Integrated BIM Project Management Approach and Asset Management on large scale projects

Authors: Veljko JANJIĆ
CEO & Co-Founder of BEXEL Consulting, veljko.janjic@bexelconsulting.com

Abstract:

Problems - Issues / Challenges-Needs
Today BIM is well recognized as one of the most promising technologies for managing the construction projects throughout the whole project lifecycle. However, development of an effective integrated BIM Project and Asset Management system usually is faced with various challenges, especially on large scale projects:

- Information loss between different project phases as well as between different stakeholders - rework and recreation of data
- Limited reusability of BIM deliverables, interoperability issues
- Lack of efficient tools for managing big data for project planning, monitoring and asset management

There is a need for efficient system, processes and tools for ensuring that each deliverable is structured in line with existing PM processes, with clear quality control and assurance procedures as well as workflow instructions on where it will be reused later in the lifecycle and what will be the necessary information handshake and requirements for it.

Solutions - Methods / Results - Findings
The main methods and principles which should be implemented for efficient BIM integrated project and asset management are:

- Information requirements management – Start with end in mind
- LEAN management – fit to purpose principle
- Information handshake
- Information system interoperability and deliverables reusability
- Continuous research and innovation

The defined information requirements for each of the BIM deliverables should take into account the software output interoperability between deliverables and ensure that the outputs from one procedure can be utilized as inputs and references of another – a piece of information entered once should propagate through the process and be used to the highest extent. In a way, the process of defining information requirements and information handshakes should resemble the principles of system engineering.

Novelty - Value / Relevance to …

- BIM standards aligned with Project Management and Asset Management standards - BIM ISO 19650
- BIM multidimensional integrated software solutions – BEXEL Manager (showcased on real use case study)
- Advanced use of information model for whole-lifecycle purposes – Asset Management and Facility Maintenance of large residential projects
- Research and development in integration of information models with asset monitoring systems - measuring, monitoring and asset data collecting in real-time, combining with existing data and analysing together by deep learning techniques for the purpose of establishing new and innovative processes for asset maintenance to be validated in field - Assets4Rail project within Shift2Rail, the European rail initiative.

Forum statement
Integrated BIM project and asset management with information share between systems, project phases and stakeholders throughout the project lifecycle, using the advanced multidimensional integrated solutions.

Keywords:

BIM; Integrated Project and Asset Management; Lean; Information handshake; R&I

Graphics:

[3D BIM Image]
[4D BIM Image]
[5D BIM Image]
[6D BIM Image]