

# Optimizing Your Business Around Industrialized Construction

## Speakers

Autodesk's own industrialized construction thought leaders:

- Amy Marks, VP of Industrialized Construction Strategy & Evangelism
- Ryan McMahon, Director of Product for Industrial Construction
- Allison Scott, Director of Construction Thought & Customer Marketing
- Tiffany Bachmeier, Director of Global M&E and Advanced Manufacturing
- Mike Haley, VP of Autodesk Research

## Learning Objectives

- How to transform a business that can adapt to industrialized construction models that are impacting the industry
- How informed design and productization can produce an outcome-based conversation between designers and manufacturers.
- How essential data can pass through the entire connected construction process from design to handoff.
- Productive ways to apply industrialized construction ideology to your business model and operational processes.
- How to take action on the future and research and work on the solutions that are beyond what's possible today.

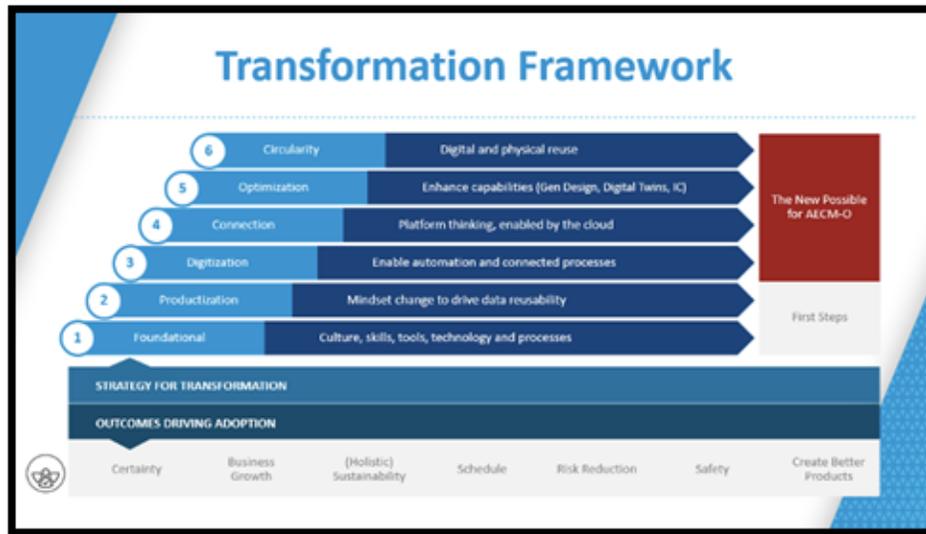
## Description

In this session, Autodesk's top thought leaders in Industrialized Construction will talk about how to successfully shift a business to align with these new developing industry trends. Each panelist will show you why these trends are important, how to successfully evolve with the times, and how Autodesk can help you every step of the way—no matter what stage of the process you are in.

## Transforming Your Business

The Industrialized Construction revolution is upon us, this is indisputable. The industry is demanding more certainty in cost, schedule and safety. We're under pressure from increasing demand, more project complexity, a global skills shortage and a drive for more sustainability. This demands change, this demands transformation. What steps can an organization take to truly transform? The transformation framework, seen here,

empowers you to overcome the complexities of Industrialized Construction and other optimizations, to reduce digital and physical waste, achieve business outcomes, and drive toward circularity, Implementing the transformation framework today will deliver success and positive business outcomes for Industrialized Construction and other innovations in the future.



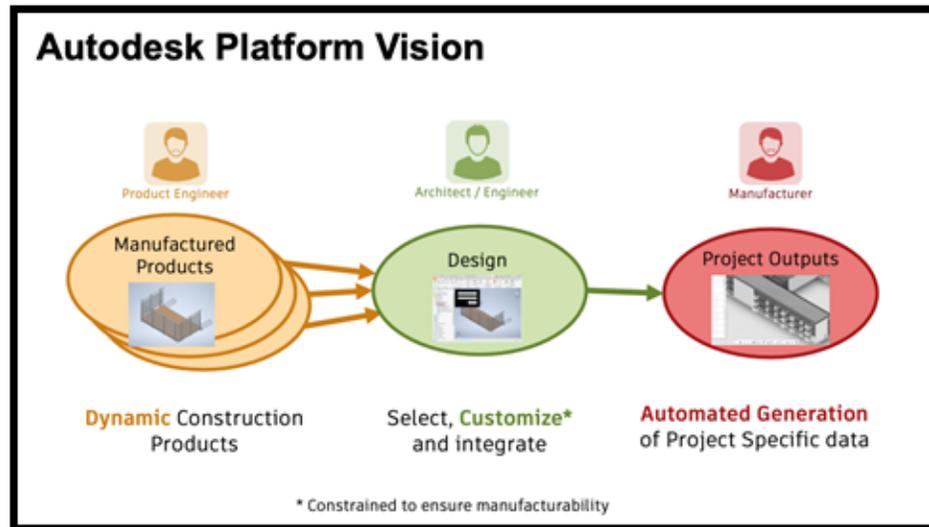
Evangelism	Product	Services
<ul style="list-style-type: none"> <li>• Events</li> <li>• Customer Briefings</li> <li>• Internal training</li> <li>• Exec Councils</li> </ul>	<ul style="list-style-type: none"> <li>• Revit/Inventor beta</li> <li>• Workflow mapping</li> <li>• Platform Integration</li> <li>• M&amp;A</li> </ul>	<ul style="list-style-type: none"> <li>• Convergence Consulting</li> <li>• Research</li> <li>• Technology Centers</li> </ul>

## Informed Design

There is a clear need to develop the data that represents what can actually be made and modified to inform design—because this data defines the construction products that trades and manufacturers produce to support many different projects. This same data used to inform building design—and this is why “Design for Manufacturing and Assembly” often is misunderstood. It’s about the Data for Manufacturing and Design that makes the ‘I’ in BIM intelligent.

Productization is the shift from bespoke prefabricated elements to defined, managed, and optimized manufactured products. Productization requires that customers define data for a standard assembly, including its variations and manufacturing data. As a foundational step, Autodesk must enable productization data to flow through our platform and to inform design using manufacturing parameters and data from how the product is used in construction and operation – we call this "dynamic data." Capturing, rationalizing, and using dynamic data is where systems thinking will come into play.

Systems thinking will enable us to understand how a design component will evolve over time. It will help us understand the relationship of a specific 'productized' part to the whole building. And systems thinking will compel us to develop our tools as "One Autodesk" since portfolio products need to access and consume this dynamic data across the platform.



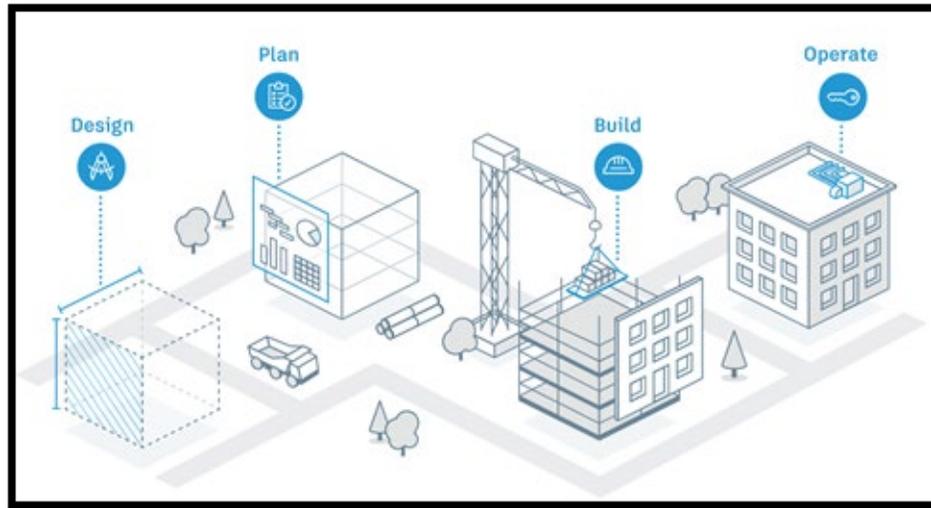
## Connecting Design-Construction & Design-Making

The power of connected construction isn't within the box of construction administration or construction management process alone. Its real power is when we amplify and leverage the data and geometry from planning and design, and put it work in the cloud to support the construction operations phase so that we get better outcomes and more predictability downstream. Our connected construction capabilities are built on the Autodesk platform of Forge and enabled through Autodesk Construction Cloud to ensure streamlined data.

Connected construction helps reduce miscommunications, create an even playing field for people to have access to what they need when they need it, and to have their work informed by earlier steps in the process. It also minimizes risk by automating how information is shared, eliminating the duplication of tasks.

Connected Construction is also powered by an integrated and connected platform, so that information can be updated **once** instead of toggling between systems, minimizing data loss and saving time and resources. This way, data can easily be shared across teams creating a centralized hub with project information increasing efficiency and quality. Technology and productization unlocks our ability to harness the project data –

organize it, interpret it and uncover patterns faster and put it to work. We also know that when design is informed there are benefits in the construction phase to be realized.



Moving towards this way of working doesn't happen overnight. Driving towards a more resilient and future proof business takes time as people, projects, and companies adapt. But for resiliency to stick you need three things:

- A willingness to transform,
- a culture that enables change,
- a strategy to help you get there.

## Guiding the Transformational Path Towards IC

Building information modeling (BIM) is considered not just a physical representation of a design but also the start of the virtual design and construction process. BIM is not or should not be static. It is a living thing! So, when design is informed, using a productized approach, powered by data and geometry – we unlock efficiencies as well as more innovative ways of working – that is connected construction.

It's not one product or one tool – or one way of working. It's an integrated process that brings together the many people, methodologies/workflows and technologies together to achieve shared goals in the construction process. Autodesk is prepared to help you navigate this path.

How we can help you along the way:

- Strategy Definition Workshops
- Foundational Manufacturing Methodology
- Advanced Technology

- Platform Gaps/Digitization
- Workflow Automation



## Reaching Beyond Today's Possibilities

Researchers are undertaking an audacious, ground-breaking and inspiring engagement to tackle the rising demand for housing. While challenges in the development of affordable and sustainable housing extend beyond design and construction, our research focuses on factories that can produce affordable, sustainable housing.

Today, the lack of affordable housing is not an isolated problem in just a few places as it has become a global issue for many cities and nations that are experiencing rapid urbanization. The rising demand and limited supply are symptoms of a severe productivity problem in the AEC industry. This lack of productivity is attributed to how we design and build, forcing the industry to address its shortcomings with a more systematic approach to innovation and business transformation.

Autodesk researchers are working to build housing cost-effectively, at a faster speed, and with less negative impact on the environment.

Imagine a powerful tool that helps architects explore the objectives and constraints of a project at multiple points across the design, make, operate pipeline. It's adaptable and provides endless design permutations to help architects optimize design at the different scales of a building project, including site, building, module unit, and materials. This tool helps ensure design priorities can be reached without compromising goals that are tied to quality, affordability, and sustainability and, of course, cost.

Data and relationships are searchable and mappable, giving architects a clear picture of the downstream effects of every design decision they make. They can see the costs and benefits of one construction technique over another, swapping a standard material with a more sustainable alternative. For example, they can compare how different windows will affect energy use over time.

The ability to track workers and processes helps new or inexperienced workers gain skills faster, helping to address the labor shortage in construction. The software also learns which tasks people excel at and what a machine can do most effectively, creating efficient processes that play to human and robotic strengths—and helps them work together.

What's more, our research is helping projects start from more than a blank slate; they begin with inherited intelligence built on data and knowledge gathered from all the projects that came before. This technology will serve as the nucleus of construction intelligence, offering smart, generative process design that learns from experience, and gets better and better over time.

Autodesk Research is using the data and knowledge we've gained from our research, to reimagine the process of creating affordable and sustainable housing—and to conceptualize the design tools and digital services that could bring that process to life.

By converging the design, and build and operate processes, and putting data and monitoring at the center, we believe we are building the technology to tackle the design problem that contributes to today's housing crisis. We want to help create the affordable housing of tomorrow. In the future, we envision the homebuilding process as circular, not linear.

***Reach out to us!***

***We're here to help you every step of the way as you continue to transform and evolve with the emerging industrialized construction trends in today.***