Digital Transformation enabling Offsite decisions
27th February 2019
Industry solutions organization
Digitizing built assets

Flow of information

- Constructors
- Infrastructure and facilities managers
- Service providers
- Citizens
- Use of service
- Optimise service
- Shape demand

Plan/Brief  Design  Build  Maintain  Operate

Accredited to Digitally Built Britain
Enable full benefits from digital ways of working in the built asset industry
History

- 1995 Established
- 2000 IFC2
- 2001 IFD ISO
- 2012 IFC4 + bSDD
- 2013 IFC ISO
- 2014 IFC Infrastructure
- 2015 BCF
- 2016...Enabling workflows
Working with others
Disruption is everywhere
Construction productivity growth remains dramatically low

$1.6$ trillion/year!

**Source:** Imagining Construction's Digital Future
Capital Projects and Infrastructure
June, 2016
McKinsey Productivity Sciences Center, Singapore

**Source:** OECD, WIOD, GGCD-10, WorldBank, US BEA/BLS, Turkish National Statistics Bureau, Singapore National Statistics Agency, Malaysian Statistics Agency, Rosstat, McKinsey Global Institute Analysis, Global Insight; ISSA
Digital Transformation

1. Embrace Digital Transformation

2. Break down data silos with improved interoperability by better understanding whole life asset value

3. Develop data strategies using international standards

4. Transform from within

Digital Data

In numbers

Gartner Study
- data used: 1%
- Dark data: 99%

SAP Report
- Company-wide adoption of digital tools: 3%
- Belief that digital is key to strategic goals: 96%

McKinsey & Company
- Potential improvement in operating margins: 20-30%
- Amount needed by 2030 for the world's infrastructure: $57 trillion
Demand driven

What does the industry need?

Needs and requirements

Solutions

What can they provide?

Software vendors

How can we support?

Needs and requirements
Demand driven

What does the industry need?

User program

What can they provide?

Compliance program

How can we support?

Standards & Solutions program

Needs and requirements

Solutions

Needs and requirements
Digitising workflows

Exchange Requirements

Process Descriptions

Data Structure

View

Purpose-driven workflows

Workflow Concept by Professor Rasso Steinmann, IABI
buildingSMART Rooms

Airport  Building  Construction  Infrastructure

Product  Railway  Regulatory  Technical
Project Case Study

Rail

**Mission**: To set global open and interoperable BIM standards for the rail industry by extending the IFC schema to create the “IFC Rail Candidate Standard”

**Timeline**: April 2018 – March 2019.

**International collaboration**: 4 bSI Summits and 8 expert panel meetings for project participants

**Resources**:
- Project leaders and project team
- Expert panel
- Infra Room Administrator
- 24 team members (plus 70+ in-kind contributors)

**Funding raised**: €2,500,000 +/-
Project Progress

Proposal ➔ Initiation ➔ Development ➔ Approval ➔ Deployed

- Your proposal here!
- IDM Legal
- MVD FM Handover
- IFC Tunnel
- DfMA, lean & offsite
- IFC Land and Site Development
- IFC Rebar
- IFC Bridge
- IFC precast
- IFC Rail
- MVD Energy Simulation
- IFC Ports & Waterways
- IDM Model set up
- MVD Quantity take off
- IDM planning e-submissions
- LOX

See the publication list

IFC = Industry Foundation Classes
MVD = Model View Definition
IDM = Information Delivery Manual
DfMA = Design for Manufacture and Assembly
LOX = Level of Development/definition/…
Linking the initiatives

- Quicker, better Value, better Quality, better Environmentally, Safer

The goal

Not a stable system yet.

Some Governments
Some clients
More required

Contractual mandate

DfMA
Lean 6 sigma
Offsite
AM (ISO 55001)
Linking the initiatives

The goal

Quicker, better Value, better Quality, better Environmentally, Safer

Contractual mandate

DfMA
Lean 6 sigma
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Some Governments
Some clients
More required
Linking the initiatives

Open data has come of age.
- Open standards
- Technology
- Cohesive community

Some Governments
Some clients
More required
Published Since 2014

bSI Final Standards

IFC Base Standards ISO
IFC Specifications & Tools
IFC 4 Specialist site
IFD Framework for object orientated info ISO
IFC4 Design Transfer view MVD
IFC4 Reference view MVD
IFC4 Infrastructure Alignment
BIM Collaboration Format XML
BIM Collaboration Format API
BIM Collaboration Format v 2.1
IFC 4.1 Alignment positioning

bSI Final Technical Report

Model View Definition for LANDXML v1.2
Infrastructure Overall Architecture
Open Standards for Regulation
Infrastructure Asset Management

buildingSMART SPEC

IFC Rail bSI SPEC
IFC Road bSI SPEC

buildingSMART Candidate Standard

ifcOWL
International Awards – 2018
A record year

- 85 Total submissions
- 40 Final for review
- 37 Independent jurors
- 4 Category winners
- 6 Special Distinction awards
2018 buildingSMART Award Nomination

Construction

Project facts:
- 90 Meter Housing
- 366 Apartments
- EURO 100 million
- IFC 2x3
- 50 different disciplines
- 350 different IFCs
- BCF used
- Extensive offsite

Bouwcombinatie Pontsteiger
The Pontsteiger Project
Amsterdam, Netherlands
Space usage/ grouping
Professional Certification

Join in Today:
www.education.buildingSMART.org

buildingSMART Professional Certification Program

The global benchmark for openBIM training

buildingSMART stands for quality assurance and standardisation in the digitalisation of the built asset industry.

Find out more
Dusseldorf
25 – 28 March 2019
buildingSMART International
Standards Summit

Order ticket  Become sponsor

Register now! www.buildingsmart2019.de
Thank you

richard.kelly@buildingsmart.org

www.buildingsmart.org