How BIM-lean integration enhances the information management process in the construction design


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Lack of communication and coordination
- Lack of integration or coordination between information systems
- Large number of diverse business needs and issues to be addressed
- Manual systems and data entry
- Information flow from customers and sales
- Information availability and accessibility
- Implementation of information systems
- Information completeness and accuracy
- Paper based systems

Insufficient documentation
- Little recognition and support of information management by senior management
- Difficulties in changing working practices and processes of staff
- Manual systems and data entry
- Information flow from customers and sales
- Information completeness and accuracy
- Paper based systems

Unbalanced sharing of resources
- Lack of clear strategy for the overall technology environment
- Limited resources for deploying
- Managing or improving information systems
- Paper based systems

Unreliable decision making
- Lack of clarity around broader organisational and strategies and directions
- Difficulties in changing working practices and processes of staff
- Information exchange

HOW BIM-LEAN INTEGRATION ENHANCES THE INFORMATION MANAGEMENT PROCESS IN THE CONSTRUCTION DESIGN

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Some of the key challenges within the construction design have been highlighted in this paper such as lack of communication and coordination, poor or missing input information, design changes. This paper identified some of the key IM challenges within the design process which have been summarised into four main categories of systems or tools, information, people, and policy and strategy. These challenges have been linked to the construction design problems and it is believed by the authors that by improving those, the IM will be accordingly improved. BIM and Lean would enhance IM. It is believed that the integration of BIM functionalities (i.e. visualisation) with Lean principles (i.e. reduce variability) enable better IM improvement during the design process.

BIM and Lean interaction would benefit in terms of reducing construction design problems and associated with the IM problems.

- Time and cost saving, and thus design could be identified in an earlier stage and would help to overcome the identified design problems such as missing information
- Information within the BIM platform provides an overall image of projects' current situation
- Projects using BIM and Lean would be beneficial in reducing construction design problems problems associated with the IM problems

- Clash detection enables identifying clashes between systems and objects.
- These improved systems and strategies allow people to take more reliable decision making.
- Clash detection improves richness of the information exchange.
- It avoids future design changes and unreliable decision making.
- Human errors could also be identified through clash detection.

- All the shared information can be managed by project participants in a collaborative environment.
- Design problems can be directly improved through identified design error or issues in the design stage.
- Visual management is linked closely to standardisation.
- Design problems due to lack of standardised systems would be improved directly and indirectly.
- As BIM and Lean provide effective work strategies the construction design problems will be resolved by improving information management