Digital Twins in Construction Projects

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What do your future customers need?
The Digital Twin in the Construction Industry

Digital twins are an accurate representation of the physical asset, and should be maintained throughout the asset lifecycle.
Least digitized industry in US and 2\textsuperscript{nd} least digitized in Europe\textsuperscript{1}

7\% of the global workforce is employed in the construction industry

1\% Labour productivity growth over past 2 decades (2.8\% growth in global economy)

20\% Over schedule and 80\% over budget is common across large projects

\textsuperscript{1} McKinsey Global Institute, Digitalization Index, December 2015
\textsuperscript{2} & \textsuperscript{3} McKinsey Global Institute, “Reinventing construction through a productivity revolution February, 2017.
\textsuperscript{4} McKinsey, “Imagining construction’s digital future,” June, 2016,
What will we achieve as we unlock the rest?

88% goes unused

Think of all we’ve accomplished using only 12 percent of the data generated by the IoT.
We are only beginning

Extabytes of data are generated by the IoT every day.
Learn from how your products are used, and get better
Good quality, accurate, available data

Volume of asset information

Value of Asset Information

**Design & Build**
- Repeatability
- Change Management
- Fewer Surveys
- Less validation

**Hand Over**
- Digital Hand Over
- No repeat activities
- Automated validation
- Accuracy

**Operation**
- Reliable Bidding
- Information confidence
- Predictive Maintenance
- Efficient scheduling

**Decommission**
- Reduced risk
- Fewer surveys
- HSE
- Repeatability
Using the data that comes available is part of the IBM Circularity offerings.

- Business Model Innovation
- Value Chain Mapping
- Circular Capability Maturity Assessment
- Target Operating Model
- Data Maturity Assessment
- Roadmap to become full Circular, incl. technological enablers like IOT, cognitive and cloud
Critical capabilities for a CE transformation and unlocking the power of the digital twin, end to end.

- Design for Circularity for Product and Component
- Design for Material Reuse
- Lifecycle Management for Product and Component

Product Design and Management incl PLM

Reuse operations

Reuse (loop) selection

Solutioning and Selling

Reverse Management

- Portfolio for new and used products
- Solutioning, including products
- Performance based contracts

- Remanufacturing
- Refurbishment
- Parts Harvesting
- Material Harvesting

- Reverse Logistics (transport and handling)
- Regulatory and Legislative Compliance
- Installed Based Management
The digital twin unlocks many opportunities.

Through having the data at our fingertips, we can offer better services, we can optimize how we use the buildings and we can ultimately deliver a better user experience and resulting productivity increase.
An example of the digital Twin (end with one of the movies in comments section)