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Integration of IES with Revit

Industry Context

Detailed architectural Revit models for coordination are not designed for complete volumetric energy modeling. There are 3 ways you can use BIM for your energy model.

1. Export Revit plans/elevations to DXF and trace in the VE;
2. Export Revit plans/elevations to DWG and rebuild a simplified Revit model for integration with the VE;
3. Detach Revit model and simplify it for integration with the VE.

Blog post, Your Energy Modeling Options - https://www.iesve.com/discoveries/blog/your-energy-modeling-options-for-bim/

Agenda (Stages of Integration)

Once you can successfully integrate BIM in BEM, you can proceed deeper into the next levels of integration using data and leveraging your team.

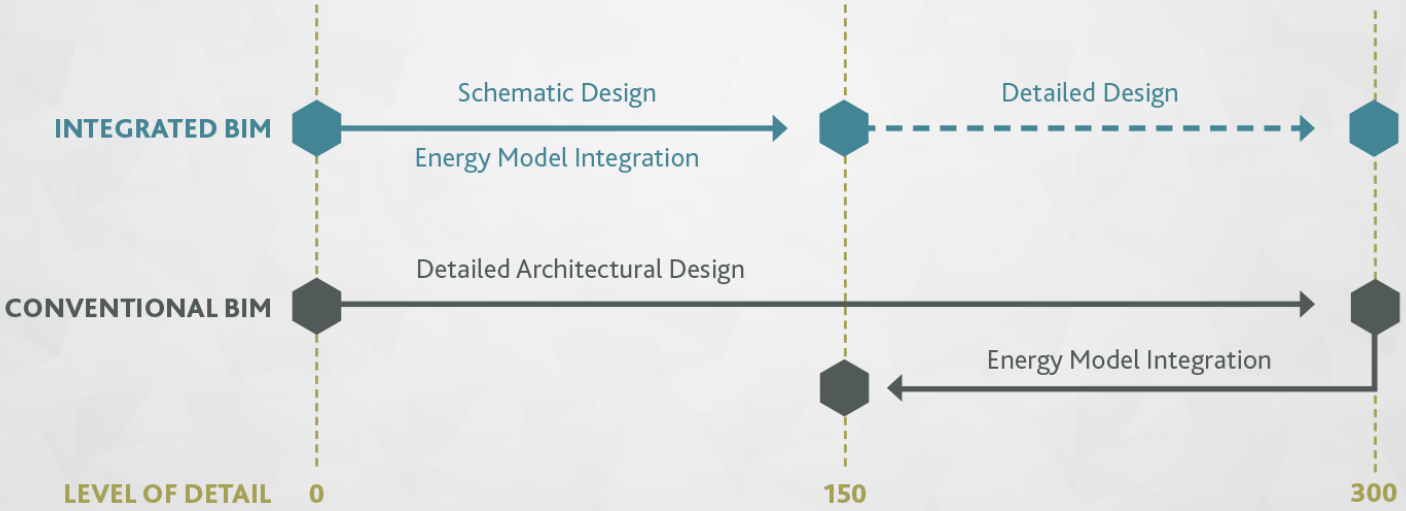
1. BIM Integration
2. Data Interoperability
3. Asset Management (not covered in this course)

Building Life Cycle Data

Today increasing volume of Data is available at every stage of the building life cycle

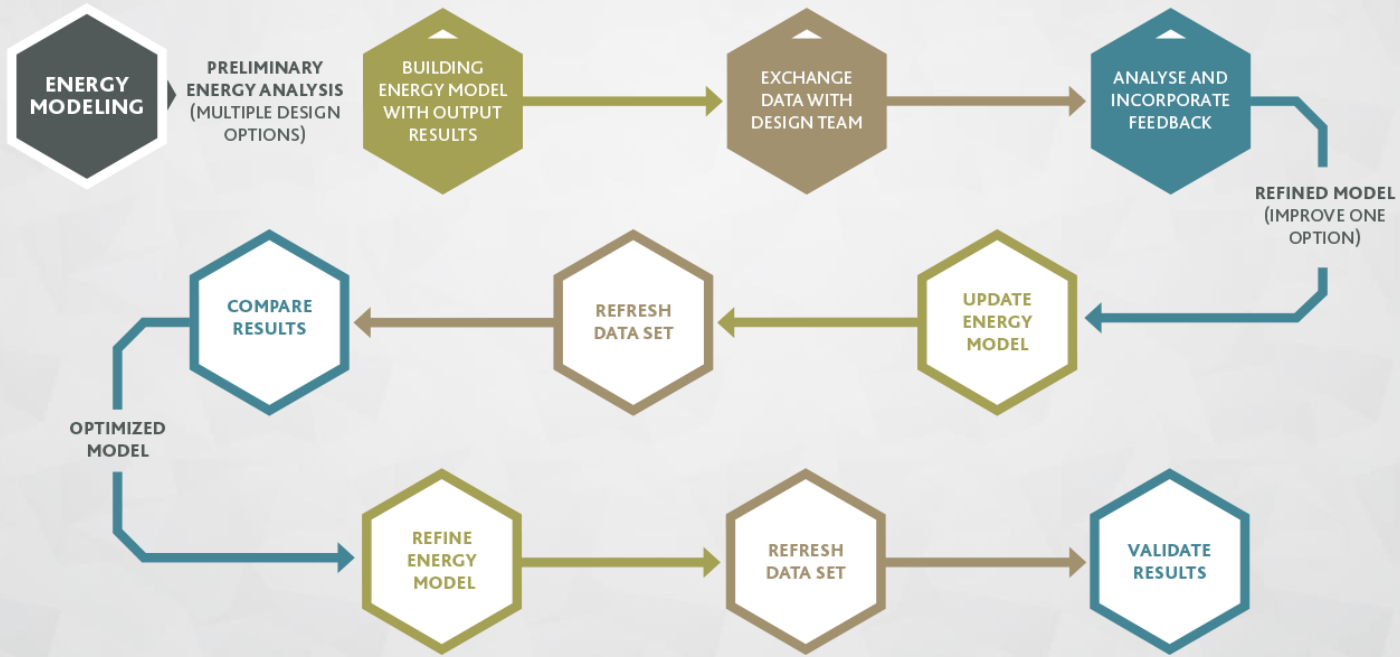
BIM Modeling Options

Create an energy model integration link at the schematic design phase with an Level of Detail 150 model.



BEM Optimization

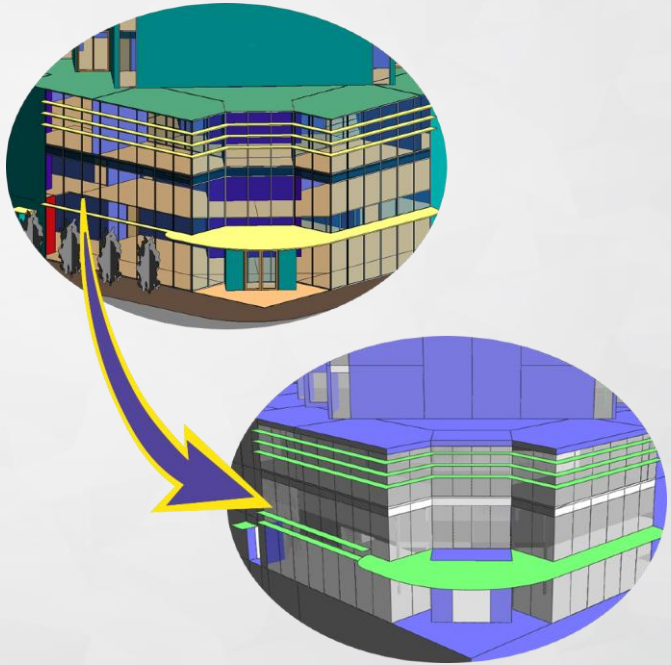
Integrating BIM enables you to manage a single BEM project throughout the design and operations.



Stage 1: BIM Integration Techniques

The 5 modeling techniques for a perfect integration.

1. Centerlines
2. Simplicity
3. Precision
4. Completeness
5. Hierarchy



BIM Import Features

1. Building geometry elements

2. Construction type assignment

3. Construction type material properties

4. Space types and associated information
    a) Space type parameters serve to exchange simulated data, such as building loads and ventilation values.

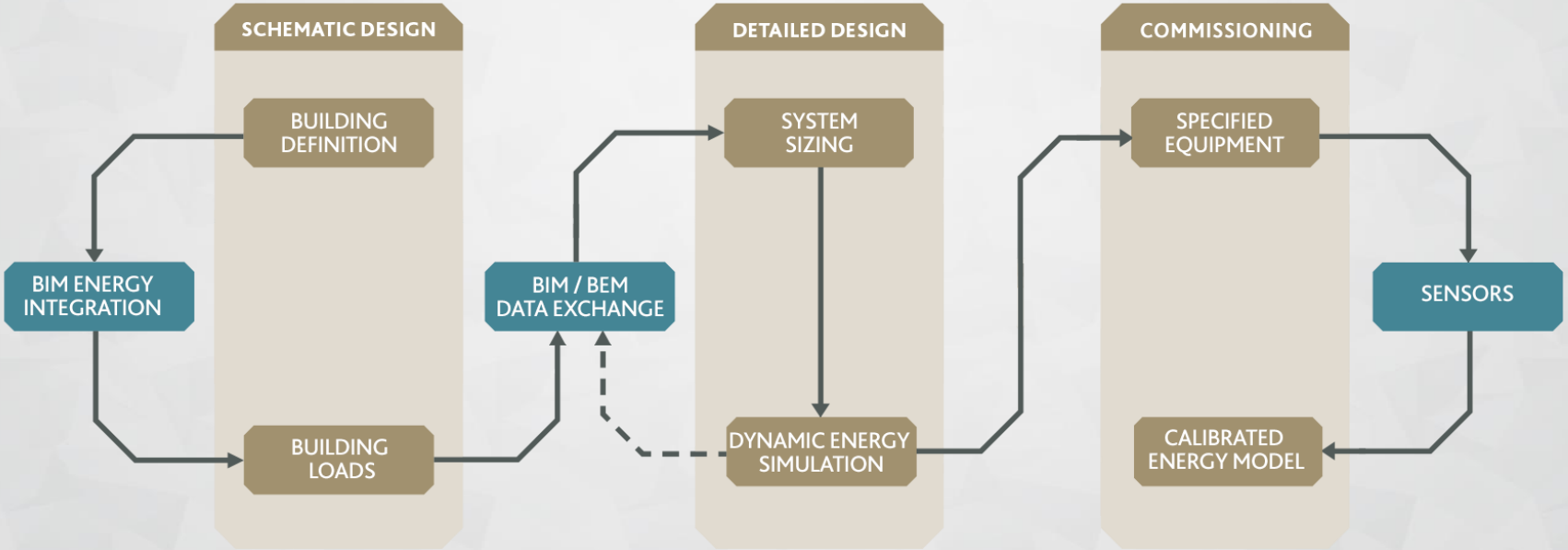
Stage 2: Data Interoperability

"A single environment to store shared asset data and information; accessible to all individuals who are required to produce, use and maintain it."

The UK's Level 2 BIM Initiative (effective April 2016)

BIM Interoperability

An integrated BIM workflow that is used to produce building loads, systems sizing up to a calibrated energy model.



Energy View

"The Energy Simulation View serves a specific purpose of capturing information from buildings to calculate energy usage and derive energy ratings." buildingSMART International

- Energy View serves as an OpenBIM compliance format for project handover or energy audits.

Stage 3: Asset Management

"The ability to bring together through open data standards from design, construction, and operations – offering the ability to analyze and create the learning feedback loops to deliver sustainable long-term improvements in asset performance." Digital Built Britain – BIML3

Software Demo

Once you can successfully integrate the VE with Revit, you can then exchange data between the two tools and manage design options.

1. Modeling Techniques for the Simple Model Approach
2. VE's BIM integration process
3. Exchange simulated building loads data from the VE to Revit
4. Incorporate a design modification
5. Discuss options for the Detailed Model Approach