



BIM Process Workflow

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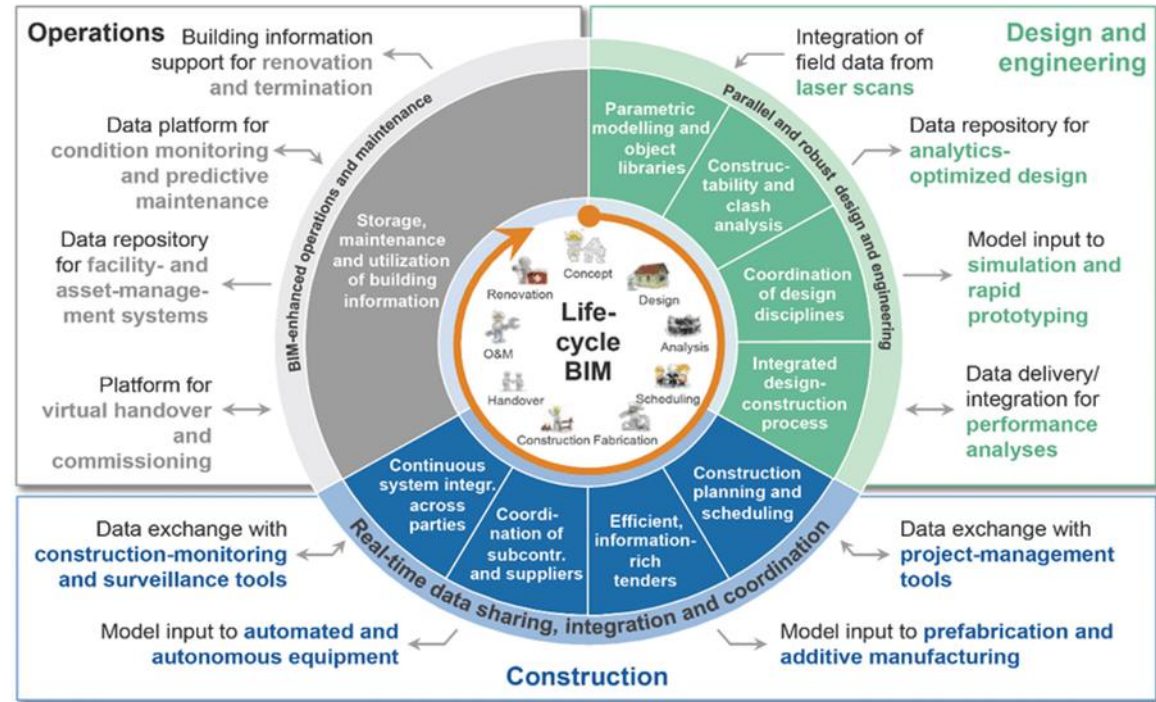
Learning outcomes

At the end of this lecture, the learner is expected to be able to

- Revise for role and content of Exchange Information Requirement in BIM process
- Explain importance of BIM Execution Plan
- Understand value and usage of Class Systems and Model View Definition

Revisiting Building Life-cycle

- BIM is not only for design and construction, but also for facility management and decommission
- Think BIM as long-term process lasting for 100 years



Applications of BIM along the engineering and construction value chain. Source: Shaping the Future of Construction, <https://www.weforum.org/publications/shaping-the-future-of-construction-a-breakthrough-in-mindset-and-technology/>.

Information Management during BIM Life-Cycle

BIM differs among projects
according to client`s needs

These needs are specified by
two documents:

- EIR – Exchange Information Requirements
- BEP – BIM Execution Plan



Exchange information requirements

- Abbreviated as EIR
- Pre-tender document
- Client specifies his needs for potential contractors
- Tender with bids from the contractors is the next step



[Exchange-Information-Requirements-che-cose-IEIR-nel-BIM.jpg](http://accasoftware.com/Exchange-Information-Requirements-che-cose-IEIR-nel-BIM.jpg)
(843×321) (accasoftware.com)

Pre-BEP and BIM Tender

- Potential contractors prepare pre-BEP
- Pre-BEP specifies how EIR's objectives would be achieved
- Client selects a contractor, after comparing pre-BEPs

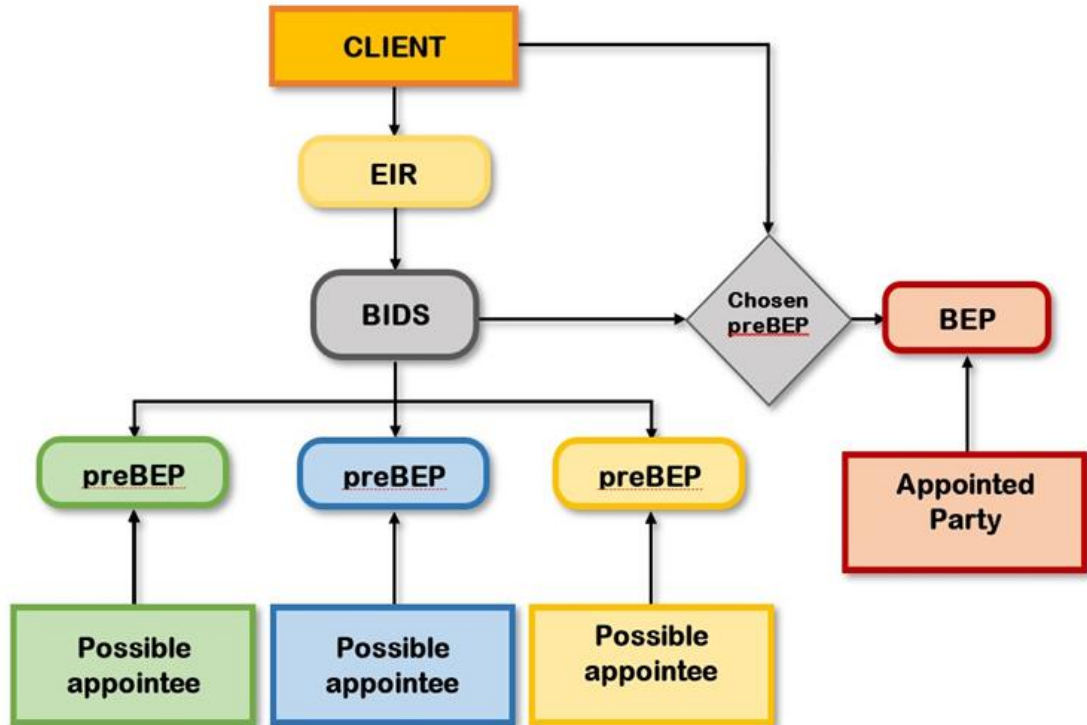


Diagram illustrating a BIM development order workflow,
<https://biblus.accasoftware.com/en/exchange-information-requirements-what-is-an-eir-in-bim/>

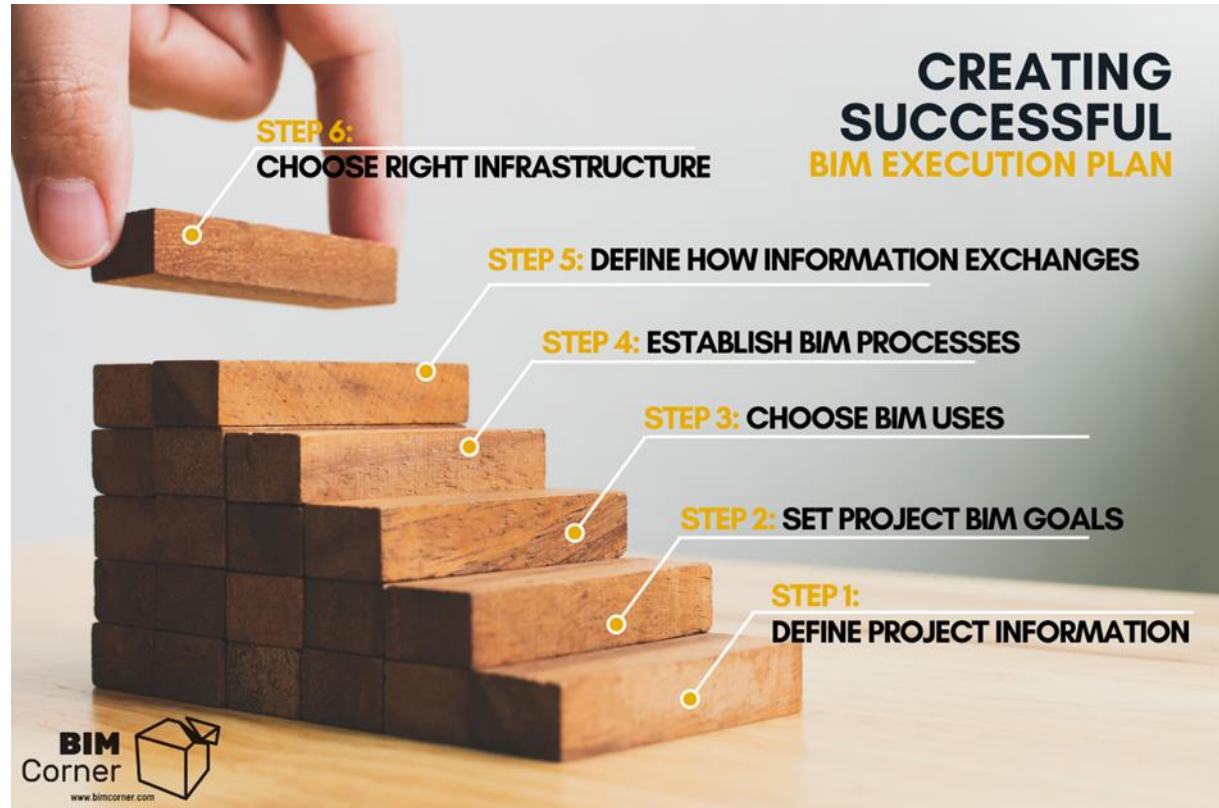
BEP – BIM Execution Plan

- BEP defines goals of BIM implementation
- Quality of BEP is crucial for successful BIM project
- BIM templates according to ISO standard can be used
- There is no universal BEP, it needs adjustments for each project



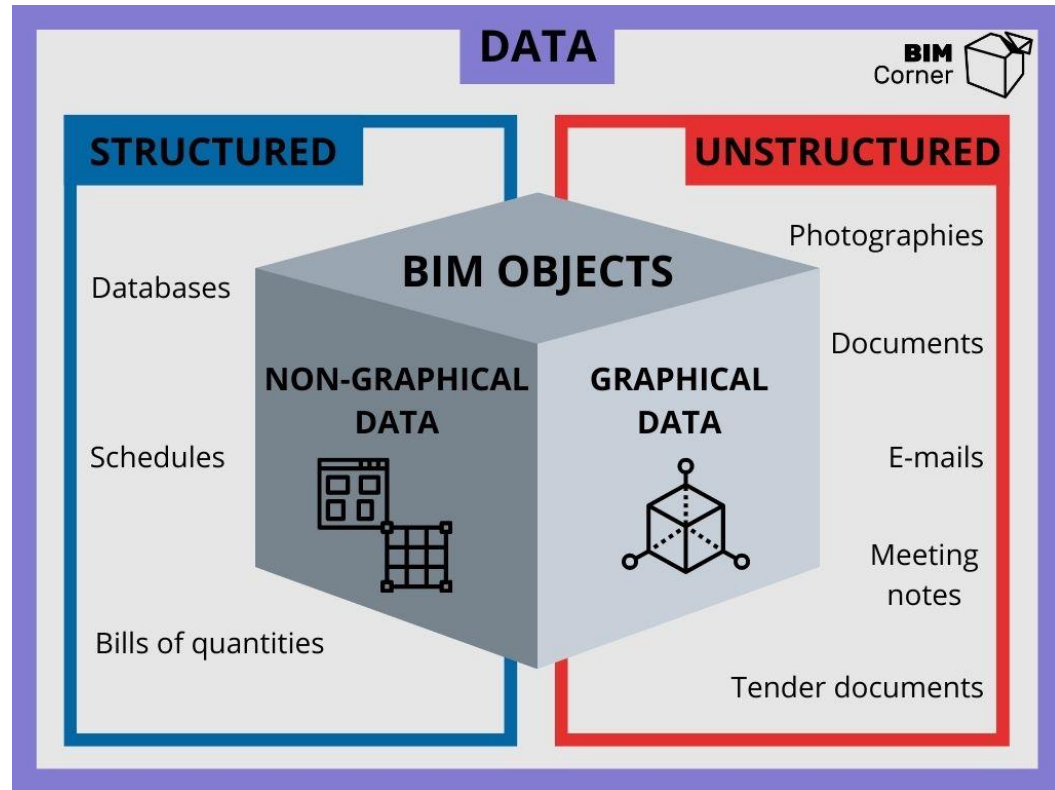
Information in BEP

- Lot of information is needed in BEP
- E.g. data management, responsibilities, deadlines, software, terminology etc.
- Monitoring progress and development of BEP during time



Terminology specified by BEP

- Thousands of BIM objects with possibly hundreds of properties each
- Everybody in project needs to use the same terminology
- The names, data structure and hierarchy is described in BEP



<https://bimcorner.com/wp-content/uploads/2022/07/KF-DATA-in-BIM-infographics.jpg>

BIM Classification Systems

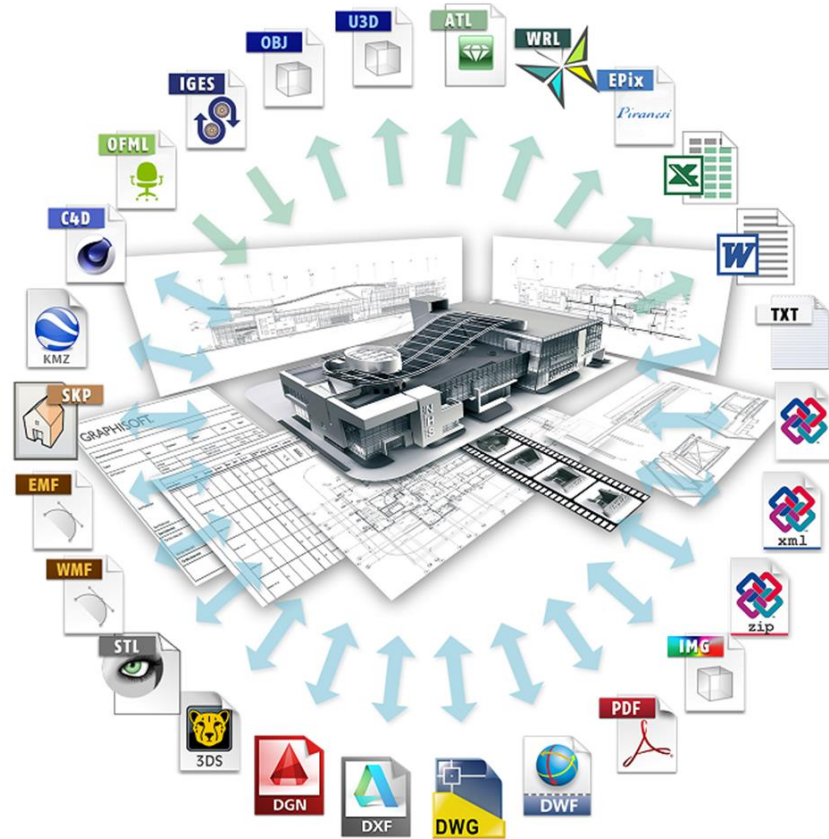
- Predefined hierarchies and properties of BIM objects
- Different classification systems, based on region and country
- System to use is specified in BEP
- IFC the only globally used system



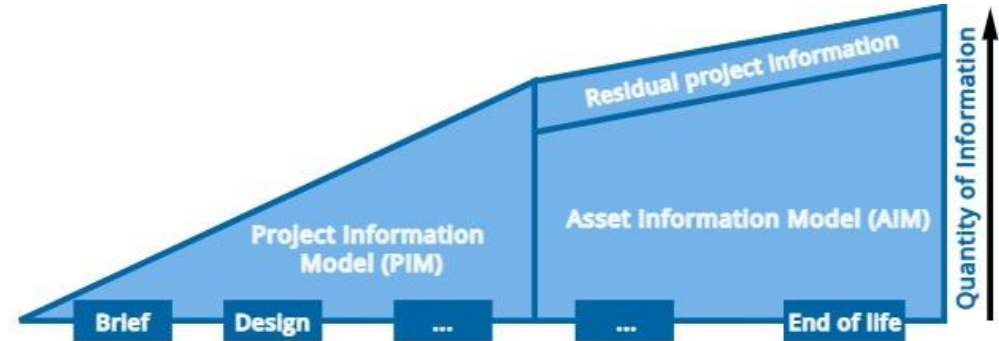
<https://biblus.accasoftware.com/es/wp-content/uploads/sites/3/2020/03/cover-IFC-UniCLASS-495x321.jpg>

Project Information Model - PIM

- Is made of all data for design, construction and commissioning
- Includes graphical data, non-graphical data, documents
- Data amount increases gradually as the asset develops



Asset Information Model - AIM



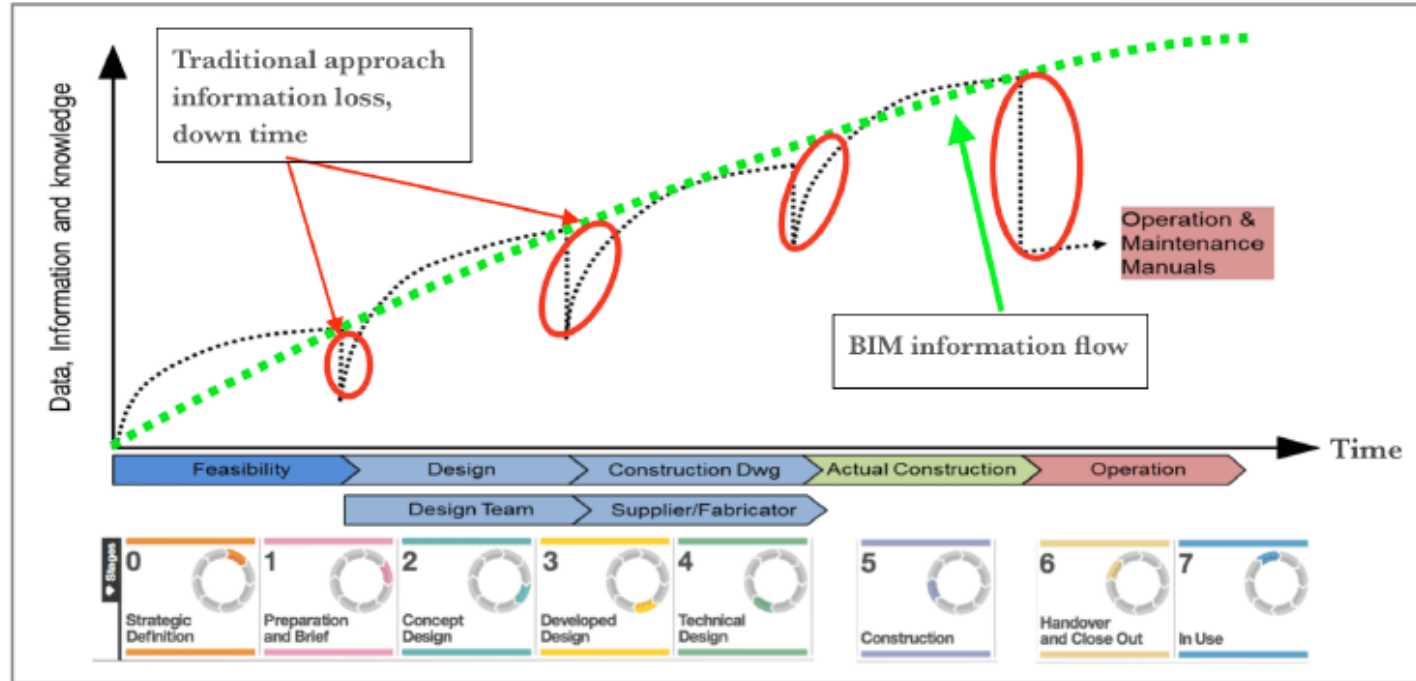
<https://bimcorner.com/iso-19650-terms-explained-in-this-simple-way/>

- Is the part of PIM information relevant for facility management
- AIM should be regularly updated

https://www.indiacadworks.com/blog/wp-content/uploads/2019/02/bim_facility_management.jpg

Information loss during hand-over

- Hand-over = information transfer from PIM to AIM
- Usually many information is lost in this step
- Much less data-loss with proper BIM

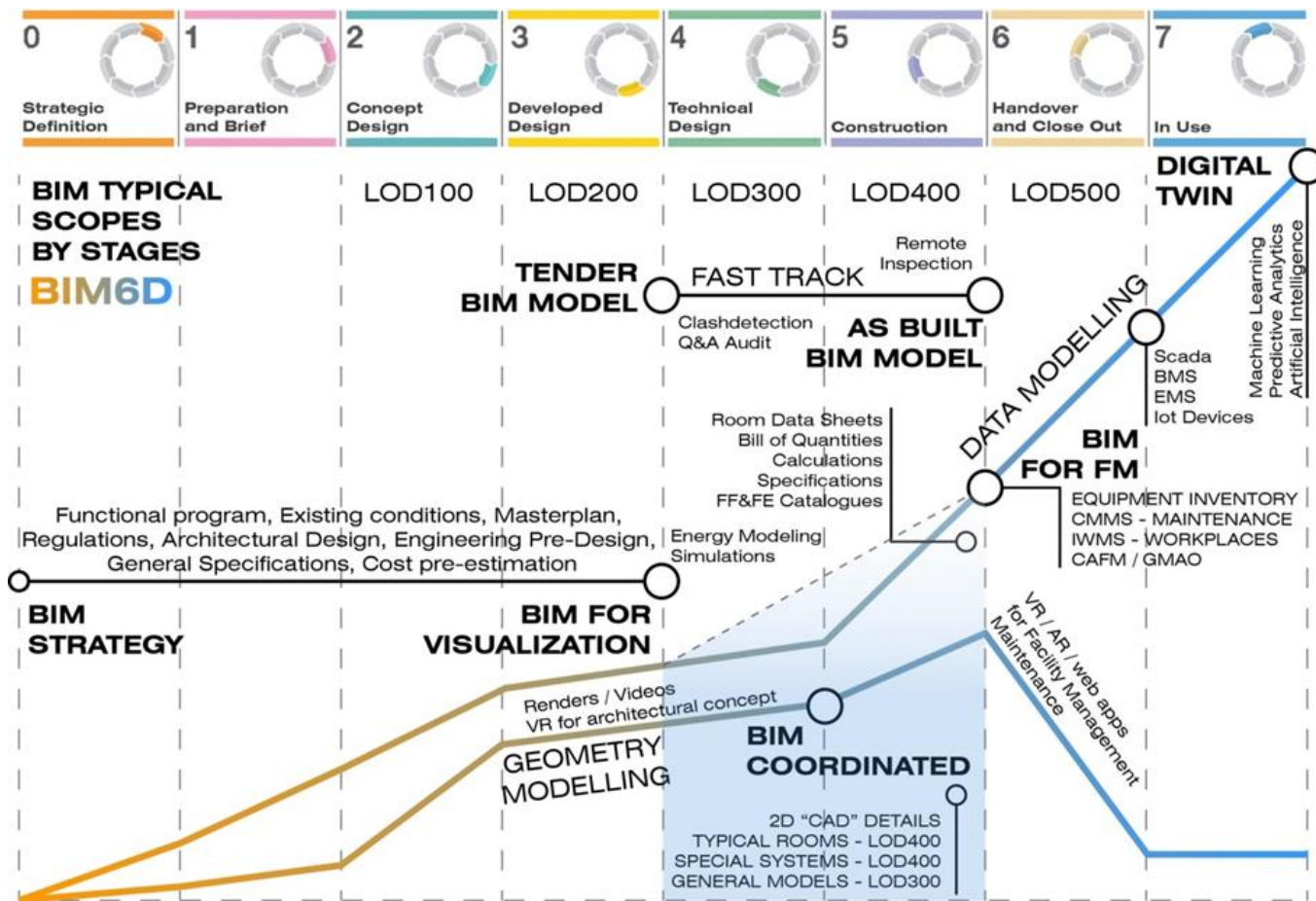


[The basics of BIM in Facility Management – Bim Corner](https://www.researchgate.net/figure/Reducing-data-losses-at-handover-stages-using-standardised-workflows-adapted-from-Aziz_fig1_312889376) After:
https://www.researchgate.net/figure/Reducing-data-losses-at-handover-stages-using-standardised-workflows-adapted-from-Aziz_fig1_312889376

BIM in Facility Management

- Numerous applications of BIM model in the management
- Results in better efficiency, especially if using sensors
- Slow adoption despite of the potential





Summary of the BIM workflow

The figure on left summarizes what we have learned about BIM process so far

<https://bim6d.eu/wp-content/uploads/2021/02/BIM-TOPICS-BY-STAGES-scaled.jpg>

Thank you for your attention



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