

A historical map of Singapore, showing the island's layout, including the city center, the harbor, and surrounding areas. The map is drawn in brown ink on a light-colored background. Key features include the city grid, the harbor, and various landmarks. The title 'FUTURE CITIES' is overlaid on the top right of the map.

# FUTURE CITIES

Networks and Grammars

ETH Sustainability Summer School

24st June – 12th July 2013

Future Cities Laboratory, Singapore



Toa Payoh, Singapore, in 1967

# Background

The Global South will be the locus of urban growth in the 21st century. It has to navigate a new path to build new economically productive, energetically efficient and environmentally healthy cities and urban agglomerations for their growing populations. A new path is needed as the existing models, grammars and visions of the Global North were developed and tested over long time periods for other population densities, other growth speeds and other climates.

What is currently missing are not insights into the design of individual buildings, but grammars to build and design cities and urban areas incrementally. These urban grammars for both the urban structure as well as the networks are at the centre of this summer school. The students will develop and experiment with their newly developed rules for the master planning of a new town of 100'000 residents, including the physical design, its impact on the daily life of the inhabitants, its energy balance and economy.

Singapore is the ideal backdrop for such a design studio, as it has been built with a very strong urban grammar of its own and as it has extensive experience of providing housing to its fast growing population. Still, it is not clear, if its example can simply be exported, if it does not need rethinking for other places and different socio-economic conditions in the Global South.

# Outline

The students' task is to develop a design grammar for the new town, i.e. a system of buildings, ratios of uses, rules for network design (junction types, grid dimensions, type of network, etc.). Further, they will be asked to assess the city qualitatively in all three dimensions of sustainability using the available evidence in the literature. Tools will be introduced to generate the new town virtually to obtain a large-scale impression of the impact of the rules.

The participants will receive inputs via lectures and workshops in all relevant fields by both local and international experts and also work individually in smaller groups on specific case studies (urban design and network design). The program will be accompanied by excursions and site visits.

Learning objectives are to:

- Deepen the understand of urban design, city planning, network design, network optimisation, job and housing balance
- Learn working in interdisciplinary and intercultural teams
- Apply creative technologies in solution finding processes
- Get hand's on experience by applying knowledge in concrete case studies

Toa Payoh, Singapore, today



Summer School location



Valuelab at the SEC, Singapore

Naomi Hanakata

CREATE tower at the SEC, Singapore



Cheryl Song

# A strong team

Successful projects are the result of dedicated individuals and teams.

The “Future Cities” summer school program is organised in collaboration between ETH Sustainability, the central hub for coordinating sustainability activities at ETH Zurich, the Department of Civil, Environmental and Geomatic Engineering (D-BAUG) and the interdisciplinary research programme “Future Cities Laboratory” (FCL) of the Singapore-ETH Centre for Global Environmental Sustainability (SEC).

Input and support for the case studies is provided by selected experts who take a leading role in the field of urban and network structures as well as sustainable development. For a detailed program, please visit our [website >>](#).





Participants of the ETH Sustainability Summer School 2012

# Who Should Apply?

The ETH Sustainability Summer School 2013 will invite 30 Bachelor, Master and PhD students from a wide spread of nationalities and disciplines (e.g. architecture, engineering, environmental and social sciences, economics, mathematics and others relevant fields for the urban fabric). Applicants will be evaluated on their academic strength, creativity and technical-related expertise, and their dedication to solving humanity's grand challenges.

# Application

Applicants must send a one-page CV and one-page letter of motivation in PDF format stating their interest in one of the two case studies 1) urban design (uses, volumes and their organisation in space) or 2) network design (private and public). Admission will be for one of these two thematic case study tracks and cannot be altered once accepted.

Deadline for application: March 22, 2013

Notification of admission: April 12, 2013

Please send your complete application to [catherine.lippuner@sl.ethz.ch](mailto:catherine.lippuner@sl.ethz.ch) (Please resend your application if you did not receive an acknowledgement of receipt within two days).

## **Costs**

The course fee for the three weeks is CHF1000, including accommodation for the whole duration of the summer school (i.e. June 24 to July 12) or CHF500 for local students who don't need accommodation. All students are responsible for organising their own domestic or international travel to Singapore.

All information about the Summer School can also be found on our [website >>](#).



## Contact

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Map of Singapore from 1815