

Researcher in Architectural Design & Infrastructure
For the Urban-Rural Systems project
ETH Zürich with Future Cities Laboratory, Singapore

Research Context

The position is offered in the context of research on 'Urban-Rural Systems: Seeding Adaptive Infrastructures', within the FCL programme. The research abstract is as follows:

This research is focused on the complex patterns of settlement emerging in the hinterlands of many large cities in Southeast Asia, India and China. All cities have their hinterlands of one kind or another. This study is specifically interested in the hinterlands of cities surrounded by tropical, wet-rice agriculture. It has this interest in part because many cities in Asia are surrounded by this kind of agriculture. More importantly, such hinterlands have very specific ecological, economic and demographic characteristics, which mean they interact with nearby urban growth in distinctive ways. Most notably, wet-rice agriculture supports relatively high population densities with fragmented land tenure arrangements. When cities encroach upon such areas, the rural does not immediately give way to the urban and instead a hybrid rural-urban typology emerges. Sometimes dubbed *desakota* landscapes (Indonesian for 'village' and 'city'), they are neither strictly urban nor rural in character, but a mixture of both.

Within that context, this research project will follow these general lines of research and development:

1. Research the spatial extent, rates of change, socio-economic character and ecological systems in *desakota* settlement types in Asia
2. Model the demographic, economic and ecological interdependencies in *desakota* landscapes (*desakota* systems)
3. Design a range of adaptable urban technologies and infrastructures suited to the transitional nature of *desakota* landscapes
4. Propose *desakota* as a model for a future sustainable urbanism.

The Position

The researcher role focusses on the urban and territorial aspects of the project as outlined above. The research may develop as a PhD project.

Responsibilities

The PhD Candidate has responsibility to:

1. Conduct research in Urban-Rural Systems (potentially towards a PhD at ETH Zürich or NUS)
2. Develop expertise through literature reviews and fieldwork on one or two of the project's urban case studies, such as:
 - Kolkata Metropolitan Region (KMR)
 - Dhaka Metropolitan Area (DMA)
 - Or other relevant region in the Indian sub-continent and Indo-China
3. Build on his/her existing urban design and/or planning expertise in one of the following disciplinary areas: building (construction methods, building materials), infrastructure (transport, energy, waste), computing (modeling, GIS, voluntary geographic information)
4. Present, process and analyse data in visual forms (GIS cartography, diagrams, charts and graphs, and urban/landscape drawings)
5. Contribute to collective design projects for urban-rural futures
6. Contribute to projects such as exhibitions, workshops, conferences and publications

Qualifications and Experience

We are looking for a highly motivated researcher holding a degree in Architecture or Urban Design/Planning, and/or with background in cognate discipline such as GIS, remote sensing, and/or infrastructure systems.

Experience in the field of urban planning is beneficial. Your English must be fluent, both written and spoken.

The appointee should have:

1. 2-year postgraduate degree in architecture, urban design/planning/engineering, or related field
2. Design and visual media experience (GIS, cartography, urban design, modelling)
3. Strong writing skills
4. Experience with research methods: literature review, data collection and analysis, fieldwork, design research
5. Computer modelling experience is an advantage
6. Passion for the 'Urban-Rural Systems' theme, and the overall aims and purpose of the Future Cities Laboratory

Our Offer

We offer a position in an international and highly interdisciplinary research group based at the Future Cities Laboratory. FCL is an interdisciplinary research programme of the ETH Zürich. It is located in Singapore and tackles the global consequences of urbanisation from the perspective of Southeast and East Asia. The guiding vision of the programme is to shape sustainable future cities by bringing together the domains of science and design. To that end, over 120 researchers – including architects, urban planners, engineers, computer scientists, ecologists, geographers, and social scientists – collaborate on themes such as high density cities, urban ecosystems, energy, cyber infrastructure, big data, mobility, spatial cognition and wayfinding, urban-rural systems, tourism and alternative construction materials.

You will be working in a team of 4 or 5 researchers in a vibrant and stimulating environment.

The post is available from September 2016.

The Singapore-ETH Centre is an equal opportunity employer and offers a competitive salary. Workplace will be in Singapore, with regular links to Zurich.

Applications including a comprehensive CV, summary folio, motivation letter and names of two referees should be sent to Prof. Stephen Cairns (cairns@arch.ethz.ch).