SEC Singapore ETH Centre
for Global Environmental Sustainability

ETH
Eidgenössische Technische Hochschule Zürich
Swiss Federal Institute of Technology Zurich

NUS National University of Singapore

NANYANG TECHNOLOGICAL UNIVERSITY

The Singapore-ETH Center for Global Environmental Sustainability offers

1 PhD position in Landscape Architecture Modeling and Visualizing

The position is offered in the context of the international joint project Future Cities Laboratory (FCL), which the Swiss Federal Institute of Technology Zurich (ETH Zurich) and the National University of Singapore (NUS) will run conjointly for the next 4 years. The position will be part of the pilot interdisciplinary module entitled "Landscape and Ecology", which will run under the Research Stream Urban Design Strategies and Resources of the ETH Zurich FCL in Singapore. The module deals with the interface between advanced landscape architecture modeling and simulation, urban hydrology, watershed modeling and hydrological ecosystem services. The site chosen for work on the landscape architecture of tropical urban peripheries is the Ciliwung River catchment in Jakarta.

The PhD will focus on new methods of landscape architectural design pertaining to selected locations along the Ciliwung River based on hydraulic models using advanced 3D computing parameters linked to GIS. The goal is to develop three-dimensional landscape tools allowing for ecological and hydrodynamic simulation. Sectors of the River will be designed, modeled and visualized coupling hydrological data with advanced terrain-modeling techniques. The resulting landscape design will be used to qualify local cultural and economic requirements while taking into account hydraulic responses to extreme flood situations. The research will look more particularly at the dynamics of existing river landscapes in the periphery of Jakarta, proposing a set of remedial scenarios that take into account comparative social, cultural and ecological benefits for each place under study. Various landscape scenarios will modify land use patterns, using vegetation to improve environmental conductivity and provide shade for alternative "soft" transportation networks that will further serve an ecosystem service approach. The candidate will need to have a good academic education (Master) in architecture, urban planning or landscape architecture with an emphasis on large-scale landscape modeling and visualizing and a sound knowledge of 3D numerical methods. Additional knowledge in landscape and ecological design is to be expected. Experience with 3D GIS and handling multivariable datasets and software combinations is preferred. The applicant will be highly motivated for scientific research and have specific interest in the topic with the appropriate background, have personal initiative, be comfortable with both team and independent work, and have good organizational skills. Very good spoken and written command of the English language at an academic level are required.

The position is open for all potential candidates with an application deadline set for May 31st 2011. Each candidate will be asked to submit an *electronic application* in the form of *two pdf files* to the application address indicated below. The *first pdf* will include a motivation letter, CV, Masters or diploma certificates and academic transcripts, the *second pdf* file will be a copy of the Masters thesis or diploma project. In addition two confidential letters of recommendation, also as pdf files, have to be submitted to directly to the application address.
The candidate will be enrolled as ETH Zurich/FCL PhD student, but the research will be conducted in Singapore throughout the doctoral period. The "Landscape and Ecology" team will be coached jointly by a Senior Researcher and a Post Doctoral researcher having proven knowledge of the relevant fields. The PhD student will join a vibrant research team in Singapore, working on a complex interdisciplinary project at the interface of landscape and ecology and computer simulation. Interviews will be conducted either at Singapore or Zürich. The position will start on 1.10.2011 or flexibly thereafter.

Additional information about the position may be obtained by writing to ETH Professor Christophe Girot: ila@arch.ethz.ch
Address for electronic submission: ila@arch.ethz.ch (maximum attachments 10 MB)