,546 (2009 estimate).⁵⁰ They are the majority of the population who spend nearly all they earn to acquire daily sustenance, basic shelter and clothing. In a global context, the Masses in the Philippines illustrate the challenges of a still emerging Asian nation trying to find a true middle-class as defined by western nations. Metro Manila is the epicenter of urban and population growth because it offers the Masses the highest possibility of financial prosperity. For many of the residents in Metro Manila, “urban growth” has come at a price of deteriorating living conditions and social welfare.

Even though the negative affects of urban growth affects all residents of Metro Manila, the Masses are distinctly categorized as the lower-income group because they are the vast majority of the population. Exactly how much of the population is in a lower-income group? The Philippine government does not officially classify the population in socioeconomic terms. For the purpose of policymaking, the Philippine government does have a National Statistical Coordination Board (NSCB). A recent NSCB research study examined over a decade of data and proposes the “middle-income class” to constitute only 22.6% of the Philippine population in 2006. The majority of the population, 77.2%, is considered “low-income class” while an insignificant amount, 0.2%, are in the “high-income class”. The “low-income class” was further divided into a “poor” (26.9%) and “non-poor” (50.3%) category. In the study, the “middle-income class” is also determined to significantly possess four socio-economic characteristics. The typical “middle-income class” family owns a house and lot, a stereo or washing machine, a house made of strong roof and strong wall, with the head of household or wife being employed. By the NSCB’s proposed definition of income classes, the vast majority of the Philippine population, over three quarters in 2006, is consequently categorized as “low-income class”.⁵¹ Using the class descriptions offered by NSCB, the Masses, the majority of the population, are appropriately linked with the lower income group and their socioeconomic characteristics. The bottom 77% of income earners does not own their own lot and house nor do they live in properly built houses.

⁵⁰ World Development Indicators Database, World Bank.
<http://databank.worldbank.org/ddp/home.do?Step=12&id=4&CNO=2> (accessed 10/20/2010)

⁵¹ Romulo Virola, et al. *The Pinoy Middle-Class is Shrinking: Its Impact on Income and Expenditure Patterns*, 11th National Convention on Statistics. 2010.

Figure 4: NSCB's Breakdown of "Income Classes"



Defined in this paper as the Masses, the lower-income group, poor and non-poor, is a vast majority of the country's population.

Perception of Middle-Income Group Growth

Can the middle-income group someday account for the majority of the population? The status of middle-income group growth in the Philippines isn't easy to assess. A 2010 study produced by the Asian Development Bank⁵⁵ states Asian countries like the Philippines have a growing middle-income group due to emerging consumer markets while another study based on local economic conditions describes a decline due to lower income and expenditure patterns.⁵⁶ Metro Manila is a rising regional center of foreign direct investment in South East Asia. The arrival of outsourced industries during the last decade, most notably business processing and call service centers, has benefited the highly educated workforce in terms of middle-income wages and lifestyles. As a result, numerous high-rise condominium projects in the vicinity of the call centers have been built to accommodate a rising professional pool of workers. Specific examples include condominiums

⁵⁵ Asia Development Bank. "The Rise of Asia's Middle Class." *Key Indicators for Asia and the Pacific 2010*, 41st Edition (2010): 2.

⁵⁶ Romulo Virola, et al. *The Pinoy Middle-Class is Shrinking: Its Impact on Income and Expenditure Patterns*, 11th National Convention on Statistics. 2010.

in the city of Mandaluyong, Cityland Pioneer and Gateway Residences in what is known as Cybergate City are strategically situated next to a major call center. High-rise condominiums largely built for the middle-income group has been a large portion of new housing supply in Metro Manila during the last decade. These real estate developments have come during a decade of relative economic prosperity for the Philippines.

The progress of the condominium developments in Metro Manila can generally be explained by foreign capital inflows. In the past two decades, the Philippines has been fairly competitive in attracting foreign investors and the business class looking to develop “world class” globalizing cities in Southeast Asia.⁵⁷ The capital inputs are, in part, from the growing population of Overseas Foreign Workers (OFWs) and local Filipino residents who have gained wealth during hyper urbanization. Whether as investment vehicle or second residence, the condominium units are the housing option of choice for urban dwellers not able to afford the higher capital necessary to purchase a traditional house and lot in the cities. Because of the effects of foreign capital investments in Metro Manila’s residential industry and the subsequent result on the cities’ skyline, there is a notable perception of middle-income group growth in the region. In reality, however, local capital contributes a small portion as compared to foreign direct investments. The wealth assets of high-rise condominiums and a growing social middle class are foreign-based. Thus, the perception of middle class income growth is largely a mirage, a phenomenon based significantly on foreign capital investments made by foreigners and a prosperous Filipino middle class (by Philippine standard) living permanently or working temporarily abroad.

Typical Filipino Household

In contrast to growing high-rise condominium style of living advertised in city centers, a majority of urban households still live in crowded 1 or 2 story homes or apartments. The typical Filipino household can be primarily characterized by its relatively large size. A 2008 government survey

⁵⁷ Gavin Shatkin, “The city and the bottom line: urban megaprojects and the privatization of planning in Southeast Asia,” *Environmental and Planning A* (2008): 387.

establishes the fertility rate at 3.3 children per woman.⁶⁰ The Philippines' current fertility rate is higher compared to fertility rates of its Southeast Asian neighbors although it is about half of the 6.0 fertility rate in 1973.⁶¹ Government surveys have determined education and earnings affect family size. The lower the education and wage level of women, the higher the fertility rate and household size. Fertility rates in the Philippines result in the average size of a Filipino household at 5 persons, with poorer households averaging higher numbers. In 2000, a household of 4 has a poverty incidence rate of 24% while a household of 9 burdened a poverty rate of 57%.⁶² As proven in various studies looking at indicators of poverty, there is a strong correlation between larger family size and incidence of poverty or decreased "household welfare".⁶³

Multigenerational / Multifamily Households

More common in urban areas where space is more valuable, multi-family households typically include families of siblings living on shared properties. Metro Manila would be an ideal case study of this urban dwelling experience. The properties are often split from its original lot size and shared by multiple family units. Elderly parents commonly live with their children and help raise their grandchildren. Filipino household units can include unmarried relatives and extended family that have migrated from the provinces. Because of the rise in Overseas Filipino Workers, households can have a missing parent, child or both. By sharing a communal type of living arrangement, the modern Filipino family has adapted to the high costs of urban living while continuing to sustain the traditional close family structure.

⁶⁰ Philippine Commission on Women "Population, Families and Household Statistics," (2010), <http://www.ncrfw.gov.ph/index.php/statistics-on-filipino-women/14-factsheets-on-filipino-women/69-statistics-fs-population-families-household> (accessed 11/9/2010).

⁶¹ Philippine Commission on Women, "Population, Families and Household Statistics," (2010), <http://www.ncrfw.gov.ph/index.php/statistics-on-filipino-women/14-factsheets-on-filipino-women/69-statistics-fs-population-families-household> (accessed 11/9/2010).

⁶² Orbeta 2005, 5.

⁶³ Aniceto C. Orbeta, "Poverty, Vulnerability and Family Size: Evidence from the Philippines," (2005), <http://www.adbi.org/discussion-paper/2005/07/27/1289.poverty.vulnerability.family/> (accessed 11/12/2010).

APPROPRIATE Urban Communities and Housing

Housing in Correct Context

Housing the Masses in Metro Manila is a multi-faceted challenge affected by various factors in land availability, affordability, infrastructure issues, proximity to jobs, etc. With a housing shortage in the hundreds of thousands and a 10-year government relocation strategy, there is an opportunity to redesign an urban housing landscape that reflects sustainable and communal values of the Masses. In the urban planning scale, specific studies need to be performed to locate which areas of the cities mass housing projects are most needed. These areas are just not informal settlements but areas where housing demand is high and continued and future informal settlements are likely.

Local city governments should make an effort to purchase, reclaim or reserve land to be used as relocation sites. This can be performed through a community land bank program. Land banks have been used in the United States to purchase and invest in properties as a way of stabilizing and revitalizing abandoned neighborhoods.⁶⁴ In Metro Manila, the government can initiate land bank strategies by working with NGOs and Community Based-Organizations (CBOs) to purchase informal settlements that are privately owned to initiate a pathway towards formal tenure as well as other private lands to be set aside for relocation. In at least one city in the Philippines, land banking has been a successful method to deter demolition of an existing informal settlement.⁶⁵ As shown in this example, securing a relocation site will ultimately be a matter of financial ability through political will by the government.

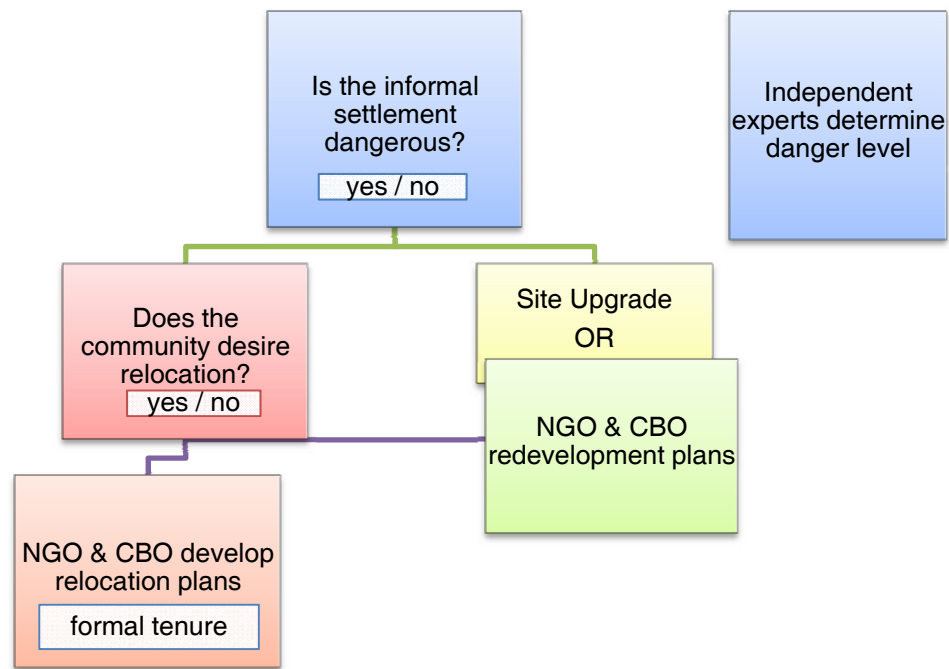
In the case when relocation is necessary, the state should start dialogue with potential residents to make sure the site fits their expectations, e.g. site is in close proximity to existing informal settlements and their labor centers, clear of environmental hazards, and basic infrastructure is available. Local administrators, as facilitators of relocation policy, should work with NGOs and CBOs to determine site-specific design, housing typology based on density requirements, and

⁶⁴ Genesee Country Land Bank, <http://www.thelandbank.org/aboutus.asp> (accessed 10/31/2011)

⁶⁵ "Iloilo City goes land banking for informal settlers", *US News Las Vegas*, <http://www.usnewsLasVegas.com/provincial/iloilo-city-goes-land-banking-for-informal-settlers/> (accessed 10/31/2011)

other planning considerations. When relocation is the only option, it should always proceed with the agreement and consultation of the residents. Forced eviction, without notification to residents, should never be an option.

Figure 5: Proposed Process Towards Participatory Relocation



In relocation scenarios due to apparent safety hazards: experts and the community both, not only administrators and city officials, should assess and provide input in the decision-making process for relocation. A pathway towards formalizing tenure of land, e.g. via community land banking, should always be considered.

There is a need to systematically examine the fundamental housing demands of the lower income market. Informal settlers have the potential, with government-backed loans, to purchase homes in designated urban relocation sites. Thus, even if relocation is necessary because of potentially extreme hazards, flooding, disease, etc., the community's input must be an integral component of the decision process. Informal settlers should have a say when and how they will be moved. The settler's own decisions about relocation will be based on the site facilities in addition to the homes themselves. The relocation site should have basic plumbing and electrical services, public and community spaces, site security and lighted pathways, basic essentials common in planned neighborhoods. At the same time, relocation sites should be within walking distance to public

transportation (busses or *jeepneys*) and be within commutable distance and time to labor centers within the cities. A mix-use community program of housing, public spaces including parks and gardens, and live/work spaces to accommodate the needs of a low-income community moves toward a user-centric design approach. Ideally, the future residents should be involved from the early phases of community design.

Relocation Site in Quezon City

A relocation site was chosen in Quezon City, Metro Manila as a design study to develop specific proposals in three areas: 1) space programming 2) site plan design and 3) housing unit design. These areas cover aspects of social, economic, and environmental sustainability issues. The following sections introduce the site and discuss specific recommendations specific to the site but transferable to similar relocation sites in scale and housing typologies.

The site is in *Barangay* Payatas of Quezon City, an area of Metro Manila characterized by rolling hills and rich vegetation. With a relatively long wet season and tropical monsoon climate, Quezon City's rains come more often than the rest of Metro Manila. About 500 meters away is La Mesa Reservoir, part of the major reservoir providing Metro Manila's main source of water. Adjacent to the site is a public high school, C. Munoz-Palma High. A few blocks away, within walking distance, is Payatas Elementary School.

Figure 6: Maps of Metro Manila and Quezon City⁶⁶ (site location marked by red dot)



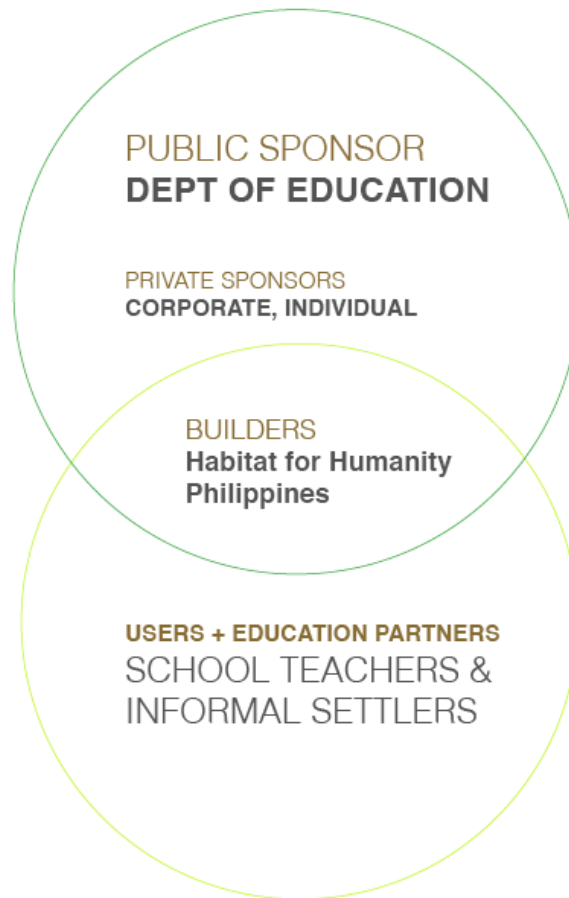
Molave Street, Barangay Payatas B, Quezon City, Philippines

The Department of Education would like to subsidize a relocation community for some of its teachers. The state has asked Habitat for Humanity Philippines (HFHP) to develop and build the housing units for a mix community of teachers and informal settlers relocating into the site. Government subsidized financing along with affordability of the housing units will enable families to own their homes in this particular relocation community. The government has donated a total land area of 1.58 hectares (3.9 acres). The site is light woodland and currently vacated. This general area of Quezon City was known to be a dumping site for residents during the urbanization of the city. A few kilometers away from the site, there is a large former dumpsite closed down because of landslides that caused a number of deaths in the past. Makeshift homes once occupied the dumpsite. Today, informal settlements are kept just outside the perimeter of the site, which is today partly used as a public park. It is hard to determine the accurate population of informal settlements living in Quezon City. But, one study estimates more than half of the city's total population are informal settlers and characterizes them as "highly organized"

⁶⁶ original image source: Wikipedia, http://en.wikipedia.org/wiki/File:Ph_locator_ncr_quezon.png (accessed 10/3/2011) and Google Maps

due to the high number of NGOs and universities in the city.⁶⁷ In fact, the premier state university, University of the Philippines at Diliman, is located in Quezon City. Even on campus, there is an official *Barangay* composed entirely of illegal settlements.

Figure 7: Project Stakeholders



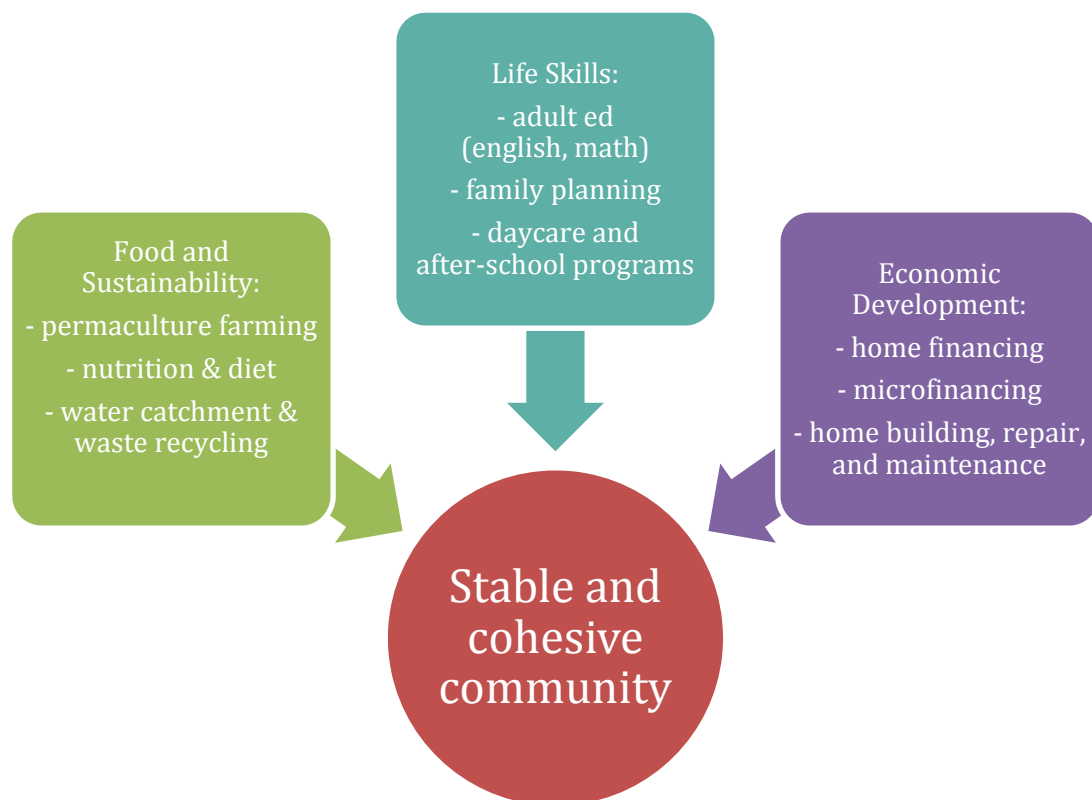
Major stakeholders are sponsors, builders and users. The Department of Education will provide the site, the bulk of the investment. The non-profit builder works with private volunteers and donors as well as home partners, the eventual users of the community.
A Teaching Community

⁶⁷ Gavin Shatkin, "Community-Based Organizations, Local Politics and Shelter Delivery in Metro Manila", *Kasarinlan: Philippine Journal of Third World Studies*, vol. 14 no. 3 (1999): 44

Teaching Village

Proposed for this site, a teaching village is a community where education programs covering life skills and sustainable systems will be developed in collaboration with residents. The teachers in residence can be hired part-time to offer the classes. Additional teachers can be hired full-time and/or can be trained and certified on-site. Informal settlers, some with background experience farming from provincial areas, can help as trainers in sustainable farming programs proposed on site. The users are, in principle, education partners. Teachers and settlers share common goals as first time homeowners, homebuilders in partnership with HFHP, and, as an official community coalition, developers of a stable relocation community.

Figure 8: Proposed Educational Program



Social programs are planned to build a relocation community that is stable and cohesive.

A new relocation community made up largely of settlers dislocated from their former community and teachers looking to start fresh are faced with the challenge of integrating into not only a

relocation community but also the larger community of Payatas, Quezon City. The largest example of a relocation community currently being established as a peri-urban town in Calauan, Laguna is designed primarily to become independent from the larger Laguna community with its own produce market, schools, commercial, healthcare, and sports facilities. With over 10,000 families, 50% estimated to be under the age of 18, expected to move into the relocation community when complete, there are already some indications the urban migrants will largely be disconnected physically, economically and socially from the surrounding established communities.⁶⁸ This is partly by design, as Calauan town will have independent facilities and amenities. However, relocation sites, in whatever scale, need to be integrated economically and socially in the cities, regions and provinces. New migrants will need jobs outside the relocation communities. Calauan town residents will need social acceptance by the Laguna community. If not, the current government estimate of a two-thirds retention rate at the newly established Calauan town will not improve and will likely get worse. In proposed relocation communities, peri-urban or urban, integration with the surrounding communities is vital.

There are several arguments for designing relocation communities to be unified and integrated into surrounding communities. Abandoned neighborhoods, most notably observed in rust belt cities in the United States, exemplifies disconnected communities which are plagued by social and environmental problems, criminal activity, environmental hazards, etc.⁶⁹ There are strong correlations between fragmented neighborhoods and weak intercommunity relationships which lead to social problems, as observed in the United states. In addition, social cohesion in urban communities are argued to have strong identities of civic and community pride, characteristics of cities with strong economic stability.⁷⁰ In theory, populations with shared identities, common goals and interests along with developed civic values tend to pool resources and support each other in times of need. The benefits of community cohesion are universal. Civic responsibility is best

⁶⁸ Personal communication with Ricky Jacinto, CEO of HFHP, 1/22/11, Calauan, Laguna, Philippines

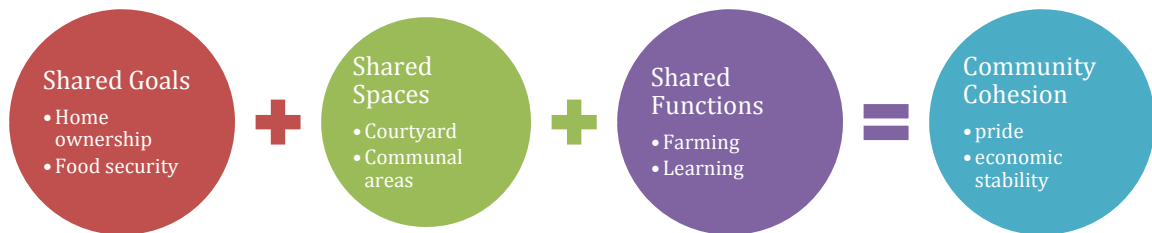
⁶⁹ Lavea Brachman, "Vacant and Abandoned Property". *Land Lines: vol 17, no. 4*, (2011)
http://www.lincolnst.edu/pubs/1057_Vacant-and-Abandoned-Property

⁷⁰ Ivan Turok, "The Connections Between Social Cohesion and City Competitiveness," *OCED Territorial Reviews: Competitive Cities in the Global Economy*, (2006)

cultivated from a comprehensive educational program built on community resource-sharing, collaborative economic development and environmental stewardship, values that also realize a form of social safety net at the community scale.

Developing community values for community empowerment are the proposed goals of a teaching community. The education program proposed is a study on the various ways a new relocation community of mix-residents coming from economic hardships can form organized and interrelated functions, from home building, resource usage, food production/distribution. The program design stresses community interaction in the classrooms, courtyard, and outdoor growing spaces. Robust collaboration among the residents by having shared goals, functions and common spaces are interrelated strategies. Ultimately, various relationships, social and environmental, are formed and play a significant role in the formation of a cohesive and sustainable relocation community.

Figure 9: Elements of Community Cohesion



As proposed, a community culture and value system that teaches and is derived from sharing of resources perpetuates a community of the same nature.

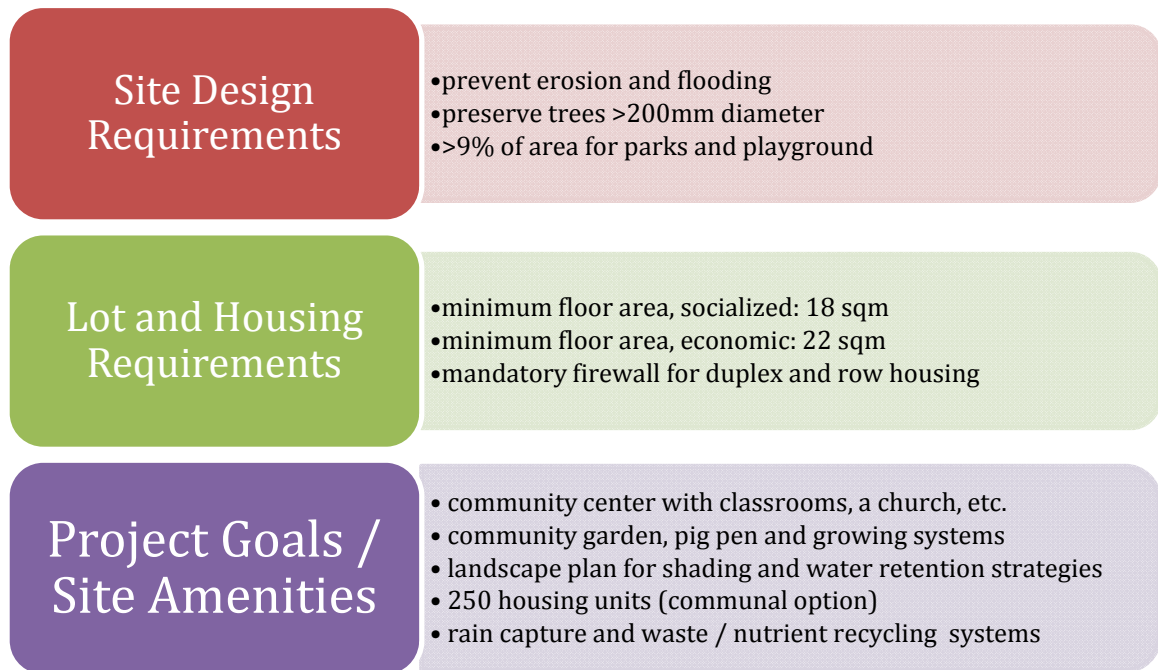
Community and Spatial Program

The following discussion and graphics present the site program and their associated spaces, buildings for the community and housing units for families. The project follows site and housing design guidelines⁷¹ set forth by the Housing and Urban Development Coordinating Council

⁷¹ Housing Regulation 'BP 220'

(HUDCC) via the Housing and Land Use Regulatory Board (HLURB) for the development of socialized (up to P400,000 or \$9,000) and economic housing (up to P750,000 or \$17,000) in the country. In addition, the author has developed community and design goals based on the concept of a teaching community for the relocation site in Quezon City.

Figure 10: Essential Design Requirements and Associated Project Goals⁷²:



The state regulates site and housing design setting minimum standards. The goals of the project go beyond these standards to develop a new design standard for a relocation community designed to instill civic and sustainable values for its residents.

Community Spaces

There are four major community buildings as shown in the site plan (Figure 11a) and more closely in the rendered plan and elevations below (Figures 11b, 12, 13a, 13b, & 13c). They are the program offices / family planning center, multifunction hall / sanctuary space, community kitchen and attached canteen, and four classroom units. The community will require offices where

⁷² Partial list. See appendix for complete design requirements and program list.

hired teachers can develop the education curriculum. Program offices are recommended for a community and program of this size. In the context of Philippine culture, the family planning center will be available for those looking for social and life counseling e.g. gaining work abroad experience, spirituality and moral guidance, in addition to advice of when to have a child. The multipurpose center is a required building in relocation sites of certain densities. This particular multipurpose center will also double as sanctuary space. The sanctuary space can be made available to the general public on the weekend for religious services, a weekly practice for many Filipinos. A large courtyard encompasses the area in front of these three buildings. The courtyard will serve as a gathering space flanked by the classrooms and the basketball court below. On the weekends, the courtyard converts into an open-air market where produce from the site can be marketed and sold. This is an opportunity for outside visitors from the larger community to interact with the relocation community and site. A central courtyard is an ideal space to host civic as well as community events. As designed, the major community program and spaces are physically linked to the courtyard, the social hub for residents.

The entrance to the community spaces as residents and visitors enter the site and park in the vehicle / tricycle lot is marked by a distinct vegetative canopy. Bamboo, renewable and sustainable, will be used as the construction material for this canopy. Growing on the trellis structure will be tomatoes and other edible climber plants, cucumbers, melons, etc. This entrance gateway serves as symbol for the food production program of the relocation site and brands it as such. Flanking the opposite side of the courtyard, below it, is an outdoor playground. Part of the social and spatial program of community cohesion and participation is a basketball court located below the plateau area of community spaces. Basketball is regarded as the most popular sport in the Philippines. And a street playground culture, especially found in lower-income neighborhoods, has evolved around this phenomenon. All activities in the community spaces engage its residents to participate and become involved in optional classes and events.

Organization and implementation of the social programs can be performed by NGOs as in the Kawad Kaliga model⁷³ (builder is also community organizer) or through collaboration with other non-profit advocates, e.g. Nutrition Center of the Philippines (NCP), Springboard Foundation, etc. These organizations develop customized programs in concert with community leaders, the representatives for the residents. Because the Quezon City relocation site has an overarching goal to build community cohesion through a varied educational program, the organizations will also work closely with the teachers and program coordinators living on site. After initial program development, with greater independence, the community can eventually run and execute the community agenda themselves.

⁷³ GK Development Model, <http://www.gk1world.com/newCommunity>

Figure 11a: Site Plan, 1:1000



Site Plan, 1:1000

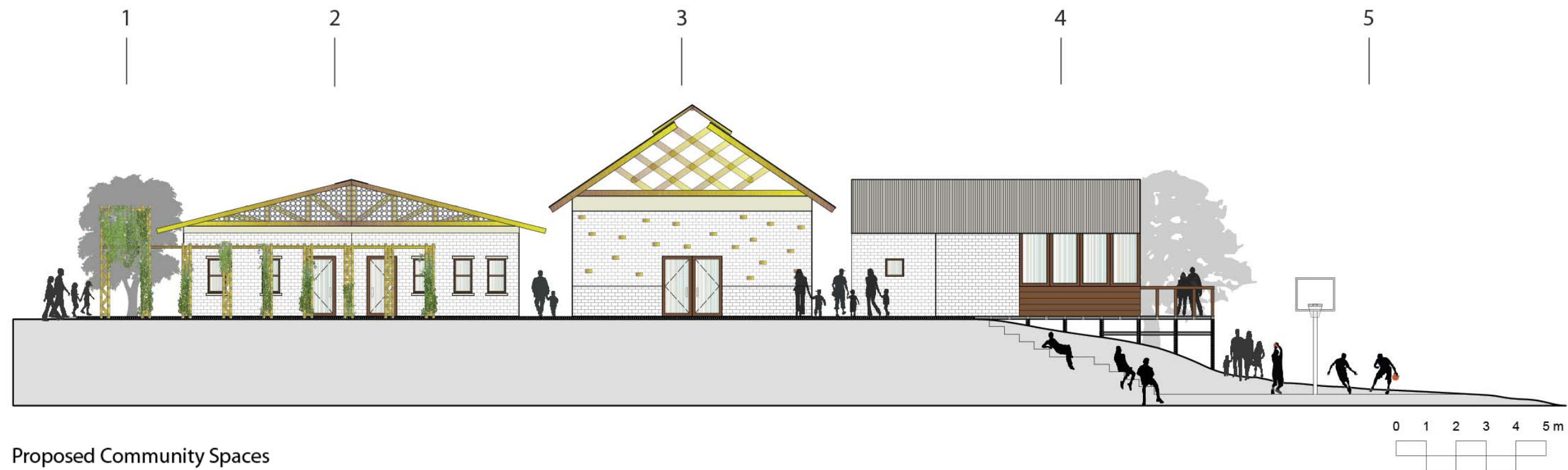
- 1 Parking
- 2 Entrance Canopy
- 3 Program Offices / Family Planning
- 4 Multifunction Hall / Sanctuary
- 5 Community Kitchen / Canteen
- 6 Basketball Court
- 7 Courtyard / Weekend Market
- 8 Classrooms
- 9 Pig Pens
- 10 Demonstration Garden
- 11 4-Linked Units
- 12 Duplex
- 13 6-unit Cluster
- 14 Single Detached

Figure 11b: Enlarged Plan, Community Spaces



- 1 Parking
- 2 Entrance Canopy
- 3 Program Offices / Family Planning
- 4 Multifunction Hall / Sanctuary
- 5 Community Kitchen / Canteen
- 6 Basketball Court
- 7 Courtyard / Weekend Market
- 8 Classrooms
- 9 Terraced Seating
- 10 Demonstration Garden

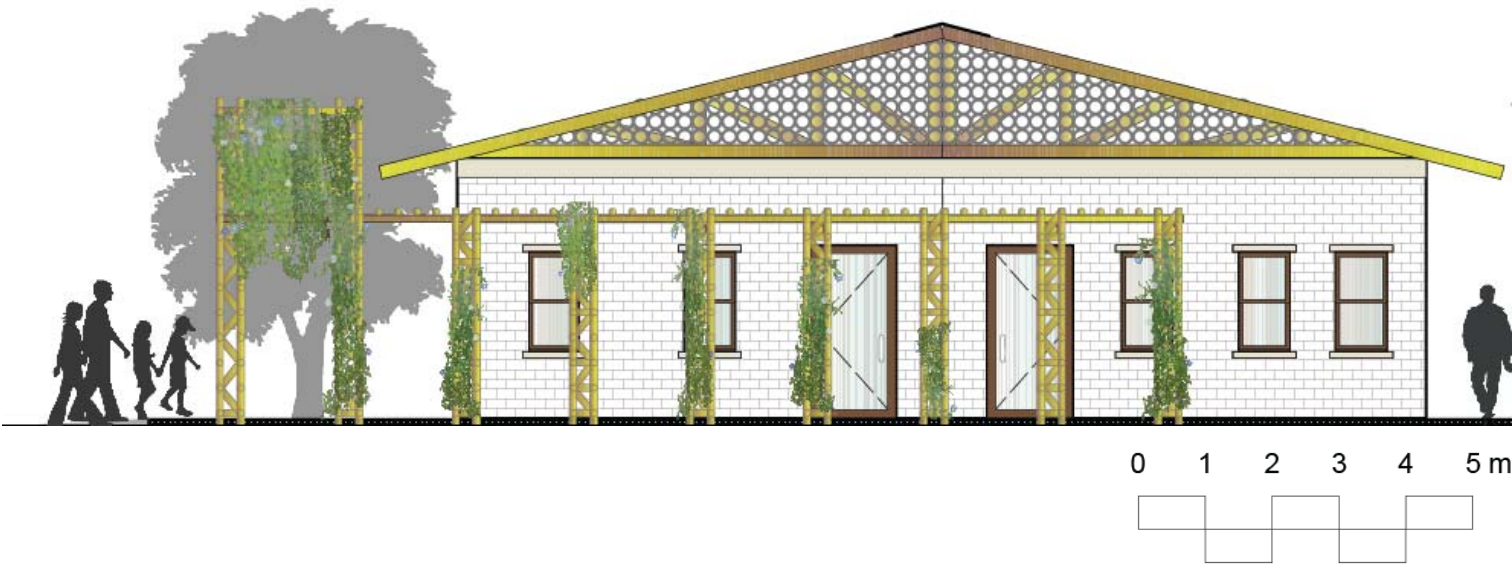
Figure 12: Elevation, Major Community Spaces



- Proposed Community Spaces
- 1 Entrance Canopy to Courtyard Area
 - 2 Program Offices & Family Planning Center
 - 3 Multipurpose Hall / Sanctuary Space
 - 4 Community Kitchen and Canteen
 - 5 Basketball Court

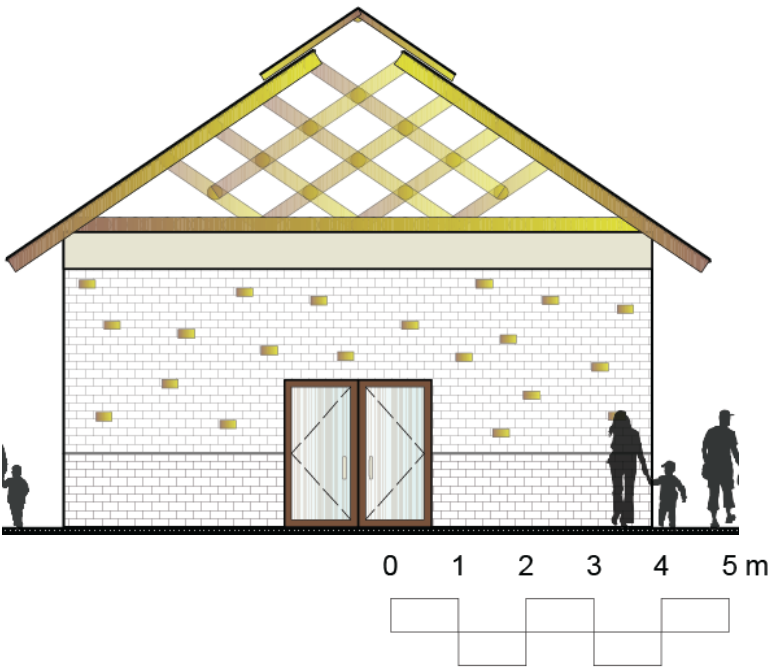
Adjacent to the community buildings is the central community courtyard where residents meet and gather on the weekday and set up the farmer's market on the weekends. Each of the major buildings and spaces are enlarged below.

Figure 13a: Elevation, Entrance Canopy



Residents and visitors enter the community space and courtyard through an entrance canopy. The first building includes the program offices and family planning center.

Figure 13b: Elevation, Multipurpose Hall



The multipurpose hall can serve as a sanctuary and prayer hall.

Figure 13c: Elevation, Kitchen & Canteen / Basketball Court



A community kitchen and canteen sits above a recreational area where a basketball court is located.

Multi-story Family Housing

Prelude to the author's discussions and recommendations on housing typology, it is worth establishing some key points on appropriate housing density. Similar to the housing requirements in other high-density cities such as Tokyo, Singapore and Hong Kong, options for high-density living are necessary in Metro Manila. Typically, high-density housing units offer less space, are closer to city centers, and can offer more public services and infrastructure. One high-density housing option, high-rise condominiums units, is generally too expensive in construction costs to be offered as socialized or economic housing for the Masses although they are typically more affordable per unit than single-family homes. In Metro Manila's urban centers, where informal residents value their proximity to work, multiple story residential buildings are a valuable option for most citizens. With the current increase in mid to high-rise developments, Metro Manila residents who can afford it are choosing to live near their work place to save money and time commuting to work. In the case of informal settlers who require low-cost rent, housing in 1 or 2-story makeshift homes is their only option. Clearly, if state intervention is to focus on on-site or relocation housing in dense urban locations, there is a need to consider increased subsidies, low-income housing tax credits, for developers offering higher density private developments or social housing alternatives near city centers.

High-density, low-income housing can also develop from low-rise housing, 1 to 4-story buildings with no elevators. While high-rise buildings can potentially house more families, smaller scale housing typologies in compact layouts can generally offer a more affordable solution. Low-rise apartment buildings requiring less structural support is the main model of housing for Habitat for Humanity Philippines in Metro Manila. Up to 4 stories high, these multi-family dwellings offer single room dwellings which can be partitioned and/or allow a mezzanine or loft space to be added. Certain cost-efficient technologies in steel frame construction and an in-house developed Concrete Interlocking Block (CIB) system reduce construction costs for the non-profit homebuilder. Unlike other medium and high-rise buildings in the cities, quality materials,

advanced engineering requirements, and structural steel is reduced to the minimum while allowing per unit costs to remain eligible for government subsidized housing.

Figure 14: HFHP Housing Types⁷⁴

Housing Type	Floor Area per unit (sq. m.)	Cost per unit
single, detached (CIB)	31	P220,00 (\$5,000)
row house (CIB)	20	P100,000 (\$2,300)
row house (pre-cast concrete)	23	P100,000 (\$2,300)
duplex (modified blocks)	20	P150,000 (\$3,400)
2-story walkup	20	P180,000 (\$4,000)
3-story cluster	20	P280,00 (\$6,300)
4-story walkup	20	P320,000 (\$7,300)

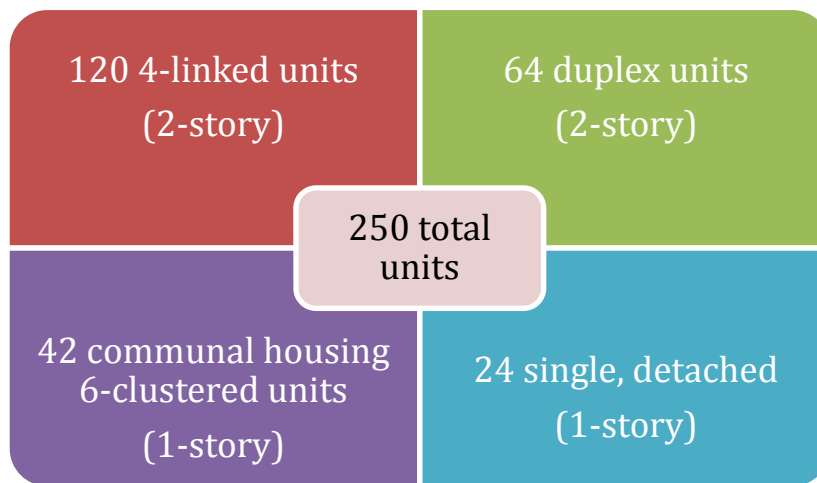
Although total floor area can vary with additional floor area (loft space) added, row houses offer the most cost-efficient typology primarily because of shared walls, which reduces construction material costs.

In determining the appropriate housing typology to use for the proposed relocation site in Quezon City, a row housing typology using volunteer and home partner labor is evaluated to be the most economical and constructible solution. Besides the cost efficiency of shared walls, walls of CIB use a relatively inexpensive material at P13 or \$0.30 per CIB unit. Modular row houses using CIB technology can be manufactured in various site build conditions using a number of tested soil mixtures, if needed. Moreover, multiple field-tests by HFHP show the galvanized steel roof structure is able to stand typhoon scale weather conditions.

⁷⁴ Source: HFHP internal documents provided to the author

Regarding row housing density on the site, it is estimated (see appendix) a maximum of number of around 360 row houses can fit on the site if all units were built to 2-stories and the row houses were placed back to back. If single story row houses placed back to back were used, about 270 units would be possible. However, with community space and program the main site design strategy, approximately 1/3 of the site or around 90 housing units would have to be surrendered to realize the community spaces. Specifically, an estimate of 58 row houses would be lost to create the community space and 32 units for the growing space. Sacrificing 90 home units to produce the community spatial and social program is a decision based on qualitative factors necessary to attain the long-term goals of a sustainable relocation community. These basic estimation and decision processes help derive the main housing production goal to be approximately 250 units. From the total units produced, 4 types of housing typologies are proposed (Figure 15).

Figure 15: Proposed Mix of Units



Breakdown of 4 housing typologies and their associated quantities to produce the total home unit count of 250. The majority of the units (184 of 250) will be row houses, 4-linked units or duplexes. 42 units arranged into 6-cluster communal living spaces and 24 single, detached units provide additional options for incoming residents.

Row or linked units are efficient housing types, spatially and economically. However varying the type of linked units in scale, function and arrangement (groupings) allows more options for the residents. For example, a more standard duplex will feature 20 square meters of living space in

the socialized housing level that can be flexed into an economic model with an additional 8 square meter mezzanine as a bedroom (Figure 16a & 16b). A single story duplex is represented in this example (Figure 17a & 17b). However, a 2-story option (Figure 17c & d) is proposed for all duplexes and 4-linked units to increase the density of the site and increase the number of available units to 250 without compromising the spatial requirements of the community program.

Figure 16a: Floor Plan, 1st Floor (scale, 1:100)

Building Amenities: Linked Units / 8 sqm mezzanine / 26 sqm total

- 1 Interior kitchen
- 2 Large opening for cross ventilation and access to front yard
- 3 Rain barrel
- 4 Shared septic tank to filter beds to growing beds
- 5 Private Balcony for air drying clothes

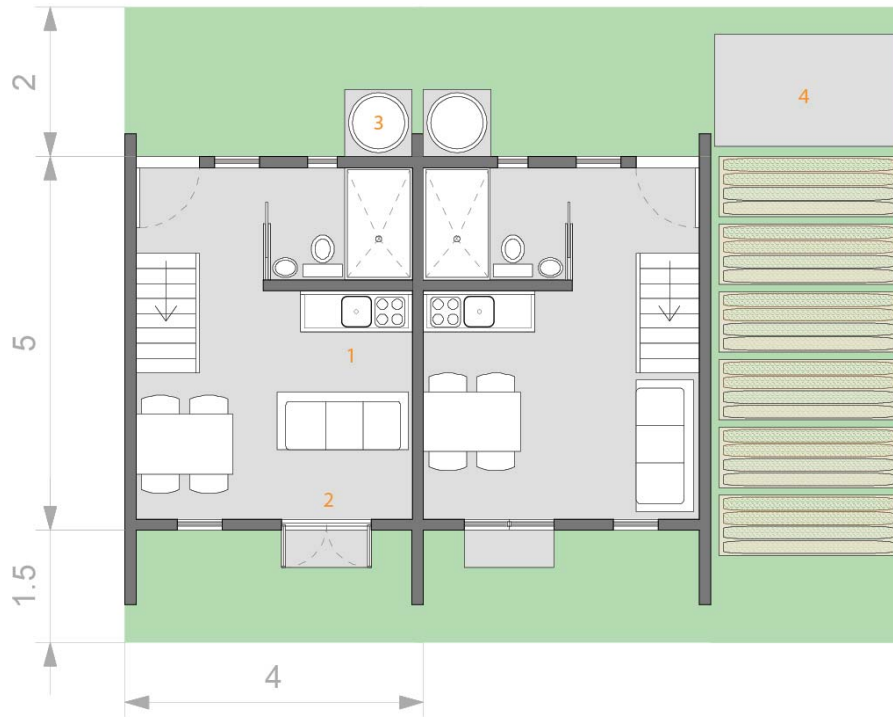
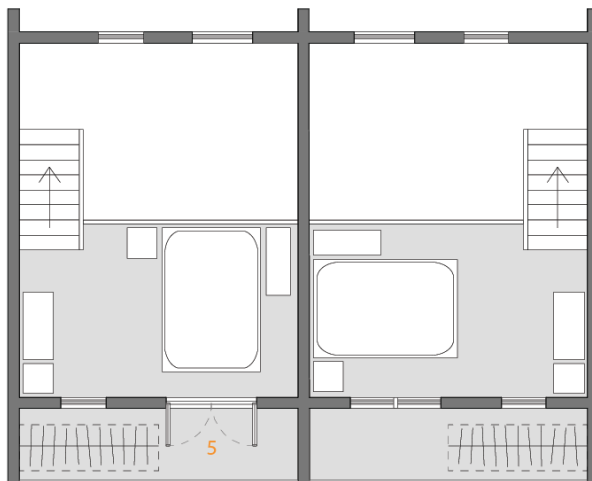


Figure 16b: Floor Plan, Mezzanine (scale, 1:100)



2 types of furniture layouts are proposed in a standard economic home (20+6 sqm). All amenities described here will be available in both socialized and economic models.

Figure 17a: Elevation, 1-story Duplex with Mezzanine (scale, 1:100)



Figure 17b: Section, 1-story Duplex with Mezzanine (scale, 1:100)

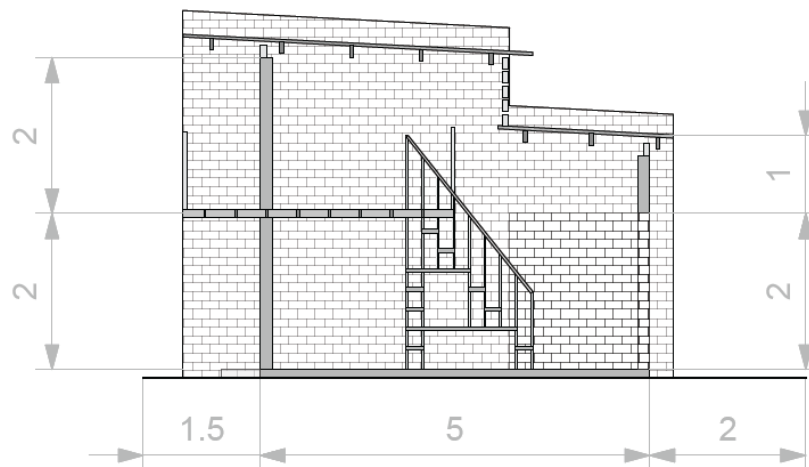
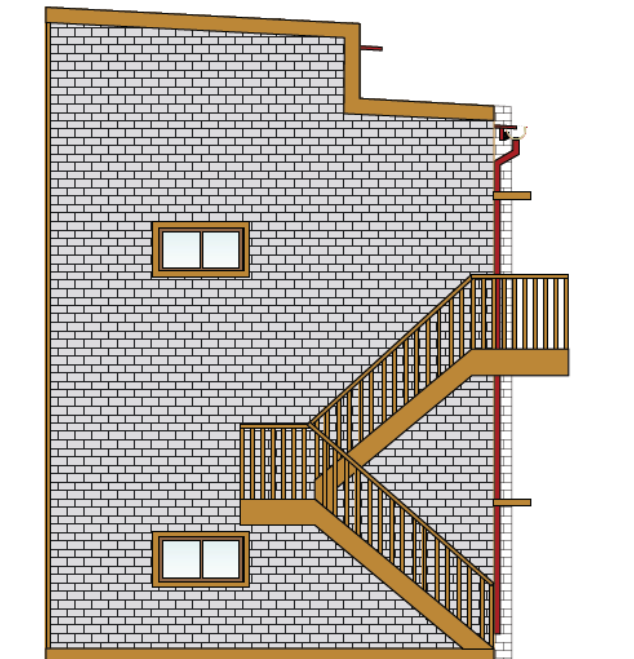


Figure 17c: Section, 2-story Duplex with Mezzanine (scale, 1:100)



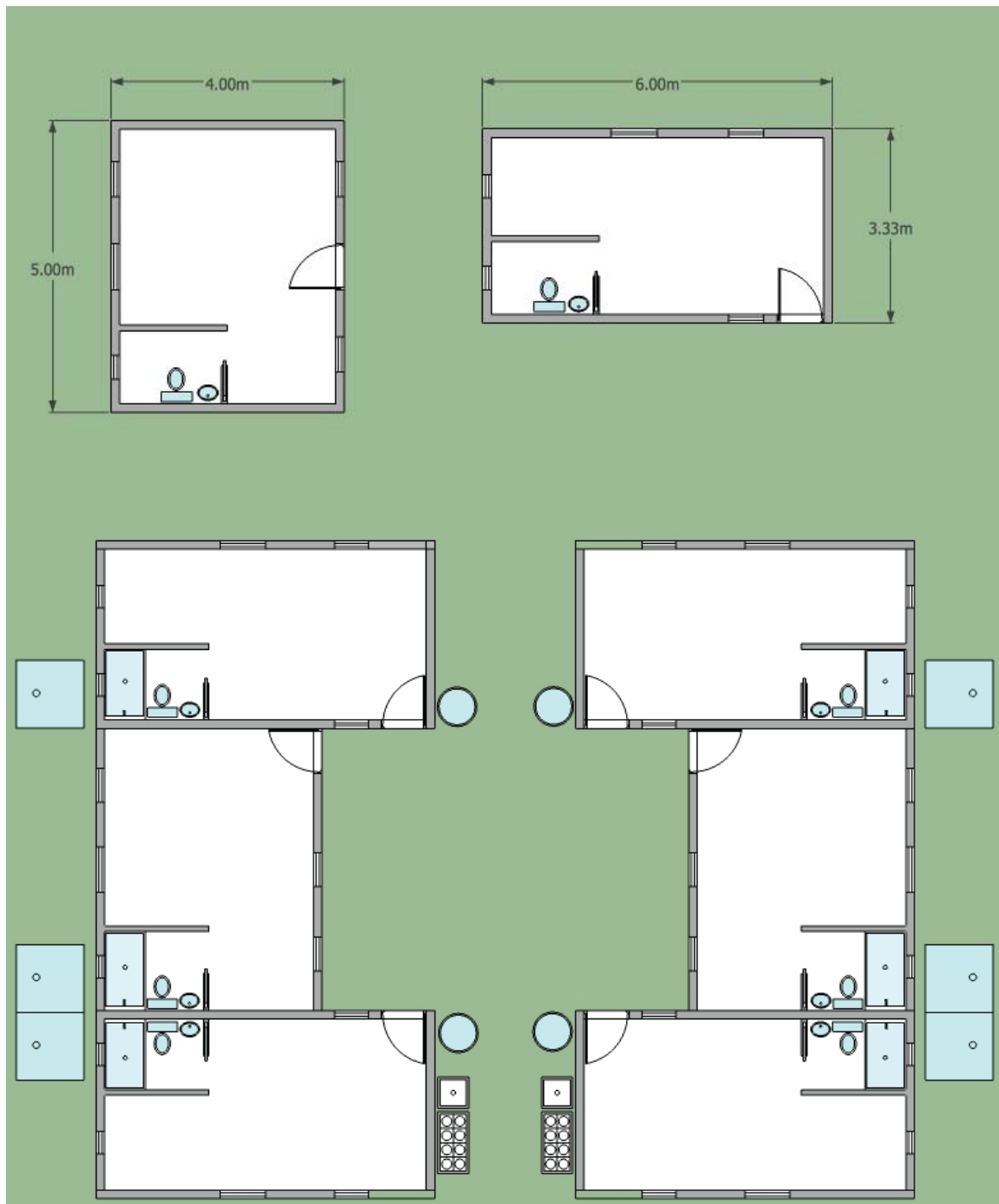
Figure 17d: Elevation, 2-story Duplex with Mezzanine (scale, 1:100)



In a 2 story economic home, the staircase is located at the rear of the building. The mezzanine space including bedroom and balcony will be accessible through a built-in metal staircase located by the entrance of the unit. Regardless of model (social or economic), there will be 1.5 meters of front yard and 2 meters of backyard space as required by low-income housing codes. Minimum height clearances (2 meters) are met. And to reduce construction material, the split roof scheme is proposed, which will potentially increase ventilation into the home as well.

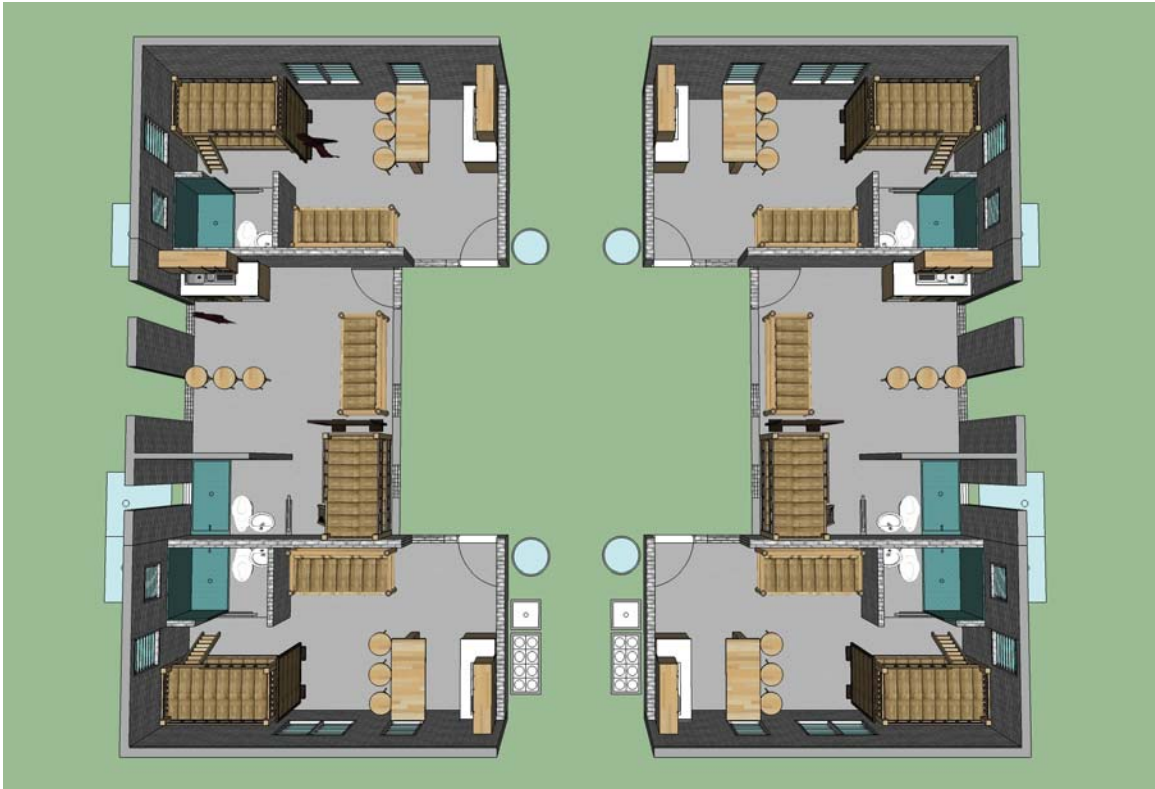
As dense housing developments increases in Metro Manila, multi-family housing typologies such as apartments, condominiums, and townhomes are increasingly becoming the most common living arrangement for urban dwellers. Filipino multi-family housing arrangements in the cities are following Western or American standards and moving away from traditional single family homes. As discussed earlier in this paper, traditional Filipino families live in communal arrangements, living together with aging parents, grandparents, unmarried relatives, etc. In lower-income bracket families, where households are larger, former informal settlers should have an option for a home with a communal layout (Figure 18 & 19). Linked units can be arranged to accommodate a multigenerational family sharing 3 or 6 units altogether. Former neighbors, friends, and social networks would also have the option of sharing in a 6 unit communal housing cluster. The economic savings would not derive just from shared walls but also a shared common space (central courtyard) and kitchen. Each unit will have it's own bath. And with lower ceilings and a lack of mezzanine space, the proposed model type is estimated to fit within the less expensive socialized housing budget. The space and construction material savings leads to more affordable homes for multigenerational families. More importantly, by living in units designed for a large multigenerational family, the preferred living arrangement for a traditional Filipino family clan is maintained.

Figure 18: Plan, 6-unit Communal Complex



The communal complex is composed of 6 units (2 units 5x4m and 4 units 6x3.33m), 2 sets of 3-linked units connected by a central courtyard space, an entrance corridor and shared outdoor kitchen. Each unit will have rain barrels for water collection, its own bath and toilet, and a septic tank for waste filtration.

Figure 19: Plan Perspective, 6-unit Communal Complex



The proposed furniture and their layout include a bunk bed, a single couch and counter for dining per home unit. The central courtyard serves as additional living space for the arranged communal households.

Community Adaptation

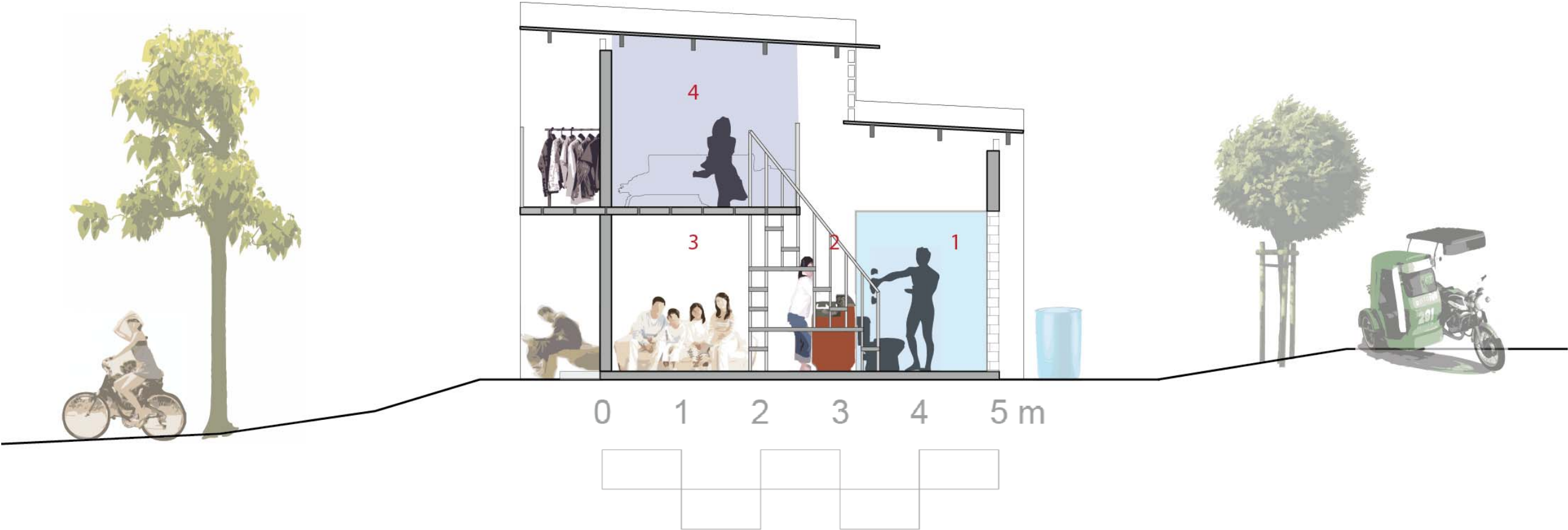
Because of the financial constraints of socialized and economic housing budgets, small-scale (requires less land and material) and low-rise (less structural material) housing typologies are made available at various levels for low-income residents looking to make the transition into the relocation site. Regardless of housing type, each home in the community is supplemented by an accompanying private front and backyard, a shared courtyard for recreational play or balcony for clothes drying, in addition to the community and growing spaces allocated for community use. From the perspective of a new resident relocating from the extreme living conditions of an informal settlement, a private interior space of 26 square meters (280 square feet) would likely offer a larger living space than the former home he/she is vacating. However, some larger families will still find it a challenge to share a compact space (Figure 20). As the community

establishes itself, some families will want to expand their homes. House expansions, as learned from HFHP, should be restricted mainly because it is often impossible to regulate properly, besides the fact that these houses are not designed to be vertically or horizontally expandable.

Figure 20: Building Section

Using Compact Spaces (26 sqm)

- 1 Bath
- 2 Cook
- 3 Sit
- 4 Sleep



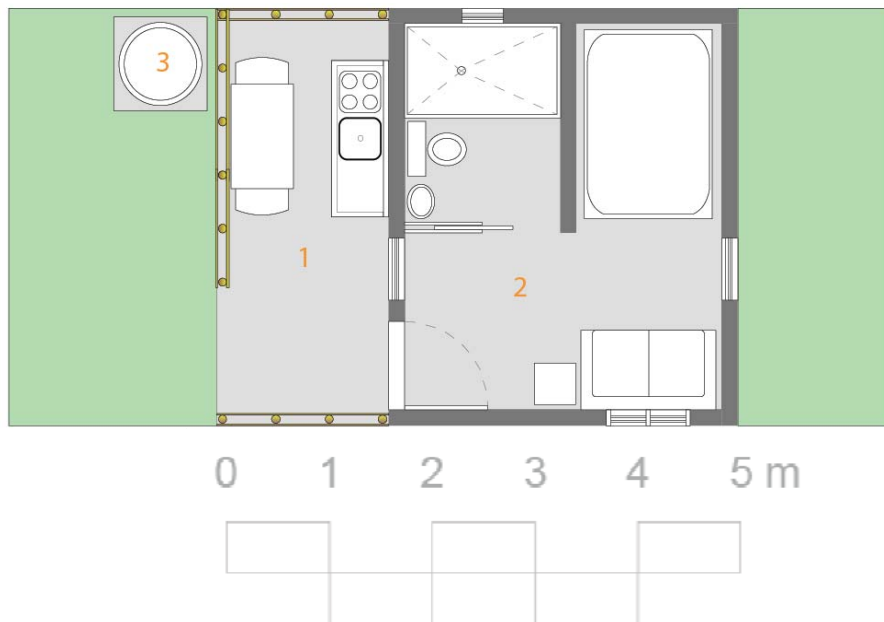
A typical settler household of 4-5 people will have basic housing and upgraded site amenities not usually found in informal urban settlements. Private indoor spaces (indicated by 1 and 4), rain barrel for water collection, and tree-lined pedestrian pathways are depicted by this image.

For those who desire a smaller housing footprint or cannot afford the top range of socialized housing units, e.g. young couples or singles, a Starter Home⁷⁵ is designed to offer a smaller yet less expensive version of the standard 20 square meter socialized unit. The minimum requirement for socialized housing in terms of enclosed floor area is 18 square meters. With bamboo walls serving to partially enclose an semi-outdoor kitchen area, an additional 6 square meters of space is added to 12 square meters of CIB-enclosed living/bath/bedroom space to bring the total square meters of a Starter Home to 18 as required (Figure 21a & 21b).

Figure 21a: Floor Plan, 1-story Starter Home

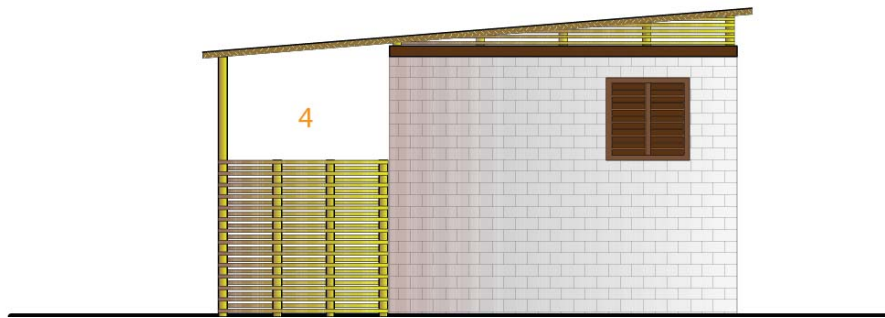
Building Amenities: Detached 'Starter' Home / 12 sqm enclosed interior / 18 sqm total

- 1 Outdoor kitchen and dining
- 2 Compact Interior reduces building costs for singles or young couples.
- 3 Rain barrel
- 4 Extensive use of local bamboo



⁷⁵ Starter Home concept is derived from Habitat for Humanity Philippines

Figure 21b: Elevation, 1-story Starter Home



Designed as low cost alternative to standard socialized housing, the Starter Home features a compact interior space and outdoor kitchen.

In terms of adapting each home to the aesthetic taste of the household, each unit's interior living area would be customizable as desired, a similar strategy used in HFHP homes. However, the aesthetic qualities of the exterior of buildings and community outdoor spaces including landscaping should be regulated in the framework of a community design program. Planners and architects can initiate a set of design guidelines. The community, its residents, can participate in aesthetic improvements and alterations within these guidelines.

Easy adaptation of residents to their new urban environment is an objective of any relocation community. Some migrating informal settlers would have an entirely urban living experience and would need to adjust to life in a community with green outdoor spaces for the first time while incoming migrants from the rural provinces would be able to adapt more easily to a community with abundant outdoor spaces, gardens and parks. For many settlers not used to living in multi-level residential buildings, there is a choice to choose a ground floor level home. Thus, incoming residents should be allowed to choose their preferred unit by type and site location. There is much a new community of settlers will need to adapt to when relocating homes, neighborhoods, and even cities. Accordingly, minimizing relocation uncertainty and living adjustment for new residents is part of an important community orientation program.

There will also be necessary adjustments for new community residents. As the social program of the Quezon City relocation community is designed to attain economic stability, housing tenure and poverty alleviation, broad collaboration and unity among its residents will be required. A good example is the food production program's cooperative requirements during its planning and implementation. Maintenance of outdoor spaces, landscaping and buildings will also have to be performed within the framework of a cooperative. Discussed in subsequent sections, the community waste recycling program, community food banks and kitchen will only run with community effort. The educational programs, teaching and sharing of various skills, along with the civic values they create is the main driver for keeping the goals and activities communal. The community is a teaching village in as much as the concept is practiced and developed during a relocation site's progress towards stabilization. The following sections further discuss these concepts of developing community cohesion and productivity through civic services.

Vertical Village

Developing a relocation community is comparable to replicating a village atmosphere in a city. This urban or Vertical Village is where similar values and experiences are shared, a contributing factor to strong community pride. Where the traditional rural village represents a community of shared skills, economic activities, festivals, recreational habits, arts and culture, the relocation community envisions to become one in its own way, self-sufficient and independent. In the case of the Quezon City relocation community, it becomes close to a district or *barangay* unit with close to an estimated population of 1,200 people. *Barangay* residents living in a Vertical Village, living in shared lands and buildings with common architectural themes and activates, hopes to produce social unity. Similar to a fishing village whose residents share a common way of life, the Quezon City relocation community is designed and developed for a particular lifestyle, urban farming in a teaching village.

SOCIOECONOMIC Focus in Urban Housing

Urban Food Production and Food Security

The recent economic crisis originating in the United States in 2008 has had a global impact. According to a United Nations (UN) report, the urban poor, particularly those in developing countries, has been one of the worst hit.⁷⁶ With the addition of rising food and energy prices worldwide, the UN report estimates the number of people with chronic food insecurity has increased by 10% or 100million people in just two years (2007-2009). In response to the global food crisis most observed to be most intense during this period, another UN report makes the recommendation of promoting sustainable urbanization through the model of “local food production... within city boundaries” by way of improved incentives and reduced barriers for the development and growth of the urban agricultural industry.^{77 78} In cities such as Metro Manila, the incentives could come in the form of reduced taxes for new agricultural businesses within city boundaries. A government investment can also be made through a community cooperative model. An unproductive urban lot owned by the city can be transferred to a non-profit organization that will coordinate and develop the urban land for community food production. Urban agriculture, the integrated practice of growing, processing and marketing the plants and animals grown and raised within urban or peri-urban areas, has the potential reduce food prices for urban consumers.

In Metro Manila, the local food market consists largely of open-air *pelengkes* or “wet markets”. This *barangay* (local district) market affords the masses produce close to their homes for meals normally prepared and served the same day. In contrast to Western markets, *pelengkes* do not freeze or refrigerate their vegetables, meats, and fishes. Usually fresh, the food supply for Metro Manila arrives daily from farms located outside the cities, usually through brokers and middlemen who transport and distribute the goods. Although becoming more popular among the more

⁷⁶ UN FAO. *Follow-up to the high-level conference on world food security: FAO contribution to the implementation of the comprehensive framework for action*, Document for FAO Council 136th session, 15-19 June, Rome 2009b.

⁷⁷ UN FAO. *State of Food Insecurity in the World 2008: High food prices and food security – threats and opportunities*, Rome, 2008a.

⁷⁸ Henk de Zeeuw and Marielle Dubbeling. *Cities, Food and Agriculture: Challenges and the Way Forward*. RUAF Foundation, 2009, 10.

affluent communities in and around Makati, organic and other sustainable farming practices and their resulting products are not marketed for Metro Manila's common consumers. The higher priced, organic products are reserved for air-conditioned marketplaces inside malls for the few who are able to afford them. A substantial collection of small community cooperative farms has the potential to change this, to allow greater access to organic and fresh vegetables to the masses.

Agricultural farming (crops, aquaculture, livestock, and poultry) has a long tradition in rural Philippines. In relocation sites with ample numbers of former rural migrants, urban agriculture is a functional strategy to make productive use of new resident's skills. With potential use of approximately 2000 square meters (half an acre) of urban space for food production in the proposed Quezon City relocation community, there can be a shift in how an urban population sources its food and nutrients. The overarching goal of an urban farming program is not necessarily to gain a for-profit business but an investment in people. Local community-based farming will develop values in civic cohesion and collaboration. Farmers learn to share resources in a cooperative farming model. Also, consumers of an ecologically sound farming model will benefit from fresh and more nutrient vegetables harvests grown on site. Urban farming in relocation communities with designed growing spaces will initiate a city movement and consumer demand in locally produced food and quality nutrition where it is most needed. An urban farming movement and its resulting social benefits to relocation communities is the focus for the Quezon City site. However, there is a conceivable economic benefit for a new local grower industry leading to increased food security within the context of Metro Manila.

Developing a community farming movement for economic aid and food security can start at the household scale (Figure 22). Various models of small scale or "backyard farming" can then be developed at various stages (Figure 23). At the backyard scale, initial investment is kept to a minimum. Backyard farming can introduce beginners to farming, growing relatively low-maintenance vegetables (tomatoes, squash, eggplant, spinach, *pechay* or Chinese cabbage),

herbs, and mushrooms in their own backyard. At the community scale, a farming cooperative can be formed to supply members with everything they need to obtain a small community lot, required farming tools, start farming, harvest the food for consumption and eventually bring surplus to the public via the weekend farmer's market or distribute the produce to the community food bank in a non-profit manner. Initially, residents can form partnerships with surrounding farming associations in the periphery of Metro Manila, including NGOs specializing as urban agricultural advocates and/or agri-business promoters such as Univet Nutrition and Animal Healthcare Company (UNAHCO). For example, UNAHCO has a program of teaching piggery operations to returning overseas workers and other similar groups. In addition to these non-profit models, micro-financing opportunities for households can be created for those who desire to produce and harvest in a for-profit model. Starting with the backyard production model, the community, working closely with urban farming promoters, can subsidize financing efforts at various scales of developing an urban farming operation.

Figure 22: Vertical Garden as Urban Farming Tool

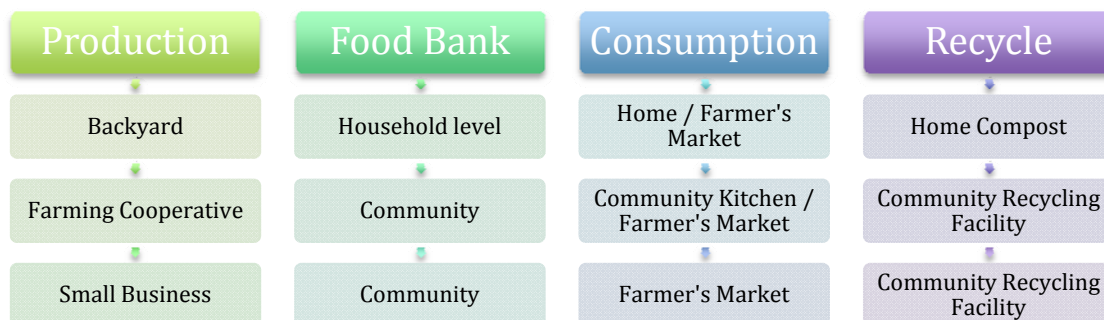
Using Walls as Vertical Gardens

- 1 Chicken wire assembly mounted on wall
- 2 Tomatoes crawl over wires to grow 1-3 m in height



A low-cost, low-tech tool to grow vegetables using a vertical garden solution: tomatoes and other crawler plants are able to grow on “chicken wires” from a soil substrate. The ground space required is reduced to a minimal.

Figure 23: 3-Tier Urban Farming Model



Supporting urban farming at the three proposed community scales has multiple byproducts beneficial to society as well as the environment. Farming on community lots as a non-profit cooperative encourages community participation and collaboration. A non-profit food bank has the potential to secure a percentage of food produced for charitable use and distribution to the

community kitchen and needy families. The general public benefits indirectly from locally sourced food by increasing competition with commercially processed foods, which can lead to decreased food costs at the neighborhood scale. Wastes from food consumption activities are highly recyclable and can be utilized as compost at all levels of a farming model. The proposed system of permaculture farming can minimize the negative impacts of production activities to the environment by reducing chemical use while increasing the function of natural soil processes. By growing food locally, the use of carbon producing transport systems is also diminished. In general, homegrown products can be better controlled for quality and nutrition, a direct benefit to household growers. Each food farmed, from vegetables to fruit trees, pigs to chickens, can be specifically tailored for each community. Urban farming for local food production and distribution is a path towards self-sufficient communities. The Local urban agriculture system is not a new concept. However, recovering domestic food security by establishing sustainable food systems and eliminating poverty is an integrated effort⁷⁹ and is exactly what a lower-income relocation community requires.

In the context of cities, various levels of urban farming models and its associated social movement has the potential to benefit food consumers who are living near the poverty level and without access to basic levels of nutrition in their diet. The creation of these local mini-economies can create jobs at various skill levels. Instructors and support staff will be needed to organize, teach classes and develop the collective vegetable gardens. Ground maintenance for the entire site will also be necessary. A core kitchen staff will run the food bank and community kitchen. And a recycling team will need to be hired to teach residents about the site and household programs. In each process of the sustainable farming model, there is a chance for community participation whether as growers, consumers or recyclers. Resident and public consumers and growers will meet directly at the farmer's market and reduce the middlemen, food brokers and distributors. In a newly established relocation community, community food banks and kitchens will offer a direct

⁷⁹ Mustafa Koc, *For Hunger-Proof Cities: Sustainable Urban Food Systems*. (IDRC Books, 2000), Netlibrary ebook, 225.

way to benefit those temporarily suffering from financial hardships and related nourishment poverties. Urban farm programs are initially developed as backyard gardens in its smallest scale and can eventually scale up to create social movements in a citywide scale. The primary goal of urban farming communities is the social movement itself, a lasting social benefit that outweighs its initial financial costs.

Community Security and Integration

In any proposed relocation site, there is a need to consider site security. With the Quezon City relocation community, the proposed perimeter fence should prevent physical access but not visual access into the site. The site should be largely accessible to invited guests and the general public, those who live in surrounding areas and want to take advantage of site amenities. However, the residents themselves can limit access to the greater community at night or as needed to secure particular site areas and community buildings. As in the case of the Calauan town relocation site, site staff can be hired during the day to primarily check in guests and visitors into the site. Regardless the level of security at certain closed hours, the site is proposed to be accessible to the outside community who desire to enter the site to view the demonstration farms, purchase products at the weekend farmer's market, enroll in educational program on site, etc. Greater community immersion and integration is one of the primary goals of the newly relocated population. Keeping the site gated and secured from the outside community diverges from this goal. A relocation site should not follow the existing trend observed in Metro Manila and other highly urbanized cities in Asia, private communities catering to higher income populations.

The increase in private communities around the world has been discussed by research studies as an interrelated function to the globalization process^{80 81}. In the globalization of American culture and real estate models, current global expansion of private communities has been attributed to the American model of privately managed and enclosed housing developments. There is a

⁸⁰ G. Glasze et al., *Private Cities: Global and local perspectives*. New York: Routledge (2006).

⁸¹ J Grant and L. Mittelsteadt, *Types of Gated Communities*. Environment and Planning B: Planning and Design (2004).

standardization of private development strategies in a flattening world where markets, consumer tastes, and lifestyle also become more homogenized.⁸² This is the specially the case in a hyper-urbanized city like Metro Manila.

Largely observed in the high end of the housing spectrum, opposite of informal settlements, Metro Manila's desire to become globalized or Americanized has led to what has been referred to as edge-city mega-projects⁸³. These exclusive private residential and commercial developments (Eastwood, Global City, Rockwell) are marketed towards the higher income consumers and designed to be independent communities with their own shopping malls, restaurant corridors, and private schools. Even though most of the shopping centers are supposedly accessible to everyone, public transportation into these private developments is limited. With most of the general population relying on buses and *jeepneys* to get around the cities, most of the public is effectively excluded and economically hindered from entering these highly secured neighborhoods. With 7 luxury residential towers in the Rockwell development, jeepneys and busses are not allowed to enter its private neighborhood at all. Travelling by roadway, residents must have a private car or ride a taxi to enter the high-rise neighborhood and its high-end commercial center.

Closing community amenities and resources to the many for the security benefit of the few is an urban planning scenario that should not be replicated for relocation communities. While the political class, the city administrators, have accepted this common development scheme, the citizens should not. The case of community integration and inclusion needs to be made to private developers and the government that regulates them. Especially in the case of mega-scale projects, new community development should offer mix-housing options for lower-income groups. The amount of new affordable housing units in Metro Manila's cities can be increased through highly controlled mix-housing policies and tax incentives targeted for private developers of

⁸² G. Glasze et al., *Private Cities: Global and local perspectives*. New York: Routledge (2006).

⁸³ Michael Douglass and Liling Huang, *Gobalizing the City in Southeast Asia: Utopia on the Urban Edge – the Case of Phu My Hung, Saigon*. *International Journal of Asia-Pacific Studies*, 3:2, 1-41 (2006).

affordable housing. In cities where informal settlers are above a fifth of urban households, it becomes necessary to do so.

Progress in Urban Planning

Metro Manila's housing issues is attached to its socioeconomic challenges. Housing opportunities for the Masses cannot be fully attained, even with enough housing stock, without socioeconomic progress. Similarly for the country and its cities, poverty alleviation is not achieved through Gross Domestic Product or wage increases alone. In mathematical terms, poverty alleviation is a function of economic, social and environmental conditions. Thus, comprehensive societal progress, which results in less poverty, is best produced by improved livelihood as well as the urban environmental condition, not at the cost of it. Urban policy makers, planners, designers and developers can start by focusing on neglected neighborhoods, in and around informal settlements, to provide clean, safe, and convivial living conditions for the Masses.

Residential neighborhoods with proper infrastructure and maintenance, open landscaped spaces for parks and recreation, and secured neighborhoods are essentials in livable hyper-urban cities. Successful communities in Metro Manila require upgraded and more commuting options in order to reduce traffic congestion and the travel time to work, shops and schools. From public transportation hubs, residents need walkable neighborhoods to reach their homes. Homes can be a sanctuary from the traffic, noise and air pollution of congested cities. As it exists today, the environmental illness of hyper-urbanism is inescapable for urban dwellers. The constant noise and air pollution from motorized vehicles reach the living rooms of most homes. Brownouts, a result of deficient infrastructure maintenance is all too common. Flooding throughout the cities is a seasonal problem. There is an alternative future.

For the elite few who reside in the most desirable districts in Metro Manila, gated private neighborhoods called subdivisions exist to create a sanctuary from the traffic and congestion of the cities. The streets of these neighborhoods are lined with trees and proper pedestrian

sidewalks. The large properties still maintaining open green spaces in these private homes show the excessive inequality just outside its walls. For the Masses, the subdivisions' high walls represent the socioeconomic gap between income groups and social classes. To realize a sense of progress, Filipinos in mass must attain a sense of these characteristics in their own communities. A vision and motivation must exist to enable urban development of similar quality for public streets and spaces, fair access to basic infrastructure and amenities, and the perception that livable and walkable neighborhoods are attainable to everyone.

Mix-use Communities (Live, Learn, and Work)

Integral in mix-use communities is a strategy to include schools, employment, recreation, and shops within the scope of the community program. Likewise, diversity in income levels, as well as age, ethnicity and other demographics define mix-use communities. For Filipino residents requiring affordable housing, mix-use communities are a desirable option. It allows them to save on transportation costs, in addition to the time and effort involved in commuting in Metro Manila. A mix-use community model is thus the basis for a prototypical relocation community program and design.

Current housing communities in low income neighborhoods of Metro Manila are by and large shared live and work spaces. In some communities, residential spaces, usually on the ground floor adjacent to major streets, are often used as eateries (*carenderias*), small markets (sari-sari stores), cell phone retail and repair shops, and other home-based businesses. In some cases, the homes are used to produce food goods sold on the streets and public busses or as storage for various products sold informally to the public. Street vending is commonplace in the Philippines. The human services that enable these markets derive from lower-income households. A vendor in a small market could even make due with a sleeping area built above their store. Today, a home business is often a necessary way of life when it is the only source of income for families. Mix-use live and work spaces are an integral part of low income communities and planned relocation communities.

A prime example of a successful community where community and entrepreneurship intersects is a Gawad Kalinga community. Gawad Kalinga's housing program is based on financial sustainability and social entrepreneurship. The organization views business enterprises as a valuable resource in their communities. They encourage private-public business partnerships to employ residents and include communities in the supply chains. "GKconomic products", as the village products are called, are developed, produced and even marketed within the communities. In one entrepreneurship project, Gawad Kalinga residential units are used as tourist home-stays within the village community. The village, having various volunteer opportunities, is the tourist destination. In Gawad Kalinga's website, residential communities are being promoted as both a living community with commercial potential.⁸⁴

Inspired as mix-use community developments, planned relocation communities have to be planned and designed as permanent long-term housing, not as transitional ones. In creation of mix-use relocation communities for Metro Manila former settler population, economic independence through personal development and education is key. Relocating families can realize their role in the new community by becoming involved in its programs. Thus, site program requirements, community center for education, job training, family planning and personal development programs, exist for the household. Investment in socioeconomic programs makes the effort to improve the person through livelihood and lifestyle training which also benefits the community as a whole.

⁸⁴ "Tourism – GK Mabuhay", *Gawad Kalinga*, <http://gk1world.com/newGKTourism> (accessed 10/29/2010)

SUSTAINABLE Village

Revitalizing Ecology & Sustainable Communities

According to Habitat International Coalition (HIC), an international, non-profit alliance of organizations with a shared goal to secure and improve housing for those with inadequate housing conditions, about one fifth of world's population today live in inadequate and unhealthy housing.⁸⁵ HIC states that populations in Third World cities are impacted most by environmental degradation caused by the urbanization process.⁸⁶ In highly urbanized regions such as Metro Manila, diminished and limited access to safe drinking water is a factor in unhealthy housing conditions. This is most evident in informal settlement areas where drums of potable water are delivered to homes regularly because city plumbing is not available. In worse case scenarios, resettlement sites are situated on or adjacent to natural waterways, estuaries of the Pasig River. Without proper waste sanitation options, household waste exhausts directly to the waterways and, eventually, Manila Bay. As much affected by inadequate housing is marine life living in the various waterways of the cities and Manila Bay. Another contributing factor to city pollution, noise and air pollution from industries and motorized vehicles are hazardous to all living species. Those affected include both human and animal populations, including birds and land animals populating the woodland periphery of the cities.

Ecological degradation affects the entire spectrum of society but not equally. Highlighted by a Philippine Environmental Monitor report highlighting air pollution in Metro Manila, it is estimated 5000 residents per year are killed by way of respiratory and cardiovascular diseases. There is clear evidence air and water pollution, poor sanitation and hygiene in the cities have a direct affect in the people's health.⁸⁷ While the same report mentions air quality has improved over the previous decade prior to 2007, low-income groups, with increased exposure to air and water

⁸⁵ "Habitat International Coalition (HIC) Perspective," (1992), <http://www.hic-net.org/document.php?pid=2706> (accessed December 2, 2010).

⁸⁶ "Habitat International Coalition (HIC) Perspective," (1992), <http://www.hic-net.org/document.php?pid=2706> (accessed December 2, 2010).

⁸⁷ TJ Burgonio. "Air pollution kills nearly 5,000 Metro residents yearly," (2007), http://newsinfo.inquirer.net/breakingnews/nation/view/20070904-86654/Air_pollution_kills_nearly_5% (accessed December 2, 2010).

pollution, were more susceptible to these health risks.⁸⁸ This is one more evidence urbanization unfairly harms the portion of society who are already benefiting the least from it.

Because much of the Metro Manila region is basically built on a natural basin with low-lying areas, environmental management strategies should address inadequate drainage systems, a form of flooding and pollution control. In 2009, Metro Manila suffered severe Metro-wide floods from tropical storm Ondoy. Blame on the lack of proper infrastructure to deal with the floods was focused on long-term environmental degradation along with climate changes.⁸⁹ The disaster prevented most public movement across most of Metro Manila. It closed schools, commerce and financial activity for days. Clearly, natural disasters and pollution have potential to reduce economic activity in Metro Manila, including foreign investment input, a large driver of economic growth for the region. Moreover, pollution and rising temperatures in the city being attributed to the urban heat island effect⁹⁰ hurts tourism, business and all forms of economic activity further. There is a large opportunity to revitalize the ecology of Metro Manila in the mold of sustainable ecosystems by way of permeable pavements, reforestation and landscape preservation, green roofs, etc. It benefits the cities' people and wildlife, prevents health and economic disasters while improving urban living conditions overall.

Metro Manila's major estuary running through its cities, the Pasig River is an integral component of urban ecology and an important indicator of the health of the environment and the wellbeing of its surrounding human communities. The Pasig River's riverbanks and estuaries are also home to a significant population of informal settlers. Without plumbing and proper sewage, the informal settlers have contributed to the polluted state of the river. However the current condition of the

⁸⁸ TJ Burgonio. "Air pollution kills nearly 5,000 Metro residents yearly," (2007), http://newsinfo.inquirer.net/breakingnews/nation/view/20070904-86654/Air_pollution_kills_nearly_5% (accessed December 2, 2010).

⁸⁹ Ellalyn B. De Vera, "Environmental Degradation, Climate Change Blamed for Massive Flooding," (2009), <http://www.mb.com.ph/node/222382/environmental-degradation-climate-change-blamed-ma> (accessed December 2, 2010).

⁹⁰ Alfredo Mahar Francisco A. Lagmay, "UP Study Confirms Metro Manila Getting Hotter," (2007), http://newsinfo.inquirer.net/inquirerheadlines/metro/view/20070503-63824/UP_study_confirms_Metro_Manila_getting_hotter (accessed December 2, 2010).

river and its surrounding communities has been most affected by industrialization of Metro Manila, itself. With increasing population and an inadequate waste collection system the river was used as an informal dumping site for decades.⁹¹

Once considered a “biologically dead” river in the 1990s, a recent study has shown evidence the water quality of the Pasig River has improved by recordings of numerous aquatic plants and a handful of fish species now thriving in the river. There is an interesting indication of “urban-adaptable species”, flora and fauna that have adapted to the urban ecology of the river even with past increases in chemical and waste pollutants.⁹² This is a strong sign of nature’s perseverance to adapt through changing microclimates and serves as a notice to us. Urban dwellers, humans, plants and animals, have adapted through the worst consequences of hyper-urbanization and, today, continue to adapt to challenges of global climate changes. Metro Manila, with its low-lying coastal cities, is a region most vulnerable to the effects of climate change, strong typhoons, earthquakes and other natural disasters. Beyond adaptation, humans can actively reduce environmental degradation they have caused by increasing the efficient use of the abundant natural resources available in the environment utilizing nature and natural systems, the most sustainable systems available.

Waste Management and Water Capture

Rainwater is the ultimate form and resource of a cleaning solution for cities. Rains clean our streets by moving motorized and bio wastes to sewers and filtration systems. As the medium of cleaning agents, bacteria and other organisms, water enables bio-filtration. In urban wastewater management, the manmade structures are part of the filtration system. Metro Manila’s roadways, buildings, roofs and open spaces are all integral components of a drainage system that could be harmful or beneficial to the main water collection depot, Manila Bay. While nature cleans city

⁹¹ Alcuin Papa. “Pasig River Not Dead-DENR,” (2009), <http://newsinfo.inquirer.net/breakingnews/metro/view/20090814-220302/Pasig-river-not-deadDENR> (accessed December 2, 2010).

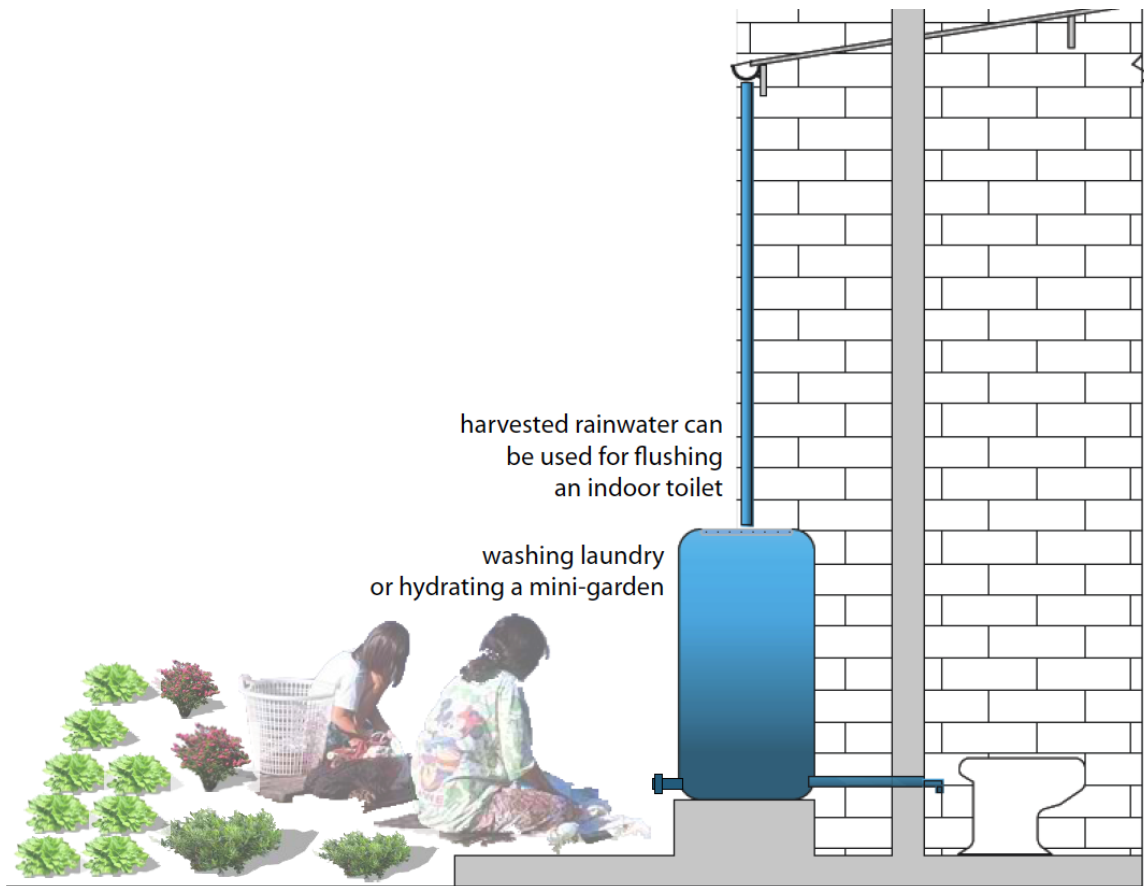
⁹² Alcuin Papa. “Pasig River Not Dead-DENR,” (2009), <http://newsinfo.inquirer.net/breakingnews/metro/view/20090814-220302/Pasig-river-not-deadDENR> (accessed December 2, 2010).

wastes through natural processes within waterways, bacteria-filled soil, rocks, and vegetation, humans have the ability facilitate filtration through mechanized and chemical filtration systems. However, it is important to value nature as the most efficient filtration system. By covering open green spaces with asphalt parking lots and roads, removing natural estuaries and trees, humans disallow the natural ability of our environment to clean itself. The natural environment is our most valuable resource.

Rainwater collection was an important legacy in the Philippines' past. Not long ago, when city plumbing wasn't commonly and consistently available, Filipinos would collect rainwater for bathing, cleaning dishes, etc. Raw rainwater was more valuable at a time when citywide infrastructure couldn't yet provide the convenience of potable water. Today, rainwater collection is a lost tradition. Municipal and private vendors have made filtered water relatively inexpensive. However, with increasing costs of everyday commodities including filtered water, rainwater collection could become more common and important in urban dwelling. In low-income communities where small decreases in household expense has more significance; rainwater collection becomes a valuable community activity.

During the author's internship at Habitat for Humanity Philippines (HFHP), sustainable systems were being developed to make efficient use of natural site resources. A basic rain harvest system was designed and built at the Calauan town relocation site. For each home, rainwater collected at each backyard was to be used by families to water their garden, wash their clothes, and flush their toilets (Figure 24 & 25). At the same time, a natural waste filtration system was developed with HFHP consultants to look at how grey and black water can be utilization in front-yard food production. These are essentially efforts to start closing the ecological loop in which humans are a large factor. The following schematic drawings and concept renderings (Figure 26, 27, 28, & 29) in front-yard food production describe progressive ideas of how man-made systems can begin bio-mimic what is already existing in nature.

Figure 24: Household Benefits of a Rain Barrel



In Calauan, Laguna, the estimated volume of rainwater that can be harvested per row house is 7,749 liters per month. A 200-liter rain barrel can be effective in reducing household potable water usage by substituting it with, essentially, a free resource.

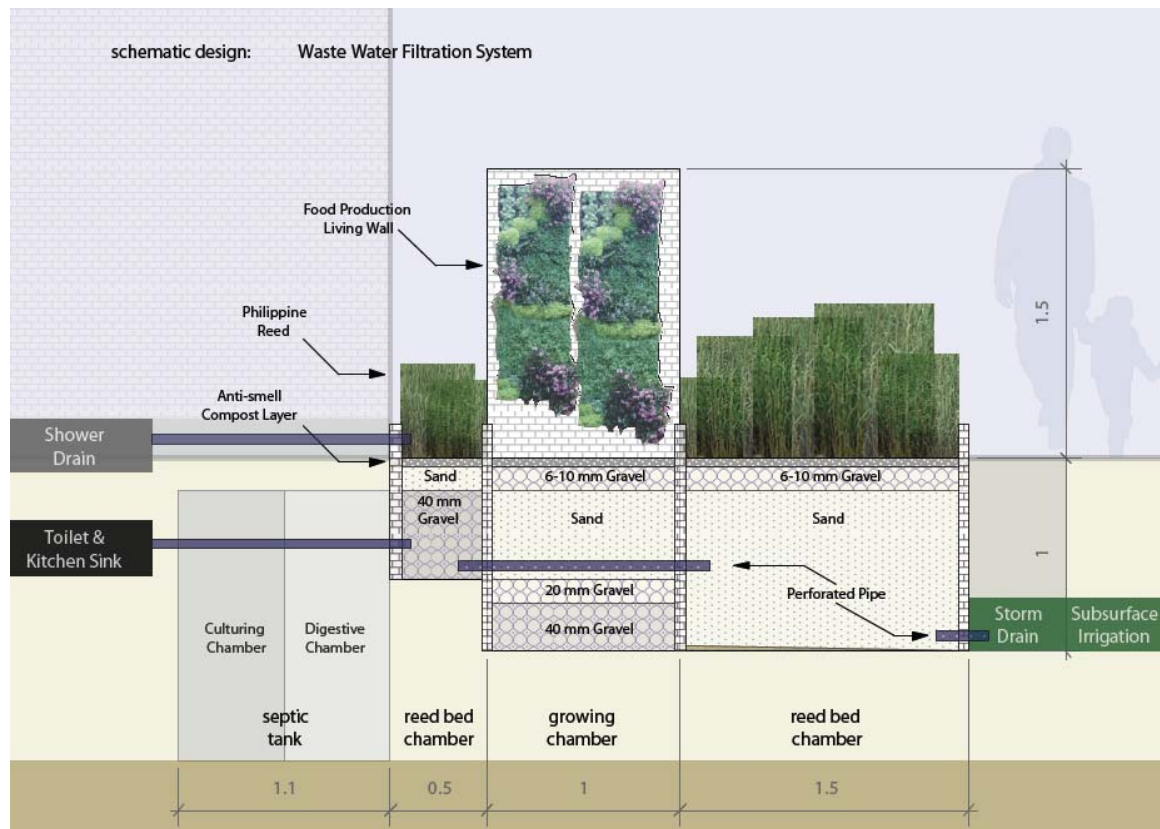
Figure 25: Components of a Backyard Rainwater Collection

Calauan Rainwater Collection



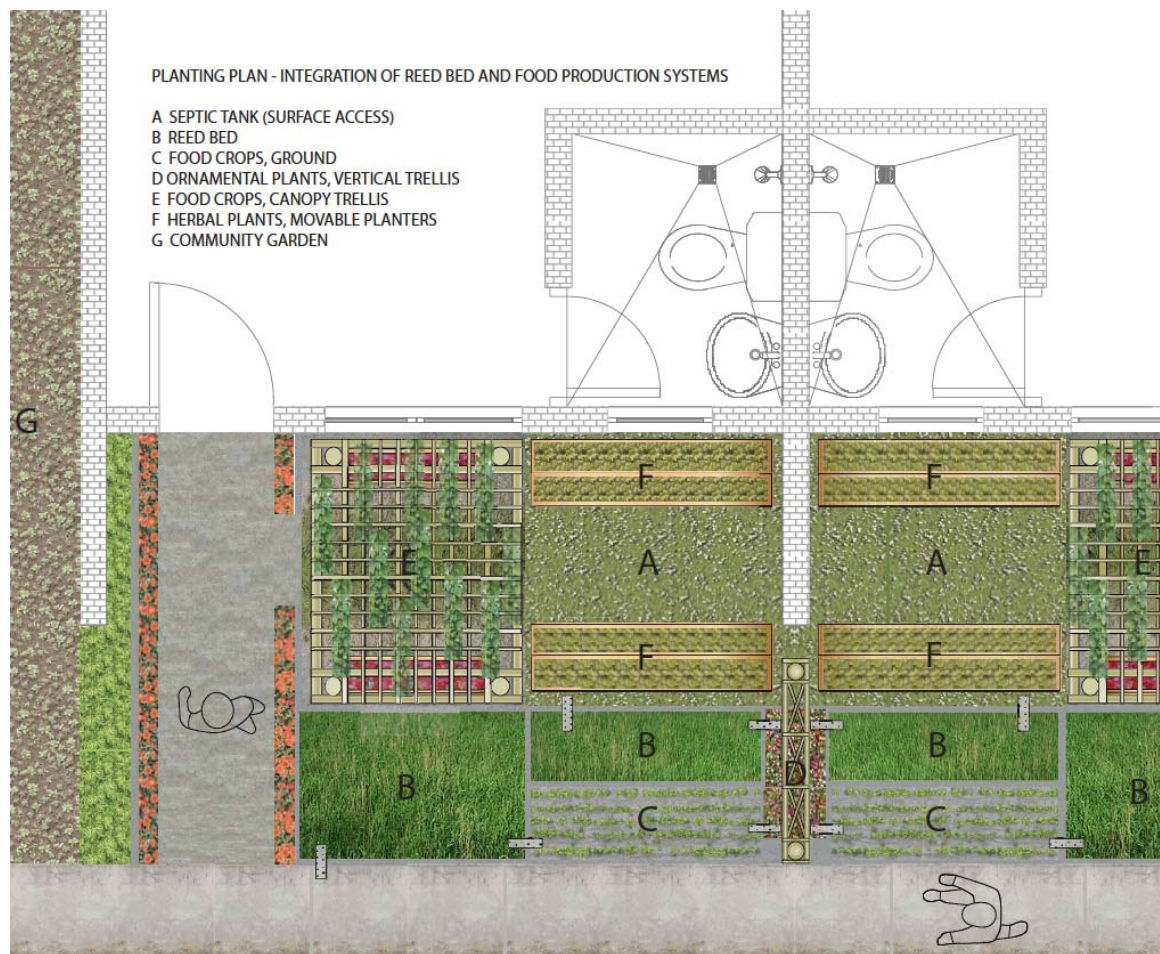
Material specifications describe a rainwater collection system customized for a relocation community. The materials are cost efficient, highly available, and make use of bamboo, a naturally grown material in the provincial region of Laguna.

Figure 26: Schematic Design for a Reed-Bed Waste Filtration System (dimensions in meters)



Grey and black water (post septic tank) is processed through a bio-filtration chamber composed of Philippine reed (*Phragmites* spp.) The reed bed reduces the pathogen load of water waste enough to be used as a nutrient source for a growing chamber shown in this case to be a “living wall”, food production on a vertical system. From the growing chamber, water is processed in a second bio-filtration chamber before distribution to the storm drain for subsurface irrigation further down the site.

Figure 27: Rendered Plan for Front Yard of Row Houses



For each row house at the Calauan town relocation site, the design called for efficient use of the front yard space to produce food crops using a bio-filtration system (reed beds), vertical trellis and canopy made of bamboo in addition to conventional planters. Each family would be responsible for growing and maintaining the food crops produced in their front yard.

Figure 28: Perspective Rendering of Household Food Production



From rainwater collection to reed bed systems, natural site resources are used to grow food.

Figure 29: Perspective of Front Yard



Food crops identified to best tolerate treated wastewater irrigation include banana, papaya, sugarcane, ginger, and rosemary among others.

CONCLUSION:

This research study starts with a background study into the current development of Metro Manila as a highly urbanized region. The 17 cities of the region heavily influence the country as the center of industry, education, and administration. Metro Manila represents the country as the dominant role player in globalization, as a source of labor migration and an emerging market for foreign direct investment. The same development that has translated into increased Gross National Production has provided minimal benefits for the Masses, the state-classified “lower-income class” both poor and non-poor. The promise of development through globalization is still an unkept one for most of the cities’ households working but living in poverty. In particular, the extensive informal settlement population has been largely unchanged through various federal government interventions since the initial efforts of the Marcos administration. Past large-scale relocation sites outside the cities have been under-planned and underfunded leading to low retention rates for those forced out of their urban communities. Nevertheless, with still growing populations in urban areas leading to extremely dense living conditions, unhealthy pollution and unsafe housing conditions in informal settlement areas, greater and renewed efforts must be made by those involved in planning and developing a more convivial urban landscape.

The recent decision from government administrators to step up their dedication to increase socialized and economic housing options has joined with increased contribution by non-profit builders and corporate sponsors alike. This is the silver lining in the story of urban redevelopment for Metro Manila. While relocation sites outside the cities are still an option, in-city relocation sites will now be the preferred strategy. And while a billion US dollars of relocation funding is a considerable budget to relocate the most flood-prone informal settlements in the cities, it is not extensive enough to be a comprehensive solution to the sizeable shortage in affordable housing stock. The implementation of a new urban relocation strategy transfers to the developers and builders of relocation sites. The planning and design of these relocation sites will dictate how efficient the relocation budget will be spent. If the goals of relocation will be to provide decent shelter alone, then builders are on a clear and efficient path. However many considerations are

necessary in building relocation sites, which may not only serve as places to build shelters but to rebuild lives and livelihood. This concept is exemplified in Habitat for Humanity Philippines' new motto to build communities, not just houses. This transformation strategy is the most effective way to use limited funds and sustain a new population through the initial challenges of relocating families from their uprooted communities. Community relocation and rebuilding, specifically through a comprehensive program that cultivates civic values, leads to sustained community cohesion.

In the Quezon City relocation site chosen for the design component of this research study, a community program was developed from the skill sets of incoming residents. With a proportion of teachers moving into the site along with the potential farming skills brought in by informal settlers, there is potential to harness and utilize the experience pool by the residents themselves. In creating the appropriate social program to develop community participation and civic values, an urban farming program was described to supplement the core educational program. The goal of the community thus becomes more about housing. The relocation community goals revolve around an urban society's desire for economic equity and social and environmental sustainability. These goals would be achieved by advancing job skills, sharing in community resources and successes, specifically in food production and increased food security on site. An urban agriculture movement enables advancement in various aspects of communities, land utilization, labor production, diet and nourishment along with food production and its associated economic benefits. Connecting all these goals and objectives expresses the overall mission of a relocation community, to create civic oriented values and unify a dislocated community. Communal values within Filipino households are already highly expressed. When this communal circle is expanded to the community scale, the mission and vision of a relocation community becomes accomplished.

In addition to the relocation community's program and design, housing design focuses on providing cost-efficient ways families can live in a compact but highly practical and functional

home. Additional living space is made possible with a mezzanine or loft space as bedroom. On the same level, a private balcony can serve as areas to dry clothes. Moreover, various housing options are offered for larger families desiring communal living spaces and new families looking for a more inexpensive starter home. In every housing typology, passive, low-energy buildings characterize the Quezon City relocation site. With rainwater collection and reed beds as resource and waste management strategies, respectively, natural site assets add economic value to the household by decreasing potable water consumption and increasing food production in a family's own front and backyards. These sustainable strategies start to close the site loop on resource utilization and integrate related environmental, economic, and social benefits. This comes at the core of development challenges and hints at improved resolutions for Metro Manila's urban issues. When the informal settlement and housing issues are confronted with the belief and strategy that gives value to these interconnected concepts, solutions become complete and more effective.

Economic progress doesn't require social progress. But social progress is achieved when economic and environmental developments are integrated appropriately. In Metro Manila where close to a fifth of urban families live in informal settlements, empowering this marginalized portion of society correctly prioritizes societal progress. This is the definition of true progress for Filipinos, the conditions that allow the Masses to actively participate in civil society and shared in its benefits and resources.

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APPENDIX

Vicinity (above) and Location Map (below):



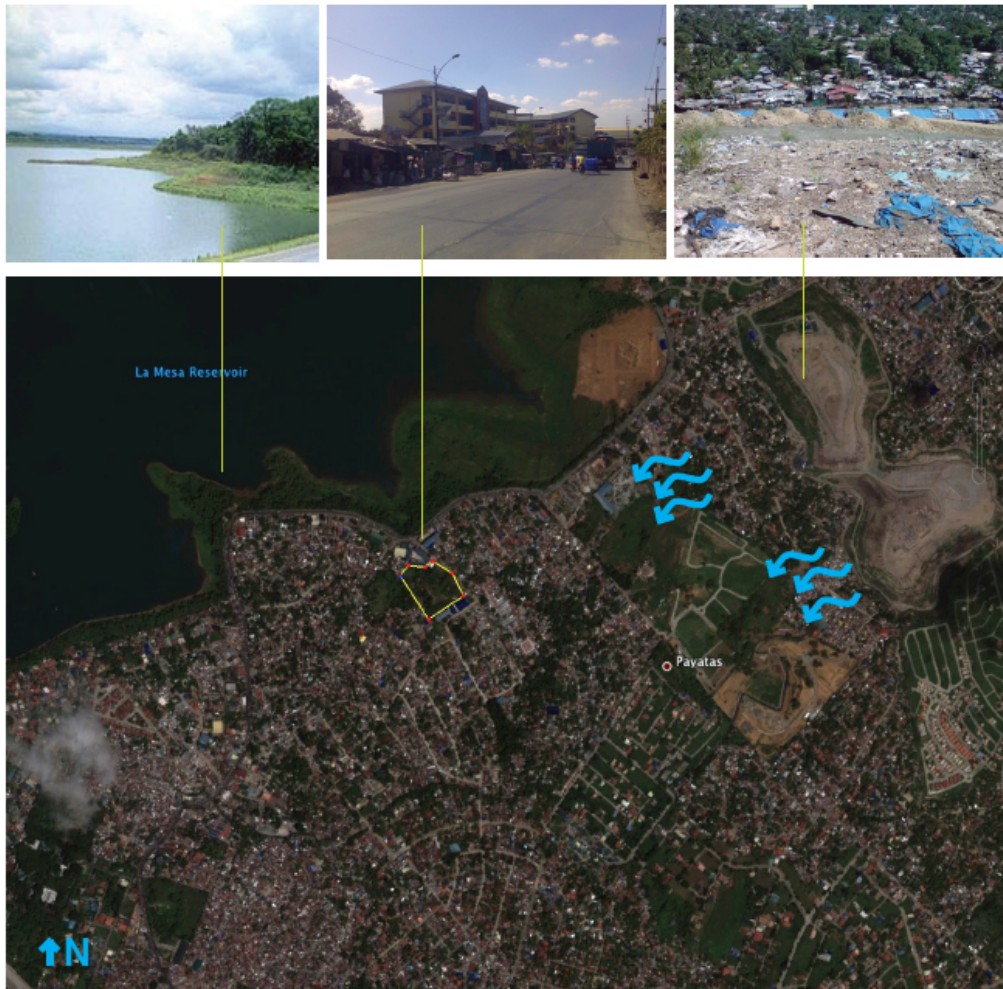
- 1 Elementary School
- 2 High School
- 3 Drug Rehab
- 4 Reservoir



- 1 Elementary School
- 2 High School
- 3 Drug Rehab
- 4 Site Entrance

Vicinity Description

Proximity to Site:	The Site is adjacent to C. Munoz-Palma Public High School and within a few blocks from Payatas Elementary School. About 500 meters away is La Mesa Reservoir, part of the water system providing Metro Manila's main source of water. There are thousands of informal settlers living along the former Payatas dump site a few kilometers away.
Geography / Climate:	A large portion of Quezon City is characterized by rolling hills. Quezon City has a tropical monsoon climate. The wet season lasts eight months from May to December. Large-scale wind conditions result from north-east and, to a lesser extent, south-west monsoon prevailing winds.



Site Description

Topography:	The site has minimum and maximum slopes of 58m to 72m (190ft to 236ft) in elevation. The most elevated area of the site is located at the North-East entrance gate.
Existing Structures:	There is community prayer hall currently in use by the entrance gate and a small bahay kubo (nipa hut) on site. An 8ft cement wall along Molave Street exists as a security barrier.
Vegetation:	Various mature trees exists on site: Philippine mahogany and mango fruit trees predominantly. There are also a few bamboo groupings at two locations.



Design Requirements

Regulation 'BP 220': During the last decade, the Housing and Urban Development Coordinating Council (HUDCC) created a Housing and Land Use Regulatory Board (HLURB) to set standards for the development of economic (up to P400,000) and socialized housing (P401,000 to P750,000) in the country. If the housing development standards are met, the home buyers will be eligible for subsidized loans through the government.

Below are selected site and housing conditions that have to be met for the proposed design goals.

SITE REQUIREMENTS

PRESERVATION / ALTERATION

Slope for proper drainage

Prevent erosion and flooding

Preserve trees with >200mm diameter

DESIGN PARAMETERS (based on density)

>9% of area for parks and playground

A "Multipurpose Center" is required

2% of area for "Community Facilities"

CIRCULATION / ROADWAYS

Major roads at least 8.0m wide

Minor roads at least 6.5m wide

Interconnecting road with public road
at least 10m wide

Pedestrian Alley to break blocks 2.0m wide

Pathwalks for housing access 3.0m wide
and maximum of 60m length

SETBACKS

Entrance to site setback 3.0m wide
and 5.0m length

LOT & HOUSE REQUIREMENTS

LOT

Duplex

Row House

Economic

54 sqm

36

Socialized

48 sqm

28

LOT FRONTAGE

Duplex

Row House

Economic

6 m

4

Socialized

6 m

3.5

FLOOR AREA

Single-family

Economic

22 sqm

Socialized

18 sqm

FIREWALL

mandatory for duplex and row houses

YARD SETBACKS

Front 1.5 m

Side 1.5

Rear 2.0

WATER SUPPLY

If public water is not available, developer must provide independent water supply system of 150 liters per day (ground, elevated, rain collection).

SEWAGE SYSTEM

Sewage disposal communal or individual

Site Plan and Program

Site Plan, 1:1000

1	Parking	6	Basketball Court	11	4-Linked Units
2	Entrance Canopy	7	Courtyard / Weekend Market	12	Duplex
3	Program Offices / Family Planning	8	Classrooms	13	6-unit Cluster
4	Multifunction Hall / Sanctuary	9	Pig Pens	14	Single Detached
5	Community Kitchen / Canteen	10	Demonstration Garden		



SPATIAL PROGRAM

Community Spaces

Courtyard Market
Daycare / Classrooms
Offices / Family Planning
Function Hall / Sanctuary

Kitchen / Canteen

Basketball Court / Seating
Community Garden
Pocket Parks

Site Facilities

Pig Pen
Cisterns
Rain Gardens / Bio-retention
Reed Bed / Bio-filtration
Compost / Permaculture
Material Recycling

Housing Units

Starter House
Socialized / Economic
Upgraded Socialized /
Economic
 Living
 Kitchen
 Bedroom
 Bath / Toilet
 Rain Collection
 Laundry / Clothes Hang
 Filtration Bed / Garden

SOCIAL PROGRAM

Community Scale

Farmer's Market – Weekend event will allow food grown on site to be sold by residents to visitors and the rest of the community

Pre-school – Daycare and daily lunch meals

Adult classes – Resident and public offering of certification classes specializing in food production & nutrition, waste recycling, community organization, and English

On-site food production – Vegetables, fruits and pigs will be grown and raised on-site

Sports – Organized sports competition held on basketball court

Community Interaction – The community will be a demonstration and teaching site for the surrounding community and a tourist visitor's destination as a prototype relocation community

House Scale

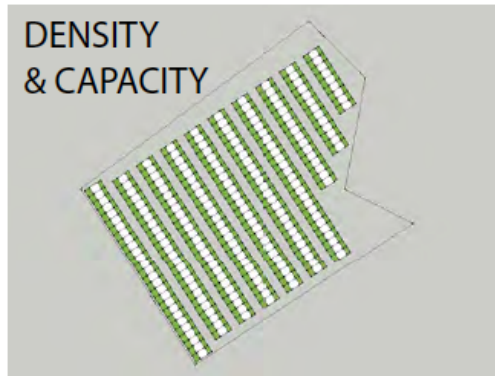
Homegrown vegetables and herbs in the backyard

Rain Barrel program will supplement tap water

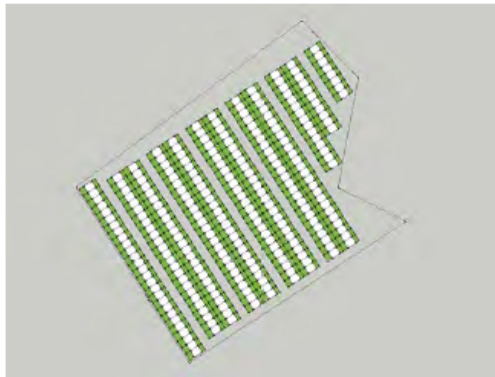
Gray-water will flush toilets and water the garden

Black-water will be bio-filtered post septic processing

Estimation of Appropriate Housing Density:

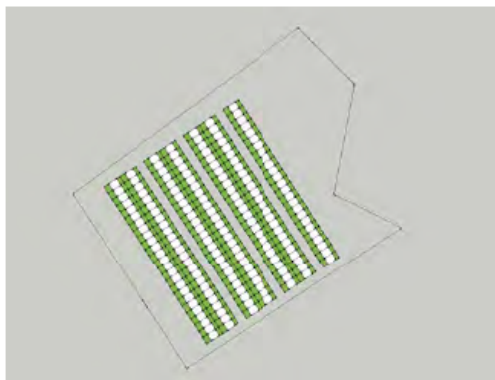


single story row houses (5m pathway per row)
without community space
220 units



single story row houses back-to-back (5m pathway per row)
without community center
269 units

If 1/3 or 90 units were converted to 2-story dwellings,
360 units (90x2 + 179) would be possible.



2-story row houses, 7 rows
ample space left over for a community center, etc.
364 units (182 x 2)

What is the housing capacity of the site? How dense should the housing clusters be?

The housing capacity for the site is around 360+ single story units, each lot at 40sqm with each unit 20sqm. At minimum, 1/3 of the lots will have to be 2-stories to reach the initial 350 unit goal. However, community spaces will have to be compromised unless 2-story housing units are maximized.

Because community spaces are integral in a program of a teaching village along with open spaces for farming and parks, 250 units total is the more attainable and more appropriate goal. Increasing density using 3-story dwellings will also be considered.