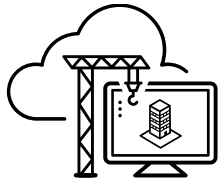


DIGITAL
CONSTRUCTION
SUMMER SCHOOL

Industrialized construction for the built environment



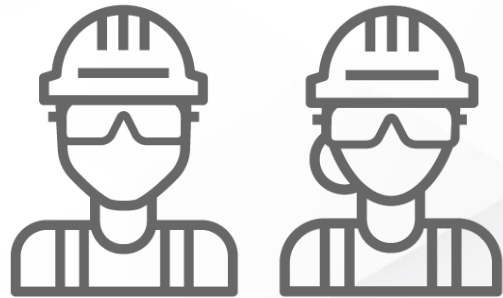


DIGITAL
CONSTRUCTION
SUMMER SCHOOL

Industrialized construction – why now?



Material waste



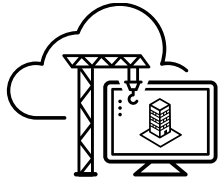
Labor shortages



Increased demand



Government &
Owner demand



DIGITAL
CONSTRUCTION
SUMMER SCHOOL

Benefits of industrialized construction

- Improved productivity and quality
- Reduced health, safety, and environmental impacts
- Increased emphasis on realizing clients' vision
- Support for innovation
- Reduce cost
- Increase predictability





Introduction to Industrialized Construction

Amy Marks
VP of Industrialized Construction Strategy and Evangelism



Amy Marks

Vice President of Industrialized Construction Strategy and Evangelism

Queen of Prefab

Industry thought leader on Industrialized Construction

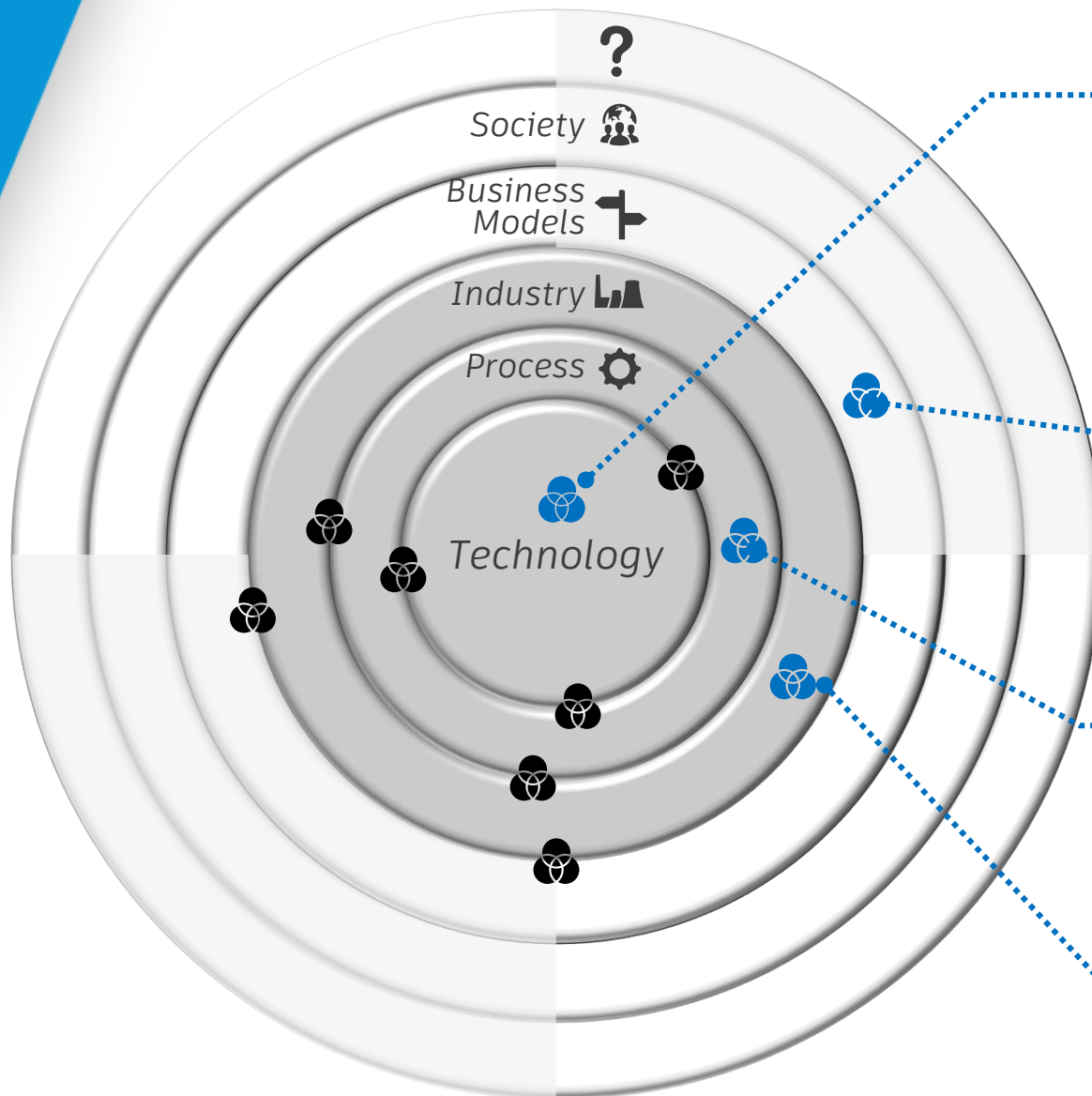
Alumna of Harvard Business School and graduate of the UF

Ambassador of Advancing Prefabrication Conference

Trainer for Mechanical Contractors Association of America (MCAA)

Singapore Govt. Panel of Experts on Construction and Productivity

Worked on six of the seven continents consulting on large-scale projects to optimize Industrialized Construction



Technology Convergence

e.g. melding of Telco, computing, consumer electronics

Business Model Convergence

e.g. GCs incorporating design/manufacturing

Process Convergence

e.g. Design ↔ Build ↔ Operate

Industry Convergence

e.g. Industrialized Construction



Industrialized Construction

The application of
manufacturing techniques
in the built environment

INDUSTRIALIZED CONSTRUCTION



Advanced
Building
Products



Single Trade
Assemblies



Multi Trade
Assemblies



Volumetric
Modular



Robotics &
Automation



Additive
Manufacturing

Prefabrication Continuum



DfMA



BIM



Lean MFG



Cloud



Big Data &
Analytics



IOT

PROCESS ENABLERS

TECHNOLOGY ENABLERS

DATA

Design

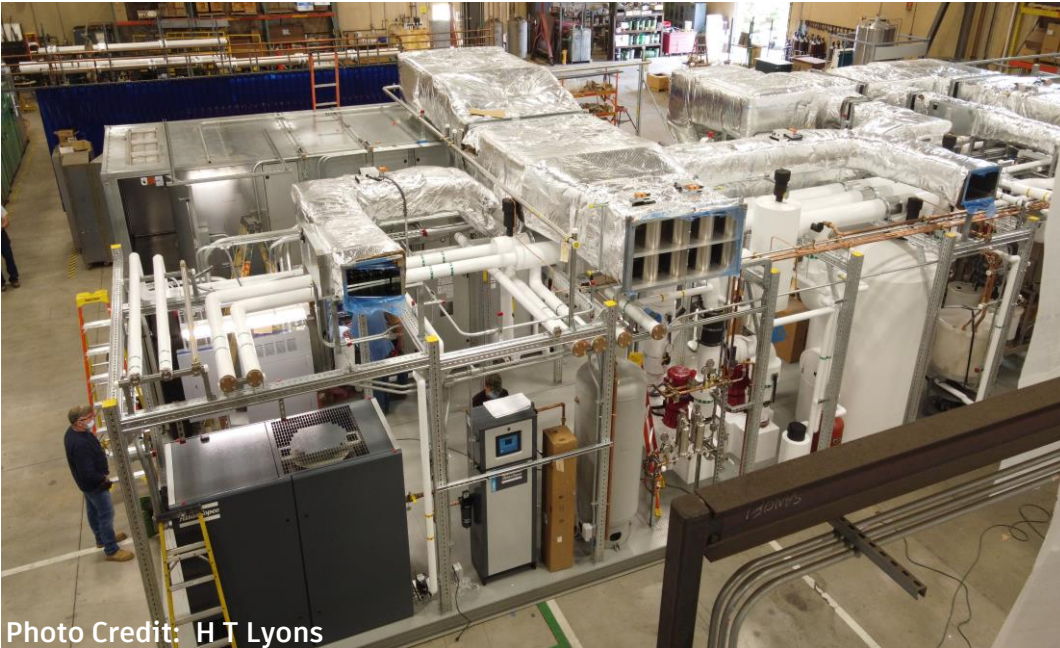
for Manufacturing
and Assembly

(DfMA)



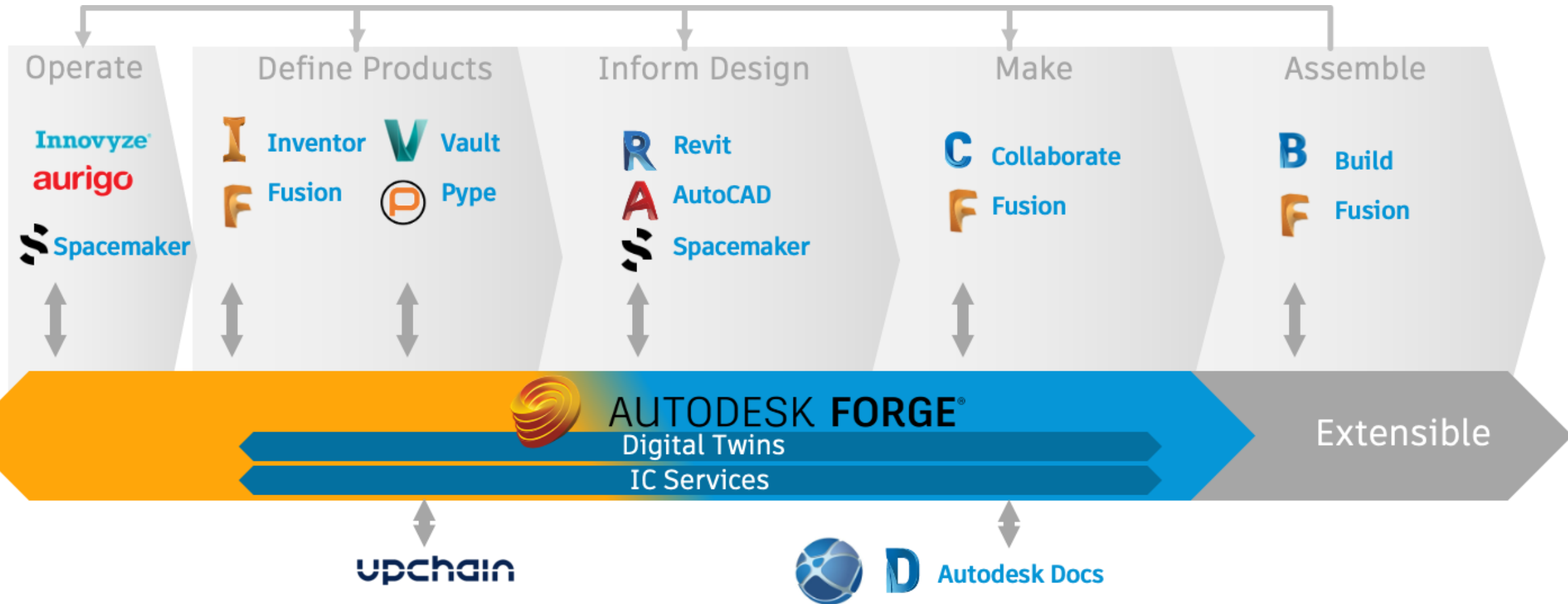


Prefabrication vs. Productization



The Future is “Product” Led and Informed Design

Data Reuse & Platform Optimization



100%

increase in global building floor area by 2060 owing to population growth and rapid urbanization.

40%

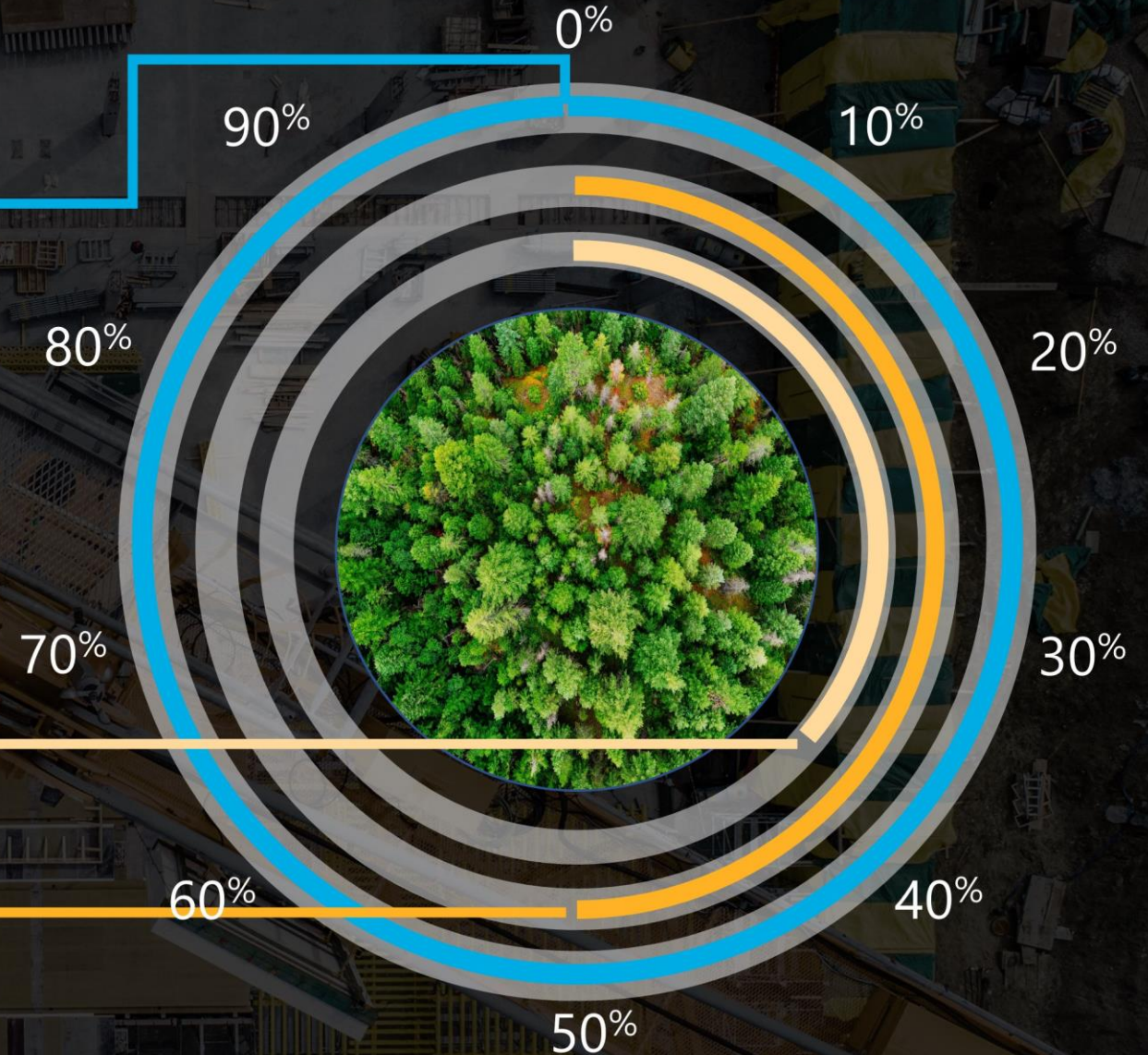
of solid waste comes from the construction industry

50%

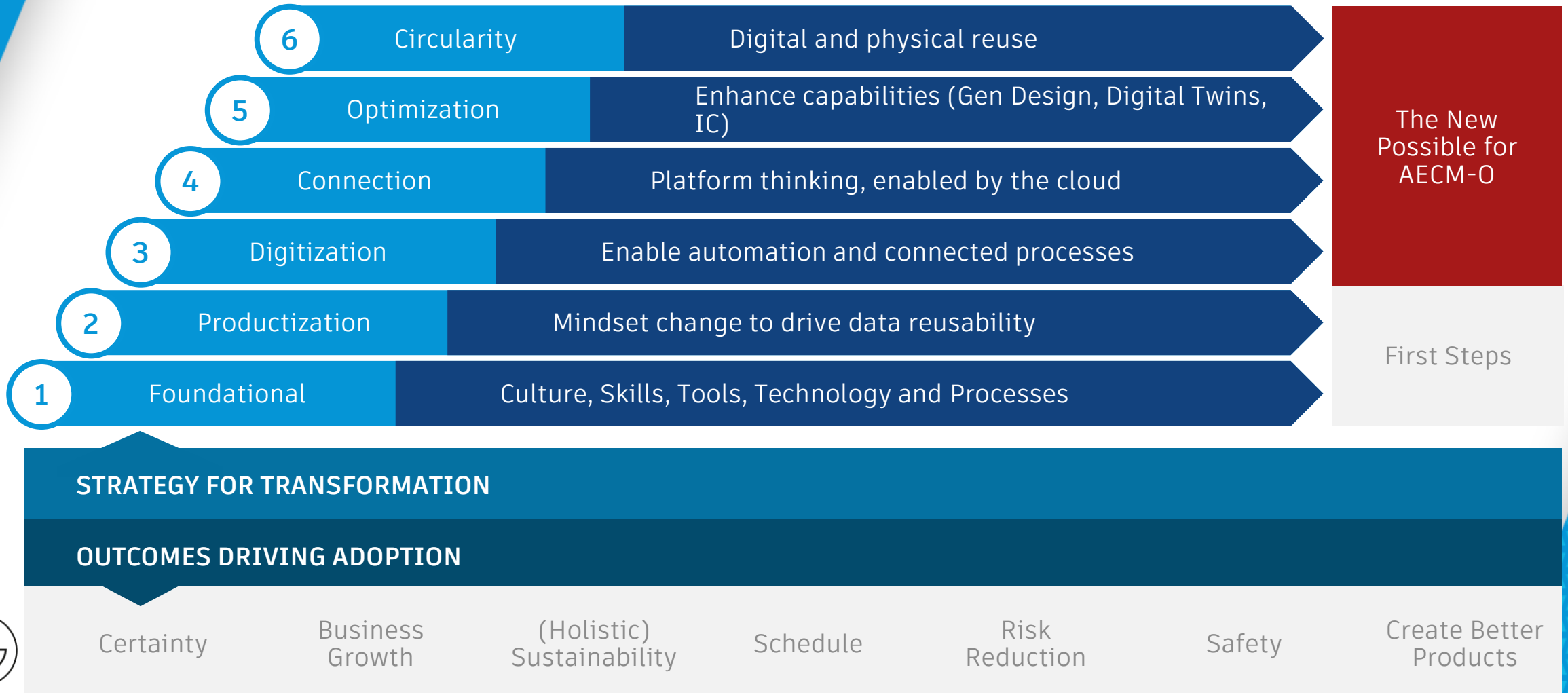
of all global material consumption comes from the building sector

Sustainable Construction

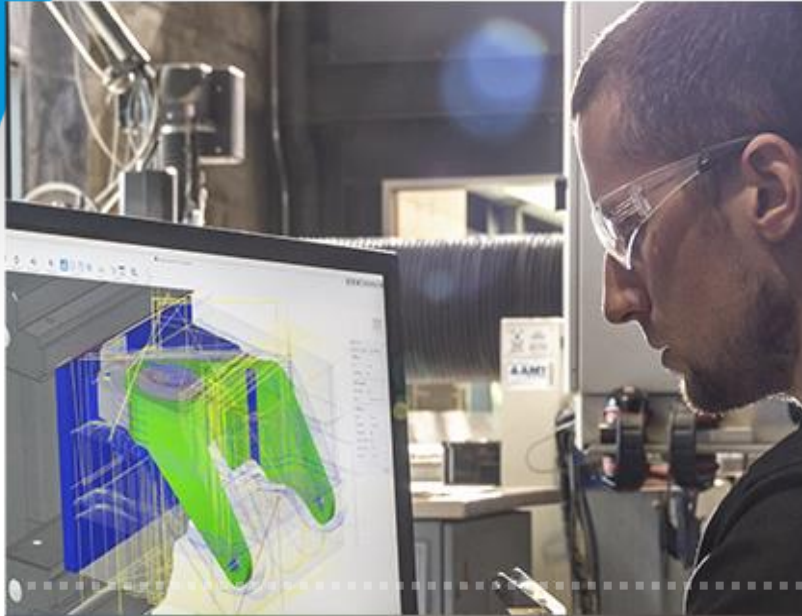
Maximizing Quality, Safety, Schedule and Cost Control while Winning More Work



Transformation Framework



Autodesk IC Strategy



Enable Data for
Manufacturing & Assembly



Connect Autodesk platform
for the ecosystem using to
make IC easier



Create a collaborative
knowledge center for IC
to share best practices



Amy Marks

Vice President
Industrialized Construction Strategy


Queen of Prefab

Alumna of **Harvard Business School**

Graduate of the **UF**

Ambassador of **Advancing Prefabrication Conference**

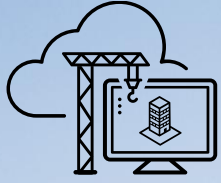
Connect with me!

 amykulkamarks

 @QueenofPrefab

 #QueenofPrefab

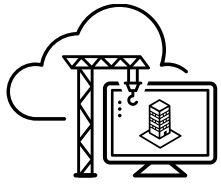
 @QueenofPrefab



DIGITAL
CONSTRUCTION
SUMMER SCHOOL

Industrialized Construction curriculum preview





DIGITAL
CONSTRUCTION
SUMMER SCHOOL

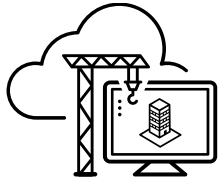
WELCOME TO THE AUTODESK DIGITAL CONSTRUCTION SUMMER SCHOOL



Anil Sawhney

Director of the Infrastructure Sector
Royal Institution of Chartered Surveyors (RICS)

- Based in Boston, MA
- Construction and infrastructure leader with a background in research, education, thought leadership
- Co-author of Construction 4.0: An Innovation Platform for the Built Environment
- Visiting professor at several institutions
- Email | asawhney@rics.org



DIGITAL
CONSTRUCTION
SUMMER SCHOOL

Industrialized Construction Curriculum

Principles of Industrialized Construction

Course objectives

Introduce the megatrends encapsulated in Industrialized Construction

Explain concepts, strategies, and principles that are important for ongoing transformation of the construction industry



Prefabrication



Additive
manufacturing



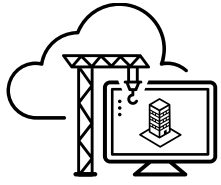
Robotics



Big data, AI, and
Predictive Analytics



Internet of Things



DIGITAL
CONSTRUCTION
SUMMER SCHOOL

Industrialized Construction Curriculum

Principles of Industrialized Construction

Learning Outcomes

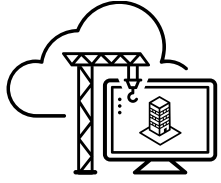
Define Industrialized Construction and the megatrends

Demonstrate the potential benefits of Industrialized Construction concepts, strategies, and principles

Create high-level strategies for the implementation of Industrialized Construction at construction organizations at the organization and project level

Describe the convergence of trends and technologies of Industrialized Construction

Illustrate working knowledge of production, manufacturing, lean principles, sustainability, and other topics during the project's life cycle and process



Industrialized Construction Curriculum

Course modules

1

- Introduction to Industrialized Construction (IC)

2

- Productization, DfMA, and Sustainability

3

- Rise of MEP Assembly

4

- Prefab Readiness and Lean Manufacturing in IC

5

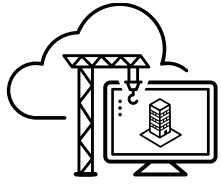
- Artificial Intelligence, Automation and Robotics in IC

6

- Convergence of megatrends Product Platforms, and Digital Platforms

7

- Future of Work



DIGITAL
CONSTRUCTION
SUMMER SCHOOL

Download Autodesk whitepapers





AUTODESK[®]

Make anything[™]