Linesight

Technology Trend Series: An integrated workflow to Reduce Time, Minimise Cost & Improve Quality objectives

26th May 2022

Agenda

01 Collaborative BIM Approach

02 Time Cost & Quality

Introduction

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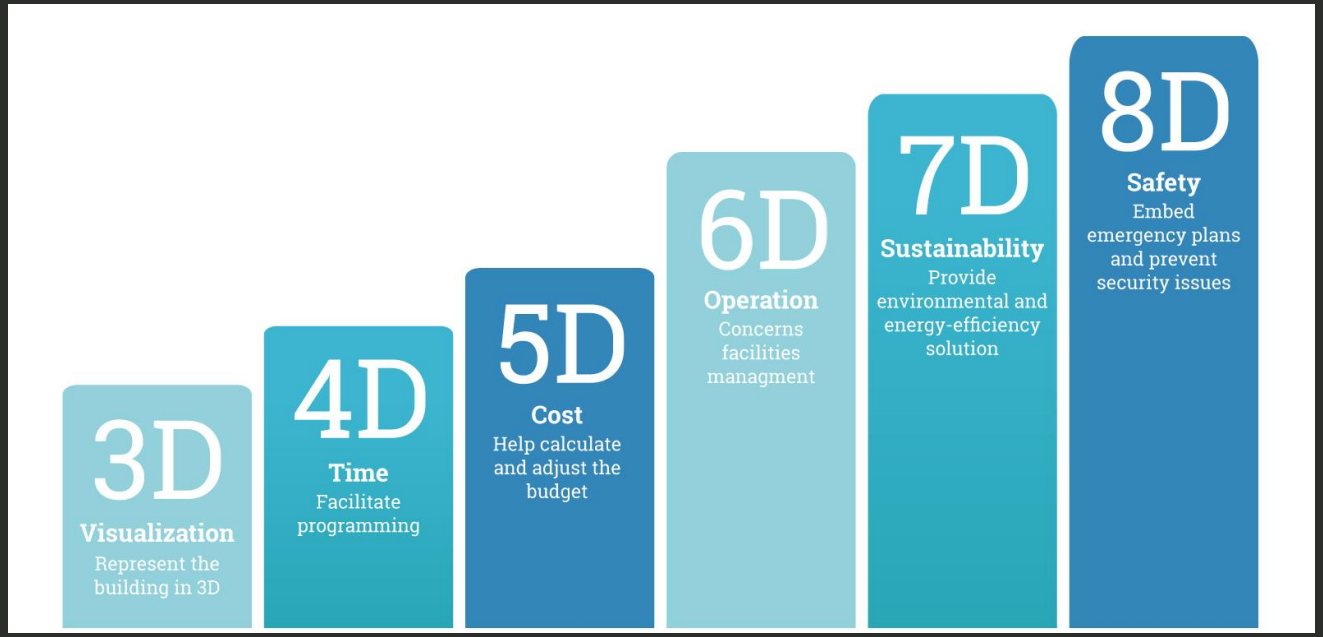
Collaborative BIM Approach

Stages of BIM



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Why do We need BIM?

BIM Principles

—*Egan & Latham rethinking construction (1998)*

“There is deep concern that the industry as a whole is under-achieving. It has low profitability and invests too little in capital, research and development and training”

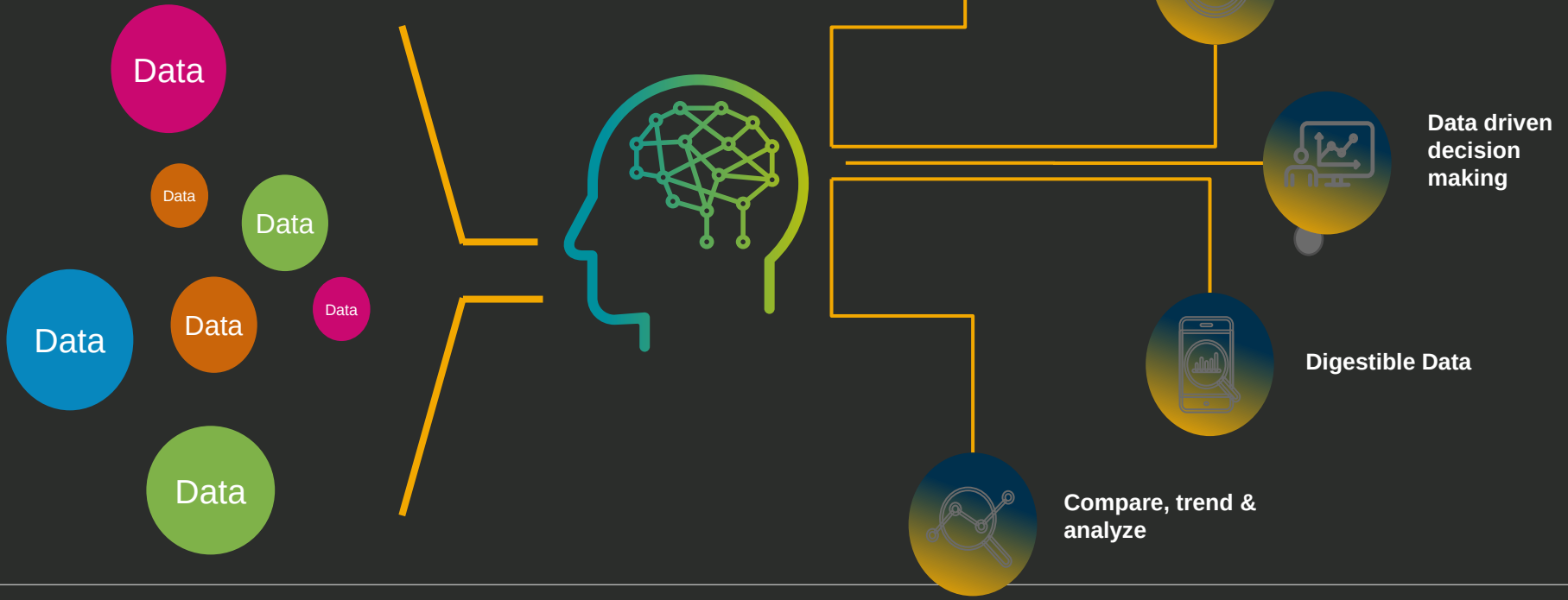
“The Task Force does not consider that technology on its own can provide the answer to the need for greater efficiency and quality in construction”

“The advice offered to construction by leading manufacturing industries is to approach change by first sorting out the culture, then defining and improving processes and finally applying technology as a tool to support these cultural and process improvements”

—*Farmer Report 2016 “Modernise or Die”*

Why

Project data collation



Time, Cost & Quality

Time, Cost & Quality

Competing Aims

- Projects need to be defined in terms of Time,Cost & Quality
- Traditionally compromise was seen as the only solution to achieve the desired outcome
- Can BIM help in achieving Utopia?

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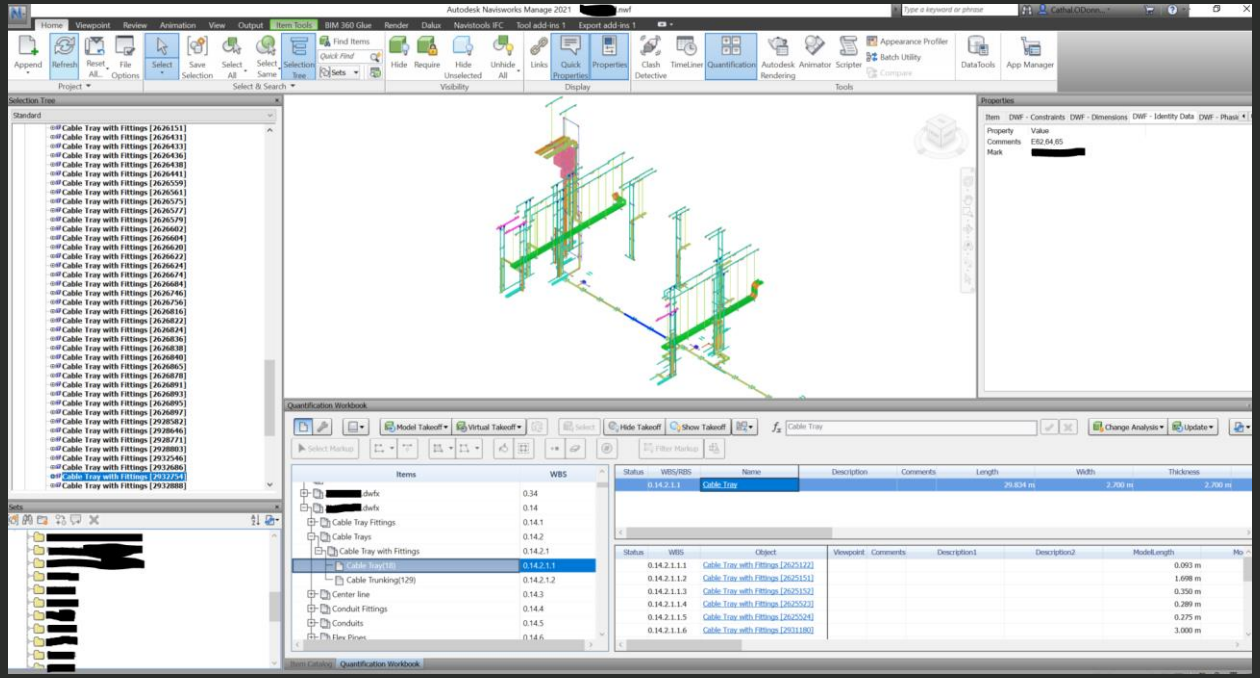
Time, Cost & Quality

BIM Workflows – Data, Co-ordination & Quantities

- Mutable model measurement tools for cross checking quantities
  1. Revit (Schedules)
  2. Navisworks (Quantification)
  3. iTwo-CostX (Quantities & Costs)

- Confidence in measure using models with 2D output from models for backup and detail / spec



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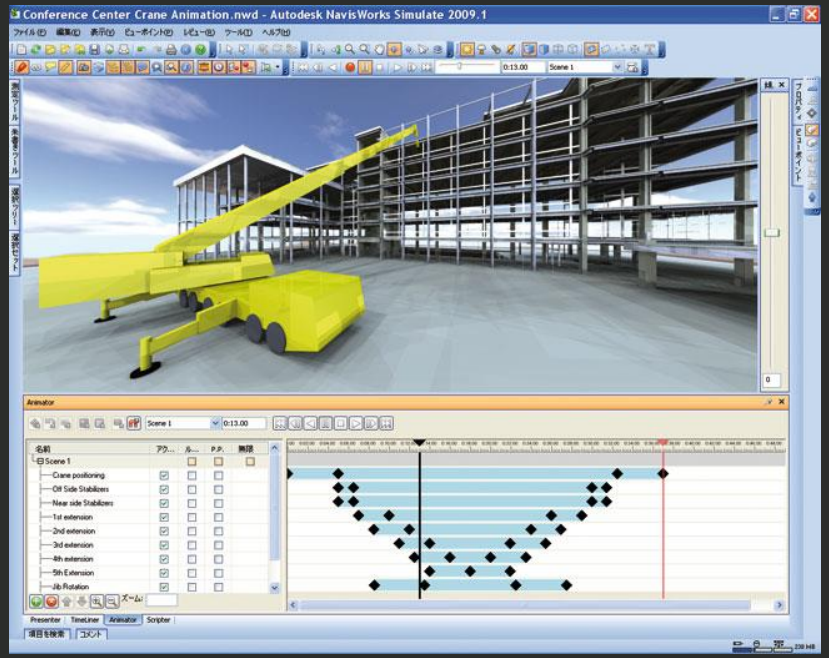
BIM Workflows – 4D Time

- Scheduling tools like Navisworks, Sychro, Fusor etc. Alllow users to create detailed schedules and construction sequences

- Advantages of 4D BIM
  - 3d Visualisation of the construction process
  - Much greater understanding of the logistics of the project
  - Additional simulations can be performed with the model to inform a number of different scenarios

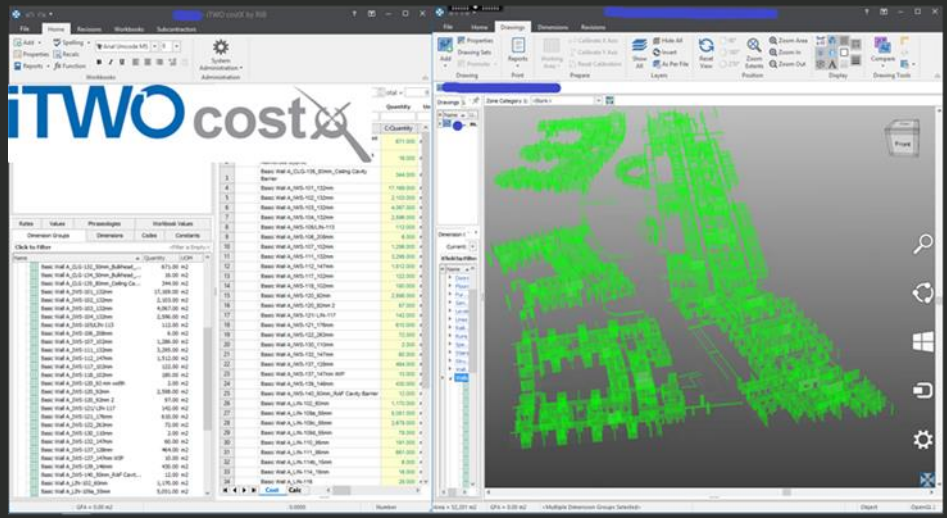


Time, Cost & Quality

BIM Workflows – 5D Cost

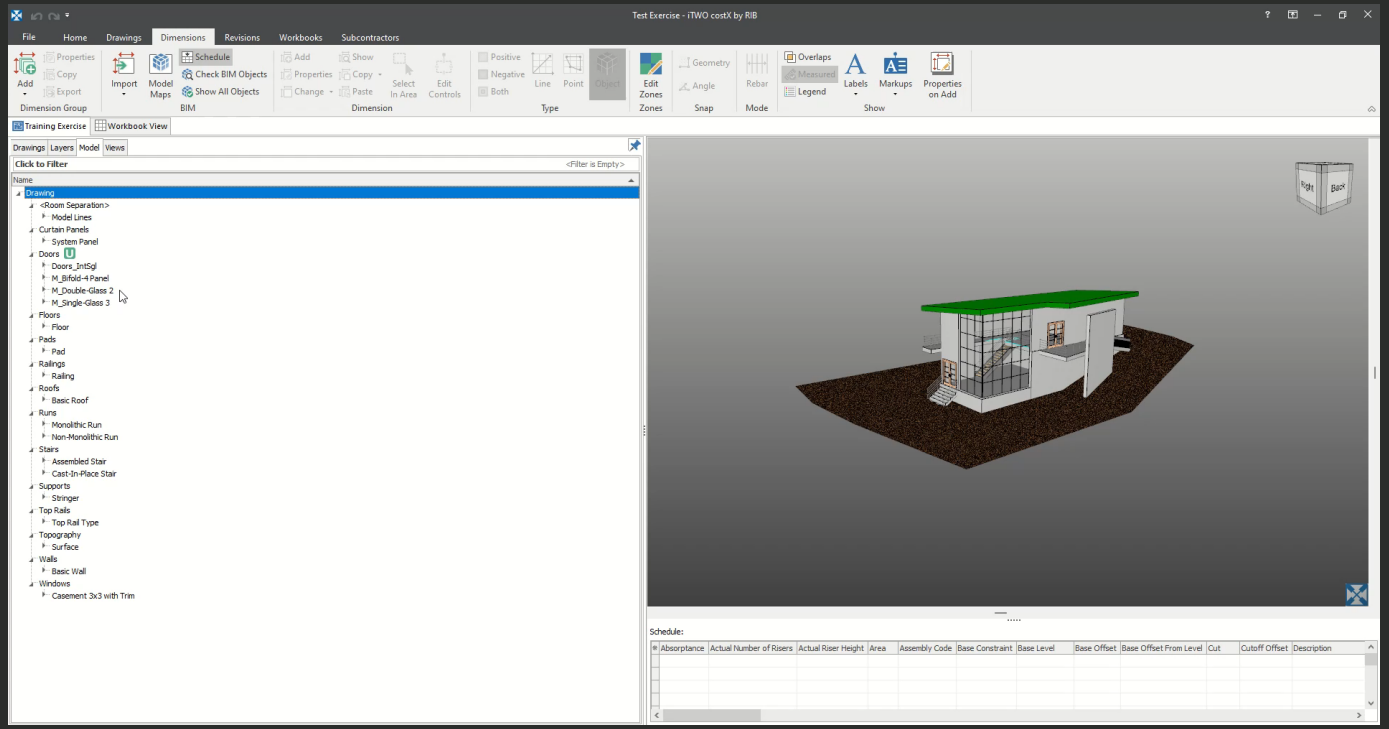
- Driven from the 3d Model data can be extracted in an automated process to provide quantities and rates to be used in Cost estimates

- Advantages of 5D BIM
  - 3d Visualisation of the model allows for greater understanding of building components
  - Faster take-off which should allow time for better interrogation of the project estimate
  - Quantification of complex design options



Time, Cost & Quality

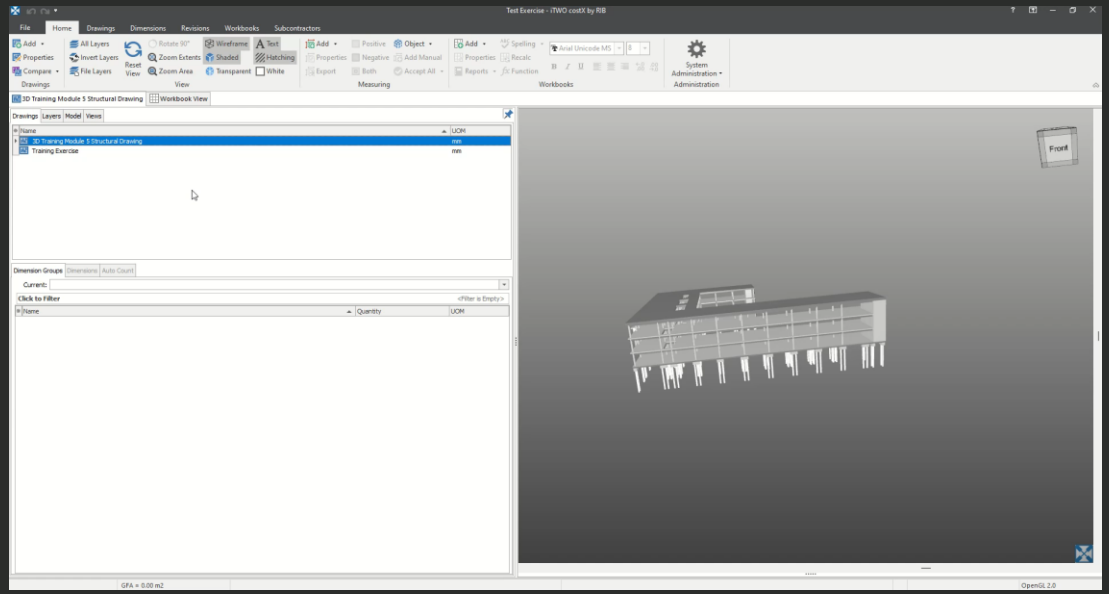
BIM Workflows – 5D Cost



Time, Cost & Quality

BIM Workflows – 5D Cost Quantity extraction with Applied Rates

- Dynamic Model Revision comparison used to track design & construction changes throughout project lifecycle
- Model Quantity extraction via element classification or pre-coded QSID's for quicker structured information driven by predefined rates



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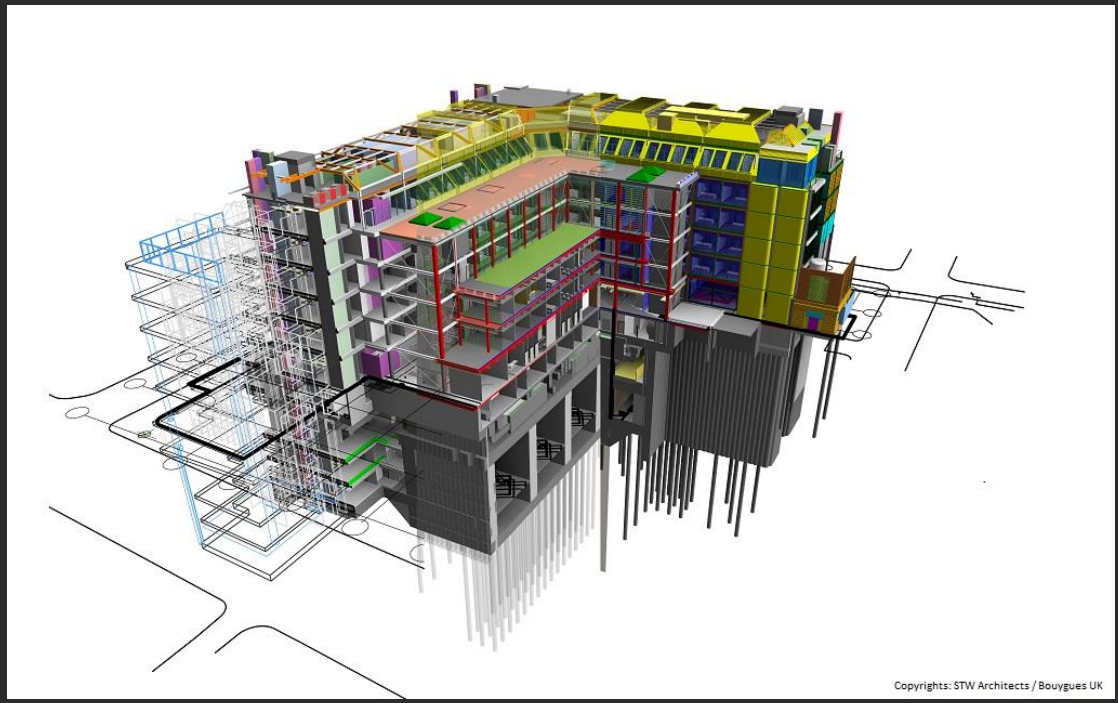
BIM Workflows – Quality Cradle to Grave

- Quality needs to be embedded into the 3d design phase.
- Maintain Quality through the use of field applications monitoring construction progress throughout
- Data collected and BIM process information needs to be transferred to the post construction phase 7d model to ensure quality continues to be adhered to throughout the buildings lifecycle



Inspections and Forms

- Standard collaborative platform for linking packages to test certs cost reports and conformance to legal standards.

- Effective use of the data to align to the digital plan of works.

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Questions?

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Thank you