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Grapefruit Design Process

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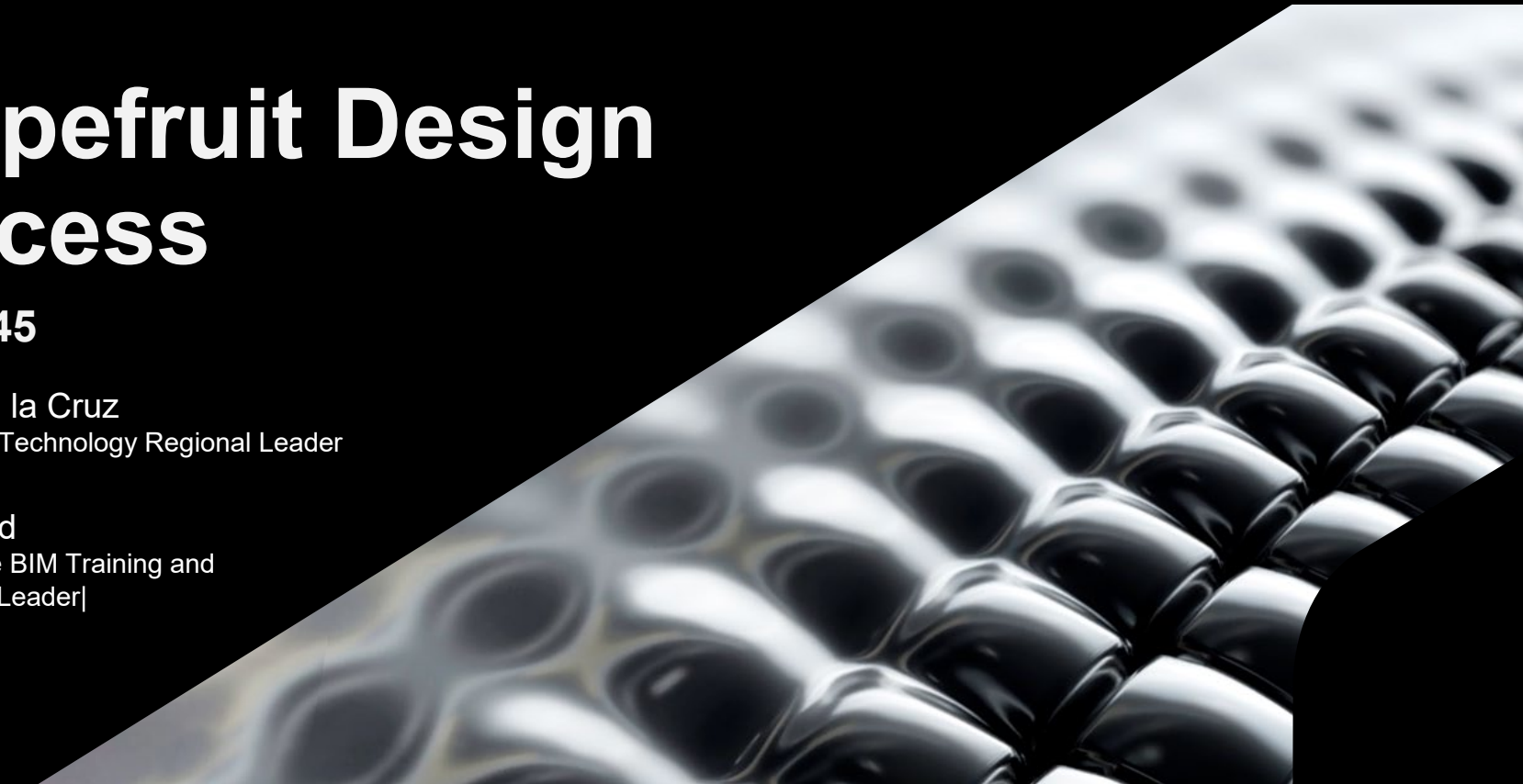
Dr. Eliel De la Cruz
HKS Practice Technology Regional Leader

Cindy Wood
HKS Firmwide BIM Training and Development Leader|



Who are we?

Dr. Eliel De la Cruz

Arq., M.Arch., M.S., Ph.D. Assoc. AIA, NOMA

I am currently the Practice Technology Leader in the America - East Region for HKS Architects. I was lucky enough to start my architectural career at an early age. I finished a 5-year architecture program when I was 21, then did 2 masters in Architectural Design and Computational Design, (SCAD, and GATech), and later a Ph.D. in Architecture at the University of Sydney in Australia. All my studies and professional experience have revolved around Design and Computational Design. I'm passionate about new technologies and finding ways to use them to improve our designs, buildings, cities, and our lives. My area of research focuses on understanding the variables that influence the adoption of new technology in the architectural design process.

I'm a geek who loves movies, anime, bowling, archery, guitar playing and learning new things in life. Cheers!

Cindy Wood

I am currently the Firmwide BIM Training and Development Leader for HKS Architects. I have been in the AEC industry for the past 16 years. After graduating with a Bachelor of Environmental Design studies with a Co-op focus at Dalhousie University in Halifax, Canada I made the trek across the continent and established myself in Los Angeles starting my career at HKS Architects. Five years ago, I took on the role of Practice Technology BIM Specialist for the Western Region of the company to help improve their project workflow and modeling skills. I use my experience from working on small and large Revit dedicated projects to help bridge the gap between the drawing software tool and practical usability needs of Architects and Interior designers. I was one of the top-rated class featured speakers at Midwest U 2018.

My hobbies include curling, sewing, winter sports, music, and dancing.

AGENDA

What we'll be covering today

1. Engage in an open discussion to listen to and learn from each other.
2. Discuss the possibility of different scenarios which deviate from the current design process.
3. Discuss current technology and possibilities of using those for new methodologies.
4. Explore 'out of the box' processes using technology which may not be commercially available... yet.

PRELUDE

What this roundtable is about

As the AEC industry continues to rely on its current design process, technology allows for the exploration of possibilities that may differ from the current workflow. The AEC has been using the same methodology for decades, way before we even had computers. This discussion poses the question: Shouldn’t we look at a holistic change of that methodology taking in consideration future technological advances?

This session will offer a forum to discuss various hypothetical possibilities regarding the architectural design process and its interaction with technology, hoping to objectively look at areas which can be improved. During this roundtable, we’ll share and discuss experiences, successes, failures, ‘wish lists’ and have an open discussion so we can all learn from each other. Every company has their own way to proceed in the design process, but even with the vast number of possible design solutions for buildings, shouldn’t the process be one that can leverage technology to its advantage?.


One of Many Questions
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The AEC has been using the same methodology for centuries, way before we even had computers. **Shouldn't we look at a holistic change of that methodology taking into consideration future technological advances?**

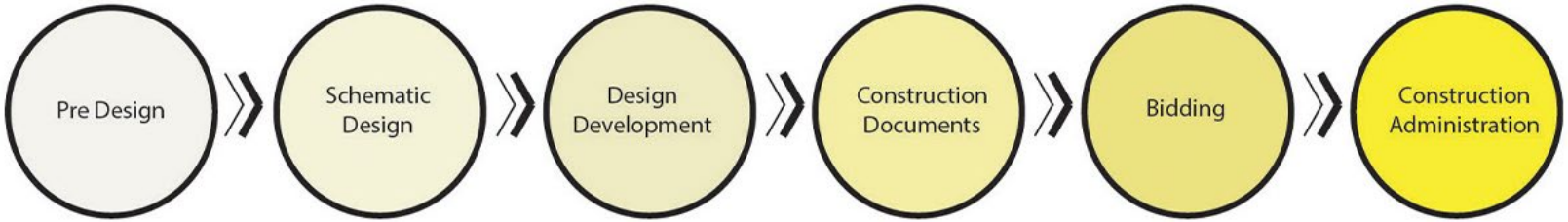

Image Source: https://www.modal-design.com/blog/architecture-design-process/

Pomplamoose = Grapefruit = Toronja

Really cool band, look them up

What’s interesting is their unique method to produce music. Recording 5 songs a day?


What about Design?

Enter Grapefruit Design Methodology

What is this concept?

Taking as reference the car industry, when Henry Ford revolutionized the industry, he took a process that was slow and inefficient and increased its productivity hundred-fold by changing the process in which the cars were built. -- Today's architectural design process is the equivalent of creating a single concept car each time a car is needed by a user.

The Grapefruit design methodology is an ambitious process which aims to combine existing and upcoming technology to allow a designer, or an architecture company, to develop multiple project solutions up to (or close to) CDs from the schematic phase. Like a design charade, by gathering a diverse group of designers, project architects, project managers, and construction administrators, in a condensed session, while utilizing different computational design tools they should be able to develop several architectural projects and have them ready, for future use, or for design alterations.

Image Source: https://skills4future.mk/bim-benefits-fit-for-the-new-millennium/

What about the tools?

Can we try this yet?

Looking at the technology that we currently have available that affords for some of this to happens, we see companies like Autodesk who purchased Spacemaker, which is an AI based generative design tool that helps designers and developers to visualize in real time multiple solutions provided to their specific site, programmatic requirements, and specific site requirements. We start seeing more often generative design used in early stages of design, designers using Grasshopper, Dynamo, and other tools running live to see real-time changes to their whimsical push and pull of their design shapes. In the academic world we see fantastic projects that combine the familiarity of the user experience in our phones and tablets with the benefits of simply solid modelers like FormIt. All of those tools are not necessarily new, although their implementation has not reach full adoption in our industry yet, but we have seen them for a number of years now. Yet once we start looking into documentation for construction, the details, the specifications, those are the area where we are hoping to see machine learning, combined with AI to start producing those details and documents on our behalf.

Image Source: https://skills4future.mk/bim-benefits-fit-for-the-new-millennium/

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Opportunities?

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