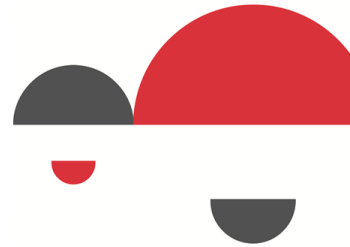


25-Oct-2022  
Edmund Leong

# EMBRACING IDD IN CONSTRUCTION STAGES FOR STRAITS CONSTRUCTION





TRANSFORMING THE WAY WE BUILD WITH  
**INTEGRATED DIGITAL DELIVERY (IDD)**



**Digital  
Design**

**Digital  
Construction**






**Digital  
Fabrication**

**Digital Asset Delivery  
& Management**

**IDD** builds on the use of **BIM** and **VDC**



## IDD: Diversified Implementation Opportunities

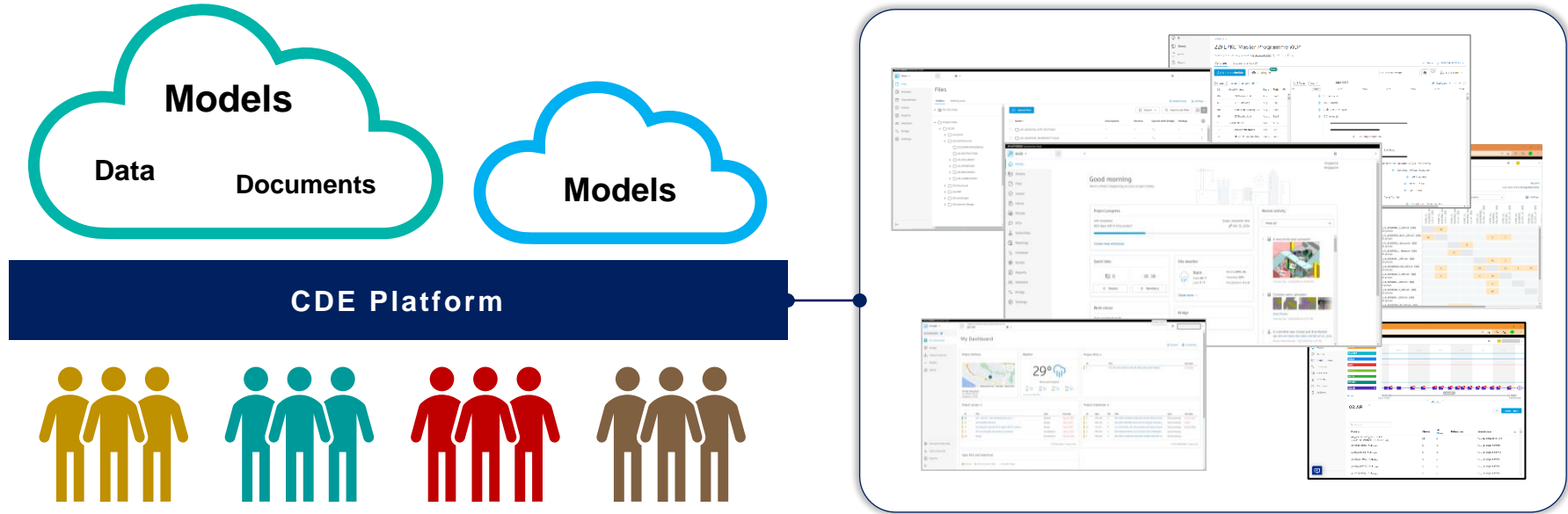
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Manpower 	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>
Safety 	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
Quality 	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>
Cost 	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>
Others ...	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>

<https://www1.bca.gov.sg/buildsg/digitalisation/integrated-digital-delivery-idd/idd-implementation-plan>



# Defining IDD for Us

Foundation → Common Data Environment



## Defining IDD for Us

Set a  
“Common Goal”

*applications*

**DESIGN**

**CONSTRUCTION**

**FABRICATION**

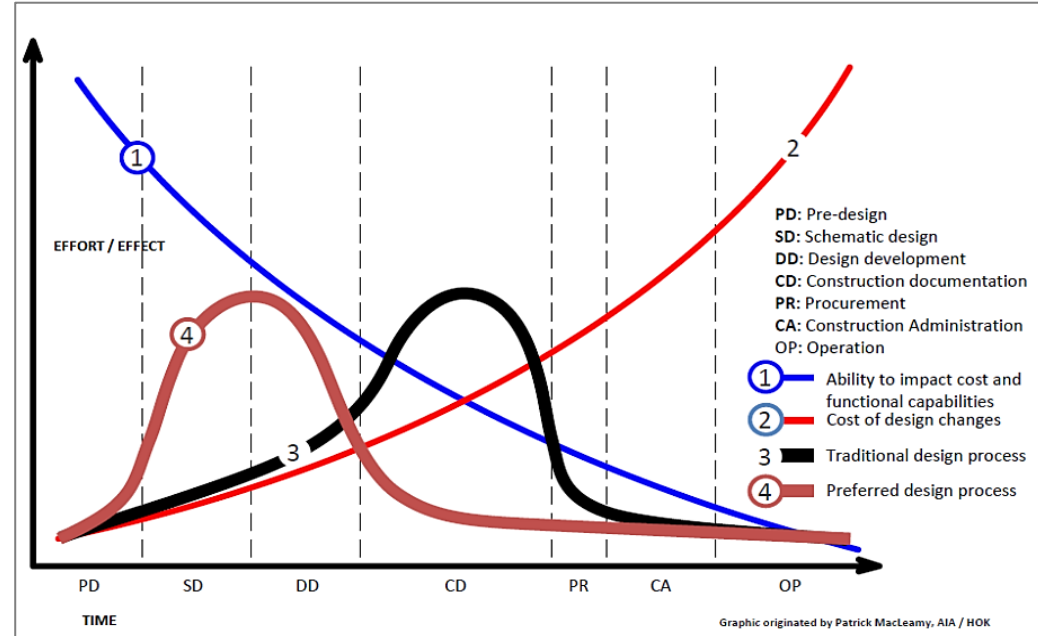
**FM**

**Time**



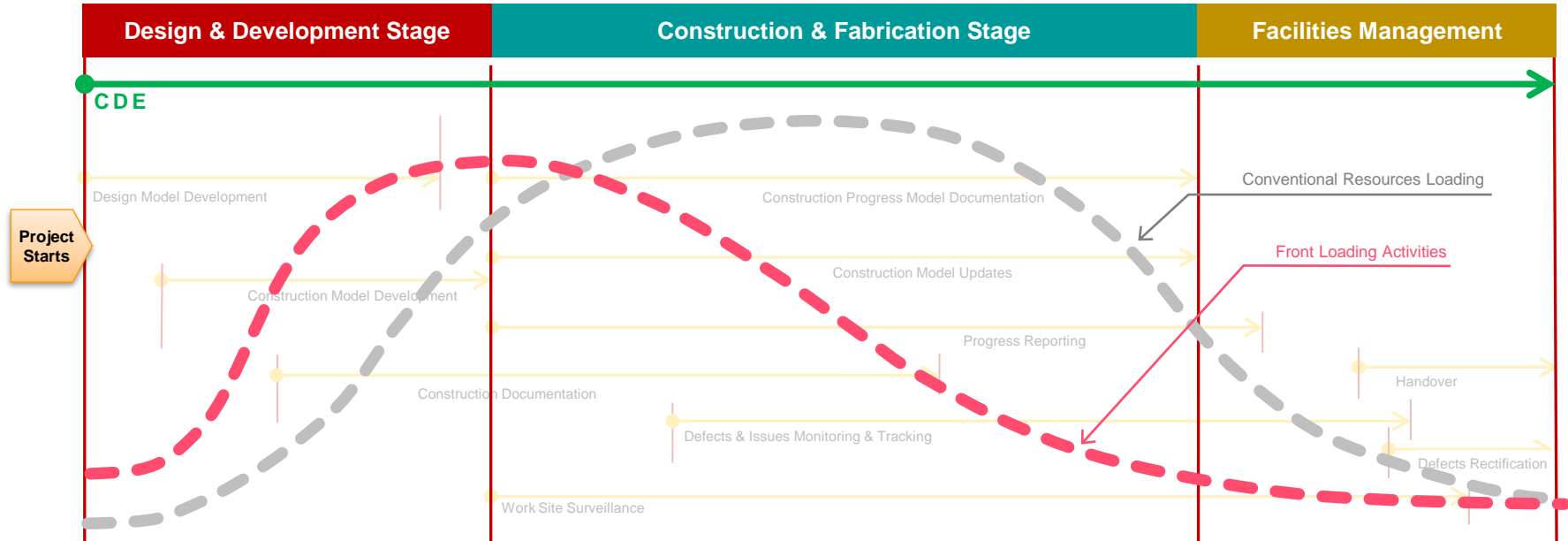
## Defining IDD for Us

- Design & Development, and Construction
- Applying “Macleamy Curve”



# Defining IDD for Us

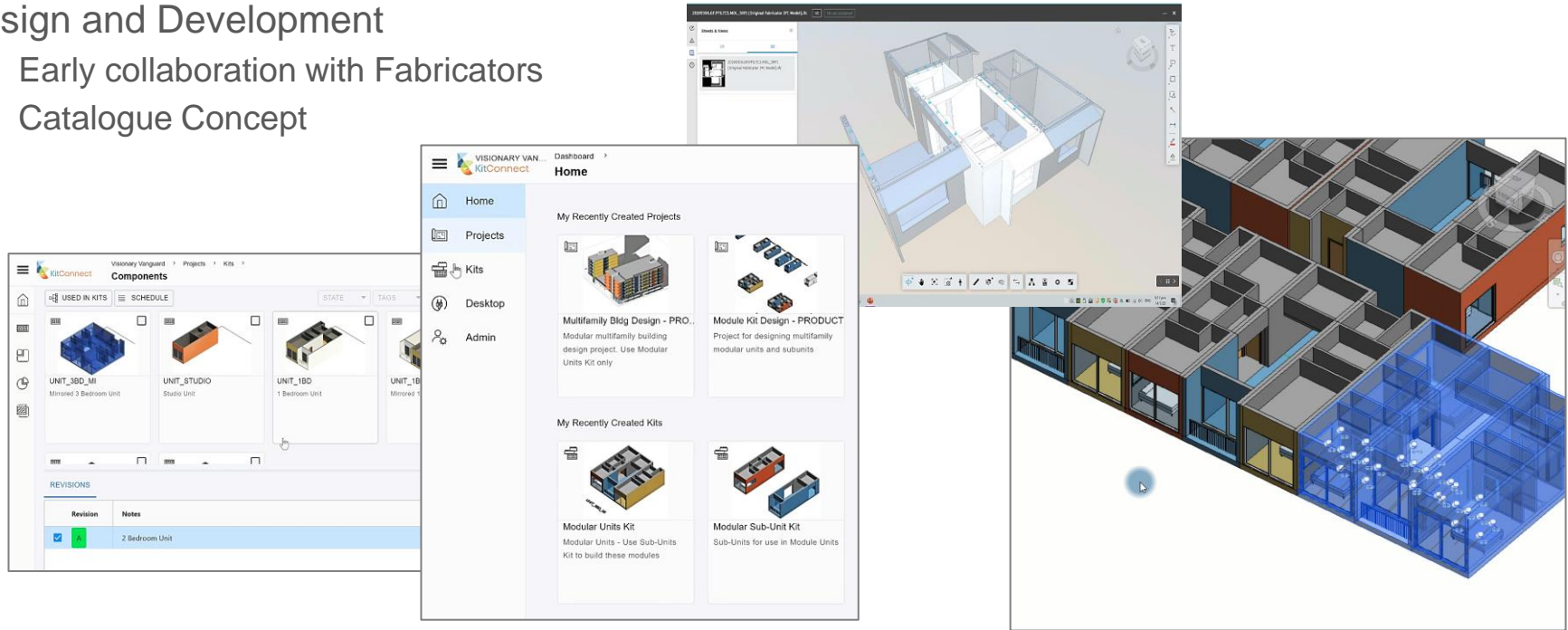
## Design & Development: Overlay Curve at Project Stages



# Defining IDD for Us

## Design and Development

- Early collaboration with Fabricators
- Catalogue Concept

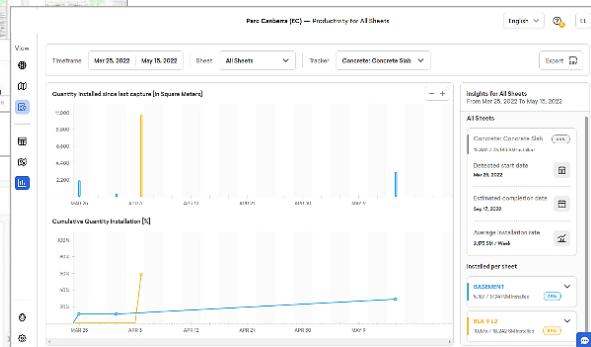
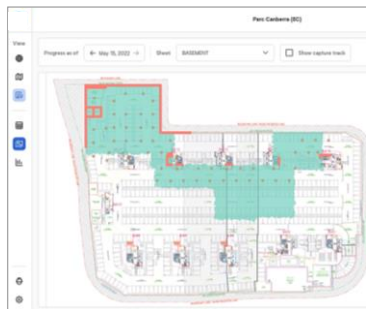
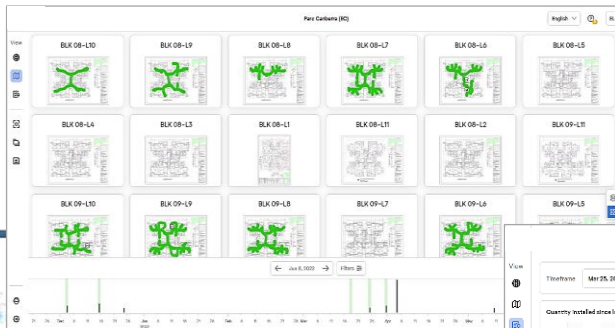
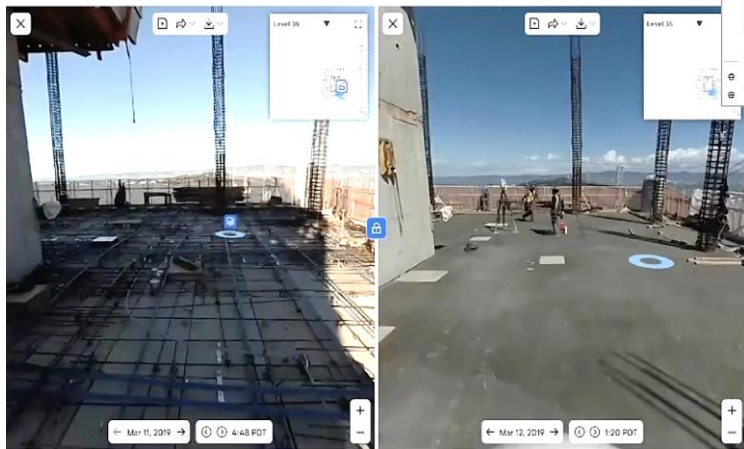




# Defining IDD for Us

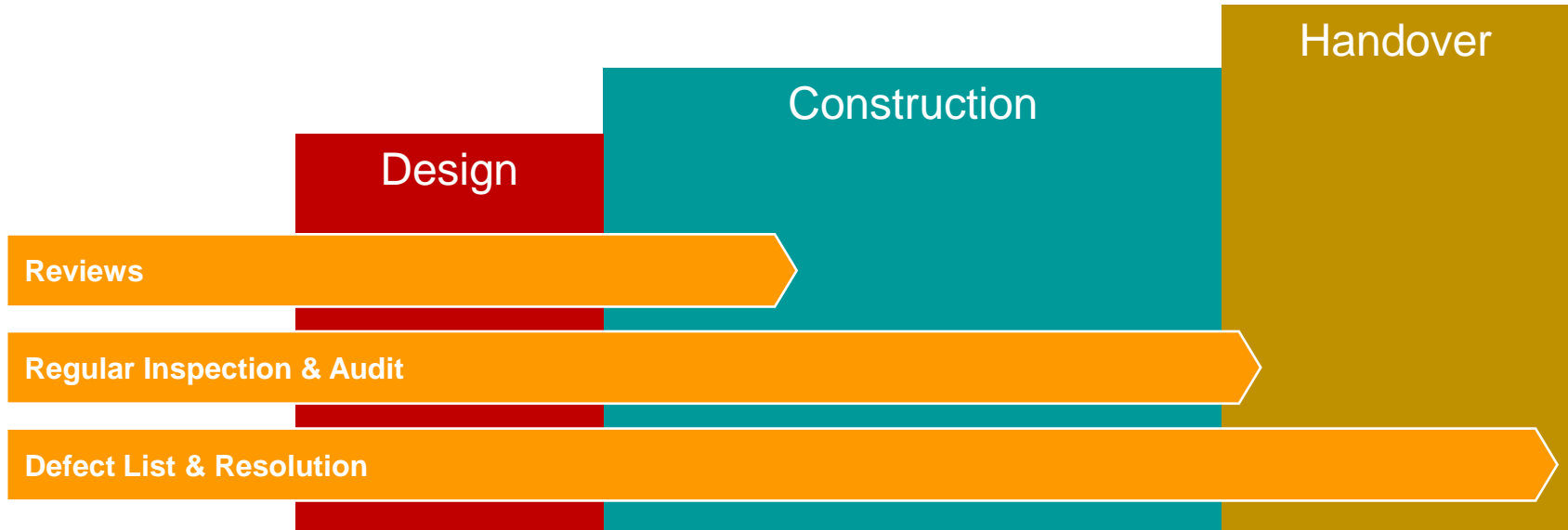
## Construction

- Site Progress Documentation
- Tracking Construction Issues

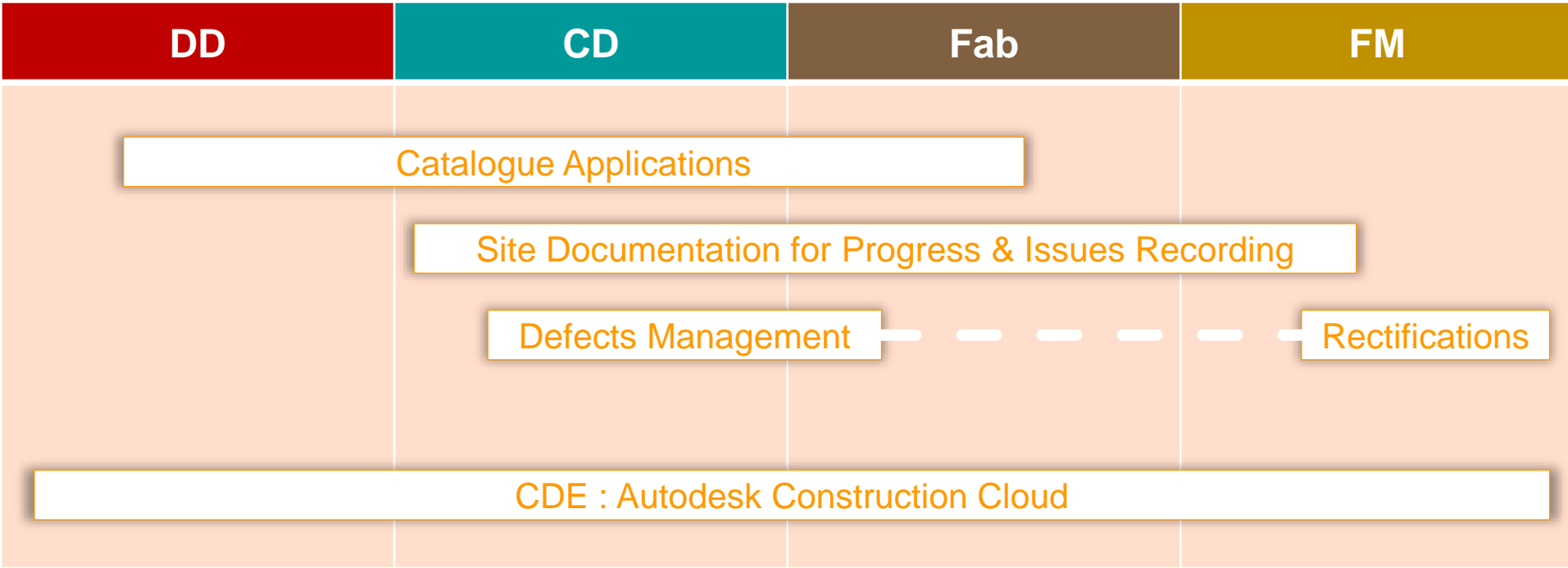


# Defining IDD for Us

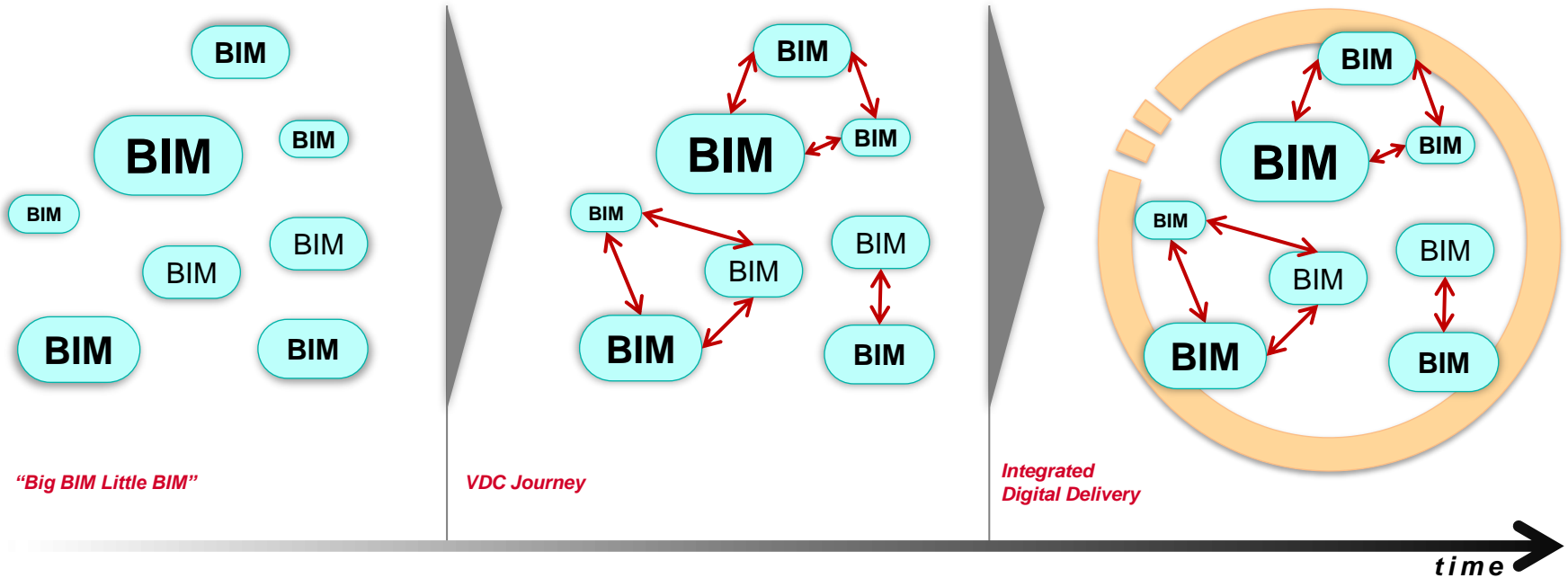
## Facilities Management: Handling Defects



## Applications in our IDD journey

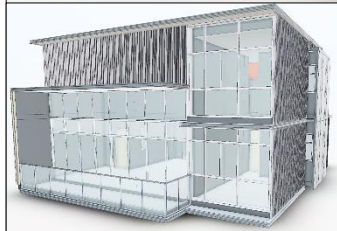
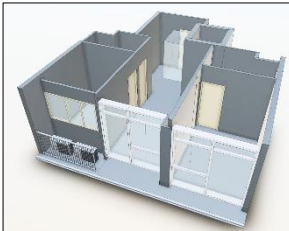


## IDD Journey in Straits



## How IDD is helping our Projects

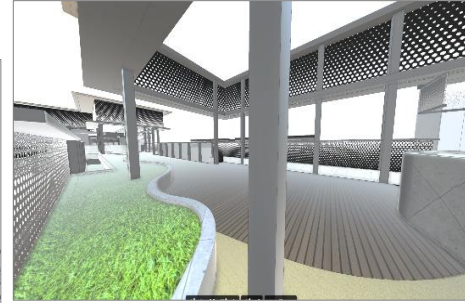
### Terra Hills





# How IDD is helping our Projects

## The Continuum



## IDD Implementation: Building Team Capabilities




**All Stakeholder: Developer, Consultants, Sub-Contractors & Internal Staff**



# IDD Implementation: BIM Handover

BIM Part  
Version 2



**Common Data Environment (CDE) Data Standard**

MAIN ELEMENT	SUB-ELEMENT*	ELEMENT NAME: • IFC • ARCHICAD (A) • REVIT (R)	DISCIPLINE	PARAMETERS (GENERIC TERMS)
Floor Waste/Drainage	Downpipe & Sump	• Distribution Point • Pipe (A) • Pipe (R)	Architecture, MEP	Length Cross sectional Profile
Railings/ Balustrade		• Walling • Railing (A) • Railing (R)	Architecture	Type Description (of Assembly/Pattern) Length Height Cross sectional size of members Material
Roof		• Rib/Roof • Roof/Morph/Slab/Shell (A) • Roof (R)	Architecture, Structure	Type Description (material & construction) Material Thickness Perimeter Area Volume U value Concrete Grade (where applicable)

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CDE Data Standard

**9.2 Example: Common vs Organisation-Specific Model Elements and Parameters (JTC)**

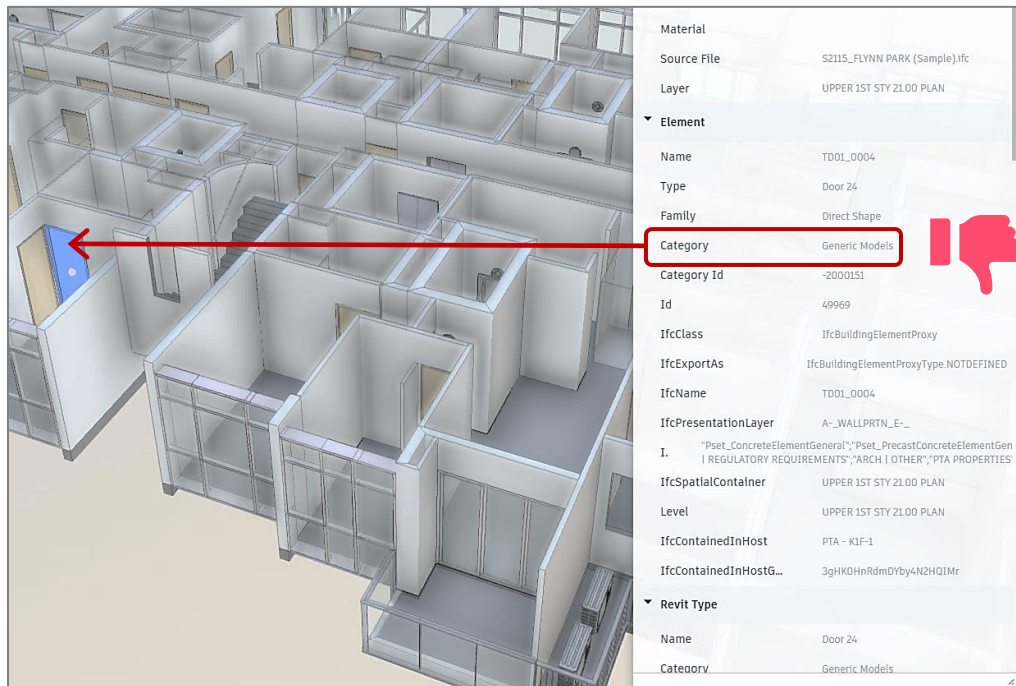
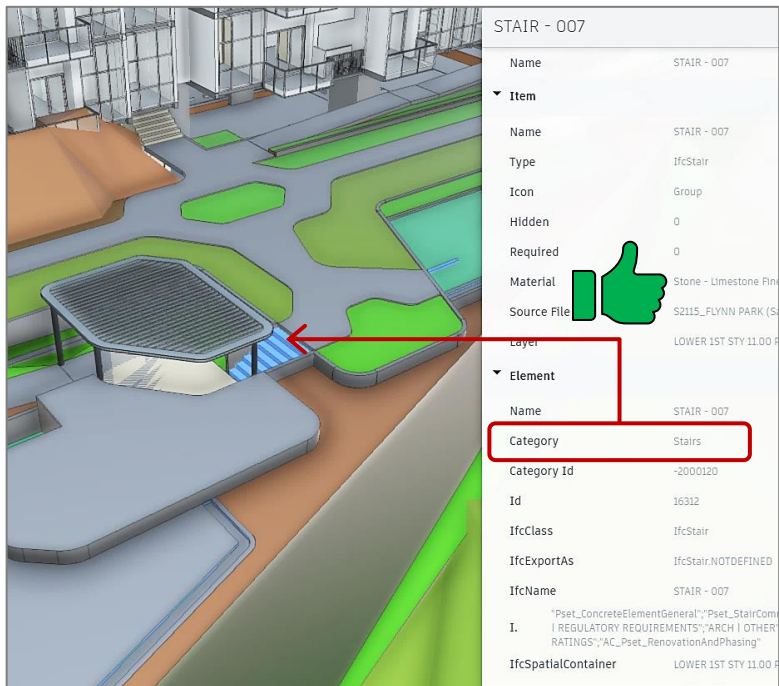
PROJECT STAGES*	INITIATION/ CONCEPT DESIGN*	PRELIMINARY DESIGN*	DETAILED DESIGN*	TENDER DOCUMENTATION*	CONSTRUCTION*	AS-BUILT*
Wall	<ul style="list-style-type: none"> <li>Type (key purpose)</li> <li>Description (to describe the wall's including Thickness of each layer and Material)</li> <li>Bottom Elevation</li> <li>Top Elevation</li> <li>Thickness (overall)</li> <li>Length</li> <li>Height</li> <li>Area</li> <li>Volume</li> </ul>	<ul style="list-style-type: none"> <li>Type (key purpose)</li> <li>Description (to describe the wall's including Thickness of each layer and Material)</li> <li>Bottom Elevation</li> <li>Top Elevation</li> <li>Thickness (overall)</li> <li>Length</li> <li>Height</li> <li>Area</li> <li>Volume</li> </ul>	<ul style="list-style-type: none"> <li>Type (key purpose)</li> <li>Description (to describe the wall's including Thickness of each layer and Material)</li> <li>Wall Type</li> <li>Bottom Elevation</li> <li>Top Elevation</li> <li>Thickness (overall)</li> <li>Length</li> <li>Height</li> <li>Area</li> <li>Volume</li> <li>Fire Rating*</li> <li>Type Number*</li> <li>Keynote*</li> </ul>	<ul style="list-style-type: none"> <li>Type (key purpose)</li> <li>Description (to describe the wall's including Thickness of each layer and Material)</li> <li>Wall Type</li> <li>Bottom Elevation</li> <li>Top Elevation</li> <li>Thickness (overall)</li> <li>Length</li> <li>Height</li> <li>Area</li> <li>Volume</li> <li>Fire Rating*</li> <li>Type Number*</li> <li>Keynote*</li> </ul>	<ul style="list-style-type: none"> <li>Type (key purpose)</li> <li>Description (to describe the wall's including Thickness of each layer and Material)</li> <li>Wall Type</li> <li>Bottom Elevation</li> <li>Top Elevation</li> <li>Thickness (overall)</li> <li>Length</li> <li>Height</li> <li>Area</li> <li>Volume</li> <li>Fire Rating*</li> <li>Type Number*</li> <li>Keynote*</li> </ul>	<ul style="list-style-type: none"> <li>Type (key purpose)</li> <li>Description (to describe the wall's including Thickness of each layer and Material)</li> <li>Wall Type</li> <li>Bottom Elevation</li> <li>Top Elevation</li> <li>Thickness (overall)</li> <li>Length</li> <li>Height</li> <li>Area</li> <li>Volume</li> <li>Fire Rating*</li> <li>Type Number*</li> <li>Keynote*</li> </ul>

# Organisation-Specific Project Stages and Parameters

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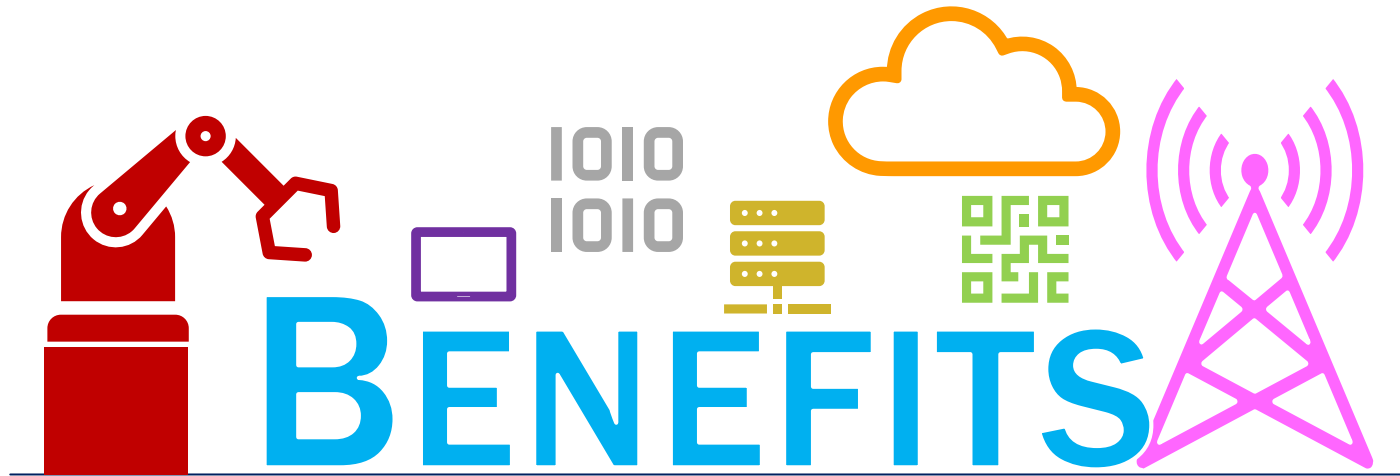


# IDD Implementation: BIM Handover, harmonizing IFC exchange



# IDD Implementation: Integrated Modeling in ICP/PCP





Reduce Waste

Optimize Resources

Improving Quality & Safety

Improve Productivity & Collaboration

IDD

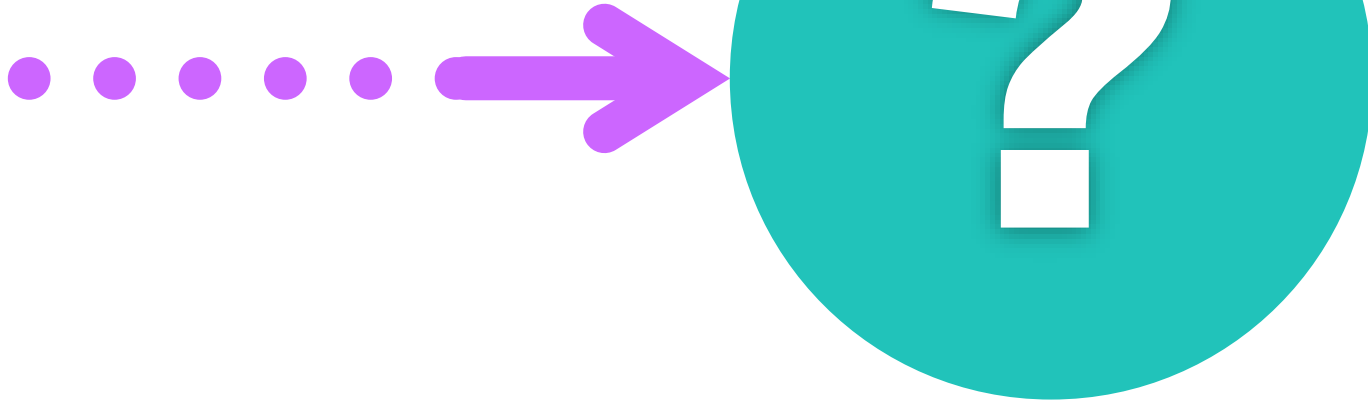
DRIVERS







## Future Projects



# Thank You

