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Best Practices for Using BIM in an IWMS

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Building Information Modeling (BIM) is a collaborative project management process that is used to manage the design, construction, and process of real estate, infrastructure, and facilities assets. At its core is the inclusion of all (as many as possible) of the project's stakeholders, including facility professionals.
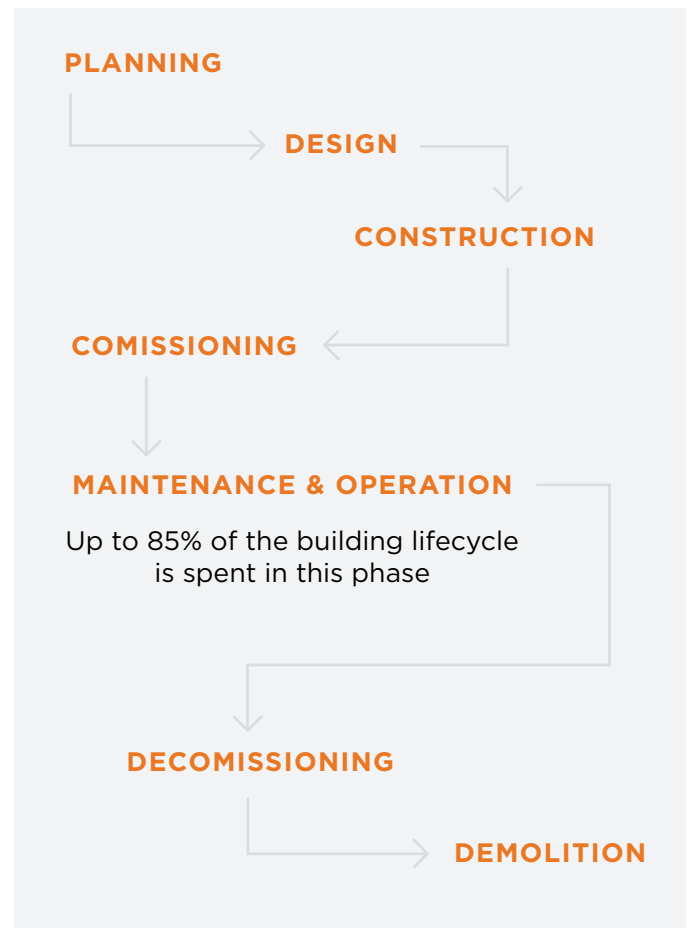
More specifically, from a lifecycle management perspective, the process allows for a facilities and operation viewpoint to be considered throughout the building design and construction periods. The process also provides an opportunity to transfer quality data – through the model's database – that is generated at different building lifecycle phases to an integrated workplace management system (IWMS). In turn, the IWMS enables facilities professionals to hit the ground running once the building is commissioned and occupied.

But what information is needed to ensure a seamless transition from the design-build phase to operations? In this guide, we will explore best practices in data gathering and implementation.

The Building Lifecycle

The term "building lifecycle" refers to the major phases that an architectural project experiences throughout its lifespan – beginning with planning and conception, then design, construction, and occupancy, and finally through decommissioning and demolition.

In a traditional lifecycle, each phase is its own separate project with, in many cases, multiple stakeholders working toward a successful outcome. The critical point occurs in the transition of information between phases. A smooth changeover depends on the overall governing plan, an individual stakeholder's processes, and the ability of all parties to coordinate and work together. Data loss is one of the biggest concerns

PLANNING

DESIGN

CONSTRUCTION

COMISSIONING

MAINTENANCE & OPERATION

Up to 85% of the building lifecycle is spent in this phase

DECOMISSIONING

DEMOLITION

in the transition between phases. The National Institute of Standards and Technology discovered interoperability and changes due to data loss amount to billions of dollars annually. Relevant, available project data is most affected since it's used by facilities professionals operating and maintaining the buildings after commissioning.

Proper data transition between lifecycle phases requires coordination and precise project management. For best results, most BIM projects are carefully planned and documented. During planning, it is crucial that the following considerations be addressed to provide a smooth transition of the developed BIM data from the design-construction phase to the maintenance and operation phase. The goal is to maximize facility stakeholder's use of the asset information within the BIM Model for facility operation.

The BIM Execution Plan

The BIM Execution Plan is a document that describes the project's BIM-related workflows, processes, stakeholder responsibilities, and tasks for each project. It is typically developed by the BIM project team, which can include design team members and owner-side BIM managers and other stakeholders.

The BIM Execution Plan is the guiding mechanism that:

- **Outlines the project's major goals and objectives with exact timelines, major contacts, and the location of all IT information**

- **Establishes deliverables and guidelines for collaboration, as well as documentation procedures, and responsibilities for data migration**

- **Communicates the project goals and objectives to all stakeholders**

Designate Roles and Responsibilities

The first step is to make sure you have the right people in the right roles to get the most out of your BIM data.

The BIM Manager *has internal and project-specific duties related to BIM use, project planning, and technology integration and implementation within the organization.*

The IT Staff *has internal, and project specific duties related to BIM use, technology integration, and technology implementation within the organization.*

Space Planners *produce the guidelines that govern architectural design, as well as data metrics.*

Facility Operations and Maintenance Managers *produce asset guidelines that govern engineering level of development (LOD) and data transfer metrics.*

Develop the Organization-Wide BIM Guide

The organization-wide BIM guide establishes common practices and documents various organizational standards (i.e, room nomenclature), industry standards, and requirements (i.e., LOD requirements, model graphical and data requirements for use with an IWMS). These are generally applied to any BIM projects within the organization. Where applicable, the BIM guide should note exceptions to the recommended standards for special or unique types of real estate, infrastructure, or facilities BIM projects.
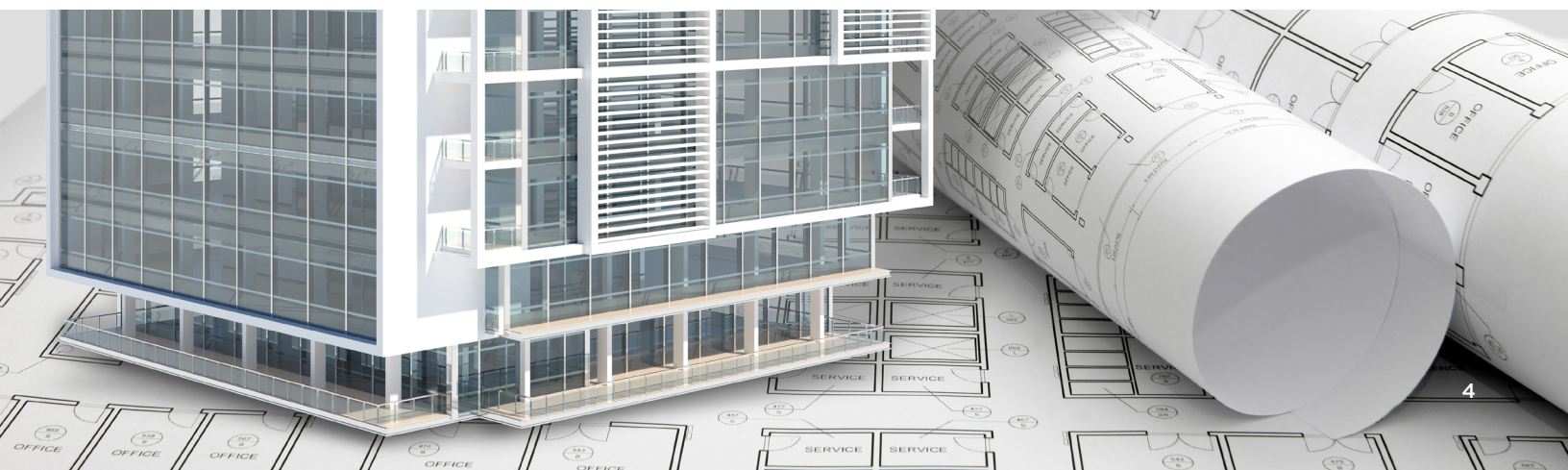
Level of Development (LOD) Requirements for Asset Categories

The [Level of Development (LOD) Specification for Building Information Models and Data](#) is a reference standard for projects that provides clarity into the content and reliability of building information models at different stages of the design and construction process.

An example of LOD-parameters accessible through Archibus, by iOFFICE + SpaceIQ

Things to Consider When Deploying an IWMS for Lifecycle Management with BIM

With your BIM guide and execution plan in place you can define how your building will be utilized.
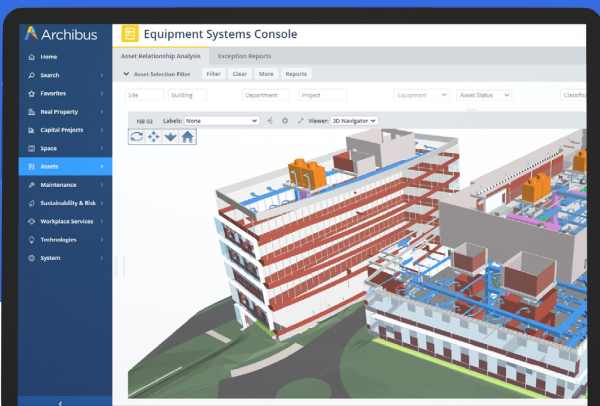
Space

Questions to Answer

- ◯ How much space do I have?
- ◯ What kind of space is it? (Cubicles, offices, open areas, etc.)
- ◯ Who will use it?
- ◯ How much does it cost?

Space Measurement Guidelines
Utilize industry standard guidelines from BOMA, IFMA, FICM, IPD, GSA, and ISO to measure your space based on their unique cost recovery methodology. For example, BOMA is most interested is extracting real-estate measurements that affect building owners. That may mean reducing leftover space and maximizing rentable area.

Archibus can produce all the necessary reports for real-estate performance calculations. However, its accuracy depends on the quality of the measurements sourced in Revit. It is imperative for the owner to identify and adhere to measurement guidelines and embed them in the model construction to produce accurate space reports.

Space Classification Guidelines

Similarly, the qualification of space by categories and types is industry and guideline dependent. Most guidelines that specify specific measurement guidelines also provide a detailed space qualification method that fits their methodology. The Archibus Extension for Revit allows for Room Categories and Room Types to be allocated to rooms directly in Revit.

Assets

Questions to Answer

- ○ Which assets do I need to track?
- ○ How much do they cost?
- ○ What is the maintenance plan for each asset?

Asset Classification Guidelines

The creation and data transfer of asset information should also follow general guidelines, which can result in extensive assets model data. It is vital to locate and transfer only the information that is useful for the analysis and daily operation of the facility and assets.

The Benefits of Integrating BIM Data into an IWMS

The integration of BIM data using a platforms such as Autodesk and Archibus IWMS delivers several benefits, including:

- **Minimizes data loss in the handover process from design-build to operations**

- **Allows organizations to identify occupancy patterns and asset performance for use in future planning and strategic procurement**

- **Provides a single source of truth between systems; helps better govern data**

- **Enables more digital collaboration and visibility between CAD operators and space planners**

- **Reduces costs by more quickly identifying issues and streamlining operations and maintenance**

- **Helps optimize the entire portfolio from detailed drawings to easily identifiable, underutilized spaces**

Whether you are responsible for new builds or existing portfolios, integrating BIM into an IWMS can help you better plan for and manage the operations of your facilities.

For more information, visit Archibus.com

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