AUTODESK UNIVERSITY

CS502301

Project Management 101: Basics of Autodesk Construction Cloud

Mauricio Irastorza
Autodesk – ACS

Marcos Harano
Autodesk – ACS

Julio Palma
Autodesk – WWS

Learning Objectives

- Learn about the approach to basic principles of PM and lean.
- Learn how to identify solution scope for quick implementations.
- Learn how to simplify construction technology adoption.
- Learn about construction management digital transformation.

Description

In this session, the LATAM TSE team will cover the basics of project management and lean construction principles for on-field tracking and data gathering to change the project management (PM) mindset from a reactive approach to a proactive approach, thanks to Autodesk Construction Cloud on-site implementation. We'll cover how to digitize current construction workflows and activities without disruptive change within owner-contractor-subcontractor workflows. You'll see how to apply PM and lean construction with an easy-to-implement approach, simplifying digital transformation for a width approach within any building information modeling (BIM) maturity-level construction company.

Speaker(s)

- Mauricio Irastorza Campos Autodesk Technical Solutions Executive

LinkedIn

Civil Engineer from ITESM Monterrey and The University of Nottingham & Construction Management Specialization at ITESM Santa Fe. Worked as superintendent and project management for heavy infrastructure projects, now partnering with Autodesk Customers in LATAM for digitizing construction workflows and Project / Cost Management activities.

- Marcos Harano Autodesk Technical Solutions Executive

LinkedIn

Civil Engineer and Master in Construction Management Porto – Portugal. Worked in quality management ISO 9001 and supervision of buildings, as well as specializing in the BIM Building Information Modeling methodology in the areas of document management, planning, and budgeting, with field applications and developing experiences in virtual reality.

- Julio Palma Autodesk Technical Sales

LinkedIn

Julio Palma is a Civil Engineer with 13 years of professional experience; he belongs to the Latin American region's Autodesk technical sales specialists group. He works closely with AEC companies (design/engineering firms, GC's/subcontractors, owners, and government agencies), advising them on implementing BIM methodology and mandates, efficient and connected workflows, and the digitization of construction sites.

Approach to basic principles of Project Management and Lean Construction

This session aims to exemplify basic concepts of project management methodologies related to civil construction, such as the Last Planner System within the Lean Construction concept, to Construction Work Areas arising from AWP (Advanced Work Packaging).

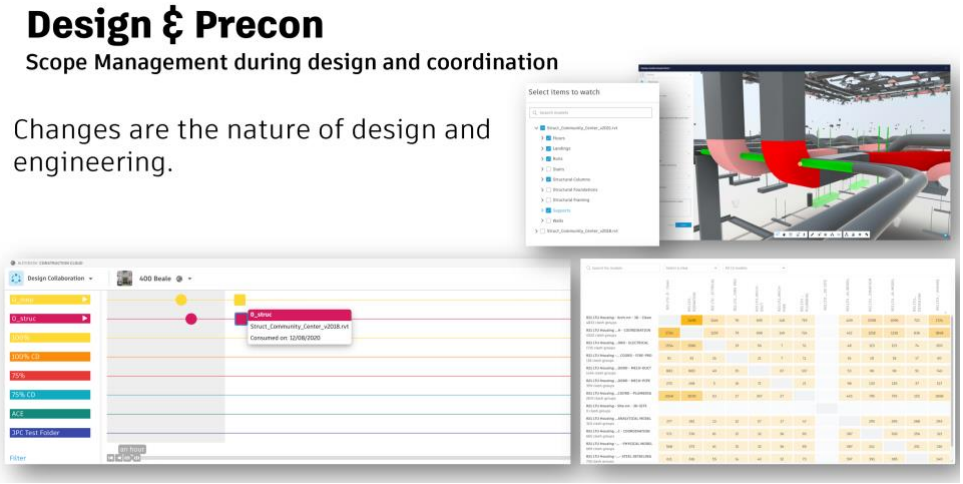
Triple Constraint Theory in Project Management

The Triple Constraint Theory states that you must be “in control of everything” and be able to see what will come. Also known as the project management triangle, project triangle, or iron triangle), the TCT is nothing new. Project managers have been using it for at least 50 years. The idea behind TCT is that there will always be at least one constraint in any system that can potentially put the project at risk, and behind the triple constraints of project management is that the success or failure of every project is tied to its budget, schedule, and scope. In other words: Scope, time, and cost management bring quality to any project.

Scope

This is a definition of the work that needs to be done. It documents the features and functions included in specific project iterations. The scope documentation should clarify what will and will not be included in the final product. You might consider using a work breakdown structure (WBS) chart to break the scope into actionable tasks.

In the construction language, deliverables related to Scope are all those documents, specifications, models, plans, etc., required during the construction, handover, and operation phases. Over those deliverables is where the Scope management focuses on bringing on-time access and control and deliver insights regarding design and coordination performance.



Autodesk BIM Collaborate for scope purposes.

Scope management can be addressed in ACC via different supported workflows intended to control documents and model versioning, teams' deliverables sharing and consuming, and quality control during the whole process.

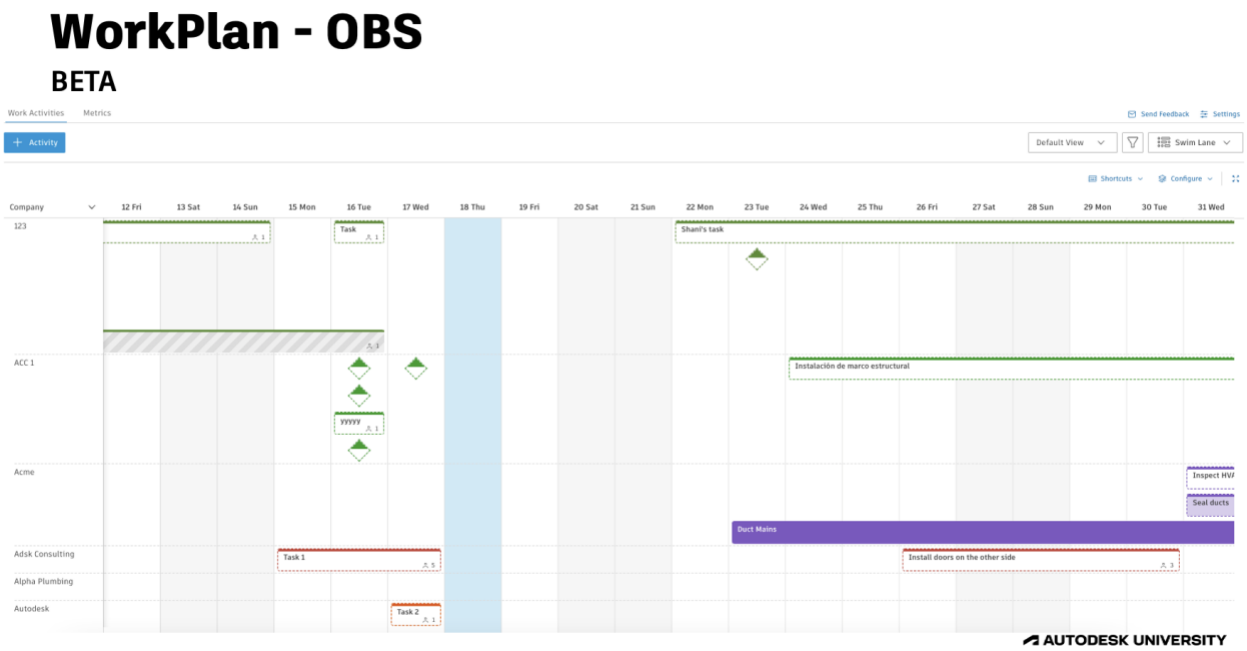
The most known workflows are:

- Document Management Workflow
- Design Review workflow
- Model Coordination workflow
- Approval workflow

Please refer to free sources to get engaged on these workflows and soon on track at https://learnacc.autodesk.com/page/all-courses

Time

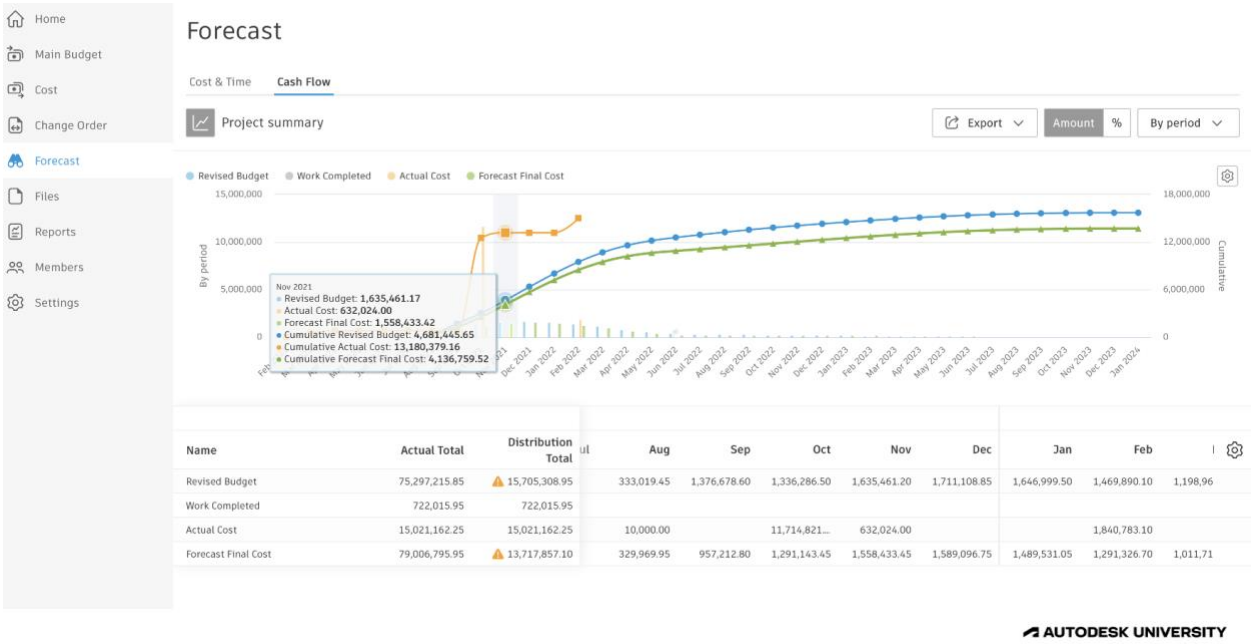
Defining stakeholders, locations, and their due tasks can guide construction teams to success, even more so if they use the right tool to manage a project's time better. Schedules and better productivity, reducing rework, can be critical in this second pillar of the TCT.



Autodesk Build for time management purposes.

Cost

Technology, alongside a good methodology, can help you estimate how much your budget will cost. To look at the following costs to help you determine the overall budget and to answer questions like: How much will it cost to pay people working on the project? Will this project require new resources? And the most important: how to connect with scope and time and forecast what comes next.

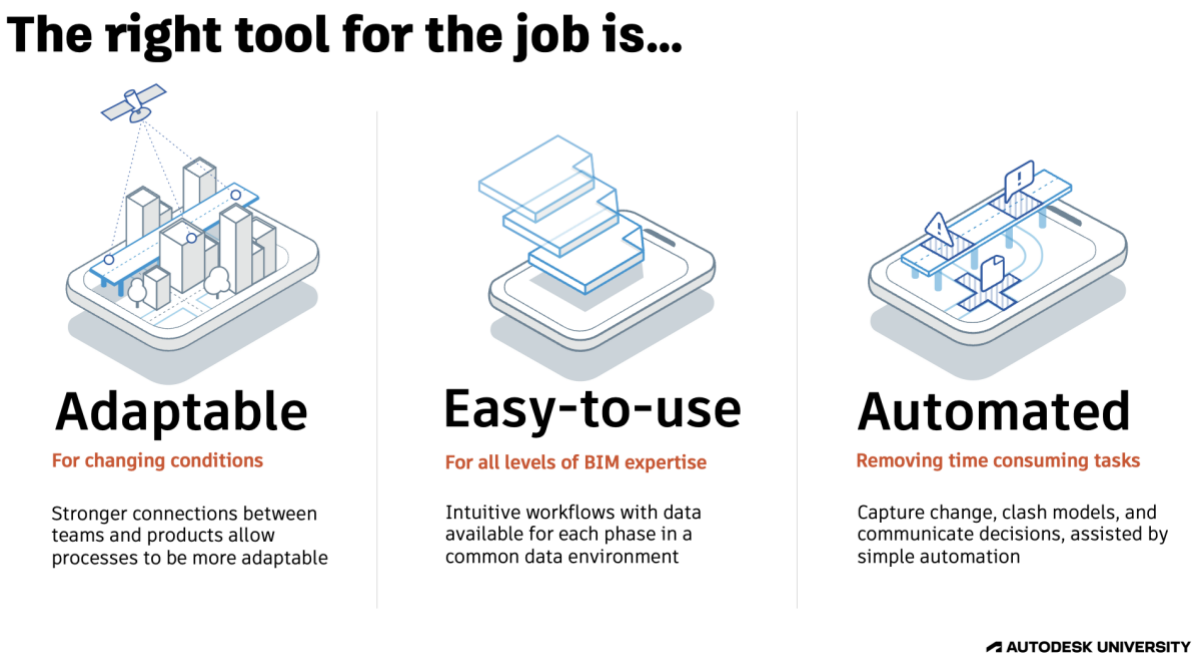


Autodesk Build for cost management purposes.

These three pillars will be essential to ensure efficiency when dealing with people, materials, equipment, budgets/contracts, locations, and information in general. That's why a CDE is so important. Only then is it possible to achieve accuracy in what was budgeted, to finish the project on time and with a high level of quality?

Identifying solution scope for quick implementation

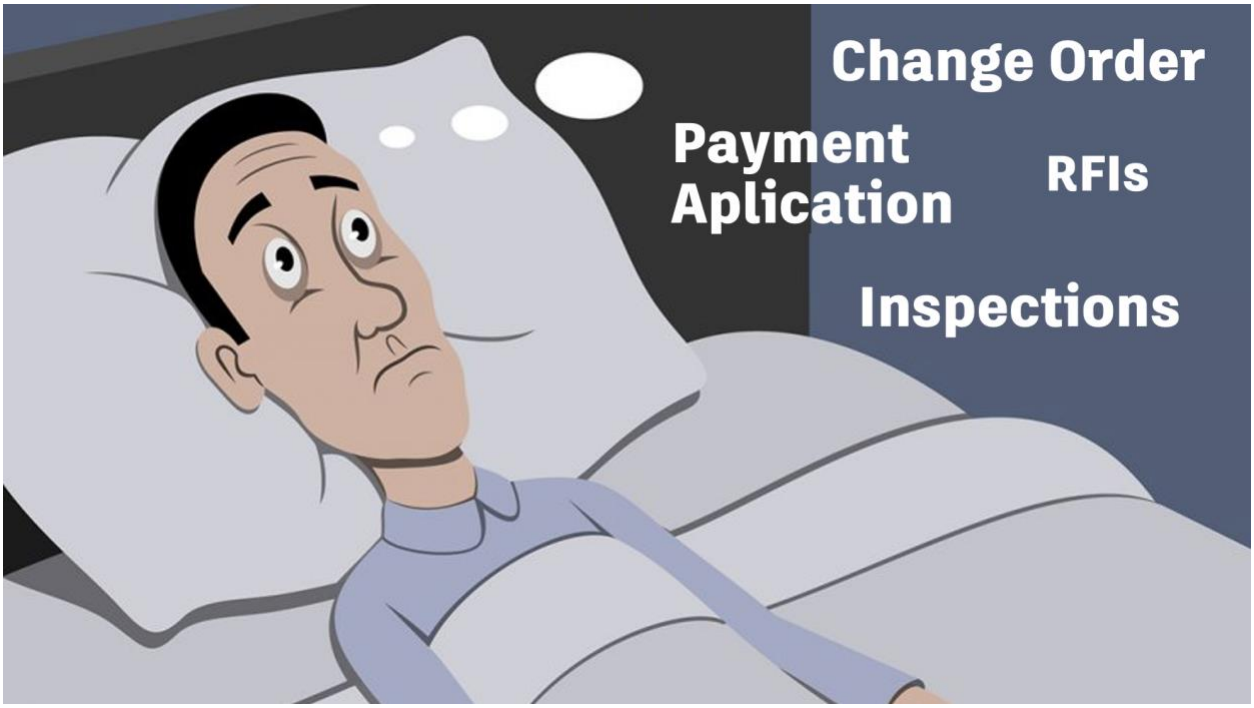
We recognize that wherever you are on that journey, you need the right tools for the job. It would help if you were adaptable, accounting for changing conditions and increasing that connection between teams and products. It would help if you were easy to use, allowing all project team members, regardless of their level of expertise, to access and use all the data available. It would help if you also had these tools be as automated as possible, making your life easier and removing some of those time-consuming, repetitive tasks.



We believe that Autodesk Construction Cloud (or ACC) is the right call for this challenge. With a CDE (Common Data Environment), the information flows through a central repository where, ideally, it is more easily controlled and up-to-date.
The CDE provides mechanisms to gate information flow so that construction documents and other information, such as markups and issues, are only available when appropriate.

Simplify construction technology adoption

Some of the challenges we've heard and faced as Project Managers, where to constantly be on top of multiple aspects that can go wrong on the job site. Leveraging on cloud-based solutions for handling these can help every stakeholder involved in the project to have better tracking, improve project documentation and be up to date with project status by accessing functional live dashboards.



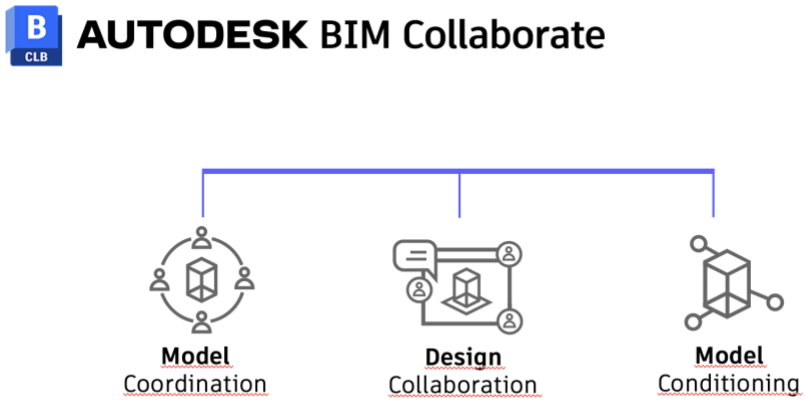
Autodesk Construction Cloud

Autodesk vision towards Construction Industry is focusing on providing the end user with connected workflows from Design to Construction, that will enable every individual to capture data towards centralized platform that will then act as a single source of truth at every stage of the project life cycle.
By combining and developing integrations with multiple point solutions, ACC users can rely on a tool for Project and Cost Management activities, resting safe that their project documentation is being handled in an easy to use, easy to access solution.

Autodesk BIM Collaborate

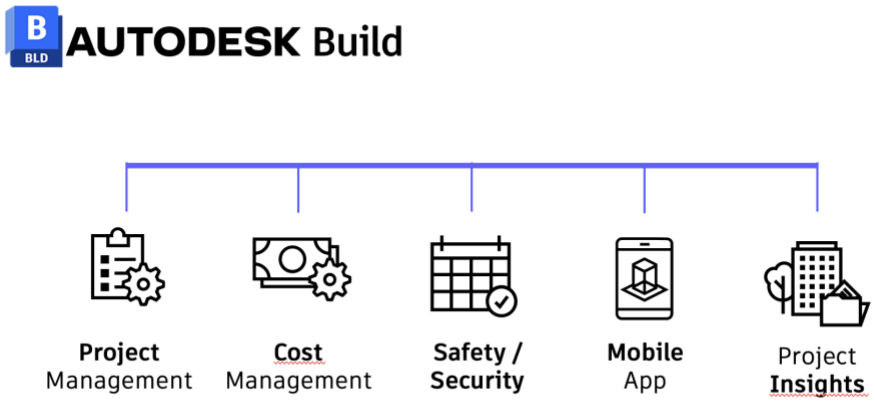
BIM Collaborate is intended to bring collaborative design and preconstruction phases, providing a seamless interface for teams' effective use of transparent information, working on ISO 19650 compliant workflows, proactive end-in-mind design, and on-time advice about possible clashes and design issues.

Some already known modules are Design Collaboration for cloud-based Revit/Plant 3D and Civil 3D, authoring, and Model Coordination for automated clash detection and management.



Autodesk Build

With Autodesk Build, project teams and field teams can stablish the connection from design to construction, being able to conduct multiple tasks divided in five main pillars, Project Management workflows like RFIs, Asset Management, Submittals. Cost Management with Budget tracking, payment application and contract management. Safety and Security inspections within Forms. Accessibility with user friendly mobile application and documentation with project insights, As Built reports and handover documentation that will give back construction workers some hours of their long days.



Construction management on digital transformation

Regarding productivity and long hours, from FMI Report- Construction disconnected, we can see how project teams are spending 35% of their time on non-optimal activities.
The only way to change from a reactive to proactive Project Management is being able to allocate the right time to the right activities, and thanks to ACC, construction teams can rely on a single source of truth for conducting digital transformation workflows on site.

Moving from point and disconnected solutions, an average of 8-15 platforms are used by field teams, with the information scattered at multiple places, time consumed to find the right documentation and generate the requested reports is a heavy lift that cloud-based PM solution will address in a short-term adoption. We are seeing these benefits with multiple customers within the first 90 days of implementation.

Some of the main benefits we've seen and spoke with our customers in Latin America are around the Time Saved on field activities like monitoring and reporting, Saint-Gobain had reduced on 50% their Quality inspection times on site.

Cemex Prefabs had been able to reduce material waste by 28%, keeping project on budget thanks to the documentation and agility to conduct changes that used to overrun the planned budget as they were not taken into consideration.

As well as the ability to finish construction projects on time, and even ahead of schedule thanks to a proactive mindset towards PM activities, like Muros & Techos had experienced, being able to finish 11 months ahead of schedule.