eCAADe 2017 – Workshop Proposal

(18-19 Sept. 2017 @Sapienza, University of Rome)

Title of the Workshop:

Parametric Design of Street Profiles

Workshop Organizers

Full name

1. José Nuno Dinis Cabral Beirão
2. Rui van Zeller de Klerk Mota

Affiliation

Faculdade de Arquitetura, Universidade de Lisboa

Rua Sá Nogueira, Pólo Universitário, Alto da Ajuda
1349-063 Lisboa, Portugal

Short Bio:

1. José Nuno Beirão is Assistant Professor at the Faculdade de Arquitectura, Universidade de Lisboa – FAUL – Architecture Department.

   He graduated in architecture from the Faculty of Architecture of the Technical University of Lisbon in 1989. Practiced architecture and urban design since then starting the architectural firm B Quadrado Arquitectos with Miguel S. Braz in 1998. José Nuno Beirão concluded his Master's degree in Urban Design in 2005 at ISCTE and his PhD dissertation entitled 'CItyMaker: Designing Grammars for Urban Design' at the TU Delft Faculty of Architecture in 2012. He developed a method and a set of tools to generate alternative solutions for different urban contexts by combining design patterns encoding typical design moves by means of shape grammars. The integrated set of tools, involving analytical, generative and assessment tools have been argued to constitute the basis of the concept of city information modelling whose acronym CIM can be read in the title, CItyMaker. His research interests are involved in the development of customizable and flexible design systems, focused on housing since 1998 and more intensively on urban design since 2001. His current interests are focused on the development of shape grammars for urban design and on the use of the generative capabilities of shape grammars to support the urban design process and foster design exploration. He is presently Co-Coordinator of the research project 'Measuring Urbanity', http://ciaud.fa.utl.pt/index.php/pt/projectos-2/urbanismo?id=533 , hosted by CIAUD.

   He is responsible for the Parametric Urban Design chair integrated in the Advanced Studies on Computation for Architecture, Urbanism and Design at the Faculdade de Arquitectura, Universidade de Lisboa.

2. Rui de Klerk holds a MSc degree in Architecture from the Faculty of Architecture, University of Lisbon (FAUL) since 2012 and is currently a PhD Candidate in Design and Computation applied to Architecture at the same Faculty, with a research on Semantic Design Systems.

   He is also a Research Fellow at the Research Centre for Architecture, Urbanism and Design (CIAUD), at the Faculty of Architecture (University of Lisbon), integrating the research project "Measuring Urbanity: densities and urban performance of extensive urban fabrics. The Portuguese case" (CIAUD_BI_09/ EAT/04008) with an FCT/MEC grant.

   From April 2015 to May 2016 he integrated the research project "TECTON 3D – Digital Mockup: Touching the 3rd dimension" (PTDC/EEI-SII/3154/2012) with an FCT grant, working on the development of an application for procedural modelling in immersive virtual reality environments.

   During 2013, he worked as a research intern in the project "O Lugar da Villa Renascentista na Arquitectura Portuguesa" coordinated by Professor Amílcar de Gil e Pires (FAUL).

   He is also a practicing architect and worked at (EMBAIXADA Arquitectura, 2013-2014; Esfera de Imagens, 2014-2015), collaborating in the development of national and international projects – from which we can highlight the Honorable Mention in the competition for the new Library of Setúbal and requalification of José Afonso Square (EMBAIXADA arquitectura, 2013).

Experience on conference/workshop organization:

1. José Nuno Beirão:

   International Workshop: "Spatial Computation for Design and Analysis of Urban and Architectural Environment" TU Delft, Faculty of Architecture and the Built Environment, Delft, Holanda
   Dezembro, 12 – 14, 2016, (integrated in the Erasmus mobility programme).

   Genoa summer School 2016, http://www.genoasummerschool.it/2016

   International Workshop: Progettazione Urbana Parametrica, Torino, May, 6th, 2016. At Politecnico di Torino.

   Organization of Conference "101 Concepts of Architecture and Urbanism in the Digital Era" Including book release with the same name; With the presence of the Editor, Prof. Fernando Lima (Federal University of Juiz de Fora) and Lecture by co-author Afonso Orciuolli (International University of Catalonia)
   Location: Faculty of Architecture of the University of Lisbon - Cubo
   12/13/2016, between 2:00 p.m. and 5:30 p.m.

   Anselmo Jewelries Workshop
   The role of new technologies in the development of a corporate image for the Anselmo Jewelries. Faculty of Architecture, University of Lisbon, December 2013 – February 2014

   International Workshop:
   Urban Datascope, eCAADe TUDelft, September, 16th, 2013

   Extended Workshop and Parametric Urban Design program:

Unicamp, August 19th - September 10th, 2013

International Workshop:
Tarlabasi Datascope, ITU, Istanbul, May, 13th – 20th, 2013
Workshop information and results available at http://tarlabasidatascope.wordpress.com/

International Seminar and Workshop:
Measuring Urbanity, FAUTL, Lisbon, May, 7th – 12th, 2012
Workshop information and results available at http://www.measurb.org/en/home.html

Organization of the workshop 'Generative Urban Design' for the Third Design Computing and Cognition Conference 08 at Atlanta on June, 21st
(workshop information and workshop proceedings available at http://mason.gmu.edu/~jgero/conferences/dcc08/).

Beirão, J. N., Duarte, J. P., & Stouffs, R. (2008). Proceedings of Workshop 1 on Generative Urban Design. 3rd International Conference on Design Computing and Cognition. Georgia Tech, Atlanta, GA, U.S.A.

Workshop **South Periphery: a house**. With Manuel Gausa (Inst. de Arquitectura Avanzada de Catalunya). FAUTL, 10th to 13th, March, 2005. Scientific Coordinator – José Pinto Duarte. Organizors: José Nuno Beirão, Carlos P. Sant'Ana.

2. Rui de Klerk:

May 2016 - Closing workshop of the research project **TECTON3D: Digital Mockup: Touching the 3rd dimension** [PTDC / EEI-SII / 3154/2012], consisting of modelling experiments, a series of lectures, a discussion panel, and the Digital Alberti exhibition (at the Faculty of Architecture, University of Lisbon) - https://tecton3d.wordpress.com/2016/05/25/closing-workshop/

From 2015 to present date - **DCG lectures** (http://dcg.fa.utl.pt/lectures/), held by the Design and Computation Group (DCG) of the Faculty of Architecture, University of Lisbon. These lectures are held on a regular basis at the Faculty of Architecture, University of Lisbon, bringing researchers and students on the field of design and computation together to present their work, followed by a debate.

1st Semester of 2004 - **17th Jobshop AEIST**, a job fair held by the Students Association of Instituto Superior Técnico (former TU Lisbon) with the participation of dozens of enterprises. Parallel to the job fair, Rui de Klerk also organized a conference cycle where some of the enterprises would present themselves to the academic community, closing with a large conference entitled "**The other face of Engineering**", moderated by Dr. Fernando Ramôa Ribeiro (1945-2011) and with the honourable presence of Dr. Maria de Lourdes Pintasilgo (1930-2004), among other guests from different fields.

Objectives:

The main objective of this workshop will be to present the CIM-St tool to the academic CAAD community, frame it within the CItyMaker toolset and parametric urban design methodologies and gather user feedback to support further development of the tool.

Another objective is to promote parametric design methodologies among the participants, providing them with the necessary tools to achieve that.

Scope:

The workshop will be directed to both architects and urban designers, but is open to any willing participant.

Contribution to the conference:

In this workshop, we will present and experiment with CIM-St tool for parametric street profile design. The workshop will provide a practical and pragmatic complement to the corresponding paper presentation during eCAADe 2017.

Participants will 'dig deeper' into the inner workings of this parametric design tool, which associates semantics with a generative design system, and experience with an alternative and expedite method to design street profiles.

Expected outcomes or skills acquired by the participants:

Participants will learn parametric methodologies applied to urban design, more specifically, to the design of street cross sections. They will also learn how to quickly create these designs with the aid of CIM-St, supported by real time analysis of the proposals.

After this workshop, participants are expected to be able to use CIM-St without difficulties and generate qualified designs in an expeditious fashion.

Workshop size:

Half day (4 hours).

Tentative program:

1. The workshop will start with an overview of the CIM-St parametric design system and its interface, framing it within the CItyMaker toolset and parametric urban design methodologies;

2. Users will be given an urban design problem, requiring them to propose street profile design solutions for a given area based on a set of constraints. This will require them to become familiar with CIM-St's interface and experiment with it extensively;

3. After the design stage, participants will be asked to complete a questionnaire regarding the usability of the design system;

4. The workshop will close with a debate among participants, where they are expected to share their design proposals for the area and argument in their favour, with the support of CIM-St's real time visual analytics.

   Besides a comparison between designs, the debate will also focus on the methodologies

and tools used to accomplish them, straining their advantages and disadvantages.

Prerequisite skills of participants and if they are required to bring their laptops:

There are no prerequisite skills of the participants to participate in this workshop.

Participants are required to bring their laptops and should have already installed a working version of Rhino 5 with Grasshopper 3D.

Logistic and technical requirements, in terms of space, wiring, projectors, audio devices, digital recording, laser cutters, printers, etc.:

In terms of space, the workshop requires enough room to comfortably accommodate all participants while using their laptops (with access to energy supply).
We will also require internet connectivity for everyone and one projector + canvas.

Maximum number of participants:

25