

S³ Singapore Sustainability Symposium Singapore, 15th -17th April 2015

Sustainable City Design

With the continued commitment of Singapore and Nanyang Technological University (NTU) to sustainability and urban solutions that are transdisciplinary, transboundary, and fully integrated, NTU's Sustainable Earth Office (SEO) and Institute for Advanced Studies (IAS), in collaboration with a number of Singapore's Agencies, are organising the second S³ in Singapore on 15-17 April 2015.

The symposium will have a Singaporean flavour, with a special interest in the challenges faced by cities and urbanisation. The title of this year's symposium is Sustainable City Design, and S³ will again serve as early input to the World Cities Summit (held in summer 2015 in New York). This year's symposium will begin with a public lecture and discussion panel including the presentation by a Minister of key objectives from Singapore's new sustainability plan.

The first S³ was held 8-10 January 2014, with the title Prosperity within Global Limits: *How to Create Dynamic and Prosperous Societies within Planetary Boundaries*. Last year, S³ produced a "10 Points" document summarising key conclusions from the symposium that was presented at the Mayor's Forum (over 140 international Mayors) at the 2014 World Cities Summit in Singapore.

In order to create an interactive and generative dialogue, S³ will operate over its two and a half days by focusing on discussion, driven by a main table and supported by delegates from the surrounding tables. Specifically, each session will have an active Chair to preside over 2-3 main table short presentations from several different disciplinary perspectives on the main conference themes. These presentations at the main table will begin a moderated discussion process that includes all delegates and focuses on several key questions posed by each theme.

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Session One: Cities, Adaptation, and Action Now!

While immediate and local priorities often take the attention and resources of Mayors and city planners, a global mindfulness about planetary and ecological boundaries is both possible and beneficial for long run city development decisions. Considering an issue like climate change (global warming, threat of sea-level rise, and ocean acidification), the connections are readily apparent between development decisions we make today and the growing environmental and social challenges of tomorrow. Framed positively, greater awareness of environmental impacts and future outcomes will help Mayors make better decisions today to keep their cities prosperous, healthy, and resilient long into the future. Cities throughout the world are already addressing many environmental issues, while planning for a whole host of longer term adaptation challenges.

Key Questions:

- (1) What key roles will cities play in addressing adaptation challenges, both now and into the future?
 - (2) Case: Singapore; Highlights of R&D and capacity for adaptation.
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Session Two: Technology and Innovation

Technology and innovation, in engineering and product development, but also with respect to management structures and entrepreneurship, will continue to be an important part of overall sustainability strategies. Policies and incentives to create more technology and innovation are often led by national governments. But cities will play an equally important role in the way they interact directly with billions of people who stand to benefit from healthier, happier, and more sustainable urban communities. In fact, city leaders and innovators are likely to have increasing influence and political clout in sustainable development decisions. Moreover, cities are ideal testbeds for implementing and experimenting with new solutions, especially since we don't fully use the proven technologies we've already developed. Progressive zoning, building codes, and engineering standards can be influential here. At the same time, encouraging and incentivising local entrepreneurs and sustainability innovators can help harness pools of untapped potential for cities, which are defined as often by their dynamic and motivated social networks, as by infrastructure and geography.

Key Questions:

- (1) Are investments and implementations of Cleantech paying off in contributing to urban transitions to sustainability and a low carbon economy?
- (2) How important are the roles of unconventional and innovative designs and planning in creating sustainable cities?
- (3) To what extent does urban design influence, become influenced by, and impact urban health care provision and planning?



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Session Three: Urban Footprint and Regional Security

By definition, cities aren't sustainable, they require large inputs of resources, water, and energy from the outside in order to exist. Sustainable urbanization may be a better term to focus on the broader relationships and environmental influences. Cities can no longer think about sustainability only within their own boundaries, but should work collaboratively within their regional networks to account for resource use and degradation, regardless of the place of creation or consumption. This implies targeting sustainability along supply value chains, and promoting environmentally responsible practices wherever cities do business and have influence. This logically suggests another point about the importance of measuring and quantifying the urban ecological footprint. Management and measurement systems for energy use, water consumption, and a life cycle analysis for the importation and disposal of materials all contribute to greater awareness. The key point, however, is that measurement and establishing reliable baselines are the first steps in all work to reduce resource consumption further, which has effects both within cities and for the regions that keep cities alive.

Key Questions:

- (1) How should we best determine or outline the impact of urban consumption on the natural resource base?
 - (2) To what extent can sustainable urbanisation contribute to alleviating the footprint of land use change?
 - (3) What are some of the key challenges to national security and urban resilience from regional environmental degradation?
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Session Four: Financing Sustainable Cities

Questions of city financing, and connected questions of election cycles and investment decisions, often present challenging questions for Mayors and city planners. There is significant potential here, however, given how relatively flexible and fleet footed cities are compared to many provincial or national governments. Using existing, innovative, or alternative financial systems and reporting mechanisms to influence public and corporate stakeholders is a good place to start. Aligning or reforming the sources, timing, and forms of city finance with long run city sustainable development goals would also support the implementation of high impact solutions. Other possibilities here include: the standardisation of long run project investment criteria; better matching of debt instruments and maturities to project scope and scale; political recognition and legitimation for long run sustainability projects; developing user charges that align resource use in cities with environmental impact; and earmarking revenues generated from property taxes for sustainable infrastructure investments.

Key Questions:

- (1) What role can stock exchanges and listing criteria play to drive sustainable development?
- (2) What are the major finance challenges for sustainable cities?
- (3) What types of financial system reforms, or alternative approaches, are needed to support sustainable development?