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BIM 2015: Visual Programming

The Ninth Annual USC BIM Conference

Friday, August 7, 2015, 8:30 am – 4:30 pm

USC School of Architecture Los Angeles, CA USA

Karen Kensek (kensek@usc.edu) and Douglas Noble

in partnership with AIA Los Angeles

BIM 2015 will feature presentations on how visual programming is being used in the building industry for design, engineering, and construction. If you don't know what it is, now is the time to learn. If you already do, see how it is applied in the building industry. The morning is a series of lectures from leading professionals. For the afternoon, pick one session that you are most interested in attending for a more in-depth discussion at the software.

REGISTRATION

- **\$35 early registration** – <https://arch.usc.edu/calendar>
- When registering, choose **one** afternoon special topic session of the five listed: 1) Marionette, 2) Grasshopper, 3) Dynamo, 4) GenerativeComponents, 5) Rhynamo + . See the schedule for more information about each session.

KEY INFORMATION

- A stellar line-up of speakers!
- 5 AIA CEUs. Remember to add your AIA number when registering.
- As usual, there are no refunds if you do not attend (send someone else from the office instead) – the money will be donated to the expense of running the conference.
- You must register and attend to receive your free BIM book.
- Bring this schedule with you – we won't have more at the conference.

LUNCH

Due to the generosity of our sponsors, we will be providing a light lunch and snacks. Please go out of your way to talk with our sponsors and thank them. We are very happy that they have chosen to support our event.

LOCATION

Please check in at the table in the Watt Hall Courtyard. Due to campus construction and renovations, we are not sure which lecture room we will be using. It will be near Watt Hall though. The website will be updated when we have more information.

Friday, August 7: BIM 2015 – Visual Programming

8:00 AM CHECK IN BEGINS

8:45 – 9:00 Karen Kensek USC School of Architecture Introduction

SESSION 1 HARRIS 101

9:00 - 9:30 Nathan Miller Proving Ground A New Proving Ground: Data-Driven Design in Practice

9:30 - 10:00 Daniel Segraves Thornton Tomasetti Canvas as Portal: Expanding on Dynamo and Grasshopper

10:00 - 10:30 Yan Krymsky Yazdani Studio of Cannon Design One Size Almost Fits: Bridging the Gap Between Off-the-Shelf Tools and Design Process

10:30 - 10:45 BREAK SPONSORED BY KALLOK STUDIOS - FUZOR

SESSION 2 HARRIS 101

10:45 - 11:15 Cory Brugger Morphosis Computation and Data Management: The New Paradigm for Architectural Design

11:15 - 11:45 Erik Narhi BuroHappold Multi-Faceted Design: No Data Left Behind

11:45 - 12:45 Mark Flamer Justin Brechtel Colin McCron Tom Lazear & Volker Mueller Marionette Grasshopper Dynamo GenerativeComponents Highlights of Visual Programming

12:45 - 1:30 LUNCH SPONSORED BY GRAPHISOFT – ARCHICAD

SESSION 3 PICK ONE

1:30 - 4:30 Mark Flamer [Vectorworks Marionette: No Boundaries](https://youtu.be/8V6l7zqUG7E)
<https://youtu.be/8V6l7zqUG7E>

Discover Marionette, a brand new design tool for Vectorworks and the first and only cross-platform graphical scripting environment available in a BIM authoring software for the AEC industry. This session explores how you can easily and efficiently create complex design variations and intelligent parametric objects. We'll also demonstrate how to take advantage of Marionette's full internal integration with other design modules and its graphical interface for Python-based scripting.

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| 1:30 - 4:30 | Justin Brechtel | Introduction to Grasshopper
http://www.grasshopper3d.com/ |
| | | Grasshopper is a graphical algorithm editor for the Rhinoceros 3D modeling package. This workshop will serve as an introduction of the essentials to effectively utilize Grasshopper in the design workflow. Emphasis will be on obtaining and using collected data to inform design decisions. The workshop will cover concepts such as data types, data structures, inputting and extracting data, functions, geometry creation, and transformations. Parametric concepts will be demonstrated through a simple example case study. No prior scripting or programming knowledge is necessary. |
| 1:30 - 4:30 | Colin McCron | Dynamo: Computational BIM Fundamentals
http://dynamobim.org/ |
| | | This session will introduce participants to Dynamo, a visual programming language for computation and design. Participants will learn how they can use simple visual programs to automate their documentation and modeling process, how to generate complex parametric forms, and how to leverage data in their Revit project to create truly intelligent building models. |
| 1:30 - 4:30 | Tom Lazear
Volker Mueller | Introduction to GenerativeComponents
http://www.bentley.com/en-US/Products/GenerativeComponents/ |
| | | Participants will be introduced to GenerativeComponents for computational geometry and visual programming. Participants will learn how to create complex parametric models useful in architecture, civil engineering, and many other fields including how to create their own parametric generative component and how to distribute that over a parametric surface. Examples will be drawn from building or infrastructure design. |
| 1:30 - 4:30 | Nathan Miller | Design Interoperability - Using Visual Programming to Streamline Design Rhynamo +
http://www.theprovingground.org/2014/11/get-rhynamo-package.html |
| | | Architects and engineers often use many tools in the design process. This session will introduce essential concepts for achieving streamlined workflows between design, BIM, and analysis environments using interoperability. Participants will learn how to create data links between different tools including Rhino, Revit, Grasshopper, and Dynamo. The class will explore these concepts through a series of real-world problems and scenarios. |
| 3:00 - 3:15 | BREAK | SPONSORED BY SKANSKA |

COMPUTERS AND POWER

Charge your computers before you come. There are not many power outlets in the lecture hall. If you have an extension cord with a multi-outlet head, please consider bringing it so that many people can use one outlet.

TRAVEL AND PARKING

Parking at USC is \$12. If you want to drive, there are several parking structures (marked "P" on the map). It is difficult to know what gates will be open. Entrance #1 is usually open. Entrance #5 is almost always open. The closest parking is at the "P" near entrance #6.

Rather than driving, we prefer to take the EXPO LINE subway or the DASH bus from downtown. The DASH "F" route from downtown goes right to USC and loops all around the campus. The DASH bus is 50 cents. The subway EXPO LINE and goes right to USC. It is \$1.75. The closest stop is called "EXPO USC" and is located near the bottom of the map.



<https://visit.usc.edu/maps-directions/university-park-campus/>