Frequently Asked Questions (FAQS)

1. How do we submit a PIP enquiry?

   For enquiries on Technologies and Innovations, DfMA Manufacturing Facilities and Integrated Digital Delivery (IDD), the interested party may provide more information on the technology at https://form.gov.sg/forms/bca/5c73865662e3a600175a0309.

   Our BCA officer will contact the interested party after the form has been completed

2. How much support may we get from PIP?

   The following costs are supportable on a co-funding and reimbursement basis:
   a) Manpower
   b) Equipment and Materials
   c) Professional Services
   d) Intellectual Property Rights

   The level of support for each area is as below:

Area	Funding Support
Technologies and Innovations	30-40% productivity improvements at trade level Co-funds up to 70% of the qualifying cost, capped at $1 mil per application > 40% productivity improvements at trade level Co-funds up to 70% of the qualifying cost, capped at $10 mil per application
DfMA Manufacturing Facilities	Integrated Construction and Prefabrication Hubs (ICPH) Co-funds up to 70% of the qualifying cost, capped at $10 mil per application
	Other manufacturing facilities Co-funds up to 70% of the qualifying cost, capped at $3 mil per application. Support for Digital Solutions (IDD) Co-funds up to 70% of the qualifying cost, capped at $300,000 per application.

Integrated Digital Delivery (IDD)	Integrated Digital Delivery (IDD) 3 stage digitalisation Co-funds up to 70% of the qualifying cost, capped at $600,000 per application. Integrated Digital Delivery (IDD) 4 stage digitalisation Co-funds up to 70% of the qualifying cost, capped at $700,000 per application.

3. What are the IDD deliverables and strategies to be implemented in PIP?

   Each project team must implement IDD throughout the whole value chain (from design, fabrication, construction and/or asset delivery and management) with clear outcome KPIs, using a collaboration platform to integrate with different stakeholders.

   Examples of IDD strategies include:

   a) The focus on one integrated model where data requirements and milestones are set by consultants upfront, with ICE sessions conducted to resolve key design issues with impact downstream (e.g. M&E spaces and Design for Maintainability)
   b) The streamlining of shop drawing approvals and data extraction, from BIM, for offsite production automation
   c) The use of BIM-to-Field technologies and site management platforms for better field management onsite
   d) The use of smart FM technologies for real-time monitoring operation and maintenance.

   Reference documents
   Annex 1: IDD Outcome KPIs
   Annex 2: Industry Leaders' Quick Start Guide to IDD: The "What" and "Why"
   Annex 3: IDD solutions for DfMA manufacturing facilities

4. What are 3 stage and 4 stage digitalisation?

   It refers to the extent of digitalisation over a typical construction project lifecycle which can be logically broken into 4 stages, namely, (i) design, (ii) pre-fabrication, (iii) construction and (iv) asset delivery and management.

   PIP helps firms to build up IDD capabilities through funding support for 3 or 4 stage digitalisation.

5. When should we submit the PIP application and what are the required application supporting documents?

   Applications must be submitted before the commencement of PIP. Any cost incurred before applicant accepts BCA offer for PIP funding support (BCA would issue Letter of Offer (LOC) for eligible projects together with Letter of Acceptance (LOA), applicant is required to accept the offer through return of LOA) would not be supportable. After the FormSG submission is

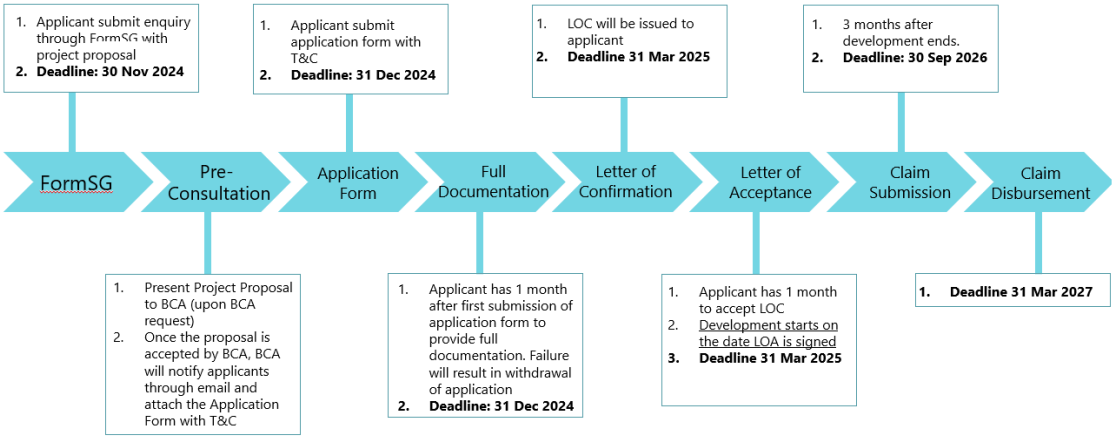
accepted by BCA, applicant would need to furnish the following application documents before BCA would assess the project for funding supportability.

S/N	Items to be submitted	Please attach the document in the relevant boxes
1.	PIP proposal slide (to be submitted during the FormSG enquiry stage)	
2.	Application form (to be shared by BCA through email for those FormSG enquiries accepted by BCA)	
3.	ACRA Bizfile form	
4.	Past 3 years' financial reports	
5.	Letter of Award or Contract, if applicable	
6.	Supporting documents to justify price reasonableness, including **three quotations** from suppliers for both proposed method and conventional method	

S/N	Information required to be included in the application document	Please tick if the information is included in the proposal slide / application form
1.	For PIP proposal slide: - Describe what is the conventional method (i.e. current method) and its limitations. - Describe what is the proposed method can how it helps to improve productivity onsite or offsite.	
2.	For PIP proposal slide and application form: - Show the project Gross Floor Area - Show the manhour requirement before and after the adoption of solution. - Show the data of manhour/m3 before and after the adoption of solution, and the productivity improvement.	
3.	For PIP proposal slide and application form: - To provide the project GFA(A), GFA covered by the proposed solution (B) and percentage of coverage (B/A).	
5.	For PIP proposal slide: - Details of at least one pipeline project*. Details required shall cover project title, stage of project, project timeline	

	Note: pipeline project refers to project at design / tender / ongoing construction which the proposed solution has the potential to be applied subsequent to the current project.	

6. When can I start the PIP project.
Pls refer below the PIP application workflow.



7. Is there a timeframe set for the completion of the PIP project?

The applicant should indicate the estimated PIP duration for evaluation. The project duration should be at least six months and be kept within two years.

8. Is GST supported?

As government grants are not meant to offset the tax liabilities of companies, GST will not be supported.

9. Can my firm/group submit multiple applications for the same construction project?

Yes, you may submit multiple applications if the technologies adopted are different and there are no overlapping areas.

10. When will I know the outcome of my PIP application?

You will be notified on the outcome of your PIP application within two months if all supporting documents are in order.

11. May I request for seed money at the beginning of my PIP?

No seed money will be provided at the start of your PIP. Payment of expenses incurred is on a reimbursement basis.

12. When can I submit my claims?
    You may submit interim claims every six months when the approved PIP grant amount is more than $1M and no later than 6 months before the final claim. All claims must be accompanied by a progress report, an Auditor's Statement and other supporting documents as requested by BCA. The final claim must be submitted within 6 months from the end of development period and accompanied by a final report and necessary documents stated in the Letter of Offer. All claims must be submitted by 30 Sept 2026 or the claim date stipulated in the BCA Letter of Confirmation, whichever earlier.

    The required claim supporting documents includes:
    - Progress and final reports
    - Video of implemented system
    - Claim statement
    - Auditor statement of expenditure by an independent accountant
    - Purchase order
    - Delivery order
    - Payment invoice
    - Payment voucher
    - Bank transaction records
    - Any other documents tht maybe needed at BCA request

To enquire for more information, please click on the link below:

https://www.bca.gov.sg/feedbackform/?Category=BuildSG%20Transformation%20Fund%20(BTF)

Annex 1

IDD OUTCOME KPIS

SINGAPORE LEADERS' QUICK START GUIDE TO IDD

SAFETY

- Improve site safety
- Reduce number of incidents
- Zero fatal accidents

TIME

- Meet or shorten target construction period
- Reduce floor cycle time
- Reduce Extension of Time

QUALITY

- Better turnaround of quality inspections

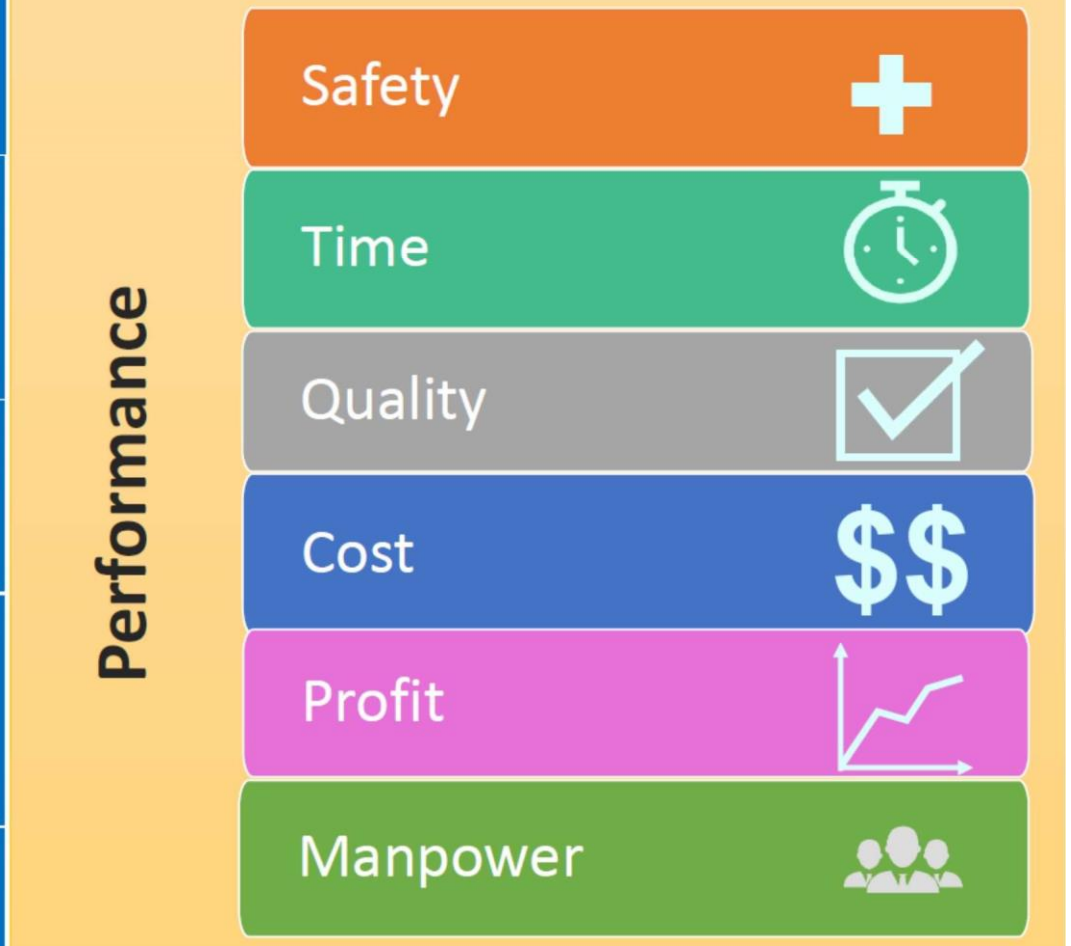
COST

- Reduce waste and rework
- Maximise target cost
- Reduce construction cost
- Reduce contingency

PROFIT

- Maximise saleable area or floor efficiency

LITERATURE RESEARCH



Safety

1. Improve site safety process
2. Zero accident, regardless minor or fatal

 Digital Design	 Digital Fabrication	 Digital Construction	 Digital Asset Delivery And Management
• Design for safety • Reduction in no. of waivers related to safety	• Reduction of safety incidents -by using BIM and digital technology to simulate and check product dimensions (W x D x L) and weight (tonnage) for lifting/handling and transportation	• Reduce errors in crane hoisting -By simulating hoisting path through BIM • 20% improvement in Permit-To-Work submission (0.19hr vs 0.15hr) -By implementing safety management system • 40% improvement in lodgement of non-conformances during safety inspection (3.4hrs vs 2.0hrs) -By implementing safety management system • 50% improvement in producing safety audit report (17hrs vs 8.0hrs) -By implementing safety management system	

Time

1. On-time completion percentage
2. Shorten target construction period
3. Reduction of request for EOT

Digital Design	Digital Fabrication	Digital Construction	Digital Asset Delivery And Management
• Design sign-off within 4 month of appointment • Improvement in time spent for design confirmation (i.e. room layout confirmation)	• 22% time savings in inventory tracking during production stage - using BIM-based digital logistic management system • 70% time saving for receiving orders digitally - using digital ordering system • Logistic – zero delivery delay - delivery 100% real-time updates of PPVC delivery status by BIM-based QR code system integration with mobile app	• Reduce onsite fit out by 15 working days per typical module • Achieve 25% of time saving on payment claim - using digital payment claim to reduce in time spent on verification and assessment of payment claim on structural elements • On-time completion percentage/ahead of schedule – using 4D BIM to simulate virtual construction schedule to achieve 20% reduction of floor cycle time, allowing accurate tracking of plan vs actual	• Not more than 1 re-inspection for TOP • Achieve 90% turnover of defects within 14 days - using defect management mobile solution

Quality

1. Improve turnaround of quality inspection
2. Reduce defects
3. Client satisfaction

Digital Design	Digital Fabrication	Digital Construction	Digital Asset Delivery And Management
• Reduction in revision and design changes -by leveraging technology i.e. VR/AR/MR • Good quality of "frozen design model" handover to contractor -by using of BIM for design coordination and client engagement before construction begins	• Reduce no. of defects arising from no. of fabrication errors -by virtually picking up errors before fabrication of material and product	• Reduction of time spent for inspection approval - By implementing BIM-To-Field mobile solution • Reduction in rework due to workmanship and wrong installation	• 40% improvement in QA/QC process (2.5hrs vs1.5hrs) - By implementing defect management system • 27% improvement in defect rectification process (1.1hrs vs 0.8hr) - By implementing defect management system • Feedback from end-users on severity of defects

Cost $$

1. Reduce rework
2. Reduce material wastage

 Digital Design	 Digital Fabrication	 Digital Construction	 Digital Asset Delivery And Management
• Improve client decision making - Using BIM QTO to estimate cost accurately • Reduce man-hours spent by 50% of optimizing lighting provision - Using computational design	• Cost saving from DfMA production - By reducing DfMA module types • Improvement in QTO • Reduction in change orders issued to off-site factories	• 90% reduction in abortive works for precast façade (no. of reworks 20 vs 2) • Improvement in QTO • 10% reduction in material wastage (i.e. concrete/rebar wastage) - By using digital ordering system and material tracking system	• 20% cost saving in commissioning handover - By implementing C2O process system • Smart FM reduces 30% cost saving - through use of model-based predictive operation and maintenance

Manpower

1. Manpower saving
2. Increase employee satisfaction
3. Reduce turnover rate

Digital Design	Digital Fabrication	Digital Construction	
• Reduce man-hours spent by 50% of optimizing lighting provision - Using computational design	• 20% manpower saving in inventory tracking during production stage and delivery - Using BIM-based digital logistics management and RFID • Manpower saving for DfMA fabrication automation - Using automation & robotics for PPVC steel carcass production	• 15% manpower saving from optimized onsite planning and resource management - By adoption of lean principle and using BIM-to-Field • Increase workers satisfaction -Over time tracking	• Improvement of FM/AM staff competent in using BIM for improved maintainability of assets & physical spaces

Annex 2:Industry Leaders' Quick Start Guide to IDD: The "What" and "Why"

Digital Design

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

Digital Fabrication

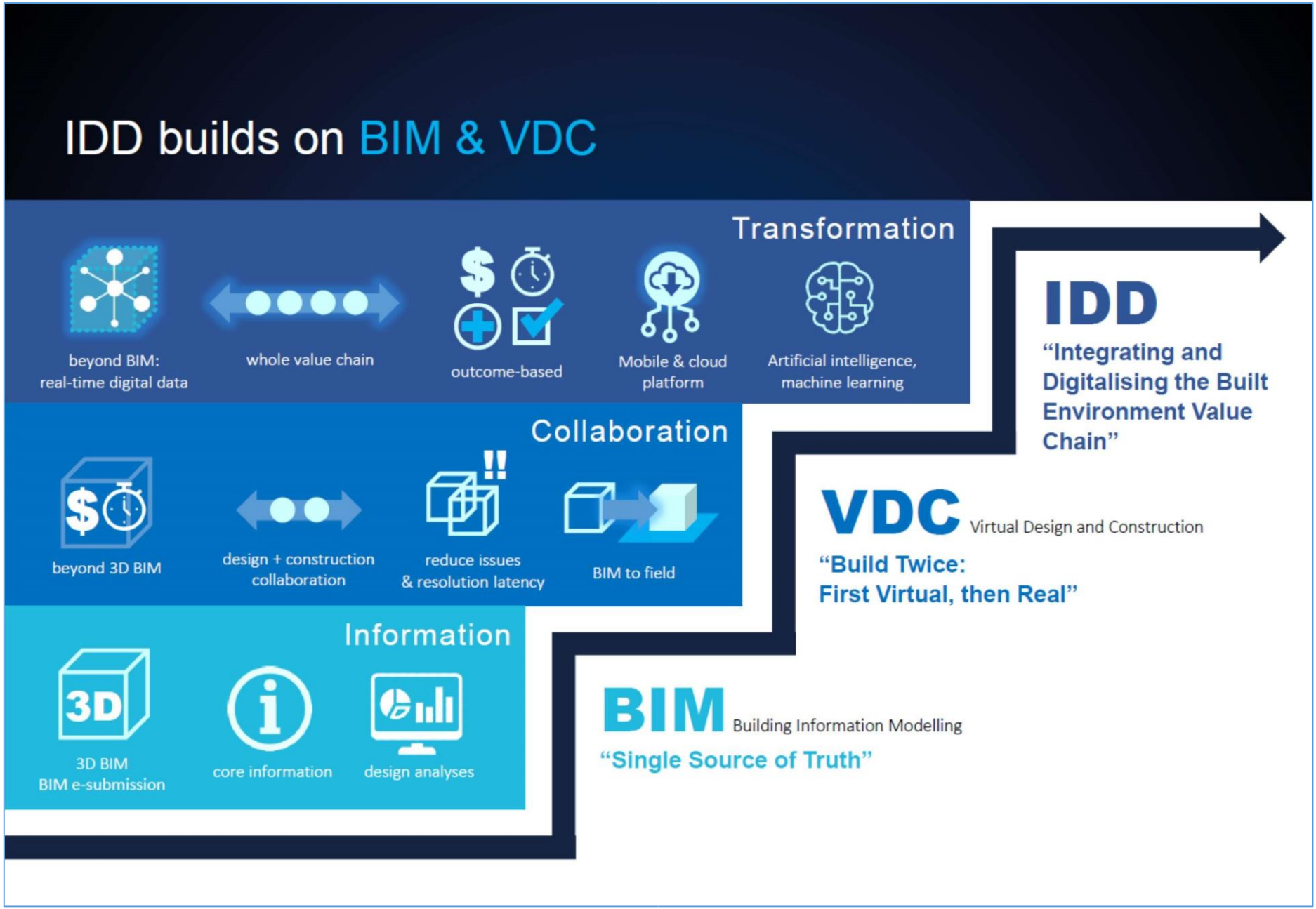
Translating design to standardised components for automating off-site production.

Digital Asset Delivery & Management

Real time monitoring for operations and maintenance to enhance asset values.

Digital Construction

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


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
3D BIM
BIM e-submission
core information
design analyses
IDD
"Integrating and
Digitalising the Built
Environment Value
Chain"
VDC
Virtual Design and Construction
"Build Twice:
First Virtual, then Real"
BIM
Building Information Modelling
"Single Source of Truth"

Benefits to PROJECT

Project teams realise outcome-based benefits from IDD such as the following:

TIME

- Meet or shorten target construction period
- Reduce floor cycle time
- Reduce Extension of Time

COST

- Reduce waste and rework
- Maximise target cost
- Reduce construction cost
- Reduce contingency

PROFIT

- Maximise saleable area or floor efficiency

SAFETY

- Improve site safety
- Reduce number of incidents
- Zero fatal accidents

QUALITY

- Better turnaround of quality inspections

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
Optimise PPVC configuration and modularisation
Review virtual mock-up to obtain early design confirmation
Resolve issues collaboratively and promptly
Study constructability to optimise cycle time
DIGITAL DESIGN
PRE-CONSTRUCTION
KPI:
Reduce PPVC module types
KPI:
Reduce lead time & cycle time
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.
Digital ordering
Extract data for production automation
Smart hoisting & installation
RFID for component tracking
DIGITAL FABRICATION
KPI:
Maximise automation
Digital progress reporting & claims
Digital defects management
Digital QA/QC inspection
DIGITAL CONSTRUCTION
DIGITAL ASSET DELIVERY
KPI:
Reduce no. of defects
DIGITAL PLATFORMS

How to KICK-START IDD

Jumpstart IDD implementation for your project by using this framework:

KICK-OFF

Organise a **KICK-OFF MEETING** with the project team to:

KPIs

1. Identify key project **challenges** and define project **outcomes**
2. Determine appropriate **strategies** at each phase to achieve outcomes

PROCESS

3. Identify relevant **processes** to re-engineer and streamline

INFORMATION

4. Integrate **downstream** phases requirements **upstream**
5. Determine other requirements for **information exchange**

TECHNOLOGY

6. Identify **platform** for data exchange and collaboration
7. Identify other appropriate **digital solutions** and technologies

EXAMPLE:

Reduce construction period from 30 to 26 months

- Early design confirmation
- Reduce floor cycle time
- Maximise pre-fabrication
- Reduce defects

Streamline and digitalise shop drawing approvals

Fabrication requirements

FM requirements

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

Annex 3: IDD solutions for DfMA manufacturing facilities