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Workshops eCAADe 2012

Schedule

Everyone who has registered for eCAADe 2012 is entitled to participate in the workshops preceding the conference. There is no additional fee required for people who are registered for eCAADe 2012. People who are not registered at eCAADe 2012 do not have access to the workshops.

Workshops are hosted by the eCAADe 2012 conference organisation and the Faculty of Architecture, Czech Technical University, but the organisation and actual running of the workshops is in the hands of the individual workshop organisers. The workshops are provided as service; cancellation or change in program is non-refundable.

There is no limit to the amount of workshops a person can register for. Please register with the contact people that are listed at the various workshop topics.

Day	Track 1	Track 2	Track 3
Monday 10 September 2012 – Morning 9:00 – 13:00	<p><i>Open Systems & Methods for Built-Environment Modeling: Techniques & Concepts</i> Room s147c (basement computer lab)</p> <p>Stefan Boeykens (KU Leuven) Andre Chaszar (O Design Consulting and Research) Volker Mueller (Bentley Systems) Pieter Pauwels (Ghent University) Rudi Stouffs (TU Delft)</p> <p>For registration to the workshop, please contact Pieter Pauwels (p.pauwels@uva.nl)</p> <p>This is a half-day workshop. More info here.</p>	<p><i>Netlogo & Agents 1: Netlogo Basics</i> Room 201 (first floor)</p> <p>Gabriel Wurzer (TU Wien) Wolfgang Lorenz (TU Wien) Nikolay Popov (Unitec)</p> <p>For registration to the workshop, please contact Henri Achten (ecaade2012@fa.cvut.cz)</p> <p>This workshop can be combined with <i>Netlogo and Agents 2: Netlogo Simulation Exercise</i> but also taken separately (no prior knowledge needed). More info here.</p>	<p><i>Evolute 1: paneling / geometry optimization / developable strips / scripted facades</i> Room s147b (basement computer lab)</p> <p>Florin Isvoranu (Evolute GmbH)</p> <p>For registration to the workshop, please contact support@evolute.at</p> <p>This is the first half of a whole day workshop. The second half is given on Monday afternoon <i>Evolute 2</i>. Please register for both parts. More info here.</p>
Monday 10 September 2012 – Afternoon 14:00 – 18:00	<p><i>Design Refinement with Conflicting Objectives – Design Space Exploration</i> Room s147c (basement computer lab)</p> <p>Volker Mueller (Bentley Systems)</p> <p>For registration to the workshop, please contact Volker Mueller (volker.mueller@bentley.com)</p> <p>This is a half-day workshop. More info here.</p>	<p><i>Robots in Architecture 1</i> Room 201 (first floor)</p> <p>Sigrid Brell-Cokcan Johannes Braumann (Robots in Architecture)</p> <p>For registration to the workshop, please contact Henri Achten (ecaade2012@fa.cvut.cz)</p> <p>This is the first half of a whole day workshop. The second half is given on Tuesday morning <i>Robots in Architecture 2</i>. Please register for both parts. More info here.</p>	<p><i>Evolute 2: paneling / geometry optimization / developable strips / scripted facades</i> Room s147b (basement computer lab)</p> <p>Florin Isvoranu (Evolute GmbH)</p> <p>For registration to the workshop, please contact support@evolute.at</p> <p>This is the second half of a whole day workshop. The first half is given on Monday morning <i>Evolute 1</i>. Please register for both parts. More info here.</p>
Tuesday 11 September 2012 – Morning 9:00 – 13:00	<p><i>Autodesk Infrastructure Modeler: Urban Planning Design for Infrastructure Modeling</i> Room s147c (basement computer lab)</p> <p>Bjorn Wittenberg (Autodesk GmbH) and Andreas Lippold (Autodesk GmbH)</p> <p>For registration to the workshop, please contact Bjorn Wittenberg (Bjoern.Wittenberg@autodesk.com)</p> <p>This is a half-day workshop, which can be followed separately, but also a continuous workflow with <i>AutoCAD Civil 3D</i> will be presented. More info here.</p>	<p><i>Robots in Architecture 2</i> Room 201 (first floor)</p> <p>Sigrid Brell-Cokcan Johannes Braumann (Robots in Architecture)</p> <p>For registration to the workshop, please contact Henri Achten (ecaade2012@fa.cvut.cz)</p> <p>This is the second half of a whole day workshop. The first half is given on Monday afternoon <i>Robots in Architecture 1</i>. Please register for both parts. More info here.</p>	<p>AB-USE Computation in Architecture 1 Room s147b (basement computer lab)</p> <p>Yannis Zavoleas (University of Patras) Ioanna Symeonidou (TU Graz)</p> <p>For registration to the workshop, please contact Yannis Zavoleas (yazavol@gmail.com)</p> <p>This is a half-day workshop which can be combined with <i>AB-USE Computation in Architecture 2</i> for application of presented techniques and theory. More info here.</p>
Tuesday 11 September 2012 – Afternoon 14:00 – 18:00	<p><i>AutoCAD Civil 3D: Building Information solution for civil engineering</i> Room s147c (basement computer lab)</p> <p>Bjorn Wittenberg (Autodesk GmbH) and Tomas Lendvorsky (Autodesk GmbH)</p> <p>For registration to the workshop, please contact Bjorn Wittenberg (Bjoern.Wittenberg@autodesk.com)</p> <p>This is a half-day workshop, which can be followed separately, but also a continuous workflow with <i>AutoDesk Infrastructure Modeller</i> will be presented. More info here.</p>	<p><i>Netlogo and Agents 2: Netlogo Simulation Exercise</i> Room 201 (first floor)</p> <p>Gabriel Wurzer (TU Wien), Wolfgang Lorenz (TU Wien), Nikolay Popov (Unitec)</p> <p>For registration to the workshop, please contact Henri Achten (ecaade2012@fa.cvut.cz)</p> <p>This workshop can be combined with <i>Netlogo and Agents 1: Netlogo Basics</i> but also taken separately (some knowledge of Netlogo required). More info here.</p>	<p>AB-USE Computation in Architecture 2 Room s147b (basement computer lab)</p> <p>Yannis Zavoleas (University of Patras) and Ioanna Symeonidou (TU Graz)</p> <p>For registration to the workshop, please contact Yannis Zavoleas (yazavol@gmail.com)</p> <p>This is a half-day workshop which can be combined with <i>AB-USE Computation in Architecture 1</i> for introduction to techniques and theory. More info here.</p>

Open Systems & Methods for Built-Environment Modeling: Techniques & Concepts

Organisers: Stefan

Boeykens (KU Leuven)
Andre Chaszar (O Design Consulting and Research)
Volker Mueller (Bentley Systems)
Pieter Pauwels (Ghent University)
Rudi Stouffs (TU Delft)

The improved integration of various design and analysis tools and techniques has long been a goal of ICT research and development, in AECO as well as other related domains, but the goal remains elusive. Decades of engineering-inspired and automation-oriented efforts have tended to oversimplify the nature of architectural/engineering design activity and the challenges of providing proper ICT support for this. The result has been ICT approaches which advocate and rely upon standardization of ontologies and workflows in an effort to find and enforce agreement on the way in which information should be represented and exchanged. While this allows control of the types and relationships of data to be handled and processed, it also constrains information representation and exchange to these types and relationships. Yet such approaches via concepts, systems and methods adapted from manufacturing and

Registration is possible only for eCAADe 2012 registered participants.
Contact & registration for this workshop: Pieter Pauwels (p.pauwels@uva.nl)
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Monday September
10, morning
9:00-13:00

other engineering fields seek to impose workflows derived from formulating and solving well-structured problems, which do not entirely address the ill-defined (aka "wicked") nature that often characterizes the design of complex artifacts and systems such as buildings, urban agglomerations and civil infrastructure. This is shown by symptoms, challenges and shortcomings of ICT support for design and construction such as the following:

- different producers and users of information about projects do not simply need to work with partial subsets of the total project data, but instead they actually represent, think about and communicate these data differently, namely with partial and parallel subsets that are not part of one total project model;
- fully transparent and rational bases for design (and policy) decision-making are rarely found in practice;
- automation risks dehumanizing and thus invalidating design outcomes, due to users' lack of trust in 'black box' processes;
- the aim of producing known design types more quickly and with fewer errors assumes that known solutions are adequate, requiring no significant amount of innovation;
- procedural modeling approaches can in some cases aid thorough exploration of given design spaces, but they are unable to meaningfully expand those spaces;
- pre-determined workflows are unlikely to be valid for more than a relatively small (i.e. highly constrained) set of design situations, if any.

None of the approaches outlined above has as yet resulted in ICT systems capable of effectively support designers so that they can reliably produce valid, innovative designs with any significant degree of complexity. Thus, we are interested in exploring the potentials of more open systems and methods which require less standardization and provide more flexibility to overcome these shortcomings.

Workshop aims

The proposed workshop aims to gather researchers, practitioners and developers for exploring and advancing alternative approaches which allow the highest practicable degree of workflow customization and user-ontologies, in order to avoid the excessively limiting aspects of the currently prevalent approaches to design-analysis integration.

The workshop follows an initiating event on this topic held at CAAD Futures 2011 in Liege that was well attended (20+ participants, 8+ countries). This second event will afford to attendees of that first event and to others who have joined the OSM group subsequently as well as to anybody else interested in the topic, a networking and brainstorming opportunity to further the objectives of the Open Systems & Methods for Built-Environment Modeling effort. At this workshop participants will be able to share views on this topic, present related work done in the interim, and plan further steps for collaboration.

The workshop is intended as a working session for collaboration among experts and newcomers to the topics covered. We will publish a 'call for demonstrations' inviting workshop participant to present their prototypes for tool-linking and data-mapping, as the basis for subsequent discussions. We also hope to collect and publish position papers of attendees as well as relevant articles, produce a poster summarizing the workshop's findings, and generate ideas for funding proposals to support further work in this area. Therefore, the workshop is open to all interested participants.

Participants are welcomed to submit a 2-page paper that suggests an alternative and innovative approach to the topics described above, and/or a description of a demonstration dealing with these issues. The suggested template for this would include: 1) Introduction with context; 2) suggested solution; 3) demonstration outline; and 4) conclusion. The submitted proposals will be peer-reviewed, and selected participants will be able to interactively demonstrate their suggested approaches and receive feedback during the workshop. The educational aim of the workshop is twofold: on the one hand, participants will learn new open systems and methods that could be deployed as alternative solutions to the topics covered by the workshop; on the other hand, the event aims at an interactive discussion about the feasibility of solutions and about the problem situation itself. An indicative list of possible topics for presentations is given below, representing some more specific aims which the workshop would work toward:

Representing human factors

- better represent social and cultural aspects in the data models of complex, distributed, interactive systems, and integrate that information into modeling and simulation of design solutions;
- describe user models of unquantifiable factors in semantic modelling tools or parametric modelling tools and link these models to other models.

Visual Data Flow

- visualize data flows hand-in-hand with editability of that visualization, towards increased usability and away from scripting or otherwise programmatically patching 'deficient' applications;
- interactively set up a personal information network, create some controls (e.g. sliders), and then manipulate the network interactively to see what feedback and insights can be obtained.

Multi-Disciplinary Optimization

- enable MDO via an open platform supporting ad hoc linking of diverse tools in conjunction with a variety of optimization algorithms.

Open Interfaces

- suggest one or two usable methodologies or frameworks to assist in (flexibly) structuring semantics - not at implementation level - e.g. how to manage the process when different people or different systems use different ontologies or don't even use any ontology at all.
- a concept for a technical approach to cope with the information flow between incompatible systems (e.g. inspired by Kepler or other scientific workflow systems).

After the workshop, we provide participants the possibility to extend their 2-page text into a full position paper, based on the input from the reviewers and the workshop participants. Additionally, a collaborative article that summarizes workshop results will be produced. The resulting papers will be published in a publicly available workshop report.

Workshop structure

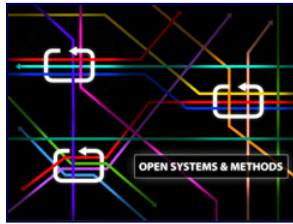
The workshop will open with a session of demonstrations as described above, followed by discussions. Although we are open to further ideas from attendees for discussion subjects, we anticipate organizing discussions into sequential or parallel group sessions - depending on the number and interests of the participants - with periodic cross-linking. Possible subtopics include:

Techniques

- User-ontologies vs. 'universal' ontologies, big vs. small tools
- Tools standards and interoperability
- Diagramming: visual dataflow, visual programming, (scientific) workflow systems
- Workflow node types and functions: tool, mapping, GUI, etc.
- Tool linking and multidisciplinary optimization (MDO)

Concepts

- Sense-making, pattern recognition, clustering, affordances
- Design and analysis models as 'boundary objects'
- Problems and virtues of standards
- Optimization vs. design space exploration

*Design Refinement with Conflicting Objectives – Design Space Exploration*

Organiser: Volker Mueller (Bentley Systems) Monday September 10, afternoon 14:00–18:00

This workshop will investigate implications of design space exploration using a parametrically driven, associative dependency system. Parametric systems make it easy to generate potentially vast, multi-dimensional design spaces which are difficult to understand, visualize, navigate, and exploit for finding a valid set of top solutions which exemplify the trade-offs that exist in those design spaces. Using GenerativeComponents in conjunction with the Design Evolution add-in participants will design projects incorporating conflicting objectives and experiment with strategies to explore the design space defined by the parametric system they designed.

Registration is possible only for eCAADe 2012 registered participants. Contact & registration for this workshop: Volker Mueller (volker.mueller@bentley.com) [Back to workshop schedule](#)

Autodesk Infrastructure Modeller: Urban Planning Design for Infrastructure Modeling

Organiser: Bjorn Wittenberg (Autodesk GmbH) and Andreas Lippold (Autodesk GmbH) Tuesday September 11, morning 9:00–13:00

Workshop on Autodesk® Infrastructure Modeler will be held on September 11, 2012, hosted by Andreas Lippold. Autodesk® Infrastructure Modeler 2013 software is a conceptual design tool that helps project engineers and planning professionals create, evaluate, and communicate convincing infrastructure project proposals for faster stakeholder approval and more confident decision making. With Infrastructure Modeler you can incorporate existing 2D CAD, GIS, BIM, and raster data to quickly create models that more realistically depict the local environment. You can more easily evaluate multiple design alternatives in the context of the existing environment by overlaying GIS data and using infrastructure sketching and proposal management tools. And you can communicate visually rich proposals of these alternatives with interactive navigations, rendered images, and recorded videos.

Registration is free participation without conference registration. Contact & registration for this workshop: Bjorn Wittenberg (Bjoern.Wittenberg@autodesk.com) [Back to workshop schedule](#)

Find out more about: <http://usa.autodesk.com/adsk/servlet/pc/index?cid=17276659&siteID=123112>

Technical requirements: Participants are required to bring their own laptops. The software needs to be installed before the workshop starts. Autodesk Software can be downloaded from <http://usa.autodesk.com/adsk/servlet/download/item?siteID=123112&id=17193264> and <http://autodesk.com/freesoftware> for "hands-on" lessons.

Autodesk Civil 3D: Building Information solution for civil engineering

Organiser: Bjorn Wittenberg (Autodesk GmbH) and Tomas Lendvorsky (Autodesk GmbH) Tuesday September 11, afternoon 14:00–18:00

AutoCAD® Civil 3D® software is a Building Information Modeling (BIM) solution for civil engineering design and documentation. Civil 3D is built for civil engineers, drafters, designers, and technicians working on transportation, land development, and water projects. Stay coordinated and explore design options, analyze project performance, and deliver more consistent, higher-quality documentation—all within a familiar AutoCAD® software environment.

Registration is free participation without conference registration. Contact & registration for this workshop: Bjorn Wittenberg (Bjoern.Wittenberg@autodesk.com) [Back to workshop schedule](#)

Find out more: <http://usa.autodesk.com/civil-3d/>

Technical requirements: Participants are required to bring their own laptops. The software needs to be installed before the workshop starts. Autodesk Software can be downloaded from <http://autodesk.com/freesoftware> for "hands-on" lessons.

Netlogo & Agents 1: Netlogo Basics

Organiser: Gabriel Wurzer (TU Wien) Wolfgang Lorenz (TU Wien) Nikolay Popov (Unitec) Monday September 10, morning 9:00–13:00

NetLogo Basics

- Introduction to Agent-Based Simulation using NetLogoTM.
- Focus on site planning and early-stage design.
- Hands-on programming.
- Importing the building site (raster, GIS).
- Agent movement, interaction with environment (cell space).

This workshop is self-contained and may be booked separately. However, a follow-up workshop is also available (*Netlogo & Agents 2: Simulation exercise*). Registration is possible only for eCAADe 2012 registered participants. Contact & registration for this workshop: Henri Achten (ecaade2012@fa.cvut.cz) [Back to workshop schedule](#)

*Netlogo & Agents 2: Simulation exercise*

Organiser: Gabriel Wurzer (TU Wien) Wolfgang Lorenz (TU Wien) Nikolay Popov (Unitec) Tuesday September 11, afternoon 14:00–18:00

Simulation exercise

- From hand-drawn sketch to simulation: Practical work using the Architecture Model Library specifically created for the workshop.

This workshop is self-contained and may be booked separately. However, a basics workshop is also available (*Netlogo & Agents 1: Netlogo Basics*). Registration is possible only for eCAADe 2012 registered participants. Contact & registration for this workshop: Henri Achten (ecaade2012@fa.cvut.cz) [Back to workshop schedule](#)

Robots in Architecture 1

Organiser: Sigrid Brell-Cokcan (Robots in Architecture)
Johannes Braumann (Robots in Architecture)
Monday September 10, afternoon
14:00-18:00

Robots in Architecture 1

A small KUKA robot will be available at the workshop. We will do a Realtime Application for the Robot, either with a Kinect or an additional Arduino Board. Participants will be able to produce some real output- not only to "play" the robot.



Robots in Architecture 2

Organiser: Sigrid Brell-Cokcan (Robots in Architecture)
Johannes Braumann (Robots in Architecture)
Tuesday September 11, morning
9:00-13:00

Robots in Architecture 2

A small KUKA robot will be available at the workshop. We will do a Realtime Application for the Robot, either with a Kinect or an additional Arduino Board. Participants will be able to produce some real output- not only to "play" the robot.

Evolute 1: paneling / geometry optimization / developable strips / scripted facades

Organiser: Florin Isvoranu (Evolute GmbH)
Monday September 10, morning
9:00-13:00

Evolute 1: paneling / geometry optimization / developable strips / scripted facades

Target audience

Students and professionals in Architecture, Design, Engineering and Fabrication.

What participants can expect to learn in this workshop

Participants will be introduced to the principle of subdivision modeling and its generalisation (combining different global and local subdivision rules). We will have an in-depth look at mesh optimization and how it can be applied for construction aware design of panelisations. Throughout the whole workshop EvoluteTools PRO 2.0 for Rhino will be used by the attendees for hands-on examples and exercises. Participants can bring their own designs (freeform surfaces) to be panelised.

EvoluteTools PRO is an advanced Rhino Plugin providing access to powerful paneling and geometry optimization tools for freeform surfaces with a user friendly interface. Participants will receive a 15 day evaluation license of EvoluteTools PRO to further explore its capabilities.

Workshop presenter

Arch. Florin Isvoranu, Evolute GmbH.

Maximum and minimum number of workshop participants

Minimum 5, maximum 10, if there is significant interest and there are more than 10 participants we are flexible.

Prerequisites necessary for participants

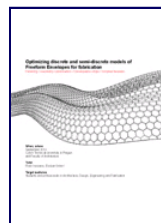
Experience in Rhino, basic knowledge of subdivision modeling, knowledge of RhinoScript is advantageous.

Platform used, required software, hardware

Rhino4 SR9, Windows, Monkey Script Editor, personal laptop.

Detailed timeline

- Introduction to subdivision modeling for designing panelisations (45 minutes).
- Introduction to mesh optimization (75 minutes).
- Showcasing analysis modes (30 minutes).
- Advanced constraint fitting (45 minutes).
- In-depth mesh and polymesh editing, curve networks for double curved panels (45 minutes).
- Developable strips (60 minutes).
- Hands-on examples, panelising designs of participants or creating panelised designs from scratch (2 hours).
- Specific topics in mesh optimization (planar quad meshes, circle packing meshes) (60 minutes).
- Introduction to the EvoluteTools PRO RhinoScript interface (60 minutes).



Evolute 2: paneling / geometry optimization / developable strips / scripted facades

Organiser: Florin Isvoranu (Evolute GmbH)
Monday September 10, afternoon
14:00-18:00

Evolute 2: paneling / geometry optimization / developable strips / scripted facades

This is the second half of the Evolute workshop (see above).

AB-USE Computation in Architecture 1

Organiser: Yannis Zavoleas (University of Patras)
Ioanna Symeonidou (TU Graz)
Tuesday

Nowadays it has become common that the digital medium does not merely define a vague research area, but a powerful tool of action, fully incorporated into architectural design practices. It is important to consider, however, that the "physical" properties of a medium - including the digital one - affect decisively the approaches and the results of design; additionally, that the modes of implementation about a medium often exceed its nominative properties. The medium gives form to creative thinking and acting, therefore it is necessary to scrutinize upon its qualities, in close relation to the ways it interferes with the design

This is the first half of a whole day workshop. The second half is given on Tuesday morning *Robots in Architecture 2*. Please register for both parts. Registration is possible only for eCAADe 2012 registered participants. Contact & registration for this workshop: Henri Achten (ecaade2012@fa.cvut.cz) [Back to workshop schedule](#)

This is the second half of a whole day workshop. The first half is given on Monday afternoon *Robots in Architecture 1*. Please register for both parts. Registration is possible only for eCAADe 2012 registered participants. Contact & registration for this workshop: Henri Achten (ecaade2012@fa.cvut.cz) [Back to workshop schedule](#)

This is the first half of a whole day workshop. The second half is given on Monday afternoon *Evolute 2: paneling / geometry optimization / developable strips / scripted facades*. Please register for both parts. Registration is possible only for eCAADe 2012 registered participants. Contact & registration for this workshop: (support@evolute.at) [Back to workshop schedule](#)

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This is the first half of a whole day workshop. The second half is given on Tuesday afternoon *AB-USE Computation in Architecture 2*. Registration is possible only for eCAADe 2012 registered participants. Contact & registration for this workshop: Yannis Zavoleas (yazavol@gmail.com)

September 11,
morning
9:00-13:00

process.

The workshop responds to the above challenge. Its goal is to integrate parametric methods in architectural design. The scripting language MEL is introduced, developed on the platform set by MAYA design software. The basics of parametric design, the use of algorithms and the related techniques are presented following an intensive experimenting approach. Moreover, the parametric design methods are compared to digital model development. After a series of initial implementations on scripting techniques, participants will work in small groups, as they will focus on design research directions of their choice.

Details and student work of previous workshops can be found [here](http://abusecomputation.wordpress.com/) (<http://abusecomputation.wordpress.com/>). **Learning experience for the audience**

The workshop will offer an introduction to scripting with Maya MEL. Participants will acquire basic scripting skills (syntax, variables, arrays, flow control) and they will produce geometry based on mathematic rules. Through the examples and exercises they will explore the possibilities of computational design for architectural applications. It is a hands-on workshop, there are introductory lectures as well as working sessions.

Requirements of the audience

Audience should bring their own laptops. Autodesk Maya is needed to be installed. Trial version, educational version is enough. Some minimal experience with 3D software is preferable but not mandatory.

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AB-USE Computation in Architecture 2

Organiser: Yannis
Zavoleas
(University of
Patras)
Ioanna
Symeonidou (TU
Graz)
Tuesday
September 11,
afternoon
14:00-18:00

This is the second half of a whole day workshop (see above).

This is the second half of a whole day workshop. The first half is given on Tuesday morning *AB-USE Computation in Architecture 1*.

Registration is possible only for eCAADe 2012 registered participants.

Contact & registration for this workshop:
Yannis Zavoleas (yazavol@gmail.com)

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