Integrated Digital Delivery

Streamlining work processes and connecting stakeholders...

...through digital data, innovation and technology...

...across the whole project life cycle from design, construction, fabrication, to facilities management...

...to deliver a better outcome for end users.

"Integrating and Digitalising the Built Environment Value Chain"

Digital Design
Engaging stakeholders to achieve optimised and coordinated design that meets client’s, regulatory and downstream requirements.

Digital Fabrication
Translating design to standardised components for automating off-site production.

Digital Construction
Just-in-time delivery, installation and monitoring of on-site activities to maximise productivity and minimise rework.

Digital Asset Delivery & Management
Real time monitoring for operations and maintenance to enhance asset values.
IDD builds on BIM & VDC

**Transformation**
- Beyond BIM: real-time digital data
- Whole value chain
- Outcome-based
- Mobile & cloud platform
- Artificial intelligence, machine learning

**Collaboration**
- Beyond 3D BIM
- Design + construction collaboration
- Reduce issues & resolution latency
- BIM to field

**Information**
- 3D BIM
- BIM e-submission
- Core information
- Design analyses

**IDD**
"Integrating and Digitalising the Built Environment Value Chain"

**VDC**
"Build Twice: First Virtual, then Real"

**BIM**
"Single Source of Truth"
Value to STAKEHOLDERS

At the same time, project stakeholders achieve value to meet their individual objectives, which in turn benefits the project as a whole.

**OWNER / DEVELOPER**
- Best design outcome for project
- Improved cost, time, and quality project goals
- More accurate & reliable digital asset information
- Enhanced value of assets

**DESIGNER**
- Faster and better design options
- Better design coordination and reduced RFIs
- Improved competitiveness

**CONTRACTOR**
- Reduced risk
- Reduced reworks
- Higher accuracy in bidding
- More time for value engineering
- Improved safety

**FABRICATOR**
- Faster shop drawing approval
- Automated translation of design to production/fabrication
- Improved production management

**ASSET / FM OPERATOR**
- Cost effective operations
- Enhanced lifecycle management
- Real time access to O&M manuals
- Streamlined maintenance regime
Applying IDD to PPVC

PPVC (Prefabricated Prefinished Volumetric Construction) is one of the most productive DfMA (Design for Manufacturing and Assembly) technologies. IDD helps to push the boundaries of productivity even further through digitalisation and streamlining of the entire PPVC workflow.

- **Optimise PPVC configuration and modularisation**
- **Resolve issues collaboratively and promptly**
- **Study constructability to optimise cycle time**

**KPIs:**
- Reduce PPVC module types
- Maximise automation
- Reduce lead time & cycle time
- Reduce no. of defects

**Digital Platforms**
- Digital design
- Digital fabrication
- Digital construction
- Digital asset delivery
- Digital progress reporting & claims
- Digital defects management
- Digital QA/QC inspection
- RFID for component tracking
- Extract data for production automation
- Smart hoisting & installation
How to **KICK-START IDD**

Jumpstart IDD implementation for your project by using this framework:

**EXAMPLE:**

1. Reduce construction period from 30 to 26 months
2. Early design confirmation
3. Streamline and digitalise shop drawing approvals
4. Fabrication requirements
5. FM requirements
6. Fabrication
7. Construction
8. Design

**INFORMATION STANDARDS:** Tender, Fabrication, Asset data and models

**COLLABORATION PLATFORMS:** data storage, data exchange, data analytics

- Computational BIM
- Virtual Reality
- BIM to Field
- Resource tracking
- Automation
- Building sensors

**KICK-OFF**

- **Organise a KICK-OFF MEETING** with the project team to:
  - Identify key project challenges and define project outcomes
  - Determine appropriate strategies at each phase to achieve outcomes
  - Identify relevant processes to re-engineer and streamline
  - Integrate downstream phases requirements upstream
  - Determine other requirements for information exchange
  - Identify platform for data exchange and collaboration
  - Identify other appropriate digital solutions and technologies