

BIM

BUILDING INFORMATION MODELLING

Interfaces between Building Services & Architectural Models

ARCDOX

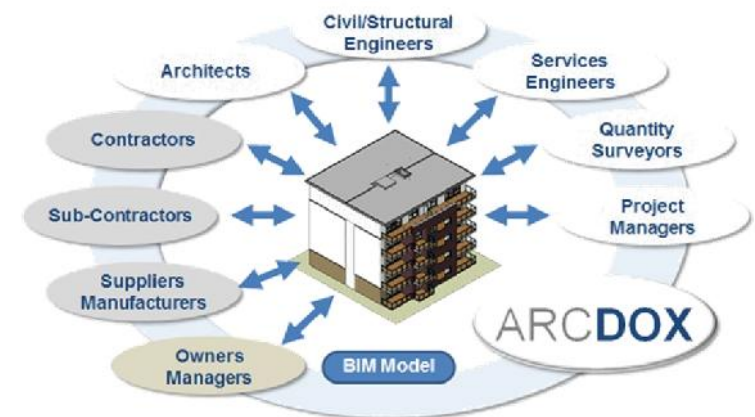
Ralph Montague BArch MRIAI
Architect, Managing Partner



About ArcDox

About the Presenter

- **Ralph Montague** BArch MRIAI
 - Architect, Managing Partner, ArcDox
 - Board Member, National BIM Council of Ireland
 - Chair, National Standards Authority of Ireland (NSAI) BIM Mirror Committee
 - Board Member, Construction IT Alliance (CITA)
 - Coordinator, CITA BIM Group
 - Chairman, RIAI Practice Sub-Committee for BIM
 - Architects Council of Europe (ACE) BIM Working Group
- **ARCDOX** | Enabling & Supporting BIM
 - Consultancy, Production, Support & Training
 - 20+ years Industry Experience
 - 8+ years Experience with BIM
 - 100+ Projects in BIM
 - 1000+ People Trained in BIM Tools



Agenda

BIM (Building Information Modelling)

- Interfaces between Building Services & Architectural Models?
- How BIM supports Collaboration between the Disciplines?

BIM

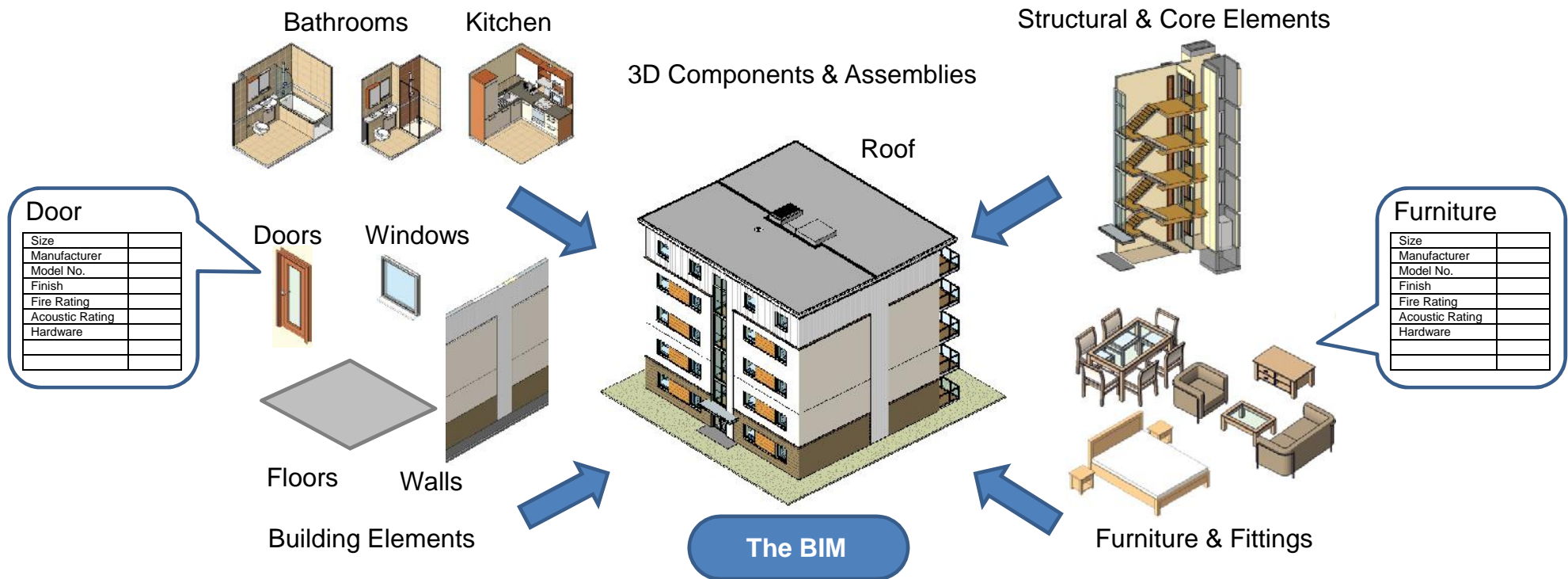
WHY
WHAT
HOW



The Beautiful Idea of BIM – Build the Building Twice

Object-Based Modelling (not line-based drawing)

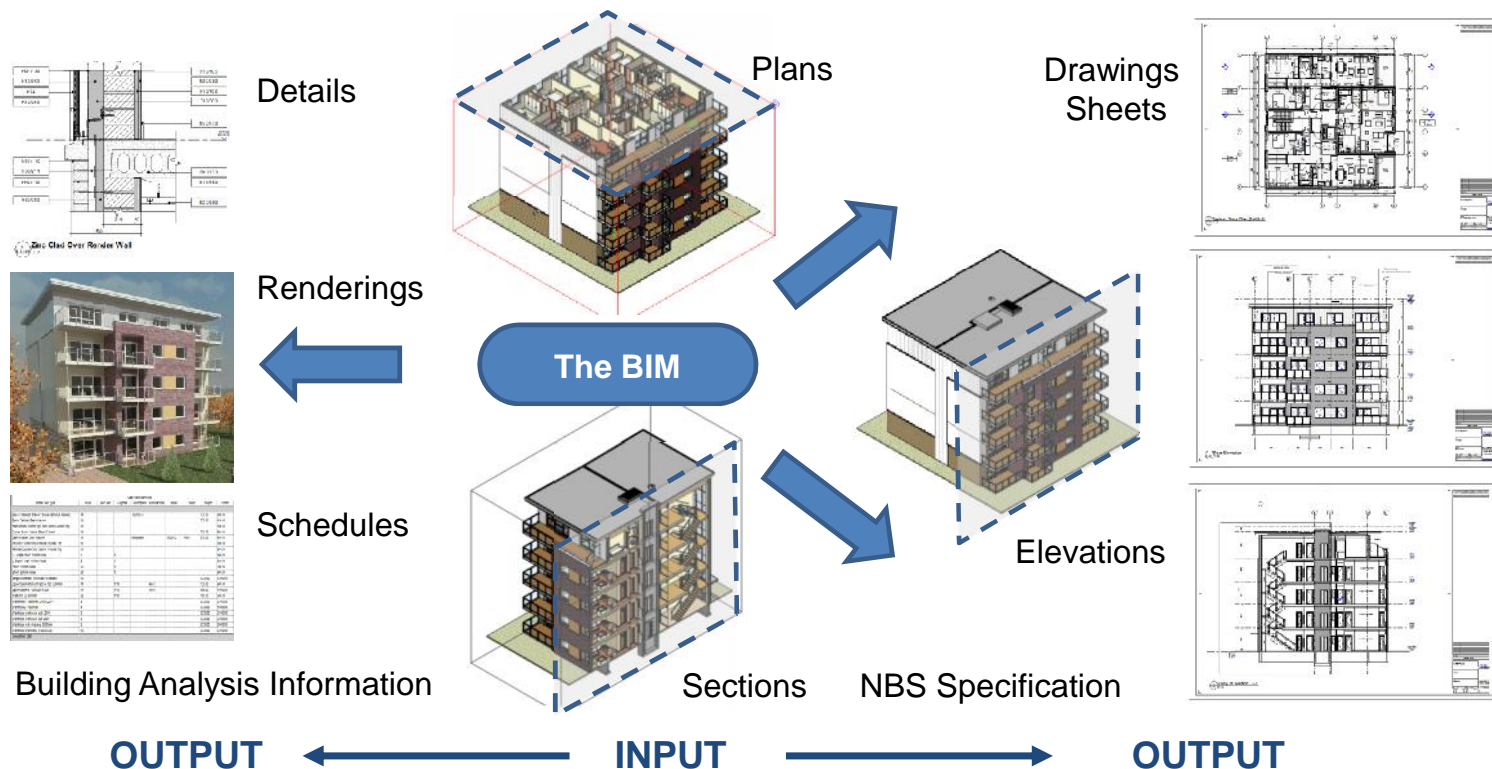
- Virtual Buildings Assembled from Objects with Intelligent Building Data – Digital Prototyping



The Beautiful Idea of BIM – Outputs Derived from Model Data

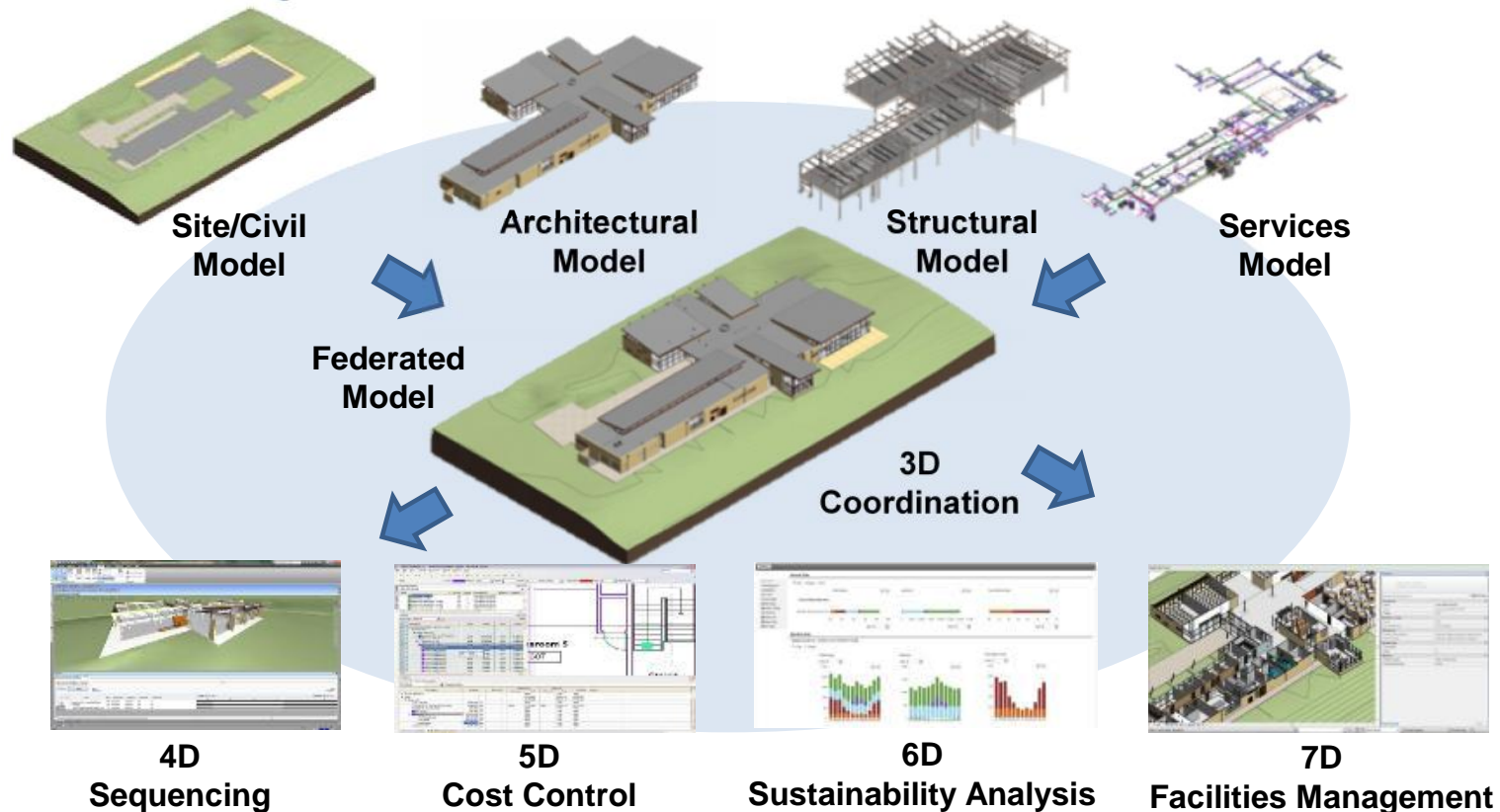
Fully Coordinated Drawings and Information Schedules

- Information or “Documents” Derived or Extracted from the Information Model/Database



The Beautiful Idea of BIM – Collaboration & Analysis of the Virtual Model

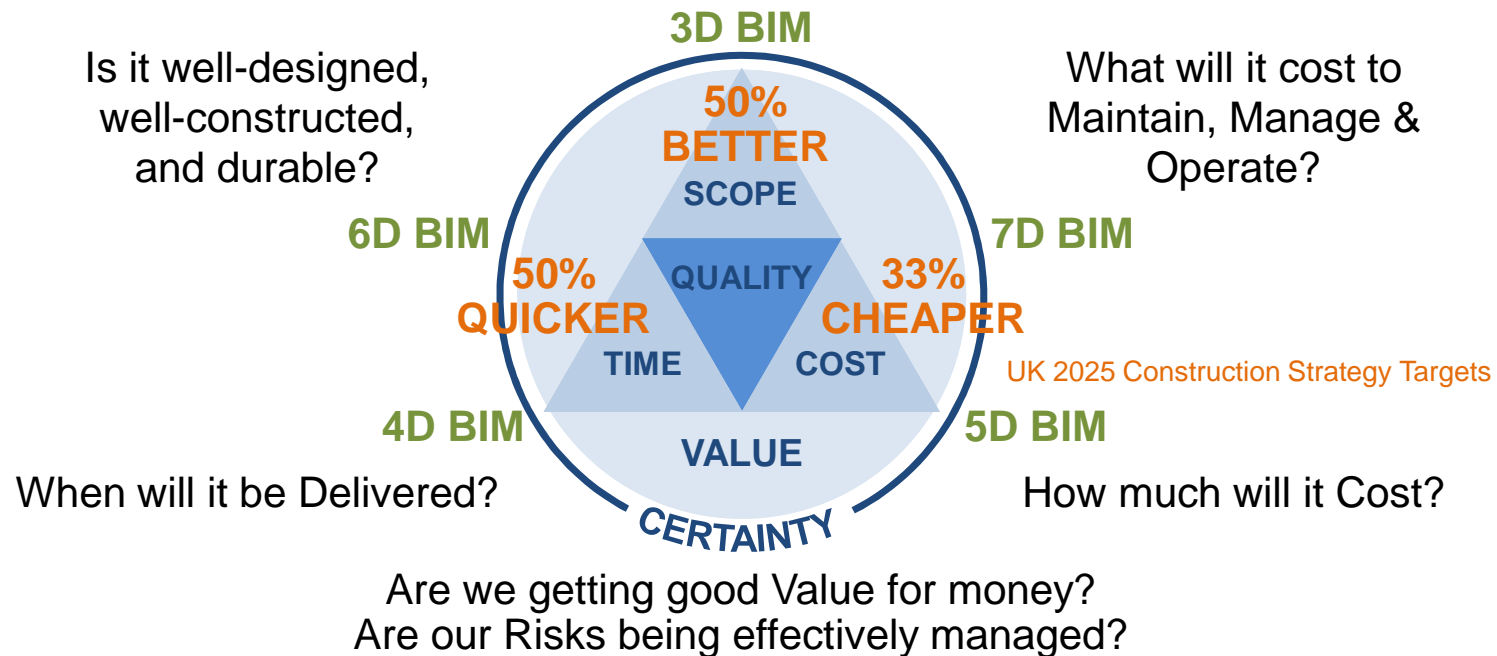
Level 2 BIM - Sharing Models for Coordination Review



The Beautiful Idea of BIM – Giving Clients What they Really Want

What Do Clients Want? **BETTER PROJECT OUTCOMES**

What are we Building?
Will it suit our needs, our image?

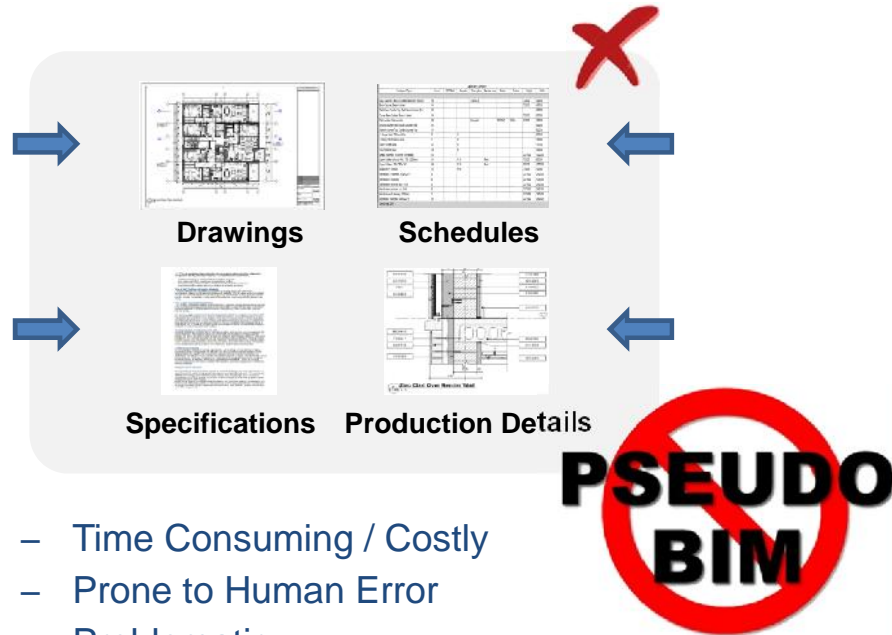


Better Buildings, Built Quicker & Built Cheaper

The Ugly Reality of BIM – Current Practice

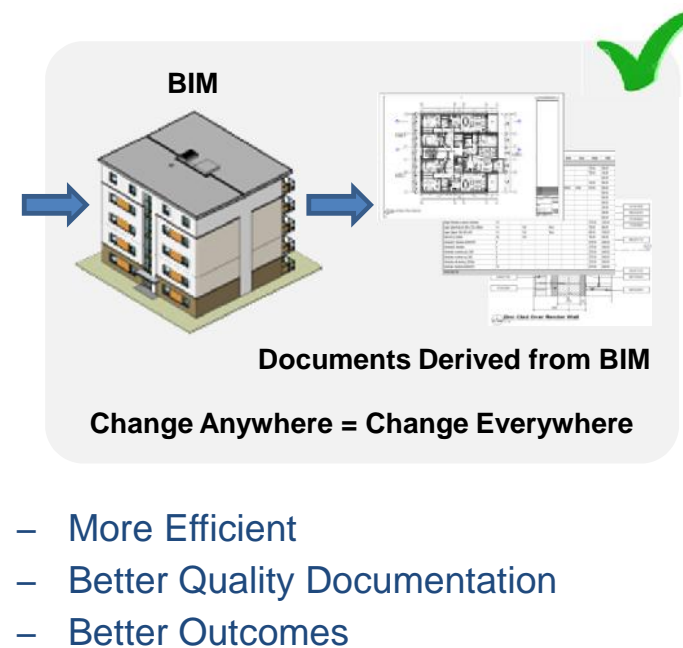
Traditional Methodology

Intellectual / Productive Input into Multiple Disconnected Documents



BIM Methodology

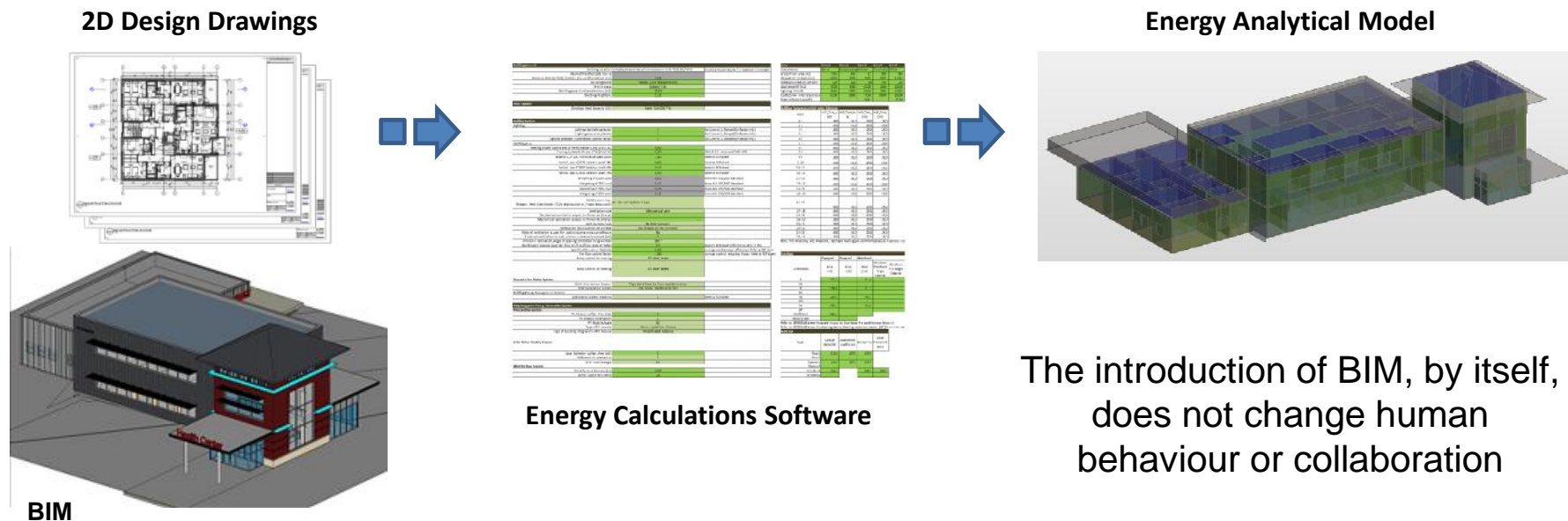
Intellectual / Productive Input into a Virtual Building Information Model



The Ugly Reality of BIM – Current Practice

Relationship between Architectural Design & Building Services Design

- Current practice is linear, siloed, slow & time-consuming
- No direct relationship between design data & calculations (few or no feedback loops)
- Analysis typically left to confirm design (later), rather than inform design (earlier)

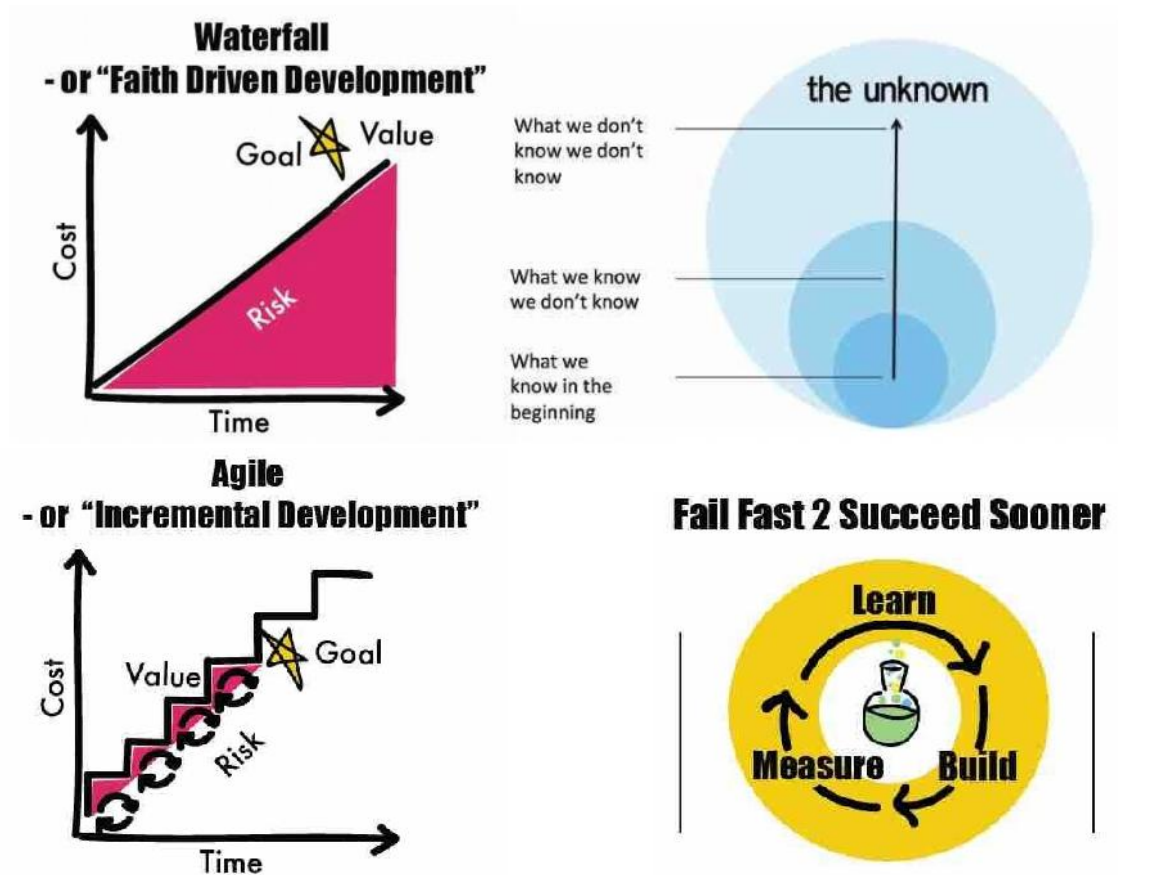


The introduction of BIM, by itself, does not change human behaviour or collaboration

BIM Collaboration – New Practices & Procedures

Agile Design Approach

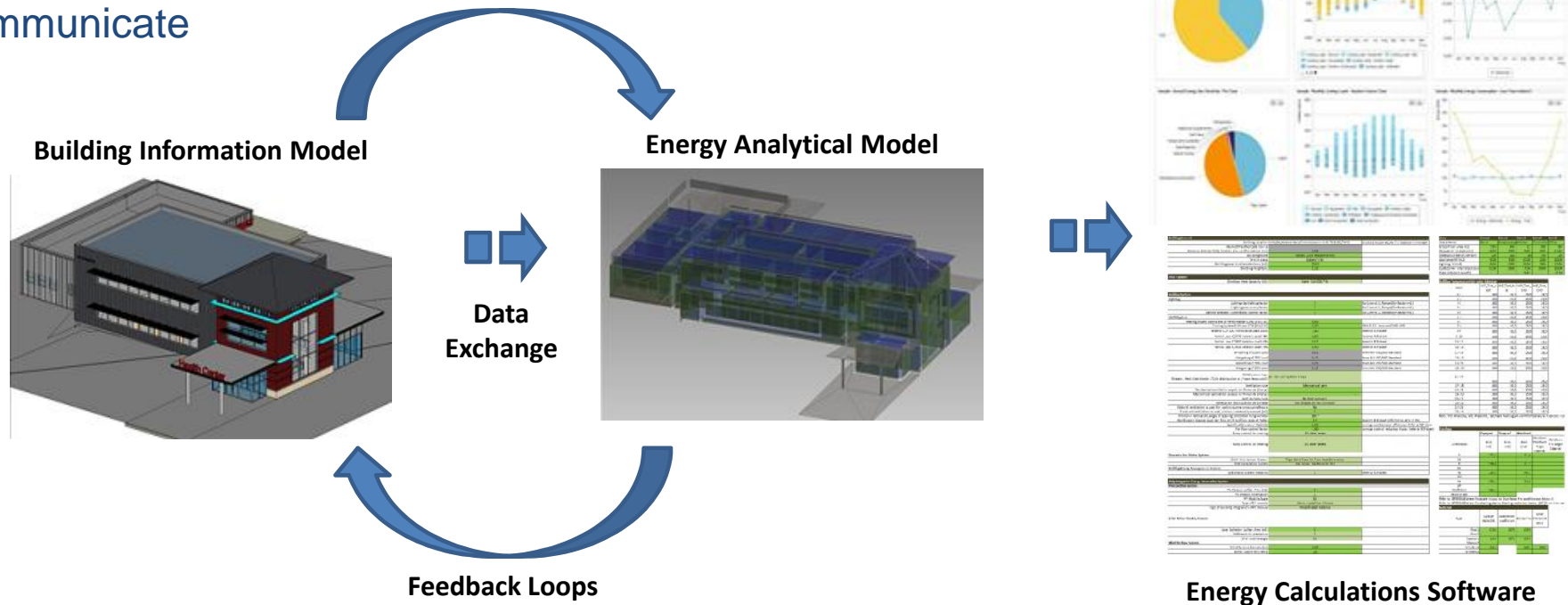
- Iterate & Analyse Quickly & Often
- Experiment
- Collaborate



BIM Collaboration – New Practices & Procedures

Relationship between Architectural Design & Building Services Design

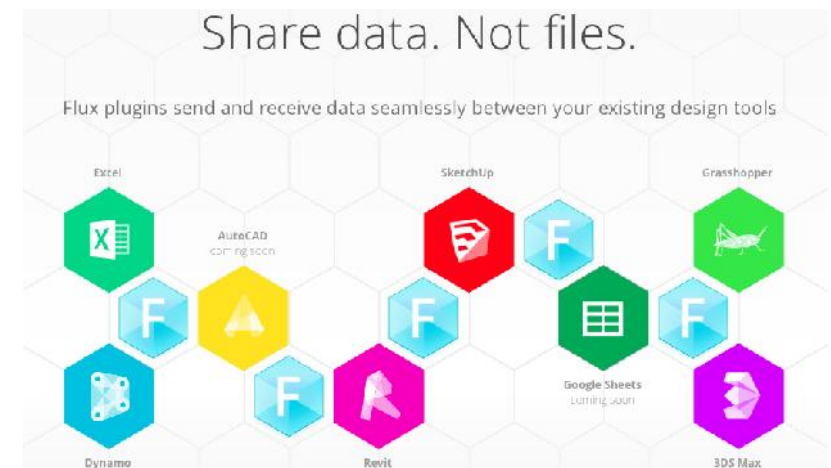
- Exchange Data, Remove “Friction” & “Barriers”
- Analyse & Iterate Often with “feedback loops” to Inform Design
- Communicate



BIM Collaboration – New Practices & Procedures

Relationship between Architectural Design & Building Services Design

- Collaboration is a “People” Issue, rather than a Technical Issue - Let’s Talk & Work Together
- Contracts & Agreements that allow and support more Agile Design Process (early engagement)
- Standards to Support “collaboration” around quick “transfer” of data for analysis
 - Data Schemas (ISO 16739 - IFC)
 - Data Dictionaries & Classification (ISO 12006 - IFD)
 - Data Exchange (ISO 29481 –IDM & MVD)
- Technologies that support Dynamic Data Exchanges



BIM in Europe

European Union BIM Initiatives

- **EU Public procurement Directive (2014)**

All 28 EU Member States may encourage, specify or require the use of BIM for publicly funded construction projects in the EU from 2016.

- **EU Government Policies & Initiatives**

UK, Netherlands, Denmark, Finland, Norway, Sweden, France, Germany etc require BIM for publicly funded construction projects.

- **EU BIM Task Group**

Public Procurement Guidelines / Handbook due 2017 <http://www.eubim.eu/>

- **EU BIM Standards**

CEN TC 442 - EU Standards for BIM being adopted or developed
ISO TC 59 – International Standards for BIM



- Opportunity
- Threat
- Skills
- Efficiency
- Productivity
- Innovation
- Competitiveness

BIM in Ireland

CITA BIM Group – The “Meeting Place” for BIM in Ireland

- 20+ Industry Stakeholder Organisations Officially Represented
- 7000+ Members, Discussions & Free Resources on **LinkedIn**
- 2011-2017 CITA Smarter Building Series
- 9 Regional BIM Groups
Dublin, Cork, Waterford, Tralee, Limerick, Galway, Athlone, Sligo, Letterkenny
- BIM Gathering Conference (23-24 Nov 2017)
- BIM Innovation Capability Programme (BICP)
- National BIM Council
- NSAI National Mirror Committee for BIM Standards



www.CITA.ie

www.BICP.ie

www.NBCireland.ie



CIBSE
IRELAND



OPW
The Office of Public Works
Only an Approved Public



lyit



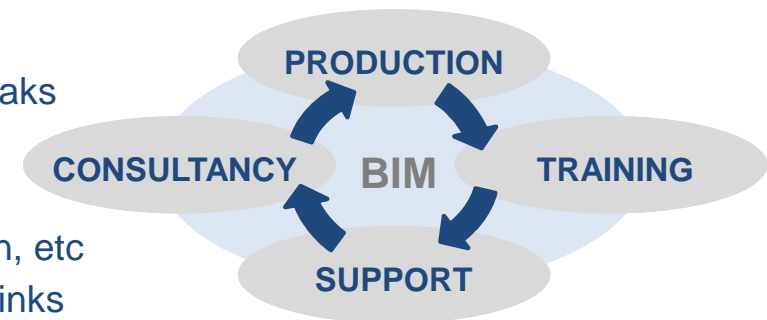
The Institution
of Structural
Engineers



BIM Consultancy – How Can ArcDox Help?

Enabling & Supporting BIM

- Specialist BIM Consultancy Services to Project Teams
- Access to Professional Expertise on “As Required” Basis
- **BIM Consultancy**
 - Implementation Advice, Execution Plans, Project Setup & BIM Workshops
 - Documentation, Standards, Templates & Libraries
- **BIM Production**
 - Stay Lean – Access Expert Resources for Workload Demand Peaks
 - Outsource Non-Design Work (2D–3D Conversion)
- **BIM Training**
 - Revit Architecture, MEP & Structure, Navisworks, 3D Max Design, etc
 - Autodesk Authorized Training & Certification Centre, RIAI CPD Links
- **BIM Support**
 - Online, On Call or In-House – Keep Team Members Productive
 - Technical Advice, Model Management, Review & Quality Control



Contact Details

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QUESTIONS

