Climbing the Hill
C1: Britomart Station

Fly Through Video
Building information modeling (BIM)

Building Information Modeling (BIM) is a process focused on the development, use and transfer of a digital information model of a building project to improve the design, construction and operations of a project or portfolio of facilities.

The National Building Information Modeling Standards (NBIMS) Committee defines BIM as:

“... a digital representation of physical and functional characteristics of a facility. A BIM is a shared knowledge resource for information about a facility forming a reliable basis for decisions during its life-cycle; defined as existing from earliest conception to demolition. A basic premise of BIM is collaboration by different stakeholders at Different phases of the life cycle of a facility to insert, extract, update or modify information in the BIM to support and reflect the roles of that stakeholder.”
BIM Overview

BIM is the move from analog to digital design and construction. A model-based technology linked with a database of project information - AIA

Construction is the only industry that does not/cannot test a design before production!
Working Concept – BIM

- Single file concept: The complete building model and all of its representations are included in the BIM file
- Real architectural elements used for modelling
- Changes of the model affect all related drawings (and vice versa)
- Automatic generation and updating of documentation
- Architectural content (libraries)
- Building information data attached to the elements
- Additional materials (rendering, animation, quantity take-offs, schedules)
BIM for CRL...Why?
CRL BIM Objectives

- A single source of Truth
  - The objectives are expected to be achieved through the following BIM benefits:
    - **Single source of truth**: improve collaboration and reduce errors
    - **Visualization**: improve safety and reduce risk
    - **Data Interoperability**: improve project delivery and collaboration
    - **Integrate Asset data with CAFM**: efficient operational performance due quick access to accurate information
- Long-term cost savings
CRL BIM Goals

- Increase Collaboration between Stakeholders
- As-Built & Asset Information Management
- 3D Coordination of Integrated Disciplines
- Improve Design & Construction Safety
BIM Management Workflow

CRL Approval Flow Chart

<table>
<thead>
<tr>
<th>Reference Design</th>
<th>Stage A, B, C</th>
<th>Stage D/Gate Review</th>
<th>Construction</th>
<th>Handover</th>
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<tbody>
<tr>
<td>BIM Models, Drawings, Principles' Requirement</td>
<td>RFP - Mock up BIM Model</td>
<td>CRL Review</td>
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<td>Develop LOD250 BIM Models</td>
<td>CRL Review</td>
<td>IFC Drawings &amp; Documents</td>
<td>Develop LOD350 BIM Models</td>
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<td>Shop Drawings &amp; Manufacturing/ Fabrication documents</td>
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Shared Environment (Hosted by C3)
BIM awareness and training

As-is CRLL BIM Assessment

Awareness across the Organization

- Lunch and Learn BIM Introduction for all CRLL staff
- Quarter BIM update for all CRLL staff

Fundamentals training for Engineering & Construction teams

- BIM Fundamentals for design and engineering team
- BIM Fundamentals for Construction, H&S team

Technical training for Engineering and Construction teams

- Navisworks for design and engineering team
- Navisworks for Construction, H&S team

Management training for Project Managers
BIM Room
CRL Documentation

• Industry Standards

PAS-1192-2-2013

NZ BIM Handbook 2016
CRL Documentation

• PTA BIM Documents

BIM Management Plan 2014

Project BIM Brief 2014
CRL Documentation

• CRL BIM Documents

CRL BIM Management Plan
Principal's Requirements for C1, C3, C7
Asset Information Requirement
CRL Documentation

• CRLL BIM Documents
Collaboration, Collaboration, Collaboration

Design Phase

Delivery Phase
4D Planning
Design Coordination

System Wide of the BIM Model illustration using Navisworks
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