

WHAT'S UP?

Vol. 01 October 2017

Southeast Asia is urbanising rapidly forming a particularly intensive mix of green and built systems in a dispersed development pattern on the edge of urban centres. This settlement system has been identified and described by Terry McGee in his theory of “desakota” development. The settlements on the urban periphery integrate aspects of both rural and urban settlement systems and livelihoods. Its other distinctive features include the dispersed and nature of the villages throughout the urban periphery surrounding large global factories, interspersed between infrastructure and large expanses of rice fields and agricultural production.

A **prime concern** for these populations is housing. **New housing is being developed but is of low quality and short supply.**

This project seeks to address this fundamental human need and right through a holistic approach integrating both construction systems, technological change, community organisation, livelihoods and ecological sustainability.

Southeast Asian villages, although appearing rural are qualitatively modern places with residents engaging in both the industrial and post-industrial service based economy. They demonstrate varying degrees of digital literacy and self-sufficiency. Materials, forms and technologies used in the construction of such villages integrate both traditional and contemporary elements. Much of the housing in these settlements is “self-build” bottom-up systems.

Personalised digital fabrication has a potential to upgrade this settlement without massive investment. The project seeks to a flexible system adaptable to the ecological, climatic and topographic conditions of the monsoon environment through the combi-

nation of new digital techniques with both traditional and modern materials that can be made affordable to the locals.

The project will integrate local capacity and advanced technology in a process known as leapfrog development whereby industrial approaches are bypassed for more advanced post-industrial techniques and methods. The project will select 1-2 settlements and develop small personal digital fabrication techniques in collaboration with the locals through a process known as “co-design”. Local girls from a low-income family who are being trained by NGO in developing life skills will play an important bridge between villagers and technicians. Architecture students from the Royal University of Fine Arts will serve as the technician to fabricate the parts. Multidisciplinary experts will also be involved in the project for a more **comprehensive approach.**

Dear friends,

We would like to announce that eghub is bringing you the

INAUGURAL newsletter which will be issued every quarterly. We hope to use this platform **to connect with people, updating the latest happenings, ignite research interest and collaboration** so that we can come together **to learn, to invent and to make a difference to the environment and the people.** Do keep a look out for it and spread the words.

Yours Sincerely,

Environmental Design Global Hub, KYUSHU UNIVERSITY

DIGI FAB Urban Village Project

UNSW
X
KU



Dr Scott Hawken, UNSW



Dr Masaaki IWAMOTO, KU

This project is a **Joint Research** between the Kyushu University (KU), Environmental Design Global Hub and University of New South Wales (UNSW), Built Environment. The project is led by Dr Masaaki IWAMOTO from KU and Dr Scott Hawken from UNSW.

The **project team** comprises **various disciplinary experts** in the area of Architecture, Landscape and Urban Design, Smart City Technologies, Engineering in Material Science, Manufacturing, Environmental, Structure, Computational Design, Digital Fabrication and Anthropologist. Also, this project involved young architecture students and the young women from the low-income family. These experiences will provide them with life skill and new knowledge for their development.

LOOK OUT

for more details in our Annual Report 2018.

Desakota Technology Tradition Multi-Disciplinary Collaboration

Interview

with Professor Masakazu TANI

Professor Masakazu TANI is a professor of environment design in the Faculty of Design. He also serves as the dean of the faculty as of October 2017. This short interview focused on his newly release book.

I read on the eghub Facebook that you have published a book. Can you tell me more about it?

Oh, we recently published the book "Deforestation in the Teknaf Peninsula of Bangladesh". I am an editor of the book, and wrote the introduction and a chapter or two. There are other findings from other researchers working on this project.

Deforestation? Did forest deplete of trees?

Well, there are still trees. The area that we are focusing on is the Teknaf Wildlife Sanctuary. It supposed to be protected by the Bangladesh Forest Department. There should be abundant and healthy trees. In fact, long ago they have much wildlife, like wild boars, deers, and Asian elephants. We can't see them now. There is an only small number of trees. In fact, the forest covered with mainly shrubs and brushes. The new trees don't seem to be maturing. That's the worrying part.

本当 (Really)? If the forest is protected, how can it be in such an advanced state of deforestation? Logging or Farming issue?

Well, Teknaf is a very long, thin strip of land. The width is probably 5-10 km and length about 60 km. The piece of land is quite small. It makes up of mainly low hills and not much of plain areas. It is not enough to support the logging industry and definitely not suitable for agriculture.

Then why? What happened?

The people who are consuming the forest are the villagers who are staying near the forest or in the forest. The forest is supporting their livelihood by providing wood as fuel, wood as income, allowing betel leaf cultivation, etc. You can find out more from the book. But basically, they have no choice because they are poor and there is a lack of economic alternatives. The forest is their survival tools and resources.

そうですね (I see)...

The study aimed to elucidate social factors contributing to processes of deforestation, including poverty, migration of refugees, forest encroachment, and power relations entailed in forest management.

How long have you all been working on this project?

7 years. Still ongoing and concluding soon. The individual analyses presented in the book are entirely based on primary information obtained through original field work conducted over a period of 7 years, and on remote sensing using satellite imagery and GIS techniques.

Any recommendations to solve the problem?

We have. The second half of the book considers reforestation approaches such as social and homestead forestry that have wider applications within developing countries.

Thank you for the time. I believe many will look forward to read the book.



About...

Associate Professor Tomo INOUE

Associate Professor Tomo INOUE is the Vice Chairman of the Environmental Design Global Hub. His current research focuses on Steel Iron Archaeology and the Study of the potential of historical environment design in developing countries.

Currently, he is working with Associate Professor Lin Yu Chang from National Taiwan University of Science and Technology who is attached to Kyushu University for a year on researching fire prevention control measures applied to the preservation of historical buildings in Japan, Taipei, Singapore and Penang.



Historic buildings were built way before current safety laws such as Building Standard Law and Fire Safety Laws were implemented. To ensure that the historical buildings are to abide by the current safety laws, improvements such as remodelling, modification and installation facilities will be inevitable. These improvements may affect the historical and cultural values of historical buildings.

There is a need that the formation of safety laws to take into consideration of the preservation of Historical and Cultural values for Heritage Buildings.

They have recently visited Penang to understand the considerations taken by the relevant authority for the improvements made to the historic buildings.

Assistant Professor Yoichi KAWAMOTO

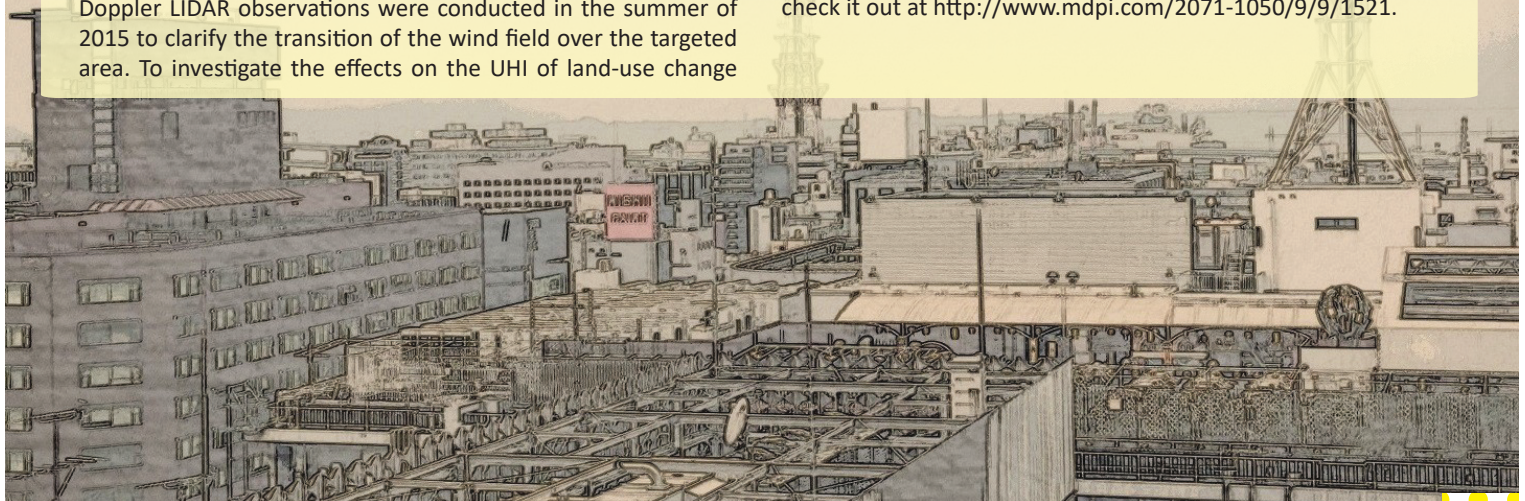
Assistant Professor Yoichi KAWAMOTO is a professor from the environment design in the Faculty of Design. His research interests lie primarily in urban environment, building environment and urban climatology. Recent years, his research focuses on Urban Heat Island phenomenon, which is a typical environmental problem encountered in dense urban areas during summer. He hopes his study will help to construct a more sustainable society in the aspect of thermal environment.

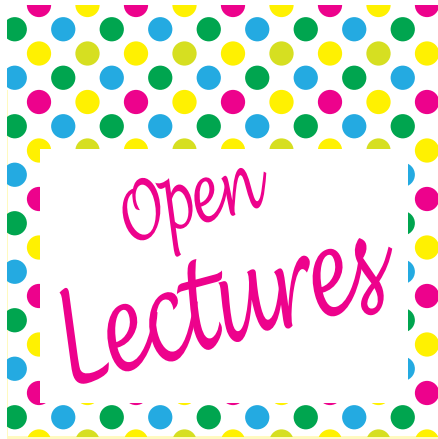
Recently, he had just presented his paper "Effect of Land-Use Change on the Urban Heat Island in the Fukuoka-Kitakyushu Metropolitan Area, Japan". In this paper, he was looking at the effect of the sea breeze in mitigating the Urban Heat Island phenomenon (UHI) at Fukuoka-Kitakyushu metropolitan area, which is located in the coastal area.

Doppler LIDAR observations were conducted in the summer of 2015 to clarify the transition of the wind field over the targeted area. To investigate the effects on the UHI of land-use change

related to urbanization, he used the National Land Numerical Information land-use datasets for Japan in 1976 (NLNI-76) and 2009 (NLNI-09) for the Weather Research and Forecasting (WRF) model. The results of the simulation showed that most of the northern part of the Kyushu region became warmer, with an average increase of $+0.236\text{ }^{\circ}\text{C}$ for the whole simulation period. Comparing the two simulations and the Doppler LIDAR observations, the simulation results with the NLNI-09 dataset (for the year closest to the study period in 2015) showed better agreement with the observations. The results of the simulation using NLNI-76 showed faster sea breeze penetration and higher wind velocity than the observations. These results suggest that the land-use change related to urbanization weakened the sea breeze penetration in this area.

If you are interested to know more about the study, please check it out at <http://www.mdpi.com/2071-1050/9/9/1521>.





AGING and HOUSING in Australia

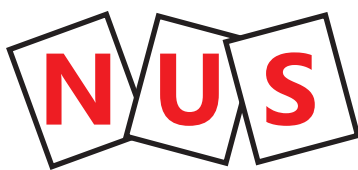
May
17

Professor Bruce Judd from University of New South Wales was with us in Kyushu University to share on his research for an open lecture on 17th May 2017 and a mini-symposium on 19th May 2017.

Prof Bruce Judd started this research in responding to a research question in the Housing and Ageing research area of the 2007 AHURI Research Agenda which asks the following questions: 'What are the types, sizes and locations of dwellings occupied by older home owners? How do these patterns vary for different household sizes? What incentives or disincentives could encourage or discourage the efficient use of dwellings and land occupied by older home owners?'



MORE
Prof Judd will share with us more in Dec 2017



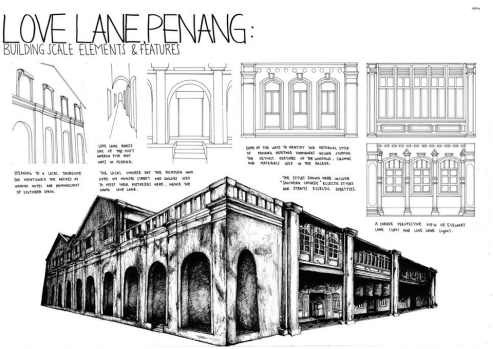
National University of Singapore Architecture Curriculum

Dr Junko TAMURA shared about the Architecture Curriculum of National University of Singapore (NUS). She gave an overview of the B.A.(Arch) four-year honours degree programme, how it leads the students to various specialisation, then proceeding to Master Programme and ultimately to become licensed Architects or to join the academia.

Her talk mainly focused on the Architecture Year 1 programme, with some highlights to the 2nd to 4th-year programme and the Master programme. In year 1, the design modules are taught through design studios. There are two main design studio modules, namely "Why we design?" and "How we design?".

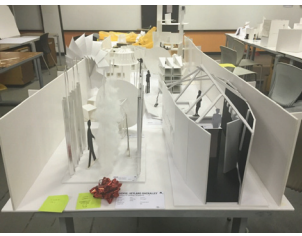
The module on "Why we design?" aimed to explore inner motivations and intuition for design, cultivate design fundamental through trying different approaches and gaining exposure to a wide range of ideas and issues that the discipline of architecture encompasses. Some of the topics include Ethics in Environment Design, Community Mapping, 12 senses, Topology, Landscape Design, Urban Planning, Sustainability Architecture, Exploring and Experimenting new materials, etc. The assignments are designed in collaboration with

the experts of the topic including industry partners. Most assignments will start with an introductory lecture after which students embarked on field trips, site visits, measurement and study of buildings for research, investigation and documentation. These lead



to the proposal of solutions via writings, sketches and models, followed by critique sessions which form the critical part of the studio procedure in teaching as it allows participation, sharing, questioning to deepen the knowledge and refining the minds.

The module on "How we design?" aimed to develop both graphical and crafting skills such that students can handle scale, dimension, and quantity appropriately and accurately. There are three projects, namely, "City", "Architecture" and "Man". They are designed specifically to deal with three



different scales. Each project explored how to design and operate at different scales, addressing the appropriate functions and capacities for our built environment.

June
6



Examples of the year one assignment and students' works, as well as other modules from Master of Urban Design course (MAUD) and year five thesis, were shared during this lecture.



Urban Heritage and Urban Development in Southeast Asia's Emerging Megacities: human rights based approaches

Dr Scotts Hawken from Built Environment, The University of New South Wales, Sydney, gave a lecture on 26 June 17.

Emerging megacities in Southeast Asia are faced with the daunting task of delivering vast quantities of urban services and environments to accommodate rapidly growing urban populations. Hierarchical and formalistic organisation dominates urban planning in these transitioning societies. This centralised approach does not have access to the resources necessary to deliver the required infrastructure and services for urbanising populations. Bottom up vernacular approaches offer a viable alternative to deliver such urban services and infrastruc-

ture and a way to continue the deep urban traditions of southeast asia. Despite this, urban development authorities have overlooked urban landscape heritage as an asset and a resource in delivering urban infrastructure and associated human rights. As a result, vernacular urban heritage has been threatened, and the urban poor are marginalised and deprived of a range of critical human rights.

Dr Hawken's talk first sets out to demonstrate the depth and richness of Southeast Asia's urban heritage as a distinct form of urbanism overlooked by Eurocentric urban historiographies. He discussed three aspects or particular types of urban heritage that

have developed distinctive indigenous Southeast Asian characteristics over two millennia.

1. vernacular settlement systems and architecture
2. street based commerce and the use of public space
3. green or ecological infrastructure such as urban agriculture

He then went on to explain the linkage between these types of heritage to human rights based development. For each type of heritage, he highlighted its potential to support specific human rights and address the multidimensional characteristics of poverty. The range of urban services delivered by vernacular urban development was contrasted with the range of services delivered or denied by formal urban megaprojects. These megaprojects require large tracts of land that often displace existing traditional or poor migrants, often built for the middle to upper class. Typically, such megaprojects don't interface well with existing urban or rural environments.

He concluded by demonstrating that the key to achieving more inclusive cities and accelerating poverty reduction in the Southeast Asia's emerging megacities is to better integrate top down urbanisation model as embodied by the 'megaprojects' with bottom up approaches offered by 'vernacular urbanism'.



Meiji's Architect Chuta Ito journey to the Ottoman Empire

Chuta Ito is the first generation Japanese Architect and Japanese Architecture Historian. His work and discovery have made great impacts even now.

Dr Miyuki Aoki Girardelli from Istanbul Technical University, has been researching about his work and traced his journey to Ottoman Empire.

During Chuta Ito's time, the book written by Fergusson was almost the only architectural history document that was introduced to Japan. In the book, he overlooked the Japanese architecture. Fletcher, one of the most influential architecture historian in 19 Century, explained it in his tree diagram that the west is developing, but all other countries architecture were passive. They are classic examples of western supremacy and biased architectural historiography.

Chuta Ito was indignant, repulsed. He is determined to change that view.

"What if Japanese Architecture is connected to Greece, the royal road of Western architectural history in its origin? Japanese architecture should be incorporated into the history of world architecture at least as a related entity in the history of western architecture and its origin, and its status in the world should improve. "

And hence, his three years journey to Euroasian began. He went to China, Myanmar, India, Middle East, Europe and North America to look at the various architecture, culture, religion, people and drawing a comparison and the relationship between the different countries. He recorded all his findings through detailed colour sketches and notes in his journals. He also took numerous photos using glass dry plates. All these are currently kept in The Architectural Institute of Japan.

With his horizons widened, Chuta Ito developed an extensive theory of architectural evolution, which encompassed European, Middle Eastern and Asian building styles.





to Associate Professor Yuki KATO

Winning the Award from the Society of Architectural History of Japan

Dr Yuki KATO was awarded by the Society of Architectural History of Japan recently on his research on how knowledge of the ancient architecture was derived and understood by the Japanese scholars during the early modern period and how this knowledge was then handed down (or not handed down) to modern architectural historians. Modern Kokugaku (国学, National Learning) played a critical role in bridging early modern and modern knowledge through the publication of extensive compilations and book series in transmitting the historical knowledge to modern architectural historians such as Ito Chuta.

His study focused mainly on the architectural history of the Ise Grand Shrine and residential

architecture. These buildings have undergone many restorations with the aspiration to return to its original states. There have been historical studies for restorations throughout the 18th and 19th centuries and each study brought about new understandings of the ancient buildings which have helped to in the restorations of the buildings. Hence, continual historical studies are needed to uncover a new understanding of the ancient buildings to lead us closer to the truth and the true restoration to the ancient state.

This study was published in the book, “近世.近代の歴史意識と建築 (Historical Consciousness and Architecture in Early Modern and Modern Japan)”.

Currently, Dr Yuki KATO is continuing his research in this area but expanding the scope to other Shrine architecture and Kyoto Imperial Palace.



HISTORY of ARCHITECTURE HISTORY

October 2017

- Dr Junko TAMURA from the National University of Singapore (NUS) will be the guest to the final presentation by Kyushu University (KU) students on the joint workshop between NUS and KU in August 2017.
- Research Students from Asia joining Kyushu University.
- The International Symposium on Quality Assurance in Design Education on 21 October 2017 organised by the Faculty of Design, Kyushu University.
- Discussion workshop with the Landscape Architecture Team from NUS on a possible collaboration with eghub.
- Exchange students from Ming Chuan University, École Nationale Supérieure d'Architecture de Paris La Villette, École nationale supérieure d'architecture et de paysage de Bordeaux.

November 2017

- The 22nd International Forum on Arsenic Contamination of Groundwater in Asia on 3 and 4 November 2017.

December 2017

- Symposium on Ageing and Housing will be held in Kyushu University with Dr Bruce Judd from University of New South Wales, sharing his expertise. It will be followed by a discussion on details of collaboration in 2018.

January 2018

- Visit Chittagong to research an adaptive use of vernacular buildings. A collaboration between architecture historians from NUS and eghub.

February 2018

- Sakura Science Programme in February 2018. Invited participants will be coming together to share and learn through symposium, workshop and visit to Kyoto, Kagoshima and Kumamoto.

Coming UP!

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