Annex 2

About the exhibition - ‘Future Cities: Research in Action’

Venue: URA Centre Atrium
Duration: 23 January 2015 to 13 March 2015

‘Cities as presently conceived are inherently unsustainable, yet cities are the key to sustainability’ Rees and Wackernagel, 1996

‘Future Cities: Research in Action’ by the Future Cities Laboratory (FCL) of the Singapore-ETH Centre presents the work of more than 120 FCL researchers over the past four years, in providing practical solutions to make cities more sustainable.

Spanning the disciplines of architecture, engineering, natural and social sciences, the exhibition features innovations to address urban challenges at scales ranging from buildings and how they are constructed, to neighbourhoods and districts, to cities and their hinterlands.

Featured innovations include sustainable construction materials, low-energy air-conditioning systems, robotic fabrication techniques, the design of vibrant urban neighbourhoods, flood mitigation, and slum rehabilitation, among others. These diverse innovations are further integrated through sophisticated digital models and design support tools.

Presenting practical solutions

The exhibition spotlights FCL projects conducted in partnership with government agencies, industry, academic institutions, and the community in Singapore and other parts of the world, which are aimed at putting knowledge into action.

These collaborative projects include studies on transportation planning and walkability in Singapore; the use of robotics in the design and fabrication of high-rise buildings; urban design proposals for Rochor and Lavender; the efficient use of back
lanes of shop houses; and studies of the hinterland of Singapore-Johor-Riau, among others.

In Singapore, to enhance transportation systems, the mobility and transportation planning module of the FCL is partnering the Urban Redevelopment Authority (URA) and Land Transport Authority (LTA) to adapt the Multi-agent Transportation Simulation (MATSim) tool to better understand road and public transport patterns and behaviour. In addition, the ‘3for2’ project based on low exergy principles aims to dramatically increase the efficiency of cooling systems, while also reducing construction costs. The concept, which was first developed in ETH Zürich, has been adapted in Singapore and is being implemented at the Dover campus of the United World College of South East Asia (UWCSEA).

Beyond Singapore, FCL research on the use of composite bamboo material as concrete reinforcement, studies of the Ciliwung River in Jakarta and Addis Ababa in Ethiopia, and the development of simulation and modelling tools have brought practical urban solutions closer to reality.

In conjunction with the exhibition, Future Cities Laboratory has put together a line up of talks and tours, where FCL researchers will share more about their work on specific topics and projects and engage in dialogue with key stakeholders and the general public.