Course Syllabus

ReThinking BIM

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Thursday 7-9pm

Fayerweather 202

Our capabilities as architects today to create and leverage organized building data is continuously expanding the possibilities for designing and understanding what we build and how we can build it. At the same time, this kind of literacy is becoming even more essential today as our lives are increasingly saturated with structured data; of which provides us with invaluable insights and feedback that alter our decisions, behaviors, and validate our ideas. This class puts forth the challenge for students to develop robust data driven methodologies and computational frameworks that intensify creative iteration and validate design solutions by utilizing various parametric design platforms to build tools and workflows for analysis, automation, simulation , optimization, representation, connecting to databases, scripting, and so forth. This course is intended to provide foundational knowledge of computational data-driven strategies used in the industry today.

In the first half, students will utilize Revit to model an existing piece of architecture in New York City as a means to learn the basics of the tools with several lectures and tutorials that address more advanced topics. Students will then re-design their initial draft with this new toolset according to a conceptual proposal put forth at the beginning of the semester. Post midterm the class will develop more advanced parametric and data-driven design methodologies that focus on achieving a revised set of design goals through an effective interoperable workflow that utilizes Rhino/Grasshopper and its extensive component libraries.

Requirements:

- Experience with at least one 3D modeling software.
- Attendance of all lectures and tutorials.
- Tutorial Assignments (8)
- Midterm Project
- FinalProject

Schedule:

- WEEK 01 - Lecture // BIM & Parametric Relationships, Project Introduction
- WEEK 02 - Lecture // Basic Revit Tools
- WEEK 03 - Lecture // Custom Component & Design Options, Project Proposal
- WEEK 04 - Lecture // Adaptive Components, Nesting, and Panelization
- WEEK 05 - Lecture // Advanced Panelization, Data Management, Documentation, Rendering
- WEEK 06 - Help Session // Desk Crit
- WEEK 07 - Lecture // Intro to Interoperability, Project Introduction
- WEEK 08 - Lecture // Workflow Design, Rhino & Grasshopper, Concept Proposals Due
- WEEK 09 - Lecture // Help Sessions // Adv. Adaptive Components
- WEEK 10 - Lecture // Simulation, Analysis, and Optimization
- WEEK 11 - Lecture // Help Sessions // Galapagos, Analysis and Optimization
- WEEK 12 - Help Session // Desk Crit