

INTERNATIONAL ENTERPRISE SINGAPORE

# Urban Solutions

Find your world-class Urban Solutions  
partner in Singapore



Driving  
Singapore's  
External  
Economy

**Close to half the world's population live in cities today, and this figure is expected to rise to 70 per cent by 2050.** By then, there are expected to be more than 25 megacities – those with a population of more than 10 million.

These trends highlight an urgent need to address issues of sustainability, safety and growth in an urban setting. The challenge will be to support expanding urban populations and economies, while at the same time ensuring a clean, safe and environmentally sustainable place to work, live and play.

Singapore is no stranger to these challenges. As a small state with no natural resources and a largely urban population, we had to manage these issues to ensure that Singapore continues to be a liveable city. In many areas, we have been successful in turning these challenges into opportunities.

In Singapore, you will find experienced partners offering sustainable and integrated Urban Solutions, ranging from water, waste and energy management, to urban planning and infrastructure development, amongst others.

### The Singapore model

Limited land area and natural resources, combined with a growing population, have led Singapore to take an integrated and long-term approach to our urban planning and development. This focus has made Singapore a globally recognised model of sustainable development, while at the same time giving rise to a large number of world-class Urban Solutions providers.



Singapore's approach is based on three key principles:

- Long-term, integrated planning
- Pragmatism and a focus on cost efficiency
- Flexibility and the need to adapt to new technologies and environmental changes

With these principles to guide them, Singapore-based companies have developed innovative Urban Solutions across the value chain, from conceptualising and planning to construction, implementation and management.

### Global solutions

Singapore-based companies have started to export their solutions around the world, translating their home-grown experience into effective and sustainable customised products and services for the global marketplace.

For companies looking to collaborate with a Singapore-based company, this means they can look forward to dealing with experienced, international partners.

In particular, Singapore-based companies have varied strengths and experience in the following sectors:

- Water & wastewater management
- Waste management
- Energy management
- Tourism infrastructure
- Urban infrastructure & townships
- Industrial developments & parks

## Key Urban Solutions projects in Singapore

Singapore-based companies and government agencies play a major part in ensuring the country's sustainable urban development. Key projects include:

### WATER AND WASTEWATER MANAGEMENT

**NEWater:** Ultra-clean, high-grade reclaimed water

- Uses advanced membrane technologies
- NEWater quality surpasses drinking water standards set by World Health Organisation and United States Environmental Protection Agency



### Deep Tunnel Sewerage System:

Managing Singapore's water resources for the next century

- 48km-long deep tunnel super-highway that operates solely on gravity
- Frees up prime land
- Cost-effective



**SingSpring Desalination Plant:** One of the world's largest desalination plants

- Among the world's most energy-efficient and largest membrane-based seawater desalination plants
- Uses an advanced pre-treatment process that includes the largest in-filter dissolved air flotation system in the world



**Marina Barrage:** Testament to Singapore's forward vision

- A unique 3-in-1 project:
  - Singapore's first reservoir in the city centre
  - Alleviates flooding in the low-lying city areas
  - Lifestyle attraction
- Designed, constructed and operating on green principles



### TOURISM INFRASTRUCTURE

**Green and Extensive Streetscape:**

Your lush welcome to Singapore

- Singapore's extensive streetscape, or roadside greenery, forms the backbone of our City in a Garden
- One of the few countries in the world that practises extensive streetscaping
- Contributes to the aesthetic pleasure of the environment and reduces air pollution from vehicles



### ENERGY MANAGEMENT

**National Library Building:** An internationally acclaimed green building

- Deployment of various innovative green features for energy- efficiency, including:
  - Use of bioclimatic vegetation and landscaping to improve the indoor thermal environment
  - Lighting control system that switches off lighting when there is sufficient natural light to illuminate the building interior, as detected by light sensors
  - Use of shades to reduce solar heat gain through the facade
  - Use of rain sensors as part of the automatic irrigation system for rooftop gardens to conserve the use of water



**ZEB@BCA Academy:** Singapore's first zero-energy building

- Singapore's first zero-energy building (generating as much energy as it consumes)
- First in the region to be retrofitted from an existing building
- Test-bed for new green building technologies



### URBAN INFRASTRUCTURE & TOWNSHIPS

**Public Transportation System:**

- A people-centred land transportation system
- Seamless transfers from covered walkways to buses and Mass Rapid Transit systems
  - Increased usage of CNG vehicles
  - Technically intelligent and user-friendly



**Public Housing:** Bustling satellite towns

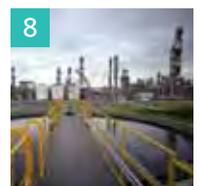
- Integration of quality residential units, public amenities, recreational and lifestyle services, and businesses to provide homes of choice for Singaporeans
- Constantly undergoing physical renewal to ensure a high quality of life



### INDUSTRIAL DEVELOPMENTS & PARKS

**Jurong Island:** Multi-tenant, on-demand utilities provision

- High value-added petroleum, chemical and petrochemical industries forming a value chain for synergy and cost savings
- Strong infrastructure support with a one-stop shop for public utilities, servicing all aspects of the tenants' needs
- Integrated, plug-and-play approach has attracted investments of over US\$20 billion



**one-north:** Integrating different land users

- A dynamic, 200 hectare R&D and business hub
- A place where people can work, live, play and learn
- An exceptional place to inspire tenants to push the boundaries of knowledge and turn ideas into groundbreaking innovations



Image courtesy of JTC Corporation

## WASTE MANAGEMENT

**Semakau Landfill:** A unique, long-term solution for waste management

- A thriving ecosystem of plant and marine life
- Available for nature-related recreational activities
- Proposed test-bedding zone for clean and renewable technologies



## SUSTAINABLE TRANSPORTATION

**Green Electric Vehicles:** Southeast Asia's first diesel-electric hybrid bus and the world's first hybrid hydraulic drive enhanced Port Prime Mover (PPM)



Image courtesy of ST Engineering

- Developed by ST Kinectics, the land systems arm of ST Engineering, the hybrid systems in the diesel-electric bus and PMM are fuel-efficient, emission responsible and allow users to gain cost savings
- Through more than 10,000 km of road trials, it was demonstrated that the hybrid electric system in the hybrid bus (photo on right) can result in fuel savings of up to 30 per cent, while the hybrid hydraulic drive system in the PPM reduces consumption by up to 20 per cent and lowers maintenance costs

**Waste-to-Energy Plants:** Recreating the balance between the environment and development

- Amongst the most-environmentally friendly plants in the world, with advanced technologies to treat effluents
- Keppel Seghers Tuas Waste-to-Energy Plant is the first waste-to-energy plant built in Singapore under the Public-Private-Partnership model. Keppel Integrated Engineering (KIE), the parent company of Keppel Seghers, also owns and operates the Senoko Waste-To-Energy Plant (photo above). Together, KIE will be able to treat up to 47.6 per cent of the total volume of waste that was sent for incineration<sup>1</sup> in Singapore



Image courtesy of Keppel

<sup>1</sup> According to the Ministry of Environment and Water Resources, 2.45 million tonnes of waste were sent for incineration in 2008.



## Overseas project experience

Singapore-based companies have a strong reputation and track record in providing Urban Solutions to clients around the world, and along all points of the value chain. Some key overseas projects include:



### International Tech Park Bangalore, India

India's premier high-tech park designed to provide a complete "work-live-play" environment for IT and technology-related businesses.



### Vietnam Singapore Industrial Park, Vietnam

Considered one of the most successful industrial developments in Vietnam in terms of investment attractiveness and environmental protection.



### Sino-Singapore Tianjin Eco-city, China

A model city in China for its environmentally-friendly features like clean, renewable energy, green buildings and transportation, and efficient water and waste management.



### China-Singapore Suzhou Industrial Park, China

One of the top integrated industrial parks in China.

## International Enterprise Singapore

International Enterprise (IE) Singapore is the government agency driving Singapore's external economy. We spearhead the overseas growth of Singapore-based companies and promote international trade.

With our global network in over 35 locations spanning many emerging markets, we connect businesses with relevant Singapore-based companies for their business expansion. Renowned worldwide for their dedication to quality and innovation, Singapore-based companies make ideal business partners.

We also position Singapore as a base for foreign businesses to expand into Asia in partnership with Singapore-based companies. Singapore's unique advantages of strategic location, stable government, competitive workforce and pro-business environment make it an ideal launch pad to the region.

Visit [www.iesingapore.com](http://www.iesingapore.com) for more information.

## IE Singapore's Global Network

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