



Use of Building Information Modelling (BIM) for Construction Planning: Incident prevention through BIM

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Content

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- Integration of BIM and Safety during:
 - Design stage
 - Construction Process
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 - Construction stage
 - Construction Process
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 - Safety Training
- Conclusion

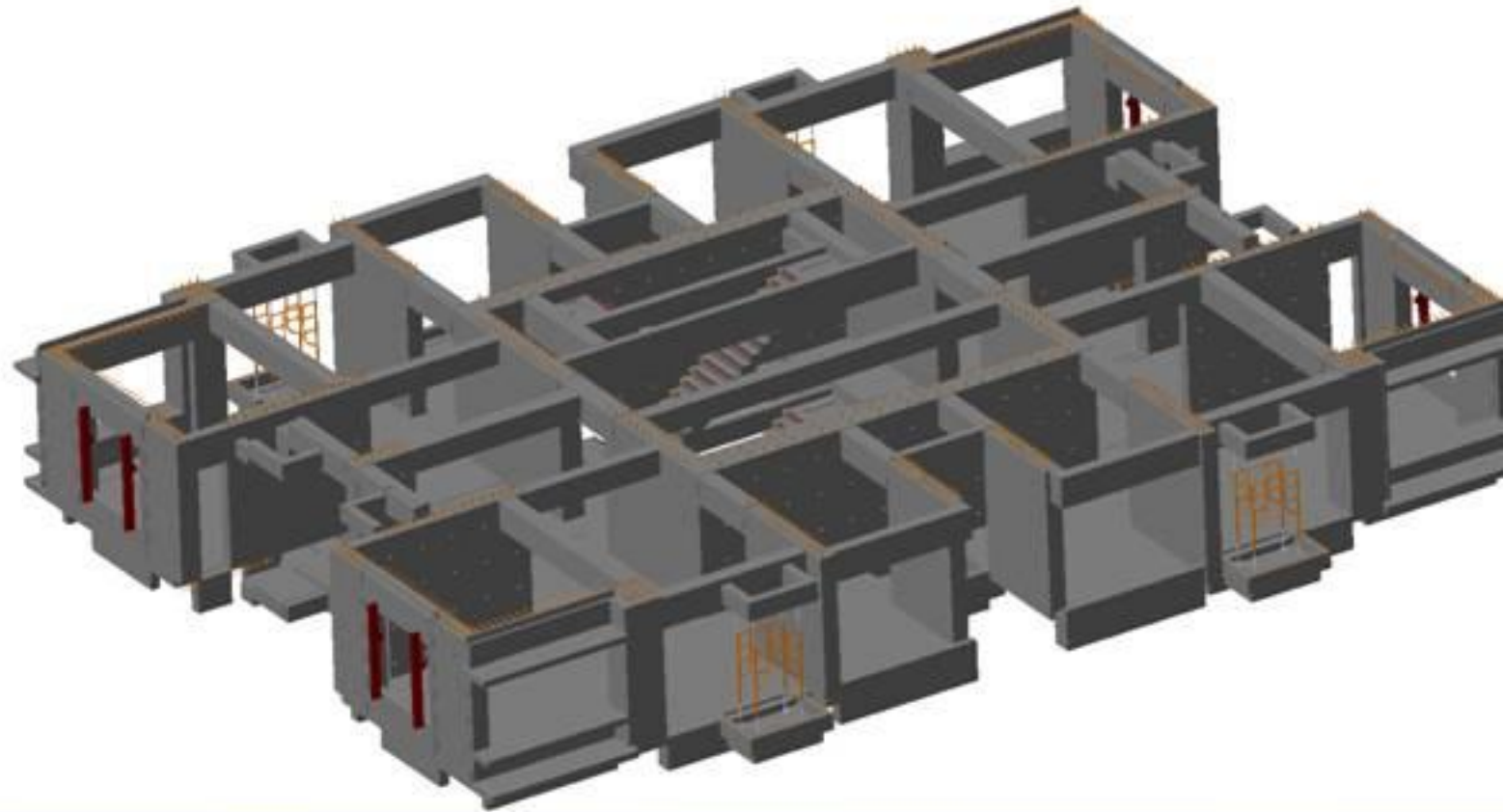


BIM

- BIM consists of different elements
 - Architecture elements
 - Facade, Finishes, Partition wall, e.t.c.
 - Structure elements
 - Structure wall, Beam, Column, e.t.c.
 - Building Service elements
 - HVAC system, Drainage system, Sprinkler System, e.t.c.
 - Geotechnical elements
 - Pile, Pile cap, e.t.c.

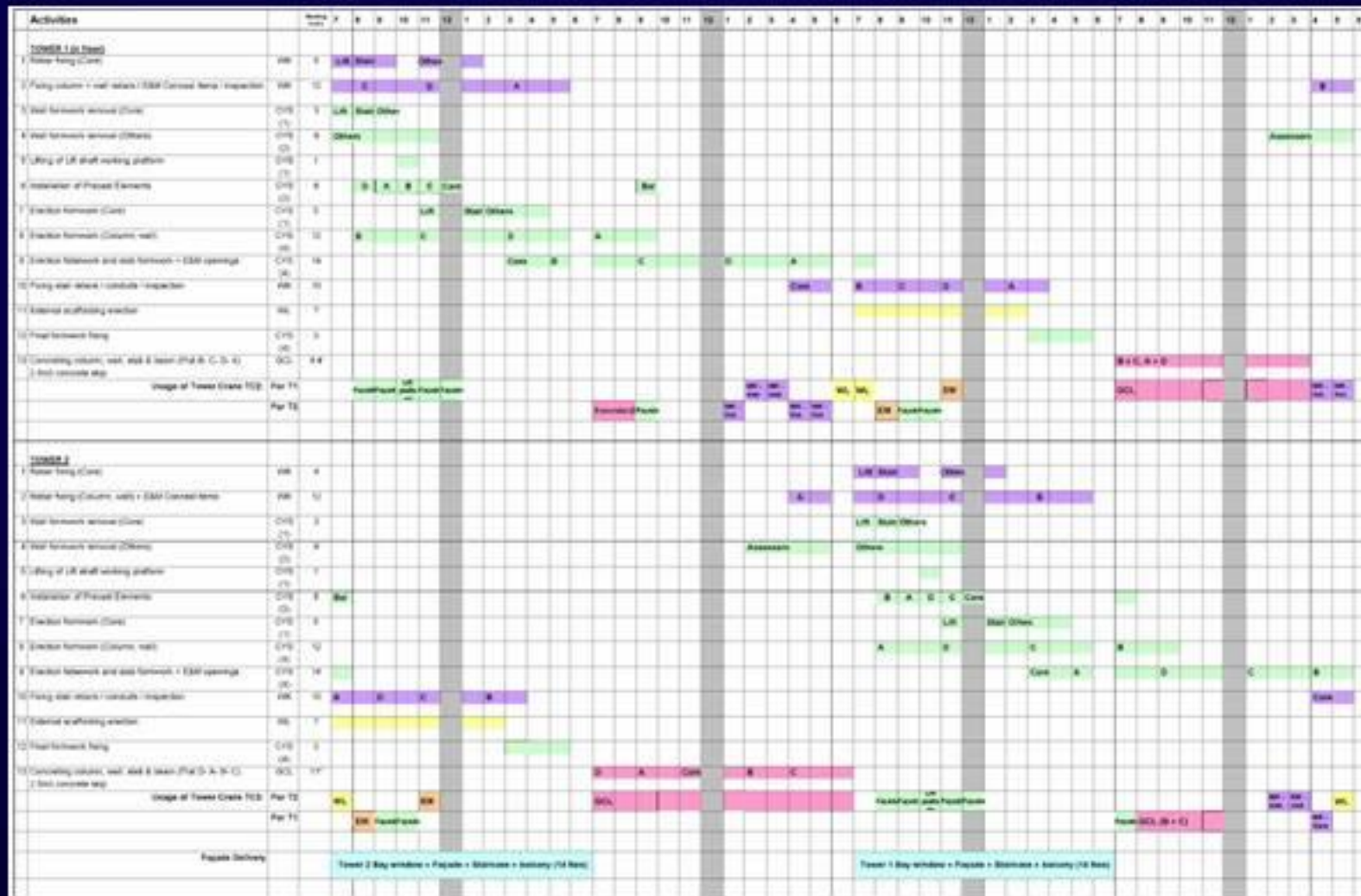


Design stage



Which one is better for designer to consider safety?

Design stage



How to design a safe construction plan with bar chart?

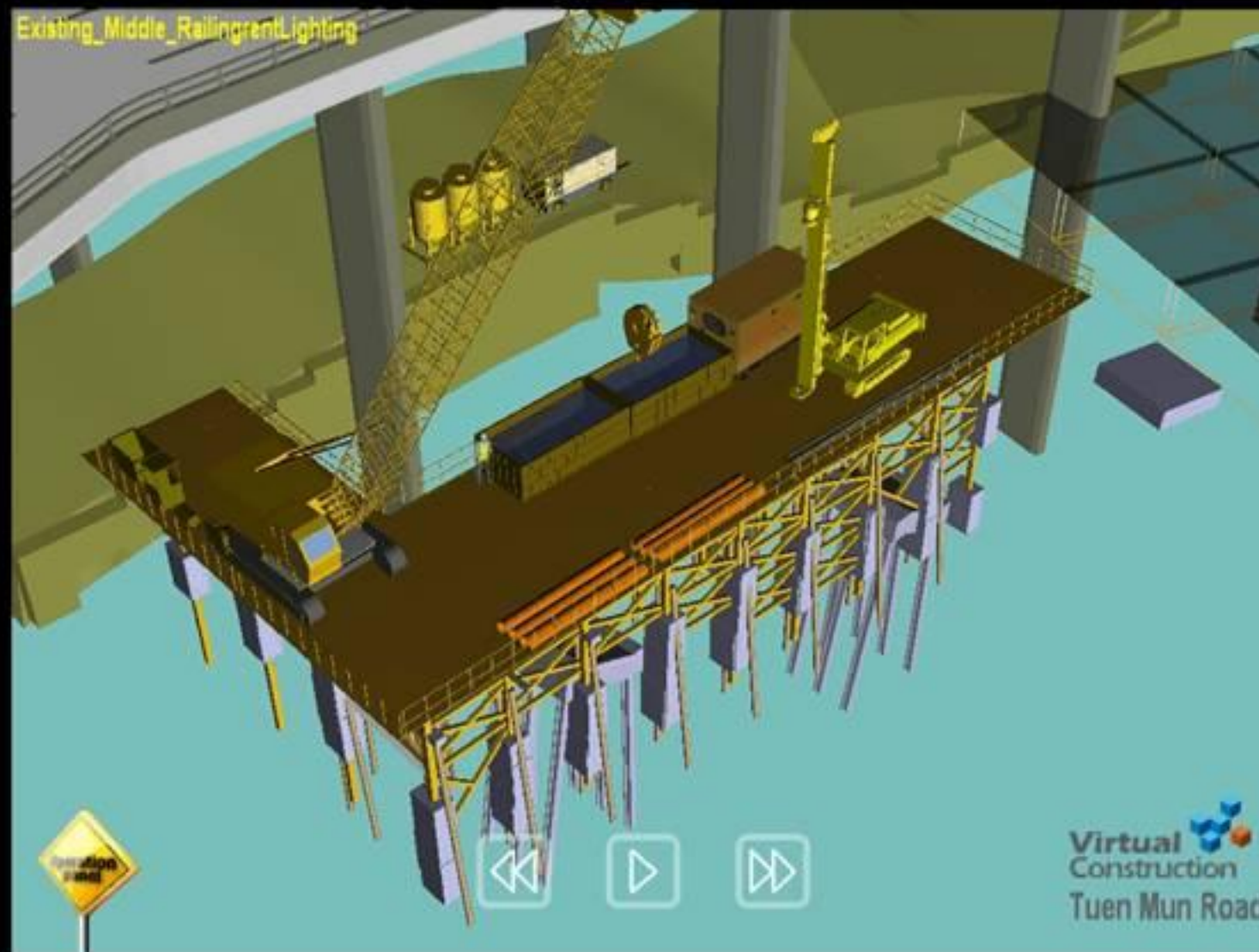
Example - Visualization of Floor Cycle

Relationship between Time and Working Space



Example – Project Design

Construction sequence, resource and temporary work design
Interaction between workers and machineries



Integration of BIM and Safety during:

Construction stage



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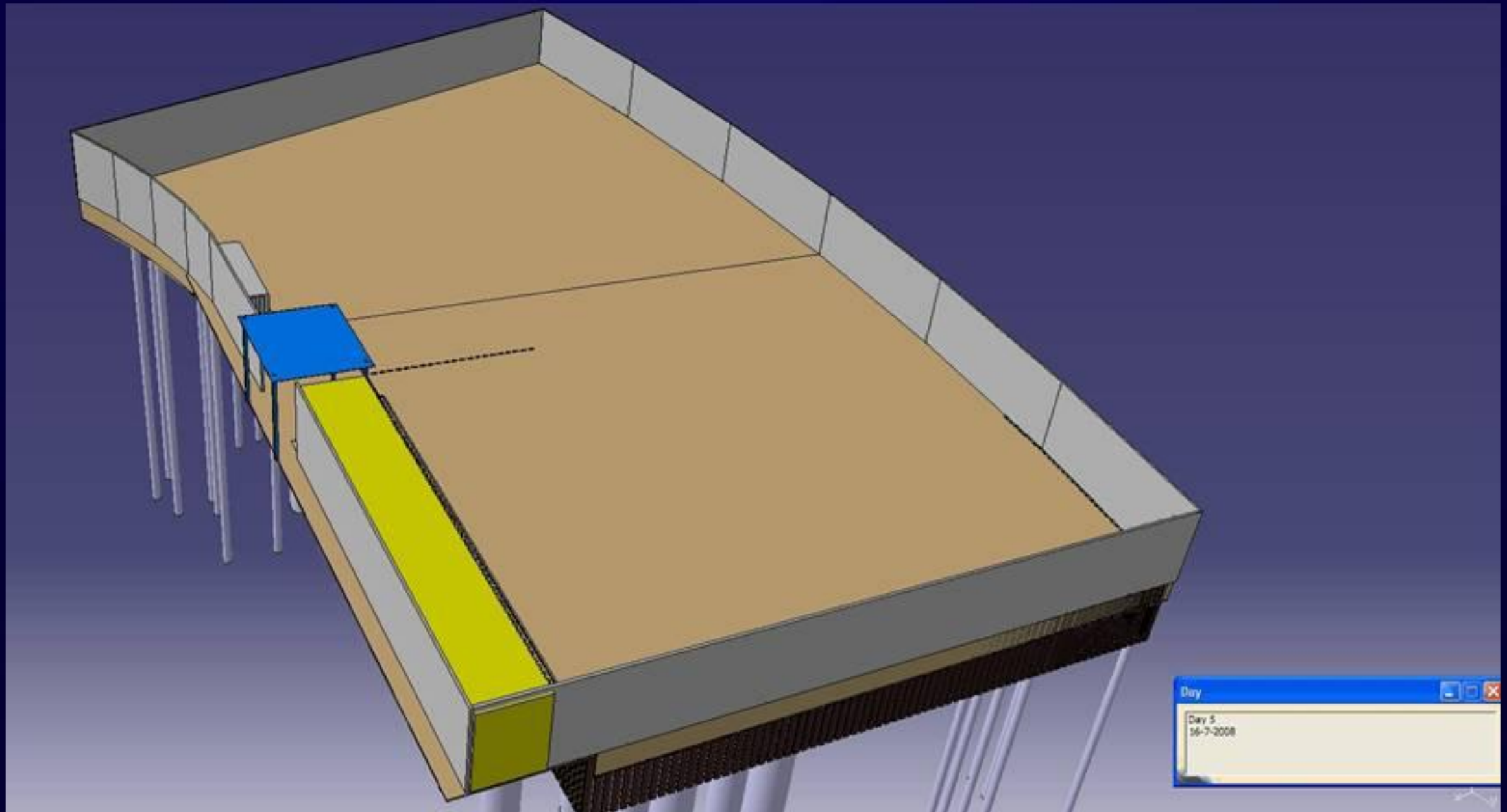
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Construction Stage

- The use of BIM can enhance anticipating the following:
 - Relationship between working time and space
 - Validation of existing construction planning
 - Anticipate the interaction between workers and machineries
 - Evaluation safety from workers viewpoint
 - Concern from the public

Example – Validation of Design

Relationship between Slope, Access road and Working Space



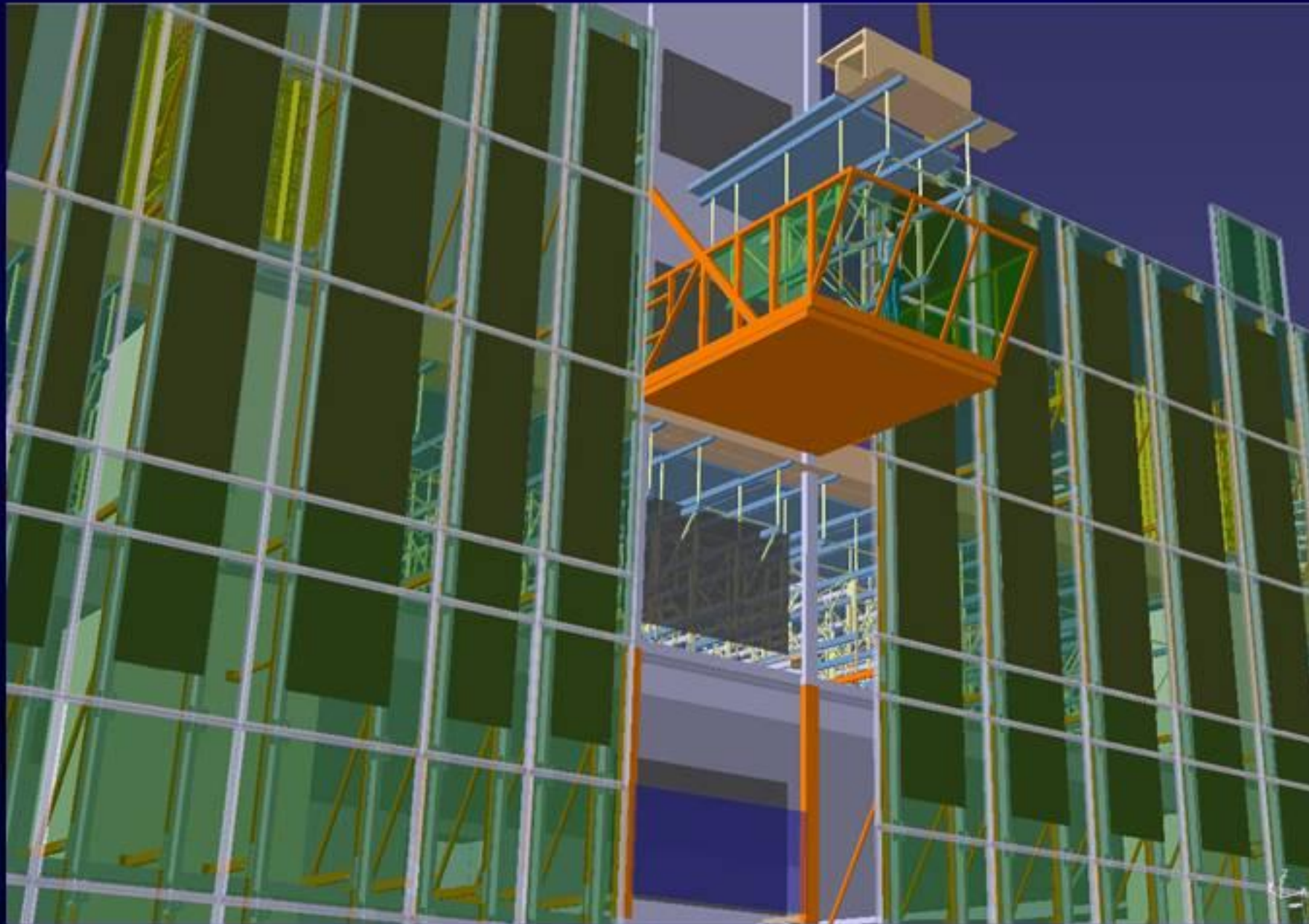
Example – Validation of Floor Cycle

Relationship between Time and Working Space



Example – Visualization of Non-typical process

Anticipate of interaction between workers and machineries



Example – Visualization of Non-typical process

Evaluation from the viewpoint of the workers



Example – Validation of TTA

Relationship between Program and Public concern



Conclusion

- With proper use, BIM provide a platform to for the safety management to:
 - Examine the project design
 - Examine construction program
 - Examine working space
 - Examine the relationship between design, program and space
 - Conduct safety training instead of real life mock-up