Benefits & Use of BIM/Digital Construction to Project & Organisational delivery

Sir Robert McALPINE

Project Controls EXPO
London, UK

Nick Leach – Head of Digital Construction

- Worked for Sir Robert McAlpine for 4 years
- Involved in Construction Industry for past 20 years
- **MCIOB** Chartership awarded with Chartered Institute of Building
- **BSI BIM Project information practitioner (ISO19650) –** certification
- **UK BIM Alliance affiliates Co-lead (Current)**

CIOB
THE CHARTERED INSTITUTE OF BUILDING

UKBIM ALLIANCE
Enabling Digital Transformation

Sir Robert McALPINE

Project Controls EXPO London, UK

Agenda

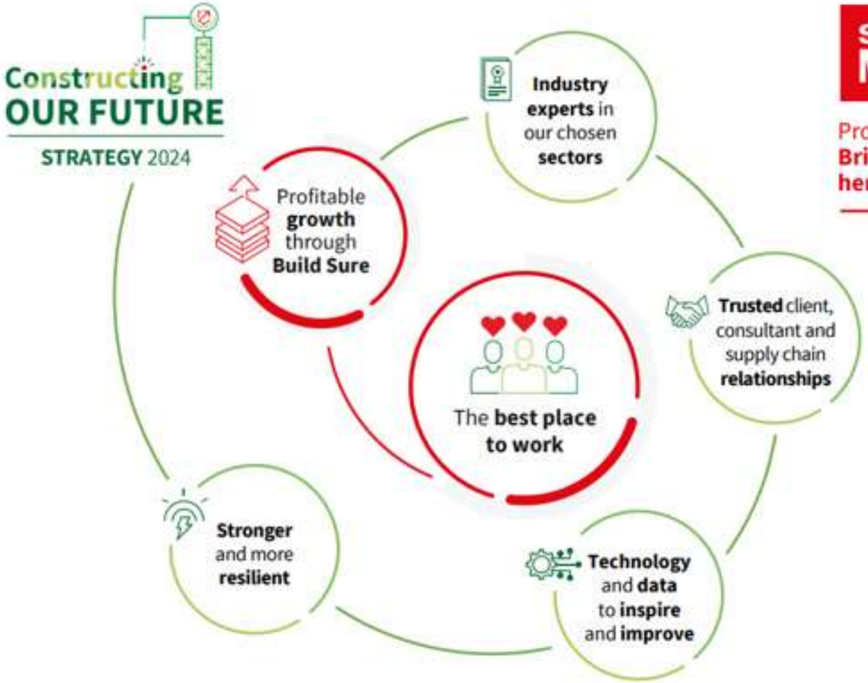
- **Overview of the SRM journey** - our digital construction/BIM strategy - Q&A - 30mins
- **A view from a project** overview of projects in how digital construction/BIM is bringing benefits and efficiencies - Q&A - 30mins
- **Break – 20 mins**
- **Breakout sessions** with hands on learning and demonstrations – **1:40mins – attendees divided in 5 groups. Groups then rotate every 20mins:**
    - Basic navigation and use of site Model viewers (Dalux) – How we use on site, training our teams and wider supply chain
    - Overview and fly through of use of 360 image capture – Matterport/Ricoh (benefits its brought especially during pandemic)
    - 4D use – how it supports our work winning, tendering, logistics and programme validation
    - VR – Utilisation for Design validation and sign off
    - Managing coordination – Our process, tools used and data reporting
- **Break – 20mins**
- **Summary and recap –** Including what's happening in the UK construction industry – **20mins**
- **Feedback/Q&A – 20mins**

Sir Robert McALPINE

Project Controls EXPO London, UK

Sir Robert McAlpine

- Established in 1869
- First contract the repair of a mine chimney for £2.45
- £1b turnover in 2019
- 1800 employees
- Launched 2018 our five-year strategy supporting our ambition to be: **the Best Builder & Best place to work**



Constructing OUR FUTURE
STRATEGY 2024

Industry experts in our chosen sectors

Profitable growth through Build Sure

The best place to work

Trusted client, consultant and supply chain relationships

Stronger and more resilient

Technology and data to inspire and improve

Sir Robert McALPINE
Proudly building Britain's future heritage

Our reputation is founded on 150 years of technical excellence and innovation, our entrepreneurial spirit and our future-focused approach.

Emirates Stadium, London

Bloomberg HQ, London

US Embassy, London

Met University, Manchester

Glenfinnan Viaduct, West Highlands

Victoria, Leeds

Imperial War Museum, Manchester

Court No. 1, London

The Dorchester Hotel, London

Eden Project, Cornwall

McLaren Production Centre

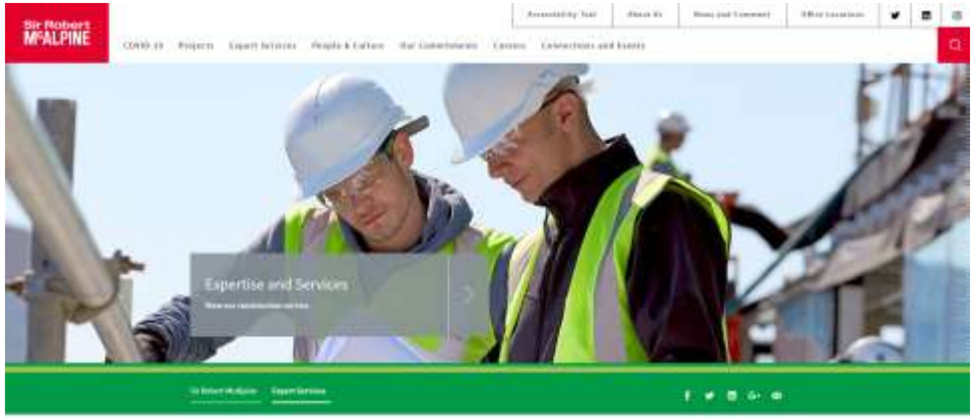
North Sea Oil Platforms

Proudly building Britain's future heritage

Sir Robert McALPINE

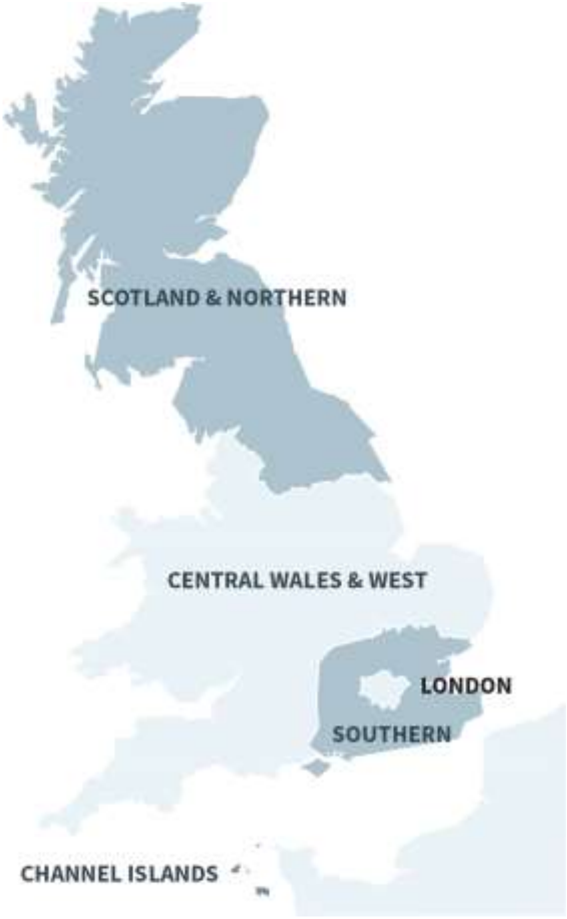
Project Controls EXPO
London, UK

How to Find out More


Sir Robert McALPINE
Expertise and Services

Sir Robert McALPINE
srm.com
Sir Robert McALPINE
LinkedIn
Twitter
Instagram
Beyond
Sir Robert McAlpine Beyond 1% Podcast
Facebook
Sir Robert McALPINE
YouTube

[Leading construction and civil engineering co. - Sir Robert McAlpine (srm.com)](srm.com)


SCOTLAND & NORTHERN
CENTRAL WALES & WEST
LONDON
SOUTHERN
CHANNEL ISLANDS

Definition

Digital Construction (BIM) is not just technology, or 3D models. It is a **way of working** in the use of **defined processes** which underpin an integrated project team and a collaborative environment. Through the utilisation of ***information management, digital tools*** and ***use of data*** it will inform our decision making and support greater efficiencies

Mission Statement

To enhance the technical excellence and trusted experience of SRM to become…
…a pioneer and leader in digital construction - successfully delivering **Britain's digital future.**

Make digital construction tangible and understandable with clearly defined value.

What are the benefits? Why do it?

- Transparency across our business
- Business risk management
- Industry requirements & Legislation (Gov BIM Mandate 2016, Construction Playbook, Building Safety bill 2021 (Hackett report), TIP
- Commercial gains/protection
- Competitiveness
- Business Benchmarking

- Governance
- Project efficiencies
- Labour/Time savings
- Internal Business relationships
- Future proofing organisation
- Innovation
- Legacy and aftercare management

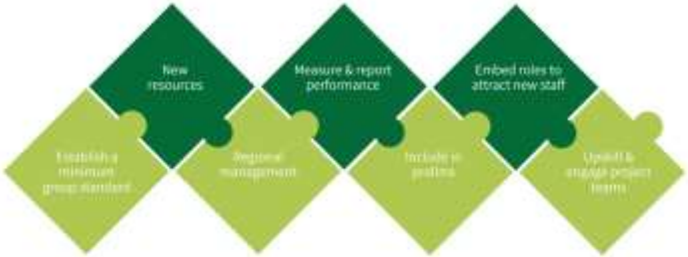
SRM BIM Strategy Adoption

Key Recommendations agreed in 2017:

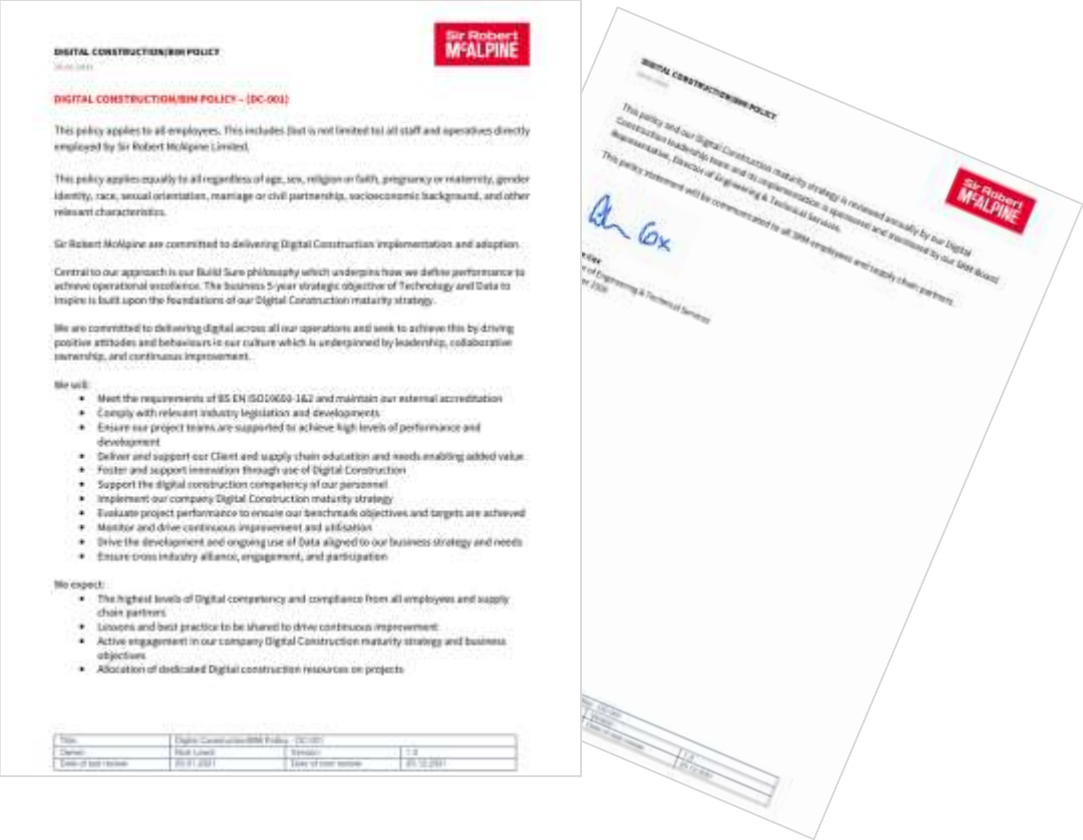
- Establish a minimum Group Standard which is clear, consistent and cannot be diluted – **the SRM BIM Maturity Metric**
- Invest in new resources / new roles to manage the strategy and upskill the project teams
- Measure progress and report performance on a regular basis to drive ongoing engagement
- Provide a variety of learning resources to upskill and engage the project teams
- Enable project teams with the necessary software and technology hardware

Year 1 Target (2018): All new projects to reach a minimum **40%** target as measured against the SRM defined **BIM Maturity Metric**

Year 2 Target (2019): All new projects to reach a minimum **75%** target as measured against the SRM defined **BIM Maturity Metric**


Establish a minimum group standard
New resources
Regional management
Measure & report performance
Include in profiles
Embed roles to attract new staff
Upskill & engage project teams

Business Digital Construction/BIM Policy



DIGITAL CONSTRUCTION/BIM POLICY

DIGITAL CONSTRUCTION/BIM POLICY – (DC-001)

This policy applies to all employees. This includes (but is not limited to) all staff and operatives directly employed by Sir Robert McAlpine Limited.

This policy applies equally to all regardless of age, sex, religion or faith, pregnancy or maternity, gender identity, race, sexual orientation, marriage or civil partnership, socioeconomic background, and other relevant characteristics.

Sir Robert McAlpine are committed to delivering Digital Construction implementation and adoption.

Central to our approach is our Build Sure philosophy which underpins how we define performance to achieve operational excellence. The business 5-year strategic objective of Technology and Data to inspire is built upon the foundations of our Digital Construction maturity strategy.

We are committed to delivering digital across all our operations and seek to achieve this by driving positive attitudes and behaviours in our culture which is underpinned by leadership, collaborative ownership, and continuous improvement.

We will:

- Meet the requirements of BS EN ISO19650-1&2 and maintain our external accreditation
- Comply with relevant industry legislation and developments
- Ensure our project teams are supported to achieve high levels of performance and development
- Deliver and support our Client and supply chain education and needs enabling added value
- Foster and support innovation through use of Digital Construction
- Support the digital construction competency of our personnel
- Implement our company Digital Construction maturity strategy
- Evaluate project performance to ensure our benchmark objectives and targets are achieved
- Monitor and drive continuous improvement and utilisation
- Drive the development and ongoing use of Data aligned to our business strategy and needs
- Ensure cross industry alliance, engagement, and participation

We expect:

- The highest levels of Digital competency and compliance from all employees and supply chain partners
- Lessons and best practice to be shared to drive continuous improvement
- Active engagement in our company Digital Construction maturity strategy and business objectives
- Allocation of dedicated Digital construction resources on projects

Title:	Digital Construction/BIM Policy - DC-001		
Owner:	[illegible]	Version:	1.0
Date of last review:	[illegible]	Date of next review:	[illegible]

DIGITAL CONSTRUCTION/BIM POLICY

This policy and our Digital Construction maturity strategy is reviewed annually by our Digital Construction leadership team and its implementation is sponsored and mandated by our SRM Board Representative, Director of Engineering & Technical Services.

This policy statement will be communicated to all SRM employees and supply chain partners.

Cox

of Engineering & Technical Services

"This policy applies to all employees. This includes (but is not limited to) all staff and operatives directly employed by Sir Robert McAlpine Limited."

"The business 5-year strategic objective of Technology and Data to inspire is built upon the foundations of our Digital Construction maturity strategy."

"We are committed to delivering digital across all our operations and seek to achieve this by driving positive attitudes and behaviours in our culture which is underpinned by leadership, collaborative ownership, and continuous improvement."

"We expect….

- Allocation of dedicated Digital construction resources on projects"

Project Maturity Targets

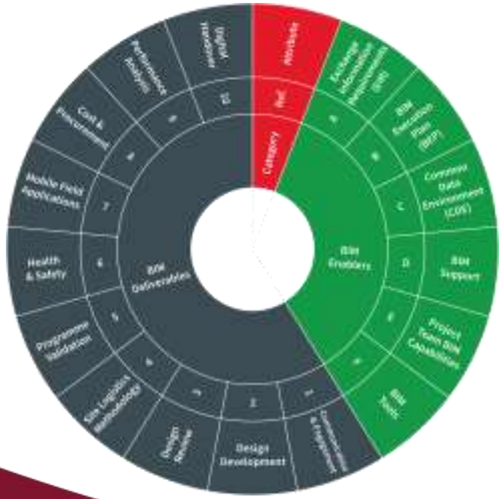
Purpose of Maturity Strategy for our Business

"To improve our predictability, performance and transparency through enhanced efficiencies and consistency in our project delivery enabled by digitalised processes and technologies."

*The project maturity target is not meant to be a tick box exercise but the **driver** for our projects and personnel to adopt a more digitalised way of working.*

Enablers required for Digital Construction (What we do)

- **Managing client deliverables** for the project
- Forming/managing **contractual requirements**/documents and processes
- **Training progress and capabilities** of projects teams on use of technology /software
- Ensuring **consistent** use of digital tools the business have identified
- **Managing monthly SRM maturity** reporting and project action plans/targets
- Supporting project **progress reporting and use of data**
- **Identifying solutions and innovations** to improve project delivery

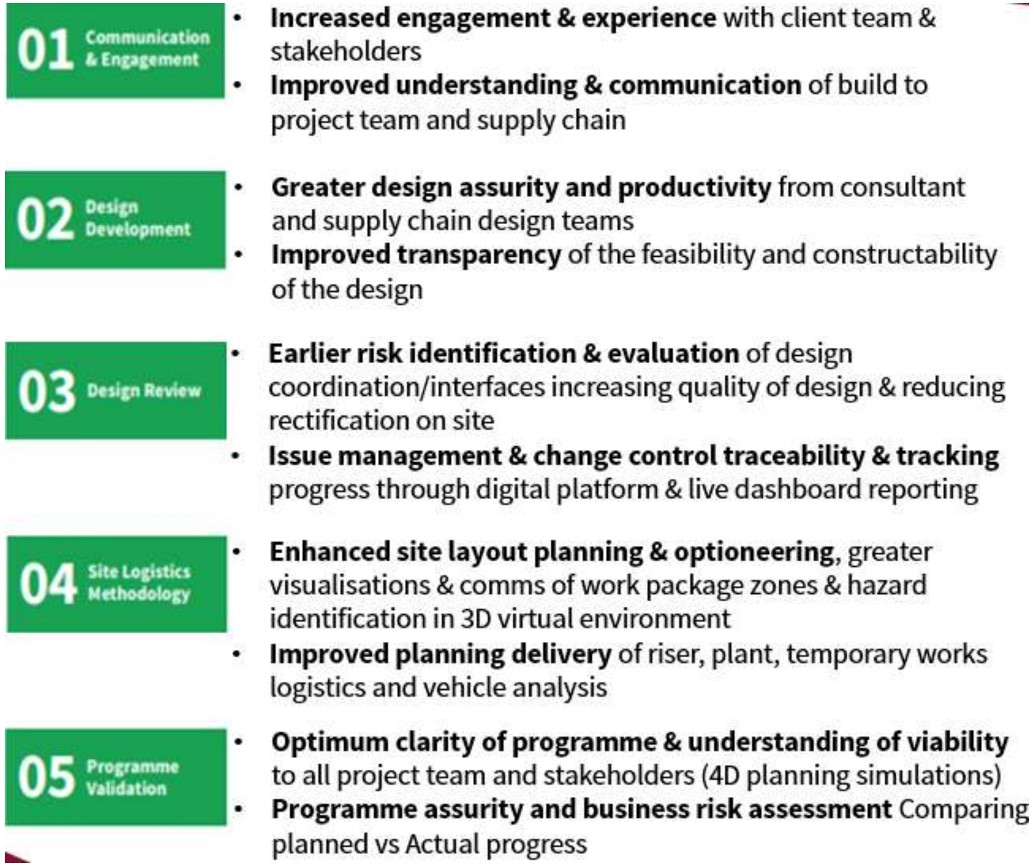

Category
Ref.
Attribute
BIM Deliverables
BIM Enablers
Digital Handover
Performance Analysis
Cost & Procurement
Mobile Field Applications
Health & Safety
Programme Validation
Site Logistics Methodology
Design Review
Design Development
Construction & Engineering
Exchange Information Requirements (EIR)
BIM Execution Plan (BEP)
Common Data Environment (CDE)
BIM Support
Project Team BIM Capabilities
BIM Tools
10
9
8
7
6
5
4
3
2
1
A
B
C
D
E
F

Digital Construction Maturity
Sir Robert McALPINE

Deliverables
03
BIM MATURITY - How are your design reviews carried out?
0
1 or 2
3 or 4
5 or 6
7 or 8
9 or 10

Deliverables
03
Definition
Benefits

Maturity Project Benefits



01 Communication & Engagement

- **Increased engagement & experience** with client team & stakeholders
- **Improved understanding & communication** of build to project team and supply chain

02 Design Development

- **Greater design assurity and productivity** from consultant and supply chain design teams
- **Improved transparency** of the feasibility and constructability of the design

03 Design Review

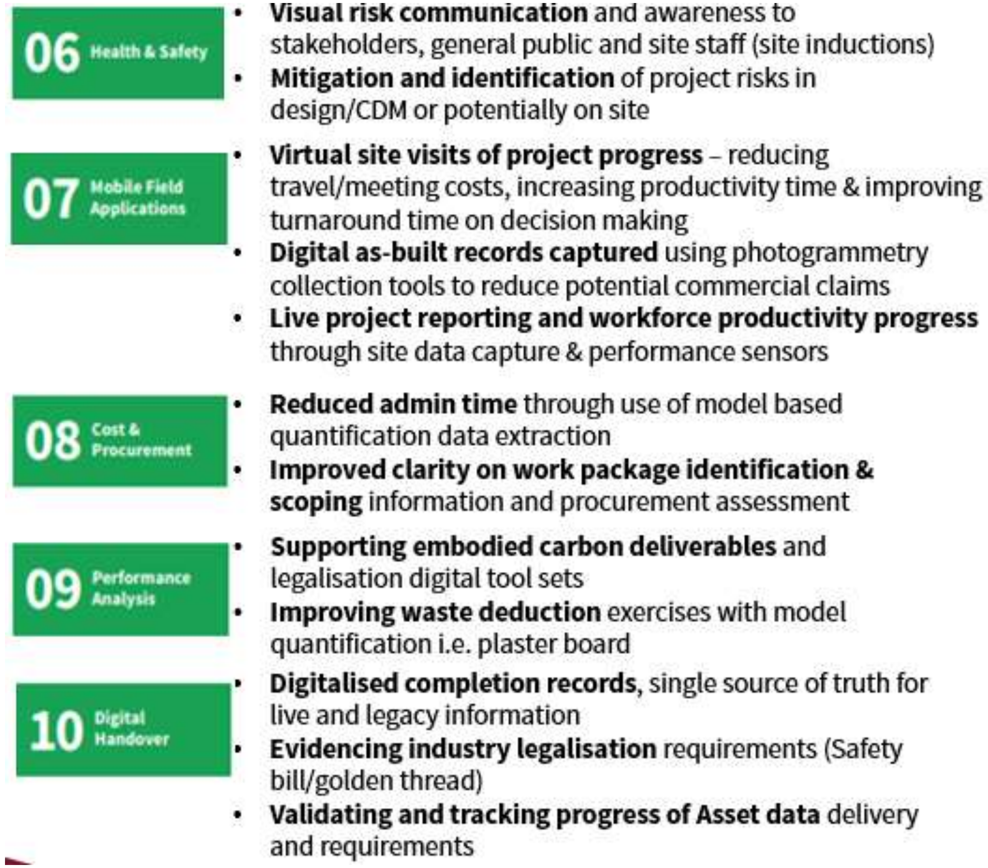
- **Earlier risk identification & evaluation** of design coordination/interfaces increasing quality of design & reducing rectification on site
- **Issue management & change control traceability & tracking** progress through digital platform & live dashboard reporting

04 Site Logistics Methodology

- **Enhanced site layout planning & optioneering**, greater visualisations & comms of work package zones & hazard identification in 3D virtual environment
- **Improved planning delivery** of riser, plant, temporary works logistics and vehicle analysis

05 Programme Validation

- **Optimum clarity of programme & understanding of viability** to all project team and stakeholders (4D planning simulations)
- **Programme assurity and business risk assessment** Comparing planned vs Actual progress



06 Health & Safety

- **Visual risk communication** and awareness to stakeholders, general public and site staff (site inductions)
- **Mitigation and identification** of project risks in design/CDM or potentially on site

07 Mobile Field Applications

- **Virtual site visits of project progress** – reducing travel/meeting costs, increasing productivity time & improving turnaround time on decision making
- **Digital as-built records captured** using photogrammetry collection tools to reduce potential commercial claims
- **Live project reporting and workforce productivity progress** through site data capture & performance sensors

08 Cost & Procurement

- **Reduced admin time** through use of model based quantification data extraction
- **Improved clarity on work package identification & scoping** information and procurement assessment

09 Performance Analysis

- **Supporting embodied carbon deliverables** and legalisation digital tool sets
- **Improving waste deduction** exercises with model quantification i.e. plaster board

10 Digital Handover

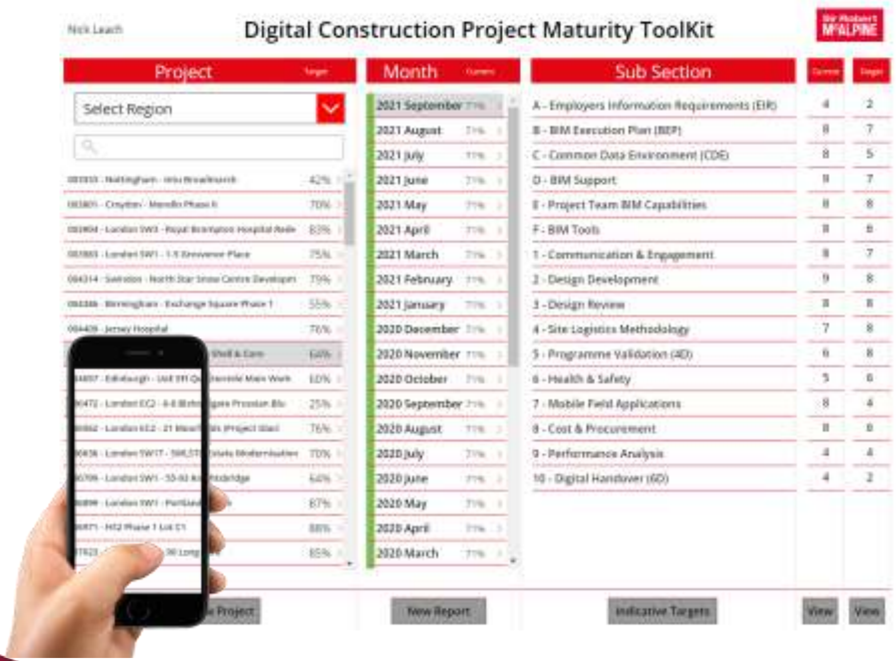
- **Digitalised completion records**, single source of truth for live and legacy information
- **Evidencing industry legalisation** requirements (Safety bill/golden thread)
- **Validating and tracking progress of Asset data** delivery and requirements

Sir Robert McALPINE

Project Controls EXPO London, UK

Project Maturity Targets

Monthly project Digital/BIM maturity reporting ongoing data collected …



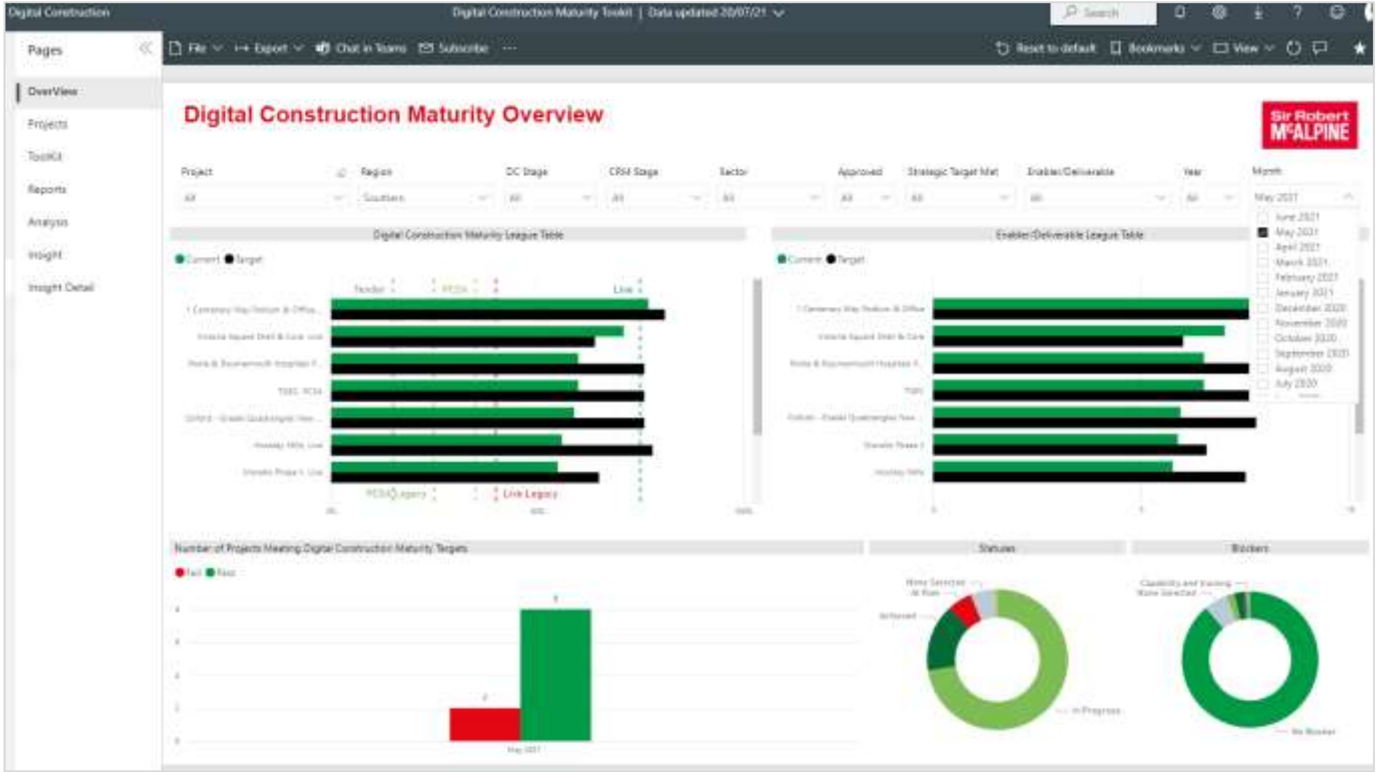
Nick Leach

Digital Construction Project Maturity ToolKit

Project
Select Region
Month
New Report
Indicative Targets
View
View

2021 September
2021 August
2021 July
2021 June
2021 May
2021 April
2021 March
2021 February
2021 January
2020 December
2020 November
2020 October
2020 September
2020 August
2020 July
2020 June
2020 May
2020 April
2020 March

Sub Section	Current	Target
A - Employers Information Requirements (EIR)	4	2
B - BIM Execution Plan (BEP)	8	7
C - Common Data Environment (CDE)	8	5
D - BIM Support	8	7
E - Project Team BIM Capabilities	8	8
F - BIM Tools	8	6
1 - Communication & Engagement	8	7
2 - Design Development	9	8
3 - Design Review	8	8
4 - Site Logistics Methodology	7	8
5 - Programme Validation (4D)	6	8
6 - Health & Safety	5	6
7 - Mobile Field Applications	8	4
8 - Cost & Procurement	8	6
9 - Performance Analysis	4	4
10 - Digital Handover (6D)	4	2



Digital Construction
Digital Construction Maturity Toolkit | Data updated 20/07/21
Search
Pages
File
Export
Chat in Teams
Subscribe
Reset to default
Bookmarks
View
OverView
Projects
ToolKit
Reports
Analysis
Insight
Insight Detail

Digital Construction Maturity Overview

Project: All
Region: Southern
DC Stage: All
CRM Stage: All
Sector: All
Approved: All
Strategic Target Met: All
Enabler/Deliverable: All
Year: All
Month: May 2021

June 2021
May 2021
April 2021
March 2021
February 2021
January 2021
December 2020
November 2020
October 2020
September 2020
Digital Construction Maturity League Table
Current
Target
Tender
Live
Enabler/Deliverable League Table
Number of Projects Meeting Digital Construction Maturity Targets
Fail
Pass
Statuses
Blockers
In Progress
No Blocker

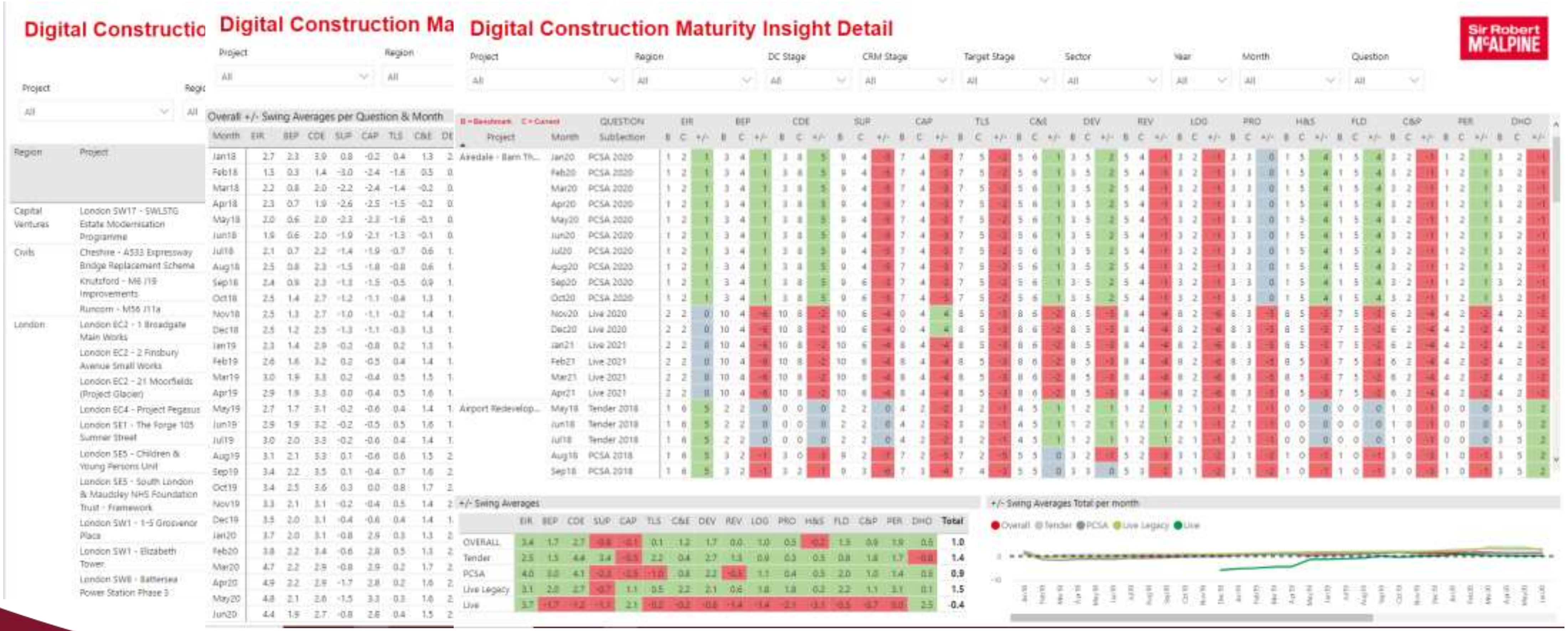
…results to be highlighted and reviewed at SRM Board level presented by assigned board sponsor

Sir Robert McALPINE

Project Controls EXPO London, UK

Project Maturity Targets

Further in depth analysis can be harnessed from the way data can be viewed...


Digital Constructio
Digital Construction Ma
Digital Construction Maturity Insight Detail
Sir Robert McALPINE
Project
Region
DC Stage
CRM Stage
Target Stage
Sector
Year
Month
Question
All
B = Benchmark C = Current
QUESTION
Subsection
+/- Swing Averages Total per month
Overall
Tender
PCSA
Live Legacy
Live

Region	Project
Capital Ventures	London SW17 - SWLSTG Estate Modernisation Programme
Civils	Cheshire - A533 Expressway Bridge Replacement Scheme
	Knutsford - M6 J19 Improvements
	Runcorn - M56 J11a
London	London EC2 - 1 Broadgate Main Works
	London EC2 - 2 Finsbury Avenue Small Works
	London EC2 - 21 Moorfields (Project Glacier)
	London EC4 - Project Pegasus
	London SE1 - The Forge 105 Sumner Street
	London SE5 - Children & Young Persons Unit
	London SE5 - South London & Maudsley NHS Foundation Trust - Framework
	London SW1 - 1-5 Grosvenor Place
	London SW1 - Elizabeth Tower
	London SW8 - Battersea Power Station Phase 3

Overall +/- Swing Averages per Question & Month

Month	EIR	BEP	CDE	SUP	CAP	TLS	C&E
Jan18	2.7	2.3	3.9	0.8	-0.2	0.4	1.3
Feb18	1.3	0.3	1.4	-3.0	-2.4	-1.6	0.5
Mar18	2.2	0.8	2.0	-2.2	-2.4	-1.4	-0.2
Apr18	2.3	0.7	1.9	-2.6	-2.5	-1.5	-0.2
May18	2.0	0.6	2.0	-2.3	-2.3	-1.6	-0.1
Jun18	1.9	0.6	2.0	-1.9	-2.1	-1.3	-0.1
Jul18	2.1	0.7	2.2	-1.4	-1.9	-0.7	0.6
Aug18	2.5	0.8	2.3	-1.5	-1.8	-0.8	0.6
Sep18	2.4	0.9	2.3	-1.3	-1.5	-0.5	0.9
Oct18	2.5	1.4	2.7	-1.2	-1.1	-0.4	1.3
Nov18	2.5	1.3	2.7	-1.0	-1.1	-0.2	1.4
Dec18	2.5	1.2	2.5	-1.3	-1.1	-0.3	1.3
Jan19	2.3	1.4	2.9	-0.2	-0.8	0.2	1.3
Feb19	2.6	1.6	3.2	0.2	-0.5	0.4	1.4
Mar19	3.0	1.9	3.3	0.2	-0.4	0.5	1.5
Apr19	2.9	1.8	3.3	0.0	-0.4	0.5	1.6
May19	2.7	1.7	3.1	-0.2	-0.6	0.4	1.4
Jun19	2.9	1.9	3.2	-0.2	-0.5	0.5	1.6
Jul19	3.0	2.0	3.3	-0.2	-0.6	0.4	1.4
Aug19	3.1	2.1	3.3	0.1	-0.6	0.6	1.5
Sep19	3.4	2.2	3.5	0.1	-0.4	0.7	1.6
Oct19	3.4	2.5	3.6	0.3	0.0	0.8	1.7
Nov19	3.3	2.1	3.1	-0.2	-0.4	0.5	1.4
Dec19	3.5	2.0	3.1	-0.4	-0.6	0.4	1.4
Jan20	3.7	2.0	3.1	-0.8	2.6	0.3	1.3
Feb20	3.8	2.2	3.4	-0.6	2.8	0.5	1.3
Mar20	4.7	2.2	2.9	-0.8	2.9	0.2	1.7
Apr20	4.9	2.2	2.9	-1.7	2.8	0.2	1.6
May20	4.8	2.1	2.6	-1.5	3.3	0.3	1.6
Jun20	4.4	1.9	2.7	-0.8	2.6	0.4	1.5

+/- Swing Averages

	EIR	BEP	CDE	SUP	CAP	TLS	C&E	DEV	REV	LOG	PRO	H&S	FLD	C&P	PER	DHO	Total
OVERALL	3.4	1.7	2.7	-0.8	-0.1	0.1	1.2	1.7	0.0	1.0	0.5	-0.2	1.5	0.9	1.9	0.5	1.0
Tender	2.5	1.5	4.4	3.4	-0.5	2.2	0.4	2.7	1.3	0.9	0.3	0.5	0.8	1.8	1.7	-0.8	1.4
PCSA	4.0	3.0	4.1	-0.2	-0.5	-1.0	0.8	2.2	-0.5	1.1	0.4	0.5	2.0	1.0	1.4	0.8	0.9
Live Legacy	3.1	2.0	2.7	-0.7	1.1	0.5	2.2	2.1	0.6	1.8	1.8	0.2	2.2	1.1	3.1	0.1	1.5
Live	3.7	-1.7	-1.2	-1.3	2.1	-0.2	-0.2	-0.8	-1.4	-1.4	-2.1	-3.1	-0.5	-0.7	-3.0	2.5	-0.4

Industry Alignment

UK BSI PAS 1192 suite

BIM Level 2

bsi. BIM Verified Design & Construction Capital/Delivery PAS 1192-2

Sir Robert McALPINE

SRM Accreditation

2017

ISO BSEN 19650 suite
(UK BSI 1192 suite superseded)

ISO19650

bsi. BIM Verified Design & Construction Capital/Delivery ISO 19650-1 and -2

Sir Robert McALPINE

SRM Accreditation

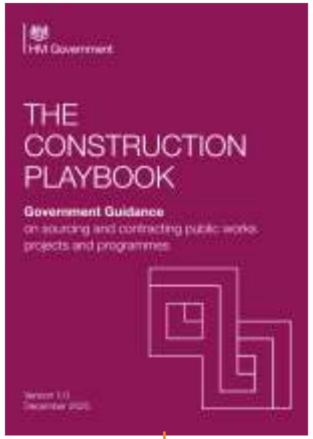
2019

UK BIM FRAMEWORK

bsi. cdbb UKBIM ALLIANCE

Guidance documents formed to support ISO 19650 suite

SRM supporting UK BIM Alliance & BSI working groups

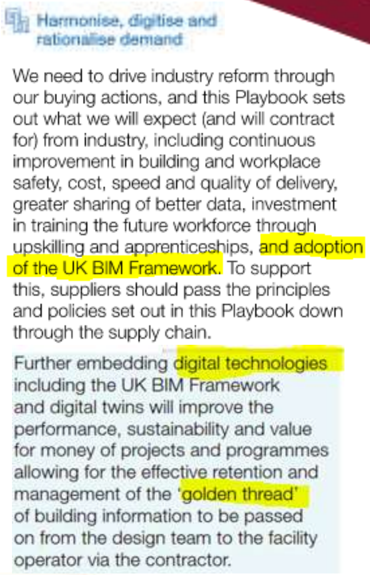


HM Government

THE CONSTRUCTION PLAYBOOK

Government Guidance
on sourcing and contracting public works projects and programmes

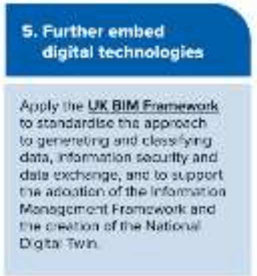
Version 1.0
December 2020



Harmonise, digitise and rationalise demand

We need to drive industry reform through our buying actions, and this Playbook sets out what we will expect (and will contract for) from industry, including continuous improvement in building and workplace safety, cost, speed and quality of delivery, greater sharing of better data, investment in training the future workforce through upskilling and apprenticeships, and adoption of the UK BIM Framework. To support this, suppliers should pass the principles and policies set out in this Playbook down through the supply chain.

Further embedding digital technologies including the UK BIM Framework and digital twins will improve the performance, sustainability and value for money of projects and programmes allowing for the effective retention and management of the 'golden thread' of building information to be passed on from the design team to the facility operator via the contractor.



5. Further embed digital technologies

Apply the UK BIM Framework to standardise the approach to generating and classifying data, information security and data exchange, and to support the adoption of the Information Management Framework and the creation of the National Digital Twin.

Infrastructure and Projects Authority

Transforming Infrastructure Performance: Roadmap to 2030

2020

2021

The Digital Construction/BIM Team

March 2021

37

bsi

BIM Project Information

PROFESSIONAL

Head of Digital Construction

Nick Leach

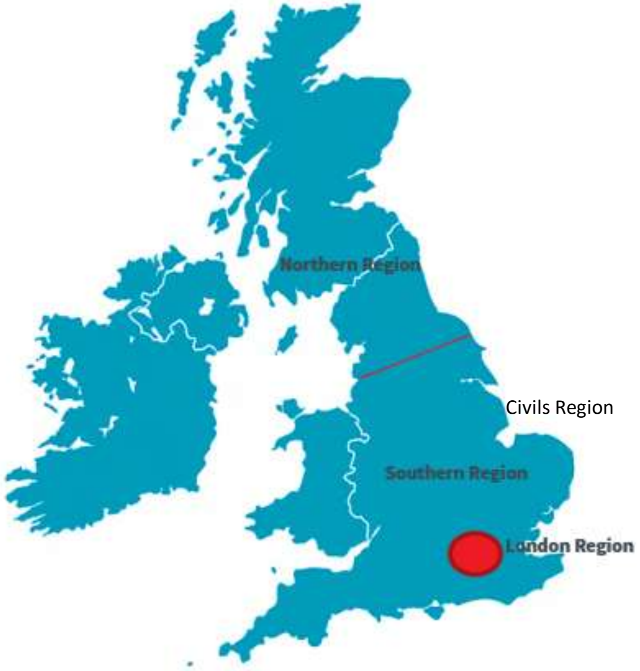
Supporting Group, Northern, Southern, Civils

London Digital Construction Lead

Padraig Delaney

Head of Visualisation Team

Simon Lockyer


Northern Region
Civils Region
Southern Region
London Region

- Head of Digital Construction
- Digital Construction Lead (London)
- Digital Construction Managers (20)
- Digital Construction Coordinators (9)

- Head of Visualisation
- Visualisation Specialists (5)

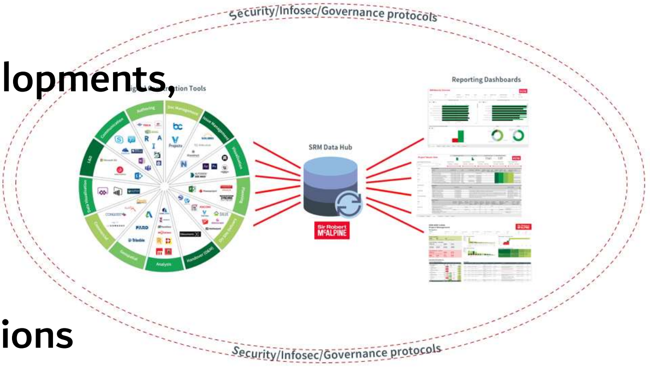
Sir Robert McALPINE

Project Controls EXPO London, UK

What we are delivering as Function

- Delivering our client and our digital construction requirements through digital enabled **processes, methods** and **innovations** to support our project teams delivery
- Driving the use of our **digital tools and technology** across all project sites in all regions
- Harnessing and forming **automated** data production from our software toolset with Power Bi dashboarding to improve project delivery and business reporting
- Conducting and developing training, material and learning to support **Digital construction tools & technology competency** on our projects
- Continued **industry engagement, representation and participation** in built environment developments, communities, initiatives, roundtables and articles
- **Vendor Account management and administration** (Dalux/BIM Collab/Edocuments)
- **Cross project Peer to Peer** reviews/audits sharing of best practice and setting recommendations

Digital Construction/ BIM



Security/Infosec/Governance protocols
Reporting Dashboards
SRM Data Hub
Authoring
Doc Management
Issue Management
Visualisation
Planning
Dry Site Delivery
Handover (O&M)
Analysis
Geospatial
Commercial
Data Visualisation
L&D
Communication
Security/Infosec/Governance protocols

Clients & Sector Requirements

Education

Durham University

University of BRISTOL

Newcastle University

Healthcare

IHP Integrated Health Projects by VINCI Sir Robert McALPINE

NHS Poole Hospital NHS Foundation Trust

NHS South London and Maudsley NHS Foundation Trust

South West London and St George's Mental Health NHS Trust NHS

Commercial

British Land

Landsec

ARGENT

SOHO ESTATES

Residential

GUILD LIVING

BATTERSEA POWER STATION

Highways

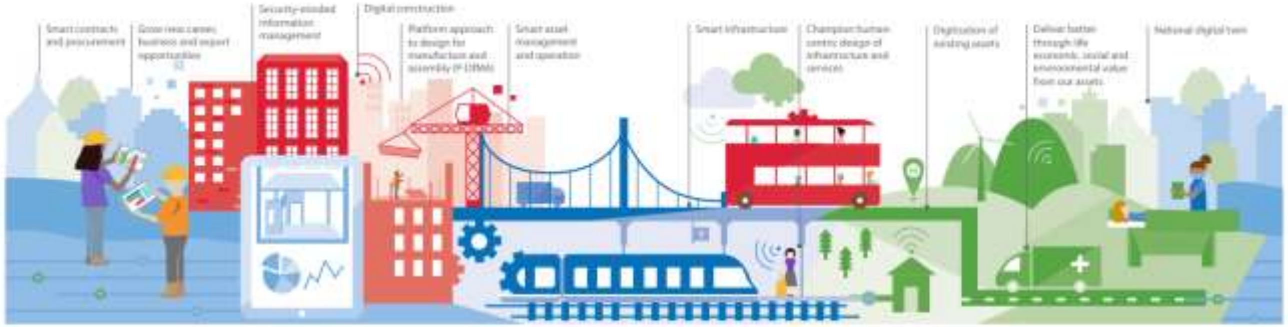
highways england

Rail

HS2

Heritage

UK Parliament



Smart contracts and procurement
Grow new career, business and export opportunities
Security-minded information management
Digital construction
Platform approach to design for manufacture and assembly (P-DfMA)
Smart asset management and operation
Smart infrastructure
Champion human-centric design of infrastructure and services
Digitisation of existing assets
Deliver better through-life economic, social and environmental value from our assets
National digital twin

Design

Use best practice, secure by default, information management and digital techniques to get data right from the start and design better-performing homes, buildings and infrastructure.

Build

Exploit new and emerging digital construction, information management, and manufacturing technologies and techniques to improve safety, quality and productivity during construction.

Operate

Use effective information management to transform the performance of the built environment and the services it delivers.

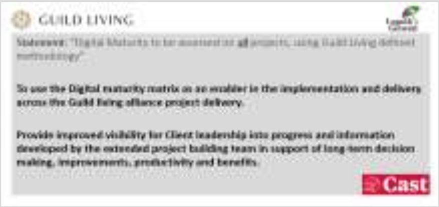
Integrate

Understand how the built environment can improve citizens' quality of life and use that information to drive the design and build of our economic and social infrastructure and the operation and integration of the services they deliver.

Health Infrastructure Plan

A Blueprint for Digital Innovation in New Hospital Builds

NHS Atos



GUILD LIVING

Statement: "Digital Maturity to be assessed on all projects, using Guild Living defined methodology"

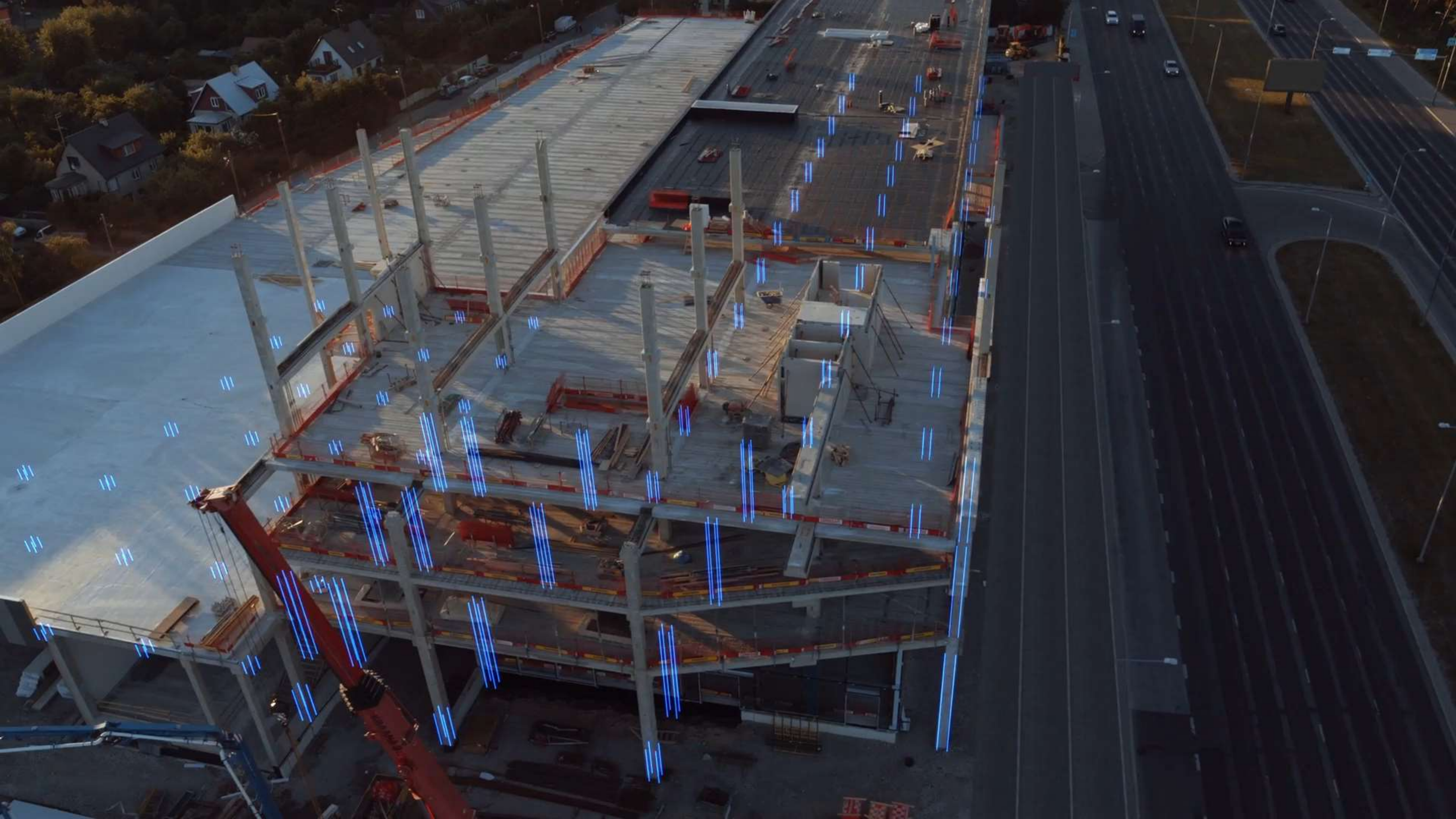
To use the Digital maturity matrix as an enabler in the implementation and delivery across the Guild living alliance project delivery.

Provide improved visibility for Client leadership into progress and information developed by the extended project building team in support of long-term decision making, improvements, productivity and benefits.

Cast

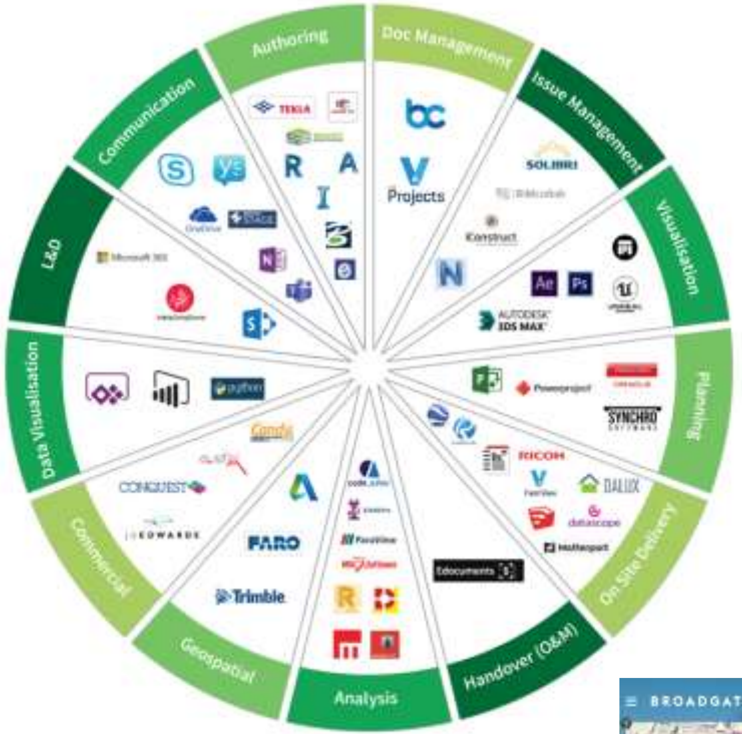
Sir Robert McALPINE

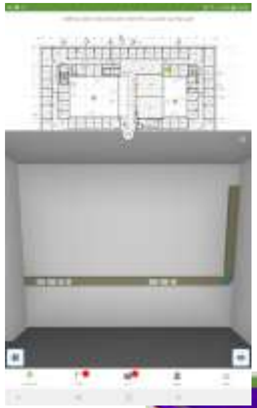
Project Controls EXPO London, UK

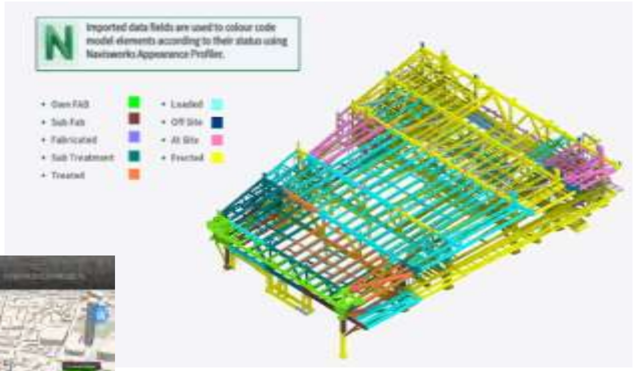


Smarter Working

Understanding and making use of the Tools we have available


Authoring
Doc Management
Issue Management
Visualisation
Planning
On Site Delivery
Handover (O&M)
Analysis
Geospatial
Commercial
Data Visualisation
L&D
Communication
TEKLA
Projects
SOLIBRI
Konstruct
AUTODESK 3DS MAX
Powerproject
SYNCHRO
RICOH
DALUX
datascope
Matterport
Edocuments
FieldView
Trimble
FARO
CONQUEST
JJ EDWARDS
python
Microsoft 365
OneDrive

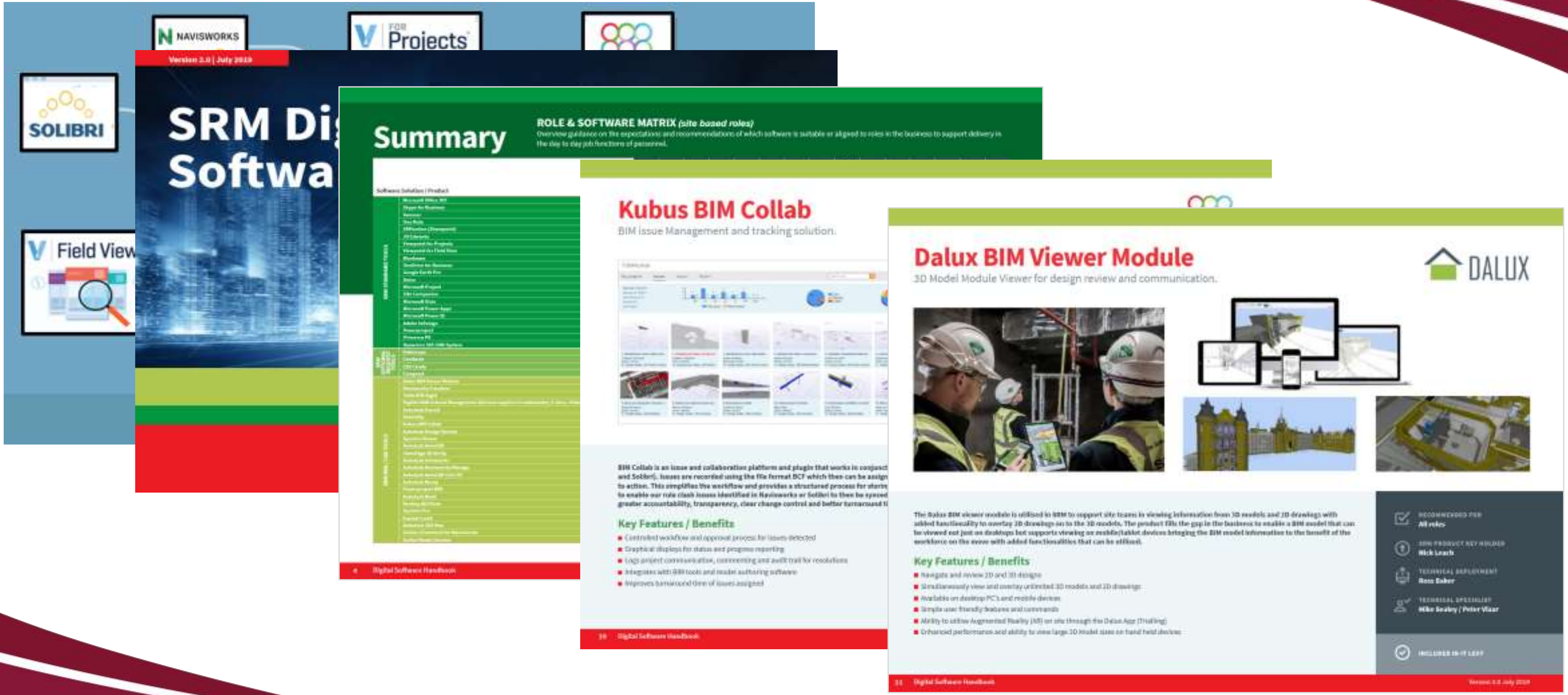



N
Imported data fields are used to colour code model elements according to their status using Navisworks Appearance Profiler.
Own FAB 🟩
Sub Fab 🟫
Fabricated 🟪
Sub Treatment 🟦
Treated 🟧
Loaded 🟦
Off Site 🟦
At Site 🟪
Erected 🟨

Sir Robert McALPINE

Project Controls EXPO
London, UK

Consistency in Tools



Version 3.0 | July 2019

SRM Di
Softwa

Summary

ROLE & SOFTWARE MATRIX *(site based roles)*

Overview guidance on the expectations and recommendations of which software is suitable or aligned to roles in the business to support delivery in the day to day job functions of personnel.

Digital Software Handbook

Kubus BIM Collab

BIM issue Management and tracking solution.

BIM Collab is an issue and collaboration platform and plugin that works in conjunct
and Solibri). Issues are recorded using the file format BCF which then can be assign
to action. This simplifies the workflow and provides a structured process for storin
to enable our rule clash issues identified in Navisworks or Solibri to then be synced
greater accountability, transparency, clear change control and better turnaround ti

Key Features / Benefits

- Controlled workflow and approval process for issues detected
- Graphical displays for status and progress reporting
- Logs project communication, commenting and audit trail for resolutions
- Integrates with BIM tools and model authoring software
- Improves turnaround time of issues assigned

10 Digital Software Handbook

Dalux BIM Viewer Module

3D Model Module Viewer for design review and communication.

DALUX

The Dalux BIM viewer module is utilised in SRM to support site teams in viewing information from 3D models and 2D drawings with added functionality to overlay 2D drawings on to the 3D models. The product fills the gap in the business to enable a BIM model that can be viewed not just on desktops but supports viewing on mobile/tablet devices bringing the BIM model information to the benefit of the workforce on the move with added functionalities that can be utilised.

Key Features / Benefits

- Navigate and review 2D and 3D designs
- Simultaneously view and overlay unlimited 3D models and 2D drawings
- Available on desktop PC's and mobile devices
- Simple user friendly features and commands
- Ability to utilise Augmented Reality (AR) on site through the Dalux App (Trialling)
- Enhanced performance and ability to view large 3D Model sizes on hand held devices

RECOMMENDED FOR
All roles

SRM PRODUCT KEY HOLDER
Nick Leach

TECHNICAL DEPLOYMENT
Ross Baker

TECHNICAL SPECIALIST
Mike Sealey / Peter Vlaar

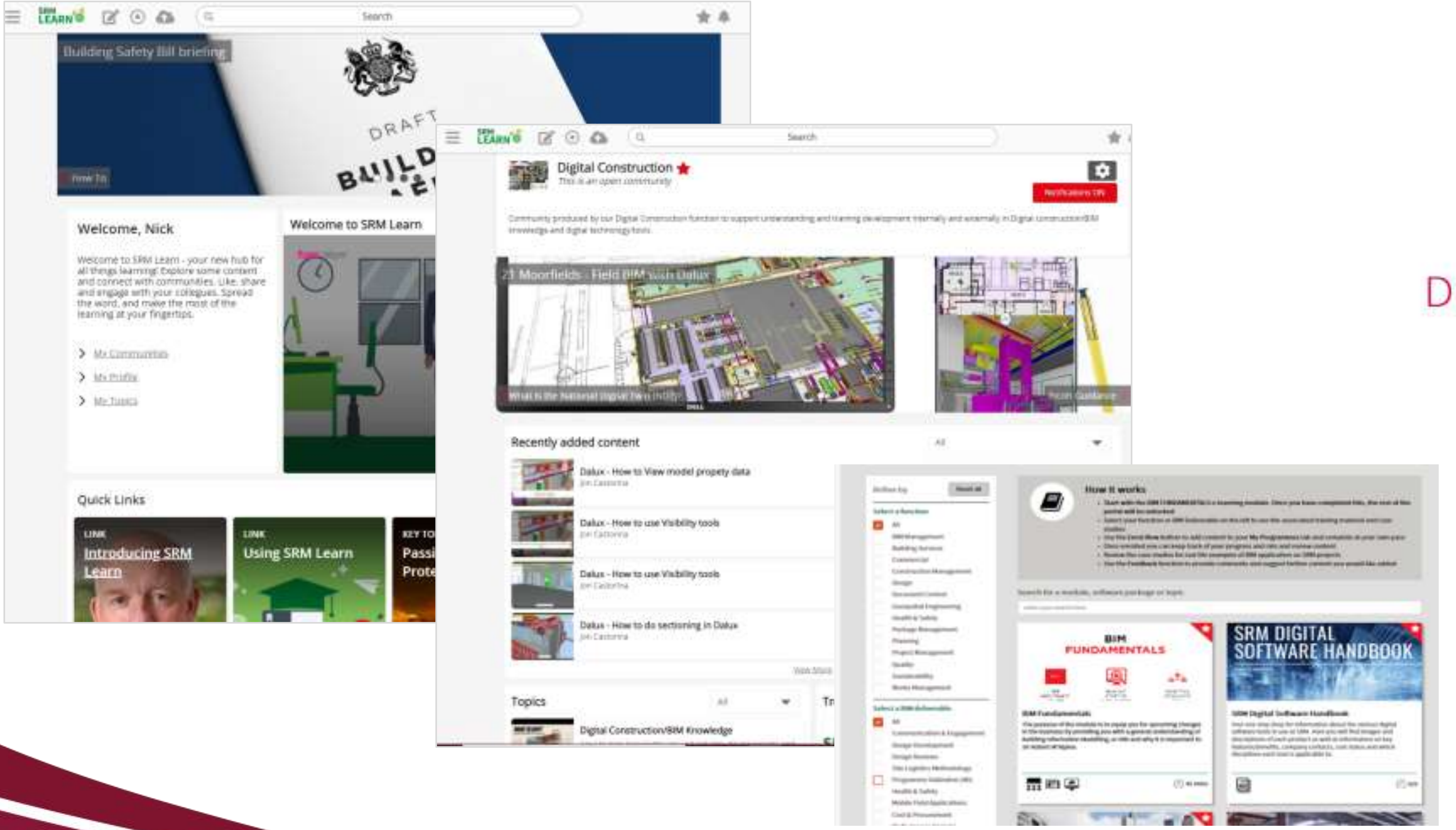
INCLUDED IN IT LEDT

11 Digital Software Handbook Version 3.0 July 2019

Sir Robert McALPINE

Project Controls EXPO
London, UK

Enabling the implementation



Building Safety Bill briefing

Welcome, Nick

Welcome to SRM Learn - your new hub for all things learning! Explore some content and connect with communities. Like, share and engage with your colleagues. Spread the word, and make the most of the learning at your fingertips.

- My Communities
- My Profile
- My Topics

Welcome to SRM Learn

Quick Links

LINK Introducing SRM Learn

LINK Using SRM Learn

Digital Construction

This is an open community

Community produced by our Digital Construction function to support understanding and training development internally and externally in Digital construction/BIM knowledge and digital technology tools.

21 Moorfields - Field BIM with Dalux

Recently added content

Dalux - How to View model propety data

Dalux - How to use Visibility tools

Dalux - How to use Visibility tools

Dalux - How to do sectioning in Dalux

Topics

Digital Construction/BIM Knowledge

How it works

BIM FUNDAMENTALS

SRM DIGITAL SOFTWARE HANDBOOK

17,029 +

VISITS TO THE

DIGITAL LEARNING PORTAL

1,460 +

COMPLETED THE

BIM FUNDAMENTALS

E-LEARNING MODULE

Connecting People

Connecting

Call & Connect – Knowledge share & best practice
Health & Safety Good Practice
We need your help
All Company
Sir Robert McAlpine

Informing

SRM REWARD HUB
Sir Robert McAlpine

SRM Digital Software Handbook

Dalux BIM Viewer Module

3D Model Module Viewer for design review and communication.

DALUX

The Dalux BIM viewer module is utilised in SRM to support site teams in viewing information from 3D models and 2D drawings with added functionality to overlay 2D drawings on to the 3D models. The product fills the gap in the business to enable a BIM model that can be viewed not just on desktops but supports viewing on mobile/tablet devices bringing the BIM model information to the benefit of the workforce on the move with added functionalities that can be utilised.

Key Features / Benefits

- Navigate and review 2D and 3D designs
- Simultaneously view and overlay unlimited 3D models and 2D drawings
- Available on desktop PC's and mobile devices
- Simple user friendly features and commands
- Ability to utilise Augmented Reality (AR) on site through the Dalux App (Trialling)
- Enhanced performance and ability to view large 3D Model sizes on hand held devices

RECOMMENDED FOR
All roles

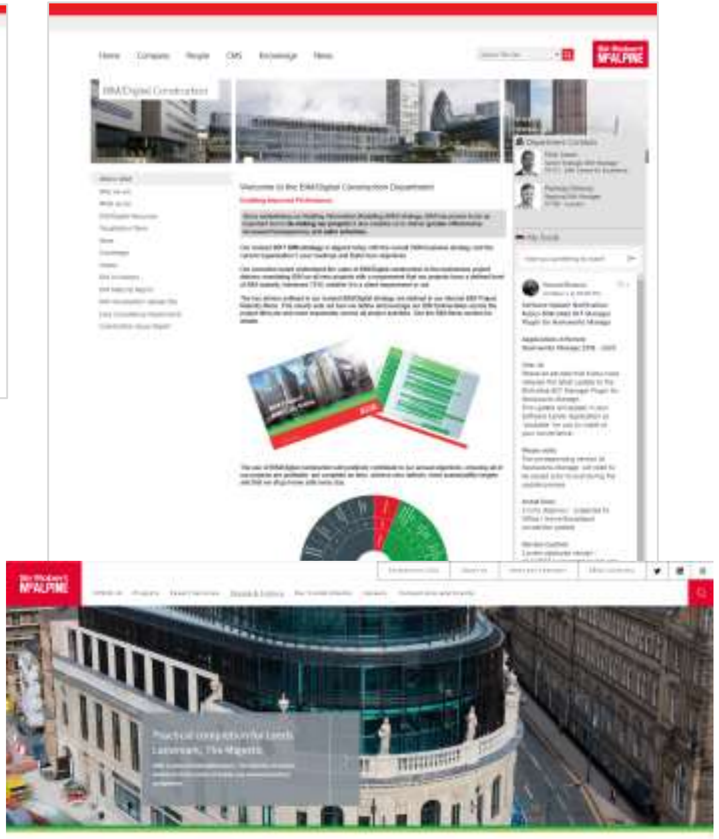
SRM PRODUCT KEY HOLDER
Nick Leach

TECHNICAL DEPLOYMENT
Ross Baker

TECHNICAL SPECIALIST
Mike Sealey / Peter Vlaar

INCLUDED IN IT LEEP

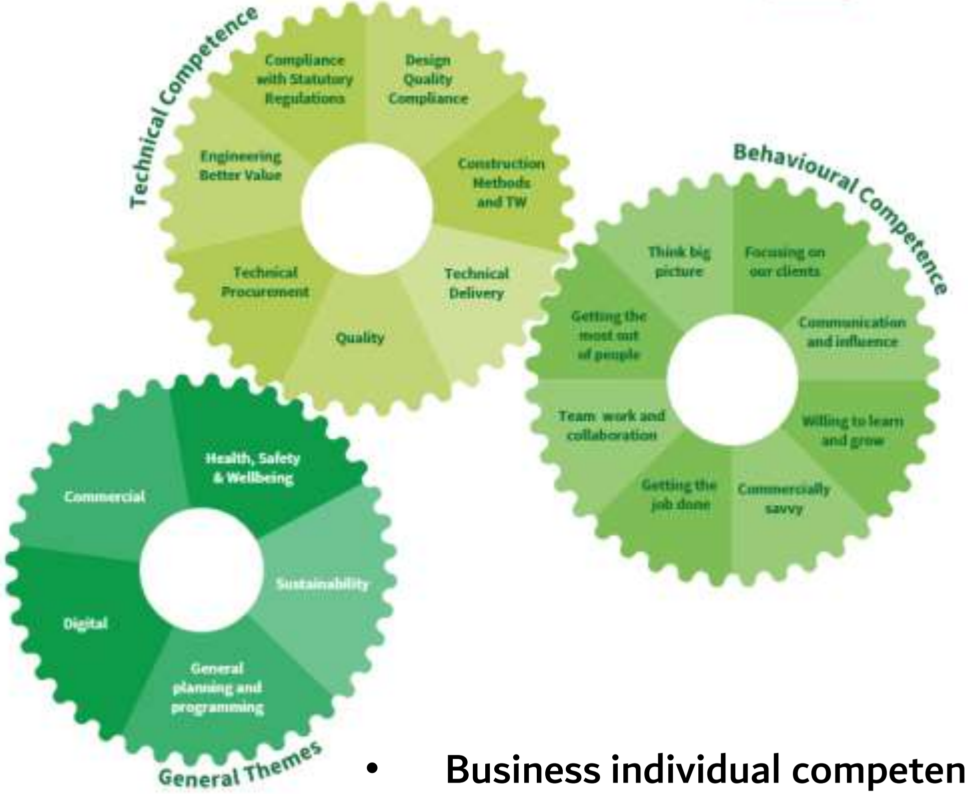
Digital Software Handbook


BIM/Digital Construction
Welcome to the BIM/Digital Construction Department
Sir Robert McAlpine

Sir Robert McALPINE

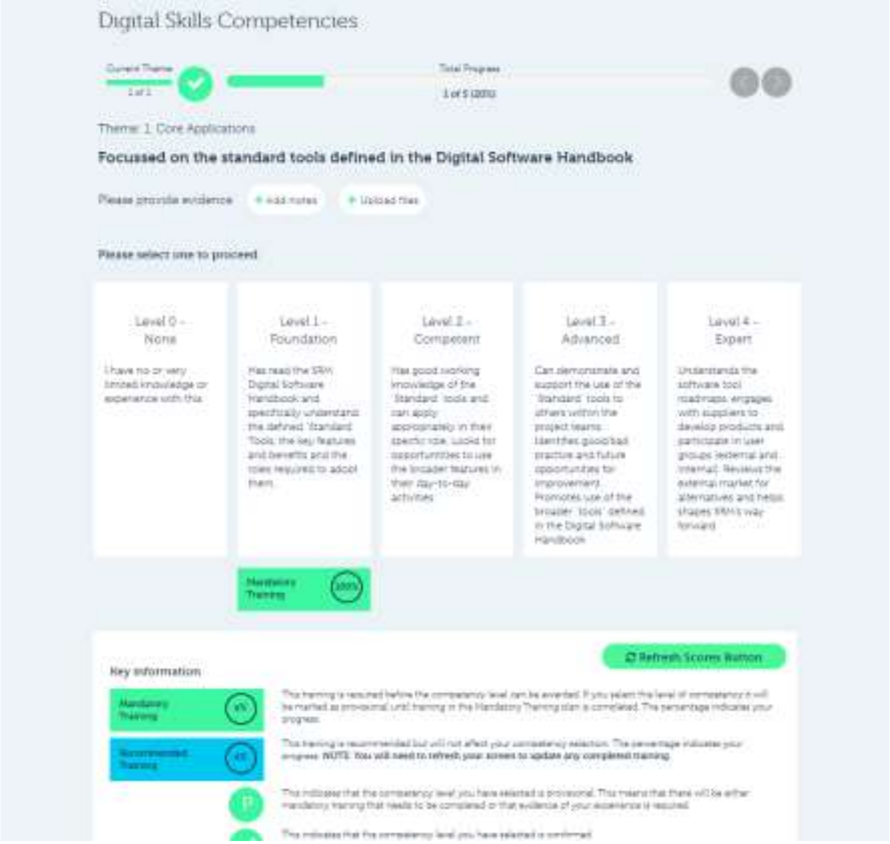
Project Controls EXPO London, UK

Business Individual Competency


Technical Competence
Compliance with Statutory Regulations
Design Quality Compliance
Engineering Better Value
Construction Methods and TW
Technical Procurement
Technical Delivery
Quality
Behavioural Competence
Think big picture
Focusing on our clients
Getting the most out of people
Communication and influence
Team work and collaboration
Willing to learn and grow
Getting the job done
Commercially savvy
General Themes
Health, Safety & Wellbeing
Commercial
Sustainability
Digital
General planning and programming

Complete Competence

Competency Assessments


Digital Skills Competencies

Current Theme 1 of 1

Total Progress 1 of 5 (20%)

Theme: 1 Core Applications

Focussed on the standard tools defined in the Digital Software Handbook

Please provide evidence

+ Add notes
+ Upload files

Please select one to proceed

Level 0 – None	Level 1 – Foundation	Level 2 – Competent	Level 3 – Advanced	Level 4 – Expert
I have no or very limited knowledge or experience with this.	Has read the SRM Digital Software Handbook and specifically understand the defined 'Standard Tools', the key features and benefits and the roles required to adopt them.	Has good working knowledge of the 'Standard' tools and can apply appropriately in their specific role. Looks for opportunities to use the broader features in their day-to-day activities.	Can demonstrate and support the use of the 'Standard' tools to others within the project teams. Identifies good/bad practice and future opportunities for improvement. Promotes use of the broader 'tools' defined in the Digital Software Handbook.	Understands the software tool roadmaps, engages with suppliers to develop products and participate in user groups (external and internal). Reviews the external market for alternatives and helps shapes SRM's way forward.
	Mandatory Training 100%			

Refresh Scores Button

Key information

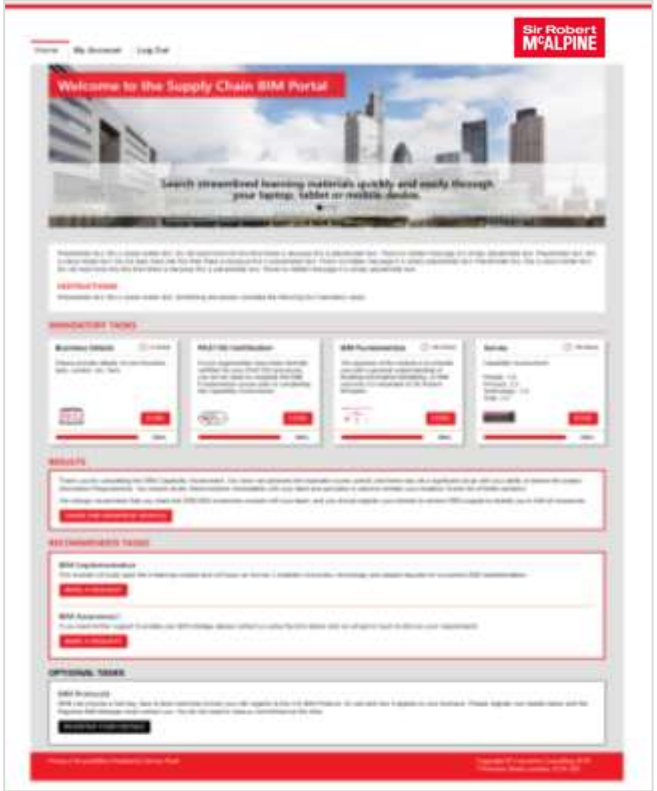
Mandatory Training 0%	This training is required before the competency level can be awarded. If you select this level of competency it will be marked as provisional until training in the Mandatory Training plan is completed. The percentage indicates your progress.
Recommended Training 0%	This training is recommended but will not affect your competency selection. The percentage indicates your progress. **NOTE: You will need to refresh your screen to update any completed training.**
P	This indicates that the competency level you have selected is provisional. This means that there will be either mandatory training that needs to be completed or that evidence of your experience is required.
	This indicates that the competency level you have selected is confirmed.

- Business individual competency framework for business identified.
- Digital theme for all roles
- Supporting evidencing for Building Safety Bill

Sir Robert McALPINE

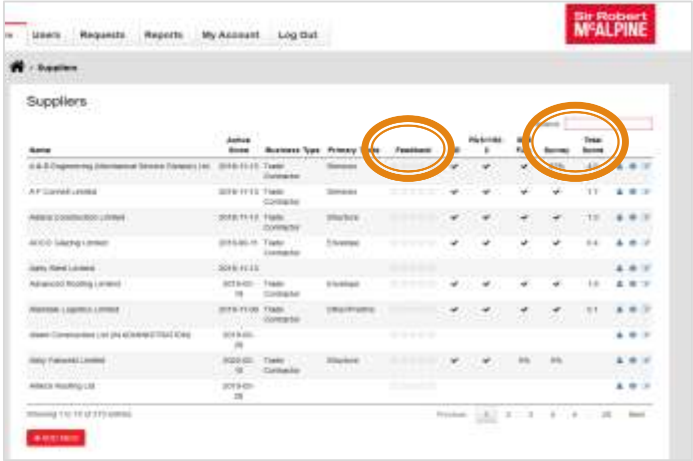
Project Controls EXPO London, UK

Assessing our Supply Chain Digital capability


Sir Robert McALPINE
Home
My Account
Log Out

Welcome to the Supply Chain BIM Portal

Search streamlined learning materials quickly and easily through your laptop, tablet or mobile device.

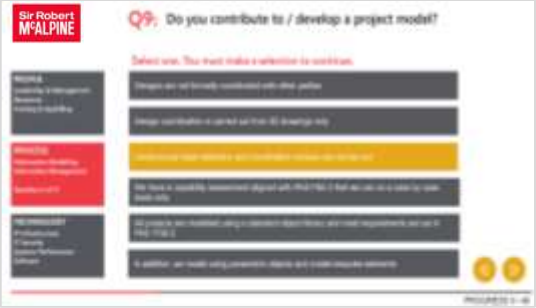

Users
Requests
Reports
My Account
Log Out
Sir Robert McALPINE

Suppliers

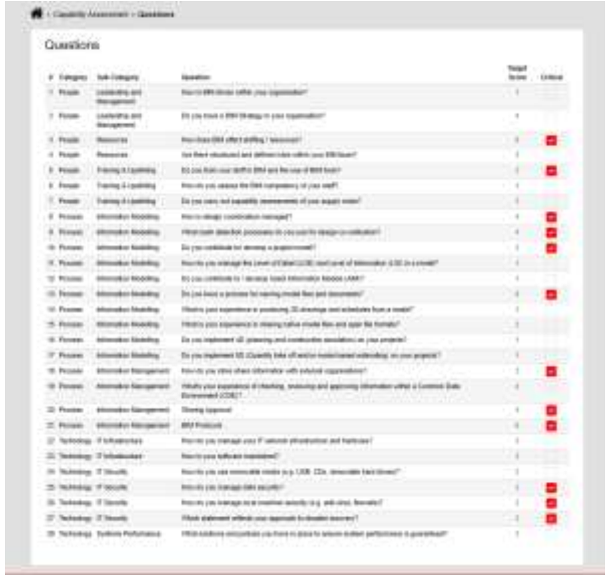
Progress Reports
41

"Very informative, and a first for us from any Main Contractor"

Gary Fry – Technical Director
Hillcrest Structural Limited


Sir Robert McALPINE

Q9. Do you contribute to / develop a project model?



Questions

Targeted **200** Tier 1 sub contractors in **2019**

190 contractors attended face to face workshops across all Regions

Target for **2021** to aim for over 250 Sub-contractors on portal

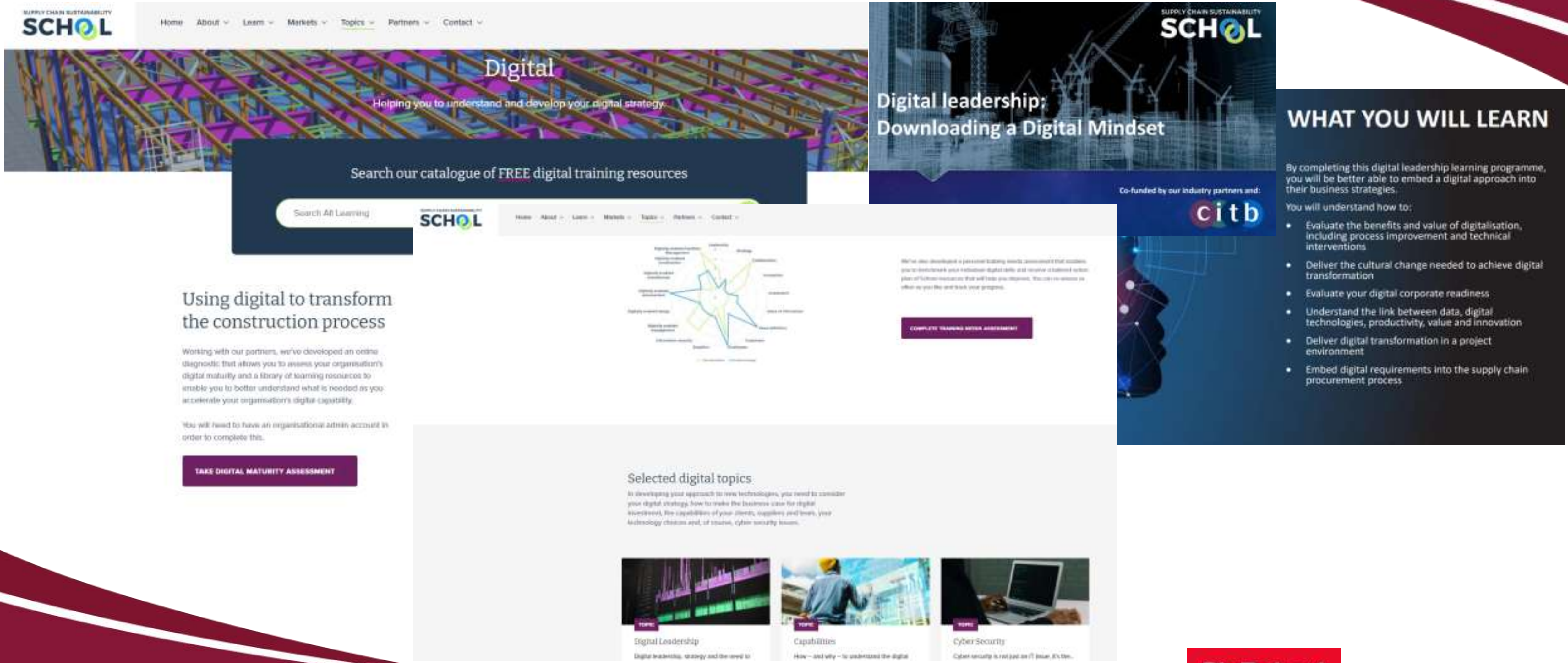
30+ SRM live projects and work packages now set up

Developed to support Procurement KPI's and sub contractor performance

Sir Robert McALPINE

Project Controls EXPO London, UK

Supply Chain Sustainability School


SUPPLY CHAIN SUSTAINABILITY SCHOOL
Home
About
Learn
Markets
Topics
Partners
Contact
Search All Learning
TOPIC
COMPLETE TRAINING NEEDS ASSESSMENT
Co-funded by our industry partners and:
citb

Digital

Helping you to understand and develop your digital strategy

Search our catalogue of FREE digital training resources

Using digital to transform the construction process

Working with our partners, we've developed an online diagnostic that allows you to assess your organisation's digital maturity and a library of learning resources to enable you to better understand what is needed as you accelerate your organisation's digital capability.

You will need to have an organisational admin account in order to complete this.

TAKE DIGITAL MATURITY ASSESSMENT

Selected digital topics

In developing your approach to new technologies, you need to consider your digital strategy, how to make the business case for digital investment, the capabilities of your clients, suppliers and team, your technology choices and, of course, cyber security issues.

Digital Leadership

Digital leadership, strategy and the need to

Capabilities

How – and why – to understand the digital

Cyber Security

Cyber security is not just an IT issue. It's the...

Digital leadership:
Downloading a Digital Mindset

WHAT YOU WILL LEARN

By completing this digital leadership learning programme, you will be better able to embed a digital approach into their business strategies.

You will understand how to:

- Evaluate the benefits and value of digitalisation, including process improvement and technical interventions
- Deliver the cultural change needed to achieve digital transformation
- Evaluate your digital corporate readiness
- Understand the link between data, digital technologies, productivity, value and innovation
- Deliver digital transformation in a project environment
- Embed digital requirements into the supply chain procurement process

Q & A

Project Overviews

Padraig Delaney– Regional Digital Construction Lead (London)

- Worked for Sir Robert McAlpine for xx years
- x
- x
- **BSI BIM Project information practitioner (ISO19650) –** certification
- x

Project overview

Padraig to add slides

Introduction Interactive Sessions

Irina Gales
Digital Construction Manager

Breakout 1
Use of site Model viewers

Lee Roy De Jongh
Digital Construction Manager

Breakout 2
How we manage coordination

Jade Booth
Digital Construction Coordinator

Breakout 3
Overview of 360 image capture

Peter Gregory
Digital Construction Manager

Breakout 4
VR adoption for Design validation & sign off

Bartosz Grzelak
Visualisation Specialist

Jonathan Head
Planner

Breakout 5
4D use in Work Winning/Tendering/Site delivery

Take a Break!

Breakout Sessions

Interactive Sessions

Audience to be split into smaller Groups

Irina Gales
Digital Construction Manager

Breakout 1
Use of site Model viewers

Lee Roy De Jongh
Digital Construction Manager

Breakout 2
How we manage coordination

Jade Booth
Digital Construction Coordinator

Breakout 3
Overview of 360 image capture

Peter Gregory
Digital Construction Manager

Breakout 4
VR adoption for Design validation & sign off

Bartosz Grzelak
Visualisation Specialist

Jonathan Head
Planner

Breakout 5
4D use in Work Winning/Tendering/Site delivery

Take a Break!

Recap/Summary

UK BIM FRAMEWORK

bsi.

cdbb
Centre for Digital Built Britain

UKBIM ALLIANCE
Enabling Digital Transformation

The UK BIM Framework was launched by the BSI, the Centre for Digital Built Britain (CDBB), and the UK BIM Alliance in **October 2019 to replace ‘BIM level 2’ as a framework for implementing best practice whole-life information management within the built environment**

The overarching goal of coordinating the implementation of BIM /Digital in the UK through the partnerships with BSI, CDBB & UKBIM Alliance

Number of main institutes now affiliating with UKBIM Alliance to support their the UK digital agenda

Industry Leadership/Direction

UNIVERSITY OF CAMBRIDGE

Centre for Digital Built Britain

cdbb

Welcome to the Centre for Digital Built Britain.

Video:
What is a National Digital Twin?

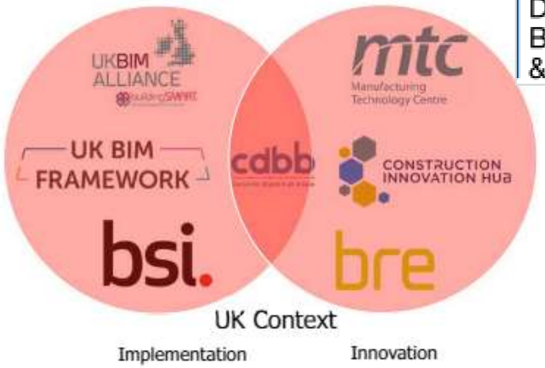
Latest news

Events

24 SEP

29 SEP

09 NOV


UKBIM ALLIANCE
buildingSMART
UK BIM FRAMEWORK
bsi.
mtc
Manufacturing Technology Centre
cdbb
CONSTRUCTION INNOVATION HUB
bre

UK Context

Implementation

Innovation

CONSTRUCTION INNOVATION HUB

Transforming performance and productivity in the construction industry

INDUSTRIAL STRATEGY

UK Research and Innovation

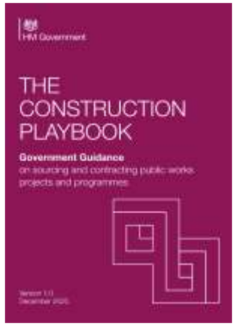
Construction Leadership Council

DIGITAL:
Delivering better, more certain outcomes by using BIM enabled ways of working

Industry Skills Plan

VALUE TOOLKIT
CONSTRUCTION INNOVATION HUB

Department for Business, Energy & Industrial Strategy



HM Government

THE CONSTRUCTION PLAYBOOK

Government Guidance on sourcing and contracting public works projects and programmes

Our Vision for the built environment

Infrastructure and Projects Authority

Transforming Infrastructure Performance: Roadmap to 2030

Skills and Competency Framework

cdbb

Driving transformation, delivering value

The pathway towards an Information Management Framework

cdbb

KPMG

The value of Information Management in the construction and infrastructure sector

Industrial Strategy

CITB

UNLOCKING CONSTRUCTION'S DIGITAL FUTURE:
A skills plan for industry

Building a Safer Future

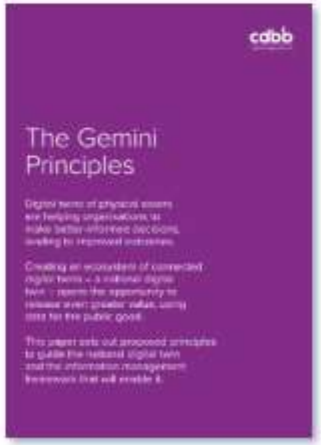
Independent Review of Building Regulations and Fire Safety: Final Report

Data for the public good

Industry Leadership/Direction

GUIDE TO DEVELOPING THE PROJECT BUSINESS CASE

HM Treasury
Guide to developing the project business case



The Gemini Principles

The Gemini Principles

The pathway towards an Information Management Framework

The Pathway towards an Information Management Framework

Skills and Competency Framework

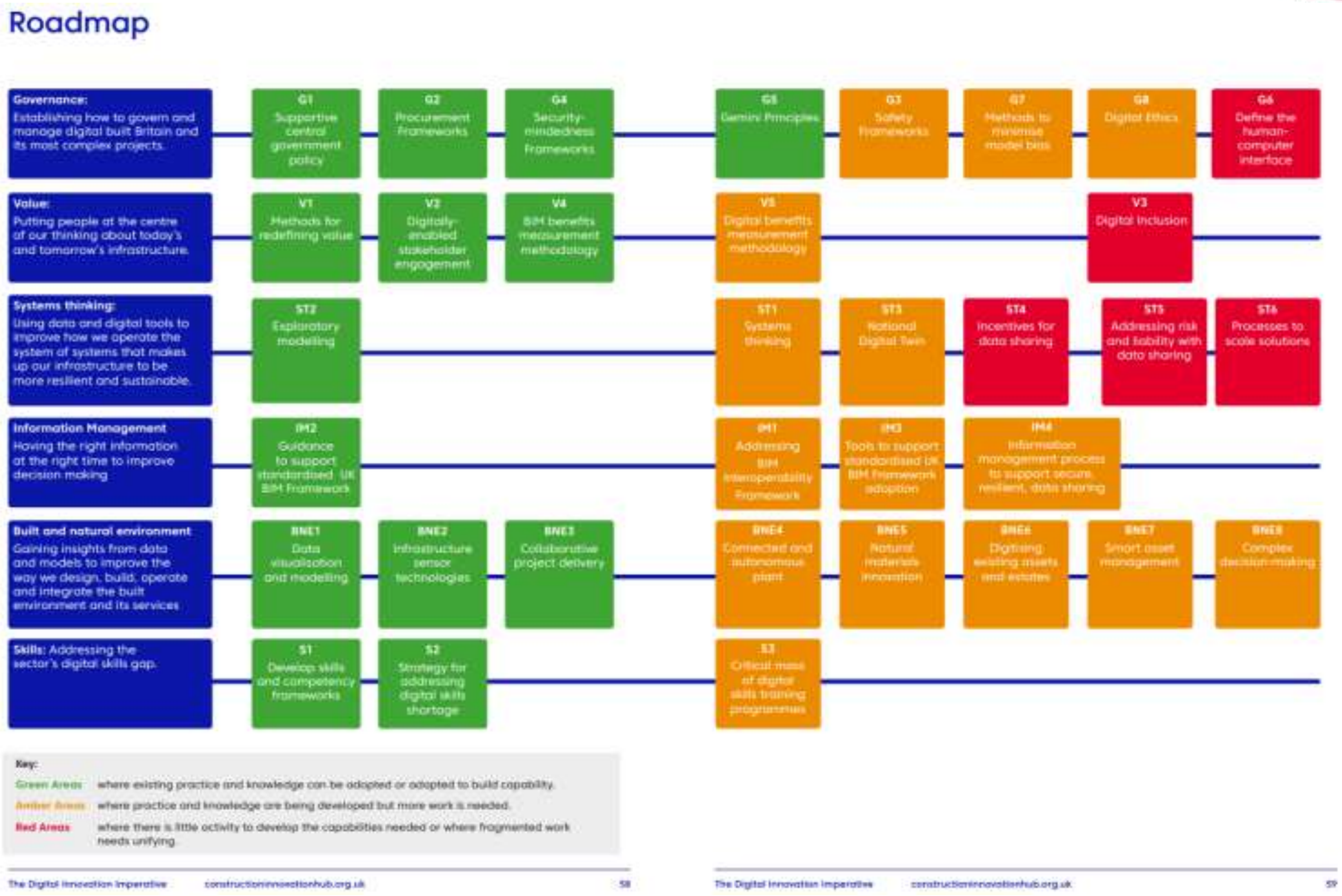
Skills and Competency Framework

UK BIM
FRAMEWORK
bsi.
cdbb
UKBIM ALLIANCE

UK BIM Framework

Digital Twin Toolkit
Developing the business case for your digital twin

Digital Twin Toolkit
Sign in or register to access the DT toolkit report via the DT Hub



Roadmap

Governance: Establishing how to govern and manage digital built Britain and its most complex projects.	G1 Supportive central government policy	G2 Procurement Frameworks	G4 Security-mindedness Frameworks	G5 Gemini Principles	G3 Safety Frameworks	G7 Methods to minimise model bias	G8 Digital Ethics	G6 Define the human-computer interface
Value: Putting people at the centre of our thinking about today's and tomorrow's infrastructure.	V1 Methods for redefining value	V2 Digitally-enabled stakeholder engagement	V4 BIM benefits measurement methodology	V5 Digital benefits measurement methodology			V3 Digital Inclusion	
Systems thinking: Using data and digital tools to improve how we operate the system of systems that makes up our infrastructure to be more resilient and sustainable.	ST2 Exploratory modelling			ST1 Systems thinking	ST3 National Digital Twin	ST4 Incentives for data sharing	ST5 Addressing risk and liability with data sharing	ST6 Processes to scale solutions
Information Management Having the right information at the right time to improve decision making	IM2 Guidance to support standardised UK BIM Framework			IM1 Addressing BIM interoperability Framework	IM3 Tools to support standardised UK BIM Framework adoption	IM4 Information management process to support secure, resilient, data sharing		
Built and natural environment Gaining insights from data and models to improve the way we design, build, operate and integrate the built environment and its services	BNE1 Data visualisation and modelling	BNE2 Infrastructure sensor technologies	BNE3 Collaborative project delivery	BNE4 Connected and autonomous plant	BNE5 Natural materials innovation	BNE6 Digitising existing assets and estates	BNE7 Smart asset management	BNE8 Complex decision-making
Skills: Addressing the sector's digital skills gap.	S1 Develop skills and competency frameworks	S2 Strategy for addressing digital skills shortage		S3 Critical mass of digital skills training programmes				

Key:

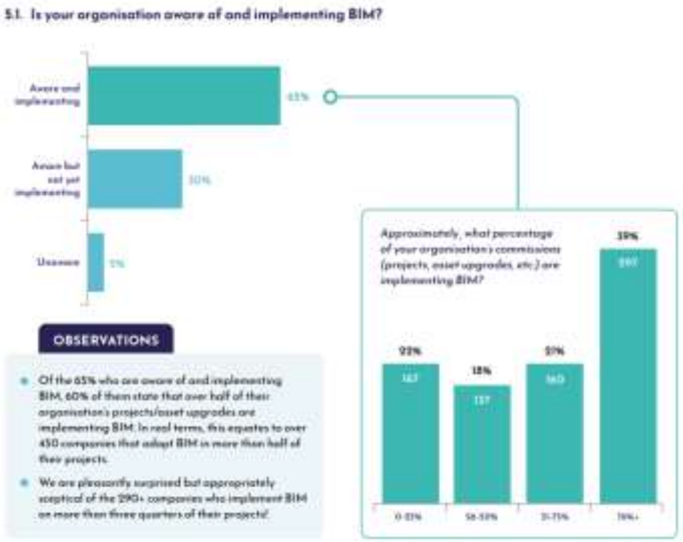
Green Areas	where existing practice and knowledge can be adopted or adapted to build capability.
Amber Areas	where practice and knowledge are being developed but more work is needed.
Red Areas	where there is little activity to develop the capabilities needed or where fragmented work needs unifying.

The Digital Innovation Imperative constructioninnovationhub.org.uk 58

The Digital Innovation Imperative constructioninnovationhub.org.uk 59

UKBIM ALLIANCE UKBIM ALLIANCE

State of the Nation Survey 2021



5.1. Is your organisation aware of and implementing BIM?

OBSERVATIONS

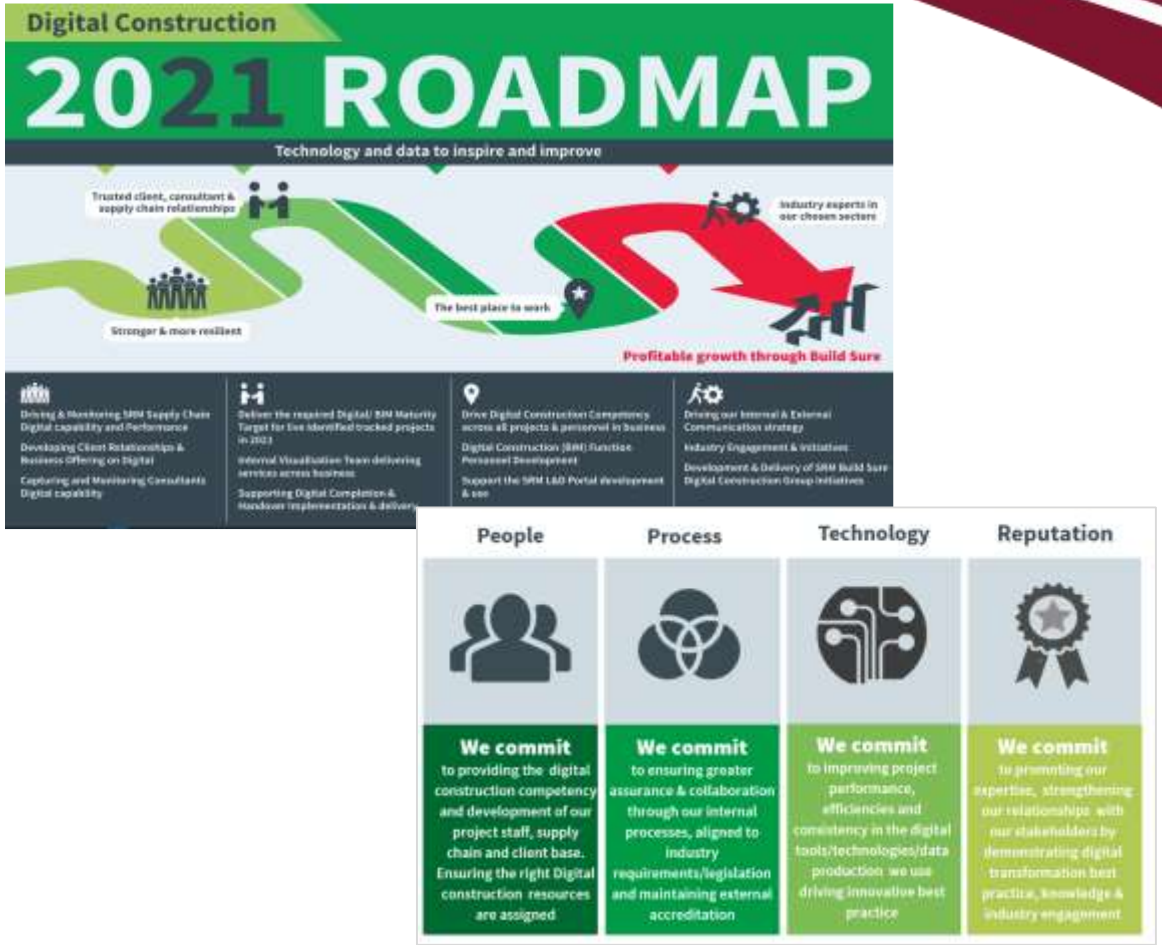
- Of the 65% who are aware of and implementing BIM, 60% of them state that over half of their organisation's projects/asset upgrades are implementing BIM. In real terms, this equates to over 450 companies that adopt BIM in more than half of their projects.
- We are pleasantly surprised but appropriately sceptical of the 290+ companies who implement BIM on more than three quarters of their projects!

Sir Robert McALPINE

Project Controls EXPO London, UK

Purpose: Digital Construction/BIM - *The driver for our projects and personnel to adopt a more digitalised way of working. **Improving our predictability, performance and transparency enabled by digitalised processes/technologies** to enhance efficiencies and consistency in our project delivery. Supporting our client, internal and legislative requirements.*

Vision/Mission: Digital Construction/BIM – *SRM To be a leader and pioneer in digital construction making it tangible and understandable, with clearly defined value to all parties that are contributing and in turn enable greater efficiencies and outputs for all.*


Trusted client, consultant & supply chain relationships
Stronger & more resilient
The best place to work
Industry experts in our chosen sectors
Profitable growth through Build Sure

Digital Construction

2021 ROADMAP

Technology and data to inspire and improve

Driving & Monitoring SRM Supply Chain Digital capability and Performance

Developing Client Relationships & Business Offering on Digital

Capturing and Monitoring Consultants Digital capability

Deliver the required Digital/ BIM Maturity Target for five identified tracked projects in 2021

Internal Visualisation Team delivering services across business

Supporting Digital Completion & Handover implementation & delivery

Drive Digital Construction Competency across all projects & personnel in business

Digital Construction (BIM) Function Personnel Development

Support the SRM L&D Portal development & use

Driving our Internal & External Communication strategy

Industry Engagement & Initiatives

Development & Delivery of SRM Build Sure Digital Construction Group initiatives

People	Process	Technology	Reputation
We commit to providing the digital construction competency and development of our project staff, supply chain and client base. Ensuring the right Digital construction resources are assigned	**We commit** to ensuring greater assurance & collaboration through our internal processes, aligned to industry requirements/legislation and maintaining external accreditation	**We commit** to improving project performance, efficiencies and consistency in the digital tools/technologies/data production we use driving innovative best practice	**We commit** to promoting our expertise, strengthening our relationships with our stakeholders by demonstrating digital transformation best practice, knowledge & industry engagement

Digital Construction/BIM - Setting us apart

- How we have a **consistent clear strategy (maturity)** in reporting digital construction/BIM delivery across all projects, with data driven metrics now collected over past 3 years

- Having a **internal dedicated Digital construction team** delivering Digital/BIM processes/technologies/data reporting on projects, where we can support and build **our client offering, education, advisory role and build long term relationships**

- How we are **capturing and assessing our supply chain digital capability,** supporting their development and journey

- Showcasing our **involvement with industry** as leaders in innovation initiatives such as projects like the Forge (digital is front and centre & part of Innovate UK) or for example our involvement in UK BIM Alliance communities or sustainability supply chain school initiatives

Looking forward...

- Growing client requirements for Digital and Data, BIM, Smart building, IOT, Digital estates

- Driving continued consistency in how we use digital tools and technology

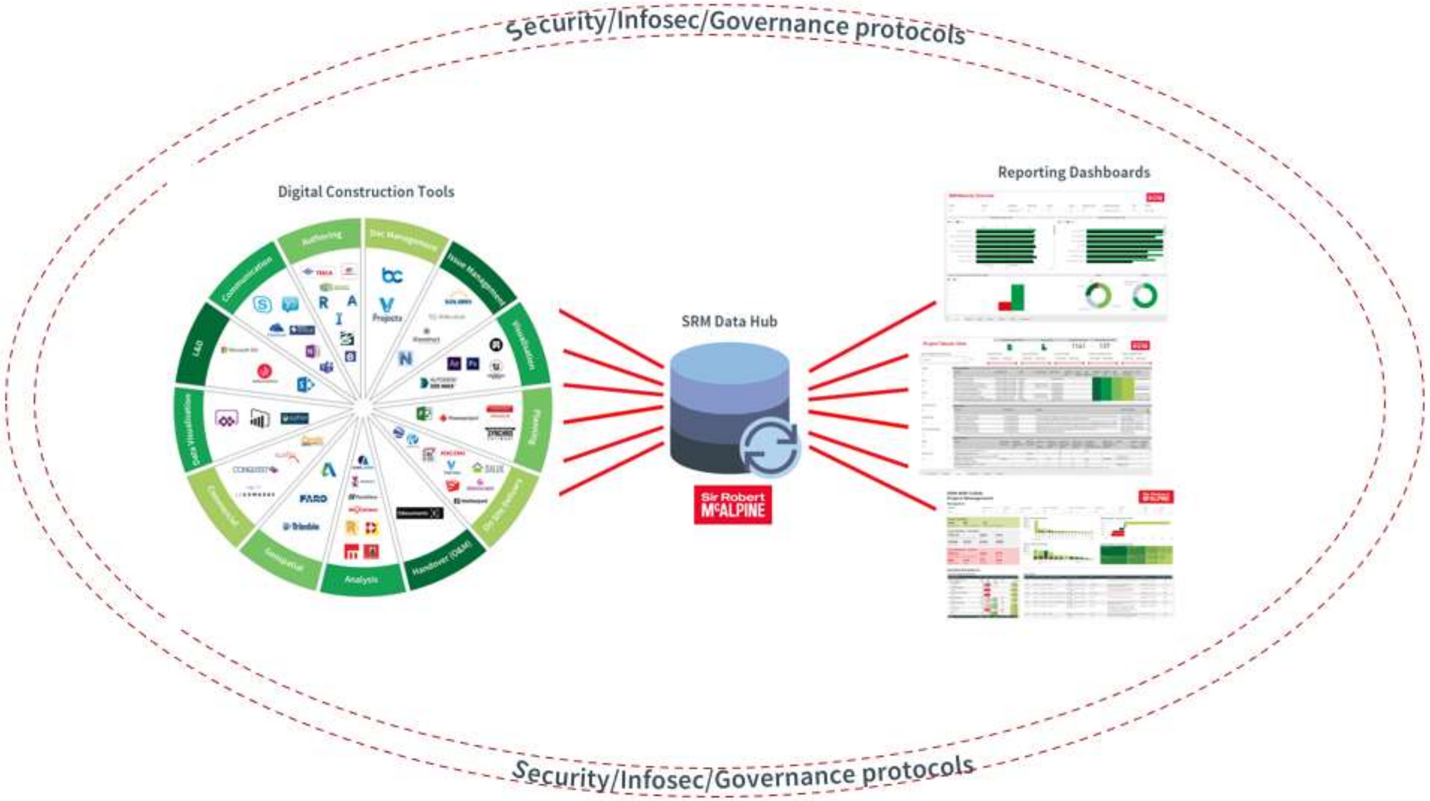
- Harness more ways of data production to inform greater business decisions and project efficiencies

- Utilise as the foundations for supporting the wider business digital agenda and culture. Improving our efficiencies with less staff in business through digital

- Supports attracting the next generation and how we retain our current talent

- Enhancing awareness of our branding and Communication externally (Business development/Work winning, Client engagement, linkage to Schools/Universities)

Harnessing Data


Security/Infosec/Governance protocols
Digital Construction Tools
Authoring
Doc Management
Issue Management
Visualisation
Planning
On Site Delivery
Handover (O&M)
Analysis
Geospatial
Commercial
Data Visualisation
L&D
Communication
Projects
FARO
Trimble
CONQUEST
SRM Data Hub
Sir Robert McALPINE
Reporting Dashboards
Security/Infosec/Governance protocols

CN Construction News

McAlpine: 25 firms sign up to data-sharing project

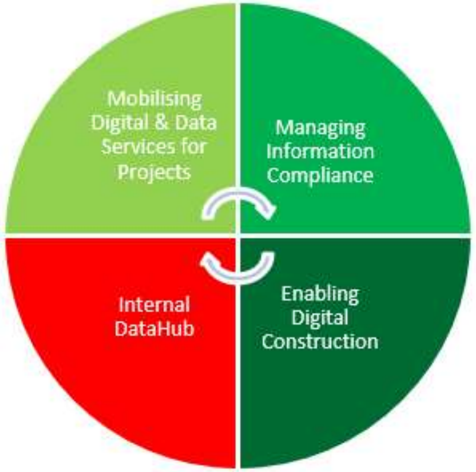
Sir Robert McALPINE
CN Briefing

Ongoing challenges

- Continued communication, awareness and culture of business understanding is required to keep momentum
- Embedding BIM, digital and information management processes further across all functions in the business
- Ongoing training and development to increase digital dexterity
- Adaptability and adherence to industry standards and developments
- Importance around cyber security of information and data

Takeaways

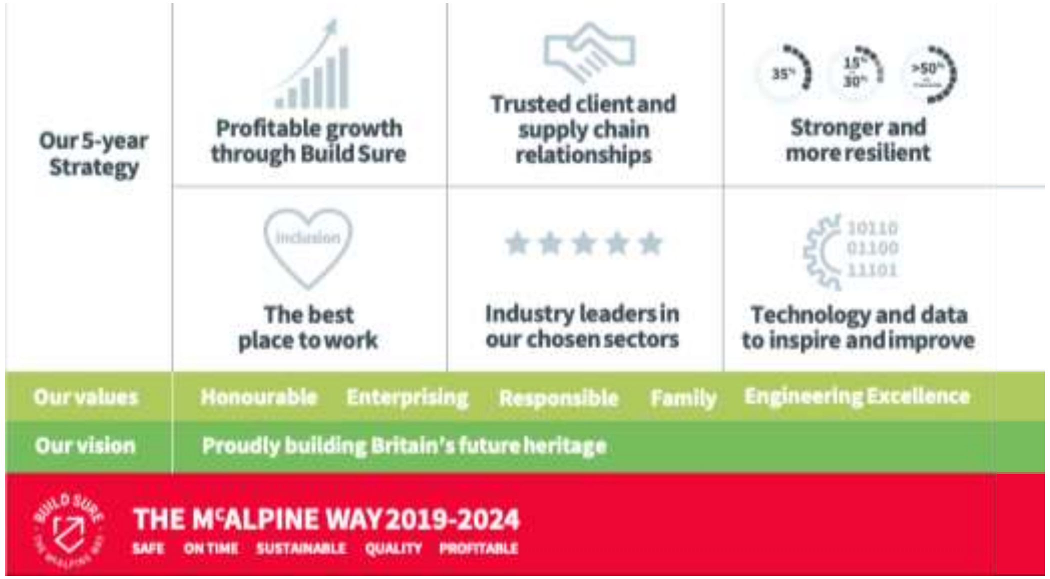
- Embed both a digital and data strategy in the business
- Understand your Client drivers & development partnerships
- Build digital competency in with individual performance indicators
- Use of technology needs to have a purpose and outputs defined
- Provide resources and platform for learning in business
- Reengineer internal processes/procedures aligned with ongoing industry requirements and accreditations
- Focus on your supply chain capability & education
- Continued communication, awareness and culture of business understanding in digitalisation is key


Mobilising Digital & Data Services for Projects
Managing Information Compliance
Internal DataHub
Enabling Digital Construction

bsi.
BIM Verified
Design & Construction
Capital/Delivery
ISO 19650-1 and -2

Sir Robert McALPINE

Invested in Digital Construction



Our 5-year Strategy

- Profitable growth through Build Sure
- Trusted client and supply chain relationships
- Stronger and more resilient
- The best place to work
- Industry leaders in our chosen sectors
- Technology and data to inspire and improve

Our values Honourable Enterprising Responsible Family Engineering Excellence

Our vision Proudly building Britain's future heritage

THE McALPINE WAY 2019-2024

SAFE ON TIME SUSTAINABLE QUALITY PROFITABLE

Thanks...

Q & A