



WEBINAR TITLE	Build Digital
PRESENTER	Robert Moore
ORGANISATION	Build Digital Project
DATE	30/05/2023

# Build Digital Project

## Build Digital Progress

*Project lead:*  
**Robert Moore**  
Build Digital Project





**Robert Moore**

Project Lead

Project Lead in **Build Digital Project** since February 2022. Involved in the **AEC industry since 1995**, Previously worked **client-side in the public sector** with the Grangegorman Development Agency (GDA).

First class honours in **MSc in Construction Informatics** has published three papers, two on information process standards and a third paper on the Irish digital transformation roadmap.

**Coauthored ISO Technical Report** 'CEN/TR 17654:2021' a guideline for the **implementation of EIR and BEP**

## What is **Build Digital's** mission?

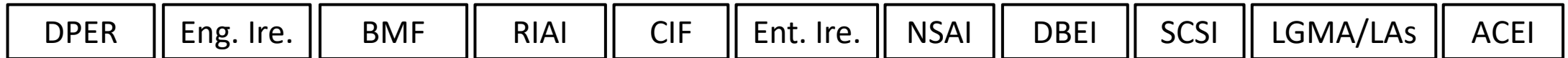
To **unite** all construction and built environment stakeholders in the drive towards interoperable **digital data adoption** across the sector to innovatively **improve efficiency**, productivity, and **international** competitiveness on a **sustainable** basis in Ireland.



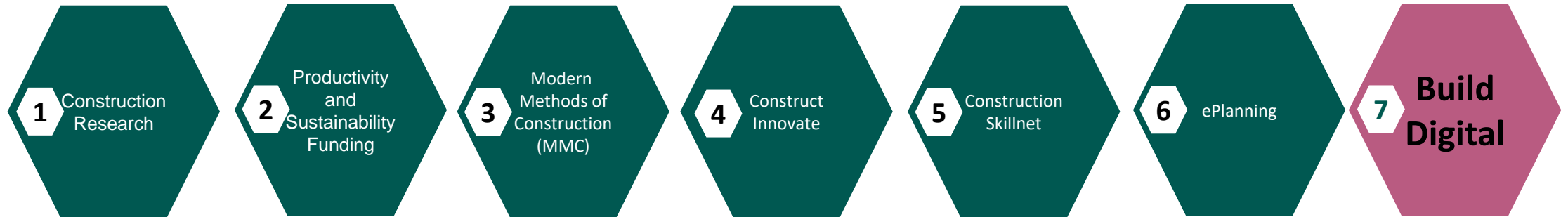
## Construction Sector Group



## Construction Sector Innovation and Digital Adoption Group



## Innovation 7 Actions - Project Team



Housing for All, Circular Economy, Sustainability





Build Digital

# Project Ireland 2040

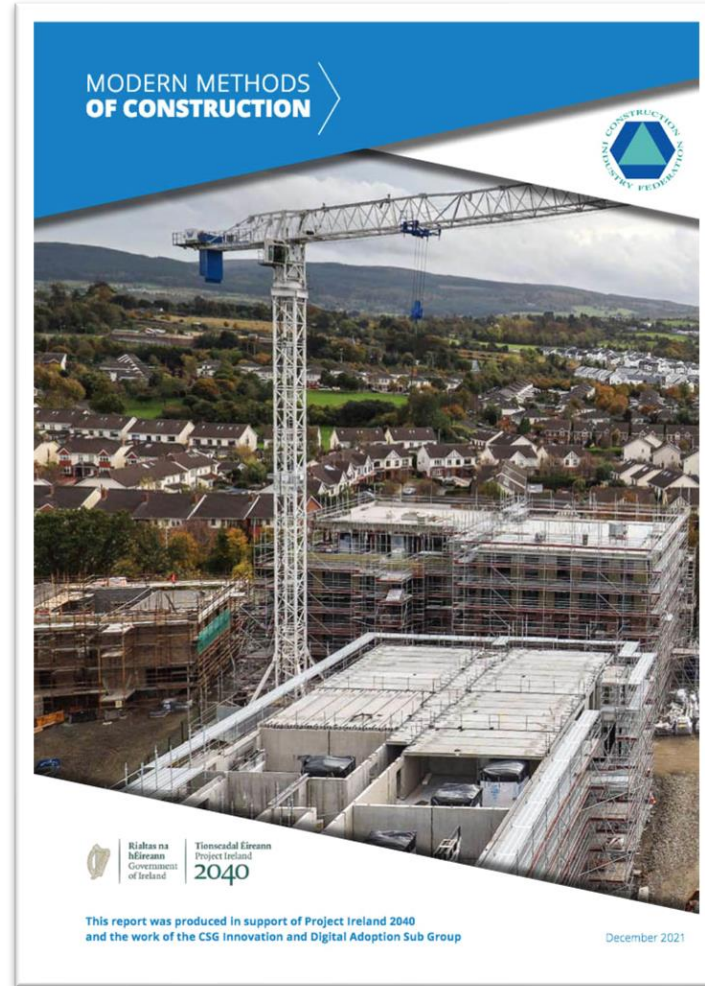
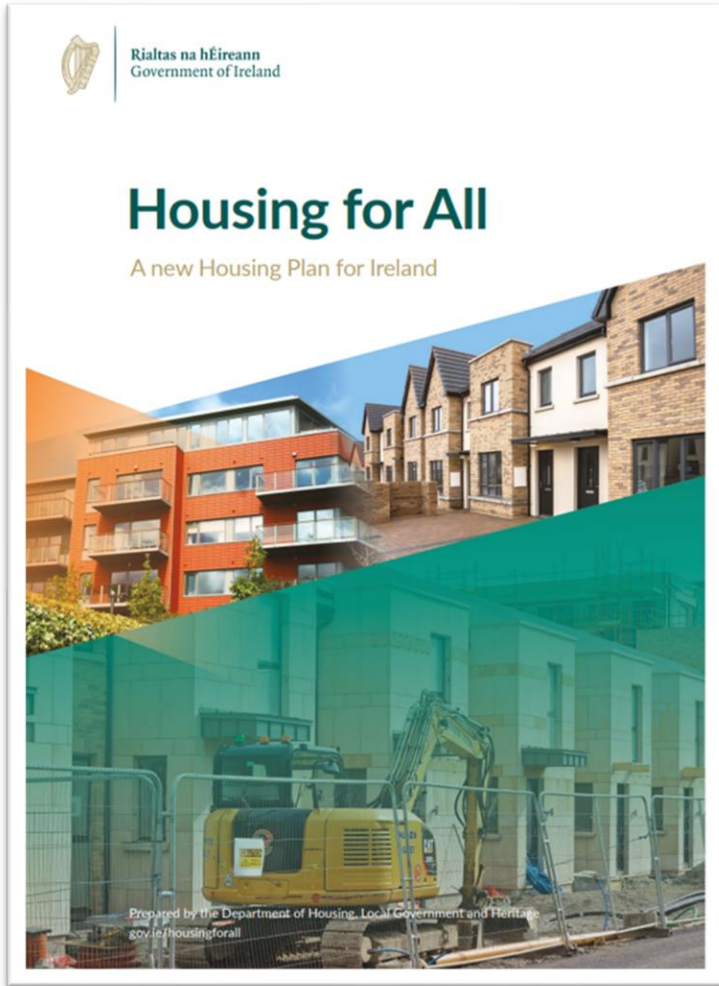


*In support of Project Ireland 2040 and the work of the Construction Sector Group, Innovation and Digital Adoption Sub-Group*



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hÉireann  
Government  
of Ireland

Tionscatal Éireann  
Project Ireland  
2040



## 5 Build Digital Project Pillars



Digital Leadership & Cultural Change



Digital Standards



Digital Education & Training



Digital Procurement



Sustainability & Circular Economy







## Digital Leadership and Cultural Change

Driving **digital transformation** of the built environment sector. Enabling **cultural change** delivering innovative, effective, and sustainable evolution in **mindset and practice**

Creating a single source of **expertise** where productivity, energy performance, sustainability, decarbonisation, the circular economy, procurement, standards adoption, and BIM coexist and are actively promoted, supported, and enabled

Delivering **toolkits** and **supports** for best practice informed enterprise digital transformation





## Digital Standards

Championing the benefits of **common rules, guidelines, and workflows** that facilitate improvement of **information flow and information management** across full asset lifecycles

Populated by leaders in **standards adoption** working with the innovation team to deliver **guidance**, showcase **best practice**, and assist organisations, irrespective of scale or role within the construction supply chain, to excel

Developing and delivering an **Irish Information Management (Digital Construction/BIM) Framework**





## Digital Education and Training

Disseminating relevant knowledge and abilities to collectively advance the design, construction, and life-cycle management of the built environment

Delivering a comprehensive suite of upskilling courses, aligned with the other pillars of activity of the Build Digital Project, available for high quality, consistent delivery across the country, including with the support of a wide range of professional bodies, representative groups, and public and private educational organisations

**Collaborating** with Action 5 – Construction Skillnet Digital Network





## Digital Procurement

Bringing national and international expertise on **best practice** in sustainable digital procurement and digital product supply chain practices to the Irish built environment sector

Adapting best practice **guidelines** and **exemplars**, via in-depth case studies and lessons learned analyses

Developing **supports** that will make it easier for SMEs across the entire construction supply chain to learn how to adapt to more **agile, digitally enabled, sustainable procurement practices**





## Sustainability and Circular Economy

Moving towards a more circular economy and built environment sector – one that prioritises designing out waste and that views products, components, and assets as valuable resources

Transforming mindsets and actions to achieve a more sustainable, responsible sector

Developing, piloting, and continuously improving toolkits for use by SMEs and clients, both for adaptation of their businesses directly and in support of their supply chains

Developing a toolkit for use by educators and trainers, including in-house trainers



## What has **Build Digital** completed?



Industry Forum populated

Plenary session

First international connections Memorandum Of Understanding (MOU) with Scottish Futures Trust (SFT)

First national agreement to collaborate with the Royal Institute of the Architects of Ireland (RIAI) Building Information Modelling (BIM) pack

Annual Survey completed

Interim Exchange Hub launched

National Annual Conference / Workshops held

**Build Digital** has  
completed



## **Build Digital's** Pillars has completed a thorough scan





## What was done, and how was it done?





## Digital Leadership and Cultural Change

International best practice in digital adoption within the AEC sector

Type **Report**; Publish Date **July**; Publish location **BuildDigitalProject.ie**





Industry context

Drivers

Leadership & Cultural Change

Measurement metrics

Barriers & Challenges

Benefits

Resources & Innovations

## Learnings for Ireland

Benefits & Challenges

Drivers

Leadership & Cultural Change

Resources





## Digital Standards

# Standards, Guidelines and Templates Inventory

Type **Tool**; Publish Date **w/c 18/06/2023**; Publish location **BuildDigitalProject.ie**



Type	Company	Standard	Year	Name	Category	Description	RIBA Stage	RIAI Stage	Scoring	Rationale
Standards	ISO	ISO 9000	2015	Quality Management Systems - Fundamentals And Vocabulary	Quality Management	This standard provides the fundamental concepts, principles and vocabulary for quality management systems (QMS) and provides the foundation for other QMS standards. This International Standard is intended to help the user to understand the fundamental concepts, principles and vocabulary of quality management, in order to be able to effectively and efficiently implement a QMS and realize value from other QMS standards.	Stage 0-Stage 7	Stage 0 - Stage 9	4	Important for companies to effectively document the quality system elements needed to maintain an efficient quality system.
Standards	ISO	ISO 9001	2015	Quality Management Systems - Requirements	Quality Management	This International Standard specifies requirements for a quality management system when an organization: a) needs to demonstrate its ability to consistently provide products and services that meet customer and applicable statutory and regulatory requirements, and b) aims to enhance customer satisfaction through the effective application of the system, including processes for improvement of the system and the assurance of conformity to customer and applicable statutory and regulatory requirements.	Stage 0-Stage 7	Stage 0 - Stage 9	4	Key principles set out in ISO 9000 are important as set out in the ISO 19650 series, although certification to ISO 9001 is not a requirement of the ISO 19650 series. An additional standard that is referenced in BSI
Standards	ISO	ISO 19650-1	2018	Organization and digitization of information about buildings and civil engineering works, including building information modelling -Information management using building information modelling:Concepts and principles.	Information Management	ISO 19650-1 is the first part of the ISO 19650 series on building information modelling (BIM). This part outlines the concepts and principles and provides recommendations on how to manage building information.	Stage 0-Stage 7	Stage 0 - Stage 9	4	This is an industry recognised BIM base standard
Standards	ISO	ISO 19650-2	2018	Organization and digitization of information about buildings and civil engineering works, including building information modelling -- Information management using building information modelling: Delivery phase of the assets.	Information Management	International standard ISO 19650-2 is the second part in the ISO 19650 series on building information modelling (BIM). This part supplies information management requirements in the delivery phase of assets.	Stage 0-Stage 6	Stage 0 - Stage 9	4	This is an industry recognised BIM base standard
Standards	ISO	ISO 19650-3	2020	Organization and digitization of information about buildings and civil engineering works, including building information modelling (BIM). Information management using building information modelling. Operational phase of the assets.	Information Management	ISO 19650-3 specifies requirements for information management, in the form of a management process, within the context of the operational phase of assets and the exchanges of information within it, using building information modelling.	Stage 7	Stage 9	4	This is an industry recognised BIM base standard
Standards	ISO	ISO 19650-4	2022	Organization and digitization of information about buildings and civil engineering works, including building information modelling (BIM). Information management using building information modelling. - Part 4: Information Exchange	Information Management	This document specifies the detailed process and criteria for decision makings when executing an information exchange as specified by the ISO 19650 series to ensure the quality of the resulting project information model or asset information model. It details the implementation of the concepts in ISO 19650-1 and is applicable to any information exchange within the delivery stages covered by ISO 19650-2 and operational trigger events covered by ISO 19650-3.	Stage 0 - Stage 7	Stage 0 - Stage 9	4	This is an industry recognised BIM base standard
Standards	ISO	ISO 19650-5	2020	Organization and digitization of information about buildings and civil engineering works, including building information modelling (BIM). Information management using building information modelling. Security-minded approach to information management.	Information Management	ISO 19650-5 specifies the principles and requirements for security-minded information management at a stage of maturity described as building information modelling (BIM) according to the ISO 19650 series and as defined in ISO 19650-1.	Stage 0-Stage 7	Stage 0 - Stage 9	4	This is an industry recognised BIM base standard

## [Digital Standards, Guidelines, and Templates Inventory](#)

In support of *Project Ireland 2040* and the work of the *Construction Sector Group, Innovation and Digital Adoption Sub-Group*



## Consultation on standards implementation

Client Awareness

Information Framework Requirements

Guidance

Current Standards





# Digital Education and Training

## Education and Training Inventory

Type **Tool**; Publish Date **16/06/2023**; Publish location **DigiCon/ BuildDigitalProject.ie**





Course Title	Institute Name	hyperlink	NFQ	Certificate	Part Time / Full Time	Delivery	Duration	Location	Affiliation
Building Information Modelling (BIM) with Project Management (Skills to Advance - Route 1)	Colaiste Dhulaigh CFE	<a href="https://www.cdcte.ie/courses/building-information-modelling-bim-with-project-management-2/">https://www.cdcte.ie/courses/building-information-modelling-bim-with-project-management-2/</a>	6	Certificate	Part Time	Online	1 year	Dublin	
Engineering Technology (Pre Apprenticeship)	Colaiste Dhulaigh CFE	<a href="https://www.cdcte.ie/courses/engineering-technology-2/">https://www.cdcte.ie/courses/engineering-technology-2/</a>	5	Certificate	Full Time	In person	1 year	Dublin	
Preliminary Engineering	Colaiste Dhulaigh CFE	<a href="https://www.cdcte.ie/courses/preliminary-engineering/">https://www.cdcte.ie/courses/preliminary-engineering/</a>	5	Certificate	Full Time	In person	1 year	Dublin	
Architectural Technology and Design (Year 1)	Pearse College of Further Education	<a href="https://pearsecollege.ie/architectural-technology-and-design-year-1/">https://pearsecollege.ie/architectural-technology-and-design-year-1/</a>	5	Certificate	Full Time	In person	1 year	Dublin	
Architectural Technology and Design with BIM (Year 2)	Pearse College of Further Education	<a href="https://pearsecollege.ie/architectural-technology-and-design-with-bim-year-2/">https://pearsecollege.ie/architectural-technology-and-design-with-bim-year-2/</a>	6	Certificate	Full Time	In person	1 year	Dublin	
PreUniversity Engineering	Pearse College of Further Education	<a href="https://pearsecollege.ie/pre-university-engineering/">https://pearsecollege.ie/pre-university-engineering/</a>	5	Certificate	Full Time	In person	1 year	Dublin	
Pre-Apprenticeship in Construction and Engineering Technology	Pearse College of Further Education	<a href="https://pearsecollege.ie/pre-apprenticeship-in-construction-and-engineering-technology/">https://pearsecollege.ie/pre-apprenticeship-in-construction-and-engineering-technology/</a>	5	Certificate	Full Time	In person	1 year	Dublin	City of Dublin ETB
Construction Technology	Errigal College	<a href="https://www.fetchcourses.ie/course/index?sfcc-courseId=334915">https://www.fetchcourses.ie/course/index?sfcc-courseId=334915</a>	5	Certificate	Full Time	In person	1 year	Letterkenny	Donegal ETB
Construction in the Build Environment	Bray Institute of Further Education	<a href="https://www.bife.ie/full-time-courses/art-and-design/architectural-technology-advanced-hnc">https://www.bife.ie/full-time-courses/art-and-design/architectural-technology-advanced-hnc</a>	6	Certificate	Full Time	In person	1 year	Bray	
Computer Aided Design	Dungarvan College	<a href="https://dunagarvancollege.ie/images/pdfs/2019/science2019.pdf">https://dunagarvancollege.ie/images/pdfs/2019/science2019.pdf</a>	5	Certificate	Full Time	In person	1 year	Dungarvan	
BIM & BIM Collaboration - Advanced	Griffith College, Dublin	<a href="https://www.griffith.ie/faculties/design/courses/certificate-advanced-bim-and-bim-collaboration">https://www.griffith.ie/faculties/design/courses/certificate-advanced-bim-and-bim-collaboration</a>	8	Certificate	Part Time	Blended	1 semester	Dublin	
Introduction to BIM (using Revit) - Certificate	Griffith College, Dublin	<a href="https://www.griffith.ie/faculties/design/courses/certificate-introduction-bim-using-revit">https://www.griffith.ie/faculties/design/courses/certificate-introduction-bim-using-revit</a>	8	Postgraduate Diploma	Part Time	In person	1 semester	Dublin	
Building Information Modelling (BIM) & Graphic Illustration - Diploma	Griffith College, Dublin	<a href="https://www.griffith.ie/faculties/design/courses/diploma-building-information-modelling-bim-graphic-illustration">https://www.griffith.ie/faculties/design/courses/diploma-building-information-modelling-bim-graphic-illustration</a>	8	Postgraduate Diploma	Part Time	In person	1 year	Dublin	
Building Information Modelling (BIM) & Graphic Illustration - Certificate	Griffith College, Dublin	<a href="https://www.griffith.ie/faculties/design/courses/certificate-building-information-modelling-bim-and-graphic-illustration">https://www.griffith.ie/faculties/design/courses/certificate-building-information-modelling-bim-and-graphic-illustration</a>	8	Postgraduate Diploma	Part Time	In person	1 semester	Dublin	
Advanced Rendering - Certificate	Griffith College, Dublin	<a href="https://www.griffith.ie/faculties/design/courses/certificate-advanced-rendering">https://www.griffith.ie/faculties/design/courses/certificate-advanced-rendering</a>	8	Postgraduate Diploma	Part Time	In person	2 weeks	Dublin	
Engineering in Industrial & Systems Engineering	Griffith College, Dublin	<a href="https://www.griffith.ie/faculties/engineering/courses/bachelor-engineering-industrial-and-systems-engineering">https://www.griffith.ie/faculties/engineering/courses/bachelor-engineering-industrial-and-systems-engineering</a>	7	Springboard	Part Time	In person	1 year	Dublin & Limerick	
Construction Technologies	Limerick College of Further Education	<a href="https://www.lcfe.ie/full_time_courses/pathway-to-construction/">https://www.lcfe.ie/full_time_courses/pathway-to-construction/</a>	5	Certificate	Full Time	In person	1 year	Limerick	Limerick & Clare ETB
Architecture and Interior Design	Blackrock Institute of Further Education	<a href="https://www.bifei.ie/courses/interior-design">https://www.bifei.ie/courses/interior-design</a>	5	Certificate	Full Time	In person	1 year	Blackrock	
Architecture and Interior Design	Blackrock Institute of Further Education	<a href="https://www.bifei.ie/courses/interior-design">https://www.bifei.ie/courses/interior-design</a>	6	Certificate	Full Time	In person	1 year	Blackrock	
Landscape Architecture	Blackrock Institute of Further Education	<a href="https://www.bifei.ie/courses/landscape-architecture">https://www.bifei.ie/courses/landscape-architecture</a>	5	Certificate	Full Time	In person	1 year	Blackrock	
Renewable Energy Technology - Pre-University	Carlow Institute of Further Education	<a href="https://carlowinstitute.ie/courses/renewable-energy-technology/">https://carlowinstitute.ie/courses/renewable-energy-technology/</a>	5	Certificate	Full Time	In person	1 year	Carlow	
Construction Trades (Pre-Apprenticeship)	Carlow Institute of Further Education	<a href="https://carlowinstitute.ie/courses/construction-trades/">https://carlowinstitute.ie/courses/construction-trades/</a>	5	Certificate	Full Time	In person	1 year	Carlow	
Construction & Building	Carlow Institute of Further Education	<a href="https://carlowinstitute.ie/courses/construction-and-building/">https://carlowinstitute.ie/courses/construction-and-building/</a>	5	Certificate	Full Time	In person	1 year	Carlow	
Engineering Technology	Croom College of Further Education and Training	<a href="http://www.furthereducationcroom.com/engineering-technology/">http://www.furthereducationcroom.com/engineering-technology/</a>	5	Certificate	Full Time	In person	1 year	Croom	Limerick & Clare ETB
Pathway to Apprenticeship - Engineering	Croom College of Further Education and Training	<a href="http://www.furthereducationcroom.com/pathways/">http://www.furthereducationcroom.com/pathways/</a>	5	Certificate	Full Time	In person	1 year	Croom	Limerick & Clare ETB

## Digital Education and Training Inventory

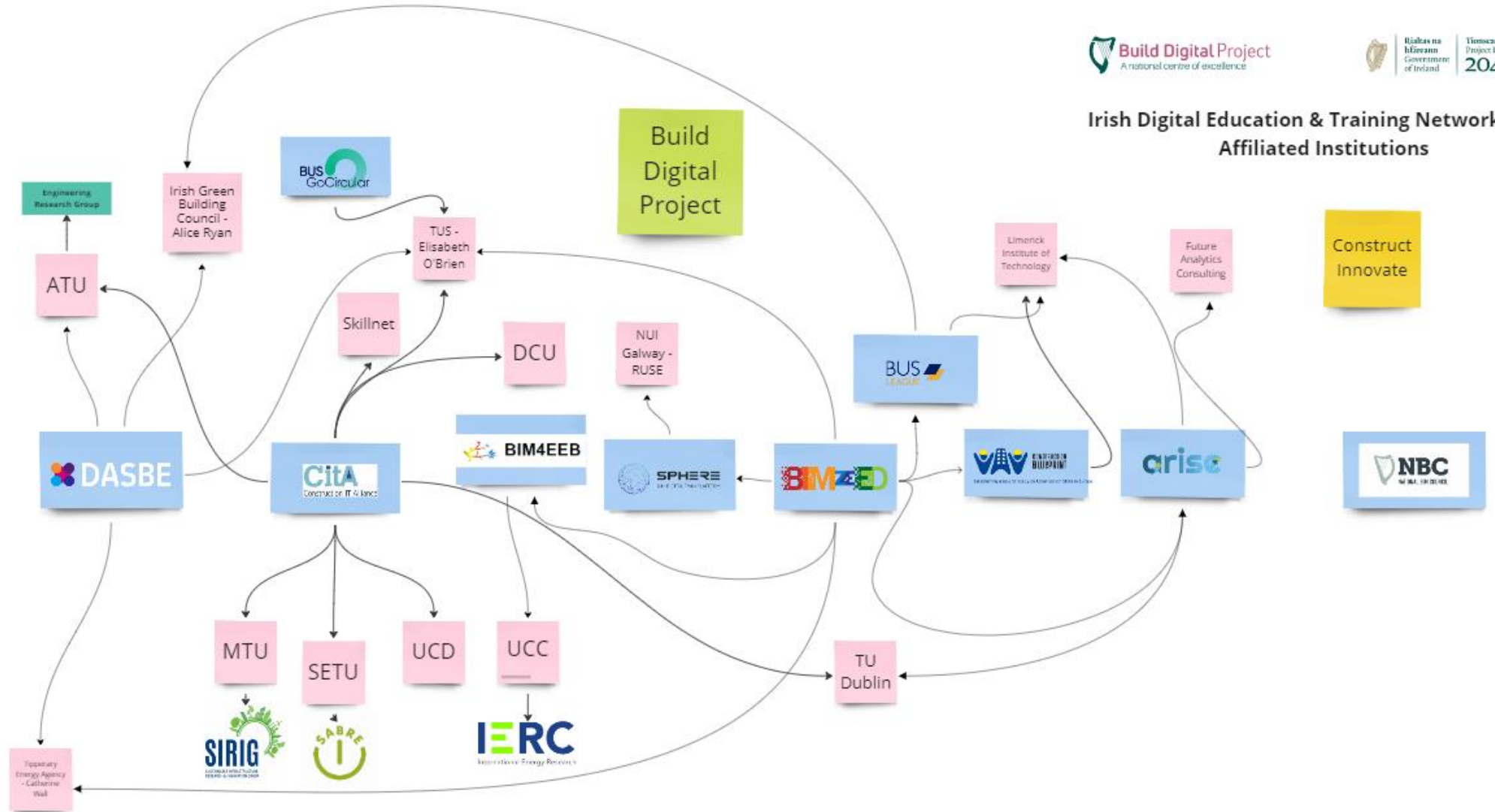
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Rialtas na hÉireann  
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Project Ireland  
**2040**

## Irish Digital Education & Training Networks with Affiliated Institutions





## Digital Procurement

Supporting the delivery of Information Management and BIM in Ireland

Type **Report**; Publish Date **w/c 05/06/2023**; Publish location **BuildDigitalProject.ie**



Global BIM

BIM in the EU

Information Loss in Construction

Need for Structured Information

BIM in Information Management Lifecycle

Framework for BIM-Enabled Life-cycle Information Management

## **BIM and Information Management**



## Overview of BIM Standards

ISO 19650 Series

ISO 19650 and Project Lifecycle

Requirements Management

Common Data Environments (CDE)

Standards for Building Information Modelling Frameworks

Importance of openBIM Standards



## United Kingdom

## Scandinavia

Denmark

Champions and Drivers

Finland

National BIM Requirements

Norway

Current Governmental Initiatives

Sweden

## Australasia

Australia

New Zealand



## Lessons for Ireland

The wide digital opportunity

Benefits of Collaboration internationally

Challenges with standards

Important of SME





## Sustainability and Circular Economy

# Sustainability Horizon scan and needs analysis

Type **Report**; Publish Date **w/c 18/06/2023**; Publish location **BuildDigitalProject.ie**







## EU-funded circular built environment projects

BAMB

IRCOW

KATCH-e

CIRCuiT

VEEP

Circular Flooring Project

CityLoops

CONDEREFF

CHARM

Houseful

WOOL2LOOP

iceberg

Cinderela

RCdiGREEN

FCRBE

RE4 Project

CDWaste-ManageVET

SUPERLOCAL

SeRaMCo

PARADE

FISSAC

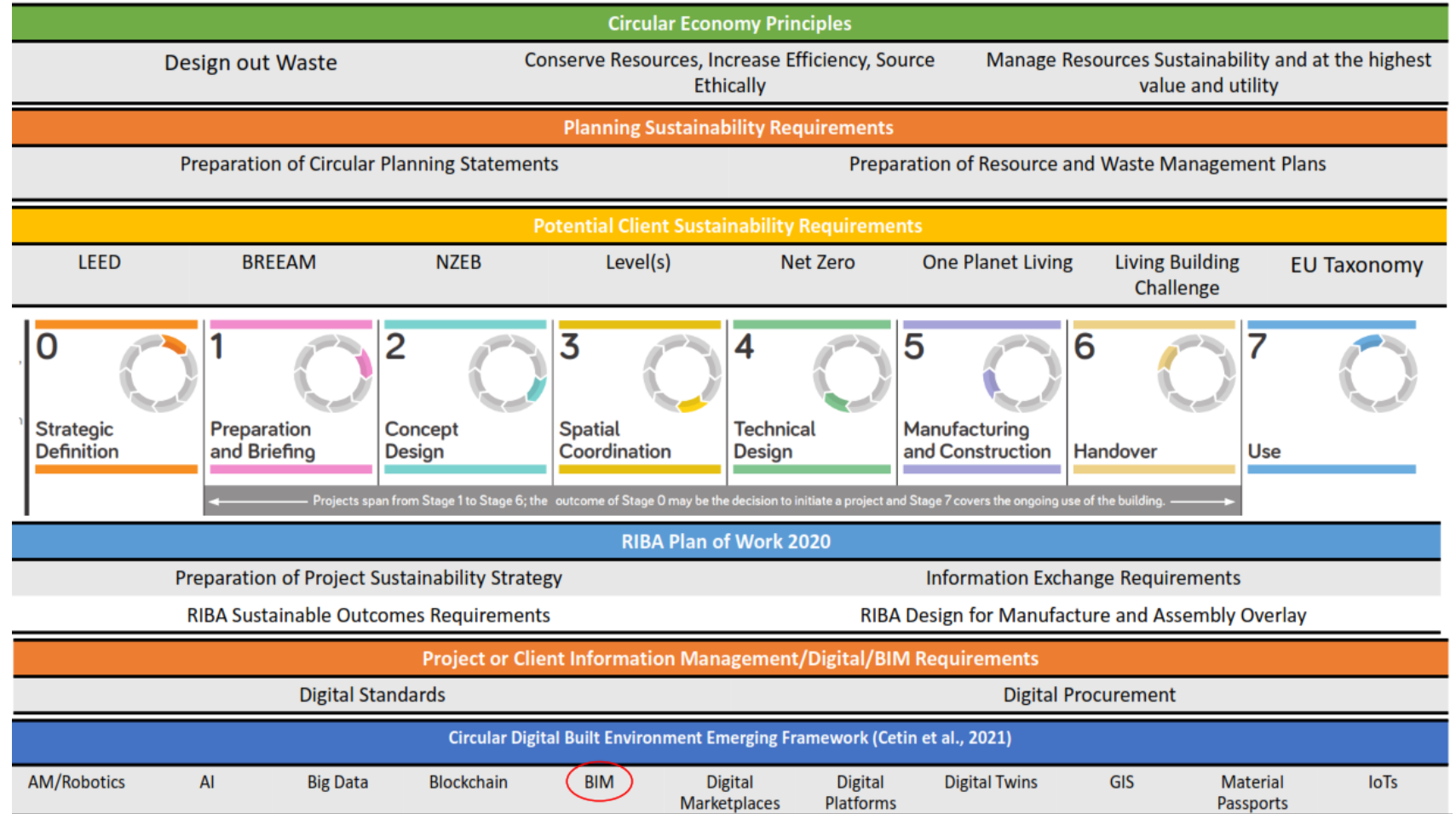
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## Considerations for the Toolkit



## What is **Build Digital** working on now?



Industry Forum refreshed via the professional bodies

OpenBIM workshop - EU BIM Task Group

International connections with EU BIM Task Group and nima (Formerly the UK BIM Alliance)

National connection with the OGP (Office of Government Procurement) to support the upcoming information management mandate

Annual Survey - Year 1 Survey analysed, and Year 2 Survey launched

National Annual Conference / Workshops – Cork, 26<sup>th</sup> October 2023

**Build Digital** is  
working on



<b>Deliverables</b>	<b>Type</b>	<b>w/c Monday</b>	<b>Location</b>
OpenBIM Workshop - EU BIM Task Group	Event	01/06/2023	Grangegorman
Supporting the delivery of Information Management and BIM in Ireland	Report	05/06/2023	BuildDigitalProject.ie
Digital Education and Training Inventory	Tool	15/05/2023	DigiCon
Build Digital Benefits Workshop	Event	01/06/2023	Dublin
Digital Standards, Guidelines and Templates Inventory	Report/Tool	18/06/2023	BuildDigitalProject.ie
Sustainability Horizon scan and needs analysis	Report	18/06/2023	BuildDigitalProject.ie
Annual Survey Year 1 Results / Year 2 Questionnaire launch	Report	25/06/2023	BuildDigitalProject.ie
International best practice in digital adoption within the AEC sector	Report	July TBC	BuildDigitalProject.ie
Website rebuild (Exchange Hub)	Event	September TBC	BuildDigitalProject.ie
Annual Conference	Event	26/10/2023	Cork



What supports will **Build Digital** pillar's share over the project's lifetime?



**Build Digital** will  
share support over  
the project lifetime

Toolkits:	Information Management toolkits Digital construction product supply chain toolkits Digitalisation for a Circular Economy (DiCE) toolkits
Guidelines:	Irish Information Management (Digital Construction/BIM) Framework Guidelines on Standards Templates/worked examples
Living Labs:	Case studies Exemplars
Training and Educational:	Searchable Inventory
Reports:	Best Practice Reports Survey findings

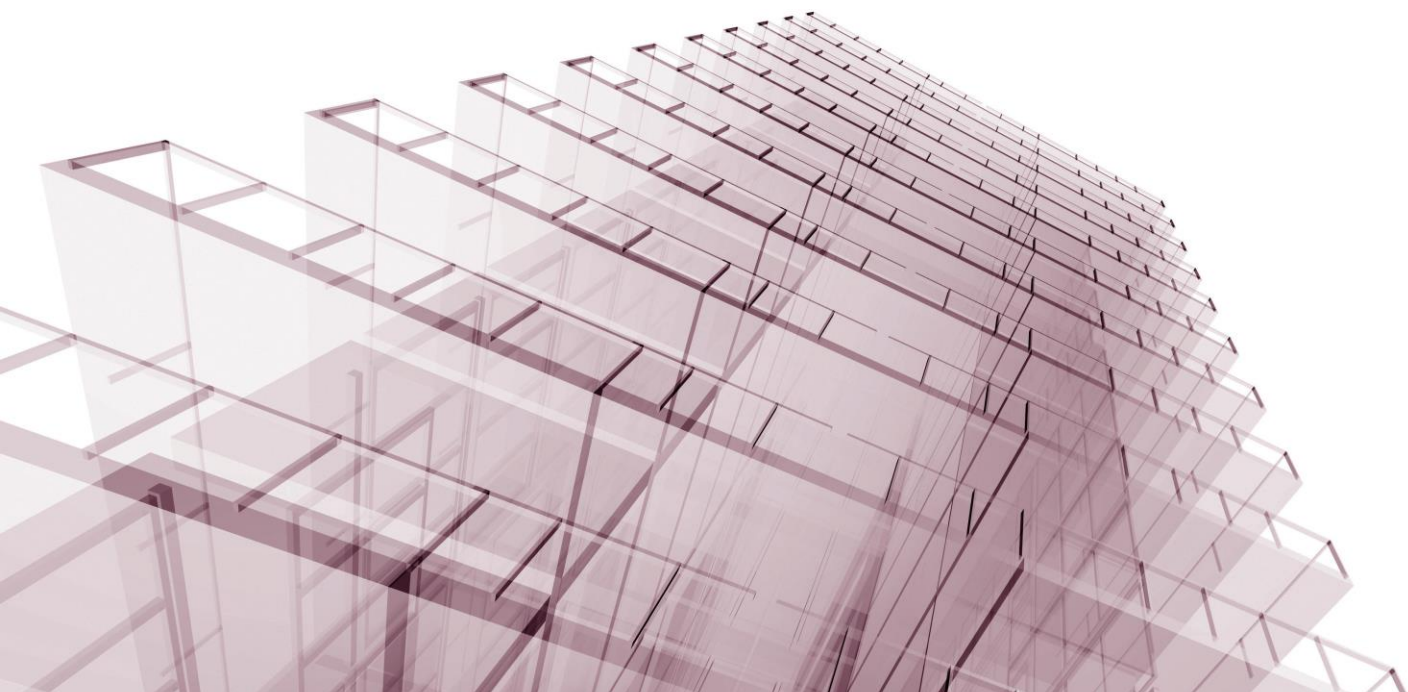




**Website:** [www.builddigitalproject.ie](http://www.builddigitalproject.ie)

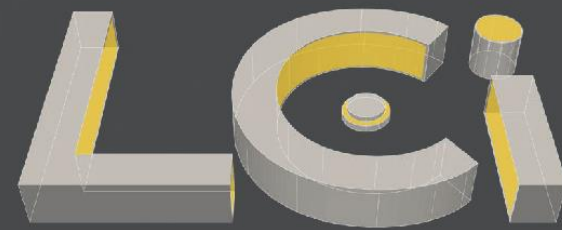
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#Ireland2040  
#NDPDelivery





**LEAN**  
CONSTRUCTION  
IRELAND



BETTER, FASTER, TOGETHER