Enclosure 1: WUDAPT Workshop Details

WUDAPT Workshop

Organizers:	School of Architecture, The Chinese University of Hong Kong (CUHK) School of Geography, Planning & Environmental Policy, University College Dublin The University of North Carolina The International Institute for Applied Systems Analysis
Date:	12–13 December 2015 (Sat & Sun)
Time:	8.30am – 5pm
Venue:	LT 9 on 12 December, Saturday LT 4 on 13 December, Sunday 2/F, Yasumoto International Academic Park (YIA), CUHK
Language:	English
Fee:	No registration fee. Overseas participants are expected to cover their own travel, accommodation and meal expenses.
Online registration:	http://goo.gl/forms/GN1okvEHPE (Deadline: 30 October 2015)
Enquiry:	Miss Wong Sze Wai (szewai@cuhk.edu.hk)

Speakers

Dr. Gerald Mills

Head of School
School of Geography, Planning & Environment Policy
University College Dublin
Dublin, Ireland

Dr. Jason Ching

Senior Research Fellow
Institute for the Environment,
University of. North Carolina at Chapel Hill
NC, USA

Dr. Iain Stewart

Postdoctoral Fellow
Sustainable Infrastructure Research Group, Department of Civil Engineering
Global Cities Institute, Daniels Faculty of Architecture, Landscape and Design
University of Toronto
Toronto, Canada

Enclosure 2: WUDAPT introduction and workshop agenda

Mapping Urban Landscapes and their Climate Effects

WUDAPT workshop December 12-13th

Chinese University of Hong Kong.

The World Urban Database and Access Port Tools (WUDAPT) initiative (www.wudapt.org) is a community-driven data collection initiative that draws upon the considerable network of urban climate scientists around the world. At its core, WUDAPT describe the physical geography of cities by capturing information on urban form (e.g. building density) and function (e.g. energy demand) at a suitable scale for urban climate studies and modelling. **Mapping Urban Landscapes and their Climate Effects** will introduce the WUDAPT project, show how urban parameters can be acquired and demonstrate the value of these data for climate-based urban planning. Our focus will be on the rapidly growing cities of China but we will also compare their emerging forms with those of other cities in Europe and the Americas.

The basic structure of cities is captured using the Local Climate Zones (LCZs) scheme, which categorizes natural and urban landscapes into distinctive types, each of which is recognizable from aerial and satellite imagery. Each LCZ is associated with a unique combination of urban parameter values that capture aspects of urban form and function that regulate the micro-climate. By itself, a LCZ map of a city provides a standard, common means for characterizing cities and can improve the data inputs needed to run urban climate models. Moreover, the LCZ map also provides a sampling framework for gathering more detailed urban parameter information. Further detailed data collection efforts will use a citizen science approach to gather information on building materials and function, landscape morphology and vegetation types. The ultimate goal of the WUDAPT project is to develop a detailed, open access, urban database for all major cities in the world, which will have value for many applications including planning for climate resilience, energy modeling, greenhouse gas assessment, etc.

The structure of the workshop reflects the design of the WUDAPT project. The first day is devoted to an understanding of the character of the urban landscape using the LCZ system and a demonstration of how LCZ maps are generated. The outcome of this work will be descriptions of the physical geographies of cities in climate-relevant terms. The second day is focused on the use of these data to make informed decisions about the form and functions of cities using simple models.

Saturday 12th December

LT9, 2/F, Yasumoto International Academic Park (YIA), The Chinese University of Hong Kong

Mapping

Time	Topic	Who
0830-0930	Introduction to WUDAPT (GM & JC)	GM, JC
0930-1030	LCZ (Iain Stewart)	IS
1030-1100	Coffee	
1100-1200	Recognising LCZ and digitizing (Michael Foley, Paul Alexander)	IS, MF, PA
1200-1300	Generating LCZ maps from Landsat	MF, GM, PA
1300-1400	Lunch	
1400-1530	Acquiring Level 1 data: Selected Chinese cities	MF, PA, GM
1530-1600	Coffee	
1600-1700	Acquiring Level 1 data contd.	MF, PA, GM

Sunday 13th December

LT4, 2/F, Yasumoto International Academic Park (YIA), The Chinese University of Hong Kong

Modelling

Time	Topic	Who
0830-0930	Comparing LCZ maps and level 1 data	JC, GM, IS
0930-1030	Urban climate models and UCPs – WRF and canopy models	JC, GM
1030-1100	Coffee	
1100-1200	Introducing LUMPS	PA
1200-1300	Running LUMPS using Level 0 and Level 1 data	PA, GM, MF
1300-1400	Lunch	
1400-1530	Interpreting model results	PA, JC
1530-1600	Coffee	
1600-1700	Next steps: Joining WUDAPT	GM, JC

IS: Iain Stewart

GM: Gerald Mills

JC: Jason Ching

PA: Paul Alexander

MF: Michéal Foley

Enclosure 3: Pre-workshop preparation

Pre-reading List

[About the need]

Ching, J., Mills, G., Fedema, J., Oleson, K., See, L., Stewart, I., Bechtel, B., Chen, F., Neophytou, M. and Hanna, A. 2014. Facilitating advanced urban canopy modeling for weather, climate and air quality applications. American Meteorological Society Symposium on Urban Environment, 2-7 February 2014, Atlanta Georgia. Available from: https://ams.confex.com/ams/94Annual/webprogram/Paper236443.html.

[Introduction to the WUDAPT project]

WUDPAT Introductory Video: http://www.wudapt.org/wudapt-video/

Mills, G., Ching, J., See, L., Bechtel, B., Feddema, J., Masson, V., Stewart, I., Neophytou, M., O'Connor, M., Chen, F., Martilli, A., Grimmond, S., Alexander, P., Foley, M., Gal, T., Wang, X., Mitra, C., Pereira, N., Steeneveld, G.-J. Introduction to the WUDAPT Project. Available from: http://www.wudapt.org/wp-content/uploads/2015/05/Mills_etal_ICUC9.pdf

http://www.wudapt.org/wp-content/uploads/2014/10/WUDAPTProjectMeetingSummary.pdf

[About the concept of LCZ framework]

http://www.wudapt.org/lcz/lcz-framework/

Stewart, I. D., & Oke, T. R. (2012). Local climate zones for urban temperature studies. Bulletin of the American Meteorological Society, 93(12), 1879-1900.

[About the LCZ workflow]

Bechtel, B., Alexander, P., Böhner, J., Ching, J., Conrad, O., Feddema, J., Mills, G., See, L. and Stewart, I. 2015. Mapping local climate zones for a worldwide database of form and function of cities. International Journal of Geographic Information, 4(1), 199-219. doi:10.3390/ijgi4010199. [pdf here]

More materials are available on the WUDAPT's website:
http://www.wudapt.org/outreach/papers/