

DIGITAL PROJECT DELIVERY



Established 1859



Regional Building

Enda Geraghty,
Regional BIM Lead, Regional Building

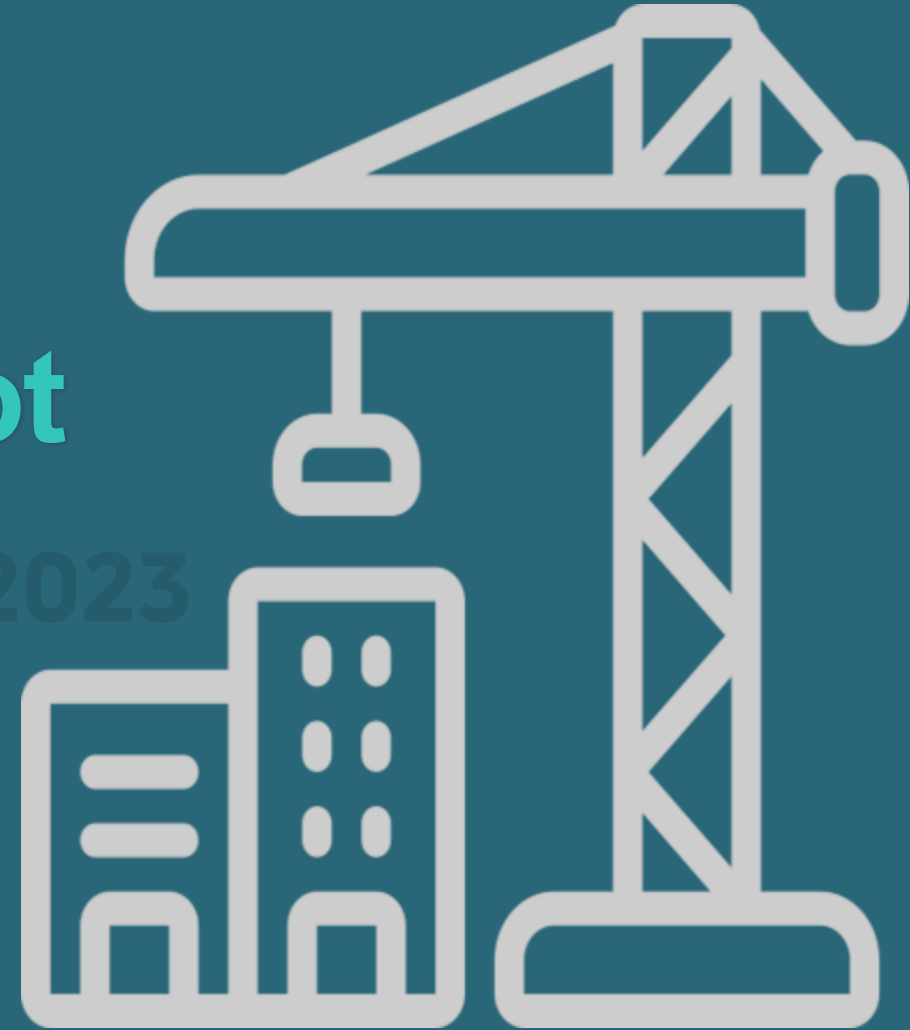


Jessica Hartnett,
Regional Information Systems Manager,
Regional Building



**What we deliver in the
construction sector has not
changed, but how we
deliver it is....**

Why?





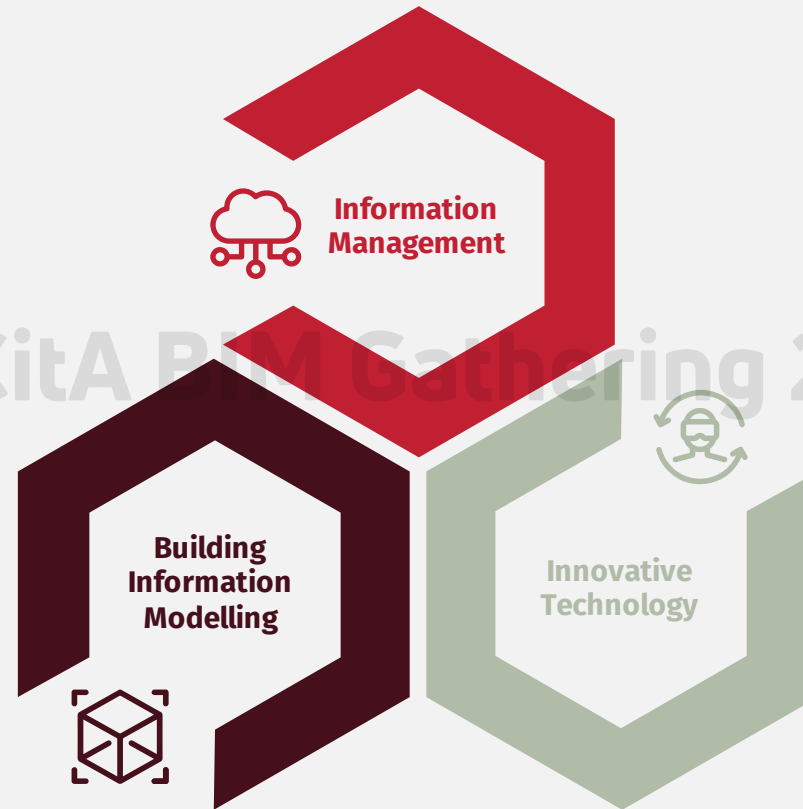
DIGITAL PROJECT DELIVERY

What is DPD?

“**Digital Project Delivery (DPD)** enables the digitisation of the processes in which our projects are designed, constructed and handed over through collaboration and innovative technology

How does it work?

DPD has three core enablers including Information Management, BIM, and Innovative Technology as part of our DPD Strategy which is detailed on projects via the IM Protocol, BEP, and DRM.



Why should you care?

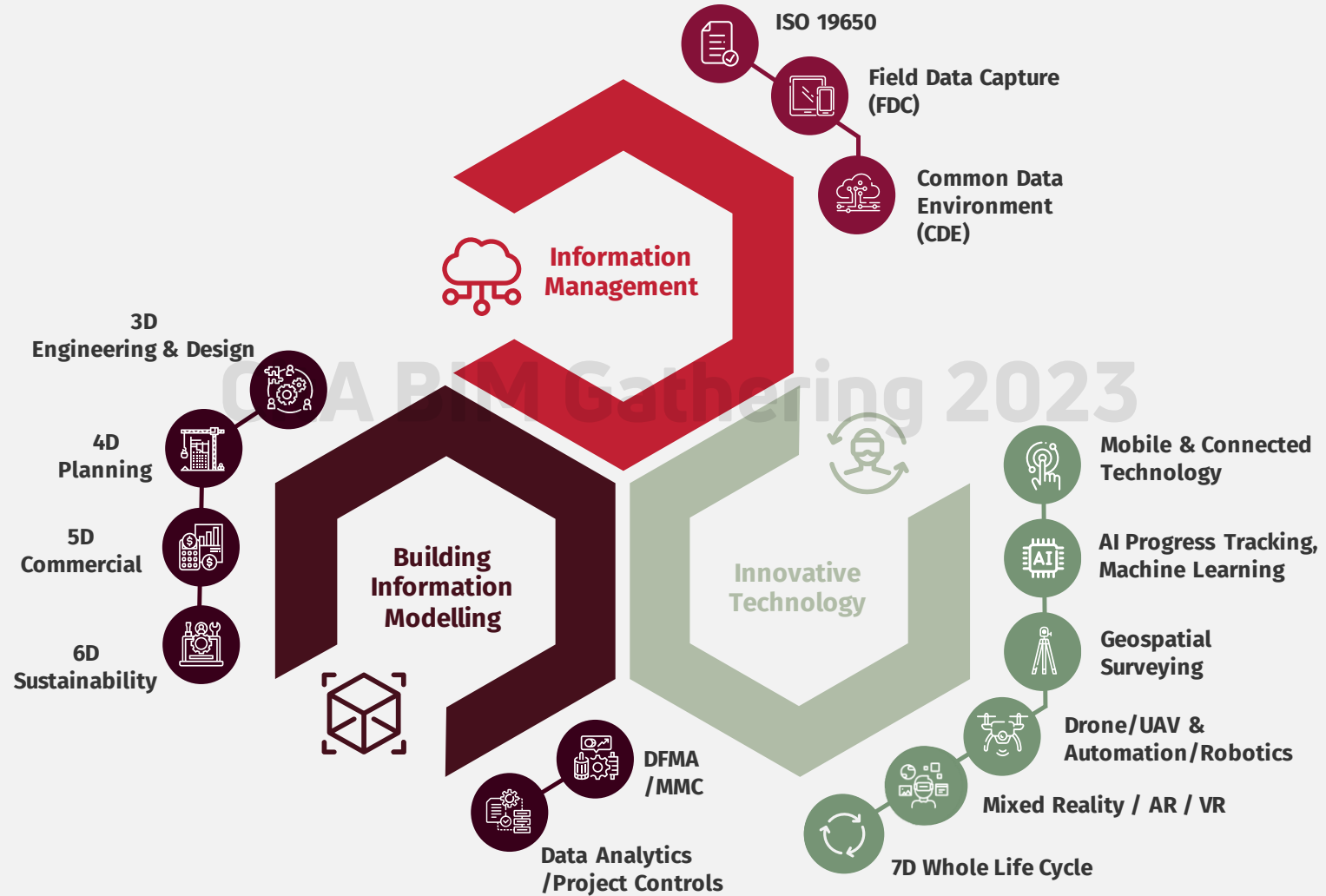
DPD saves time, and cost and de-risks projects due to better collaboration, better coordination of design information, “right-first-time construction”, avoiding rework, and reducing waste leading to a lower embodied carbon footprint on our projects.

What are the Opportunities?

DPD can enable Modern Methods in Construction (MMC) and Offsite Assembly. DPD can capture embodied carbon of buildings to meet Net Zero targets. Capex DPD can create smart intelligent connected projects to give better end-user experience, predictive maintenance, project insights, and overall performance which reduces operational energy and carbon. Opex



DPD APPROACH



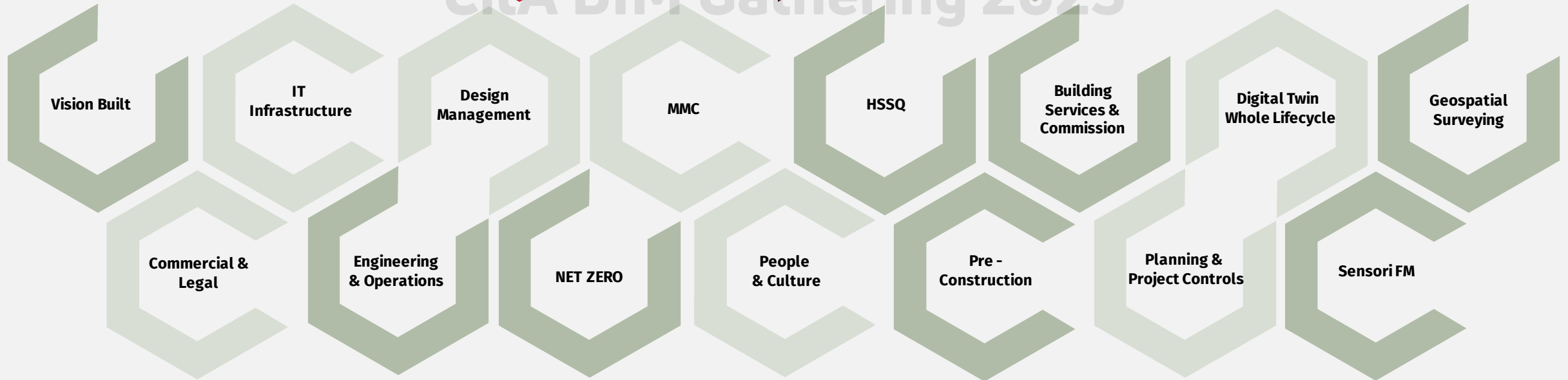


INTEGRATED DPD

3 Core Enablers are embedded throughout every service and function of our business



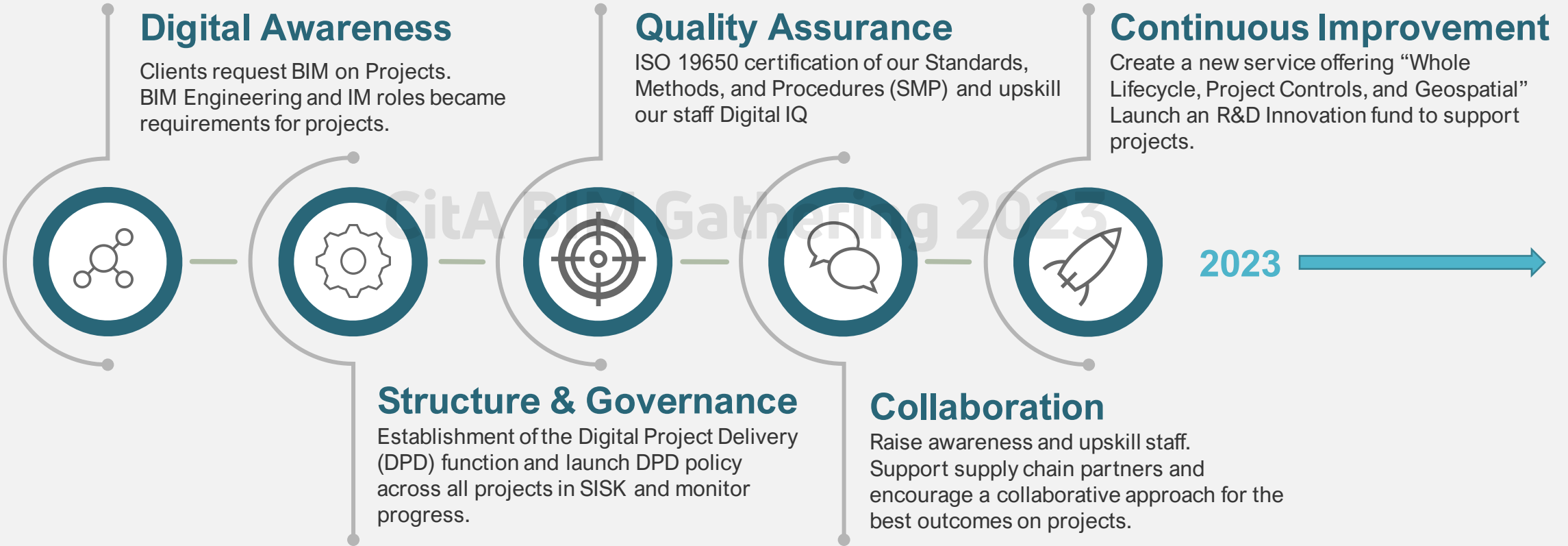
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DIGITAL JOURNEY

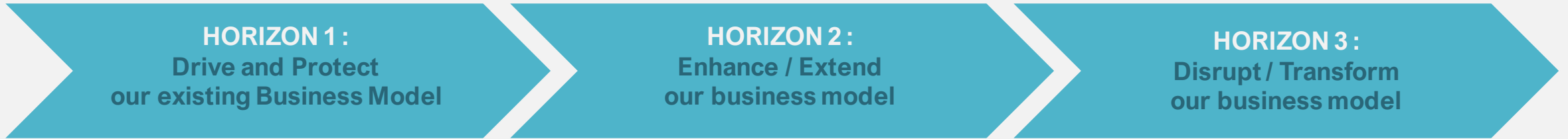
2011





DIGITAL MATURITY

THREE HORIZON MODEL



	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5
BIM	2D - 3D Design & Engineering	3D - 4D Construction Management	5D Commercial Project Controls	6D Sustainability Embodied Carbon	7D Whole Life Cycle Digital Twin
IM	Online Data sharing	Common Data Environment & Digital Field Tool	Unified Information Management Platform	Smart and Collaborative Framework	Construction Ecosystem, Real-time Data Analytics
TECH	CGI Rendering, Surveying, Mobile Technology	Drone/UAV & Interactive solutions	Geospatial, AI progress tracking	Automation & Robotics	Integrated BMS IoT, Sensor Technology



Regional Building Project Overview

Athlone, Westmeath

Project: Community Nursing Units (CNU)



Limerick

Project: Project Opera



Project: University Hospital Limerick, Ward Block Extension



Galway

Project: Bonham Quay





Information Management



International
Organization for
Standardization



- We are certificated to ISO 19650 and maintain it annually.
- Our approach to Information Management is detailed in our IM protocol
- Our IM / BIM Team support all projects with project setup, training, and day-to-day support.
- We have project naming conventions with approvals and workflows for quality assurance under ISO 19650





Field Data Capture

- Problem
 - Incorporate inspection plan numbering into inspection forms/tasks
 - A lot of work to maintain excel spreadsheet
- Solution
 - Use our Digital Field Tool FV to save time and provide real time updates

Project Name	Name	M - Monitor	R - Review	I - Inspect																
Project Name	Name																			
Project No.	Name																			
Item Reference	Work Item	Assigned Certifier	Ancillary Certifier	Ancillary Certifier	Ancillary Certifier	Ancillary Certifier	Ancillary Certifier	Ancillary Certifier	Ancillary Certifier	Specialist Sub-Contractor	Ancillary Certifier	Subcontractor Installation	Documentation	Inspection	Inspection No.					
(To be updated with Contractor Programme Data)	Action	Architect	Struct Civil	Services	Landscape	Acoustic	Fire	DAC		Specialist Sub-Contractor	Compliance Certificate	Checks Required								
	Name	Name	Name	Name	Name	Name	Name	Name	Name											
STAGE A - Substructure Work																				
1.00	Formation level condition	M																		
1.02	Reinforcing	M																		
1.03	Foundation	M																		
1.04	Reinforcing walls	M																		
1.05	Reinforcing walls	M																		
1.06	Reinforcing walls	M																		
1.07	Reinforcing walls	M																		
1.08	Damp proof membrane	M																		
1.09	Insulation	M																		
1.10	Basement to measure	M																		
1.11	Drain	M																		
1.12	Basement structures	M																		
STAGE A1 - Below ground works																				
2.01	Hardware supplier compliance	M																		
2.02	Core supply	M																		
2.03	Electrical supply	M																		
2.04	Water supply supply	M																		
2.05	Underground ducts	M																		
2.06	Excavation	M																		
2.07	Waterproof joints and details	M																		
2.08	Drainage, ducts and protection	M																		
2.09	Site lighting	M																		
2.10	CCPC compliance	M																		
2.11	Service ducts	M																		
2.12	Water supply locations	M																		
2.13	Hard landscaping - steps, ramps and railings	M																		
2.14	Consistency of materials	M																		
2.15	Maintenance routes	M																		
2.16	Surface finish	M																		
2.17	Painting finish	M																		
2.18	Trench quality	M																		
STAGE A2 - Basin and rising elements																				
3.01	Reproduction of water mainline separate - meters	M																		





Field Data Capture

V FIELD VIEW TASKS FORMS

F1.2488193 - GENERAL INSP

Form Location

Inspection Notification Number

Description of item(s) inspected

Inspection Date/Time

Inspection Items

Is inspection complete

Items Inspected

Photos

0

ADD ROW

EDIT TASK: F1.44811417

Task Type *
BC(A)R - CNU

Description *
First Floor item

Location *
4626 - ATHLONE - CNU

Status *
 Open

Status Change Comments
Comments

Package *
Main Contractorr

Issued To Organisation *
Sisk Ireland South West and North

Target Date *
9/20/2023

Issued By User *
Jessica Hartnett

Priority

Score *
01.05 Water proofing

SAVE CANCEL

FORM F1.2488193 ASSOCIATIONS

TASKS

REF	RELATION	DESCRIPTION	STATUS	DATE
T1.44811417	Child	First Floor item	<input type="checkbox"/> Open	9/13/2023

4626 - ATHLONE

0001

First Floor etc.

9/6/2023 10:00 am

02.00 Hardcore supplier compliance

02.01 Gas supply

02.02 Electrical supply

02.03 Mains water supply

02.04 Underground ducts

02.05 Attenuation

01.05 Water proofing

SAVE CANCEL

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Common Data Environment

Public Files **V** | FOR **Projects**

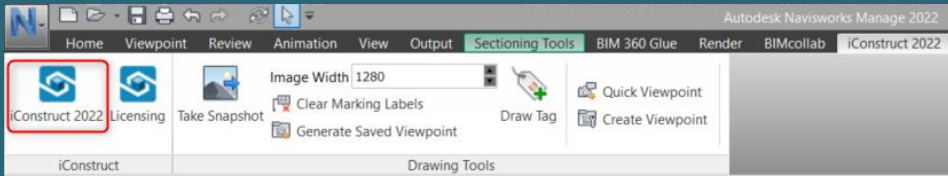
<input type="checkbox"/>	NAME	PRIMARY	DESCRIPTION	REVISION	STATUS	SIZE
<input type="checkbox"/>	CitA Demo					
<input type="checkbox"/>	001 Uploading a Single File	✓	Single File Upload	P01	S2 - Suitable for Infor...	248 KB
<input type="checkbox"/>	002 Batch Uploading Files	✓	Batch Upload	P01	S2 - Suitable for Infor...	439 KB
<input type="checkbox"/>	003 Replacing Adding Primary and Secondary Files	✓	Replace	P01	S2 - Suitable for Infor...	160 KB
<input type="checkbox"/>	004 Downloading Documents	✓	Download	P01	S2 - Suitable for Infor...	127 KB
<input type="checkbox"/>	005 Email Notification Management	✓	Notifications	P01	S2 - Suitable for Infor...	295 KB
<input type="checkbox"/>	006 Batch Print from the Clipboard	✓	Batch Print	P01	S2 - Suitable for Infor...	60 KB



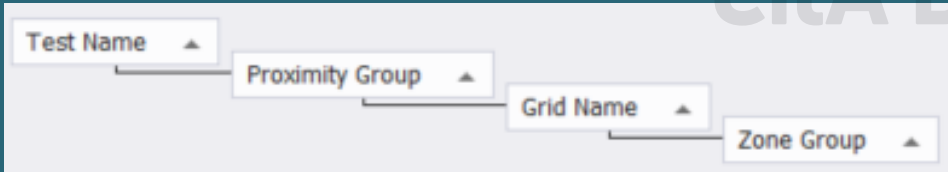
3D Coordination

Clash detection streamlined using iConstruct

iConstruct plug-in for Navisworks



Setup

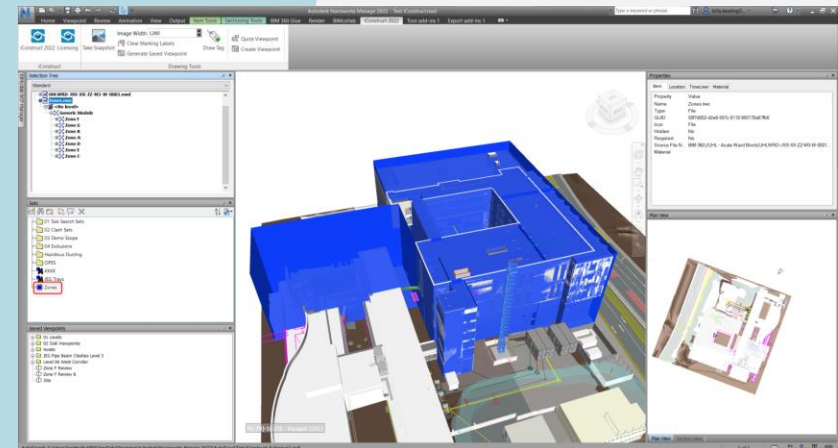
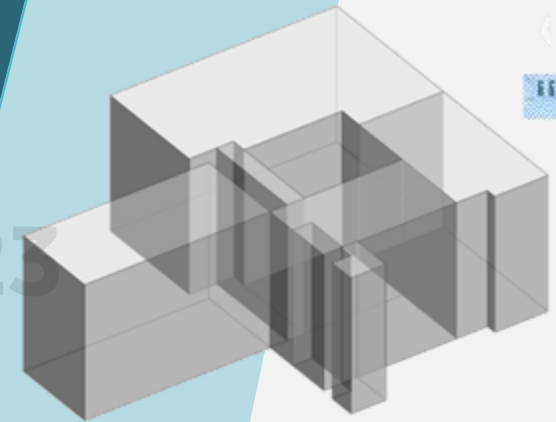


Before

Name	Status	Clashes	New	Active	Reviewed	Approved	Resolved
CR13A_XMEP vs Steel	Old	164	63	100	0	0	1
CR14_XMEP vs Ext MEP_Level 2	Done	269	269	0	0	0	0

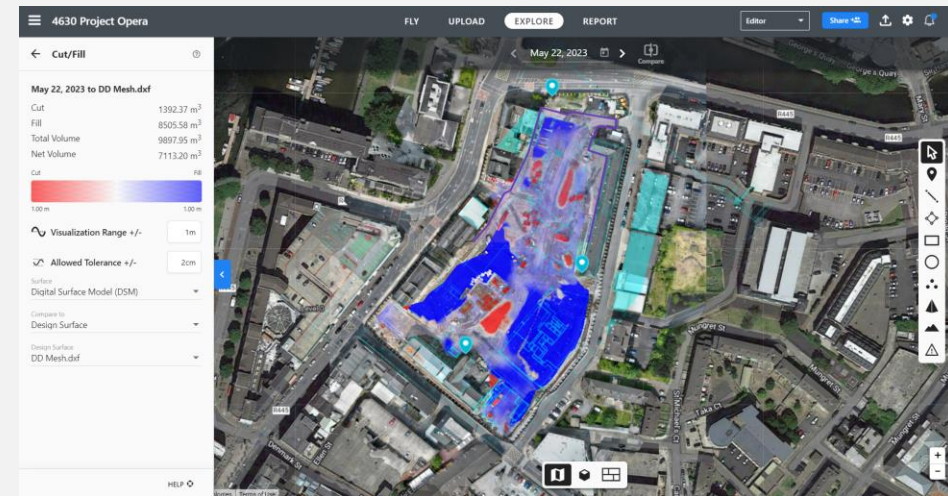
After

Name	Status	Clashes	New	Active	Reviewed	Approved	Resolved
CR13B_XMEP vs Steel (Clearance 100mm)	Old	68	0	0	0	0	68
CR14_XMEP vs Ext MEP_Level 2	Done	74	74	0	0	0	0





Drone & Interactive Solutions

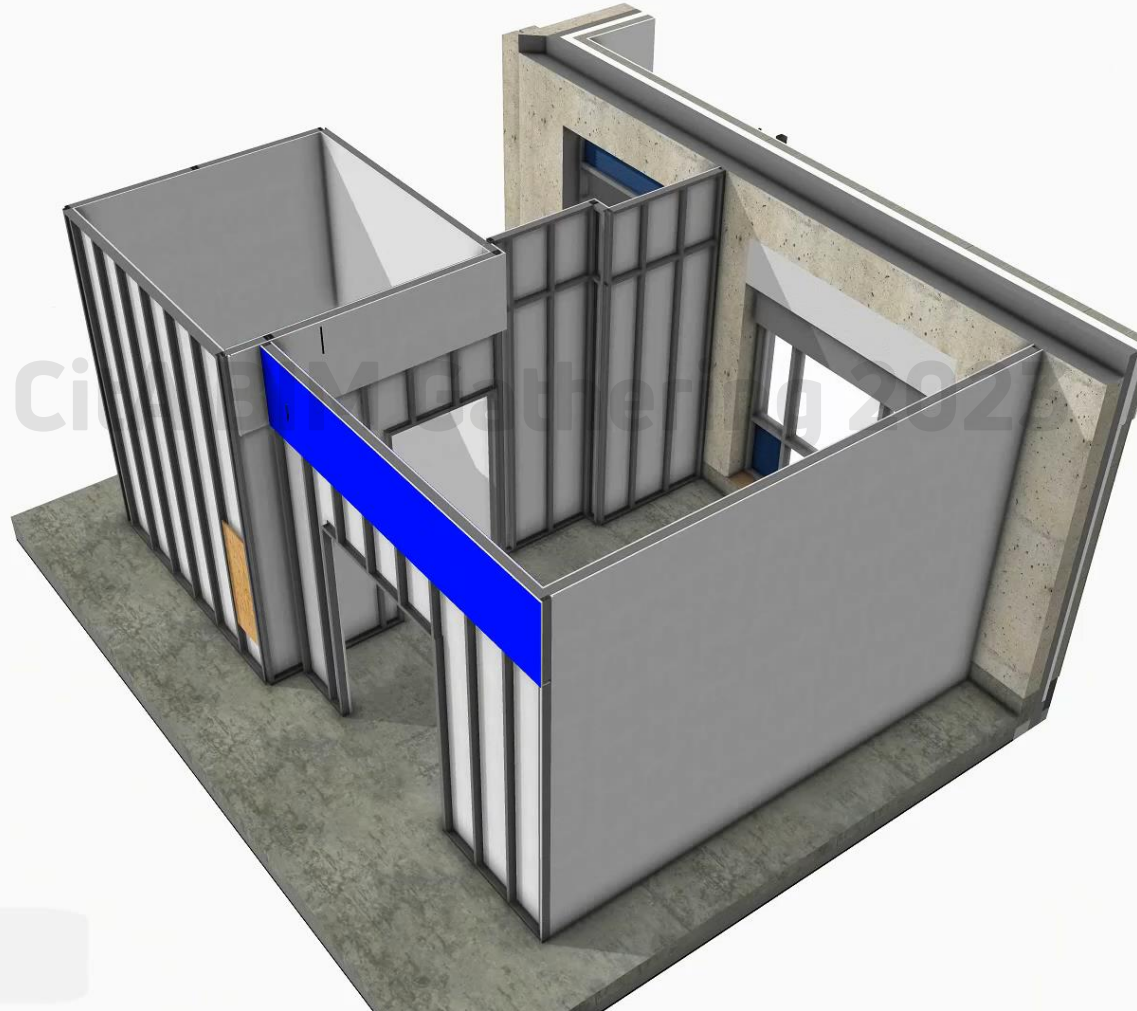




4D BIM - Deliver on the Detail

Day: 4

- | | |
|---|----------------|
|  | Board 1 side |
|  | Tape and Joint |
|  | Mist Coat |
|  | Wall Closure |
|  | Skim Walls |
|  | Paint 2nd Coat |
|  | Final Paint |
|  | PVC Walls |
|  | Ceilings |
|  | Install misc |
|  | MEP Elec. |
|  | MEP Mech. |



Walls openings



Geospatial

Why We Use 3d Laser Scanning?

Enhanced Collaboration

Improved collaboration with the construction team, design team and client. Detailed data captured allows for better understanding of the project as whole at different stages of construction

Early Issue Detection

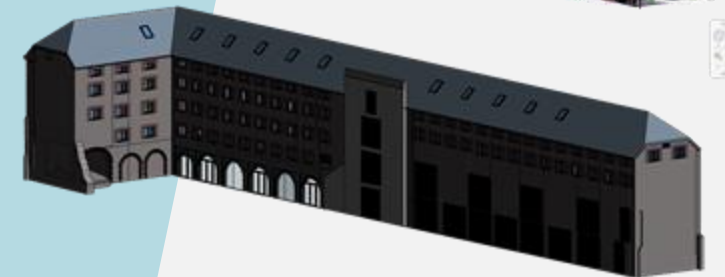
Identify potential issues early in the construction process. This help avoid costly rework

Monitoring and Progress Tracking

Monitor construction progress, while detecting any discrepancies or deviations from design allow for quick decision-making and course correction.

As-Built Conditions Verification

The verification process allows us to check 3D scanned data of site vs the 3D model



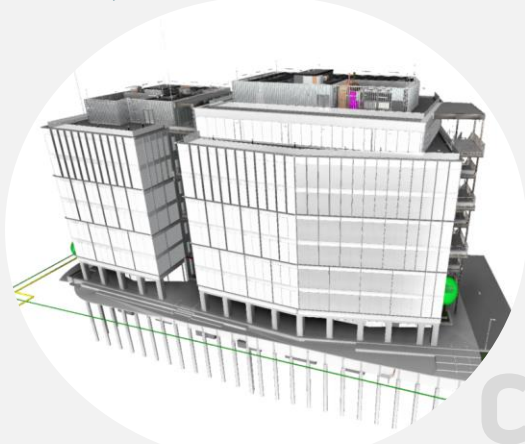
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Sustainability

The Process of creating Carbon Remodel on Bonham Quay, Galway

Project Information



3D BIM Models

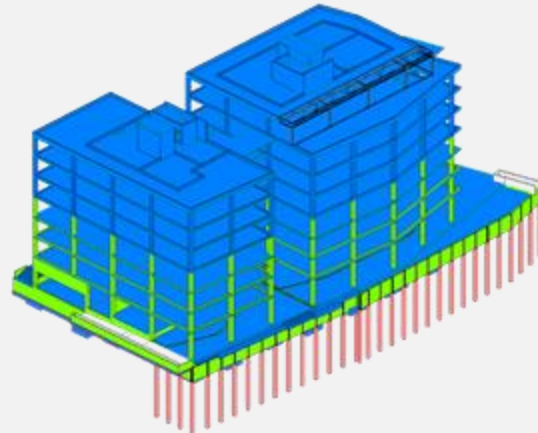
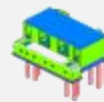
Bill Ref.	Description	Quantity	Unit
(22) INTERNAL WALLS			
CONCRETE WORK			
Reinforced in-situ concrete core walls 250mm thick including formwork and reinforcement @ 100kg/m3			
1A	Concrete		
1B	Rebar		
1C	Formwork		
1D	Kickers		
1E	Sundries; forming opes, etc.		
BLOCKWORK WALLS			
1F	235mm blockwork		
1G	100mm blockwork walls		
1H	Sundries; forming opes, etc.		
(23) FLOORS			
CONCRETE WORK			
In-situ concrete			
Suspended Floors 250mm Thick			
Post Tensioned Flat Slabs, Prestressed reinforcement 6.5kg/m2 & Conventional H-bar reinforcement 55kg/m3			
3A	Concrete		
3B	Rebar		
3C	A232 Mesh		
3D	PT Cords		
E/D Cost on Formwork			
Subcontractor for PT - Deck Extension/ form opes in edge shutter etc.			
3F	Formwork; edge of beds	m2	
3G	Formwork; soffit of slab	m2	
3H	Sundries	Item	
3I	concrete sealer	m2	

BOQ

BONHAM QUAY - BLOCK B & C			
Concrete Elements	Reference No.	Strength Class	Q88 %
Pad Foundations	2	C32/40	50%
Basement floor slab	2	C32/40	50%
Basement rising walls & columns	4	C40/50	50%
Ground floor slab	3	C32/40	33.82%
Ground floor rising walls & columns	4	C40/50	50%
1st floor slab	3	C32/40	33.82%
1st floor rising walls & columns	4	C40/50	50%
2nd floor slab	3	C32/40	33.82%
2nd floor rising walls & columns	4	C40/50	50%
3rd floor slab	3	C32/40	33.82%
3rd floor rising walls & columns	4	C40/50	50%
4th floor slab	3	C32/40	33.82%
4th floor rising walls & columns	4	C40/50	50%
5th floor slab	3	C32/40	33.82%
5th floor rising walls & columns	4	C40/50	50%
6th floor slab	3	C32/40	33.82%
6th floor rising walls & columns	4	C40/50	50%



Construction Waste and Energy Data



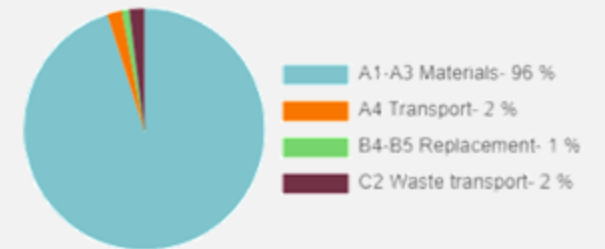
LCA tool



- ✓ Import of design and Construction Data
- ✓ Assigning Material and EPDs (CSA elements only to date)
- ✓ Define Asset lifetime and other lifecycle criteria
- ✓ Set Carbon modelling and reporting Criteria

Reports and Scenarios

Embodied carbon by life-cycle stage



Embodied carbon benchmark

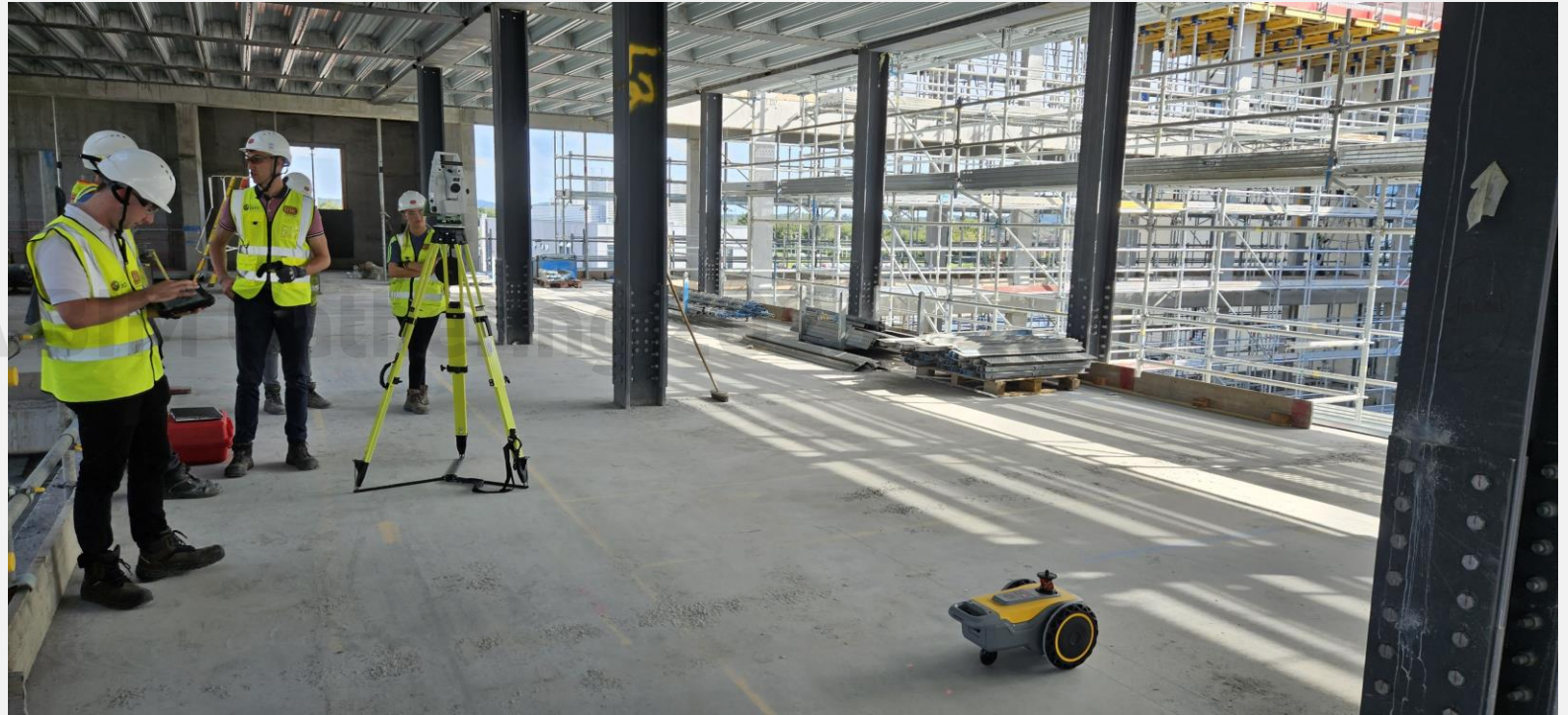
Cradle to grave (A1-A4, B4-B5, C1-C4)		kg CO ₂ e/m ²
(< 290) A		234
(290-400) B		
(400-510) C		
(510-620) D		
(620-730) E		
(730-840) F		
(> 840) G		

Embodied carbon by structure - A1-A3



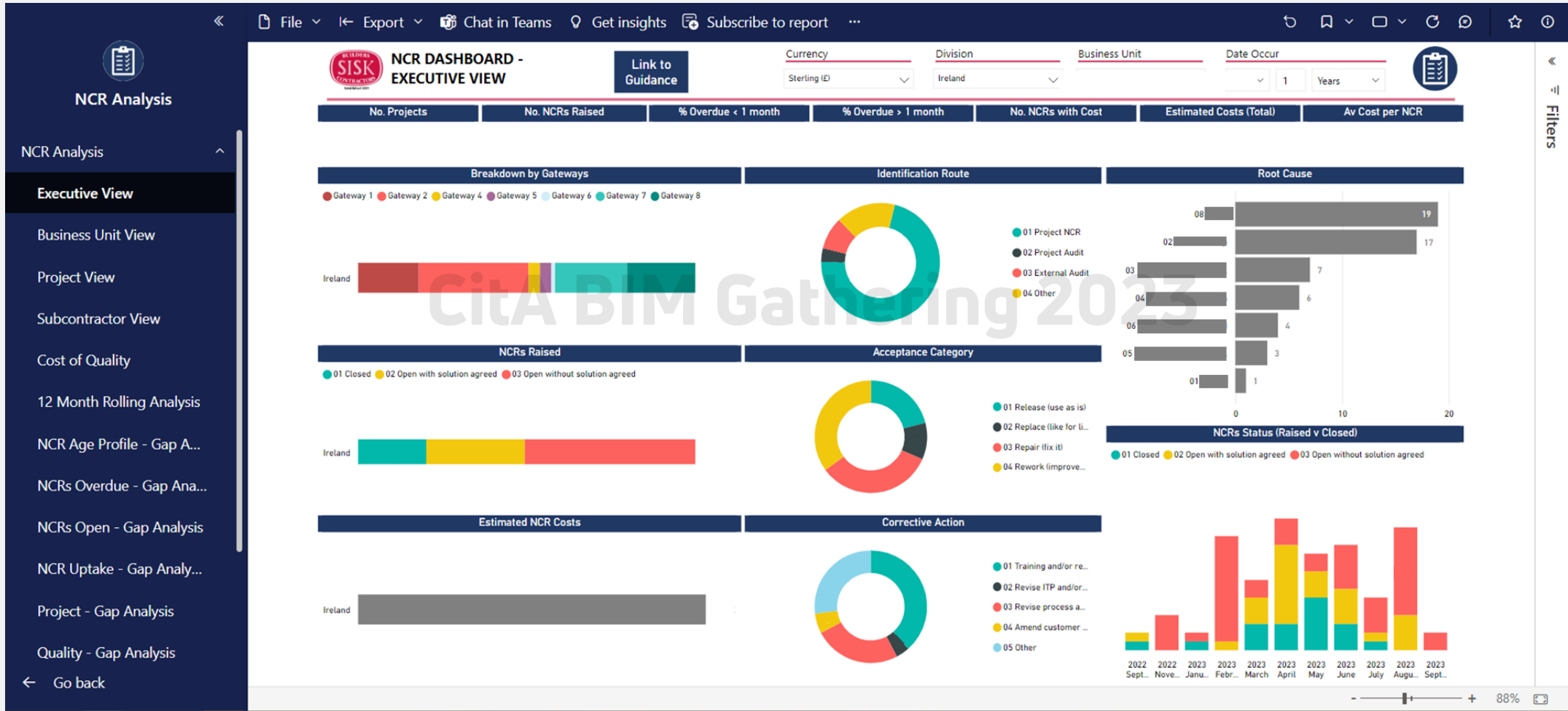


Automation & Robotics





Real Time Data Analytics



With over a decade of collaboration, innovation, passion, hard work, and a lot of disheartening attempts and unsuccessful project approvals and submissions...

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We now have continued success, and it is only the start for the SISK Digital Project Delivery Team...

DIGITAL PROJECT DELIVERY TEAM

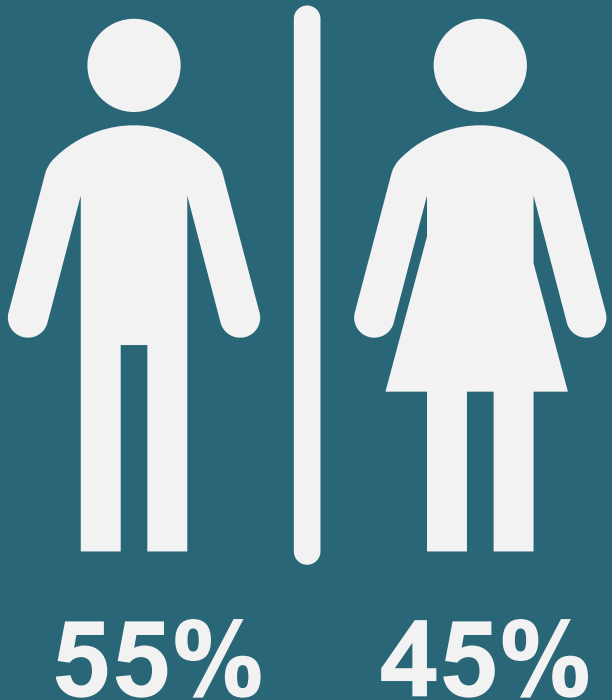
 **160+ YEARS**
of Experience



Collaborative Roadmap
and Vision



No:1 Irish
Contractor



 **DPD**
GRADUATE
PROGRAMME

Career
Progression



Diverse & Inclusive Team
from across the world

95+

DPD Team
Est. over a decade
with top talent and
emerging new roles





Digital Vision

OUR VISION

The digital tools we have at hand drive our lifestyle choices and speed up our daily tasks. They allow us to be more efficient, collaborative, and organised in our workplaces. Our ambition for the next 3-5 years, is to propel Sisk to a new era of performance through the integration of cutting-edge digital technologies

OUR AMBITION



We will equip our business with the right level of digital competency



We will change our thinking to 'digital by default'



We will transition our business into an organisation that sees the value of data as an asset



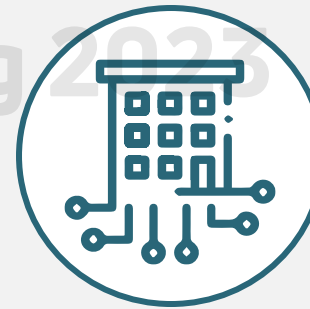
We will build new technology foundations which enable the business to evolve, innovate and lead from the digital frontline.

Our Key Focus Areas

Our Digital Transformation strategy puts our people at the core of its success, driven by a team who are passionate about technology and who have a firm understanding of our business.



PEOPLE & CULTURAL CHANGE



INTEGRATED DPD APPROACH



DATA-DRIVEN ORGANISATION



TECH ROADMAP VISION FOR THE FUTURE

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Established 1859



**Interested in
joining SISK “Scan Here”**

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