Feasibility study in Regenerative Modular Construction

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Introduction

This Project is about visualizing and assessing feasibility of an adaptive regenerative modular building.

Objectives

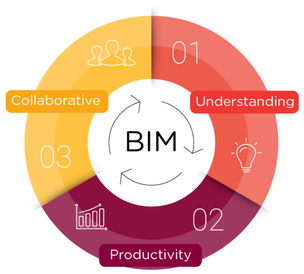
- Develop design concepts by applying several modeling techniques such as BIM, cost modeling and energy modeling
- Assess feasibility of a unique form of building

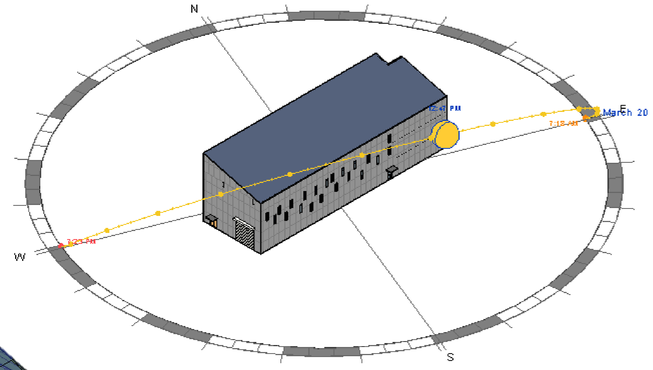
Methods

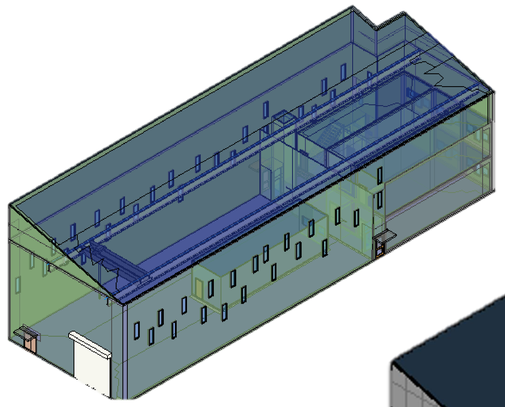
Building Information Modeling Management methods are utilized for effective concept development, visualization and process management.

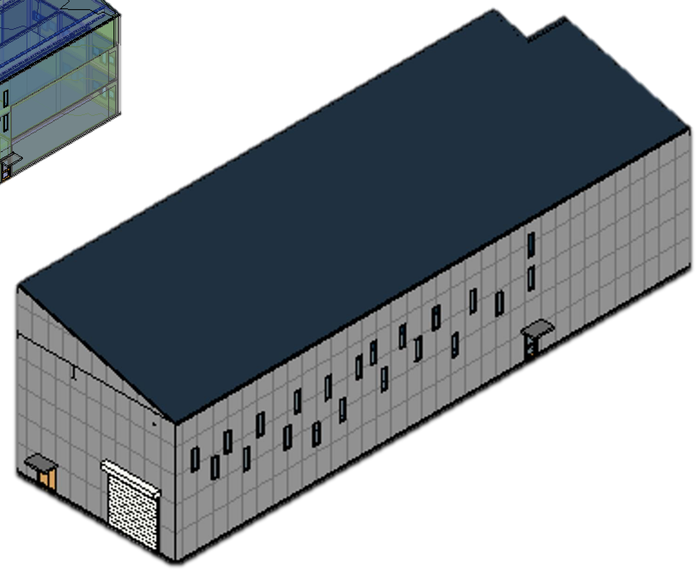
Software: Revit, Insight

Conceptual Design Optimization with BIM Integration









Design Philosophy

- Sustainability
- Adaptability
- Resiliency
- Circularity

Proposed Building Features

- Unique energy storage system
- 'Off-grid' capabilities
- Adaptable and advanced building controls

Why adaptive regenerative modular facility at UVic ?

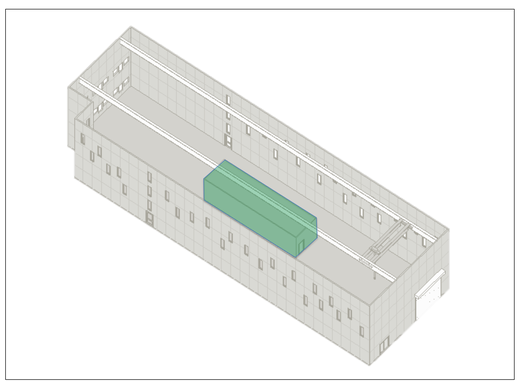
- Students can build a new module each year as part of an *undergraduate development program*
- *Graduate and PhD researchers* can try new materials, new structural solutions & building control systems
- Research and Development for local modular industry

Future Steps

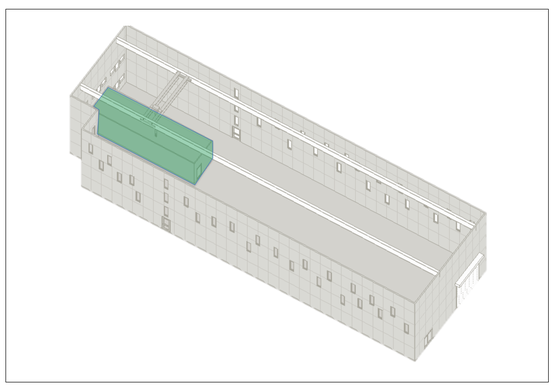
- Cost modeling for a Single Module
- Preliminary energy Modeling
- Solar studies for PV output

Concept Illustration

Module Construction



Module Placing



Module Stacking