Creating Resilient & Livable Cities

Asia Society

Pacific Cities Sustainability Initiative
Insights From The 2014 Annual Forum

ULI Urban Land Institute

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THE PACIFIC CITIES SUSTAINABILITY INITIATIVE (PCSI) is a collaborative dialogue which aims to foster long-term sharing of urban sustainability strategies between communities across the Pacific Rim. Launched in 2009 with the support of the USC Marshall School of Business and the UCLA Anderson School of Management, the initiative is a joint program of the Asia Society and the Urban Land Institute with support from leading organizations engaged in solving unprecedented challenges associated with rapid urbanization in Asia and across the Pacific Rim. PCSI convenes select thought leaders from business, government, and academia with the aim of fostering new alliances, sharing innovative strategies, and showcasing effective practices.

For more information about the Pacific Cities Sustainability Initiative, please visit
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#PCSI

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Contents

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Preface

IN MARCH 2014, a group of more than 200 participants, including urban sustainability experts, practitioners, and researchers, convened for the 2nd Annual Pacific Cities Sustainability Initiative (PCSI) Forum, "Creating Resilient and Livable Cities," presented by Asia Society and the Urban Land Institute (ULI). Featuring site visits around Manila, keynote presentations, panel discussions, and interactive breakout sessions, this year's Forum provided participants with an opportunity to exchange best practices and share lessons learned. Government representatives, global urban planning experts, nongovernmental organizations, multinational firms, designers, and researchers exchanged ideas and had a unique opportunity to learn about the host city of Manila and to meet and network with their counterparts in the Philippines.

This year's Forum dialogue on resilient and livable cities was particularly relevant for the Philippines, which is still recovering from the disastrous Typhoon Yolanda (Haiyan) in the fall of 2013 and is engaged in a national debate about how to "build back better." Manila is also a city familiar with the impacts of disaster, with regular floods and storms affecting the entire metro region. In fact, Forum participants were able to get an insider's view of the massive underground water detention tank at Burgos Circle in Manila's Fort Bonifacio neighborhood, just one of the infrastructure solutions that will make Manila more resilient in the future.

Participants on a PCSI Manila Forum Mobile Workshop peer into the water detention tank at Burgos Circle

We have been working since 2012 to complete ULI's Ten Principles of Sustainable Development for Metro Manila's New Urban Core which has paved the way for our immediate neighborhoods and key stakeholders to hear each other, collaborate, and help us work toward a responsive and resilient community. Additionally, in an effort to make Metro Manila more resilient and livable, ULI Philippines proposed the BGC Heartwalk project, part of Building Healthy Places, an initiative that promotes projects linking human health and development as a core component of thriving communities. The BGC Heartwalk project consists of a 1.2-kilometer stretch of pocket parks which serve as a pedestrian walkway with lush landscapes and way-finding elements to connect BGC with major transit and access routes. Encouraging commuters and residents to walk will help reduce traffic and provide a healthier way of getting around.

Doris Magsaysay-Ho and Carlos Rufino welcome participants to the 2nd Annual PCSI Forum in Manila

The PCSI Forum in March 2014 also laid the groundwork for the Philippines' Livable Cities Design Challenge, supported by Asia Society and ULI in partnership with the APEC National Organizing Council, National Competitiveness Council of the Philippines, U.S. Agency for International Development, World Wildlife Fund, and Alliance for Safe and Sustainable Reconstruction. Twenty Philippine cities will vie for top honors in best urban planning and disaster risk reduction to meet the challenges of climate change and sustainability.

Manila is also a city familiar with the impacts of disaster, with regular floods and storms impacting the entire metro region.

By evaluating the Philippines' experience with rapid urban population growth and extreme weather events, Forum participants sought to contribute to an understanding of how to create more sustainable, resilient, and livable cities in an age of increasing climate uncertainty. In the pages that follow, you will read some of the outcomes of this dialogue, along with proposed practical strategies that city leaders, citizens, and the private sector can implement along their path to a sustainable future.

Doris Magsaysay-Ho
Chair, Asia Society Philippines Foundation

Carlos S. Rufino
Chair, Urban Land Institute Philippines

Introduction

THE PACIFIC CITIES SUSTAINABILITY INITIATIVE (PCSI) is a collaborative dialogue that fosters the exchange of knowledge in pursuit of furthering urban sustainability between communities across the Pacific. Established in 2009 with support from the Centers for International Business at the University of Southern California's Marshall School of Business and the University of California, Los Angeles, Anderson School of Management, PCSI is now a partnership initiative of Asia Society and the Urban Land Institute, with support from our sponsors and leading global organizations in Asia, North America, and beyond.

As the United Nations has reported, more than 50 percent of the global population now lives in urban areas. Livability in these growing cities can be elusive, particularly in Asia—home to some of the most polluted cities in the world. Traffic congestion, slum housing, and access to open public space are just a few of the major hurdles cities face in becoming more livable and sustainable. In addition, the cities of the Pacific are uniquely vulnerable to the impacts of climate change and natural disaster, making resiliency a top priority.

This publication builds on the outcomes of PCSI's 2nd Annual Forum, "Creating Resilient and Livable Cities," held in Manila, Philippines, in March 2014. Inside, you will read recommendations

Tom Nagorski, Asia Society Executive Vice President, Sir Robert Parker, Secretary Panfilo Lacson, and Dr. Kuntoro Mangkusubroto at the PCSI Manila Forum Opening Panel

and insights from a cross-section of urban sustainability experts, including practical strategies that can be used by leaders in their own cities. These pieces provide fresh perspectives on creating cities that are more resilient to the impacts of climate change and more livable places for their inhabitants to live, work, and play.

Mobile Workshop participants in Ayala Triangle Gardens, Manila

Topics include why good governance is critical to a livable and resilient urban environment; why climate change matters; the importance of long-range integrated planning; how vulnerability shapes cities; how to house people and support community networks; and how cities can be planned around both people and the environment. This publication additionally features the outcomes of several interactive breakout sessions at the PCSI Manila Forum focused on urban mobility, public–private partnerships, resiliency and investment strategy, and resilient infrastructure. You will also read about a special project that kicked off at this year's Forum—the Philippines Livable Cities Design Challenge, which has drawn participation from the mayors of dozens of urban regions across the Philippines. We hope this publication will help them, and other city leaders, gain new insights and take action to make their cities more resilient to disaster and more livable for all citizens.

As the United Nations has reported, more than 50 percent of the globe's population now lives in urban areas.

Kathleen Carey
Executive Vice President and Chief Content Officer, Urban Land Institute

N. Bruce Pickering
Vice President, Global Programs and Executive Director, Asia Society Northern California Center

How Cities Can Prepare for and Recover from Disaster: 10 Key Steps

SIR ROBERT "BOB" PARKER
FORMER MAYOR OF CHRISTCHURCH, NEW ZEALAND

SIR BOB PARKER WAS MAYOR *of New Zealand's second-largest city, Christchurch, when it was devastated by a series of violent earthquakes in 2011. Close to 200 people died during the quakes, and at least 10,000 were injured. Sir Bob suggests some practical steps cities can take both in preparation for and recovery from a major disaster.*

1. PRACTICE, REHEARSE, TEST, TRIAL, TRAIN: PREPARATION IS EVERYTHING

No one can really understand what it is like to be in a major disaster until you're already in it. Living in a seismically active country like New Zealand, we should spend time rehearsing what to do should such an event strike. But remember: nothing can prepare you for that moment when you're actually in the middle of chaos. The key thing I've learned is that disaster training is vital, even though so little of it will play out the way you imagined. However, you will have internalized the structure and have a clear understanding of who the key people are, what your lines of communication will be, and where you can set up a base.

2. ORGANIZATIONS SHOULD PREPARE FOR THE WORST-CASE SCENARIO

Take a broad view and remember that it's not just about your own organization surviving, it's also about systems and records. If you can't get your building operating as soon as possible after a disaster, it will cost you far more than any insurance will cover. The most important thing is to keep your organization functioning for your employees and community. The leadership of any given organization should be asking the decision makers what risk management analysis has been done and what particular risks they need to manage. What does our risk portfolio look like? What would happen if we couldn't bring staff into the workplace for a month? What would happen if I couldn't make visits to my clients? Organizations need to think through these questions—a relatively simple but time-consuming task.

But remember: nothing can prepare you for that moment when you're actually in the middle of chaos.

3. AS DISASTER UNFOLDS, FOCUS ON THE BASICS

In Christchurch, all communication was out, bridges were down, and thousands of people were trapped. The key thing is person-to-person communication in those first few hours. Who's in charge of the police? How can they be contacted? Who's in charge of the ambulance? How can we find out what state the hospitals are in? You will need a comprehensive and regularly updated list of assets.

4. USE EVERY AVENUE TO COMMUNICATE AND BE INNOVATIVE

Loss of information is one of the first things that will happen. Letting people know what's going on will restore functionality much more quickly. If people know what's going on, that you are moving swiftly to help them, they will accept the inevitable deprivation that comes with a major emergency.

5. BUILD YOUR INTELLIGENCE NETWORKS

When you are in a situation where the power is out, chaos has ensued, and pressure is high, building a big picture of the overall event is key. We often forget this when we watch television coverage of major disasters from afar. Ensure your "intelligence gathering units" are in place in advance, whether

they are civil defense, fire departments, local media, or community groups, who can all help shape a better picture of the overall event.

Christchurch immediately following the earthquake

6. SOLVE ONE PROBLEM AT A TIME

You can't do everything at once. A major disaster is a complex puzzle that comes out of nowhere, and you find yourself in the middle of it when you're least prepared. You must take things one step at a time—go back to basics, including collaborative prioritization with fellow agencies

7. LEADERS MUST STAY IN TOUCH WITH THEIR COMMUNITIES

In the aftermath of the earthquakes, I made a point of spending several hours per day reaching out to various communities, including street meetings, to mind-map what was needed and see what was going on. By building an accurate personal picture, you don't just rely on the reports of others.

8. BE FLEXIBLE

Even though having a structure in place is key, the greatest asset is flexibility. Whatever is in place must be modified, adapted, and changed. In a major disaster, there is no perfect outcome, which is why adaptability and flexibility are key. Flexibility is difficult to build into bureaucratic structures, which becomes part of the challenge.

9. ACCEPT YOU'LL GET THINGS WRONG

It doesn't matter how much planning you do, there will be things you haven't accounted for that become major challenges. This is to be expected, but everything depends on how quickly you can respond to and rectify these challenges.

10. LOCAL AUTHORITIES MUST REMOVE THE ROADBLOCKS TO RECOVERY

What the Christchurch Council did was simplify a lot of rules. Cordoning off the Central Business District would have meant the workplaces of 50,000 people ceased to exist. Therefore, we reduced red tape and said, "If you have a business somewhere in the CBD that wasn't critically damaged, you can operate in your house. All you have to do is keep us informed and if you're not about to start a blast furnace in a quiet suburban street, you can do it." We wanted people to stay at work, and through this simple process, 90% of businesses in the city were operating within three to four months after the earthquake. Getting people back to work quickly is key to keeping people in the area and keeping the community and economy running.

Sir Robert "Bob" Parker is former Mayor of Christchurch, New Zealand.

Good Governance Makes Great Cities

ANTONIO G. M. LA VIÑA
ATENEO DE MANILA UNIVERSITY

GOOD GOVERNANCE IS A PRECONDITION FOR LIVABILITY. The main characteristics that make governance effective and produce optimum outcomes are:

1. A clear vision shared by the leaders and citizens of a city.

2. The ability to implement that vision with capacitated and empowered governance institutions.

3. Above all, in crafting and implementing that vision, inclusiveness is critical, that is, making sure that the poor and marginalized also own that vision and participate in making it happen.

The theme of good governance was discussed thoroughly in the panel on "Good Governance, Preparedness and Integrated Response" during the Pacific Cities Sustainability Initiative (PCSI) 2nd Annual Forum "Creating Resilient and Livable Cities," held in Manila, Philippines, last March 11–13, 2014.

In that discussion, I used as an example the recent climate-related disasters in the Philippines that devastated many of our major cities to emphasize the importance of good governance and, in particular, why inclusiveness is a must.

In 2009, Typhoon Ketsana caused massive flooding in Metro Manila and displaced hundreds of thousands of its residents. In 2011, Typhoon Washi brought rains and flash floods to Cagayan de Oro City in Mindanao and killed approximately 2,000 people. And, of course, just this past November 2013, Typhoon Haiyan destroyed the city of Tacloban in the Visayas, possibly causing casualties of anywhere from 6,000 to 10,000 or more of its inhabitants.

What is sometimes ignored in the reporting of overall statistics of deaths and damage is the fact that the costs and the suffering in these disasters were borne disproportionately by the poor. The truth is that the impacts of natural disaster are unjustly distributed. A city that is segregated—into poorer and richer areas, with areas that are booming economically while others are left behind in stagnation, with some neighborhoods more prepared than others—is not going to respond to disaster effectively. When a major disaster hits, as it did in Manila, Cagayan de Oro, and Tacloban, it is very difficult to rebound when so many of a city's citizens – already poor and marginalized – are affected directly by the disaster.

Boys play on a destroyed bridge in southern Mindanao after Typhoon Washi in December 2011

Even more unjust is the finger-pointing aimed at the poor in cities in the Philippines during disasters—their informal settlements are blamed for floods because their dwellings block the waterways. However, there are much more serious factors at play.

In Metro Manila, uncontrolled development has resulted in paving most of the city and closing off many of the water pathways. This situation is compounded by heavier rains, stronger typhoons, and rising sea levels—all resulting from climate change—combined with antiquated drainage systems, malfunctioning water pumps, denuded forest in the surrounding areas, faulty solid waste management, poorly designed flood control projects, and, above all, the sinking of Metro Manila because of too much groundwater extraction. We could say that we are fooling ourselves to believe that clearing floodways of informal settlements is the solution to flooding in Metro Manila.

Volunteers in Tacloban working on homes for those in the "no build zone" five months after Typhoon Haiyan

From these recent disaster experiences, it is clear that the key principle of governance that must be followed is inclusiveness. The poor must be part of the planning process. They must have a say in where their settlements should be located, with particular regard to economic and education opportunities. Their mobility needs must be considered in designing public transportation systems.

Inclusiveness is, of course, insufficient for making great cities. Good governance also requires capable and empowered public and private institutions.

Good governance is key to creating livable, competitive, sustainable, happy, and great cities.

Local governments must be granted the highest autonomy to formulate and adopt an inclusive and comprehensive vision of the city. They must also have authority to raise the necessary revenue and should have adequate control over human and other resources to support the implementation of that vision.

In the Philippines, from a legal point of view, the Local Government Code of 1991 is adequate in that it does give local government autonomy and authority. However, there is still a fair amount of capacity building necessary with many local governments.

During our conversation at the 2nd Annual PSCI Forum, Gloria Steele, Mission Director of USAID Philippines, shared examples of USAID's initiatives to build the capacity of local government in the Philippines. Guillermo Luz, Vice-Chair of the National Competiveness Council, also highlighted the new "Livable Cities Design Challenge," a planning and design competition with the objective of getting city planners to better plan their areas for a climate-defined future and for disaster risk reduction. Both of these efforts will help build the capacity needed to improve governance and more resilient, livable outcomes.

Finally, it is not just public institutions that need to build capacity for good governance. Private, citizen, and community organizations are also critical players. When enabled and empowered, these organizations ensure attention is paid to inclusiveness (that word again) and accountability. Good governance is key to creating livable, competitive, sustainable, happy, and great cities.

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A Change in the Weather: Climate Change and the Case for Energy Efficiency

JAMES A. MAGUIRE
AON RISK SOLUTIONS

THE DEVASTATION WROUGHT BY SUPER TYPHOON HAIYAN on November 8, 2013 in the Philippines has been well documented in the news media and much discussed in Asia's insurance industry. While the insured loss is likely to remain low because of the relative underdevelopment of Tacloban and the lack of hard infrastructure assets in the surrounding islands, the economic loss caused by the storm may approach US$13 billion; the total number of displaced citizens is estimated to be close to 700,000, and the loss of life may exceed 10,000. More important for weather watchers and insurance executives, Super Typhoon Haiyan (Yolanda) struck the Philippines with sustained winds of 195 miles per hour (the highest on record, with gusts estimated at 235 miles per hour). Independent climate scientists have discussed how this may represent an inflection point for Asia in terms of climate change and extreme weather events.

Or does it? *Aon Benfield Impact Forecasting* recently released its Annual Global Climate and Catastrophe Report 2013, which points out:

- For 2013, 296 events produced aggregate economic losses of US$192 billion—4% below the 10-year average of US$200 billion but above the average of 259 events.
- For 2013, natural disasters caused total insured losses of US$45 billion—the lowest since 2009 and 22% below the 10-year average of US$58 billion.

Thus, the correlation between climate change (the severity and frequency of catastrophic natural events) and economic impact may not be as direct as some have perceived. Nonetheless, as the case of Super Typhoon Haiyan makes clear, even in the absence of direct insured loss, there is an urgency to reduce the impacts of climate change. Hong Kong provides a case study for using energy efficiency to reduce the greenhouse gases (GHGs) that contribute to climate change.

Super Typhoon Haiyan arrived not long after Super Typhoon Usagi made landfall on September 22nd in Guangdong, China. Though Usagi was originally forecast for a direct hit on Hong Kong, it was much diminished when it ultimately made landfall in China. Nevertheless, it still caused an estimated US$2.9 billion in economic losses, and at least 15,000 homes were destroyed, with loss of life estimated at 30. While tracking directly toward Hong Kong in its early path, Usagi very much ended as a "great near miss."

If the Philippines sits in the "Tornado Alley" of typhoons, then Hong Kong would be the side street just off the alley. Hong Kong is located in the heart of a typhoon zone and will likely experience an increase in the frequency and intensity of extreme weather events. Average daily temperatures in Hong Kong have risen 1.2 degrees since 1913, and mean sea levels in Victoria Harbor have increased 2 millimeters per decade since 1954. As a meteorologist at Hong Kong Observatory commented this past year, "Hong Kong is like a frog in water that is gradually being brought to the boil; people do not seem to be aware of the long-term effects of climate change."[1]

Hong Kong features two primary opportunities to increase energy efficiency—the building and property sectors and logistics and trading firms. In the vertical landscape that is Hong Kong, buildings account for

1 Edwin Lai Sau-tak of the Hong Kong Observatory as quoted in the *South China Morning Post*, 11 November 2013.

89% of all electricity that is consumed. Electricity generation alone accounts for 67% of Hong Kong's total local GHG emissions, and Hong Kong's buildings account for 60% of GHG emissions locally! Additionally, Hong Kong logistics and trading firms hold considerable investments in factories operating in Guangdong as part of the global supply chain network, another key opportunity for energy efficiency.

Energy efficiency is typically defined by its goal of reducing the amount of energy required to provide products and services. The development, financing, and performance execution of energy efficiency projects is usually undertaken by an energy services company (ESCO) working with a host and having the following characteristics:

- Proven technology to reduce GHG emissions
- Measurable savings in energy utilization and spending
- Finance-led model that targets maximum value for money and performance
- Guaranteed performance by ESCO
- Immediate financial impact to a host or supplier's bottom-line operating expense. Additional benefits in terms of:
    - o Cost reductions due to capital expenditure reductions over time
    - o Cost reductions due to increased throughput
    - o Cost reductions due to improved product quality

Hong Kong's skyline in smog

There are several steps needed to accelerate Hong Kong's investment in energy efficiency. The Hong Kong government must enact a more robust regulatory framework; new building regulations would position Hong Kong to lead Asia's major cities in combating climate change through energy-efficient construction and building codes. Hong Kong, a center for innovation and financial services, could incentivize public–private partnerships and financing tools to scale energy-efficiency projects. Aon recently worked with a global ESCO to introduce new financial risk management approaches in building services.

Hong Kong is the logistics and supply chain manager for China. The introduction of new financing strategies coupled with the regulatory requirement (and enforcement) of energy efficiency standards in the Chinese supply chain would certainly move the needle in terms of GHG emissions and, most likely, go some way toward mitigating the trend toward more extreme weather. Hong Kong's government could provide loan guarantees to support ESCOs and hosts wishing to work on efficient retrofits, both in the country and across borders.

Hong Kong specifically and the insurance industry generally are well positioned for the expansion of risk management and natural catastrophe analytics that are needed to support public and private sector stakeholders to determine how climate risk is managed in a public policy context. Aon Benfield represents leading-edge analytics within the insurance industry for managing natural catastrophe risk. The issue is risk: risk management tools, including analytics and entreprise-wide risk management platforms, are key allies in the fight against climate change. Economic growth within the context of extreme weather and climate change requires both better data recording and analysis to support the comprehensive understanding of economic impact and insurance loss caused by natural catastrophes across the years, by the event type and on a transnational basis.

Energy efficiency represents the low-hanging fruit in the process of combating climate change. Our ability to use both old and new risk management instruments will support financing for much-needed projects.

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Multi-Stakeholder and Multi-Faceted Planning: The Key to Resilient and Livable Cities

SEAN CHIAO
AECOM

THE 2012 OLYMPICS SUCCESSFULLY REJUVENATED a formerly derelict part of London and strengthened that metropolis, bringing to the fore the importance of high-quality urban renewal through integrated planning. The same process is currently under way in the city of Rio de Janeiro. In both of those cities, the "legacy" of these events is more significant than the showcase of the Games themselves. AECOM was honored to have played a leading role in the preparation of each of these global showcase events, but, most important, we fulfilled the promise of establishing a resilient and more livable future for generations to come.

A resilient and livable city has enough green infrastructure and public realm to allow its residents to thrive.

As remarkable as Olympic preparations are, in absolute terms, they are of a scale and complexity comparable to what needs to be undertaken on a regular basis in major Asian cities during the foreseeable future.

"The River of Life" in Kuala Lumpur is a project that has risen to this challenge by reviving the Gombak and Klang rivers that run through the heart of that city. AECOM, in partnership with the Malaysian government, set out to activate, regenerate, and enliven the 10.7-kilometer river and its surrounding vicinities by creating a new public realm and economic platform that harmoniously supports the multi-faceted well-being of Kuala Lumpur.

Projects like "The River of Life" require that every part of the design process includes these five principles that shape the city: Citizens to Live, Nature to Thrive, Business to Invest, Cultures to Celebrate, and Visitors to Enjoy.

River of Life, Kuala Lumpur, Malaysia – project detail

1. CITIZENS TO LIVE

In providing a livable environment for citizens, we are looking at a balanced provision of basic needs and urban resources: food, water, transportation, education, health care, safety. It means the provision of human-scale communities that encourage the well-being, social equality, and public engagement of citizens. "The River of Life" provides inclusive environments that promote interaction between the residents, the community at large, and the water. It weaves together a highly livable urban fabric that connects the citizens with their city.

2. NATURE TO THRIVE

A resilient and livable city has enough green infrastructure and public realm to allow its residents to thrive. It provides a clean and reliable source of water supply and wastewater management, and it promotes the reduction of energy consumption while exploring alternative energy strategies. Singapore has adopted

creative ways to make efficient use of every square centimeter of land in the island city. Ordinary public infrastructure like canals, elevated rail lines, and rooftops double as usable public spaces for leisure and recreation. The Singapore government also brought its sewage management underground with the Deep Tunnel Sewerage System to intercept used water flows in existing gravity sewers and to channel the flows to a centralized water reclamation plant for purification, freeing up space in the land-scarce country.

Too often, new master-plans have overlooked a city's culture as an integral part of the development process.

3. BUSINESS TO INVEST

Behind every city's success is a robust, even innovative, regulatory framework to govern development. It must foster a fair yet competitive market that promotes public-private partnership, and must attract and retain talent, which is key to weaving the efficient urban fabric that is the backbone of a resilient city. Without a strong basis in this area, one essential component of the urban puzzle would be missing.

4. CULTURES TO CELEBRATE

The planning of urban spaces must accommodate the coexistence of new lifestyles with existing indigenous cultures and the preservation of urban heritage. The environment must be shaped to promote a dynamic and tolerant cultural, social, and religious environment. Too often, in recent decades, new master plans have overlooked a city's culture as an integral part of the development process, often to the detriment of the vibrancy and authenticity of the urban center.

5. VISITORS TO ENJOY

To attract visitors and encourage citizens to sink their roots in their home communities, planners and leaders should seamlessly incorporate elements like accessibility (for both the physically able and the physically challenged), safety, and quality of the environment. Only when these fundamentals are mastered can we aspire to create a city image that one could call the "signature" of the city and strengthen its software development, such as its services, provision of information, and creation of high-profile events to put the city on the world map.

Olympic Park, London

The foregoing conditions are not utopian, though their integration is only achievable through a multi-stakeholder and multi-faceted integrated planning approach. This approach incorporates planners, designers, architects, engineers, and municipal leaders with a common goal of creating resilient and livable cities that can sustain the challenges of today and of tomorrow. In an increasingly globalized and competitive world, Asian cities must make concerted, bold, even Olympic-scaled efforts to better themselves on many fronts, or else face decline. At AECOM, we believe that this is less of a challenge than an opportunity for Asian cities to take the global lead in the 21st century.

Sean Chiao is Chief Executive, Buildings + Places, Asia Pacific, AECOM.

Resilient Infrastructure, Resilient Cities

TRANSIT-ORIENTED RESILIENCE

RIVES TAYLOR
GENSLER

What does "urban mobility" mean in the context of creating resilient cities, especially in a place like Manila? In a special breakout session at the Pacific Cities Sustainability Initiative (PCSI) 2nd Annual Forum in Manila, participants agreed that more than addressing the once-per-decade upheaval of a major earthquake or typhoon, the everyday livability of the city is key to improving urban mobility. Everyday gridlocked traffic, with its attendant impacts on health, productivity, and quality of life, has a much more pervasive and insidious impact on the population of a given city.

Large-scale cities like Manila, whether in Asia or the Americas, are often composed of a number of villages or districts with their own politics and constituent needs. These distinct districts also often have complex transit aspirations with even more complicated planning. With scattered responsibility, where clear mandates and regulations are lacking, inter-city or regional integration is difficult. Logjams in creating a clear transit strategy tend to occur in planning departments, where grand plans come into conflict with long-term execution.

Some of the particular challenges to building up urban mobility in cities include: How to make the journey enjoyable? How to create transit stations that are integrated with a lively mixed-use mode? How does transit address the weather and its variability over a year—are there adaptations for hot, rainy, or snowy weather?

At the root of any effort toward improving urban mobility should be a better understanding of behavioral shift ("transit is a good thing"), predictability, safety, and choice. Creating solid mobility options is as much about "software" as it is about transit hardware. Expert participants at the PCSI Manila Forum breakout session repeatedly emphasized that any approach to improving transportation and mobility rests on two basic approaches:

- An educational and information campaign is necessary.
- The campaign must recognize the non-negotiable principle that low emission development needs to be the standard.

Transit options begin with the human-scale and least costly options, which all start with safe roads: bicycles, walking, and electric mopeds with charging stations are all human-scale forms of urban mobility. "Please get rid of the two-stroke gas engines that pollute our city!" said one of the participants at the Manila Forum. One ideal approach to creating safer roadways with more mobility options is to allocate one-third of the space to trees and landscaping, one-third to pedestrians and bicycles, and one-third to motorized traffic.

Malaysia's SMART Tunnel (Stormwater Management and Road Tunnel) is an example of resilient infrastructure that handles traffic congestion and also diverts water in storm events

Bikeshare station in Beijing

Transit also shapes the city on a larger and more regional scale. Participants at the breakout session discussed transit-oriented development and the necessary development density to support different types of transportation. Many cities struggle to fund light or heavy rail systems but could use an incremental approach, based on leveraging their rights-of-way, to implement bus lines or bus rapid transit lanes that are separated from traffic and could link not only neighborhoods but also regional city clusters. Aligning mass transit in this way could also have multiple uses for a city—such as running water or power infrastructure upgrades to redevelop surrounding neighborhoods over time.

Mobility can be part of an overall strategy for improving resiliency in cities. Thinking about transit in this way can deliver several other outcomes. For instance, better transit allows for decentralized or flexible work opportunities (time and place)—perhaps, over time, erasing the differentiation of lower- and higher-income places of work and residence. Transit can also encourage families to stay in surrounding rural agricultural areas while facilitating their goods-to-market opportunities.

Finally, there was a clear sense in the breakout session that in order to improve urban mobility on a pan-Asian scale, countries must be integrated in their approach and must work together to share lessons learned and tackle their shared challenges.

Rives Taylor is Director of Sustainable Design at Gensler.

RESILIENCY AND INVESTMENT STRATEGY

KATE BROWN
GROSVENOR

City resilience is a key concern for long-term investors in the urban environment. It is also a concern for individual cities seeking to remain competitive, attract capital, and provide a decent living and working environment for their populations. How do you go about evaluating a city's resilience as an investor entering a market or comparing a number of markets with different characteristics? How is creating sustainable, resilient, and livable cities becoming part of investment strategies? And what can cities do to encourage and retain international investment?

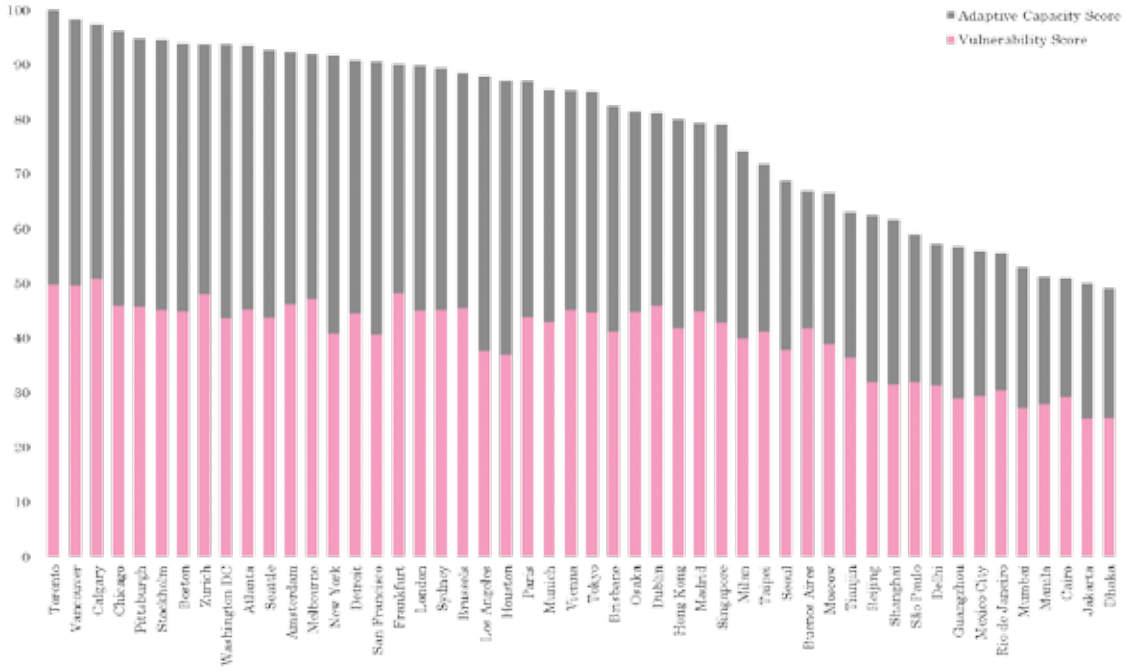
These issues were debated in an interactive breakout session at the Pacific Cities Sustainability Initiative 2nd Annual Forum in Manila. The outcomes of this conversation are reflected in the following points.

KEY PRINCIPLES FOR INVESTORS

1. Quantify the Risk Systematically

Traditionally, real estate investors have been concerned with economic factors such as rising interest rates. But there are plenty of other concerns—rising sea levels, earthquakes, overpopulation, social inequity, pollution, crime, and poorly functioning government.

These risks and trends of globalization, climate change, and aging populations are creating dramatic changes at the country, city, and neighborhood levels, meaning that the traditional methods of assessing real estate investment risk—such as standard deviation of returns, projected vacancy rate, and forecast rental growth—are insufficient.



City resilience rankings (Grosvenor)

To address this, Grosvenor has produced a research report, "Resilient Cities," which evaluates vulnerability and adaptive capacity to arrive at an overall city resilience ranking. The report also provides a clear and systematic way to evaluate long-term investment risk when considering long-term real estate investment opportunities in cities around the world.

The discussants at the Forum agreed that the findings do not necessarily mean investors should avoid cities with lower resilience. Instead, this highlights the risks those cities face and enables more informed decision making about entering that market.

2. Be Mindful of Your Likely Length of Investment

Systematic evaluation of city resilience has clear implications and opportunities for organizations with a fiduciary duty to guard the value of their investments over the long term—including pension funds, insurance companies, sovereign wealth funds, trusts, and others.

The insights provided can also help long-term investors create portfolios that optimize returns to minimum vulnerability scores or maximum adaptive capacity. Investors deploying capital into more resilient cities can be confident that if they take a knock, they will bounce back in a relatively short time and are likely to provide safe havens in a rapidly changing global environment.

City resilience is a key concern for long term investors in the urban environment.

However, for those investors with a shorter time horizon (seven years or less), it can be more challenging. For these short-term investors, a portfolio of resilient cities will not necessarily be less volatile. In some cases there could be greater opportunities, especially where a city has demonstrated its commitment to improving its adaptive capacity.

Resilience is a dynamic process, and the risks will change over time. If emerging cities follow the principles set out below, it is possible that they will attract key infrastructure investment, meaning that in 5 to 10 years, they could become more resilient.

KEY PRINCIPLES FOR CITY GOVERNMENTS

3. Importance of a Municipal Vision

The cities that perform well in the resilience rankings are those that are well planned and governed. Key to this is a central municipal vision, illustrated most recently in New York City's "PlanNYC" long-term city vision. Having a coordinated response has enabled city leadership to make strategic investments in the public realm, making the city more livable. The plan specifically addresses climate resilience with many mitigation and adaptation strategies. It was put into practice in the wake of Hurricane Sandy, enabling the city to get back to business quickly.

In emerging cities, this clarity is often lacking and is greatly needed. A clear citywide plan with transparency about what is trying to be achieved provides certainty to investors and filters into the regulatory system through planning and building regulations.

A clear vision also enables cities to prioritize strategic investment. Cities that invest in public infrastructure, planning systems, and support for employment growth can increase their resilience significantly, thus improving long-term investment prospects.

4. Establishing a Framework to Ensure Institutional Quality

Certainty is critical to attracting and retaining international investment in infrastructure. There has to be a clean system that cannot be arbitrarily changed and in which foreign investors will have confidence.

To establish this, institutions are needed at the city level, such as a government agency that holds the municipal vision and a program that drives its delivery.

This central organizational role is key, as it leads to an image of cleanliness and competence, from which grow security, trust, and transparency – which are all key elements to attracting and retaining investment.

By undertaking a resilience assessment, government authorities can judge their own performance, assess future risks, and improve their capability to adapt to adverse events in an increasingly uncertain world.

Kate Brown is Group Director for Sustainability at Grosvenor.

Destruction after Typhoon Haiyan

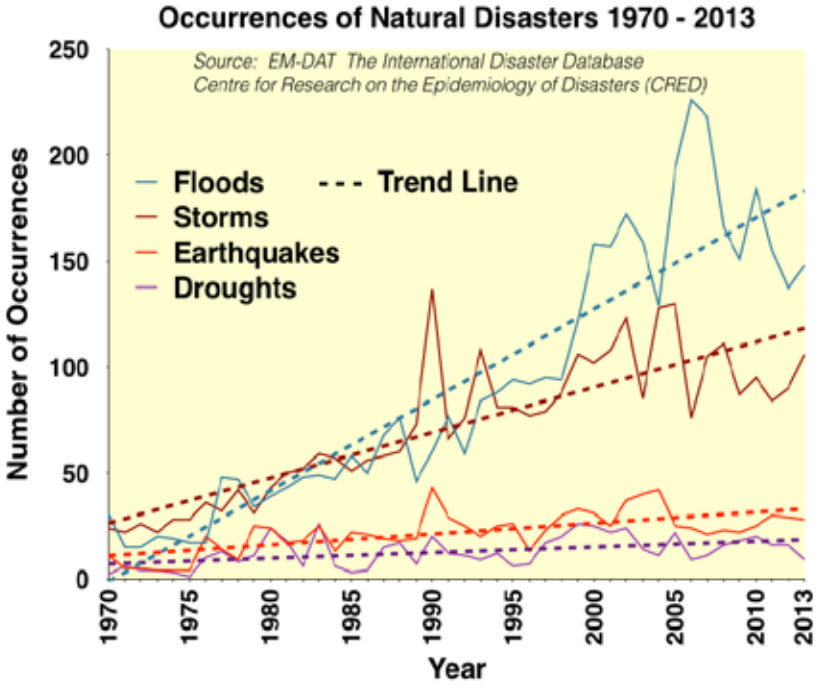
QUALITIES OF RESILIENT INFRASTRUCTURE

ASHOK RAIJI
ARUP
FIONA COUSINS
ARUP

Over the past few years, the impacts of climate change have become evident. Storm events are more frequent and more powerful, resulting in large monetary losses along with tragic and significant human costs. Hurricane Sandy, which hit the East Coast of the United States in 2012, and Typhoon Yolanda (Haiyan), which decimated parts of the Philippines in 2013, are grim reminders of the ravaging forces these events have. While it is true that two events do not represent a trend, when one looks at what has transpired over the past 40 years, there is a very clear and alarming trend of an ever-increasing

number of storms and floods. Furthermore, this becomes an issue of epic proportions when one considers that 75% of the world's cities (with a population of almost 3 billion people) are in coastal areas and vulnerable to flooding caused by storms and tidal surges.

The need for resilient infrastructure is no longer a choice. The time has come to upgrade old infrastructure in our cities and to plan and design robust infrastructure in the new cities that are being developed in response to urbanization.



As the definition of "resilience" suggests, resilient infrastructure must have the capability to recover quickly from difficulties. In the context of the built environment, this means that transportation systems, grids (electrical and smart), information and communications technologies, energy and water systems, and buildings all need to have this "bounce-back" ability after a storm event.

This is particularly significant for the grid of the future that will encompass and integrate many functions that are needed for the built environment. Failure of this infrastructure would be disastrous, as it would impact all aspects of living.

What must we be resilient to? The answer is really everything.

- Slowly changing stressors—climate change, sea-level rise, erosion, greater rainfall, stronger windstorms
- Sudden shocks—earthquakes, tsunamis, hurricanes, tornadoes
- Social change—revolution, demographic change

When do we need to be resilient? The answer is "always", but, to be more precise, we must be resilient before, during, after, and long after an event.

Resilient before: This means having a plan, social connections, knowing what plan B is, and knowing what might befall us.

Resilient during: Riding out a storm or an earthquake, or even a tsunami, is quite often "the easy bit" as long as one is alive at the end of the event. Resilient infrastructure can go a long way in preventing the detrimental impacts of extreme events. For example, sea walls can mitigate tidal surges. Putting critical infrastructure outside the floodplain will keep buildings and transportation systems in operation.

Resilient after: Right after a disastrous event, the focus is on staying alive and very shortly after that, on staying healthy. The disaster recovery world is about providing food, water, shelter and sanitation as quickly as possible. Robust infrastructure (transportation, communications, etc.) makes this much easier.

Resilient long after: This is all about learning from extreme events and adapting plans and systems for the better.

In summary, there is a need to be resilient to a wide range of things, at all stages of their occurrence. We must be aware that the future will be different while recognizing that we cannot predict how different it will be.

The basic characteristics of a resilient system can be summarized in the following six key points:

1. Redundancy or flexibility—Providing multiple pathways in a system. It is about making sure there are many ways to get things done.

2. Capacity—Making sure that systems are not stretched to their breaking point.

3. Safe failure—Designing and planning so that the failure of a single piece of equipment does not result in failure of the entire system. This could be achieved through flexibility or extra capacity.

Now is the time to build and rebuild infrastructure in areas that are vulnerable. Waiting is not an option.

4. Rapid rebound—Making a system that can be brought back quickly if it fails or has to be shut down for its own protection.

5. Constant learning—We always have to learn from the last event so that procedures, systems, responses, and so on can be made better, more efficient, and more effective.

6. Anticipating, planning, and designing for the predicted future impacts of climate change.

There is a school of thought that suggests resilience and livability are mutually exclusive. That is simply not so. In fact, it is clear that resilient infrastructure will ensure livability in the very long term, making life a great deal better and safer for the 3 million people who live in coastal areas that are vulnerable to storms, tidal surges, and sea-level rise. Now is the time to build and rebuild infrastructure in areas that are vulnerable. Waiting is not an option.

New York City's 42nd Street subway station closed due to Hurricane Sandy

Ashok Raiji is Principal and Americas Property Business Leader at ARUP.

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Living in the Resilient City

ROBERT FREITAG
UNIVERSITY OF WASHINGTON

VULNERABILITY AND LIVING IN THE RESILIENT CITY

I recently moderated a workshop session at the Pacific Cities Sustainability Initiative 2nd Annual Forum in Manila, titled "Vulnerability in the Resilient City: Housing and Community Networks." Our discussion was informed by the other Forum panel discussions, the on-site mobile workshops, and the insights of the experts in our panel discussion: Antonio Meloto, Founder and Chairman of Gawad Kalinga; Illac Diaz, Director of My Shelter Foundation and Liter of Light; and Celina Agaton, a Google USAID ICCM Fellow.

In fact, as a former Peace Corps Volunteer (stationed in and near Manila in the mid-1960s as a science teacher), the Forum was for me a personal rediscovery of Manila. I walked from Makati to Roxas Boulevard, traveled by Jeepney throughout the city, traveled to the end of both light rail lines, visited Antipolo, and was driven by friends around Laguna de Bay—these explorations served to refuel my admiration of Manila. These conversations and experiences set the stage for an incisive conversation about vulnerability, resilience, and community in the growing urban metro regions of the Pacific.

Our session focused on the challenges to achieving both resiliency and livability, particularly for vulnerable communities—but in the end, the conversation ended up focusing on the opportunities. Several key ways that metro regions in the Philippines (and elsewhere) can promote community resilience can be summarized as follows:

- Nurturing *bayanihan* (a Filipino term referring to a spirit of community or cooperation), which includes revitalizing existing neighborhoods that nurture the *bayanihan* spirit by expanding and restoring public spaces and adding trees and open areas.
- Providing opportunities for engineered "sweat equity" along with interim and transitional housing and structures in cities and in the aftermath of disasters.
- Using new technologies to increase awareness of the rapid changes occurring to the built, social, and natural environments.
- Viewing shopping malls as vital but ancillary elements of the urban neighborhood social community fabric.
- Incorporating sea-level rise projections when incentivizing coastal development.

Illac Diaz of Liter of Light shows residents of a Manila slum how to install a DIY solar light made from a water bottle

The Forum mobile workshop to the Mall of Asia (a major mall in the heart of Manila) provided an interesting prelude to our discussion. From a resilience perspective, the mall is very well engineered—it can function as a refuge in a storm, and it was built and designed with storms and sea-level rise in mind. However, shelter alone doesn't support the ability of citizens to self-organize, a key component of resilience. What is needed are neighborhoods sheltered by trees, with small shops and sufficient public space to ensure quality of life.

Another concern in Manila, and also a threat in many coastal cities, is that higher than expected sea-level rise could make coastal infrastructure even more expensive. In Manila, the Mall of Asia, Intramuros, and the U.S. Embassy (all stops on our mobile workshop tour) will likely be inundated. Capital that could be used to support retreat or development in other areas will likely be used to protect these resources.

In our panel discussion at the Forum, we turned to more specific examples of creating community resiliency, with Gawad Kalinga's work providing a key perspective. Mitigation and strengthening the built environment alone does not equate with resilience. Though the poor are often viewed as vulnerable, their social networks have proven to be more resilient to the impacts of adverse change than those with higher income but void of community.[1]

Our physical environments can enhance (or reduce) this social capital—I was struck by how walls and the lack of public space in Manila neighborhoods have an impact on the community. Without places to gather and without green space, the streets are hotter, dustier, less welcoming, and less community oriented. Good urban design is meaningful, and it can create and nurture community.

Illac Diaz, of Liter of Light and My Shelter, showed how the people working with his foundations are able to build social capital by using readily available or free building materials (such as plastic bottles, mud, and bamboo) and methods that can be easily learned by the communities that will use them. The skills used are transferable—whether to start a business or respond to a disaster. It is helpful to think of resilience as the ability of a community to self-organize, not to bounce back to a past state but to a new normal.[2] In dynamic landscapes like coastal and riverine floodplains, building transitional structures without an extensive footprint may end up being a preferred alternative. The Dutch, for instance, do not typically allow permanent structures on the sea side of dikes. The kiosks, dressing rooms, and restaurants providing goods and services to beachgoers are dismantled every year before expected winter storms.

Critical to resilience is the availability of feedback. Knowing the world around us is key to the ability of a community to self-organize, especially in rapidly changing environments. These feedback tools (including the user-generated mapping tools introduced by Celina Agaton) are becoming more available and more easily understood and increasing our resilience.

The Philippine Islands will have to accommodate many changes with increases in overall population and migration to urban areas, stresses to natural capital, and changes brought on by a warming climate. Change will come both incrementally and episodically as natural thresholds are crossed. Adverse impacts resulting from these changes can be tempered by existing social capital, increased opportunity for transformability, and providing better feedback and situational awareness.

Robert Freitag, CFM, is Director of the Institute for Hazards Mitigation Planning and Research, Senior Instructor, and Adjunct Faculty at the University of Washington.

1. This is well documented by Eric Klinenberg (*Heat Wave: A Social Autopsy of Disaster in Chicago* [Chicago: University of Chicago Press, 2002]) and others.
2. Brian Walker and David Salt, *Resilience Practice: Building Capacity to Absorb Disturbance and Maintain Function* (Washington, DC: Island Press, 2006).

HOUSING AND COMMUNITY NETWORKS

ANTONIO MELOTO
GAWAD KALINGA

I am the founder of Gawad Kalinga (GK) ("to bestow care"), a Philippine-based nongovernmental organization (NGO) and movement that aims to end poverty by restoring the dignity of the poor. GK was founded over a decade ago and has expanded its presence to Indonesia, Cambodia, and Papua New Guinea, where its work focuses on governance, productivity, and replicability in creating livable and sustainable communities.

Gawad Kalinga's approach to responding to disaster, fighting poverty, and creating sustainable communities can be summarized through the following key points:

- **HAVE A MOVEMENT STRATEGY.** Gawad Kalinga has built more than 2,300 intentional communities that directly impact the lives of over 1 million poor. This was achieved by adopting a "movement" rather than "project" strategy. Extreme poverty, vulnerability to climate change, and food insecurity are massive challenges, and addressing them requires dreaming big, creating a massive platform, and collaborating with a wide network.

- **CREATE A MULTI-SECTORAL EFFORT.** GK could not achieve scale on its own, and it leverages its limited capacity by joining with partners, donors, and volunteers. Creating solidarity through shared values, or bayanihan to Filipinos, has been compared to the Christian parable of the multiplication of loaves and fishes.

- **SECURE LAND.** Finding land to build communities for the landless poor, the victims of natural disaster or conflict, is the first challenge. GK was able to show an increase in land value around communities, thereby attracting more land donation. Recently, GK's ability to respond to Typhoon Yolanda (Haiyan) in Visayas Province was much faster than many international organizations because donated land was already available. Gawad Kalinga already had available land donated before the disasters struck.

- **PARTNER WITH GOVERNMENT.** GK has supported the practice of "land banking" in over 600 municipalities throughout the Philippines. Progressive municipal and national leaders have facilitated land donations and purchases, in addition to the mobilization of volunteers and resources for development, housing, and schools. For example, Governor Arthur Uy partnered with GK to build communities in the towns of Compostela Valley by working with local mayors to provide land, water, and access roads. GK also partners with the national government and receives support such as volunteer assistance from the Armed Forces of the Philippines, the Department of Education, the Department of Environment and Natural Resources, and the National Housing Authority.

A Gawad Kalinga Village

Corruption is often perceived as a major barrier in institutions around the Philippines, and NGOs have been suspected of fund diversion. GK has been privileged to work with local governments to build integrity and national pride, thereby building trust and attracting more resources. Other key leaders who have worked with GK to promote good governance and public–private partnership include Mayor Noel Rosal of Legaspi City, Albay, and Mayor Ed Pamintuan of Angeles City, Pampanga.

- **PARTNER WITH BUSINESS.** Over the past decade, GK has collaborated with more than 500 local and multinational corporations to fund homes and schools and to provide volunteers for medical missions and disaster preparedness training. GK advocates the concept of the walang iwanan economy, which aims for inclusive wealth and job creation, and believes that CSR is really "CSI" (corporate social investment) in an expanding market—one that promotes productivity, aspirations, capacity building, and dignity among the poor. To rise as a nation, we have to empower those at the base of the pyramid to rise.

Farm Village University Phase One, Bulacan, Philippines

- **SOCIAL EMPOWERMENT.** GK seeks to empower its beneficiaries to help themselves and others. To receive a home, a typical beneficiary family renders equity, undergoes a training program and signs an agreement to abide by community rules. There is a particular focus on supporting men to transform from a life of crime and become part of the solution. Jobs such as building homes, schools, water systems, roads, and farming motivate workers to become more socially integrated and take pride in their work for the community they live in. Many workers for GK's rebuilding efforts for Typhoon Yolanda (Haiyan) survivors include volunteers from communities in Mindanao and Luzon who were former typhoon victims themselves. Recipients have become givers—the nation will be built not just from top down but also from bottom up.

- **HOLISTIC PERSPECTIVE.** The ideal sustainable GK village includes secure land, homes with toilets, clean water, electricity, a safe neighborhood, a healthy environment, opportunities for a livelihood, and access to education. GK creates an open platform for collaboration, and attracts resources and expertise it does not have. For example, Illac Diaz of Litre of Light and My Shelter was able to spread his DIY lighting technology to many of GK's remote, off-the-grid communities. Innovations like the disaster mapping work being done by Celina Agaton is another example of technology that could be spread to rural victims of disaster. While GK's community building movement began in city slums, today, focusing on rural development helps to mitigate urban in-migration and congestion.

GK has a long term vision: to improve the lives of 5 million Filipino families by 2024 through inclusive social innovation and wealth creation. GK is developing 25 Farm Village Universities in strategic provinces to serve as mentorship hubs and platforms for education, business incubation, tourism, classroom, and community. Ideally, the urban rich (privileged with knowledge, technology, capital, and networks) can collaborate with the rural poor (who know the land, work with their hands, and understand resiliency) to harness undiscovered talent and innovations. The long-term goal is to develop more than 500,000 social entrepreneurs to generate jobs, help the Philippines attain food security, and reduce the country's vulnerability to climate change, by 2024. This is the new "Filipino Dream," which many hope will come true not only for the Philippines but everywhere where poverty and vulnerability exist.

Antonio Meloto is Founder of Gawad Kalinga.

A ROADMAP TO A GREEN AND RESILIENT FUTURE

JEFFREY HELLER
HELLER MANUS
ARCHITECTS

The effects of unsustainable urban planning have left many major cities in Asia at a crossroads. In China, for example, rapid urban growth rather than the long-term needs of citizens and the environment has been until recently the primary goal. The results are apparent from Shenyang to Guangzhou: top tier cities have become congested, less productive, and unhealthy.

Cities are complex ecosystems, but the focus has mainly been on designing cities to facilitate commerce and automobile traffic. Today, people are moving to cities to seek economic opportunity and create a consumer class, which increases the demand on infrastructure. Roadways often take up a large percentage of land areas in cities, and with sizeable distances between where people live, work, and shop, crowded roadways and polluting traffic jams have become the norm.

With quality of life declining, people who can afford to move away from congested top-tier cities will continue to do so as long as the living conditions there are unbearable. Those who are less financially mobile bear the brunt of decreasing quality of life, fueling social resentment. It is clear that prioritizing rapid growth in urbanization does not create sustainable cities. It is not sustainable for the environment, and it is not sustainable for the people who live there.

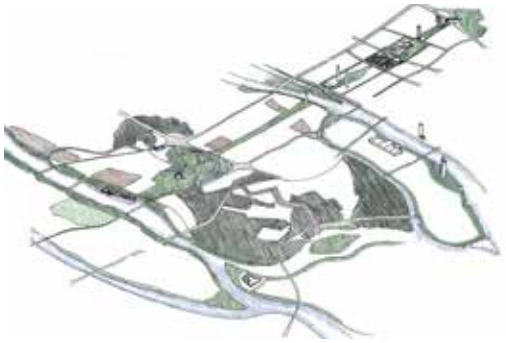
Addressing unsustainable growth relies on three essential principles, which are all interdependent: sustainability, mobility and livability.

SUSTAINABILITY takes natural resources and new technology into account. Energy efficiency, conservation, waste management, and recycling are key. This means prioritizing locally available or recycled construction materials and being mindful of the local climate (whether damp, dry, hot or cold) to increase durability of buildings. Sustainability also relies on increasing density in urban environments, which makes the role of green and open space even more important. Sustainability takes heritage into account – historic buildings can be repurposed into new developments, which saves on construction materials, preserves a city's sense of history, and adds commercial value.

MOBILITY is essential to planning a green city. Focusing on how people move through cities rather than prioritizing how cars move changes the way a city is planned. Mixed-use and transit-oriented developments depend on mass transit with enough capacity to handle the demand, and the transit systems must be well organized and coordinated to make this option an attractive, viable alternative to the private automobile. Government policy is essential–supporting public transit, rideshare, and bicycle access to compliment policies that de-incentivize private car use (e.g. registration quotas, parking and fuel fees, and taxes).

LIVABILITY is building cities with a high quality of life; sustainability and mobility contribute greatly to urban livability as a whole. A beautiful city, from skyline to landscape, includes the physical form of the city, natural and man-made landmarks, public transportation, and a balance between historical and new developments. A beautiful city, rich in its individual culture, environment, and history, creates civic pride.

In addition to these three principles, both climate change and resilience have become increasingly important in recent years. Planning low-carbon, livable cities is no longer enough -- urban centers must address their own local risks, including floods, earthquakes, storms, drought, or sea level rise. Planning for resiliency and disaster preparedness, especially regarding infrastructure, must become part of the urban planning process.



Guangzhou North and South axis master plans rely on green corridors and natural landscape areas

Designing or redesigning a city to make it greener can be a difficult, large-scale project with many competing priorities. However, there are seven basic strategies that make following a project through from concept to completion more likely to succeed:

Within Guangzhou's South Axis, metro and light rail systems define patterns of urban density

1. FORM AN "URBAN VISION"

The "urban vision" rests upon the basic principles of sustainability, mobility, and livability, with the city's unique environment and history taken into account. Mixed-use, compact urban centers designed for walking and public transportation should be incentivized.

2. ALLOW THE URBAN PLAN'S GOALS TO DICTATE DEPARTMENTAL POLICIES

It is essential for city leaders to outline their overall planning goals and "urban vision" to individual departments. Senior government officials and planners must take leadership to help direct individual department plans and policies, and show how their policies impact other departments and contribute to the overall "urban vision" and mutual goals.

3. INTEGRATE PLANS FOR SUSTAINABLE TECHNOLOGY IN THE ORIGINAL PLANNING PROCESS

When plans call for specific sustainable technologies such as smart grids, transit, or waste-management systems, experts need to be brought on board early. Preservation experts and historians who can help identify landmarks and districts to be preserved, and how best to work with them, should also be consulted at an early stage in the planning process.

4. GET PUBLIC INPUT EARLY

Citizens often have a good understanding of what they need and want from their city and can offer valuable feedback. Citizen comments should be solicited during the planning phase and final plans should be presented at a follow-up meeting that shows how their comments were taken into account and why ideas were integrated or not. This gives citizens a feeling of ownership in their city and a personal investment in the plan.

5. INTEGRATE THE EXPERTISE OF LOCAL PLANNERS AND FOREIGN EXPERTS

Encourage the use of foreign experts in green planning for input and have them work alongside locals. Local planners know the area and individual city environment best and should always be part of any team. Foreign experts may be able to offer new perspectives as well as new ideas on technology and land use.

6. EXPERIENCE URBAN PLANNING SUCCESS STORIES

City leaders, such as Mayors, should travel to other cities or host exchanges to learn first-hand from other cities that have been successfully redesigned. Looking at successful case studies can provide a clearer idea of what works and what doesn't.

7. THE LIMITS OF CITY SIZE

Cities, even if properly planned, cannot grow indefinitely. At some point their sheer physical size creates another set of problems that cannot be properly resolved, such as increased congestion, environmental degradation, and an inability to provide citizens with essential services. Endless cityscape without natural breaks skews the human value system and results in poor choices for the general benefit of the population at large. All great cities have embraced major open spaces in accordance with their scale.

The only way forward for large developing urban centers is not to stop urbanization but to rethink urbanization. Redesigning cities with the future in mind creates a better city both for today and tomorrow. Fortunately, with forethought, organization, and the right principles, these healthier, happier cities are in our reach.

Jeffrey Heller is President of Heller Manus Architects.

Case Study: Philippines

ACHIEVING SUSTAINABLE URBAN DEVELOPMENT THROUGH PLANNED CITY EXTENSIONS

NATHANIEL VON EINSIEDEL
CONSULTANTS FOR COMPREHENSIVE ENVIRONMENTAL PLANNING, INC.

Urbanization in the Philippines is driven by economic growth, which offers opportunity and better access to social and infrastructural services. However, urban expansion has also led to negative impacts including: environmental abuse, traffic congestion, inadequate public open space, increased demand for public services, energy and infrastructure, escalating sprawl and crowded slums, and lapses in the integration of social and cultural diversity. Urban development policies in the Philippines have not effectively guided urban expansion – many Philippine cities are sprawling and encroach on ecologically fragile and disaster-prone areas.

To address this situation, the Philippines has initiated a project on urban extension planning to promote more sustainable, livable, and resilient cities. Assisted by the United Nations Human Settlements Programme, the "Achieving Sustainable Urban Development" (ASUD) project is being piloted in four cities: Cagayan de Oro, Iloilo, Silay, and Tacloban. It advocates a "planned city extension" approach that aims to: (1) increase residential and economic densities and thus support economies of agglomeration, and (2) guide new development toward areas which are better suited for urbanization, thus preserving the environment and increasing resiliency.

The five key results of Planned City Extensions are:

- A spatial structure that supports urban development and attracts investments;
- Large areas of land made available for development, reducing land prices and speculation;
- Sufficient public space demarcated to support high densities, mobility, and infrastructure networks;
- Urban densities that increase incrementally in a sustainable way, thus accommodating population growth more efficiently; and
- Minimized ecologic footprints through more compact patterns.

Aerial view of Manila captures the scale of the metropolis

This approach offers additional benefits of economic agglomeration: lower infrastructure, transport, transaction and service costs; reduced mobility demand and strengthened social interactions; and increased social heterogeneity as a result of mixed land use.

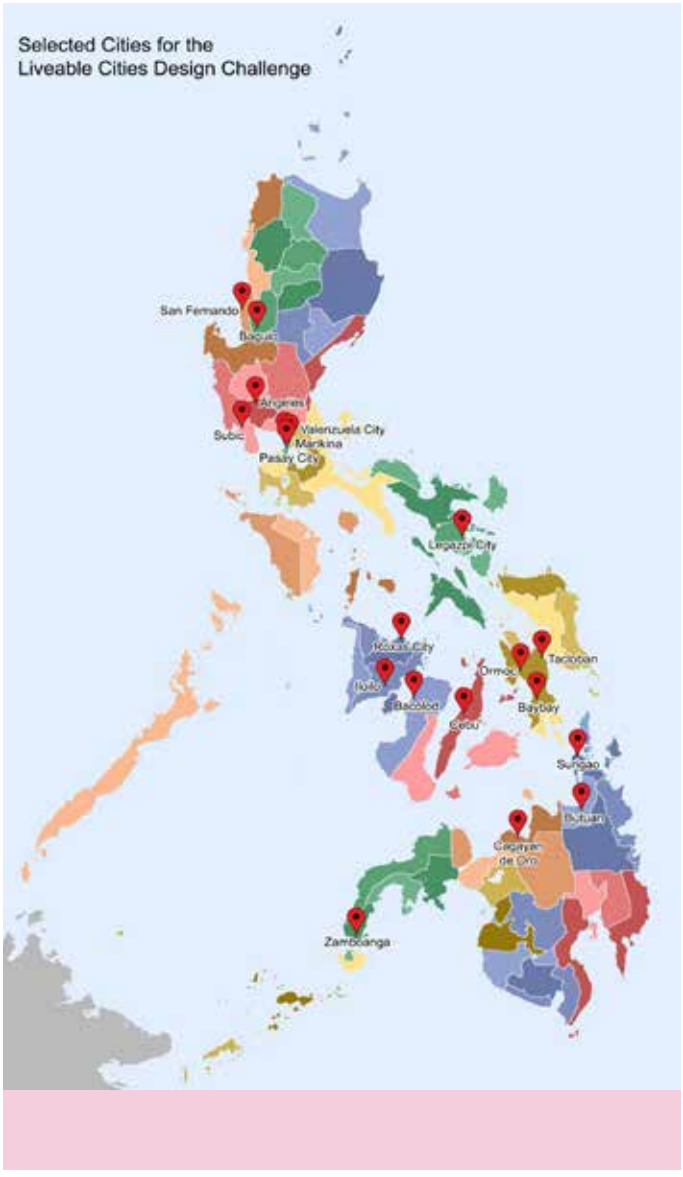
While it is too early to judge if the Planned City Extension approach is successful, initial lessons from pilot projects suggest that by going back to basics — focusing on the definition of the street network and plots, and limiting functional zoning — extension plans can provide a foundation for public and private investment and for more complex future interventions. They offer a realistic and cost-effective avenue to manage population growth, prevent slum formation, and reduce unplanned, unsustainable urban development.

Nathaniel von Einsiedel is Principal Urban Planner at CONCEP Inc. (Consultants for Comprehensive Environmental Planning, Inc.) and President of Alliance for Safe and Sustainable Reconstruction (ASSURE). He is also Senior Urban Development Adviser for Achieving Sustainable Urban Development (ASUD), UN-Habitat Philippines.

The Philippines Livable Cities Design Challenge

GUILLERMO LUZ
NATIONAL COMPETITIVENESS COUNCIL (PHILIPPINES)

THE PHILIPPINES IS A COUNTRY OF ALMOST 100 MILLION PEOPLE spread out over 7,100 islands. Traditionally, our economy has been viewed as mainly agricultural and much of the business and investment focus was on three key cities : Metro Manila (Luzon), Cebu (Visayas), and Davao (Mindanao). However, in actuality, the Philippines has become much more urbanized in recent times – according to *The 2012 World Population Data Sheet*, 63% of our population lives in an urbanized area. Cities are typically centers of consumption, resource use, and waste, but they are are also the key engines of growth for regional economies.



Cities in the Philippines Livable Cities Design Challenge

Today's cities, especially those of the Asia-Pacific region, face a new challenge. In addition to dealing with congestion, the need for mass transit, water resources, power, better law enforcement, and public services, cities now face a climate-constrained future. In recent years, climate change and natural disasters have become the unpredictable variables which have affected our cities. Typhoons, monsoon rains, floods, earthquakes, and volcanic eruptions have increased risk and disruption in our cities.

A DESIGN COMPETITION

As a way of taking action toward creating tomorrow's sustainable cities, I have teamed with my organization, the National Competitiveness Council, along with Asia-Pacific Economic Cooperation (APEC) National Organizing Council, Urban Land Institute, World Wildlife Fund, Asia Society, and Alliance for Safe and Sustainable Reconstruction (ASSURE), to create the *Livable Cities Design Challenge* to address both the risks and potentials of cities in the Philippines.

The goal of the *Livable Cities Design Challenge* is to run a planning and design competition focused on getting city planners from across the Philippines to better plan for disaster risk reduction in a climate-constrained future. At the same time, the idea is to encourage cities to become competitive by creating livable city plans that emphasize safety, convenience, lifestyle, and sustainability, thereby attracting people to live, work, and play.

Twenty cities were invited and selected to join the *Livable Cities Design Challenge*, including the host cities of the APEC 2015 Meetings, and cities that are particularly vulnerable or have been affected by disasters in the past. To kick off the challenge, city leaders were invited to a briefing in Manila and to attend the *Pacific Cities Sustainability Initiative 2nd Annual Forum* organized by Urban Land Institue and Asia Society on March 12-13, 2014.

COMPETITION CATEGORIES

The *Livable Cities Design Challenge* has two categories, each of which require a strategic vision and a plan for a livable, resilient city. The strategic vision begins with an assessment of the existing situation, in addition to a strategy for disaster risk reduction and preparedness. The plan requires spatial, transport, and infrastructure planning, urban design strategies and must involve the community in the process.

Tacloban City Mayor Alfred Romuladez, Leyte Congressman Martin Romualdez, and Cebu City Mayor Michael Rama

At the end of the day, we seek to encourage cities that are attractive for people to live, work, and play in that are also affordable, accessible, diverse, environmentally friendly, economically viable and climate-resilient. The process and the plan should be well documented, illustrating how the public sector, private sector and the community will work together to make the city more livable and competitive for business.

CATEGORY ONE: GOVERNMENT CENTER

The first competition catergory focuses on planning a complex of government buildings that are designed to be disaster-resistant (e.g. able to withstand designated limits of wind velocity, floods, and earthquakes), coupled with an awareness and education program to better prepare people for disasters. These buildings must be located in an area that is hazard-free and must be designed to serve the public in pre- and post-disaster phases. They must serve a primary purpose as a public service facility (e.g. a school or hospital or government office) and a secondary purpose during disasters (e.g. an evacuation shelter or command post). The buildings must be designed to be the last remaining building in operation, with full back-up power, water, telecommunications, and other capabilities when all other buildings are down. This Government Center may be in contiguous area or may be scattered over different pockets or zones within city limits and accessible to a majority of the city's population.

CATEGORY TWO: APEC MEETING VENUE

The second competition category focuses on creating a venue for the APEC meetings the Philippines will host in 2015. The site need not cover an entire city but must at least cover an area surrounding an APEC meeting venue plus access and routes to other events and functions and to the airport. The plan must include amenities which make attendance at an APEC meeting enjoyable for both delegates and city residents, without causing inconvenience to local residents. The design should capture the soul and spirit of a city and be designed to become a permanent fixture in the city, capable of contributing to the transformation of that city into a "livable city" over the next several years. Additionally, the design must encompass disaster-risk reduction principles.

The *Livable Cities Design Challenge* is being run with the assistance of a team of architects provided by ASSURE, who will act as mentors or coaches for each of the cities. After site visits and workshops, cities will come together for a presentation as well as a public display of their plans. The competition is being supported by USAID, through Project INVEST, and by Microsoft. While no formal awards will be given, winners will be under consideration for multi-year technical assistance support from USAID under its SURGE project. Through the design challenge, we look forward to starting a real, actionable trend for better urban design and the creation of livable cities in the Philippines.

Guillermo Luz is Private Sector Co-Chairman for the National Competitiveness Council (Philippines).

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Editor: Emily Peckenham
Special Thanks: Jezreel Apelar Antonio, Robert Bullock, Jo Capal, Christina Casas, Robert Hsu, Nicholas Lalla, Suyin Liu Lee, Min-Shu Lin, Jennifer Rockett, Brandon Sedloff, Wendy Soone-Broder, Maria Scarzella Thorpe.

To learn more about the Pacific Cities Sustainability Initiative, visit:

AsiaSociety.org/PCSI and **ULI.org**