



VIEWPOINT  
**FREDERICK TEO**

# Overcoming Challenges to Build Resilient and Future-Ready Cities



**“Making cities resilient and future-ready will require substantial investment and collaboration across sectors”, says Frederick Teo, Chief Executive Officer of GenZero.**



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With more than half of the global population living in urban areas, cities are at the frontline in the fight against climate change.

A dense population puts enormous pressure on a city’s sustainability, adaptability and resilience. In addition, the climate impact of cities through resource consumption and waste generation is greatly disproportionate—cities occupy only about 3% of the earth’s surface, yet they consume around 70% of our global energy.

### The Urban Challenge

By 2050, 70% of the human population is expected to live in cities. The rapid pace of urbanisation poses unique challenges.

By adopting sustainable and climate-resilient infrastructure, growing cities can ensure that they are liveable and can cope with climate risks like rising sea levels and extreme weather. At a planning level, urban infrastructure needs to be weather-proofed in anticipation of more frequent extreme weather events that lead to flooding.

For example, the Singapore government launched a S\$5-billion coastal and flood protection fund in 2020 to enhance drainage and flood prevention infrastructure. This infrastructure includes seawalls, tidal gates, and revetments to defend against rising sea levels and erosion. Singapore’s iconic Marina Barrage is an example of a successful measure that has helped prevent flooding in the low-lying central city area and, at the same time, form a new reservoir.

Across the world, more than 100 countries have pledged to achieve net zero gas emissions, with most aiming to reach this target by 2050. To meet this commitment, the world needs to accelerate the switch to renewable energy sources and low-carbon building materials like low-carbon cement and steel, enhance building efficiencies (e.g. through the use of energy-efficient lighting, heat pumps and district cooling) and adopt other innovative green solutions to scale impact.

New York City is an example of a city undergoing a green transformation. The city was awarded the Lee Kuan Yew World City Prize in 2012 for its holistic systems-based approach to realise

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a greener and more resilient urban landscape, given its ageing infrastructure. It adopts an interdisciplinary strategy to synergise land use planning, transportation investment, environmental stewardship, and public health.

However, not all cities have the resources to do the same, and many of the sustainable solutions and technologies needed to achieve net zero by 2050 are still not ready for deployment at scale.

### Unlocking Capital to Future-Proof Cities

So how can we fast-track the green transformation of our cities?

The key is in providing access to capital not only to accelerate the development of new solutions, but also fund green infrastructure deployments.

Historically, governments have led such infrastructure financing. However, public capital alone cannot fully bridge the urban-infrastructure funding gap given the high capital expenditure involved. More and more, governments are facing financial constraints with many demands on an increasingly limited public purse. This is where public and private sector collaboration is key.

We need to tap different sources of private capital. Such capital, in the form of corporate investments, venture and growth capital, philanthropic funds, and impact investing, can unlock the potential of transformative ideas. By aligning investment with clear social and environmental objectives, private capital can help drive the development of innovative technologies, and deployment of proven sustainable solutions in new and existing urban infrastructure. This will enable cities to enhance their adaptive capacity, mitigate climate risks, and promote inclusive growth.

Besides private equity, private lenders need to be mobilised to broaden the available pool of capital alongside multilateral development banks that help de-risk urban infrastructure projects, especially in emerging markets.

However, to truly attract private capital, optimising risk-sharing is imperative. Governments can create an enabling environment through clearer regulatory frameworks and attractive fiscal incentives to make Public-Private Partnerships (PPPs) work.

PPPs allow for a more balanced risk-reward outcome between parties while leveraging the

expertise and resources of both sides to drive transformative change. For example, Singapore's TuasOne Waste-To-Energy Plant (TuasOne) was developed under a PPP framework to provide waste incineration services to the country's National Environment Agency (NEA) while leveraging the expertise of one of the world's leading industrial groups, Mitsubishi Heavy Industries. TuasOne aims to support Singapore's long-term waste management needs while recovering energy from municipal waste. Located on 4.8 hectares (48,000 m<sup>2</sup>) of land, it is the most land-efficient waste-to-energy plant in Singapore generating enough electricity to power 240,000 4-room public housing flats.

### Looking Ahead

The story of urbanisation is still being written across the world.

Making cities resilient and future-ready will require substantial investment and collaboration across sectors. The race to secure the well-being of future generations and address climate change has started and will end in cities. 🌱