



# AUTODESK IN BOSTON'S SEAPORT: BUILDING FOR INNOVATION WITH INTEGRATED PROJECT DELIVERY AND LEAN



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## LEAN APPROACHES IMPLEMENTED

- ▶ Pull Planning
- ▶ Flow Board Tracking
- ▶ Just-In-Time-Deliveries
- ▶ Daily Stand-Up Meetings
- ▶ "Nothing Hits the Ground"

## POWER COUPLE: IPD AND LEAN

Building industry software innovator Autodesk has joined Boston's Seaport innovation community, moving from the 'burbs of Waltham, Mass. to 70,000-square-feet of customized space in the Seaport's monumental Innovation and Design Building. These new digs combine an advanced workshop for research and prototyping digital fabrication methods and construction automation for the AEC (architecture, engineering and construction) industry, with collaborative office space. Called "BUILD Space"—for "Building, Innovation, Learning and Design"—these are definitely not run-of-the-mill work places, and the construction process has been fittingly innovative, too.

Autodesk's Vice President Jim Lynch, explains the vision behind BUILD Space, "We want to increase Autodesk's visibility and connection to the Boston technology culture and engagement with the innovation ecosystem. Another goal is to have the community gain a better appreciation for the impact that Autodesk customers and technology have in this world. We want to expose the community to the things we do around the built environment."

To transform the warehouse-like spaces, the team is using the highly collaborative "Integrated Project Delivery" (IPD) approach, with a co-located team and plenty of integrated Lean tools. To plan collaboratively to the smallest detail, and track with minute care, the team is using Pull and Milestone Planning, Autodesk's own Lean tool—BIM 360 Plan software, and whole team Stand-Up Meetings. For the efficient flow of materials and the safest site conditions, the team is implementing a Just-in-Time-Deliveries policy and Nothing-Hits-the-Ground materials management, which requires all materials on-site, be on wheels. Last but not least, the design is benefiting from collaboration, with contractors playing "Design-Assist" roles, bringing field know-how to the whole team.

## SPECIFICATIONS

**LOCATION:**  
Boston, Mass.

**SIZE/TYPE:**  
70,000 sq. ft./Tenant Fit-Out

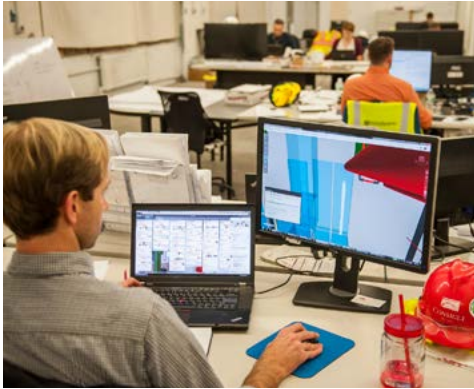
**DELIVERY METHOD:**  
Integrated Project Delivery

**DURATION:**  
5 months

**OWNER:**  
Autodesk

**ARCHITECT:**  
SGA

## CO-LOCATION AT AUTODESK



### THE RIGHT PEOPLE IN THE ROOM

Consigli's Project Superintendent, Matt Guimond, talks about the combined impact of Integrated Project Delivery and Lean. "As an Integrated Project Delivery project, we have the great benefit of being a co-located team, all together—Autodesk's project manager, the project's architects Spagnolo Gisness & Associates (SGA), engineers, M/E/P subcontractors and our Consigli team—on-site at the Design and Innovation Building. It is great for efficient communication. When you have the right people in the room, things can go very fast."

"And a co-located team also helps smooth out the "Request for Information" (RFI) process—the clarification of design information—in important ways. We've been able to shorten the typical two-week long RFI process to a single day because the architect or engineer you need to get a clarification from is sitting next to you. Also, a co-located team reduces the need to overload the design team with a lot of questions at any one time."

### A 60-FOOT SCHEDULE

Lean's Pull Planning process—planning a project collaboratively as a production system—has been central to the project's success. For Autodesk's new Boston Seaport office, the team has used Pull Planning on two levels:

for high-level milestone planning, and for detailed plans of what's needed to get to each milestone, which are developed hand-in-hand with the trade foremen.

Guimond explained, "One of our first Lean steps was developing a high-level milestone Pull Plan with the project management team. Literally 60-feet-long, spread across the wall of the team's co-location room, each milestone of the project is shown as a colored paper "sticky." When one project milestone is moved, you automatically see the effect it has on the schedule, project-wide."

"Using it is invaluable. It quickly brought to light that we needed to track individually—rather than collectively—the 100 pieces of leading-edge technology equipment to be installed. Including everything from robots to 3D printers, they're all part of the BUILD Space. Using a Lean "Flow Board," we're tracking the steps leading to their installation. We list every requirement that needs to be met before installation can begin, and when those requirements are met. One advantage is that if there's an opportunity to install any equipment early, we know right away if everything is in place for that to happen."



### CUSTOMIZING DESIGN WITH DESIGN-ASSIST

The innovative and collaborative "Design-Assist" process—which breaks with building industry tradition and pairs design team members with construction trades and vendors—has also been an important part of the project. When Autodesk decided that they wanted their conference rooms to be modular and reconfigurable, the project's architects, SGA, created a design concept that was then developed by Consigli's team, with help from specialty interior contractors Creative Office Pavilion (COP), and millwork vendor, DIRTT.

### PULL PLANNING BENEFITS

- ▶ Collaborative scheduling builds team accountability
- ▶ Maximizes input from those responsible for the work
- ▶ Increases detailed understanding of what is required to reach a milestone
- ▶ Identifies smoothest work flow
- ▶ Identifies constraints to tasks
- ▶ Implements best use of subcontractors' time and labor

These conference spaces are essentially "rooms-within-a-room." One challenge: structurally they needed to span up to 25 feet, far wider than any existing pre-fabricated modular office system available or what could be built with light gauge metal framing.

To meet the challenge, Consigli developed a one-of-a-kind steel shell. "It looked like a big steel spider," said Guimond. Then COP and DIRTT adapted a modular, panelized wall system for its exterior and interior. Now, each of these six large "rooms" can be configured with either one, two or four interior areas, giving Autodesk a wide range of options for their collaborative teams.

This January the team celebrated the first major milestone, with Autodesk's 180 employees moving from Waltham into the new Seaport-based, sixth floor offices. Underway now—and heading to a May completion—are the two floors of BUILD Space, which will support a variety of researchers and builders in residence from the AEC community, as well as academia.

As Autodesk's move-in day to the sixth floor got closer, the team wanted to create a special welcome. When Guimond looked at the 40 feet of white brainstorming wall boards, he saw a blank slate, and knew it needed to be transformed into a special welcome sign. He also knew the person for the job, Consigli mason, Jason Boucher. "He's not only a mason, he's an artist. Swapping masonry tools for pens, Boucher created an Autodesk-branded welcome sign. Everyone loved it," said Guimond. ■