



Recognising Excellence in the Built Environment

**INTEGRATED DIGITAL DELIVERY
FIRM AND PROJECT CATEGORY**



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INTEGRATED DIGITAL DELIVERY

ABOUT THE AWARDS



The objectives of BCA Awards 2021 – Integrated Digital Delivery are as follows:

1. Recognise firms and projects for their outstanding IDD adoption and project teams' efforts;
2. Demonstrate IDD values and good practices at firm level and project level; and
3. Encourage more firms and projects to adopt IDD

BCA Integrated Digital Delivery (IDD) Awards are grouped into Firm and Project categories as shown below:

- PLATINUM
- GOLD^{PLUS}
- GOLD





Recognising Excellence in the Built Environment

**INTEGRATED DIGITAL DELIVERY
FIRM CATEGORY**



INTEGRATED DIGITAL DELIVERY

FIRM CATEGORY - OBJECTIVES



The objectives are:

1. Encourage firms to adopt IDD framework, technology and processes by establishing their own IDD value propositions, policies, standards, organisation committee with clear roles & responsibilities and training roadmap.
2. Recognise firms for their outstanding approaches in adopting IDD technologies, methods & processes across the projects in their firm.



INTEGRATED DIGITAL DELIVERY FIRM CATEGORY ASSESSMENT CRITERIA

The three assessment criteria for Firm category are:

i. Value and Culture

- ✓ Well defined value propositions and roadmap for IDD adoption
- ✓ Well documented IDD policies, standards & best practices
- ✓ Well structured efforts & programmes to build internal IDD culture

ii. Organisation and People

- ✓ Well organised Senior-Management-led IDD Committee with clear roles & responsibilities to drive IDD adoption to all levels
- ✓ Well implemented Skills Framework & Development Programme to build IDD capability
- ✓ Well demonstrated measurable outcomes from its Skills Development Programme
- ✓ Well demonstrated IDD capacity and capability at firm level

iii. Technologies and Research & Innovations (R&I)

- ✓ Well demonstrated adoption of data-driven and collaborative environment for better outcomes over the past 3 years
- ✓ Well demonstrated adoption of new technologies and methods for better process or outcome
- ✓ Well documented outcomes and involvement in R&I projects for its impact, scalable and innovative solutions compared with conventional practices

INTEGRATED DIGITAL DELIVERY FIRM CATEGORY WINNERS



AWARD	FIRM
PLATINUM	ONG&ONG Group Pte Ltd
	Woh Hup (Private) Limited
GOLD ^{PLUS}	Lendlease Singapore Pte Ltd
	MOH Holdings Pte Ltd
	Surbana Jurong Consultants Pte Ltd
GOLD	CPG Corporation Pte Ltd
	Kimly Construction Pte Ltd
	Lum Chang Building Contractors Pte Ltd

INTEGRATED DIGITAL DELIVERY

FIRM CATEGORY - PLATINUM



ONG&ONG Group Pte Ltd



ONG&ONG
group

IDD Culture & Value

- ✓ Exceptional IDD adoption with strategised focus areas in workplace, workforce, and workflow's transformation through digital-centric initiatives with international setups
- ✓ Outstanding implementation of IDD policies, standards & best practices, efforts & programmes for IDD culture building and impacts to the BE sector

Organisation & People

- ✓ Exceptional leadership quality and committed Senior Management for IDD adoption
- ✓ Outstanding IDD adoption at all levels spearheaded by Digital Technology Team
- ✓ Outstanding IDD measured outcomes in productivity gains with successful internal training programmes for integrated team with digital mindset and skillsets

IDD Technology Adoption

- ✓ Company-wide Cloud-based Common Data Environment (CDE) implementation
- ✓ Computational BIM and Generative Design
- ✓ In-house BIM automation tool with BIMomatic add-on application
- ✓ AR/VR/MR/Real-time rendering
- ✓ BIM for DFMA Collaboration and Centralised Library
- ✓ Digitalised clash detection, tracking, transmittals, review, approval, as-built & handover
- ✓ Digital ICE session with Smartboard, CDE Dashboard and cloud-based review
- ✓ Business Continuity Plan with comprehensive digital strategy

INTEGRATED DIGITAL DELIVERY

FIRM CATEGORY - PLATINUM



Woh Hup (Private) Limited



IDD Culture & Value

- ✓ Exceptional IDD adoption with sizable and iconic projects for cross-disciplinary and cross-phases integration with impressive in-house technology development.
- ✓ Outstanding implementation of IDD policies, standards & best practices, efforts & programmes for IDD culture building and impacts to the BE sector

Organisation & People

- ✓ Exceptional leadership quality and committed Senior Management for IDD adoption
- ✓ Outstanding IDD adoption at all levels spearheaded by internal IDD Task Force
- ✓ Outstanding IDD measured outcomes in productivity gains with successful IDD setup with in-house tailored training provision

IDD Technology Adoption

- ✓ Hubble App for Quality Assurance and Quality Control, Novade for Safety,
- ✓ AR/VR, 3ds Max, Twinmotion, Navisworks, miro & Microsoft Teams
- ✓ ProjectWise, Synchro Software
- ✓ Drones Photogrammetry, Laser Scanning
- ✓ In-house 5D Integration Platform for BIM, Planning and QS
- ✓ Power App, in-house Precast App, BIM for DfMA, Digital Rebar and Digital Mock-ups
- ✓ Centralised corporate Common Data Environment

INTEGRATED DIGITAL DELIVERY

FIRM CATEGORY - GOLD^{PLUS}



Lendlease Singapore Pte Ltd



IDD Culture & Value

- ✓ Successful IDD adoption and widespread implementation through in-house capability development and innovative technology deployment embedded as standard operating procedures
- ✓ Successful implementation of IDD strategy, standards & best practices, culture of innovation, knowledge sharing, and contributions to the BE sector

Organisation & People

- ✓ Outstanding leadership quality and committed Senior Management for IDD adoption
- ✓ Successful IDD adoption with integrated multi-disciplinary expertise across Development, Design, and Construction.
- ✓ Created a Digital Engineering career pathway which professionalises the practice and discipline of Integrated Digital Delivery
- ✓ Impressive IDD outcomes with good returns over investments and successful improvements on safety, quality, sustainability and competitiveness for project delivery

IDD Technology Adoption

- ✓ Codifying DfMA ready reference data for earliest stages of development
- ✓ LiDAR Scanning for survey and as-built quality verification
- ✓ Co-located ICE room to improve collaboration and coordination
- ✓ Drones/ Unmanned Aerial Vehicle (UAV) for site planning, safety and progress reviews
- ✓ 360 deg photo documentation to track construction progress
- ✓ Open Building System Integration (OBSI) Smart FM Platform
- ✓ Digital venture for development of an end to end digital platform for IDD

INTEGRATED DIGITAL DELIVERY

FIRM CATEGORY - GOLD^{PLUS}



MOH Holdings Pte Ltd

The logo for MOH Holdings, featuring the company name in a bold, purple, sans-serif font with a thin grey arc underneath.

IDD Culture & Value

- ✓ Successful IDD adoption with impressive IDD framework for public healthcare eco-system and partners
- ✓ Successful implementation of IDD policies, in-house technical references and guidelines, efforts & programmes for public healthcare development and contributions to the BE sector

Organisation & People

- ✓ Forward-looking project leaders and committed Senior Management for IDD adoption
- ✓ Successful IDD adoption spearheaded by MOHH Productivity Task Force
- ✓ Successful IDD outcomes with aligned expectations, improved planning reliability, reduced abortive efforts, increased safety confidence, enhanced quality information and improved delivery productivity

IDD Technology Adoption

- ✓ Public healthcare Common Data Environment
- ✓ Construction Asset Standardization & Engineering (CASE) platform
- ✓ BIM Design Object Library (DOL)
- ✓ Lightweight Model
- ✓ E-Forum
- ✓ Integrated Healthcare Asset Management System (iHAM)

INTEGRATED DIGITAL DELIVERY

FIRM CATEGORY - GOLD^{PLUS}



Surbana Jurong Consultants Pte Ltd



IDD Culture & Value

- ✓ Successful IDD adoption with digital engineering practices with innovative in-house technology development across projects
- ✓ Successful implementation of IDD policies, standards & best practices, workflow & information management system, efforts & programmes, for IDD culture building and contributions to the BE sector

Organisation & People

- ✓ Outstanding leadership quality and committed Senior Management for IDD adoption
- ✓ Successful IDD adoption spearheaded by SJ Digital Management Office (DMO)
- ✓ Successful IDD outcomes with aligned expectations, improved planning reliability, reduced abortive efforts, increased safety confidence, enhance quality information and improved delivery productivity
- ✓ Surbana Jurong Group is the first Singapore-headquartered global urban and infrastructure development consultant to attain the ISO 19650 certification in 2020 and re-certified in 2021

IDD Technology Adoption

- ✓ Building Information Modelling (BIM) & Virtual Design and Construction (VDC)
- ✓ Computational BIM and Generative Design
- ✓ Drones
- ✓ Virtual Reality
- ✓ Computer Aided Virtual Environment(CAVE)/Immersive Virtual Reality System (IVRS)
- ✓ Common Data Environment

INTEGRATED DIGITAL DELIVERY

FIRM CATEGORY - GOLD



CPG Corporation Pte Ltd



IDD Culture & Value

- ✓ Successful IDD adoption in consultancy services from Master Planning and Project Management to Design Consultancy, Construction Management and FM
- ✓ Successful implementation of IDD policies, standards & best practices, efforts & own thought leaderships programmes and contribution to the BE Sector

Organisation & People

- ✓ Outstanding leadership quality and committed Senior Management for IDD adoption
- ✓ Successful IDD adoption spearheaded by CPG Digital Deliver Committee
- ✓ Successful IDD outcome with impressive digital masterplan, digital tools, digitalised workflows, digital asset management and centralized digital integrated facility management system.

IDD Technology Adoption

- ✓ Computational Design and AI applications
- ✓ 3D Laser Scanning
- ✓ Design for Manufacturing and Assembly (DFMA) with cross laminate timber (CLT)
- ✓ IDD Tender Documentation
- ✓ 5D BIM Design to Cost Estimation
- ✓ Virtual Reality for Design Collaboration, Digital Virtual Mockups and ICE Coordination
- ✓ In-house mobile apps for Construction Management
- ✓ Common Data Environment and IFM Technology
- ✓ Smart Estate Technology

INTEGRATED DIGITAL DELIVERY

FIRM CATEGORY - GOLD



Kimly Construction Pte Ltd



KIMLY
CONSTRUCTION

IDD Culture & Value

- ✓ Impressive company transformation with Kimly's IDD journey started since 10 years ago and convincing outcome for cross-disciplinary, cross phases integration and productivity gains
- ✓ Successful implementation of IDD policies, standards & best practices, efforts & programmes for IDD culture and competency building together with the projects' team members.

Organisation & People

- ✓ Outstanding leadership quality and committed Senior Management for IDD adoption
- ✓ Successful IDD adoption spearheaded by internal IDD Committee and IDD Task Force
- ✓ Well-demonstrated IDD measurable outcome with streamlined process, improved productivity, centralised accessible database, and impressive digitalisation efforts

IDD Technology Adoption

- ✓ Computational BIM & Virtual Design and Construction (VDC)
- ✓ Cloud based collaboration
- ✓ Drones & AI analytics
- ✓ Digital Procurement System
- ✓ Digital Safety
- ✓ Defects & Logistics Management System

INTEGRATED DIGITAL DELIVERY

FIRM CATEGORY - GOLD



Lum Chang Building Contractors Pte Ltd



IDD Culture & Value

- ✓ Successful IDD adoption and company-wide transformation for cross disciplinary and cross-phases integration, enabling optimised operations and productivity gains
- ✓ Successful IDD culture-building through the implementation of IDD policies and programmes, supported by the adoption of standards and best practices
- ✓ Successful fostering of adoption within the BE sector through collaborative platforms to augment connection amongst all project stakeholders

Organisation & People

- ✓ Outstanding leadership quality and IDD adoption championed by Top Management
- ✓ Full commitment to IDD adoption spearheaded by internal IDD Committee
- ✓ Well-demonstrated IDD adoption with measurable outcomes, robust IDD capacity, competent and capable staff enhanced on-site productivity and innovative transformation efforts

IDD Technology Adoption

- ✓ Collaborative platforms with Autodesk 360 Docs, Trimble Connect & Novade Safety
- ✓ Wireless VR for Virtual Mock-up and DfMA M&E
- ✓ Common Data Environment with CMiC, Fulcrum and Aconex
- ✓ Laser Scanning, Robotic Total Station & Drone Video for Site Management



Recognising Excellence in the Built Environment

INTEGRATED DIGITAL DELIVERY PROJECT CATEGORY



INTEGRATED DIGITAL DELIVERY PROJECT CATEGORY - OBJECTIVES



The objectives are:

1. Encourage project teams to streamline work processes and connect stakeholders through digital data, innovation and technology across the whole project life.
2. Recognise project teams for their outstanding adoption of IDD cross-disciplinary integration and productivity gains.



INTEGRATED DIGITAL DELIVERY PROJECT CATEGORY ASSESSMENT CRITERIA

The three assessment criteria for Project category are:

i. IDD Project Overview

- ✓ Well defined value propositions and execution plan for IDD project
- ✓ Well defined IDD project requirements, process, standards & best practices
- ✓ Well structured IDD project Team, & communication channel

ii. IDD Areas & Integration

Well demonstrated value chain integration from design to asset management of the four IDD areas:

- ✓ Digital Design
- ✓ Digital Fabrication
- ✓ Digital Construction
- ✓ Digital Asset Delivery and Management

iii. Outcomes & Comparisons

- ✓ Well demonstrated adoption of new technologies and methods for better process or outcomes
- ✓ Well documented comparisons of measurable key performance Indexes of IDD with conventional approach, e.g. cost, time, manpower, resources, quality, productivity comparisons

INTEGRATED DIGITAL DELIVERY PROJECT CATEGORY WINNERS



AWARD	PROJECT
PLATINUM	Paya Lebar Quarter
	Kallang Polyclinic & Long Term Care Facility
GOLD ^{PLUS}	Rivière and Fraser Residence Promenade
	LTA Contract N110 - Design and Construction of North-South Corridor (Tunnel) Between Ang Mo Kio Avenue 3 and Ang Mo Kio Avenue 9
	79 Robinson Road
GOLD	Ang Mo Kio 23 Nursing Home
	Kranji Green (JTC Multi-Storey Recycling Factory)
	JTC Logistics Hub
	Tampines N6 C4&C5

INTEGRATED DIGITAL DELIVERY PROJECT CATEGORY - PLATINUM



Project Name: Kallang Polyclinic and Long-Term Care Facility
Estimated Gross Floor Area: 11,724 sqm
Estimated Project Cost: \$47 million

IDD Project Team

- MOH Holdings Pte Ltd
- RDC Architects Pte Ltd
- ARUP Singapore Pte Ltd
- WSP Consultancy Pte Ltd
- CPG Consultants Pte Ltd
- AECOM Cost Consulting and Project Management (Singapore) Pte Ltd
- Tiong Seng Contractors Pte Ltd
- Robin Village International Pte Ltd
- Robin Village Development Pte Ltd
- Steeltech Industries Pte Ltd
- Sing Moh Electrical Engineering Pte Ltd
- Winner Engineering Pte Ltd
- Markpoint Engineering Pte Ltd
- Maxx Engineering Pte Ltd

INTEGRATED DIGITAL DELIVERY

PROJECT CATEGORY - PLATINUM



Project Name: Paya Lebar Quarter
Estimated Gross Floor Area: 164,800 sqm
Estimated Project Value: \$3.7 billion

IDD Project Team

- Lendlease Singapore Pte Ltd
- DP Architects Pte Ltd
- Arup Singapore Pte Ltd
- Hexacon Construction Pte Ltd
- Active Fire Protection Systems Pte Ltd
- Kaer Pte Ltd

INTEGRATED DIGITAL DELIVERY

PROJECT CATEGORY - GOLD^{PLUS}



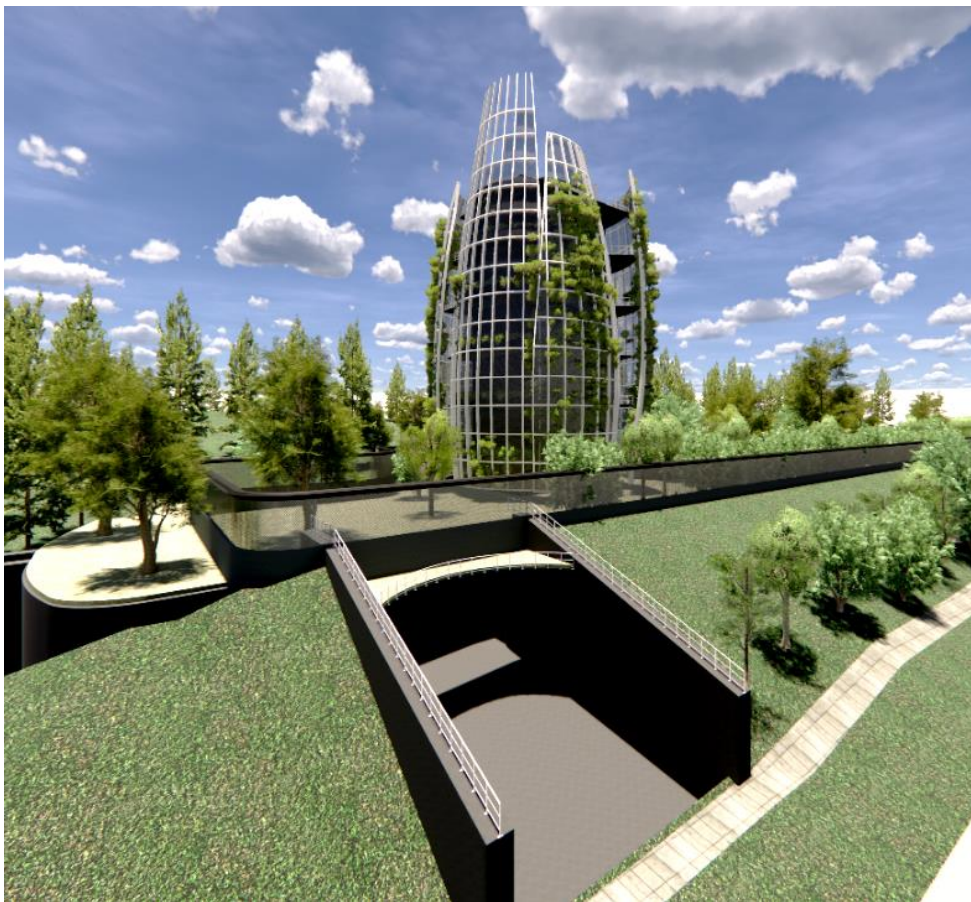
Project Name: Rivière and Fraser Residence Promenade
Estimated Gross Floor Area: 51,231 sqm
Estimated Project Cost: \$240 million

IDD Project Team

- Frasers Property Singapore
- P&T Consultants Pte Ltd
- KTP Consultants Pte Ltd
- J Roger Preston (S) Pte Ltd
- Woh Hup (Private) Limited

INTEGRATED DIGITAL DELIVERY

PROJECT CATEGORY - GOLD^{PLUS}



Project Name: LTA Contract N110 – Design and Construction of North-South Corridor (Tunnel) Between Ang Mo Kio Avenue 3 and Ang Mo Kio Avenue 9

Estimated Length & Width: 1.95 km & 38 m

Estimated Project Cost: \$799 million

IDD Project Team

- Land Transport Authority
- ONG&ONG Pte Ltd
- KTP Consultants Pte Ltd
- AECOM Singapore Pte Ltd
- Lum Chang Building Contractors Pte Ltd
- KORI Construction (S) Pte Ltd
- BRC Asia Ltd

INTEGRATED DIGITAL DELIVERY

PROJECT CATEGORY - GOLD^{PLUS}



Project Name: 79 Robinson Road
Estimated Gross Floor Area: 57,005 sqm
Estimated Project Cost: \$190 million

IDD Project Team

- Southernwood Property Pte Ltd
- CapitaLand Project Management Pte Ltd
- DCA Architects Pte Ltd
- P&T Consultants Pte Ltd
- J Roger Preston (Singapore) Pte Ltd
- Shimizu Corporation

INTEGRATED DIGITAL DELIVERY

PROJECT CATEGORY - GOLD



Project Name: Ang Mo Kio 23 Nursing Home
Estimated Gross Floor Area: 7,928 sqm
Estimated Project Cost: \$19 million

IDD Project Team

- MOH Holdings Pte Ltd
- DP Architects Pte Ltd
- KTP Consultants Pte Ltd
- Meinhardt (Singapore) Pte Ltd
- CPG Consultants Pte Ltd
- DP Consultants Pte Ltd
- Vigcon Construction Pte Ltd

INTEGRATED DIGITAL DELIVERY

PROJECT CATEGORY - GOLD



Project Name: Kranji Green (JTC Multi-Storey Recycling Factory)
Estimated Gross Floor Area: 134,033 sqm
Estimated Project Cost: \$242 million

IDD Project Team

- JTC Corporation
- Architects 61 Pte Ltd
- Boustead Projects E&C Pte Ltd

INTEGRATED DIGITAL DELIVERY

PROJECT CATEGORY - GOLD



Project Name: JTC Logistics Hub
Estimated Gross Floor Area: 141,067 sqm
Estimated Project Cost: \$358 million

IDD Project Team

- JTC Corporation
- AWP Architects Pte Ltd
- Meinhardt (Singapore) Pte Ltd
- Meinhardt (Singapore) Pte Ltd
- Kimly Construction Pte Ltd
- Nanyang Technological University
- Natsteel Holdings Pte Ltd
- SEN SG Pte Ltd
- Yongnam Holdings Limited
- Nam Fang Co. Pte Ltd
- DLE M&E Pte Ltd

INTEGRATED DIGITAL DELIVERY

PROJECT CATEGORY - GOLD



Project Name: Tampines N6 C4&C5
Estimated Gross Floor Area: 151,779 sqm
Estimated Project Cost: \$221 million

IDD Project Team

- Housing & Development Board
- Building & Research Institute, Housing & Development Board
- SIPM Consultants Pte Ltd
- Surbana Jurong Consultants Pte Ltd
- China Construction (South Pacific) Development Co. Pte Ltd

Organiser



An Initiative Under

