

ISSUE 22 • APR 2023

URBAN SOLUTIONS

Building Partnerships



INTERVIEW

Desmond Lee
Soichiro Takashima

CITY FOCUS

Barcelona

OPINION

Philipp Rode
Manoj Sharma
Ong Key Wee
Terence Ho

ESSAY

Hwang Yu-Ning
Chew Men Leong
Ho Kong Chong &
Wong Shiau Ching
Aurelie Chardon

CASE STUDY

North America
Singapore

A biannual magazine
published by

CENTRE for
LiveableCities
SINGAPORE

WORLD CITIES SUMMIT MAYORS FORUM 2023

(By invite only)

Liveable and Sustainable Cities: Forging an Inclusive and Resilient Future

24 to 26 September 2023,
Dongdaemun Design Plaza (DDP),
Seoul, Republic of Korea



Organised by:

CENTRE for
LiveableCities
SINGAPORE



Hosted by:



 worldcityssummit.com.sg

 info@worldcities.com.sg

 [@worldcityssummit](https://www.facebook.com/worldcityssummit)

 [@World Cities Summit](https://www.linkedin.com/company/world-cities-summit)

 [@world.cities.summit](https://www.instagram.com/world.cities.summit)

 [@WorldCitiesSummit](https://www.youtube.com/WorldCitiesSummit)

URBAN SOLUTIONS

ISSUE 22 • APR 2023

CENTRE for
LiveableCities
SINGAPORE

CLC IS A DIVISION OF



© 2023 Centre for Liveable Cities, Singapore

Opinions expressed in Urban Solutions do not necessarily represent the views of CLC. While the publisher has taken reasonable care in compiling the magazine, it shall not be liable for any omission, error or inaccuracy.

Contact

Centre for Liveable Cities

T +65 6645 9560

E mnd_clc_publications@mnd.gov.sg

W www.clc.gov.sg

45 Maxwell Road #07-01, The URA Centre
Singapore 069118

ISSN 2301-3540 (print)

ISSN 2301-3532 (e-version)

E-version: www.clc.gov.sg/research-publications/publications/urban-solutions

Printed on Enviro Wove, a paper made from 100% recycled content.



Cover Image: Illustration of partnerships in urban development to achieve liveable outcomes.

Image: Centre for Liveable Cities

URBAN SOLUTIONS is a bi-annual magazine published by the Centre for Liveable Cities. It aims to equip and inspire city leaders and allied professionals to make cities more liveable and sustainable.

Set up in 2008 by the Ministry of National Development and the then-Ministry of the Environment and Water Resources, the Centre for Liveable Cities (CLC)'s mission is to distil, create and share knowledge on liveable and sustainable cities. CLC's work spans four main areas—Research, Capability Development, Knowledge Platforms, and Advisory. Through these activities, CLC hopes to provide urban leaders and practitioners with the knowledge and support needed to make our cities better. For more information, visit www.clc.gov.sg.

Editorial Team

Shawn Tan
Geraldine How
Nicole Lum

Editorial Consultant

Hedgehog Communications

Design Consultant

Green House
Design + Communications

Image Credits

- 8, 13, 14: Ministry of National Development, Singapore
- 10: Carolyn / Unsplash
- 11: Ministry of Health (MOH), Singapore
- 12: Housing & Development Board (HDB), Singapore
- 15: Centre for Liveable Cities
- 16, 18, 19, 21, 22, 24, 25: Fukuoka City
- 27: Logan Armstrong/Unsplash
- 28, 30: Ajuntament de Barcelona
- 29, 31 (2): Victoria See / Centre for Liveable Cities
- 31 (1): Linus Ekenstam / Unsplash
- 32: Alex Motoc / Unsplash
- 36: Rawpixel.com / Shutterstock
- 41, 42, 43: Asian Development Bank
- 46: Keppel Infrastructure
- 51: Jason Goh
- 53, 54, 55, 56, 57: Rhindon, Singapore
- 58, 62: Urban Redevelopment Authority
- 61: National Youth Council
- 65: Singapore Institute of Architects (SIA) and Singapore Institute of Planners (SIP)
- 66: Discover Tanjong Pagar
- 68: thinkhubstudio / Shutterstock
- 70: ST Engineering
- 71: Consortium for Kaohsiung Mass Rapid Transit (MRT)—Red Line Extension
- 72: Richie Chan / Shutterstock
- 73: Smart Luz Consortium
- 74: metamorworks / Shutterstock
- 76, 79: Ho Kong Chong
- 80: Tang Ya Cheng, used by permission (Micron SGCSR)
- 86: Dominic Chavez, International Finance Corporation
- 87: Global Infrastructure Hub
- 88: Beo Cista Energija
- 93, 94, 95, 96: Rebuild by Design
- 101, 102: Singapore University of Technology and Design Social Urban Lab (SOULab)
- 103: Centre for Liveable Cities

CC BY 2.0 - <http://creativecommons.org/licenses/by/2.0/legalcode>

CC BY-NC 2.0 - <https://creativecommons.org/licenses/by-nc/2.0/legalcode>

CC BY-SA 2.0 - <https://creativecommons.org/licenses/by-sa/2.0/legalcode>

CC BY-SA 4.0 - <https://creativecommons.org/licenses/by-sa/4.0/legalcode>

Some original images have been edited for page layout purposes. Every effort has been made to trace the copyright holders. The publisher will correct any omission of due acknowledgement in the online version, and in any subsequent printing.

Building Partnerships



“Partnerships that can stand the test of time will deliver long-term value and results.” 68

CHEW MEN LEONG

“...partnerships and networks can enhance productive competitiveness and instil healthy rivalry among cities.”

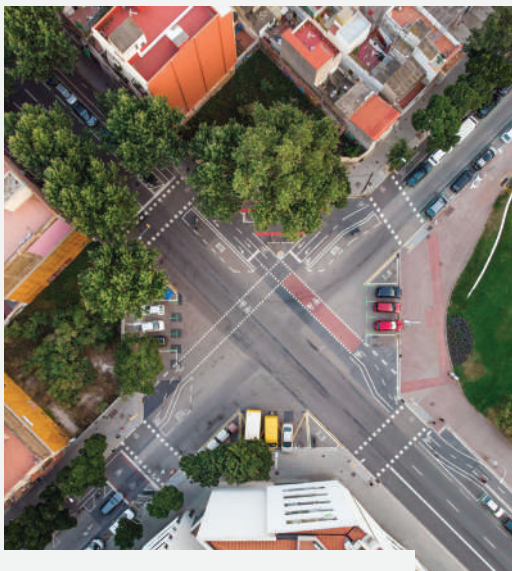
MANOJ SHARMA

38

“...it will become increasingly important for us to think globally, but act locally together with various partners.” 16

SOICHIRO TAKASHIMA





“Barcelona’s strong city leadership, integrated governance structure, and experimental and collaborative spirit has served it well in their follow-through on sustainable mobility.”

26

VICTORIA SEE & SHAWN TAN

“Partnerships that start off with clear roles and outcomes often have a higher chance of lasting the distance.”

52

RHINDON



3



“Partnerships with the People sector are key to how urban planning plays out over time.”

HWANG YU-NING

58

Contents

i INTERVIEW

Tackling Singapore's Complex Challenges with a Whole-Of-Society Approach 08
DESMOND LEE

A City Marked by Business Opportunity and Liveability 16
SOICHIRO TAKASHIMA

c CASE STUDY

Leveraging Private Sector Relationships to Scale Mission-Driven Work 90
NORTH AMERICA | CLIMATE RESILIENCE

Creating Dementia-Inclusive Neighbourhoods through Partnerships with the Community 98
SINGAPORE | INCLUSIVE COMMUNITIES

c CITY FOCUS

Towards a Car-Lite Future, One Partnership at a Time 26
BARCELONA

e ESSAY

The Long-Term Plan Review—Working with Partners to Shape a Space for Our Dreams 58
HWANG YU-NING

Unlocking the Full Potential of Smart Cities through Partnerships 68
CHEW MEN LEONG

Informal Neighbourhood Partnerships: “With a Little Help from My Friends” 76
HO KONG CHONG & WONG SHIAU CHING

Partnering to Deliver Innovative Financing for Green and Inclusive Cities 84
AURELIE CHARDON

o OPINION

Partnerships as an Urban Response to the Global Polycrisis 34
DR PHILIPP RODE

Make Financing Go Further with Partnerships: An Asian Cities Perspective 38
MANOJ SHARMA

Rethinking Water Sustainability with Public-Private Partnerships 44
ONG KEY WEE

Assessing the Suitability of Public-Private Partnerships for Infrastructure Projects 48
TERENCE HO

i ILLUSTRATION

Building Effective Partnerships for Placemaking 52
RHINDON



From the Executive Director

The Critical Role of Partnerships in Cities and Urban Development



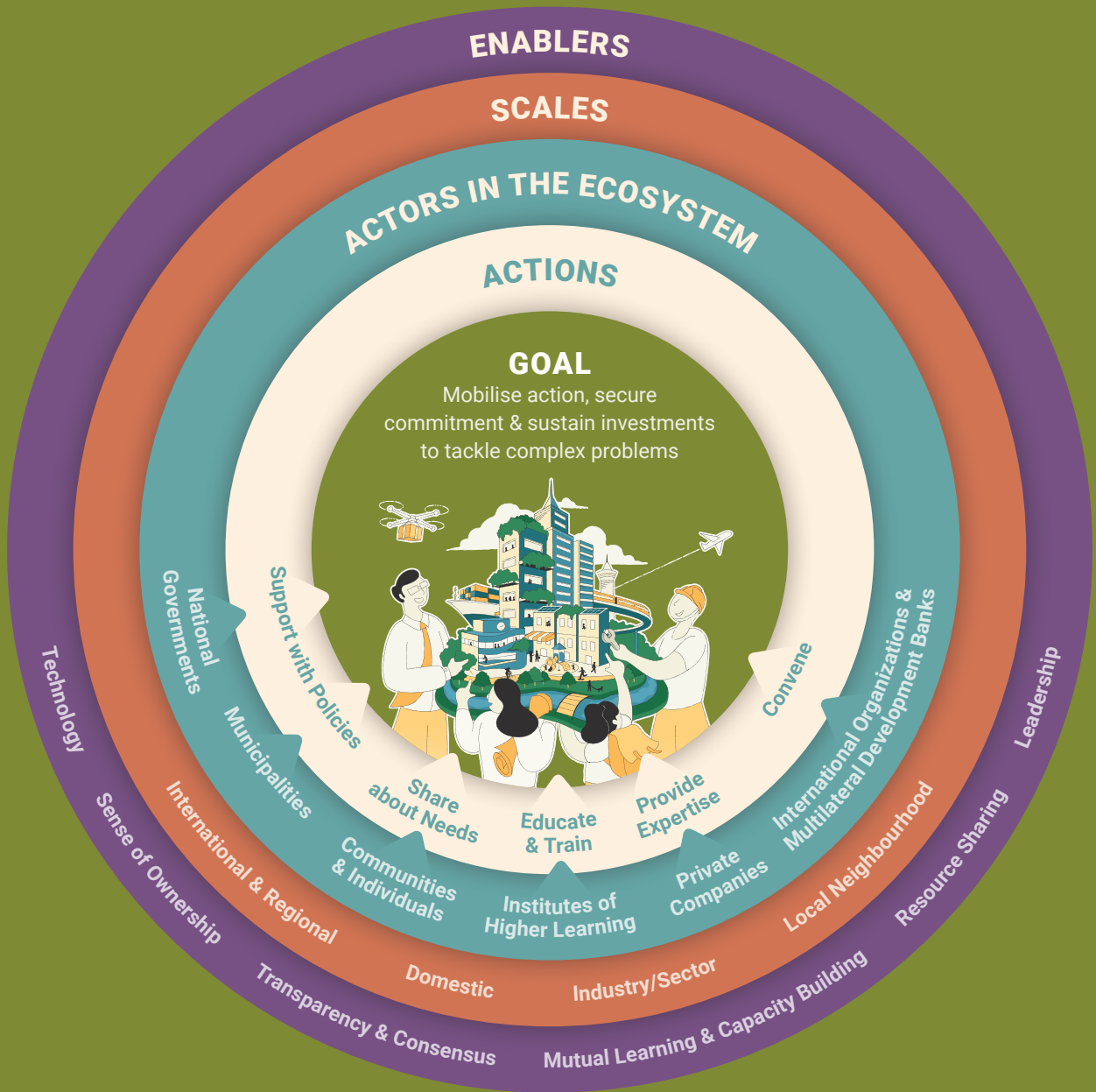
If done well, partnerships help cities better anticipate and plan for future trends and challenges.



As cities around the world emerge fully from the pandemic, they are faced with ever more complex urban challenges such as the growing impact of climate change, ageing societies, supply chain disruptions and economic uncertainty. These issues are exacerbated by conflict and geopolitical tensions, with each issue revealing itself to be more cross-cutting than previously anticipated. Given their longer-term implications, apart from the need to be agile in our interventions, cities must also secure the commitment, expertise and investments from stakeholders to develop sustained and integrated solutions. It is in this context that our latest edition of Urban Solutions spotlights the role of action-oriented partnerships in helping cities become more resilient against emerging issues.

Partnerships proved critical—life-saving even—in our fight against COVID-19. The experience highlighted that solutions to complex problems do not lie within individual sectors or domains, but require stakeholders to come together, each contributing towards common goals and the greater good. If done well, partnerships help cities better anticipate and plan for future trends and challenges.

For example, effective partnerships can help deliver middle ground amidst greater social polarisation and produce win-win outcomes. They can also mitigate developmental risks by pooling knowledge and resources to address new challenges arising from climate change or socio-economic disruptions, and leverage co-creation tools to achieve greater shared value, in response to calls for new forms of collective decision-making in cities.



Conceptual frame capturing the cross-sectoral and multi-scalar “system” of urban partnerships.
Image: Centre for Liveable Cities

The topic of partnerships in urban development is not new. However, how they interact—their gaps and synergies—across a wide but segmented built environment value chain, and at different scales, are less considered. Through a range of narratives that map out the spectrum of partnership-related issues, approaches and actors, this Urban Solutions issue seeks to provide a “systems” frame for understanding the varied cross-sectoral dimensions of urban partnerships at different levels. Readers are

invited to reflect on past experiences and ponder about how we can redefine our approaches for better outcomes in future.

We need effective urban partnerships now more than ever, and leadership for our cities is key.

As cities operate in an increasingly VUCA (Volatile, Uncertain, Complex and Ambiguous) environment, more difficult trade-offs will have to be made, observes Singapore’s Minister of

National Development, Desmond Lee. Thus, the Singapore government is taking the lead to plan ahead and deploy resources strategically. So is Fukuoka, as Mayor Soichiro Takashima shares how the city is providing the conditions for more effective partnerships to flourish, such as through the relaxation of regulations and flexible adaptation of values.

Putting forth strong use cases for urban partnerships.

At the city level, Hwang Yu-Ning, Deputy CEO and Chief Planner at the Urban Redevelopment Authority of Singapore, details the recently completed Long-Term Plan Review and how it could not have been achieved without the support of the people, including stakeholders from professional institutes as well as traditionally under-represented segments of society.

Developing cities can also gain from multi-sector partnerships which enable urban governance reforms, create integrated solutions and build capacity. Manoj Sharma, Chief of Urban Sector Group at the Asian Development Bank, makes a compelling case for this. Through innovative and bankable projects, financial and technical resources can be pooled and redistributed for better results, illustrates Aurelie Chardon, Principal Investment Officer at the International Finance Corporation (IFC), citing the cases of Belgrade and São Paulo's public infrastructure transformation.

Informal partnerships at the grassroots level are equally important as they help to plug the gaps in our neighbourhood-based care environment, argues Ho Kong Chong, Associate Professor at the National University of Singapore. This is echoed by the Centre for Liveable Cities' Senior Assistant Director Elly Chiu, who shares about her Dementia-Inclusive Neighbourhoods Study which taps on local partnerships to drive the implementation of design prototypes promoting social inclusivity.

Designing for action-oriented partnerships.

In most instances, public engagement remains primarily consultative. To propel them towards more action-oriented partnerships, design thinking consultancy Rhindon outlines principles that help create sustained and meaningful value in the partnering process, like building empathy and ensuring clarity of roles and outcomes upfront. Building on the strengths and experiences of partners can also help to scale up our development of smart cities, suggests Chew Men Leong, President for Urban Solutions at Singapore Technologies (ST) Engineering. Having the right partners are therefore essential to project implementation, underscores Amy Chester, Managing Director of Rebuild by Design. Terence Ho, Associate Professor at the Lee Kuan Yew School of Public Policy, further builds on this by reminding us that risks and objectives alignment, as well as contractual flexibility, are crucial ingredients for public-private partnership success.

Cities are at a crossroads today with multiple pathways ahead. With more complex choices to be made, we must be able to harness partnerships in all its forms in urban development to better mobilise resources, share knowledge and secure longer term commitment to action. I hope this issue of Urban Solutions prompts and provokes good reflections on the role of partnerships for cities and their way forward.



Hugh Lim

Executive Director
Centre for Liveable Cities

i

INTERVIEW

IN CONVERSATION WITH
DESMOND LEE

Tackling Singapore's Complex Challenges with a Whole-Of- Society Approach

Desmond Lee, Singapore's Minister of National Development, discusses the merits of working with different facets of society to tackle cross-cutting urban challenges.



| *Image: Ministry of National Development (MND), Singapore*



With limited space, we have to constantly make difficult trade-offs to balance the evolving interest of different stakeholders and manage the common fault lines...



What are the key urban challenges that global cities like Singapore will face in the next few decades?

Singapore is the only sovereign city state in the world. Unlike other global cities, we cannot afford to locate important functions away from the city—airports, military training facilities, water treatment and waste management ports have to be built within a small space of 730 km², close to housing and commercial facilities. Within this finite space and resource envelope, we have to find a way to meet all our needs and aspirations—to create a vibrant and competitive global city, and an endearing home for all Singaporeans to live, work and play.

However, like other global cities, these needs and aspirations are evolving. With limited space, we have to constantly make difficult trade-offs to balance the evolving interest of different stakeholders and manage the common fault lines—between generations, income groups, citizenship or immigration status, ethnicity, race, religion, etc. We can see how in other cities where this is not managed well, these fault lines can become powerful forces that divide society. As a young and diverse society, we are especially aware of the importance of a cohesive society and have made continuous efforts to build and preserve it through over 50 years of nation building.

Are there specific risks that Singapore will need to look out for?

There are a few risks that I think are important to highlight.

First, our society is ageing rapidly. Nearly 1 in 5 Singaporeans are aged 65 and above, and this will increase to nearly 1 in 4 by 2030. With an ageing population and a falling dependency ratio, we will need to increase expenditure on social and healthcare services, and infrastructure. This will require additional expenditure and land, which will place a fiscal burden on a smaller working population. As a nation, we will have to refresh and calibrate our social compact carefully to remain sustainable, and avoid inter-generational divides which have polarised the political landscape in some societies.



As an island surrounded by water, and with 30% of its land less than 5 m above mean sea levels, Singapore is threatened by rising sea levels.
 Image: Carolyn / Unsplash

10

||
As a small city-state with no natural resources, Singapore's success depends on the industry and unity of our people.
 ||

Second, as a small and open economy, we are susceptible to global economic and technological shifts that can accentuate the skills divide in our society. Those with the right skillsets in demand will have their income determined by the global market, while those with obsolete skillsets are at risk of unemployment and income stagnation. Without intervention, lower-income families invest less resources in their children and aggregate in poorer neighbourhoods. This entrenches income divides across generations, and poses a key risk to social cohesion and national unity.

Third, climate change is another risk that will impact the current generation, and many generations to come. As a country, we have to work with the international community to reduce global carbon emissions, but we also have to be clear-eyed about the impacts of climate change—rising sea levels and more extreme weather patterns—and start taking steps now to adapt.

These challenges are not exhaustive. We also have to guard against unknown unknowns and black swan scenarios. In the context of urban planning, we will need to set aside space buffers, be agile and flexible, and be ready to mobilise both government and community resources, just as we did during the COVID-19 pandemic.

How can partnerships in urban planning help to address these strategic risks?

As a small city-state with no natural resources, Singapore's success depends on the industry and unity of our people. The challenges that lie ahead, including those I highlighted earlier, are complex and multi-dimensional. How we tackle them must similarly be multi-pronged, using a whole-of-

society approach. In the context of urban planning, planning for and building social infrastructure is just as important as the physical infrastructure. The government takes the lead to watch for longer-term trends, plan ahead, and marshal community and private sector partners to meet these challenges.

For example, an ageing population presents not just an economic or fiscal challenge. It is also about how we can fundamentally reshape the way society thinks about eldercare to enable seniors to live longer in good health and remain productive. We are placing a greater emphasis on ageing-in-place and involvement of the community. Ageing-in-place allows seniors to live independently and actively in the community they are familiar in while having close access to social care and support services. This relieves burden on the healthcare system, improves emotional well-being outcomes and staves off ills like social isolation and loneliness.

The government is leading the way to build a city-for-all-ages. We have launched a new model of public housing for seniors integrated with care service packages which we call the Community Care Apartments. We are also integrating more healthcare, commercial and community facilities suited for seniors into more public housing developments. To complement these physical infrastructure that enable seniors to age in place, we partner with the community to develop engagement and support networks through initiatives like the Community Network for Seniors or Silver Generation Ambassadors.



Singaporeans, today, are enjoying longer and healthier lives. The supporting infrastructure will help them pursue their aspirations as they age.
Image: Ministry of Health (MOH), Singapore

Another example is how we support inter-generational social mobility. The government provides public rental flats at heavily subsidised rates to serve as a social safety net. For the lower-income families and individuals in public rental flats, our aim is to uplift them, so that they can eventually buy a flat of their own. Through ComLink, an initiative which we are expanding nationwide, we bring together community resources to partner various government agencies to support disadvantaged families in rental housing to achieve stability, self-reliance and social mobility.

We do so by taking a family-centric approach—looking at their needs holistically, and coordinating health and social support from across different government agencies, including housing, social services, health, employment and education, as well as other non-governmental actors such as social service agencies, secular and religious organisations, and healthcare institutions. This is a whole-of-society effort to enable social mobility by building communities of care that empower and uplift families.

Beyond the social sector, partnerships with the private sector and the wider community are also important as we tackle pressing and complex challenges that will affect us and future generations. Our efforts to address climate change demonstrate this very clearly. To do our part to limit global warming, we launched the Singapore Green Plan 2030, a whole-of-nation movement to pursue sustainable development. Last year, we also announced our climate ambition to achieve net zero carbon emissions by mid-century.

For the Built Environment sector, we worked with the Singapore Green Building Council to engage over 5,000 stakeholders, from industry associations and businesses to consumers and youths. This culminated in the latest edition of our Singapore Green Building Masterplan which



An artist's impression of a community care apartment in Queensway Canopy housing development, featuring open layouts with sliding partitions, a built-in wardrobe, cabinets and a furnished kitchen.
Image: Housing & Development Board (HDB), Singapore



Industry stakeholders are partnering Singapore in greening its buildings, as seen in Keppel Infrastructure @ Changi that officially opened in October 2022.
Image: Ministry of National Development (MND), Singapore

sets out our ambitious “80-80-80 in 2030” targets (to green 80% of buildings, to have 80% of new developments classed as Super Low Energy buildings, and to achieve 80% improvement in energy efficiency from 2005 levels for best-in-class buildings by 2030) to accelerate the decarbonisation of our built environment. We continue to work in close partnership with our industry stakeholders and academic partners to drive greater innovation in the sector and intensify our greening efforts.

As our social compact evolves, how will Singapore’s approach to urban planning change? How can partnerships feature more critically in this process?



This can only be done through extensive engagement to understand the needs and aspirations of users from all walks of life.



We are already coping with such shifts today. Singaporeans’ aspirations have evolved with rising affluence. There is growing demand for more entertainment options, better jobs, and better and more accessible services like transport, healthcare, and education. More singles desire to live on their own. Our seniors desire to live independently too. Household sizes are growing smaller. There is a growing call to conserve more of our green and blue spaces, as well as our built heritage. Given our limited space, we will have to make difficult trade-offs. To do so, we need to constantly refresh our social compact as the demands and aspirations of society shifts.

This can only be done through extensive engagement to understand the needs and aspirations of users from all walks of life. For example, in the Long-Term Plan Review that was recently concluded last year, we engaged more than 15,000 individuals, and received a wide range of ideas.

The government also launched Forward Singapore last year, to bring Singaporeans together, to examine our society’s values and aspirations, discuss possible ideas, and build consensus to refresh our social compact on how we should move forward together. Specifically, under the Build pillar, we will establish more partnerships with local stakeholders to build more vibrant, inclusive and liveable environments.

||

It takes time to nurture relationships, foster trust and gradually build up capabilities to work together on the challenges facing our city.

||

Is there a big picture strategy by Singapore for partnerships at different scales?

Cultivating a culture of partnerships starts at the citizen and grassroots level. We want citizens to participate actively in the community and take ownership of the spaces that they are in. In managing municipal issues, individuals and community organisations can play a crucial role in discussing community issues, and coming up with recommendations that take into consideration the needs of diverse members of the community.

For example, we set up the Community Advisory Panel on Neighbourhood Noise in April 2022 to look into addressing noise from neighbours and congregation noise from common areas. The panel engaged close to 4,400 to understand the views and experiences of the community, and came up with recommendations on how to manage neighbourhood noise. This was a community-led effort, that was able to consult widely, and harness the views and ideas from the public on how we can build a more gracious and harmonious living environment.

At the level of the city-state, partnerships are also deeply ingrained into the way we plan our city. The feedback and suggestions gathered from our Long-Term Plan Review exercise, for instance, will eventually feed into our urban masterplan.

Many Singaporeans also feel that it is important to conserve our green spaces and live in harmony with nature. We have been transforming Singapore into a City in Nature, to weave nature more closely into our urban fabric and incorporate ecological considerations into our long-term land-use planning with a science-based approach.



The ongoing OneMillionTrees movement invites Singaporeans to play an active role in restoring nature back to the city. Launched in April 2020, almost 50% of the target has already been achieved.

Image: Ministry of National Development (MND), Singapore

Minister Desmond Lee connected with over 70 ministers, mayors and city leaders at World Cities Summit 2022.

Image: Centre for Liveable Cities



We recently completed the Ecological Profiling Exercise, an island-wide study of green spaces across Singapore, in partnership with experts and members of the nature community. Based on the findings, we were able to better understand the role of different green spaces in enhancing ecological connectivity, and are establishing new Nature Corridors. These will strengthen ecological connectivity between source habitats in these areas, and help us protect our rich biodiversity.

Finally, at the city-to-city level, we have been working hard to build up links with other cities, to share best practices, and establish a global network of cities working to resolve current challenges. Though the World Cities Summit, we have also been providing a platform for cities to come together, share ideas and find ways to partner with one another.

From the individual to the international conglomerate, working with partners across different scales allows us to adjust policy to meet real needs, bring on board experts and key stakeholders, mobilise community resources, and help Singapore become more resilient and responsive to changes in a rapidly evolving global environment.

Are there limitations to partnerships and how will Singapore address them?

Partnerships will continue to be crucial for Singapore, and for cities around the world. Our experience with the pandemic has shown us that resilient cities need to have engaged citizenry, extensive links with people and private sectors, as well as robust global networks. In our urban development, the Singapore of tomorrow will have to work closely with stakeholders to build, rejuvenate and imagine a home that is liveable, sustainable and globally competitive.

Partnerships are not easy. It takes time to nurture relationships, foster trust and gradually build up capabilities to work together on the challenges facing our city. The partnerships that we have developed in Singapore are the result of many years of painstaking dialogue and collaboration. We have to remain committed to building and sustaining platforms for partnerships, so that partners at all levels can continue to contribute. As a global city, we will have to remain open to ideas, and be prepared for the changes to come. It is this mindset of partnerships, a willingness to try, and deep trust across society that will allow cities like Singapore to flourish in the years and decades to come. 📍

i

INTERVIEW

IN CONVERSATION WITH
SOICHIRO TAKASHIMA

A City Marked by Business Opportunity and Liveability

Soichiro Takashima, Mayor of Fukuoka, shares about the role of government in driving partnerships, and how he plans to make Fukuoka a leading city in Asia.





For Fukuoka City to continue to be a safe, secure, liveable and attractive city, partnerships are extremely important.



The Impetus for Partnerships

Given the increasingly complex challenges faced by cities today, why are partnerships even more critical and relevant?

Japan is facing a declining population and an ageing society with a declining birth rate. This makes it difficult to continue providing government services in the same manner as before. For cities to continue growing, we need to attract a diverse range of human resources and capital from around the world to create new businesses.

However, new services and products that help to solve social issues cannot be developed by the government alone, and there are many regulations in Japan that are unique to a mature nation.

I believe that, moving forward, our city administration will require greater effort to promote sustainable urban growth. This can be achieved by maximising the power of the private sector and other sectors through creating and reforming social systems and rules. For example, through relaxing administrative regulations in our partnerships with private companies, universities, local residents, and other parties.

The city of Fukuoka has taken great effort to maintain and enhance the liveability for residents. How important are partnerships in helping to progress liveability goals in Fukuoka City?

Currently, 96% of residents feel that Fukuoka City is easy to live in. The city has also been highly rated as easy to live and visit, in publications such as travel guidebook *Lonely Planet* and the *New York Times* in its "52 Places to Go in 2023" article. This is through the effort of Fukuoka citizens who have supported the development of the city over the years. For Fukuoka City to continue to be a safe, secure, liveable and attractive city, partnerships are extremely important.



PHOTO : Fumio Hashimoto

Ohori Park, Fukuoka.
Image: Fukuoka City

One such partnership is our regional strategy promotion council known as Fukuoka D.C. (FDC), which has attracted attention from the World Economic Forum. The FDC is a “think & do tank” for industry, academia, government and private businesses to collaboratively develop and promote regional strategies. Public-private partnership projects require great ideas, knowledge to incorporate those ideas into administrative plans, and a sense of speed. If any one of these aspects are not present, it will difficult to succeed. Hence, the FDC plays the important role of translating private-sector ideas into tangible administrative plans. For example, when the budget proposal for a project needs to be quickly approved by the city council, but the government is limited because it operates on a fiscal year basis, the FDC can step in to help drive the project at private sector speeds.

As for ideas, Fukuoka's unique characteristics as a compact city give us a distinct edge. The concentration of urban functions and interactions in one small area inevitably creates many interaction opportunities between business managers and entrepreneurs, which leads to frequent explosion of ideas.

By continuing to work with diverse entities such as the FDC, we can solve issues that are difficult for the government to tackle alone, and at the same time, maximise policy effectiveness.



Street Food in Fukuoka.
Image: Fukuoka City

Strategic Partnerships at Different Scales

How has the city leadership in Fukuoka leveraged strategic partnerships to develop innovative solutions for meeting complex urban challenges?

Needless to say, the spread of COVID-19 over the past few years created many challenges around the world. The responsibilities that cities bore across areas, from the health and safety of their residents to employment and education, were significant. At the beginning of the pandemic, when accelerating vaccination was a priority issue, Fukuoka City pushed for industry, academia and government to collaborate on workplace vaccination. Companies, universities, and other organisations in Fukuoka were the first in Japan to secure their own venues and medical personnel to administer vaccines at workplaces and other locations. As a result, Fukuoka achieved the highest vaccination rate among major cities in Japan.

Fukuoka City also works with the FDC to support companies with limited resources to create new services and products. Such efforts include coordinating with the local community, and encouraging companies to take on the challenge of social implementation. We are also working together to attract international financial functions by branding Fukuoka as an international city that is continuously innovating.



At the same time, it is also important to collaborate with a wider range of partners, not just cities, in order to achieve effective and specific actions.



For example, in September 2022, M-DAQ, a unicorn-class company from Singapore, opened its first branch in Japan in Fukuoka City. This was made possible through the efforts of Team Fukuoka, an industry-academia-government promotional organisation, aimed at attracting international financial functions. M-DAQ's business proposition is based on the idea that instead of having to exchange currency when travelling abroad, you can use their service to make electronic money payments with just your smartphone. We hope that Fukuoka will be a pioneer in developing new services that will create solutions for social issues, and that the entry of foreign companies will make Fukuoka a more viable option for overseas start-ups in the future.

What is the value in city-to-city level partnerships, and how can cities ensure positive outcomes from such partnerships?

From a global perspective, Fukuoka City was developed through more than 2,000 years of exchange with surrounding nations and the world. Today, it has established networks with cities globally in various forms. Through sister cities around the world, and through exchanges based on the characteristics and strengths of each city, we are working to revitalise our local economy and develop the next generation of globally-minded human resources.

For example, we have a sister city relationship with Bordeaux, France, and for 40 years, have enjoyed ongoing partnerships and exchanges at the private, academic and citizen levels. Leveraging Bordeaux's reputation for wine and Fukuoka's reputation for food, we have worked to establish a mutually benefitting partnership. We hope to support a small chateau in Bordeaux that makes fine wines, while at the same get more people to visit Fukuoka for wines that can only be enjoyed here. Currently, Fukuoka City is one of three cities in the world and the only city in Japan to have a wine bar accredited by the *Conseil Interprofessionnel du Vin de Bordeaux*. Such sister city arrangements are conducive for promoting global exchange among the youth who represent the future, as well as revitalising the local economy.

Fukuoka City has also been hosting the Asian-Pacific City Summit since 1994, bringing together leaders from cities around the Asia-Pacific region to promote Sustainable Development Goals through inter-city cooperation. Through this summit, sister and friendship city agreements have been concluded between Busan and Auckland, and Oita and Guangzhou.



Leaders from 32 cities across the Asia-Pacific region gathered in Fukuoka City for the 12th Asian Pacific City Summit.
Image: Fukuoka City

For the 13th Summit, which was held in 2022, international organisations, universities, businesses, and many other stakeholders hailing from 33 cities across 13 countries in the Asia-Pacific region, came together to discuss about urban development after COVID-19. The Summit provided a valuable opportunity for attendees to share about various challenges brought about by the pandemic, and to gather suggestions on policy formulation for overcoming the crisis, and what future direction to take.

Based on Fukuoka City's experience with city-to-city partnerships, what are some challenges faced, and how can these be overcome?

Under the framework of inter-city collaborations such as the Summit, I believe it is important to continue our ongoing and evolving discussions, and to share concretely about our initiatives and knowledge.

At the same time, it is also important to collaborate with a wider range of partners, not just cities, in order to achieve effective and specific actions. The Summit is attended not only by cities of the Asia-Pacific region, but also by Japanese governmental agencies, private companies, universities and international organisations such as UN-Habitat, the OECD and the World Bank.

In conjunction with the 13th Summit held online in 2022, Fukuoka City, UN-Habitat and Japan's Ministry of the Environment launched the Fukuoka Method Global Network (FMGN)—a learning platform to spread the waste landfill technique known as the Fukuoka Method. Developed by Fukuoka City and Fukuoka University, the Fukuoka Method has so far been introduced in 21 countries, mainly in Asia, and is helping to improve landfill sites and the surrounding environment by reducing methane gas emissions. Through the FMGN, we hope to continue promoting inter-city cooperation to solve carbon and waste problems faced by cities around the world.



Deployment of the Fukuoka Method to a waste landfill site.
Image: Fukuoka City



Through the Fukuoka method, the landfill site has been rapidly stabilised, and vegetation has begun to return.
Image: Fukuoka City



The government and citizens are partners in creating the future of communities.

We cooperate on an equal footing, while fulfilling our respective roles and responsibilities.



Could you share about some of the key partnership initiatives between the government and the people that have been introduced? What have you learnt here?

The government and citizens are partners in creating the future of communities. We cooperate on an equal footing, while fulfilling our respective roles and responsibilities.

Fukuoka City consists of 151 local communities across the city. The city provides subsidies and other support for local community activities in various fields such as crime prevention, disaster mitigation, child welfare, the environment and health promotion. In addition, the city holds a meeting for all local communities every year to present certificates of appreciation to those who have contributed to local activities, and to provide an opportunity to share examples of excellent efforts by each local community.

Crime prevention efforts are important for local residents to feel safe and secure in their daily lives. In Japan, it is not only the police organisations, but also the local communities that are engaged in crime prevention activities. For instance, in each community, local community members plan their own patrol routes based on their years of experience, and conduct crime prevention patrols when elementary and junior high school students head to and leave school. Recently, however, we started facing challenges such as the ageing of patrol leaders, and the difficulty in recruiting new members.

To tackle these problems, an experiment was started in some parts of the city last year, to create patrol routes using AI. Our aim was to improve patrol efficiency, while at the same time, make it easier for non-native residents, who may be less familiar with the city, to participate in crime prevention patrols.

This is an example of Fukuoka City working with residents and private companies on community-level initiatives. Through residents' on-the-ground knowledge and private companies' technological expertise, we hope to be better able to take on the challenge of solving local issues and social implementation together.

The Role of Government in Driving Partnerships

Fukuoka City is focused on developing the potential of hydrogen energy, and has launched hydrogen stations in the city. What is the role of government in initiating and leading partnerships to drive such innovative solutions to meet the strategic needs of the city?

Fukuoka City has been focusing on hydrogen energy for many years. We started with the Hydrogen Leader City Project, in collaboration with industry, academia, and government, which led to the opening of a world-first hydrogen station that produces hydrogen from sewage in 2015.

||
 ...it will become increasingly important for us to think globally, but act locally together with various partners.
 ||

In 2022, a new council was established with several private operators to jointly implement activities that promote the use of hydrogen. The council branded the station as a locally produced and consumed hydrogen station, and also collaborated with universities to conduct research into various aspects, including the reduction of costs.

Fukuoka City also signed a collaboration agreement with Toyota Motor Corporation on a wide range of initiatives that support the move towards hydrogen power. Such initiatives include the world's first mobile power generation and supply system, "Moving e". In addition, we are also planning to deploy hydrogen-powered vehicles for garbage collection and school lunch delivery.

The government will take the lead in developing and demonstrating technologies throughout the entire hydrogen supply chain, from production to transportation to usage. We are dedicated to the cause of creating carbon neutral societies in Japan and beyond, by showing the world a city that is sustainably run on hydrogen.

What is your view on the role of government in meaningfully sustaining partnerships, and how do you think this role will change in the future?

Our current environment is full of challenges, including COVID-19, soaring oil and commodity prices, climate change, declining birth rate and an ageing population. There is also pressure to build a more sustainable, diverse and inclusive society.



| A world-first hydrogen station that produces hydrogen from sewage.
 Image: Fukuoka City



The world's first mobile power generation and supply system, "Moving e".
Image: Fukuoka City

To this end, it will become increasingly important for us to think globally, but act locally together with various partners. I believe that the role of government should be to improve citizen services and community development by flexibly and speedily adopting new values, while keeping a firm grasp on the needs of citizens in this current age.

Do you have a vision of how the future of partnerships, in the context of urban development, should be like? How do you think it will unfold for Fukuoka City?

Fukuoka City has its sights set on becoming a leading city in Asia, defined by a harmony between people, the environment and urban vitality.

With a population of 1.63 million, our goal is not to become a mega-city like Tokyo, but a compact and vibrant city. We want to create an environment, which is conducive for taking on new challenges such as starting businesses, while at the same time easy to live in.

I believe that a sustainable society can be achieved if we work together with the business community, universities, citizens, and our partner cities around the world. Such an approach allows us to tackle issues from various angles, while working together towards a common goal as one unified society. We want to create a concrete and successful model in Fukuoka City that maximises the power of the private sector through various partnerships, while embracing changes in social systems and rules, including deregulation by the government. I hope that our example can be used as a reference around the world. 🗨️

BARCELONA

Towards a Car-Lite Future, One Partnership at a Time

TEXT: VICTORIA SEE AND SHAWN TAN

By prioritising climate change, public health, and transport safety and equity, Barcelona has taken deliberate steps to embrace sustainable mobility modes and transform its residents' living experience. Come explore the city's innovative approaches to partnerships that have enabled their streets to come alive!

BARCELONA



Shawn Tan
Deputy Director, Centre for Liveable Cities

Shawn is Deputy Director of Research at the Centre for Liveable Cities, focusing on research strategies, knowledge development and international partnerships. He was previously with the Urban Redevelopment Authority (URA) as an urban planner (2010–2021). Shawn holds a Master's degree in Spatial Planning from the University College London and a Bachelor's degree in Sociology from the National University of Singapore.



Victoria See
Manager, Centre for Liveable Cities

Victoria is a researcher at the Centre for Liveable Cities, where she focuses on topics related to urban planning and design, foresight and sustainable mobility. She holds a Bachelor of Arts in Architecture from the National University of Singapore, and a Master of Architecture from the University of Michigan.



Aerial view of Barcelona.
Image: Logan Armstrong / Unsplash



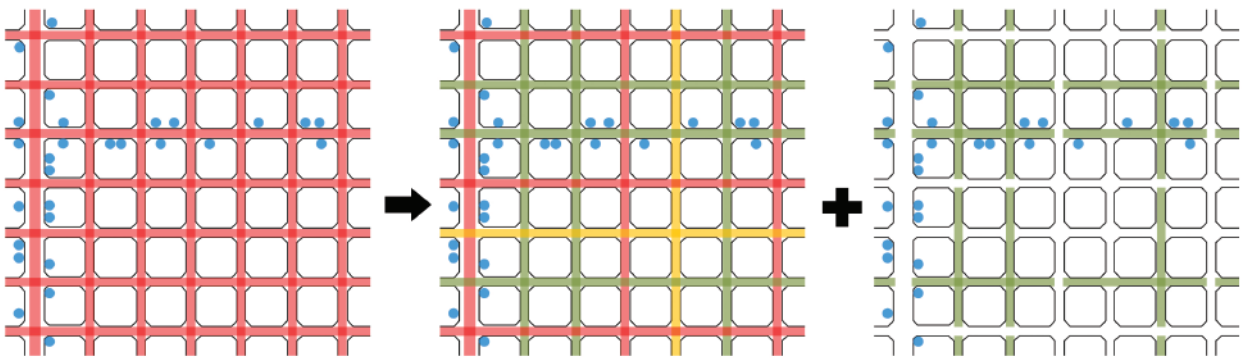
More widely known for their Superblocks urban concept, Barcelona has also established close partnerships among its metropolitan and city administrations, and the public to roll out a suite of complementary, high-impact sustainable mobility initiatives that aim to increase its walk, cycle and public transport mode share to 82% by 2024 (from 77% in 2018). In November 2022, an inter-agency delegation comprising the CLC, the Urban Redevelopment Authority (URA) and the Land Transport Authority (LTA), visited Barcelona to learn more about their unique approaches to sustainable mobility, and the important role of strategic partnerships.

Despite having one of the highest car ownership rates amongst European Union cities at about 6,000 private vehicles per km², Barcelona enjoys a high percentage of trips made by foot (34% in 2018). Nevertheless, the city has not rested on its laurels and continues to strive towards becoming less car-reliant through its Urban Mobility Plan—a 5-yearly planning exercise that was first introduced in 2014. Motivated by environmental sustainability, urban efficiency and social equity goals, the Urban Mobility Plan 2019–2024 comprises 60 lines of action and 300 measures that seek to make the streets of Barcelona friendlier for pedestrians of all ages, and reduce tendencies to drive.

From Superblocks to Green Streets: Benefitting the Larger Community through City-Local Partnerships

The Superblock concept consolidates nine urban blocks into one “Superblock” by converting interlocking streets into pedestrian-priority streets through tactical urbanism and road repurposing. This model has been rolled out in a few locations since 2016, such as the Poblenou neighbourhood and Eixample district.

Today, passing pedestrians are able to navigate the reclaimed public spaces with ease and confidence. Seniors and adults often linger on the street furniture provided to enjoy a snack and watch the world go by, while children fill the space with their self-organised play. The City Council recorded 32 community cultural, sports or market events held along these redesigned streets at the pilot sites since 2019, up from a total of 5 prior to the implementation of the Superblocks. This has been accompanied by other positive externalities such as improved air quality, reduced noise pollution and increased revenue for surrounding businesses. However, these outcomes did not occur organically; they were the fruits of well-planned and sustained partnerships.



Barcelona's shift from a vehicle-centric urban grid to a car-lite Superblock model.
Image: Ajuntament de Barcelona

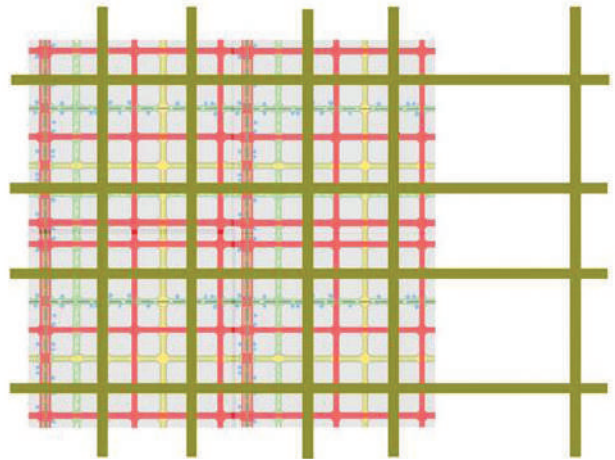
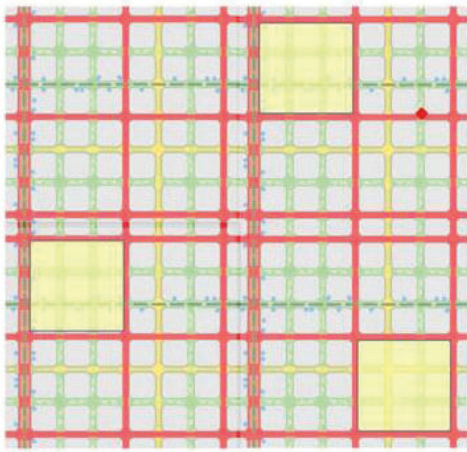


Tactical urbanism in the form of a playground and public space on a road intersection within the Superblock in the Poblenou neighbourhood.
 Image: Victoria See / Centre for Liveable Cities

||
However, these outcomes did not occur organically; they were the fruits of well-planned and sustained partnerships.
 ||

To socialise the public to the eventual benefits, and potential near-term costs and inconveniences of such transformative projects, the City Council concurrently rolled out a public engagement programme to the tagline of “Let’s Fill the Streets with Life!” Through a series of townhall meetings, workshops, site visits and community events, the City Council engaged with local residents, business associations, social organisations and the authorities to share preliminary concepts, identify existing pain points and co-create draft plans. Stakeholders were also provided with timely updates on the outcomes and impacts of implementation through quantifiable data. After almost two years of trials, the local community began to experience first-hand benefits of the Superblocks model, which resulted in them becoming more accepting of the changes.

Together with the authorities’ courage to push ahead with what they believed to be good for the city despite initial pushback, this positive engagement model has helped to build trust



The shift from the Superblock concept (by zones) to Green Streets with Green Squares (by streets).
Image: Ajuntament de Barcelona



Artist's impression of a Green Street.
Image: Ajuntament de Barcelona

and lay fertile groundwork for longer term partnerships to occur. The City Council continues to build on and refine its approach as it rolls out the Superblocks and other sustainable mobility projects throughout Barcelona.

Even though the Superblocks model has been heavily premised on Barcelona's unique grid structure, its strategies of tactical urbanism and road repurposing can be translated to different urban contexts, and therefore provide a strong basis for the shift towards more sustainable mobility modes. In fact, arising from public feedback and findings from its pilots, the City

Council is now exploring the application of these strategies at a wider scale along linear streets across the city, instead of confining it to the local urban blocks.

With aims to extend its benefits across a wider range of neighbourhoods and to create city-wide ecological corridors while minimising the negative externalities from traffic diversion, this evolution and scaling up of the Superblocks programme is testament to the well-founded basis of its approach—strong city and local-level partnerships.

Fostering a Conducive Cycling Culture: Partnerships-Enabled Programming to Scale Up Local Initiatives

Besides reclaiming road space for pedestrians and public space, Barcelona has also accelerated the expansion of its cycling network and public bicycle-sharing system, Bicing, over the last decade. The city aims to have 308 km of completed cycling paths by the end of 2023, a 40% increase from 2019. The whopping 93 million bicycle trips made within the city in 2021, up from 67 million in 2018, provides strong evidence to the rising popularity of cycling as a viable mode of commute among locals. To further support this, three key cycling path design typologies are being introduced to make the cycling experience safer and more seamless:

- **Segregated cycling paths**—Dedicated lanes for bicycles and personal mobility devices, that are located on pavements, or at the same grade and next to regular vehicle lanes.
- **30 km/h streets**—Streets where bicycles have right of way over other vehicles, and all vehicles have speed limit restrictions.

- **Single platform streets**—Streets featuring a curb-less design to facilitate smoother rides for cyclists, and barrier-free access for pedestrians.

Besides providing adequate infrastructure to nudge commuting behaviour and preferences, Barcelona has also leveraged innovative programming to cultivate a cycling culture among its children and youths. One example is a community partnership initiative called “BiciBús” (or “bike bus”). Since early 2021, this citizen-led and City Council-supported project has enabled hundreds of children to cycle to school safely in a convoy escorted by a police car and parent volunteers. It has been documented that children wake up excited to cycle to school with their peers. What began as a modest idea involving a trial route in the Sarria neighbourhood has since exploded into a growing movement of at least 15 routes across the city. The project continues to ride on the combined efforts of parent volunteers, willing and open-minded parents, enthusiastic school children and the police department, and demonstrates the importance of sustained bottoms-up partnerships within the local community.



Cycling lanes at an intersection in Barcelona.
Image: Linus Ekenstam / Unsplash



A segregated bi-directional cycling “highway” located in the middle of the bi-directional Avinguda del Paral·lel in Barcelona.
Image: Victoria See / Centre for Liveable Cities

Imposing a Low Emissions Zone: Partnerships across Administrative Boundaries in Barcelona

With its location and availability of jobs, Barcelona city receives a large inflow of vehicular traffic from the larger metropolitan area, up to about 12,500 inbound vehicles daily. Moreover, due to its geography, inland pollutants, especially those generated at the street level known as “black carbon”, tend to be retained within the city’s urban boundaries. Therefore, the City Council has been partnering its metropolitan counterpart, the Àrea Metropolitana de Barcelona (AMB), to push the needle on its transition towards sustainable mobility in a bid to restore the quality of its living environment for future generations. One metropolitan-level initiative is the Low Emission Zone (LEZ) which began implementation in phases, starting in 2018.

The LEZ only authorises vehicles of less pollutive categories to enter the core city boundary during regular working hours, and leverages on Barcelona’s Ring Road structure to provide an alternative route for more pollutive vehicles to

bypass the inner city. Overall, the scheme seeks to discourage drivers from retaining older, more pollutive vehicles, or owning a private vehicle altogether.

Several regulations and incentives were also rolled out to complement the LEZ, including an individualised non-transferable, three-year free public transport pass offered to any car owner in the metropolitan area, who commits to selling off their old, pollutive vehicle, and refrains from any new vehicle purchase over the same period. Since the roll out of this scheme, the overall number of older, more pollutive vehicles in the metropolitan has decreased significantly (Figure 1). This is no small feat and is a strong indication of the close collaboration and coordination between metropolitan and city authorities, with a will to keep the larger common good in mind.

Barcelona: An Inspiration to Other Cities in their “Car-Lite” Journeys

Barcelona’s multi-pronged approach towards sustainable mobility has duly addressed one key challenge faced by many cities in their



Barcelona Ring Road with the LEZ at the right side of the image.
Image: Alex Motoc / Unsplash

	Mar 2017: Announcement of upcoming LEZ	Apr 2020: After full implementation of LEZ	Sep 2020: Prior to enforcement of punishment of LEZ	Dec 2021: After enforcement of punishment of LEZ
Percentage of old vehicles being used in the metropolitan	20%	8%	6 – 7%	2 – 3%
Nitrogen oxide concentration (gNO_x/km²)	0.7972	0.6175	0.4469	0.3887
PM10 concentration (gPM10/km²)	0.0449	0.0451	0.0385	0.0367
Carbon dioxide concentration (gCO₂/km²)	-	227.88	200.28	194.89
Black Carbon concentration (gBC/km²)	-	0.009	0.0072	0.0059

Figure 1. Chart of the effectiveness of the LEZ and its complimentary policies.
Source: Àrea Metropolitana de Barcelona

transition towards a “car-lite” future—they have managed to transform the city’s “hardware” in terms of physical mobility infrastructure, while also aligning its “software”, such as the public’s mindsets and behaviour. The city authorities have also not shied away from their own conviction and responsibility. They have been open with testing the various transformative infrastructural changes, actively involving key stakeholders before using it as a robust basis to scale up to a wider range of commuters, to navigate their own realities and build new commuting norms. These would not have been possible without trusted partnerships across various levels—local, city and metropolitan—that focused on the longer term and greater good.

Without a doubt, Barcelona’s strong city leadership, integrated governance structure, and experimental and collaborative spirit have served it well in their follow-through on

sustainable mobility. This is not the end; there are certainly more exciting outcomes to look forward to. This transformational story—characterised by the city’s willingness to embrace public opinion, to partner with peer organisations, and to continuously refine even well-received models—has truly given other cities the confidence to do likewise; alas, the journey continues. 🧭

This article was written based on the learning points gleaned from a recent study trip to Barcelona as part of a joint research collaboration on “Measuring the Socio-Economic Costs-Benefits of Sustainable Mobility” between CLC and the Centre for Innovation in Transport (CENIT).

VIEWPOINT

DR PHILIPP RODE

Partnerships as an Urban Response to the Global Polycrisis



Domestic and international partnerships operating on multiple levels are what's needed for solving today's complex crises argues Dr Philipp Rode, Executive Director of LSE Cities at the London School of Economics and Political Science, and LSE Lead of the Emergency Governance Initiative for Cities and Regions.



Governance renewal for the coming decades will require adjusting our institutional structures to emergency mode, activating strategic partnership across and within territories, while dealing with live crises.



Around the world, people are exposed to and worry about concrete, multiple and often overlapping crisis points. While the pandemic may have been the dominant concern until recently, it is now surpassed by a combination of crises linked to geopolitical conflict and a fragile international order, global energy and food supply, and the early effects of the climate emergency. While statements about an ever acuter crisis and the proliferation of emergency declarations can easily lead to resignation and even oblivion rather than mobilising collective action, a systematic analysis of the current state of crisis and an acknowledgement of its governance implications is no matter of choice.

Partnering for Complex Realities

The evidence that systemic risks such as global heating, increasing inequalities, biodiversity loss or social unrest are increasingly higher and overlapping is becoming stronger by the day. But rather than intersecting coincidentally, observers increasingly worry about the connection between them. This has led to a new recognition of a global polycrisis defined by the Cascade Institute as “a single, macro-crisis of interconnected, runaway failures of Earth’s vital natural and social systems”. When any of the risks above turn individually into a real crisis, the resulting complex emergencies are already beyond social memory, highly political, lacking trigger moments

and difficult to define. When they materialise as part of a polycrisis, they create an entire system of such complex emergencies.

The governance implications of a global polycrisis are profound. Governing singular complex emergencies has already entirely overwhelmed existing institutional structures. Hoping for a return to normal mode governance anytime soon, while convenient at present, will not only be seen increasingly as naive but ultimately as dangerous. Governance renewal for the coming decades will require adjusting our institutional structures to emergency mode, activating strategic partnership across and within territories, while dealing with live crises. Crucially, the complex emergencies we are facing today demand governance well beyond established disaster response, relief and recovery. Systemic risks, complex emergencies and the polycrisis share dynamic networks, unknown feedback loops, non-linear relationships, and deep uncertainties that cut across policy domains, professional disciplines, administrative boundaries and timescales.

The type of emergency governance required to tackle these complex realities will have to be built around a capacity for deep prioritisation, managing trade-offs and productively engaging with diverging political sentiments. Crucially, emergency governance will have to activate new strategic partnerships to overcome



Cities have been experimenting with citizen assemblies that bring together diverse voices from the community to inform planning and governance. Image: Rawpixel.com / Shutterstock

sector-specific governance silos, territorial fragmentation and political division. Cities and their governments are well-positioned to lead these partnerships which will have to operate across various dimensions—vertically, by seeking new collaborative approaches to engage with their respective national governments, and horizontally, by establishing partnerships with other cities, nationally and internationally, as well as with committed private and third sector actors. Most importantly, new city-led strategic partnerships will have to focus on building “coalitions of the willing”, formed through open invitations to local citizens and residents to join in experimental efforts for responding to complex emergencies.

Retooling Urban Governance

An urban response to the polycrisis and governing complex emergencies will have to be built on local governments’ strengths, such as their agility, proximity to people, capacity for partnerships and in-depth understanding of interrelated systems. The Emergency Governance Initiative for Cities and Regions (EGI) led by United Cities and Local Governments (UCLG), Metropolis, and LSE Cities at the London School of Economics and Political Science investigates this urban response. Financing and budgeting will have to adapt to and acknowledge the role of fiscal autonomy and new capacities to generate own-source revenues. Local public services will have to adjust to exceptional times, acknowledge structural changes in demand, adopt flexible staff re-deployment mechanisms and encourage strong cooperation across service operators. Ultimately, municipal and local government will

have to lead more effective territorial responses to complex global emergencies and re-embrace two fundamental logics of urban governance.

First, the recognition that urban governance is fundamentally multilevel. In normal mode policy making and service delivery, most tiers of government and many non-state actors are already involved in urban affairs. Under emergency mode, multilevel co-operation, co-production and co-delivery move beyond a value-driven distribution of state power and becomes a precondition for effective emergency response. Above all, the required strategic partnerships need to rely on advanced coordination mechanisms. To enhance multilevel emergency governance, cities and regions must also take on a strategic decision-making role and not just bear operational responsibilities. Furthermore, redundancy and diversity rather than efficiency and hierarchical control may have to be prioritised. Success relies on close feedback loops between executive decisions and their impacts on the ground; it needs to employ mechanisms that can quickly aggregate inputs from different local governments, and should be built around a platform for continuous information and experience sharing between multiple agencies, city governments, as well as national and international urban governance networks (Figure 1).

Second, urban governance needs to be considered as a political rather than a technocratic approach. Possibly the greatest challenge of governance renewal for and under crisis modes will be to increase the democratic legitimacy of emergency action. Radical and rapid policy intervention inevitably lead to tensions

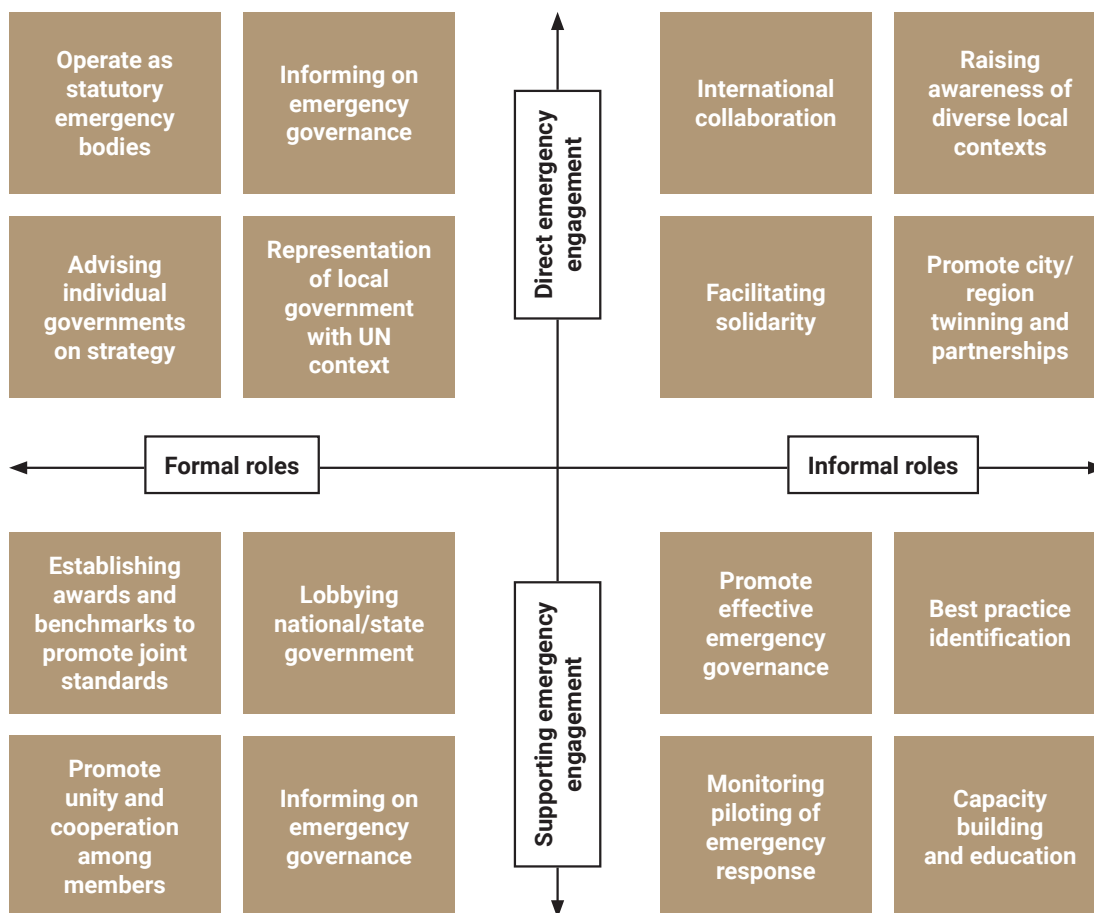


Figure 1. City networks as strategic partnerships responding to complex emergencies.
Image: Rode et al (2021). *Multilevel Emergency Governance*. EGI Policy Brief 4

between long-established frameworks for ambitious participation, good governance and representation. Instantaneous and technocratic decisions, limited political debate and absent political mandates for emergency action manifest such tensions. But emergency governance also establishes synergies and opportunities for democratic renewal with clear triggers for wide engagement—citizens as agents for change, a new confidence in the collective and increased motivation of the general public to contribute. These practices are increasingly informed by feminist thought, care ethics and advances in governance by empathy.

Scaling Strategic Partnerships

Over the last few years and at the intersecting crisis points of the pandemic—the climate emergency, political confrontation and social unrest, city-led strategic partnerships have already established many practices that can be

learnt from. Emergency assemblies, digital citizen wallets, youth councils, expanded voting rights, decentralised emergency responses and far-reaching emergency response consultations are just a few examples. Progressive cities also help to overcome the reactionary tendency of dealing with permanent crisis by leading reforms of existing institutions and governance approaches that counterbalance the short termism of emergency responses. But they will also have to be able to better detect and enable social tipping points that lead to transformative change. The joining-up of concrete, territorially embedded intervention and broader normative frameworks is what partnership-oriented urban governance can clearly offer the new emergency governance. It is an offer that must be deeply embedded in a future response to the global polycrisis. 📍

VIEWPOINT

MANOJ SHARMA

Make Financing Go Further with Partnerships: An Asian Cities Perspective



More than just financing, we also need knowledge and innovation that are driven by productive partnerships to achieve our goal of creating liveable cities in Asia, argues Manoj Sharma, Chief of Urban Sector Group, Sustainable Development and Climate Change Department, Asian Development Bank.



The region's challenges require what we call “Finance++”, a strategic combination of finance complemented by knowledge and innovations and...partnerships.



Two pressing questions that most urban development practitioners often ask are: what resources are required to address infrastructure deficits, and what can make our cities more liveable? A 2017 Asian Development Bank (ADB) study, “Creating Livable Asian Cities”, estimated that the developing Asia and the Pacific region needs about \$1.7 trillion in annual infrastructure investments, starting from 2016 until 2030 to maintain growth, improve essential services and develop climate resilience. The ongoing COVID-19 pandemic has further aggravated the region's inadequate infrastructure and urban service delivery. So, how do we overcome such a huge gap and make cities in Asia and the Pacific more liveable?

Financing alone is insufficient to bridge the huge gap. The region's challenges require what we in ADB call “Finance ++”, a strategic combination of finance complemented by knowledge and innovations (first plus), and collaboration and partnerships (second plus). ADB's experience in the region illustrates that cities which focus on policy, governance and capacity-building levers along with innovative development approaches and knowledge solutions often succeed in creating an enabling environment for attracting diverse financing and strong partnerships, especially with the private sector. Attracting the private sector's interest has eluded most

developing cities because they struggle with the operational qualities that give the private sector confidence in government: sound governance, prudent financial management and creditworthiness.

On the other hand, convincing governments to invest in policy, legal, regulatory and governance reforms can be a challenging “sell” when they are hard-pressed for infrastructure development. Institutional development is less visible yet brings a level of transparency and accountability that attracts a variety of partnerships needed for more visible, transformative and sustainable development. Stronger institutions also make stronger partnerships.

Productive Partnerships

While ADB serves a significant role in making the region's cities more liveable, which is one of the seven strategic priorities of ADB, we are only one of many stakeholders needed to address the scale of the region's urban development challenges. Governments, multilateral and bilateral development partners, the private sector, and civil society organisations can and need to do much more—individually and collectively—to incentivise city-level reforms, generate and share relevant knowledge

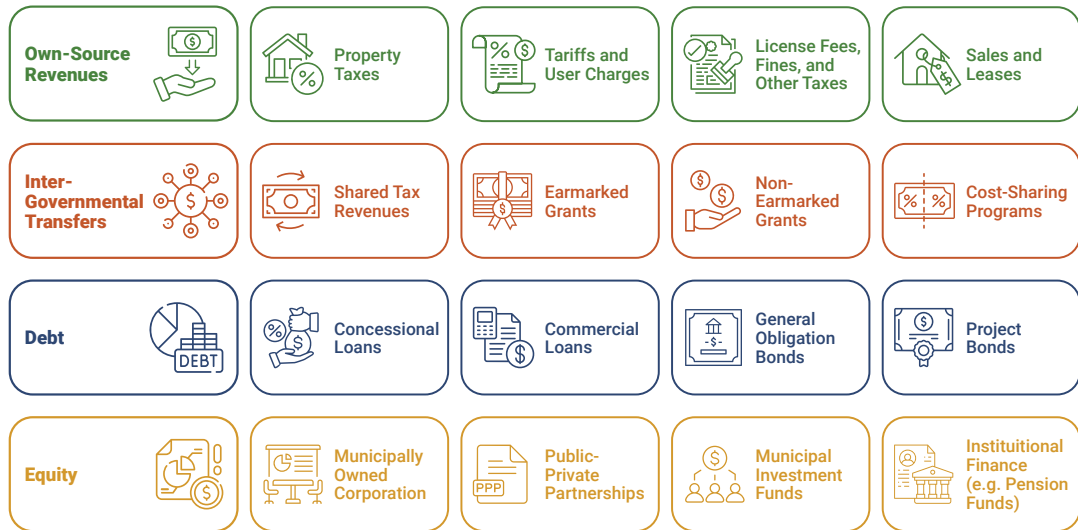


Figure 1. Municipal Finance Sources.
Image: Asian Development Bank

solutions, and foster meaningful collaboration. Partnerships can support transformational development and enhance liveability in the region’s cities in several ways.

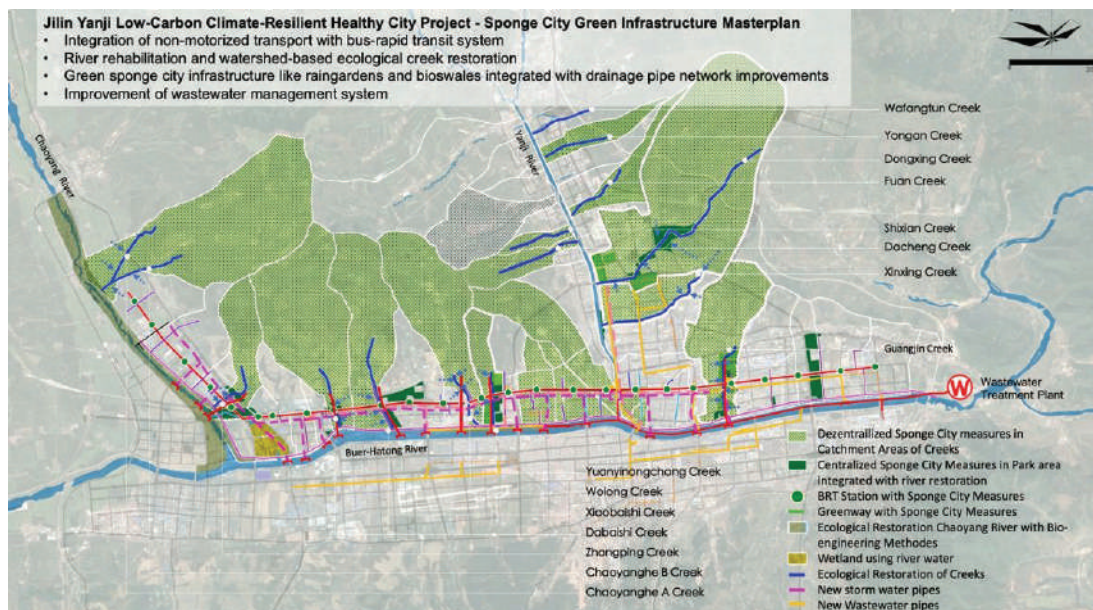
Strong Urban Governance

First, partnerships can support transformational urban governance reforms—fiscal, regulatory and administrative reforms—to create a sustainable enabling ecosystem at all levels and to benefit all partners. Fiscal reforms are the key to unlocking the potential of cities to attract investments and provide better services. Most cities in the region mobilise revenues through what we at ADB call the “3Ts”: central government Transfers, local Taxes and Tariffs. As we all know, the 3Ts are not serving cities to realise revenues at their optimum levels. Many cities need to reform their tax assessment and collection systems, develop own-source revenue streams, enforce sustainable tariffs and user charges, and institutionalise predictable inter-governmental transfers. And to accomplish those reforms, they need the technical expertise and knowledge solutions that partnerships offer.

Our experience of working on ADB-financed urban projects over the past 30 years has taught us that improving local revenue mobilisation and creditworthiness is the first important

step for a city to attract resources from the private sector and public-private partnerships (PPPs). Our experience also tells us that such partnerships with the private sector and PPPs are critical to improving thze urban infrastructure and service delivery at all stages—planning, financing and construction, as well as operations and maintenance. Such partnerships can also leverage alternative financing sources: land-value capture, borrowings from commercial banks, or municipal bonds on capital markets.

Consider the instrument of municipal bonds, which is a debt obligation by a local government agency with the premise to pay the interest at specific intervals and the principal at maturity. A bond works like a loan: the bond issuer or the local government agency is the borrower (debtor) of the amount that could be used to finance infrastructure in the city. Municipal bonds are almost non-existent in most cities in developing Asia. In the United States, however, the municipal bond market is so developed that almost two-thirds of cities’ infrastructure is financed by municipal bonds, with approximately 50,000 issuers of municipal bonds and \$4 trillion in outstanding amounts as of June 2022. Twinning programs that facilitate partnerships by connecting cities for knowledge sharing and capacity, e.g., between US municipal



Regional partnerships are important conduits for sharing innovative urban development project designs. ADB's project in Yanji, Jilin Province, for example, demonstrates how transit-oriented urban development alongside the sponge city concept, can create sustainable ecosystems within cities.

Image: Asian Development Bank

issuers and willing Asian cities, can enhance Asian cities' capacity to issue bonds, particularly with climate and social impacts, at a reasonable cost of capital and with adequate returns to potential investors. Municipal bonds provide not only much-needed finances but also stimulate critical reforms to improve creditworthiness.

Applying the Systems Approach

Second, partnerships can generate and share knowledge on innovative and integrated approaches for maximum development impact. Urban spaces have always been innately complex and competitive, necessitating integrated solutions involving myriad partners delivering results across multiple sectors and intraregional boundaries with a "multiplier effect" while also strengthening institutional capacities and governance systems.

ADB's projects in Ping Xiang, Jiangxi Province and in Yanji in Jilin Province are good examples of the sponge city concept incorporating urban-rural water resource management, nature-based solutions, and environmental considerations into urban planning, while at the same time promoting rainwater harvesting and integrating green- and grey infrastructure to create sustainable ecosystems within cities. Similarly, ADB's partnership with private water utility, Shenzhen

Water (Group) Co., Ltd., brought together the required expertise of smart water technologies to support climate- and disaster-resilient urban water infrastructure in Shenzhen.

Strong and effective partnerships also yield results for meeting the Sustainable Development Goals (SDGs) while creating opportunities for innovative solutions. Affordable and green housing is one such example. It is heartening to see increasing interest in the private sector and commercial banks in the region to develop new housing finance mechanisms, strengthen housing policies and institutions, and engage communities and other stakeholders in meaningful ways to address the severe shortage of housing, especially for the poor and the vulnerable groups.

ADB works in about 40 developing member countries in Asia and the Pacific and is ideally placed to capture good practices and lessons from one project in one city, and transmit them to other cities for replication and scaling up. ADB's "Inclusive, Resilient and Sustainable Housing for Urban Poor Project in Tamil Nadu, India", for example, supports innovative design of houses for the poor, involves more consultative and participatory processes, and demonstrates the bankability and sustainability of affordable



The ADB-supported “Sustainable Housing for Urban Poor Project in Tamil Nadu, India”, promotes innovative low-income housing design through more consultative and participatory processes.
 Image: Asian Development Bank

housing for low-income urban residents through promoting private sector participation and PPPs. ADB proactively works to replicate and scale up such good examples across the region.

Raising the Bar

Third, partnerships and networks can enhance productive competitiveness and instill healthy rivalry among cities. Partnerships and coalitions are crucial to discovering and promoting successful strategies among all relevant stakeholders. For example, educational institutions can support cities to improve workforce skills through enhanced technical and vocational education and training programs with help from successful industry leaders. Municipal leaders need credible and practical solutions that are most readily available from the experiences of similarly situated cities.

For example, a city in India can learn best practices in solid waste management from the county’s best-ranked cities in the annual Cleanliness Competition (Safai Survekshan in the local language), which the Government of India has conducted every year since 2014 for more than 4,500 cities across the country. Interestingly, these participating cities are not only competitors, but also collaborators and

influencers. Such partnerships and networks can flourish and sustain through collaborations with institutional drivers (e.g., governments and development partners like ADB), who play an important catalytic role of providing financial, technical and logistical support. Participants must also embrace partnerships such as twinning programs, engage in a process of learning, and continue to build capacities to sustain the momentum.

Elevating Asia and the Pacific in the International Scene

Finally, our partnerships should support the entire knowledge cycle, pool resources, create accountability and provide good platforms for the Asian developing cities’ advocacy role on the global stage. ADB collaborates with other development partners, private sector organisations and foundations to mobilise resources into trust funds to support initiatives for capacity building, analytical studies and pilots, and knowledge generation and dissemination. The cumulative effects of reforms, capacity, knowledge and partnerships are a development ecosystem that attracts private sector investment. Cities need the private sector’s participation, which needs to be of a level that is commensurate with the challenge.



ADB's Asia Pacific Water Resilience Initiative and Water Resilience Trust Fund, launched at COP27, are examples of broad-based and high-capacity partnerships that assist developing member countries in pursuing resilient development.
Image: Asian Development Bank

Globally supported regional partnerships can help countries and cities localise global development and climate initiatives, such as the Sustainable Development Goals and Nationally Determined Contributions, for win-win development strategies. Moreover, the knowledge transfer is a two-way street. Global leaders and strategists can learn as much about local challenges, opportunities and innovations as national leaders can learn about global best practices.

ADB's Commitment to Nurturing Purposeful Alliances

The developing world is unlikely to achieve the 17 SDGs by 2030. Nevertheless, we at ADB believe that development processes to make cities liveable in Asia and the Pacific can still be fast-tracked through impactful partnerships. ADB is leveraging its investments and partnerships to create opportunities and facilitate partnerships among all stakeholders. For example, the creation of the Livable Cities Advisory Group in ADB in 2021 provides a network of expertise from the public and private sectors, and enhances the synergy of ADB's work on liveable cities with the current global agenda such as the SDGs and the Paris Agreement Alignment. As municipalities

strengthen their governance systems and become more responsive to partnerships, private sector confidence will grow and bring support for infrastructure finance, technology and market engagement. Partnerships are a major strategic pathway to building an ecosystem where we can all work together and make our cities more liveable in the shortest possible time. 🤝

VIEWPOINT
ONG KEY WEE

Rethinking Water Sustainability with Public- Private Partnerships



Mr Ong Key Wee, head of Singapore's Public Utilities Board's (PUB) Public-Private Partnership (PPP) Management Office, defends the case for PPPs and highlights the considerations for positive outcomes in Singapore's water journey.



The PPP approach is ideal because such projects give the private sector a suitable platform for innovation.



To enable Singapore to adequately secure its water supply, national water agency PUB's strategy for procurement has evolved through the years to navigate the ever-changing business landscape and to tap on the growing capabilities of the industry. Beginning with only the outsourcing of infrastructure construction while retaining design and supervision in-house, PUB has since been able to outsource both the design and construction to the private sector. While PUB continues to operate our own plants, we now outsource some of our projects through Public-Private Partnerships (PPP) where the design, construction, operation and maintenance of the plants are all undertaken by the private sector. Such an arrangement allows for a robust and diversified water sector for Singapore.

As the first public agency to adopt a PPP approach, PUB has significant experience in such partnerships. Starting in November 2001, PUB called for its first PPP tender for a seawater desalination plant in Tuas under the Design-Build-Own-Operate arrangement. This resulted in the construction and opening of SingSpring Desalination Plant in September 2005. Since then, PUB has gone on to roll out six more PPP projects: three NEWater plants (Ulu Pandan NEWater Factory, and Changi NEWater Factories 1 and 2) and three seawater desalination plants (Tuas South Desalination Plant, Marina East Desalination Plant and Jurong Island Desalination Plant).

Why the PPP Approach?

Value for money, a conducive environment for new technologies and innovation, and the growth of the country's private water industry are among the key benefits that PUB and Singapore have gained from adopting the PPP approach.

Under PPP, the design, build, operation and maintenance of the plant are undertaken by the same company or consortium. Private sector firms that design and build the plants are hence incentivised to also optimise the subsequent operation and maintenance of the plant to reduce costs. This has resulted in the competitive water prices put forward by the successful private bidders for the various PPP projects.

As part of efforts to drive research and development (R&D), and innovation in the water sector, PUB works closely with partners to implement new technology and design. The PPP approach is ideal because such projects give the private sector a suitable platform for innovation. Under the PPP tenders, broad technical specifications are stated to ensure successful delivery of the project. Beyond that, the rest of the requirements specified in the contract fundamentally relate to the performance of the product water (e.g., the quality and quantity of NEWater or desalinated water). For example, in the Marina East Desalination Plant project



Aerial shot of Marina East Desalination Plant (MEDP) and reverse osmosis system.
Image: Keppel Infrastructure

(see box-out) undertaken by Keppel Infrastructure Holdings, PUB specified broad technical requirements to use membrane-based treatment processes, but left the bidders to innovate and optimise the detailed design of the plant.

Additionally, PPP also offers business opportunities for the growth of the private sector in Singapore's water industry. Formerly, private sector firms were only contracted to design and construct the facilities, while PUB's own

staff remained responsible for operating and maintaining the plants. Under PPP, however, PUB relies on the experience and expertise of firms to execute the entire design, build, operation and maintenance chain. This not only allows private sector companies to gain valuable project delivery expertise and operational experience, but also provides them with a track record that they can showcase for future undertakings, especially overseas.

||

Safeguards are built into the PPP contracts to allow PUB to step in and take control of the whole or part of the plant to ensure continued operation.

||

Case Study: Marina East Desalination Plant

On 4 February 2021, Prime Minister Lee Hsien Loong witnessed the official opening of the Marina East Desalination Plant (MEDP). This PPP project, undertaken by Keppel Infrastructure Holdings, has several innovative and unique features:

- MEDP is the first dual-mode desalination plant in Singapore that is able to treat both reservoir and sea water into drinking water.
- It is also the first plant in Singapore to employ direct coupling of Ultrafiltration (UF) and Reverse Osmosis (RO) systems, which:
 - Reduces footprint due to the elimination of break tanks and booster pumps;
 - Reduces power consumption due to elimination of energy usage by booster pumps; and
 - Eliminates maintenance issues related to microbiological growth in the break tanks and cartridge filters.
- It seamlessly integrates into the surrounding greenery by doubling up as a public recreational space complete with a green roof, bicycle parking and toilet facilities. Its design also incorporates eco-features such as rainwater harvesting, and a lush landscape that promotes biodiversity.

Putting in Place Safeguards

Notwithstanding the merits of PPP, PUB ensures that its staff acquire the relevant technical qualifications to adequately assess that the concession companies (companies which were awarded the PPP contracts) meet the necessary competencies, and are in alignment with the agreements relating to the construction and operation of the plants. Such in-house expertise enables PUB to regularly monitor and audit the PPP plants' performance to ensure that the product water meets the quality and quantity requirements, and to evaluate the remedial actions taken by the plants if performance standards are not met.

Retaining such expertise in-house also allows PUB to intervene should the concession companies default. Safeguards are built into the PPP contracts to allow PUB to step in and take control of the whole or part of the plant to ensure continued operation. PUB may exercise these step-in rights when specific conditions are met, such as when the concession company's operations or financial standing cross a critical threshold, or if the default (e.g. failure to deliver water supply of specified standard for a specified period) is not remedied within a stipulated timeframe.

Partnerships That Last

PUB's PPP projects have largely gone well due to a rigorous selection process that first and foremost ensures selected PPP partners possess the technical and financial capacity. More than that, it is a mutually beneficial partnership that is championed from the top in both PUB and the concession companies. 😊

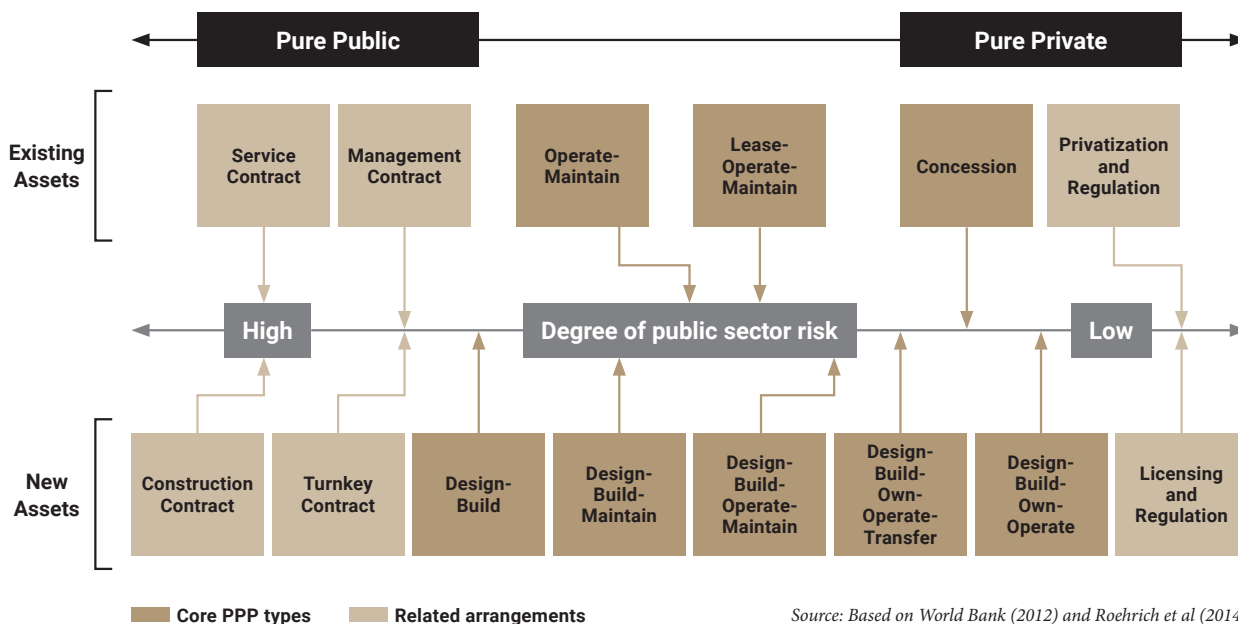
VIEWPOINT
TERENCE HO

Assessing the Suitability of Public-Private Partnerships for Infrastructure Projects



Public-private partnerships also have their risks and downsides, argues Mr Terence Ho, Associate Professor in Practice at the Lee Kuan Yew School of Public Policy, National University of Singapore.

Scale and Scope of Responsibility and Risk for Different PPP Contract Types



Source: Based on World Bank (2012) and Roehrich et al (2014)

Figure 1. Varieties of PPPs.

Image: Jomo KS, Anis Chowdhury, Krishnan Sharma, Daniel Platz, "Public-Private Partnerships and the 2030 Agenda for Sustainable Development: Fit for purpose?", United Nations Department of Economic and Social Affairs (DESA) working paper no. 148, February 2016

The Value of Public-Private Partnerships (PPP)

Since the 1990s, PPPs have been widely adopted in both developed and developing countries for infrastructure development. Such arrangements include Design-Build-Finance-Operate or Build-Own-Operate whereby the Government engages a private sector entity or consortium to finance, develop and operate infrastructure in return for a commitment to purchase the public services generated from the infrastructure over a period of time (Figure 1). PPPs have been used for a wide range of infrastructure including roads, bridges, schools, hospitals and prisons.

The value proposition of PPPs is evident:

1. They are able to mobilise private finance and avoid large upfront fiscal outlays at a time when the public purse is stretched and borrowing costs are rising;
2. They can optimise risk sharing between governments and the private sector in terms of development, financing, operational or demand risks; and
3. They also encourage a life-cycle approach towards public asset management by factoring in operating and maintenance considerations into the upfront design of facilities.

Inherent Risks of PPP

However, PPPs do not obviate the need for government spending—they merely spread it out over the life cycle of the asset. PPPs also have their risks and downsides, which governments would do well to keep in mind.

The greatest risk inherent in PPPs is the long-term contractual relationship between the public agency and the private consortium, which is typically 20 years or more. During this time, there may be changes in technology, user patterns and even stakeholder priorities. Hence, it is important to build into the PPP contract sufficient flexibility for variation.

Even without major shifts in the operating environment, the day-to-day running of the facility requires mutual accommodation in a spirit of give-and-take, as not everything can be spelled out in a contract. A successful partnership requires open channels of communication and strong trust among partners, as well as a mechanism to resolve disputes that may arise. It is also important that the financial incentives for the private sector partner are aligned with the aims of the public agency for the infrastructure that is developed.

Benefits and Risks of PPPs

Benefits	Risks
Mobilise private finance, avoid upfront fiscal costs	Long-term contract may not anticipate changes in technology, user patterns and stakeholder priorities
Optimise risk sharing between the government and private sector	Contract may not be able to spell out all contingencies, and can introduce friction and inefficiency in daily operations
Encourage a life-cycle approach towards public asset management by integrating operations and maintenance considerations in upfront design	Partnership may not work out if financial incentives for private partner are not well aligned with public sector objectives
Leverage private sector innovation and expertise at various stages of the project	

Figure 2. It is important to weigh the benefits and risks of PPPs as it may not be suitable for every project type.
Image: Terence Ho

Despite best efforts, PPPs may not always work out. Take the Singapore Sports Hub, for example. The \$1.33 billion facility was planned in 2003 as the largest integrated sports infrastructure PPP project in the world, with the aim of tapping on private sector expertise and networks to bring major sporting and entertainment events to Singapore. After a delay arising from the Global Financial Crisis (GFC) in 2008–09, the project finally achieved financial close in 2010.

Singapore Sports Hub opened its doors to the public in 2014, but issues soon emerged. In 2016, Sports Hub Pte Ltd (SHPL) put a price tag of \$26 million for an extra 35 days of rehearsal for Singapore’s National Day Parade. Although the fee was later reduced to \$10 million, the cost of staging the Parade at the Sports Hub was still considerably higher than at previous venues, and the Parade has not returned to the Hub since. In March 2020, SHPL was also fined for failing to meet the stipulated minimum number of sporting event days at the Sports Hub.

Eventually, divergence between the commercial objectives of SHPL and the Government’s aim of promoting community sports resulted in a parting of ways. In 2022, the Government exercised its option to terminate the Sports Hub PPP, taking full control of the facility’s operations and management. This was some 13 years ahead of the PPP contract end-date of 2035.

Minister for Community Culture and Youth, Edwin Tong, explained in Parliament that the PPP had fallen short of “promoting sufficient community vibrancy in and around the Sports Hub”. He noted that the profit-driven model was “not sufficiently aligned” with the government’s emphasis on community programming, such as the hosting of school sports events, grassroots programmes and other activities with social rather than commercial returns.

The Sports Hub example points to the difficulty of getting a PPP to work when its revenue model is not well aligned with public objectives, in this case—the promotion of community sports.

This is not to say the Sports Hub PPP was without benefits. Private sector financing freed up fiscal resources and reduced the Government’s financial risk during the GFC, while private sector expertise enabled the facility to hit the ground running at a time when Singapore’s sports and entertainment ecosystem was less well-developed.

However, it was decided that ownership and direct management of the Sports Hub in the current phase of operation would give SportSG greater control and flexibility to drive policy outcomes, and enable deeper integration of the Sports Hub with new developments in the surrounding Kallang precinct.



Singapore Sports Hub.
Image: Jason Goh

Besides the Sports Hub, the PPP model was also used in the development of Institute of Technical Education (ITE) College West, a Singapore technical education college which opened in 2010. However, when the time came to develop its next campus—ITE College Central, ITE subsequently reverted to traditional procurement, which suggests that it did not find PPP to be the best option for the development of such facilities.

When Is PPP Suitable?

In Singapore, the PPP model has enjoyed greater success in utilities infrastructure such as desalination, water reclamation and incineration plants. A recent example is the Jurong Island desalination plant, a partnership between the Singapore Public Utilities Board and a private consortium formed by two companies, ST Engineering and Tuas Power. ST Engineering's expertise and design innovation paved the way for greater energy efficiency, while co-location with Tuas Power's power plant brought about infrastructural synergies.

Such utility projects are perhaps better suited to PPP as the output is standardised and can be easily monitored, while the underlying technology is stable. By contrast, PPPs can be problematic in social infrastructure where

commercial and social objectives diverge, and ever-changing user needs pose a problem even with contractual flexibility.

PPPs will continue to be an important option for governments across the world in infrastructure development, particularly given the urgent need for infrastructure renewal and climate adaptation in many countries. Singapore would do well to keep the PPP option warm by building up PPP-related expertise, and drawing lessons from existing projects as well as the experience of other countries.

However, it is important to note that PPPs are not the only option for mobilising private sector finance or expertise. Hybrid PPPs, where financing may be wholly or partly sourced from public funds or official development assistance, are also gaining traction as alternatives to traditional PPPs. Public agencies will need to factor in the characteristics of each project—including risk, flexibility and objective alignment—to decide whether a PPP is appropriate, what form it should take, and how the contract should be drafted to maximise chances for success. 🗨️



ILLUSTRATION

COMMUNITY ENGAGEMENT

Building Effective Partnerships for Placemaking

Rhindon is a multi-disciplinary design consultancy that applies a human-centred design and systems approach to placemaking. We have worked with a diverse range of organisations to help them re-imagine what a thriving community could look like, driven by collective ownership and creative impact.

TEXT AND IMAGES: RHINDON (BILLY KWAN, JOSHUA TEO AND AQIDAH HASLAN)

Building a Systems View of Partnerships for Placemaking

One of the aspects of placemaking that we have been constantly re-thinking, is how to move beyond short-term activation (e.g., through programmatic interventions), to creating sustained impact and tangible change within a neighbourhood or district. As a system, our urban environment has many different parts that exist in interrelated ways. These webs of interrelations mean that issues are often complex and multifaceted, unsolvable by any one party or agency.

Building partnerships becomes an important key to creating meaningful impact as it facilitates the process of finding common ground amidst differences in perspectives, and leveraging on the assets of the system to collectively drive outcomes based on a shared vision. Ultimately, this translates into greater opportunities for meaningful impact where there is ownership of the change by the communities who inhabit the space.

Here are 5 key principles that we have found to be hugely important in building successful partnerships for placemaking:

1. Build empathy and trust through a common understanding of the different needs within the system	2. Align on a common picture for the future	3. Partner according to common interests and complementary strengths	4. Have clarity of roles and outcomes	5. Lower the barriers of partnership through experiments
--	---	--	---	--

1. Build empathy and trust through a common understanding of the different needs within the system

A neighbourhood or urban district is often made up of groups of people with a variety of needs and aspirations. Often, these differences could be seen as in competition with each other resulting in a phenomenon of multiple groups working in silos to improve their own circumstances. Getting the different groups into the same room to listen to each other's challenges helps them find common ground with each other and helps them discover opportunities to make a bigger impact through collaborations. This can be done at various levels and the key is often to centre the conversation around a common challenge or experience that groups are passionate about improving.

The National Volunteer & Philanthropy Centre (NVPC) Lower-Income Colabs brought together over 140 people who were involved in working with lower-income families, to build a common understanding around the families' lived experience. Over five sessions, participants went through a facilitated process of Learn, Align, Act, with the goal of partnering to solve for unmet needs.

Under another project, we worked with Wisma Geylang Serai (WGS) to engage youths, young adults and political stakeholders, to align on what was important to them in the refresh of WGS. The insights from these engagements were used to guide how they wanted to partner with retail tenants.



2. Align on a common picture for the future

A shared vision of the future is essential in building trust and enabling collective action among the different stakeholders within the system (whether place or community). The aspirations of each individual or group are galvanised and translated into a common vision that each party is able to identify with and thus align on. It also builds collective ownership around what the stakeholders hope to see and the role they see themselves playing in that new future. It is important to use different tools to make this experience as visual as possible, as it helps stakeholders visualise their future involvement in a more tangible way.

Conversations That Help Bring Alignment of a Common Future

Who is in this future vision?

Where are you and what is the role you are playing?

What impact has been made? Who achieved it and how was it achieved?

What are the important narratives you see in this future?

How are people feeling about the future? What are they saying?



3. Partner according to common interests and complementary strengths

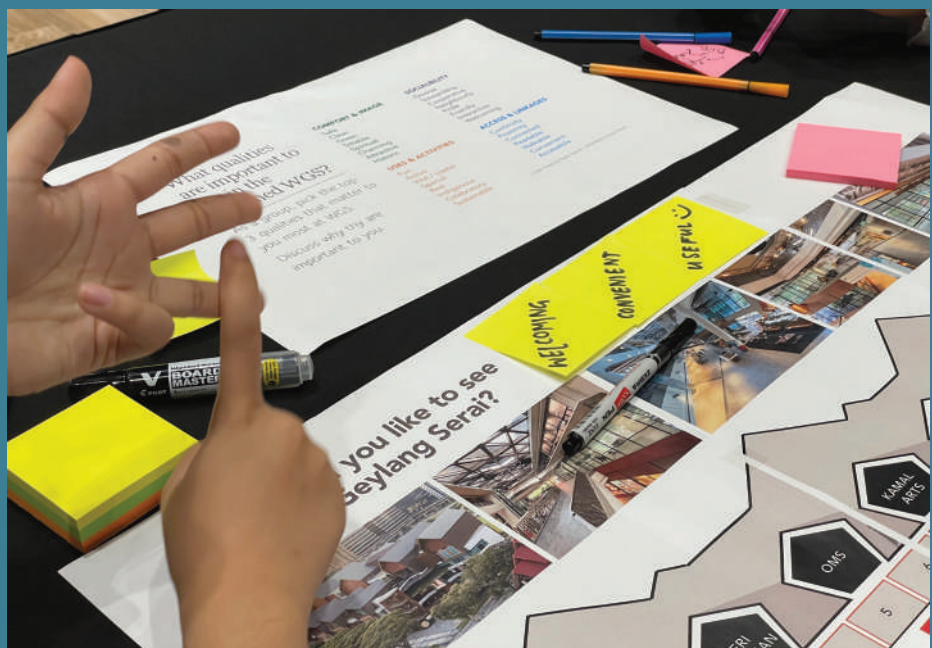
A common barrier to successful partnerships is often the question of effort versus value—“How much effort is this going to require of me and my organisation and what are the returns from this?” To overcome this inertia, we believe it is important that partnerships start from a position of strength, which is to say, “What does one bring to the table and how can that be enhanced by partnering with someone else with a common interest and complementary strength?” For example, bringing together funders, different service providers and residents creates a unique opportunity for those with resources to identify, understand and address the gaps in the system. Even end users should be considered as assets with something to bring to the table and not just recipients.

Forming Partnerships Using a Strengths-Based Approach



4. Have clarity of roles and outcomes

Partnerships that start off with clear roles and outcomes often have a higher chance of lasting the distance. Identifying a Project Champion is key to imbuing a sense of responsibility and trust among stakeholders. A champion's passion and commitment will go a long way in building collective ownership and advocating further the causes they support. Most importantly, a champion should be capable of mobilising resources with the commitment to take positive action. Here, partnerships can be harnessed as a strategic tool to aid the champion in expanding their resource pool, ensuring success of placemaking initiatives and securing longer term investments needed to address emerging urban issues.



5. Lower the barriers of partnership through experiments

Translating relationships into partnerships is no easy task. A common struggle is in formalising the partnership beyond a friendly relationship. This could be due to a lack of organisational buy-in or the lack of clarity on what to partner on. This is where taking a prototyping approach towards the partnership could create the space for buy-in and commitment. We often urge groups to start first by doing something together as an experiment and then building on it, encouraging a bias towards action rather than a wait-and-see attitude.

For example, by partnering with a community service provider who already had a network of relationships within the community, we were able to test different ways in which partnerships between the organisation, a public gathering space (in this case, the coffeeshop), volunteers and residents could create a more liveable neighbourhood for seniors and families.





URBAN PLANNING

HWANG YU-NING

Deputy CEO and Chief Planner, Urban Redevelopment Authority of Singapore.
As the Deputy CEO and Chief Planner of the URA, Singapore's land use planning and conservation agency, Hwang Yu-Ning oversees the urban planning and conservation of the built heritage of Singapore.

The Long-Term Plan Review—Working with Partners to Shape a Space for Our Dreams



URA organised guided tours of the LTPR exhibition at the URA Centre.
Image: Urban Redevelopment Authority

In Singapore, we have adopted a multi-stakeholder approach in our urban planning process, which broadly includes the Government, the Private sector and the People sector. The Government sets the rules and the framework, while the Private sector comes in with investment and implementation and together with the People sector contribute their ideas and feedback.



The LTPR engagement embodied the principle of multi-stakeholder engagement, as we worked together within the Government sector to better partner with the People Sector...



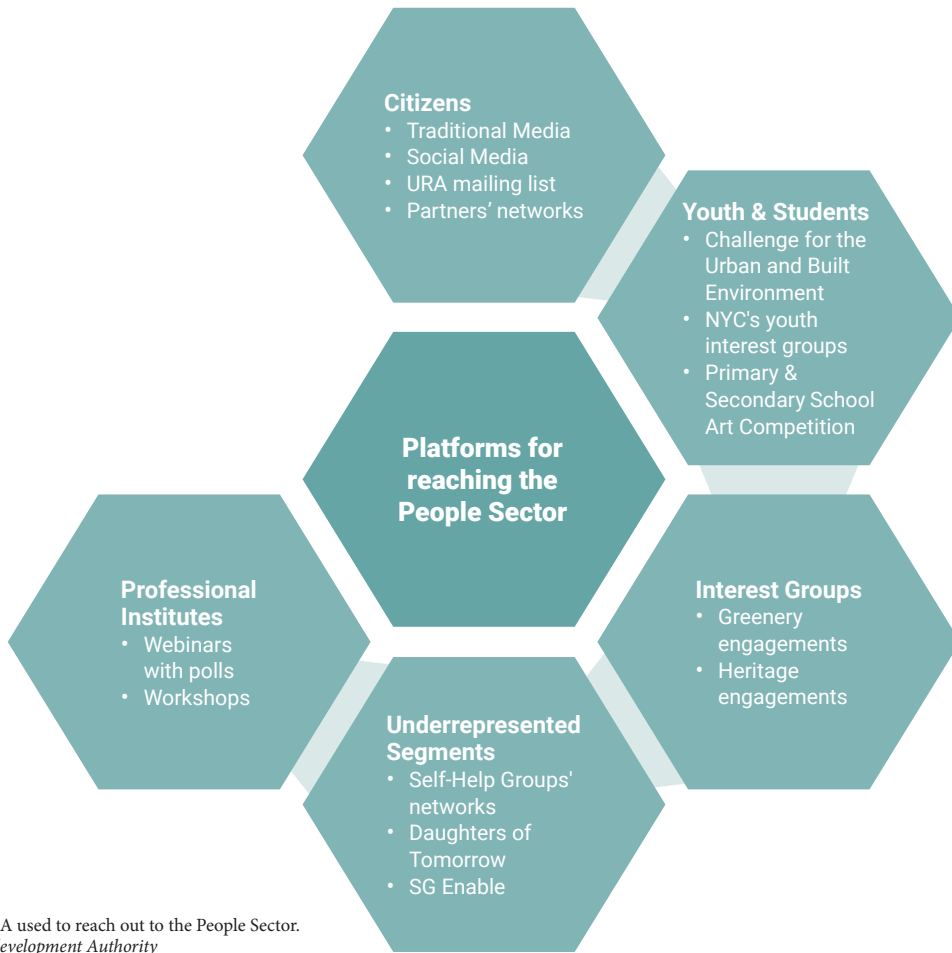
Over the years, the balance of the Government, Private and People sectors' involvement on the urban planning process has evolved. Increasingly, the government has emphasised the importance of co-creating with the People sector as exemplified by public engagement efforts such as Singapore Together (2019), the Emerging Stronger Conversations (2020) and the ongoing Forward Singapore.

In the urban planning and land development realm, actively engaging the People sector allows us to incorporate perspectives that we may not be aware of, encourage citizens to have a stake and say in their futures, and talk about policy considerations and constraints.

The Urban Redevelopment Authority (URA) is Singapore's land use planning and conservation agency. We recently concluded the Long-Term Plan Review (LTPR), which

sees us reviewing long-term plans for the development of Singapore every 10 years. Such plans include mapping out strategic land uses and infrastructure needs over the next 50 years and beyond. The LTPR public engagement exercise was the most extensive that the URA has ever undertaken, involving more than 15,000 people from all walks of life from July 2021 to April 2022. The engagement culminated in an LTPR public exhibition to showcase the ideas and strategies for the future, and reached a total of 200,000 people.

The LTPR engagement embodied the principle of multi-stakeholder engagement, as we worked together within the Government sector to better partner the People sector—Citizens, Youth and Students, Interest Groups, Underrepresented Segments and Professional Institutes.



Platforms that URA used to reach out to the People Sector.
Source: Urban Redevelopment Authority

60

Citizens—Reaching Out to The General Public

In previous reviews of our long-term land use plans, citizen engagement centred on consultation of advisory panels, made up of subject matter experts in their respective fields and representatives from different sectors, and on a selected number of focus group discussions. We tended to engage the wider public only nearer the end of the process—during the exhibition period, when the plans had largely been finalised. While the public was invited to give their comments on the plans during the exhibition period, it mainly served to inform them, rather than consult them.

For our recent LTPR public engagement exercise, we consulted the broader public much earlier on,

in tandem with the development of the long-term plans. We conducted the engagement in phases over a one-year period. This phasing allowed us to conceptualise the engagement process as a “journey” that we could invite citizens to join us on—starting with establishing a shared vision and values for the future, moving on to idea and strategy generation, and discussing trade-offs and issues along the way, before finally factoring these as vital inputs to our plans.

We leveraged both traditional and social media to reach more people. In addition to garnering media coverage in all the broadsheets, we also spread word of our engagements through

URA’s mailing list and social media outlets. Our partner government agencies, interest groups, grassroots organisations and professional bodies also helped to publicise our initial visioning and values poll through their own networks. As a result, 5,600 people took the poll, and we were able to tap on this initial pool of interested respondents to sustain interest in engagement opportunities at subsequent phases of the LTPR engagement, such as facilitated discussions and webinars. We encouraged those who were interested in the LTPR to subscribe to our monthly emailer, follow us on social media and volunteer with us, so that our relationship could extend beyond the LTPR and into

Youth and Students—Inspiring the Next Generation

other planning and community engagement efforts.

To further amplify the LTPR’s outreach to the general public, we conducted a dialogue with grassroots leaders from the People’s Association (PA) Communications Workgroup, which drives the sharing of policy information with residents. With a better understanding of the LTPR, grassroots leaders were better equipped to respond to residents’ queries or concerns about their current and future living environment. At the end of the LTPR engagement period, we partnered the PA again, to organise guided tours of the LTPR exhibition for Advisers and grassroots leaders.

Given that the LTPR’s planning horizon is 50 years and beyond, it is particularly important to engage our youth as they will be the ones who will live through the fruits of it. In this respect, we tapped on existing relationships with youth and school groups, sought out government agencies and organisations who shared similar goals with us, and partnered them to make our joint outreach more effective across the spectrum of youth.

In the “tertiary level to young adult” segment, the Ministry of Community, Culture and Youth (MCCY) and the National Youth Council (NYC) polled 1,000 youths on LTPR considerations, conducted a youth dialogue and mobilised members of NYC’s youth interest groups to organise engagements within their own groups and schools, such as the Singapore University of Technology and Design.

In the “pre-tertiary” segment, URA tapped on the Challenge for the Urban and Built Environment (CUBE) programme, an annual competition for students to dive into the intricacies of planning and urban design for Singapore, and experience what it’s like to be an urban planner. As part of the 2021 edition of CUBE, more than 80 youths from junior colleges, institutes and polytechnics discussed how to achieve the LTPR outcomes that public engagement participants had envisioned for Singapore—inclusive, adaptable and resilient, distinctive and endearing, and sustainable. The Ministry of Education (MOE) also put us in touch with Geography Educators and Humanities Scholar students.

In the “primary and secondary” segment, we invited students to submit their ideas for Singapore in a “Space For Our Dreams” art



The LTPR Youth Conversation was held in partnership with the National Youth Council and the URA.
Image: National Youth Council



Original pieces submitted by primary and secondary school students for the “Space For Our Dreams” art competition.
Image: Urban Redevelopment Authority

competition. MOE disseminated news of the art competition through their school network, just before the year-end school holidays. We received a total of 215 original artworks as entries, and awarded 18 participants for their creative and

visually-attractive interpretations of our future city. We will sustain the connections formed with students by inviting them to participate in our regular programmes and visit our Singapore City Gallery.

||
 We will continue to engage [these stakeholders] to plan for key areas beyond the LTPR engagement period.
 ||

Interest Groups—Working with NGOs to Create Better Outcomes

In tandem with the facilitated discussions and workshops that we conducted with the general public and youth, we also sought topical inputs from a variety of interest groups.

URA and land development agencies regularly engage with non-governmental organisations such as the Nature Society of Singapore on development plans. For example, through engagement with industry experts, academics, and nature and heritage expert groups, we were able to adopt an ecologically sensitive approach for the Springleaf Precinct, including:

- Keeping significant conservation areas and buffer zones within the proposed future Nee Soon Nature Park;
- Concentrating developments on the existing brownfield sites and less sensitive areas to protect core biodiversity areas; and
- Targeted tree planting to enhance habitats and ecological connectivity within core areas of the existing freshwater swamp forest.

The LTPR presented an opportunity to engage the many biodiversity and environment interest groups further upstream in the planning process, to discuss the different types of greenery we should cater for, and how to plan for it. Between June and December 2021, we held a series of focus group discussions and worked with 70 stakeholders from academia, industry and interest groups to shape our long-term strategies for Singapore's green and blue spaces.

As a follow-up from the LTPR greenery engagements, we are currently reviewing the Landscaping for Urban Spaces and High-Rises (LUSH) scheme together with stakeholders, including professional institutes, to study the feasibility of introducing ecologically-sensitive development guidelines to enable greenery in buildings for enhancing ecological connectivity between key habitats. We will continue to engage these groups to plan for key areas beyond the LTPR engagement period.

On a similar note, URA has been partnering heritage groups for many years, from the Conservation Advisory Panel which started in 2002, to the Heritage and Identity Partnership, which was formed more recently in 2018. We consulted heritage interest groups on how to retain a distinctive identity and sense of place for Singaporeans, even as we adapt to the rapidly changing and unexpected needs of the future. The LTPR discussions provided useful insights into going beyond celebrating our built heritage (physical structures and areas), to also encompassing people's memories of places.

|| The longstanding partnerships, as well as the ones newly created, will play a vital role in planning for Singapore's urban environment going ahead.



Underrepresented Segments— Incorporating a Broader Range of Views

One of the challenges of engagement is obtaining as many representative views as possible. Beyond the topical interest groups, we also tried to reach out to groups who might otherwise be underrepresented in engagements.

MCCY put us in touch with representatives from self-help groups, such as Yayasan MENDAKI, Singapore Indian Development Association, Chinese Development Assistance Council and the Eurasian Association, as well as groups like SG Enable, so that we could better incorporate views from different parts of the community. We also had an intimate dialogue with beneficiaries of Daughters of Tomorrow, an organisation supporting women from low-income families, on what was important to them.

While this was the first time we got in touch with these groups, it forged the path for further engagements on future planning projects. We invited members of these groups to join in discussions and workshops with the general public, so that they could provide their perspectives to the person-on-the-street. Subsequently, we invited these groups to the LTPR exhibition to see how their inputs were reflected in the Long-Term Plan.

Professional Institutes— Tapping on Practitioners' Expertise

United by the common goal of bettering the urban environment in Singapore, the URA has enjoyed longstanding partnerships with professionals in the urban planning field, including architects, landscape architects, planners, engineers, designers and real estate developers. These partnerships have produced good practice design guides, competitions, seminars and speakers' series, dialogues, and publications. We sought the support of such professionals, both through their institutes and their firms, to contribute their expertise and views on LTPR.

The professional institutes proactively helped to raise awareness of the LTPR, and arranged for platforms for their members to exchange ideas on the future of Singapore. For example, the Singapore Institute of Architects (SIA) and Singapore Institute of Landscape Architects conducted webinars on topics covered in the LTPR, such as how greenery and biodiversity make a city attractive to live in, the importance of integrating nature into urban landscapes, and which aspects of our living environment can most benefit from data and innovation-driven solutioning in the longer term. The webinars included polls to get the audience's feedback on strategies

and elements to include in the Long-Term Plan. The Singapore Institute of Planners (SIP), Urban Land Institute Singapore and SIA conducted workshops for their members, yielding interesting discussions, and even sketches and visuals on what the future of Singapore could be.

The LTPR exhibition provided an opportunity to showcase forward-looking concepts from the professional community. We featured ideas for the redevelopment of Paya Lebar Air Base from SIA and SIP, as well as from the "Runway for Your Imagination" ideas competition that SIA, SIP and URA had jointly launched in 2020, giving the public ideas on what the town of tomorrow could look like. The exhibition also featured thought-provoking "What If?" panels, contributed by thought leaders from architecture, design and engineering firms, on how our cityscape and planning can adapt to future changes.



This illustrative plan for the future Paya Lebar Air Base is one of the outcomes of a collaboration between SIA, SIP and URA.

Image: Singapore Institute of Architects (SIA) and Singapore Institute of Planners (SIP)

Reflections and Next Steps

As a land use planning exercise with national-level impact, the LTPR compelled us to reach out broadly to achieve our engagement goals. We were grateful that partnerships with agencies such as MCCY, NYC, MOE and PA allowed us to bring our message to stakeholders beyond our usual scope, and for the strong support from interest groups and professional institutes.

The longstanding partnerships, as well as the ones newly created, will play a vital role in planning for Singapore's urban environment going ahead. The Draft Master Plan Review will be the next major opportunity to continue working with our trusted partners, to translate the broad strokes of the long-term plans into medium-term land use plans at the district- and parcel-level.

Partnerships with the People sector are key to how urban planning plays out over time. On one hand, partnerships are crucial in helping to translate longer-term, abstract visions—such as “making Singapore distinctive and endearing”—into daily lived realities. An example of this is URA's pilot Business Improvement District (BID) programme, which seeks to empower community partners to carry out placemaking of their precinct. We carry out placemaking with the private sector by:

- Meeting stakeholders regularly to explore ideas and address challenges;
- Facilitating events and activities by guiding the stakeholders and event organisers on the agency requirements and permits; and

- Identifying opportunities for partnership between the stakeholders and potential partners to grow their event (see Discover Tanjong Pagar box story).

On the other hand, the feedback that we receive on everyday developments also informs our planning guidelines and policies, and feeds back into the reviews of our medium- and long-term plans. Regardless of the sector we come from—Government, Private or People—we all have the capacity to contribute towards Singapore's urban environment. Through partnerships, we will be able to work together better, and do our part to make Singapore into a great city to live, work and play in. 🌱

DISCOVER TANJONG PAGAR—PARTNERING THE PEOPLE SECTOR IN PLACEMAKING



66

Discover Tanjong Pagar's Community Green is home to an eco-playground made of upcycled wood, which was designed in collaboration with community stakeholders.

Image: Discover Tanjong Pagar

Discover Tanjong Pagar (DTP) is a collaborative partnership between property and business owners that was formed in 2019 to transform Tanjong Pagar into a more connected, vibrant and sustainable precinct through placemaking. As part of the pilot Business Improvement District (BID) programme launched by URA in 2017, DTP works closely with government agencies and the community to connect people and businesses, and create a place where people want to be. Some of the placemaking initiatives that DTP has spearheaded include:

- **Community Green**—In November 2019, DTP adopted a 1,650m² open space bounded by Tras

Link, Wallich Street and Peck Seah Street and turned it into a beautiful green space for community activities.

- **Tree Planting**—In December 2020, DTP pledged to work with partners and stakeholders to plant 100 trees in the precinct by 2025, as part of the One Million Trees movement by NParks. In February 2022, 24 trees were planted together with green partners—The Sustainability Project & One Million Books, Tanjong Pagar residents and the URA. The trees were donated through the Plant-A-Tree programme by NParks' Garden City Fund.

DTP also organised a Bean to Green community initiative, which involved partnering Cantonment Primary School in August 2022 to recycle used coffee grounds from an espresso bar at OUE Downtown Gallery into fertiliser. The students set up a booth to sell the fertiliser, and the proceeds went towards the planting of eight trees in the precinct.

- **Eco-Playground**—In March 2022, DTP launched an inclusive eco-playground at Community Green. The playground is made of upcycled wood from felled trees, and is designed in collaboration with children and stakeholders from Tanjong Pagar. It features



It is heartening that over time, the stakeholders came together to define a shared vision, and work together on placemaking efforts for the precinct.



creative elements that promote multi-generation learning and interaction, and is a popular spot for all to gather and unwind.

- **Street Activation of Tras Link**—In September 2022, DTP worked with agencies such as URA, the Singapore Police Force, Land Transport Authority and Singapore Land Authority to temporarily close Tras Link. With the help of the Singapore Wellness Association and residents, the street was transformed into a giant playground with heritage-themed games for kids and adults. The temporarily closed Tras Link was also one of the sites used to host Mid-Autumn Festival celebrations, together with Community Green and Guoco Tower Urban Park.
- **Supporting Disadvantaged Communities**—Since 2019, DTP has been giving back to society through the Tanjong Pagar Gives Back movement. In December 2019, DTP organised a Christmas gift donation drive, partnering charities, non-profits and social service agencies to spread festive cheer to a group of 1,000 beneficiaries. These included children in need, youths at risk, vulnerable seniors and migrant workers. In October and November 2021, DTP collaborated with SG Cares Volunteer Centre @ Kreta Ayer to raise over \$24,000 to purchase grocery vouchers for over 750 elderly residents in Tanjong Pagar. Throughout the pandemic, DTP also organised group-buys to support hawkers and small businesses.

- **Organising Community Activities**—Discover Tanjong Pagar has organised fitness activities, such as Spartan Challenge, District Race, Yoga in the Park; festive events such as lantern-making competitions, balloon-sculpting workshops and concerts; and heritage events such as tours, exhibitions and film screenings.

Reflections by URA

As the concept of precinct partnership was new to stakeholders in Tanjong Pagar, it took us some time to help them understand the potential and benefit of working together to enhance the precinct. It is heartening that over time, the stakeholders came together to define a shared vision, and work together on placemaking efforts for the precinct. Through the journey, URA has played the role of a facilitator, cheerleader and mentor. We helped DTP understand agency guidelines, connected them to potential partners to explore collaborations, and also shared knowledge and resources to spark new ideas. We believe in building trust and being on the ground to understand their challenges, support them in their efforts and strengthen their capacity for placemaking.

Visit www.discovertanjongpagar.sg to learn more about Discover Tanjong Pagar's latest initiatives.



ESSAY



SMART CITIES
CHEW MEN LEONG

Chew Men Leong is President for Urban Solutions at ST Engineering.

Unlocking the Full Potential of Smart Cities through Partnerships



ST Engineering's Urban Solutions business collaborates with ecosystem partners across the world to unlock the potential of Smart Cities.
Image: thinkhubstudio / Shutterstock

As the world enters the post-pandemic era, many smart cities are advancing to the next level of development: ramping up sustainable digital platforms to solve urban problems at scale.



Collaborations between ecosystem players from all sectors... will play an increasingly central and pivotal role in developing the right suite of smart solutions to meet the unique needs of each city.



Having accelerated the adoption of digital technologies to tackle urban challenges posed by COVID-19 and climate change, municipal governments around the world are now looking to apply these smart innovations at a systems level city-wide. Be it reducing city-wide traffic congestion, mitigating climate change or addressing broader demographic issues like an ageing population, cities are now pulling together technologies and expertise across multiple realms to create smarter solutions to address more complex problems.

To achieve the desired outcomes, effective partnerships are key. Collaborations between ecosystem players from all sectors—private, public and academia—will play an increasingly central and pivotal

role in developing the right suite of smart solutions to meet the unique needs of each city.

As a global smart city solutions provider, ST Engineering's Urban Solutions business collaborates with ecosystem partners across the world to achieve beneficial outcomes for cities. Having delivered over 800 smart city projects across more than 150 cities through successful collaborations, we are a strong advocate of partnerships to address urban challenges, improve quality of life for communities, and unlock greater value in smarter cities.

Here are some attributes of successful partnerships distilled from our experience in smart city projects across the globe.



A trusted partnership is likely to work well together, increase the chances of winning contracts, and lead to successful project completion.



The Whole Is Greater than the Sum of Its Parts

Working as a team delivers far more synergies and impactful outcomes than solo efforts. When businesses from different industries and value chains engage constructively with each other as well as with agencies and authorities in the public sector, the outcomes for smart city projects can be exponentially improved to benefit citizens. This is because each partner brings their unique strengths and perspectives to the project, which is critical for city-wide projects that can be highly complex and multi-faceted—covering commercial, social, political and other dimensions.

Open dialogue and brainstorming among diverse stakeholders can generate solutions that are more holistic and comprehensive. This, however, must be paired with clear

and effective communication that addresses differences and defines measurable objectives, so as to ensure parties work towards a common goal.

A partnership can also benefit from being multinational. This can enable a business to strategically mobilise new technologies, domain knowledge and strategies from the global marketplace, which would be challenging for it to do organically.

One example of a global partnership is Urban Solutions' collaboration with SWARCO, an Austrian headquartered intelligent transport systems (ITS) provider. These two parties jointly provide solutions for Smart Digital Junction and road infrastructures to customers globally.



Urban Solutions collaborates with SWARCO to jointly provide solutions for Smart Digital Junction and road infrastructures to customers globally.
Image: ST Engineering

Build Trust and Expertise with Long-Term Win-Win Outcomes

Besides improving safety with more effective AI-driven junction management, the partnership also shares knowledge about the unique requirements in different markets and pools insights to address the increasing challenges faced by transport agencies around the world. This speeds up market access for both parties, and facilitates deeper understanding of customers' requirements and pain points.

Rather than trying to tackle the global market individually, both parties gain additional capabilities, capacity and resources to quickly expand their market reach. This collaboration strengthens the value proposition of both parties to address the current and future challenges posed by conventional junction management for traffic controllers.

When finding a suitable long-term business partner, businesses should choose one that will offer strengths to their organisations or complement and advance business goals and capabilities. Partnerships that can stand the test of time will deliver long-term value and results. This is especially important for smart city developments since such projects typically require years—or even decades—of collaborative work and sustainable partnerships.

Some steps that can help in building trust in partnerships with positive outcomes include establishing clearly-defined roles and responsibilities, aligning goals and values, and setting expectations at the start of every partnership. This can be achieved through regular open communications between all parties in the partnership. A trusted partnership is likely to work well

together, increase the chances of winning contracts, and lead to successful project completion.

We have experienced the benefits of trusted partnerships in our more than 30 years of implementing rail projects, where we have built up substantial ground expertise through collaborations with various partners, supply chain stakeholders and other multinational consortiums. Our Smart Mobility business, for example, is part of a consortium with Hyundai Rotem that was awarded a multi-million dollar contract from the Kaohsiung City Mass Rapid Transit Bureau to provide turnkey rail services comprising smart metro solutions, trains and a power supply system for the 13-km Kaohsiung MRT Red Line Extension over a 7-year period.



Consortium partners celebrating their Kaohsiung MRT Red Line Extension contract win.
Image: Consortium for Kaohsiung Mass Rapid Transit (MRT)—Red Line Extension



Kaohsiung Metro.
Image: Richie Chan / Shutterstock

72

Another consortium that we have is with Siemens Mobility and Stadler Rail to provide turnkey rail services, including rail electronics solutions as well as above-ground train depot design, construction and equipment fit out, for the new Kaohsiung MRT Yellow Line. In this project, we were responsible for overall project management and served as the systems integration lead.

These project wins reflect the local authorities' recognition of the value and strengths, as well as the technologies and strong track records that Urban Solutions and our consortium partners collectively bring to the projects.

||
By pooling resources from various partners, smart city projects can be more cost-effective by spreading the initial investment over a larger user base to serve more people as the city grows.
||

Collaborate to Build Scale and Sustainability

To be truly successful, smart cities cannot simply adopt digital technologies in silos. It is important to leverage the strengths and diverse experiences of industry collaborations to combine innovations with user-centric operating strategies, and scale up digital platforms to realise the full benefits of managing multiple smart city verticals for various entities ranging from buildings and estates to city-wide deployments.

Municipal authorities may lack the resources, expertise and funding to undertake such massive projects on their own. Partnering with private sector consortiums and technology solutions providers can be an effective and faster way to build scalable digital platforms that can steer a city towards more sustainable outcomes, reduce operating costs, and deliver more efficient and seamless operations with optimised user experiences.

One example of how such public-private partnerships (PPP) are helping massive smart infrastructure projects take off is Rio de Janeiro's Public Lighting project. When fully deployed in 2024, it will be one of the world's largest deployments of a city-wide, public smart street light control project. It is expected that the project will enable the city to benefit from energy savings of about 70%.

Urban Solutions is the technology partner to the Smart Luz consortium which was awarded the concession to operate, maintain, expand and modernise Rio de Janeiro's public lighting infrastructure for a period of 20 years. The project is initiated by the Municipal government of Rio de Janeiro with support from the IFC World Bank and financing guarantee from the U.S. International Development Finance Corporation. The consortium also involves partnerships with private

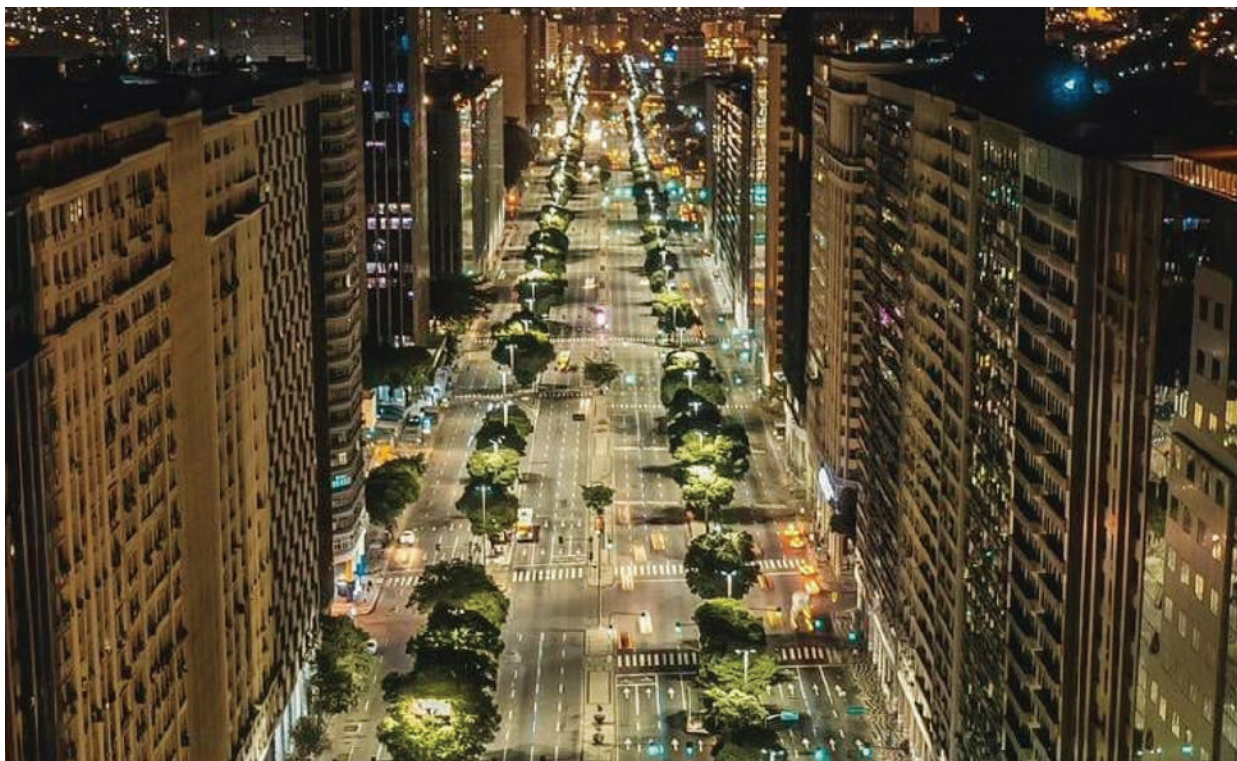
companies, utilities, and local and global solutions providers who pooled together their respective expertise, experiences and resources to deploy this integrated smart city project in Latin America.

For this project, we will be deploying our award-winning Smart Street Lighting solution with Internet of Things platform to connect and manage more than 300,000 LED streetlights across the city. The platform can also manage more than 25,000 devices and sensors to enable Wi-Fi hotspots, waste management and traffic junction sensing for future smart city applications.

As part of the strong Smart Luz consortium partnership, ST Engineering has also secured a contract to implement its Smart Street Lighting solution in two more cities in Brazil: Aracaju and Feira de Santana.

For large-scale smart city projects, it is important for partners to collaborate and build solutions that leverage digital platforms that can be scaled or expanded to support a diverse range of use cases and smart city applications. By pooling resources from various partners, smart city projects can be more cost-effective by spreading the initial investment over a larger user base to serve more people as the city grows. This provides more opportunities for partnerships to replicate successful smart city deployments to other cities.

In addition, a data-driven integrated platform can also offer important key performance indicators to cities and consortium partners to ensure the interests of various parties are continuously evaluated and aligned to achieve long-term, win-win outcomes for all.



Rio de Janeiro's Public Lighting PPP project.
Image: Smart Luz Consortium

Partnerships for the Future

PPP and other forms of collaboration will no doubt be a catalyst for smart cities to continue their fast pace of expansion. According to Data Bridge Market Research, the smart cities market is expected to reach US\$1,874.83 billion by 2029, growing at a compound annual growth rate of 21.7% between 2022 and 2029. The expertise and contributions of different technology providers, infrastructure players and industry players will be critical in ensuring that smart city projects will not only be operational, but commercially feasible and truly sustainable.

As we look ahead to the next stage of development for smart cities, we can expect to see more municipal authorities focusing on smart,

green transport ecosystems. This will continue to drive collaborations with industry partners to test new technologies and pilot innovative transport solutions that require multi-party collaborations.

One such example is Mobility-as-a-Service (MaaS), which is enabled by a city-wide platform that empowers commuters to plan, book, pay and execute their multi-modal, end-to-end journeys, and enjoy mobility services on-the-go via their mobile phones. For the platform to succeed, transport agencies, public transport operators, technology solutions providers and mobility service providers will need to work together to ensure a seamless travel experience and offer a variety of services that encourage greater use of public transport.

74



Mobility-as-a-Service requires multiple stakeholders to work together to provide a variety of services that ensure seamless travel experiences for commuters.
Image: metamorworks / Shutterstock




It is important to prioritise partnerships that have a long-term perspective and a commitment to achieve win-win outcomes for all parties.



Another example is an integrated transport operations hub which can provide a consolidated view of a city's transport modes, and derive commuter, traffic and system views of each transport mode. It monitors and projects demand in real-time to better manage transport supply, reducing or eliminating resource gaps for transport operators. For such a hub, transport authorities and public transport operators will need to partner industry stakeholders such as technology solutions providers and various related players for a holistic solution that addresses current and future needs.

A green transport ecosystem is just one example where partnerships can play a key role in driving more connected, resilient and sustainable cities. Other areas such as security, utilities and infrastructure are similarly gaining traction in leveraging PPPs to accelerate smart city initiatives around the world.

Partnerships play a critical role in achieving sustainable, liveable and efficient cities of the future. Successful partnerships require collaboration between the public and private sectors, as well as community involvement. It is important to prioritise partnerships that have a long-term perspective and a commitment to achieve win-win outcomes for all parties.

By adopting an open communication, goal-oriented and sustainable approach towards building long-term trusted partnerships, stakeholders can benefit from a collective strength and mindshare that will increase their chances for success in transforming cities to address urbanisation and climate change challenges. 



LOCAL COMMUNITIES

**HO KONG CHONG, WONG SHIAU CHING
AND URBAN HERITAGE TEAM**

Ho Kong Chong is an Associate Professor of Sociology, NUS and Head of Urban Studies at Yale-NUS College. Wong Shiau Ching is a research fellow at the Department of Architecture, College of Design and Engineering, NUS. The Urban Heritage Team consists of Anisha Drall, Dou Jingzhi, Martin Choo Yi Kang, Muhammad Naeem Shehryar and Tan Shan Min.

Informal Neighbourhood Partnerships: “With a Little Help from My Friends”



| The fieldsite in Toa Payoh East at dusk. As resettlement nears its end, most of the residents have moved out of these two rental blocks.

Image: Ho Kong Chong

National University of Singapore's Associate Professor Ho Kong Chong and Wong Shiau Ching spotlight the everyday forms of care arising from informal neighbourhood partnerships in this curious case of rental block resettlement in Singapore.



The flexible nature of informal partnerships allow for activities to grow and shrink according to need.



Public-Private Partnerships

Local governments realise that efficiency and effectiveness in service delivery increasingly require partnerships among sectors, groups and individuals. Such partnerships have acquired a variety of meanings. Perhaps the most common term is “public-private partnerships”, which has been highlighted as a resource to foster urban economic development. Literacy and health programmes gain traction when government agencies partner with neighbourhood organisations. Partnerships create synergy, spread out and dilute potential risks, resulting in additional financial resources, more consensual working environments and reduced potential overload on government agencies. At the neighbourhood level, the proximity of residents could enforce local norms and reduce free rider problems. The vested interest of residents in having good living environments motivates them to cooperate with local government agencies.

Care Relations in the Neighbourhood

There are different types of partnerships operating in the Singapore neighbourhood. There are those which are initiated by the government, which tend to be more formal involving contractual obligations to cooperate. Such partnerships usually involve the flow of funds and other resources, cover multiple sites, and often require extended periods to fulfil specific objectives.

In contrast, our article focuses on informal partnerships at the neighbourhood level. These are more idiosyncratic and unique as compared to formal partnerships which are rule-bound and therefore more limited in terms of activity range. The flexible nature of informal partnerships allow for activities to grow and shrink according to need. Certainly, these arrangements should also be defined as partnerships because there is a clear reciprocity in the relationship. The exchange process



When residents are socially active and already participating in various activities, informal partnerships grow organically and contribute to a city of care.



may not be symmetrical but it does involve some mutuality in efforts. The sub-title of this essay, “With a little help from my friends”, taken from a Beatles’ song, captures the importance of timely help among friendly relations in everyday situations. This is all the more so among neighbours because cooperative informal partnerships are enhanced by proximity.

This article’s focus on informal partnerships as the uncredited ingredient in neighbourhood care relations stems from a heritage class exercise on documenting residents’ memories of place and experiences in their neighbourhood. When residents are socially active and already participating in various activities, informal partnerships grow organically and contribute to a city of care. Informal partnerships act as a lubricant, mobilising and organising the take-up of issues initially overlooked by government agencies, while at the same time allowing for other actors to provide additional support when needed.

Perhaps the most visible occurrence of informal partnerships in academic literature is the broken windows theory, a neighbourhood-based perspective on crime prevention. When neighbours cooperate, watch out for each other and actively maintain social order in their neighbourhood, lower crime results. Social capital becomes an attribute located at the neighbourhood level, entrenched in place because informal partnerships that flourish necessitate that neighbours look out for one another. It is an understanding that is evolved and sustained, capable of extending to other areas of need. It is unbounded by the rigidity of formal partnerships.

Everyday Forms of Care, Moving and Settling

Our case material for illustrating informal partnerships is based on the experience of elderly residents from two rental blocks—29 and 31 in Toa Payoh East Singapore—who had to undergo resettlement as their apartment blocks were being slated for demolition.

Providing insight into the minds of these residents was the Singapore University of Social Sciences (SUSS) Gerontology Student and Alumni Committee (GSAC), made up of current students and past graduates of the Singapore University of Social Sciences’ Gerontology programme, who formed a volunteer group in December 2021 to help residents with the relocation. These 13 volunteers, which came from diverse professional backgrounds, sought to help residents through befriending, logistical and administrative support, repair works and handing over of care to the social service manager in the new location.



The two rental blocks, 29 and 31 in Toa Payoh East, which are slated to be demolished.
Image: Ho Kong Chong

Although this case seems like a routine issue of moving residents, it highlights a more serious problem of seniors living alone. One such volunteer, HP, noted in an interview on 8 December 2022:

Somewhere in July or August 2021, when I was doing my weekly [meal delivery], ...because I get to know the seniors for one over year, ...they came to me and said “*Cham liao, cham liao, ai bwa chu liao, ai tiah liao*” (‘Problem, problem, we need to move, our homes are going to

be demolished’ in Hokkien)... so this thing struck me...I was thinking to myself how to support [these residents]. And I also can foresee that this is not going to be a simple project, you will need more volunteers...So I said, “let’s do a ground up.”

||
 These residents often live alone, which also means that they lack the family support to mobilise for a complicated move.

80

||



|| Micron SGCSR volunteers helping Mdm Tan pack for her relocation in September 2022.
 Image: Tang Ya Cheng, used by permission (Micron SGCSR)

Ng Kok Hoe from the Lee Kuan Yew School of Public Policy and the Cassia Resettlement Team (CRT) documented a similar issue of elderly resettlement in the book, *They Told Us to Move* (2019). Like Dakota-Cassia, the residents living in public assisted rental flats in Toa Payoh East, share a similar predicament. According to one volunteer's estimate, about 80% of the residents in Toa Payoh East are over 60 years old, many of whom have lived there for at least two decades. These residents often live alone, which also means that they lack the family support to

mobilise for a complicated move. Aside from the physical move, they also have to undertake a formal change of address, renovations and coordinate with authorities for activation of utilities.

Our analysis goes a step further from the Dakota-Cassia study by identifying, through interviews with residents and volunteers, how these ground up linkages work to mitigate the moving-related problems, and also to show the range of informal partnerships and general forms of support that exist within the neighbourhood (Figure 1).

Five Types of Neighbourhood-Level Support and Partnerships

<p>Type 1: Between Residents</p>	<p>“He’s the helper, very good. One day I not well...suddenly...cannot walk. Then I called him [‘Malay Uncle Neighbour’]...Brother I am not well...He [came] to see me...and called ambulance. When ambulance [came to take me away] he closed the door [for me] and [came] to see me [at the hospital].” Mdm I, >25 years residence, 24 September 2022</p> <p>“The neighbour is a Malay uncle...painted the place for her and then fixed the piping for her. There’s another neighbour...helped her to move some of little stuff over so there’s this camaraderie...the kampung spirit.” Resident whom Mdm I mentioned was recounted by HP, 8 December 2022</p>
<p>Type 2: Between Residents and Agency</p>	<p>“[Social service agency] downstairs, they have treated me very well [and] helped me a lot...I am also a volunteer there...I used to help distribute food but no longer now because many residents have moved away or passed on...and help out at activities such as parties or when ITE students come [for volunteer work]...On Tuesday I [help out and] play bingo games and on Thursday there is karaoke, I would go downstairs to sing.” Mdm Y, 45 years residence, 24 September 2022</p>
<p>Type 3: Support from Neighbourhood Businesses</p>	<p>“...that one good, but I don’t like to go...that kopitiam...Ah Chye, I go and order tea...[he said] ‘kia, gia kee jia’ (‘go take and eat’ in Hokkien), don’t want to collect me money...That vegetarian that one, I go and order. He also ‘na na na, na qu chi, bu yong gei wo gian’ (‘go and eat, don’t give me money’ in Mandarin) so I feel so malu...[the hawkers remember me] ‘aiyoh, you so nice you take care of your father, you take care of your husband’ ...They know lah, they remember me... ‘you really take care of your father, ...everyday you bring him out...” Mdm R, 30 years residence, 24 September 2022</p>
<p>Type 4: Multiple care links among Volunteers, Residents and Agencies</p>	<p>“There’s this senior [who] came back with a urinary bag [from the hospital]...that was a Saturday and he’s actually staying alone. I approached Madam Y, ‘can you help to deliver food?’ ...Madam Y said ‘no worries’ and got another resident...to check on him. And he will deliver the meal over the weekend. Then when [social service agency staff] came back to work on Monday, ...[they would] check on [the resident].” HP, 8 December 2022</p> <p>“We discovered [an elderly] who’s been bathing [outside his flat] he’s on wheelchair and he cannot get into the bathroom because of the curb...[Residents] told me he’s been going [place to bathe]...so I went to see then he told me... ‘I cannot apply’...I called HDB up and I told [social service agency] to contact the contractor for me...[Then] I bargained with [the contractor], I said ‘we cannot get any fund and he can’t pay because he is under welfare’... So I paid him [the discounted cost for the resident] lah.” Mdm H, community leader, 14 December 2022</p>
<p>Type 5: Volunteers partnering with Businesses to deliver services to Residents</p>	<p>“I become a business development guy [in order to secure the help of companies]...M is big electronics company and they want to do some CSR...So I have to do a pitch to the...team [that] we’re trying to get them (the residents) to move.” HP, 8 December 2022</p> <p>“...there’s bread [donated directly from a hotel or food rescue group collecting from bakeries] delivered at night...[Mr H] helps to bring over in the morning...and they would call me to help distribute to different residents [in neighbouring blocks]...Residents who know me would take.” Mdm A, 14 December 2022</p>

Figure 1. Five types of neighbourhood-level support and partnerships. The interviews above were conducted by Urban Heritage Team, comprising of students from Yale-NUS who responded to A/Prof K.C. Ho’s call to help residents recall memories of their neighbourhood. (Some of these quotes have been translated, as well as edited for brevity).

Source: Ho Kong Chong

|| Different actors can be incorporated into the support system, thereby enlarging the scope when needs arise. ||

It is important to state that everyday forms of partnerships are important because these can be mobilised for needs such as resettlement, as in the case of Type 1 relationships. These types of support and partnerships share the following characteristics:

Agency of residents and role of resident leaders—As in the case of Dakota-Cassia, many residents depend on support services. However, many are also far from being helpless. For example, residents like Mdm A and Mdm Y are active volunteers and trusted members of their communities, whom volunteers like HP depend upon to bridge relationships with residents. Relationships of care (Type 1) between residents work to support residents who are frail and in ill health. Because they live in close proximity, they are in a position to observe changing circumstances and are proactive in informing volunteers or community workers of specific individuals' needs. The role of resident leader was clearly expressed by HP (8 December 2022) as he sought to build inroads to the residents as a precursor to attempts at service delivery:

So we started [and]...we want to be the voice of the seniors. So we started befriending...,

without getting to know the senior you will not have the moral right to say I want to go in and support (them)...similar like in the army, ...in every platoon or company, there is one guy that actually...commands certain respect. Similarly Block 29 there is this [Mdm A who is] like a...village chief...and also [Block] 31 there's another guy [Mr H]...there's actually another lady [Mdm Y]...So we work closely with these [residents] because these are the people [who] have been there for years.

Neighbourhood businesses are important partners—In highlighting company contributions, we often gravitate to larger companies because of their larger financial and human resources, which can be deployed for social service. The corporate social responsibility (CSR) policies of such companies (Figure 1. See the example of M under Type 5) can certainly be harnessed for social good. However, what seems to be missing in the CSR literature is the role of the local micro businesses like hawkers, bakeries and neighbourhood eateries which also play an important role at this micro-scale. Such micro businesses operating at the local level also maintain regular face-to-face contact with residents and must be considered a critical element in

building a community of care. The example provided by Mdm R (Figure 1. Type 3) is a case in point of how micro businesses have some capacity to support residents at the local neighbourhood level.

The flexibility and multiplexity of informal partnerships—Different actors can be incorporated into the support system, thereby enlarging the scope when needs arise. Social service agency Thye Hua Kwan, for example, helps needy residents with weekday food support. This agency also works with other community partners to deliver other services for the elderly (Figure 1. Type 4). In the same way, company CSR efforts can also be cultivated to empower residents to also be conveyors of social support, rather than just receivers. The flexibility and multiplexity of these ground partnerships give it the appearance of rhizomatic informal support networks which could expand to areas where there are unmet needs and contract when these needs are met.

Weaving an Ecosystem of Partnerships

They Told Us to Move contains detailed accounts of residents facing resettlement. There is a sense of emotional loss that comes from the disruption to decades-long relationships. Everyday cherished neighbourhood routines are lost and need rebuilding. Even the shedding and discarding of possessions linked with the old house can have a profound impact upon residents.


In our case study, this sense of displacement is a lingering one. Even after moving to a nearby location for over two months, Mdm A inadvertently continues to alight at the bus stop of her former place. She remarked, “My husband chided me and said my brain is still there” (interviewed 14 December 2022). Indeed, her sense of self and identity continues to be rooted in the old neighbourhood as she returns daily to help residents clear unwanted items and distribute bread from food rescue efforts.

Care exists within an ecosystem of partnerships where the constituent parts work with each other. There are different informal partnerships and linkages with agencies; some are task-specific while others last for a longer duration. We argue that while formal partnerships stemming from agency involvement may create a certainty and allow for resource flows, informal partnerships also have a valuable part to play in covering some of the gaps in the neighbourhood-based care environment.

Informal partnerships may not work in all neighbourhoods. The wealthier neighbourhoods have less need to depend on help from neighbours as they have the

financial resources to pay for the necessary service. At the opposite end of the income spectrum, the poorest neighbourhoods may consist of more transient residents, who are disorganised and lacking in the more stable neighbourhood ties that form the bedrock of informal partnerships.

Can informal partnerships be encouraged by policy? The answer is both yes and no. It may not work if the transient neighbourhood works against stable neighbourly relations and its associated support, or if residents turn to extended kin for help and support, though that in itself is a good thing. There is, however, a role that formal neighbourhood agencies can play in creating informal partnerships of support among the residents (Figure 1. Type 4 and 5). This is an important consequence of outreach that should not be discounted, as we have seen that recipients who have received assistance often return this help to other residents who require services that formal agencies cannot provide.

It is advantageous to incorporate the help of clients of policy programmes because they have a grounded understanding as recipients, and can contribute to better delivery. The task of urban policy, therefore, is not to ignore these seemingly humble and inconspicuous relationships. Because they fade into the background of everyday life, urban solutions which arise from such relations often surprise policymakers. When mobilised, however, these relations work to ensure a more complete environment of care among residents who need it most. 



SUSTAINABLE FINANCING
AURELIE CHARDON

Aurelie Chardon is a Principal Investment Officer at IFC. She is IFC's Asian lead for cities and subnationals, responsible for investments and advisory work in municipal financing, waste, water and urban services across Asia.

Partnering to Deliver Innovative Financing for Green and Inclusive Cities



IFC (International Finance Corporation) is a sister organisation of the World Bank and member of the World Bank Group. It is the largest global development institution focused on the private sector in emerging markets, working in more than 100 countries. In the urban sector, IFC partners with governments and private sector players to support the development of fit-for-purpose, inclusive and sustainable urban infrastructure services. They share about their initiatives in Belgrade and São Paulo.

The Need for Partnerships

Cities power the global economy. They contribute over 80% of the world's gross domestic product and house more than half its population. But they also produce more than 70% of its greenhouse-gas emissions, use over 75% of its natural resources, and produce around half its waste. Rapid urbanisation and the climate crisis are bringing the need to improve the provision of urban services and crisis preparedness to the fore. Municipal leaders must move quickly to plan for sustainable growth and more efficient basic services, climate-resilient infrastructure, and the affordable housing required to better cater for the needs of their expanding populations.

It is impossible for cities to address these challenges alone. Mayors need to think not only about how much investment their cities need, but also about who they can partner with to ensure the best project and service delivery. In particular, private-sector solutions, innovation and best practice are critical to addressing their complex needs. Partnerships that work for both parties will be fundamental to creating the sustainable cities of tomorrow. Development partners, such as IFC, are available to help.

Large-Scale Rejuvenation of the Vinča Landfill through a Public-Private Partnership (PPP)

Let us take an example from the waste industry, a challenging sector for almost all cities, both in Asia and around the world. The Vinča landfill, located 15 kilometres outside of Belgrade, Serbia, used to be the largest unsanitary open-dump site in Europe, receiving 90% of Belgrade's waste. This is the equivalent of around half a million tons of waste a year, or 600 truckloads of trash daily. The landfill, which was the size of 185 football fields, was running out of capacity. The site was impacting the air quality in Belgrade and the surrounding areas, frequently catching fire and polluting groundwaters and nearby agricultural areas, as well as discharging untreated water into the Danube.



Waste pickers spent long days collecting recyclable material at the Vinča landfill in Belgrade, Serbia.
Image: Dominic Chavez, International Finance Corporation

When the city began exploring a solution to overhaul the landfill, Sinisa Mali, who served as the Mayor of Belgrade from 2014 to 2018, during the time the project to overhaul the landfill was developed, said, “We had no experience in waste and treatment...It was about trying to find a partner that not only had the financial means to finish the project, but also had the know-how and experience to operate it.”

In 2014, the City of Belgrade hired IFC’s PPP transaction-advisory team to act as lead transaction advisor to structure and tender a project to overhaul the management of its waste. The project entailed closing and remediating the old dump site and constructing a new European

Union-compliant sanitary landfill. It also featured a new waste-to-energy facility capable of processing up to 340,000 tons of municipal waste each year, as well as a combined heat and power facility for processing construction and demolition waste. This incinerating facility would be capable of powering around 30,000 households and delivering heat to the municipal district-heating system.

After a competitive dialogue with five pre-qualified bidders, the project was delivered under a long-term PPP contract awarded in 2017 to Beo Čista Energija (BCE), a special-purpose vehicle formed by France-based utility company Suez, Japanese conglomerate

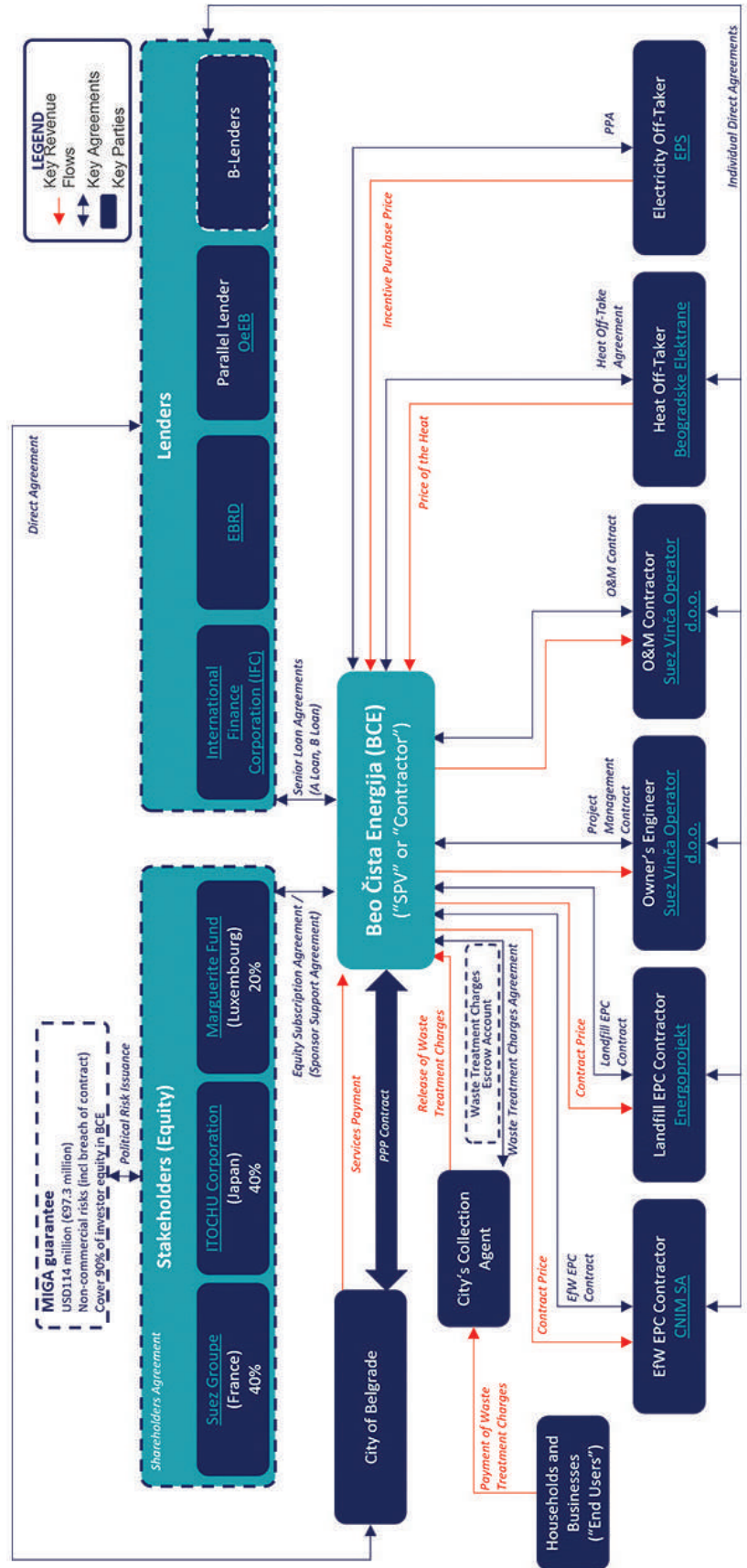
Itochu Corporation and a private-equity fund managed by European infrastructure investor Marguerite.

The total project cost was estimated to be €350 million. IFC and the Multilateral Investment Guarantee Agency (MIGA), a member of the World Bank Group that provides guarantees (political risk insurance and credit enhancement) to investors and lenders, issued €260 million in financing and guarantees to BCE. MIGA also supported the sponsors, guaranteeing €97 million for non-commercial risks, which covered up to 90% of investor equity in BCE.

After a competitive dialogue with five pre-qualified bidders, the project was delivered under a long-term PPP contract...

The financing package further included a €20 million blended concessional loan from the Canada-IFC Blended Climate Finance Program, a partnership between the government of Canada and IFC to promote private-sector financing for clean-energy and climate-adaptation projects. The European Bank for Reconstruction and Development, and the Development Bank of Austria also provided financing for the project.

The advisory efforts were implemented in partnership with the governments of Austria, Canada and Switzerland, and the Rockefeller Foundation. The project followed IFC's Performance Standards, which define IFC clients' responsibilities for managing their environmental and social risks.



Project structure scheme for the rejuvenation of the Vinča landfill.
Image: Global Infrastructure Hub

Experienced sponsors, public-sector stakeholders, transparent structures and multilaterals to de-risk the project were all key to its success.

This was the first time a large-scale environmental infrastructure PPP project had been undertaken in the region, and it required a number of stakeholders, working together. Experienced sponsors, public-sector stakeholders, transparent structures and multilaterals to de-risk the project were all key to its success.

The project is expected to be fully commissioned by the summer of 2023. The mountains of trash have become green spaces, the sanitary landfill is in operation, and gas emanating from the trash is about to be collected to generate electricity. Future waste will also be processed to generate heat and electricity. It is estimated that the programme will allow Belgrade to reduce its greenhouse gas emissions by 250,000 tonnes of CO₂ per year, notably by curbing methane emissions from uncontrolled dumping.

Transforming São Paulo's Water Infrastructure by Leveraging Development Partners and Innovative Financing Solutions

Another example of a transformative urban infrastructure partnership comes from Brazil, where the investment needed to achieve the country's target of universal water and sanitation services by 2033 is estimated at BRL 750 billion (approx. US\$145 billion), according to the Brazilian Association of Private Concessionaires of Public Water and Sewage Services and KPMG.

Companhia de Saneamento Básico do Estado de São Paulo (SABESP), one of the largest water and sanitation companies in the world, sought to tackle the pressing problem of water loss during distribution. Such losses, called non-revenue water (NRW), come from leakages in the distribution system, under-registration of customer-water meters, data-handling errors, water theft and unbilled authorised consumption. NRW hampers the financial viability of water utilities because it results in lower revenues, lost water resources and increased operational costs.

SABESP partnered with IFC on Utilities for Climate (U4C), a new initiative that gives water utilities access to a package of tailored advisory services, investment products and knowledge-sharing partnerships. It is focused on building relationships with water



In February 2023, the facility started the production of electricity and heat from waste.
Image: Beo Cista Energija

Going Together to Go Far

utilities as they develop solutions to address climate change and boost commercial water infrastructure investment opportunities. As part of this initiative, and at SABESP's request, IFC funded and implemented a diagnostic and action plan to tackle NRW losses.

IFC also provided SABESP with a BRL 760 million (approx. US\$150 million) loan to finance investments that focused on improving water quality, and expanding sewage collection and treatment in some of the poorest neighbourhoods in São Paulo, as part of the Pinheiros River Clean-Up programme. The investment will support several projects that focus on sewage network construction, network interconnections and connection of households, social work with local communities, providing water distribution flexibility, and increasing water security.

This was the first blue loan in Latin America. Blue loans are aligned with the Green Loan Principles (GLP), and proceeds are exclusively dedicated to financing or refinancing activities that contribute to ocean protection and/or improved water management. Blue finance is a subset of the larger green finance market, which has expanded rapidly in the last several years.

These are just some of the many examples of how cities and subnational utilities around the world can tackle complex urban projects by tapping into the power of partnerships to access innovative financing solutions.

Municipal leaders have a huge and critical task ahead, and they do not have to face it alone. Solutions exist for them to share project risks, de-risk investments, leverage innovation, experience and knowhow from the private sector, and even be rewarded when they deliver on their targets.

Finding the right partners can take time and effort, but it is worthwhile. Track record, reputation and expertise are all important factors for selecting private-sector companies as partners. Municipal leaders should also be clear and realistic about their needs and priorities, and be ready to work hand-in-hand with their partners. Infrastructure projects take time, and there will be bumps along the road, which is why fostering good communication and trust amongst partners is essential.

Development institutions such as IFC are here to help by brainstorming to address key challenges, making connections,

structuring bankable projects, mobilising commercial financing, and leveraging World Bank Group and private-sector expertise to facilitate infrastructure projects through advisory and technical assistance. Engaging with them early and leveraging some of their tools and products can help foster innovative ideas and structures to address some of the key risks or concerns, and ultimately make the project a success.

Through the power of partnerships, the green, resilient and inclusive cities of tomorrow are no longer just a pipe dream. 🌱

NORTH AMERICA | CLIMATE RESILIENCE

Leveraging Private Sector Relationships to Scale Mission- Driven Work

Rebuild by Design (Rebuild) uses collaborative, design-driven problem-solving to help communities and cities build resilience. Working with APTIM and iParametrics, Rebuild published an accessible compendium of county-by-county climate impacts.



 NORTH AMERICA



Amy Chester is the Managing Director of Rebuild by Design. She has spent more than 20 years in municipal policy, community engagement, real estate development and communications advocating for the urban environment.

|| In order to address the worsening impacts of climate change...governments must work alongside communities and cross-sector partners to identify infrastructure investments... ||

Investing in Infrastructure to Manage Worsening Climate Change

As our days become hotter, storms more severe and sea levels higher, communities will dramatically rethink their relationships to the built and natural environments around them. Much like the COVID-19 pandemic, disasters reveal time and again how vulnerable and inequitable our systems are when stressed. As the financial cost of disasters continues to rise, there are also countless unaccounted for losses that exacerbate existing vulnerabilities such as increased mental health struggles and the destruction of community ties.

As a response, climate change adaptation practices are advancing at all scales across the globe—from the individual to the intergovernmental level. Simultaneously, advancements in climate science are revealing a more formidable future and a corresponding need for urgent action. Planning and building infrastructure that can better prepare us for climate change can lessen the ramifications of high-

impact climate events before they strike. Such infrastructure can aid in addressing extreme heat or flooding, or moving communities out of harm's way.

In order to address the worsening impacts of climate change and head off future damages, governments must work alongside communities and cross-sector partners to identify infrastructure investments that will drive physical, social and ecological co-benefits, and create hundreds of thousands of middle-class jobs—before climate events strike, not after communities have suffered. This will necessitate billions of dollars to create infrastructure that adapts our communities to the impending climate risk. The current reality, however, is that a vast majority of the money that a state government receives to improve its infrastructure, often only comes after a disaster.

Rebuild by Design (Rebuild) has been working at the forefront of climate adaptation issues

for the past decade, bringing innovative public-private partnerships to regional design challenges, as well as national and international place-based engagements. The organisation matches local communities and governments with global expertise to reimagine, design and build large-scale infrastructure that can help communities adapt to climate change.

Whilst working with communities and local governments around the world to design and plan for new climate infrastructure, we also realised that until the issue of a lack of predictable pre-disaster funding is addressed, communities will not get the protection they need. To address this gap, Rebuild began working towards the development of Resilient Infrastructure Funding at the local and regional levels to raise the money needed to address climate adaptation challenges, and to put communities at the forefront of decision-making.

||

This report is the culmination of the work Rebuild has done through partnerships with the public and private sector, non-profits, universities and the most impacted communities, over the past 10 years.

||

92

Laying the Foundation: The New York State Environmental Bond Act

The effort to create resilient infrastructure funding solutions first began in 2019 when Rebuild piloted the idea of creating a ballot measure to fund billions of dollars of needed climate infrastructure in the state of New York; the state that had experienced 16 climate disasters during the former governor's first 9 years in office.

Rebuild created the research, strategy and coalition to convince the State government to propose a ballot measure to set aside a new funding source for climate-forward infrastructure. Part of that work was to educate and leverage entities that were not yet prioritising climate adaptation, but who were powerful in the halls of the State legislature and who had access to decision makers.

Rebuild created an advisory board that included local government associations, building and construction trade labor unions, builders and construction associations, and statewide and national environmental organisations, who were in a position to activate their members and speak directly to the governor and legislature. By creating a unified voice of vastly different interests, we provided the political support to introduce this bold initiative.

In January 2020, the Governor of New York introduced the bond measure, which became the foundation for the US\$4.2 Billion Environmental Bond Act for New York State—approved by voters in November 2022.

Scaling the Model Nationwide

Rebuild's work to develop the Bond Act for New York State became a replicable model that provided insights into how to build cross-sector partnerships for effective convincing of key officials to invest in climate adaptation. As soon as the measure was introduced, Rebuild mobilised to replicate a similar approach for other states. To manage this scale of work, we knew that it would be necessary to bring in additional help.

Rebuild sought the partnership of APTIM, a global engineering firm, who shared our vision for more resilient communities. After a few months of scoping the work and realising that there were many new directions it could take, we decided that we would need additional technical expertise. APTIM then suggested to bring in the services of iParametrics who had deep understanding of past climate events and access to the Federal Government's data in a format easier to organise than the public website. Having the services of these two firms, who were deeply committed to climate-forward planning and infrastructure, allowed us to expand our data analysis and produce additional maps for each of the 50 states.

APTIM and iParametrics generously resourced the project with an incredible team of engineers, researchers, finance experts, data managers, and volunteers who were deeply committed to identifying, analysing, and synthesising different data sets and ideas into an actionable agenda. Through the local knowledge of their nationwide staff, our team also gained a national perspective and deeper understanding of specific states.



Atlas of Disaster Report.
Image: Rebuild by Design

Atlas of Disaster

Through this 1.5-year partnership, we released Atlas of Disaster, a 670-page report that includes over 300 maps that provide information on: county-by-county federal spending, where the most socially vulnerable populations reside, the energy reliability by utility area, and where compounding physical and social risks indicate a potential high return on investment. The report notably found that 90% of U.S. Counties had a federally declared climate disaster between 2021 and 2022—signaling that climate change is already here.

This report is the culmination of the work Rebuild has done through partnerships with the public and private sector, non-profits, universities and the most impacted communities, over the past 10 years. In addition to a number of policy changes, the report calls for three transformations from current policy:

1. Co-creation

The report is designed to be a blueprint for equitable planning, and to enable better decision-making for government, the private sector, philanthropy and finance. It acts as a “how-to” guide for states to develop their own collaborative planning programs to design and prioritise climate infrastructure. Using a co-creation process with stakeholders, governments can deliver new, upgraded, innovative and climate-ready infrastructure that: protects communities in the face of climate vulnerabilities; works to make existing investments more resilient; and which opens the way for additional federal funding opportunities.

2. Infrastructure funding

The report calls for each state to develop a Resilient Infrastructure Fund, capitalised by a modest insurance surcharge, or voter approved bond measure that supports climate investments and provides the local match for federal infrastructure dollars. Investing in large-scale infrastructure to address climate events will lower overall risk and the need for higher insurance payout. Just a 2% surcharge on certain types of insurance could leverage from US\$600 million to over US\$27 billion in each state, or US\$287 billion across the United States. Also included in the report is data on voter approved bond measures that have been successful in recent years, demonstrating that voters are voting to support climate infrastructure funding.

3. Better preparedness for the future

Our state-by-state information provides local entities with the data they need to advocate for new policies, programmes and funding sources on the state level, as well reforming benefit-cost analyses to choose better projects to implement. It also calls for a major shift in federal disaster policy to move the bulk of post-disaster funding to mitigation, and refinancing traditional disaster policies that are now out of date such as measuring a disaster by its economic loss, not its human loss.

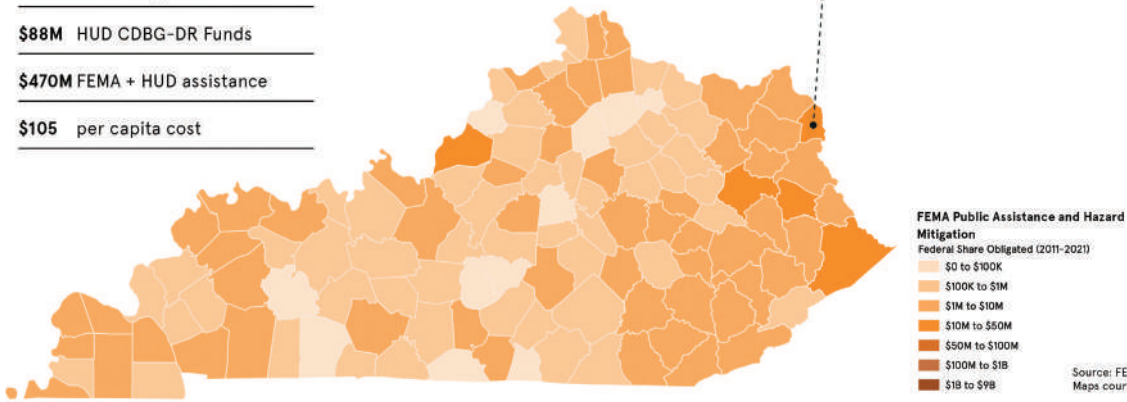
FEDERAL ASSISTANCE 2011-2021

POST-DISASTER PUBLIC ASSISTANCE AND HAZARD MITIGATION FUNDS OBLIGATED BY COUNTY FOR CLIMATE DISASTERS



Boyd County has received the most post-disaster FEMA funds in the state: \$12.4 million.

- \$382M** FEMA obligations
- \$88M** HUD CDBG-DR Funds
- \$470M** FEMA + HUD assistance
- \$105** per capita cost



Source: FEMA 2021
Maps courtesy of iParametrics.

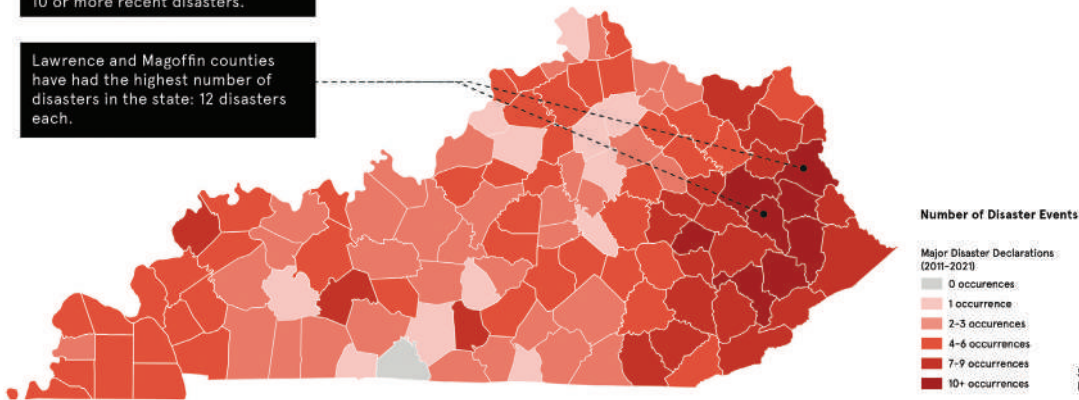
DISASTER OCCURRENCES 2011-2021

FEDERALLY DECLARED MAJOR DISASTERS BY COUNTY



Eight counties in Kentucky have had 10 or more recent disasters.

Lawrence and Magoffin counties have had the highest number of disasters in the state: 12 disasters each.



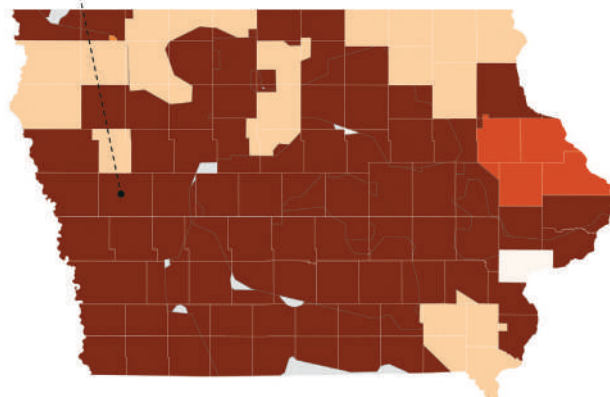
Source: FEMA 2021
Maps courtesy of iParametrics.

Report analysis for the state of Kentucky. Data and map from iParametrics.
Image: Rebuild by Design

ENERGY RELIABILITY 2011-2021

COUNTIES AT GREATEST RISK OF POWER OUTAGES

Crawford County has high social vulnerability and low energy reliability.



Aggregated Annual Electric Outage Duration Including major events - SAIDI_W_MED

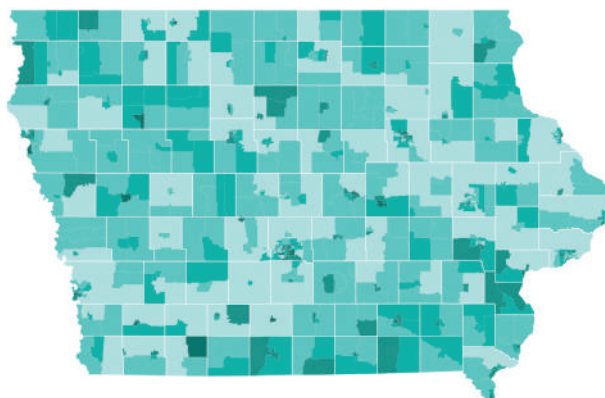
- missing electric outage data
- 0 - 60 minutes
- 60 - 120 minutes
- 120 - 240 minutes
- 240 - 456 minutes
- 456 - 7,700 minutes

Source: U.S. Energy Information Administration
Maps courtesy of APTIM

SOCIAL VULNERABILITY INDEX 2011-2021

AREAS OF GREATEST SOCIAL VULNERABILITY

Ringgold, Lee, Decatur, Johnson, and Wayne counties have high poverty rates, high diversity of hazard risks, and low investments from previous disasters.



Social Vulnerability Index

CDC (2018)

- No Value
- 0.0 - 0.2
- 0.2 - 0.4
- 0.4 - 0.6
- 0.6 - 0.8
- 0.8 - 1.0

Source: CDC/ATSDR 2018 Social Vulnerability Index
Maps courtesy of iParameters

Report analysis for the state of Iowa. Data and map from iParameters and APTIM.
Image: Rebuild by Design



Work with your partner to understand how the collaboration might help them too. We do not always get a yes, but often times we do.



Our Key Takeaways

Our report has received local, national and international attention, and represents a win-win outcome for ourselves and our partners. The effort leveraged initial investments from the philanthropic and private sector in an order of magnitude that cannot be measured. As a small non-profit, we were able to access a team of incredible thinkers who deeply understood how extreme climate events affect communities.

The resulting report quickly made us national experts in federal government policy reform. In return, the private sector got to work on something that they were passionate about—both within the scope of their client base, and to a greater extent—their footprint in this field.

Lessons learned from this model:

- Leverage each other's knowledge and network. Each partner brought a unique depth of understanding to this work. Together, this enabled us to develop a greater understanding of all the challenges;
- Choose partners whose passion will extend beyond the current task. Though you are committing to a defined activity, there will be needs that extend beyond that

initial partnership such as follow-up presentations and inquiries. Ensuring that there is not a hard stop to the partnership will enable both sides to take advantage of opportunities that arise. At the same time, you should also be mindful that a pro bono project has a limit that should be respected;

- Ensure partners get credit for their inclusion. Look for ways to highlight the work of each partner to demonstrate to other private sector companies the benefits of working with a mission-driven non-profit; and
- If you are a non-profit in a position to ask for pro bono support, make the ask. Rebuild by Design's leveraging of partnerships over the years has enabled us to do work that we would not otherwise be able to do. Work with your partner to understand how the collaboration might help them too. We do not always get a yes, but often times we do. 🗨️

SINGAPORE | INCLUSIVE COMMUNITIES

Creating Dementia- Inclusive Neighbourhoods through Partnerships with the Community

The Dementia-Inclusive Neighbourhoods Study focuses on the role of partnerships between agencies, designers, planners and local stakeholders, with a longer-term view to inform policy making.



Elly Chiu leads the Centre for Liveable Cities' Foresight team, which identifies drivers of change to inspire thinking on how policy and strategy can respond or prepare. She is also part of a research team at the Centre which conducts forward-looking studies on planning for a Healthy City.



Lim Ren Ai is a researcher at the Centre for Liveable Cities, where she focuses on ageing, health, and social behavioural science related topics.

Rising Incidence of Dementia Globally, and in Singapore

Singapore's population is ageing rapidly and the city will be home to over 900,000 seniors by 2030. Alongside this growth in the seniors population is a rising incidence of dementia—while dementia is not a natural part of ageing, its prevalence is more common in older adults. Currently, about 1 in 10 persons aged 60 and above has dementia, and this proportion is expected to increase over time. By 2030, the number of people living with dementia in Singapore is set to double from current numbers.

People in the early stages of dementia may experience mild memory loss, or challenges with cognition, perception and speech. When the illness progresses to the middle or later stages, they may experience personality changes and an increasingly reduced ability to perform higher-order tasks, such as navigation. This has an impact on the quality of life for persons living with dementia, as well as those caring for them.

The Current Gap in Hardware Provision for Dementia-Inclusivity

Today, dementia day care and caregiver support are available to support persons with dementia. The Agency for Integrated Care (AIC), which coordinates and supports efforts in integrating care for seniors and caregivers, is actively strengthening community-level support. They partner community care service providers to implement community and intervention teams to increase dementia and mental health awareness, and provide support for those identified with needs. AIC has also set up Dementia-Friendly Communities, Go-To Points in neighbourhoods, and launched the Dementia-Friendly Singapore Movement, which rallies society to build a caring and dementia-friendly Singapore.

While the “software” and programming for dementia-friendly communities is in place, more can be done to enhance the “hardware” of the built environment, to enable persons with mild to moderate dementia to continue to live in their homes and neighbourhoods.

Currently, dementia-friendly design guidelines in Singapore are for indoor, institutionalised settings such as nursing homes. Guidelines relating to dementia-friendly neighbourhoods exist overseas, but these are for lower-density neighbourhoods. For a high-density city like Singapore, therefore, we need to develop new guidelines which can be applied to the way we plan and design our neighbourhoods, for dementia-inclusivity.

It Takes a Whole Community to Create Dementia-Inclusive Neighbourhoods

However, creating a dementia-inclusive neighbourhood cannot just be the task of planners and designers alone.

Input is also needed from those who live, play and work in the neighbourhoods, as they have an intimate understanding of the gaps and needs in their neighbourhood, based on lived experiences and observations.

This includes persons living with dementia and caregivers, their neighbours, businesses, and service providers in the community. As dementia-inclusive design is meant to support inclusivity for all, we must also hear and learn from other segments in the community, such as young families with children, and those with special needs.

The importance of partnering with the local community is particularly important in the Singapore context of a city that is already highly built-up. Dementia-inclusive “hardware” cannot always be applied tabula rasa. For existing neighbourhoods and towns, planners and designers will need to balance the need for change with the need to maintain existing areas or features that are positively familiar to residents. This requires sensitivity and an understanding of residents’ relationships and perceptions of their neighbourhoods today.

A Partnership-Driven Approach

With these challenges as the backdrop, AIC and CLC, in its role as a futures centre for the infrastructure and environment sector, are co-leading Singapore’s first evidence-based study on Dementia-Inclusive Neighbourhoods.

Working with the Singapore University of Technology and Design (SUTD)’s Social Urban Laboratory, the study seeks to distil design and policy recommendations contextualised to Singapore’s high-rise and high-density urban environment, to enable those living with dementia to age in more inclusive communities with a higher quality of life.

Partnerships with multiple stakeholders are a cornerstone throughout this initiative (Figure 1).

In fact, this principle informed the selection of the study site—a housing estate in Yio Chu Kang, located in the Central North region of the city. This area was selected as it has an existing catchment of senior residents, and more importantly, the support of local grassroots leaders and service providers who are already contributing to dementia-inclusive community initiatives.

100

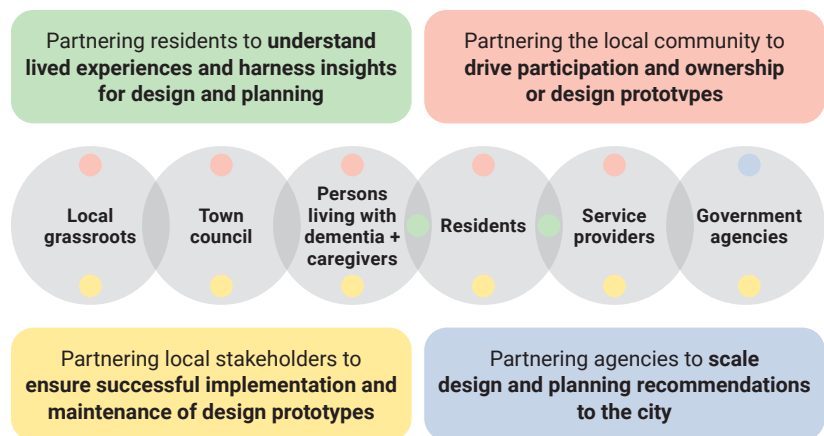


Figure 1: The partnership model for the AIC-CLC-SUTD Dementia-Inclusive Neighbourhoods Study.
Image: Elly Chiu and Lim Ren Ai

Understanding First-Person Perspectives and Lived Experiences of Persons Living with Dementia and Their Caregivers

The research study started with engaging persons living with dementia and their caregivers, by observing their behaviours and interactions in their natural environment, to understand their needs and experiences. This phase was supported by service providers such as senior care centres and clinics located in Yio Chu Kang, who proactively reached out to persons with dementia and their caregivers to participate in the interviews.

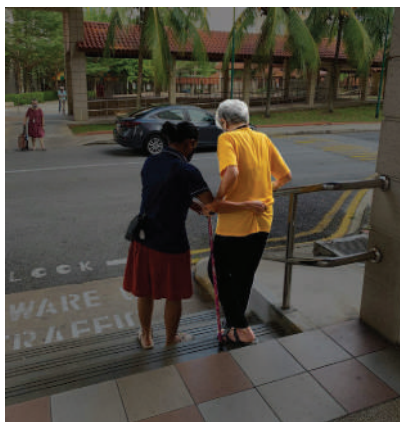
To understand their preferred daily routines, persons with dementia were given a set of pictures with different features in the neighbourhood and were asked to select pictures that would

constitute their “best day in the neighbourhood”. This method was designed to accommodate their preference to express their responses in non-verbal or visual ways. This was complemented by an in-depth interview with their caregivers, to further understand their lifestyles, habits and aspirations.

The researchers then accompanied the person with dementia and their caregiver on a walk around the neighbourhood. This allowed the researchers to capture their responses to the environment, understand what was easy or less easy, and observe their wayfinding methods.

Through the design ethnographic studies, we found that what makes a place friendly or inclusive to persons living with dementia are not abstract signages or nostalgic murals, but their overall perception of the neighbourhood and the psycho-social factors associated with it. They would not step out of their home if there were multiple issues to consider (such as number of junctions to cross), but they would venture outdoor if their favourite activities were waiting for them (such as meeting friends for chess). These helped us to come up with innovative ideas and designs to enhance the psycho-social environment of the neighbourhood.

Professor Chong Keng Hua, Associate Professor of Architecture, Director of Social Urban Lab (SOULab)



Researchers interviewed and observed 10 pairs of persons with dementia and their caregivers to understand their behaviours and motivations when navigating their neighbourhood.
Image: Singapore University of Technology and Design Social Urban Lab (SOULab)



Residents at a Community Workshop in May 2022.
Image: Singapore University of Technology and Design Social Urban Lab (SOULab)

Capturing Residents' Perspectives through Community Workshops

Next, community workshops were held for the residents of Yio Chu Kang to partner AIC, CLC and SUTD in identifying sites in their neighbourhood that could benefit from more inclusive design, and to supplement insights shared by persons living with dementia and their caregivers.

Having lived in Yio Chu Kang for years, residents were able to share observations that designers may not be able to pick up from a site survey. For instance, residents could point out frequently-used short cuts within the neighbourhood which deviated from formal routes, and gave opinions on how amenities like activity areas or ramps could be placed at more suitable areas.

Understanding and responding to non-dementia residents' needs is also important to ensure that eventual designs and prototypes are inclusive to all, and not just persons living with dementia.

At these workshops, residents were also able to learn more about the needs of persons living with dementia by hearing from them directly, as well as from SUTD researchers. This two-way engagement with residents early on in the study set a good foundation for a sustained partnership throughout the lifecycle of the project, including support for the design prototypes that would eventually be piloted on the site.

Insights on How Persons Living with Dementia Relate with the Neighbourhood

By partnering with persons living with dementia, their caregivers, and the Yio Chu Kang community, AIC-CLC-SUTD were able to distil four key insights on how persons living with dementia relate with the neighbourhood.

Firstly, persons living with dementia and their caregivers have a heightened sense of risk about the environment, and this can hinder them from navigating the neighbourhood with confidence. Secondly, it was observed that persons living with dementia, even if they may have trouble reading signages, often moved around the neighbourhood with a clear internal “mental map” of the area. As such, a “less is more” approach may be more helpful to support persons living with dementia in navigating their high-density, highly-stimulated urban environment. Thirdly, when making improvements to the neighbourhood or renewing older estates, planners should take care to preserve spaces that hold positive familiarity and value for residents. Lastly, neighbourhood planning and design should support the quality of life of persons living with dementia by introducing choice and new purposes incrementally.

Partnering Local Stakeholders to Pilot Design Prototypes On-Site

Based on these insights, AIC, CLC and SUTD have developed several design prototypes for implementation. To be situated at key community spaces, the prototypes include a revamped void deck that will act as a calming community space for a variety of activities, an outdoor activity area redesigned as an intergenerational community space with elements that promote wellness, as well as enhanced feature columns for wayfinding across a main path in the neighbourhood. In this phase of the study, AIC, CLC and SUTD are partnering closely with the Ang Mo Kio Town Council and local grassroots to translate the design prototypes into reality.

Before the prototypes were developed, the research team also engaged residents on how they might use the prototypes, and discussed possible programmes to build up interest and engagement with these spaces. Six months after the prototypes are implemented,

Singapore will be a rapidly ageing society over the next few years. There will also be a significant number of seniors who will face challenges with dementia as well. It is therefore important that we adopt a science-based approach to tackle the issues of ageing and dementia, and implement workable solutions on the ground. By working with partners, we can assess what is best to improve one's lived experience in the community, and to scale this nationwide.

Mr Yip Hon Weng,
Advisor to Yio Chu Kang
Constituency, Member of
Parliament, Singapore

the research team will conduct post-implementation reviews with residents to assess how well the prototypes have met their goal to make the neighbourhood more dementia-inclusive.



Yio Chu Kang residents giving their feedback on the proposed prototype designs.
Image: Centre for Liveable Cities

Partnering Agencies to Scale Up Guidelines Nation-Wide

Besides partnering with the community in Yio Chu Kang, it is also important to translate learnings into guidelines to inform the planning and design of other neighbourhoods in Singapore.

Today, Singapore has existing codes and guidelines on barrier-free access and universal design. There are also initiatives to improve the inclusivity of our train and bus networks, and plans to roll out therapeutic gardens for the well-being of residents. So how might we enhance these to better address the needs and aspirations of those living with dementia and other cognitive impairments?

To this end, AIC and CLC have been engaging agencies such as the Building & Construction Authority, Housing & Development Board, Land Transport Authority,

National Parks Board, and the Urban Redevelopment Authority, to share and discuss findings on the study, with a view to translating these into new or revised guidelines, so that dementia-inclusive neighbourhood principles can be applied more widely in Singapore through inter-agency partnerships. Such guidelines cover questions such as how dementia-inclusive guidelines might be incorporated into Universal Design guidelines, and how features within our therapeutic gardens might be enhanced.

These partnerships and coordination between agencies need to be established from the initial stages of the study, to increase the potential for successful implementation and uptake of the study's recommendations, and the likelihood of achieving meaningful and lasting change.

Partnerships and coordination between agencies need to be established from the initial stages of the study, to increase... the likelihood of achieving meaningful and lasting change.

Conclusion

Partnerships with the community and agencies have been a cornerstone in the AIC-CLC Dementia-Inclusive Neighbourhoods Study, from the development of insights, to the shaping of the prototypes, and in the future scaling up of interventions through plans, programmes and policies. By taking on a whole-of-society approach, Singapore aims to be an inclusive city, not only for persons living with dementia, but for all who live here. 🗨️

CITY PERSPECTIVES

EMBRACE NEW PERSPECTIVES INSPIRE NEW POSSIBILITIES

At Singapore Management University, we put cities at the heart of our focus. City Perspectives is the platform where we address the pressing issues of our time with insightful ideas on Digital Transformation, Growth in Asia and Sustainable Living from leading experts.

Explore articles, podcasts and videos by esteemed thought leaders on current subjects that impact society, business and the world at large. Whatever the interest, they serve to fulfil one goal: To enlighten, challenge and inspire solutions to bring about change for good.

cityperspectives.smu.edu.sg

At the Centre for Liveable Cities,
we are committed to providing urban leaders
and practitioners with the knowledge and
support needed to make our cities better.

Join our conversation on social media #CLCSG

