The Industry that Time Forgot:
Pioneering the Digital Future in Architecture

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shp
BOTH/AND

SERVICE FIRMS
SERVICERS OF CLIENTS

DESIGN
CONCEPT
PROCESS
ENVIRONMENT
HISTORY/THEORY
CULTURE

Expertise
Negotiating the Market
Construction Technology
Value
Enterprise
Branding

DESIGN
MARKET CONDITIONS
PROGRAM
SITE
SCHEDULE
CODES
What is the problem?
Productivity Decline in the Construction Industry

Digitization Index

Compound annual growth rate %

Productivity growth 2005 - 14

Negative growth in productivity

— McKinsey Global Institute: Reinventing Construction, A route to Higher Productivity
How do we do this?
We need the right tools.
We need the right process.
1a. Concept/Massing: What can you build?
1b. Concept/Massing: What should you build?
1c. Systems/Layout

LOGISTICAL PLANNING

PROGRAMMATIC LAYOUTS GENERATED / DATA-DRIVEN DESIGN MODELING

INITIAL SYSTEMS DECISIONS MADE
1d. Structure/Systems

Structural analysis pulled from model to verify design.

Model acts as deliverable for pricing, code review, and planning.

Mechanical systems developed in model.
2a. Digital Twin

- Life Cycle Tracking
- Real-time 3D Scanning
- Augmented Reality Walkthroughs
- Parts/Pieces/Assemblies/Components sent out for fabrication
- Architect/Engineer/Fabricator/Contractor generate fabrication level models
3a. Data Collection and Distribution
We need to manage data.
1a. Concept/Massing: What can you build?
Envelope
Code + Massing
Size up any site — instantly.

Unlock real estate development potential with Envelope.
Verify opportunities. Accelerate deal flow.
Gain your competitive advantage.
1b. Concept/Massing: What should you build?
Design Templates
Automating Baseline Data to Inform Design
1c. Systems/Layout

LOGISTICAL PLANNING

PROGRAMMATIC LAYOUTS GENERATED / DATA-DRIVEN DESIGN MODELING

INITIAL SYSTEMS DECISIONS MADE
Real-Time 3D Analysis
Connectivity and View Studies
Environmental Analysis + Data Driven Design
Façade Systems
Interactive Visualization
2a. Digital Twin

- **LIFE CYCLE TRACKING**
- **REAL-TIME 3D SCANNING**
- **AUGMENTED REALITY WALKTHRUAGHS**
- **ARCHITECT/ENGINEER/FABRICATOR/CONTRACTOR GENERATE FABRICATION LEVEL MODELS**
- **PARTS/PIECES/ASSEMBLIES/COMPONENTS SENT OUT FOR FABRICATION**
87 Dikeman St
Lidar Scanning + Point Clouds
Barclays Center
Life Cycle Tracking + AR
Automated Assembly

Factory Planning
Feature Wall
AR Walkthrough + Assembly Testing
DESIGN DELIVERY OCCUPANCY

3a. Data Collection and Distribution
233 Broadway
Layout Planning
Botswana Innovation Hub

Case Study
THANK YOU

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