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BIM Boot Camp

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Learning Objectives

- Learn how to assess your staff's current BIM skill level
- Learn how to lay a solid foundation for your training program
- Learn how to construct training sessions
- Learn how to create a BIM culture that goes beyond training

Description

Whether your company has a rich history with Building Information Modeling (BIM) or you've recently decided to take the plunge, developing and maintaining internal training is a tall order. BuroHappold Engineering New York has developed a thorough yet practical internal training program for Revit software and Dynamo software for its offices worldwide, and the company would like to share the outcome of the challenges that it faced along the way. With 90% of the projects in the New York office being Revit based, new engineers have a limited amount of time to adjust to the technology and the corresponding company standards. This demand placed an enormous amount of pressure on the firm's BIM team to create a training program that was fast, furious, and efficient. Attendees of this presentation will leave with a clear understanding of the steps necessary for ensuring that engineers are ready to hit the ground running in Revit projects.

Your AU Expert

Kayleigh Houde has over 9 years of experience with BIM, having worked in the engineering field in Philadelphia, New York and Los Angeles. She has a BS in architectural engineering from Drexel University and is currently a mechanical engineer for BuroHappold Engineering. Her primary roles include the design and coordination of high-rise and super-high-rise structures in New York City. Her current project work includes 45 Broad Street, 25 Park Row and Columbia Business School.

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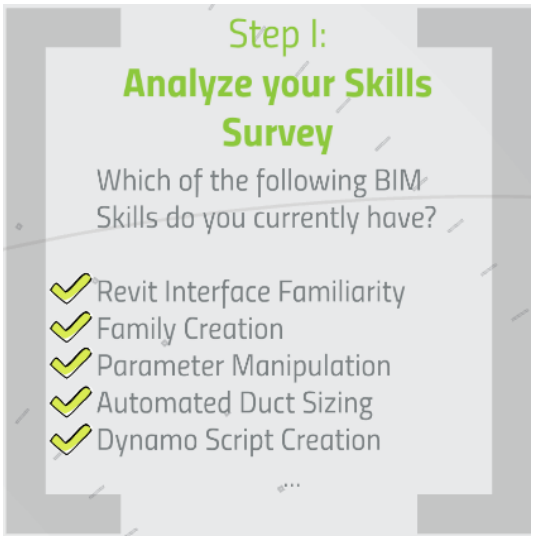
Introduction

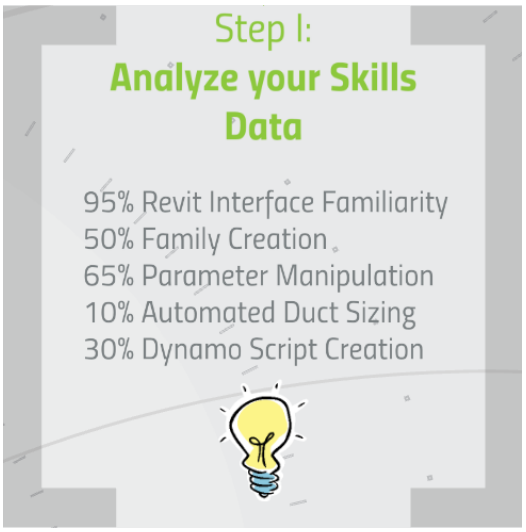
This session will explore methods for developing internal BIM training for Revit and Dynamo. My background is primarily in MEP, so the material will be MEP focused, however it could just as easily apply to other disciplines. The majority of this information will be covered by my lecture, however this document will re-present the material in a more formatted manner.

I. Assess Your Staff

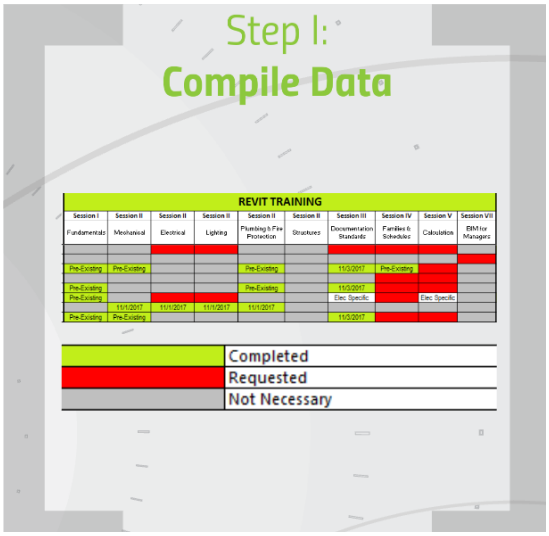
Previous to developing any of your training material, there are a few things that you'll need to get in order. First, you'll need to assess your staff's current BIM capabilities. I suggest using SurveyMonkey, or a similar website to assemble a quick surveying asking each of your colleagues what Revit/Dynamo skills they currently possess.



Upon receiving back responses from your office, I would suggest formatting the results in a clear way, stating where the office is exceeding and where the office is lacking. This will give you a clear picture of where guidance/training is needed.

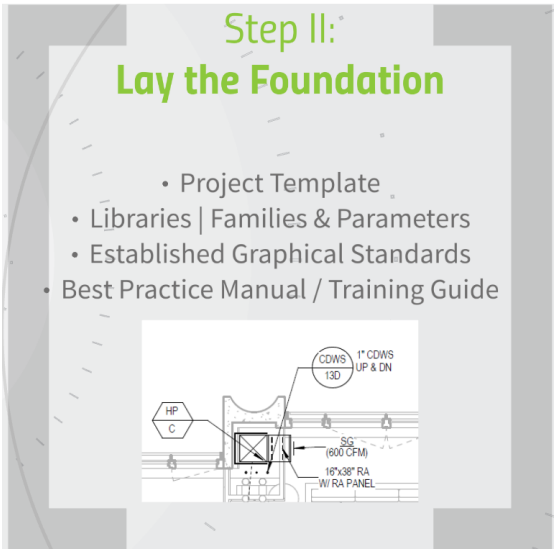


Another pro-tip is taking that data and compiling it into a sort of Training Matrix to keep track of who receives which training session, and when. It's also a great conversation point with managers.



II. Lay the Foundation

Previous to developing any of your training material, there are a few things that you'll need to get in order. First, you'll have to agree to a project template that will be applied to all projects, including a browser structure. You'll also need libraries full of office specific families and shared parameters. Additionally, you'll need to have some tough conversations on graphical standards regarding leader styles, standard fonts, and tags. Finally, having a set of training guides, or a best practice manual will help to serve as a follow up to your training sessions.



III. Create an Outline for the Training Program

Every company has different needs for their staff in terms of who they'll be training, what they need to train them, where the training will be taking place, and when that training will fit into their staff's schedule. While BuroHappold's training program is certainly not a one-size-fits-all, it's flexible in the sense that you could easily adjust your training to be over a couple of days while maintaining what would be taught during that time.

Number & Length of Sessions

We decided on (5) training sessions for Revit and (5) training sessions for Dynamo, each varying in length from 1-2 hours. Overall, 15 hours to get your engineers up and running in both software platforms.

Size of Group

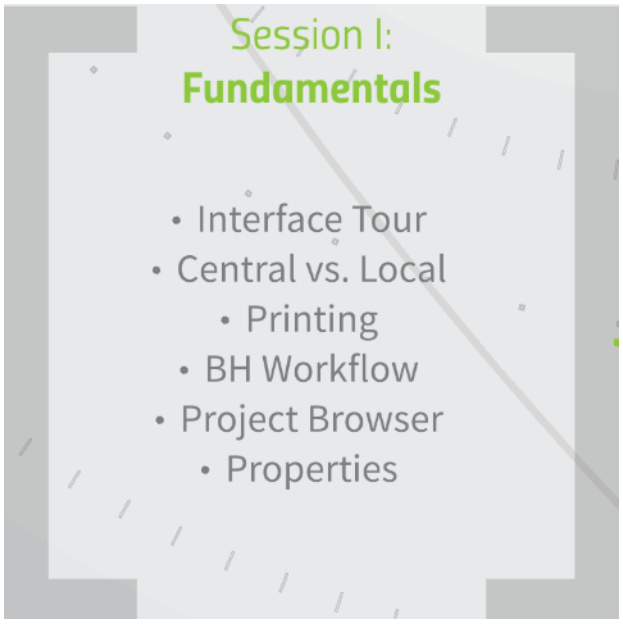
Training your entire office at the same time is not only impractical, but it also assumes that each user has the same level of ability with the software. We found that training 2-3 people with similar skill levels was the best environment for training, it ensured that no one got lost in the herd and that no question was left unanswered.

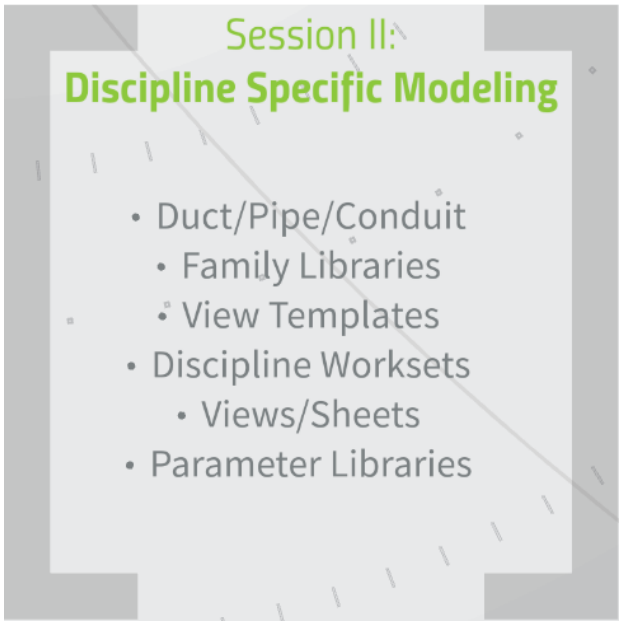
Material to be Covered

We wanted the material to be company and project specific, while ensuring that the basics of Revit would be covered. The easiest way to accomplish this was to begin training with an exemplar project, one that contained all of our standard features (tags, families, project browser). More about the material to follow.

IV. Create Revit Training

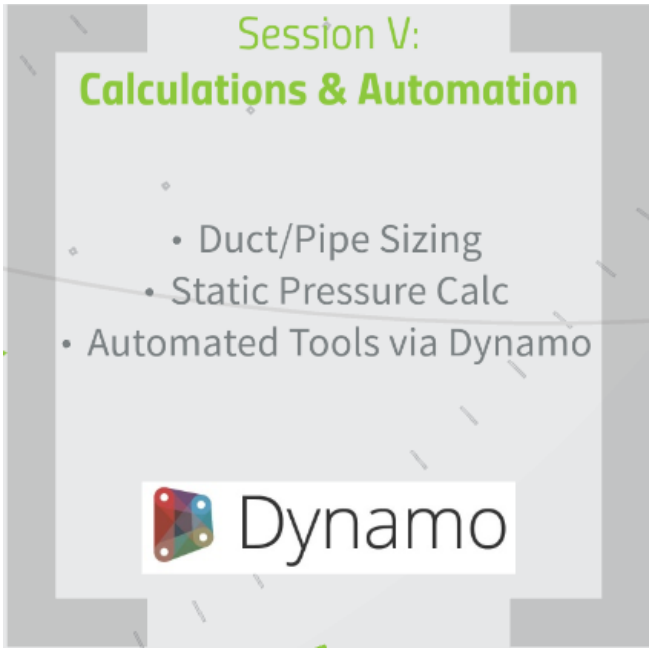
The (5) Revit training sessions start with the basic facets of Revit (Session I), then lead into discipline specific 2D modeling techniques (Session II), followed by a crash course in parameters via families and schedules (Session III), then perfecting that 2D deliverable with tools and add ins (Session IV), and finally the use of calculations and automation in Revit.


Session I:
Fundamentals
• Interface Tour
• Central vs. Local
• Printing
• BH Workflow
• Project Browser
• Properties


Session II:
Discipline Specific Modeling
• Duct/Pipe/Conduit
• Family Libraries
• View Templates
• Discipline Worksets
• Views/Sheets
• Parameter Libraries

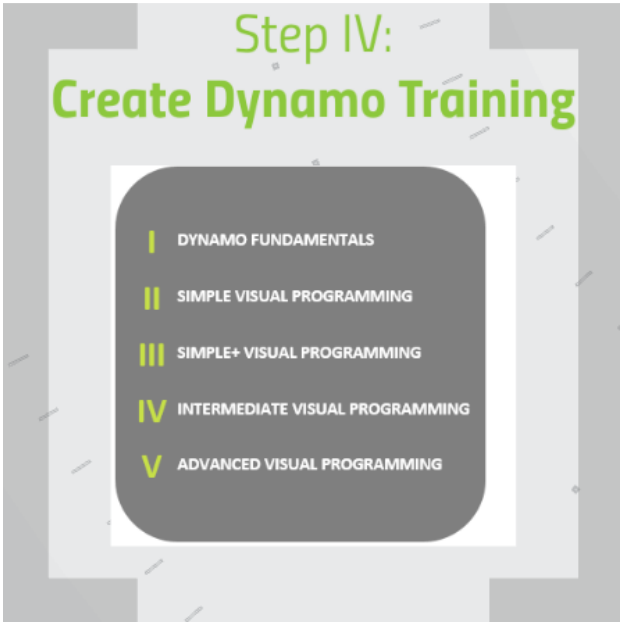

Session III:
Families & Schedules
• Family Library
• Building Families
• Parameter Library
• Adding Parameters
• Creating Schedules
• Creating Tags
RushForth Projects


Session IV:
Documentation Standards
• M-001 Symbols Sheet Comparison Tool
• M-100 Kinship for Family Management
• M-500 Detail Sheet Creation Tool
• M-600 Schedule Reviews
• M-700 In-House Riser Creation Tools from 3D to 2D
Kinship
Dynamo
RushForth Projects

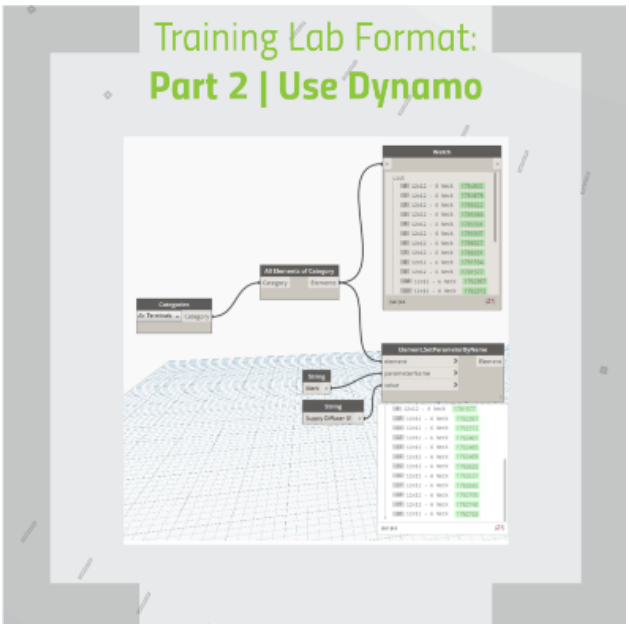


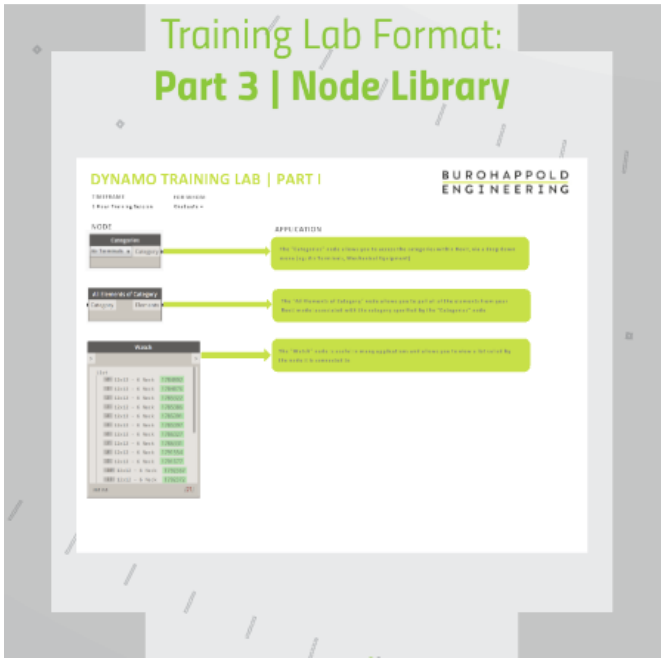
IV. Create Dynamo Training

The (5) Dynamo training sessions are held in a lab-style format. The first being a 101 for Dynamo with an interface and concept tour, the next (4) sessions including varying levels of difficulty of scripting. Each session includes a "Problem Statement", in Session II it would be something like "Set each space to 500 CFM", then in Sessions IV "Reference the ASHRAE table in Excel, match the space name to it, get the area and occupancy and set the specified supply airflow for the space". The training would then be guided by the instructor in solving the problem statement. Finally, the attendees would receive a completed script and a node library PDF to complement their new visual programming knowledge.




Training Lab Format:
Part 1 | Present the Problem
DYNAMO TRAINING LAB | PART I
BUROHAPPOLD ENGINEERING
STEP 1
STEP 2


Training Lab Format:
Part 2 | Use Dynamo



IV. Beyond BIM

Be sure to make a concerted effort to ensure that training does not stop after your 10 training sessions. At BH we hold BIM Forums to discuss Revit issues once a month, and we also hold a Hackathon to work through our latest Dynamo conundrums.