Digital and B.I.M. Maturity Workshop

SUPPLY CHAIN SUSTAINABILITY SCHOOL

SUPPLY CHAIN SUSTAINABILITY SCHOOL

Section One

Introductions

Digital

Offsite

SPOTLIGHT

David Emery

SUPPLY CHAIN SUSTAINABILITY SCHOOL

Please introduce yourself using Mentimeter

SUPPLY CHAIN SUSTAINABILITY SCHOOL

Real-time polls and audience Q&A

1. Go to www.menti.com in a new browser or tab on your phone or computer.
2. Enter the menti code: **2179 3301** or use this QR Code
3. Don't disconnect from the webinar, you will still need to hear the trainer

Mentimeter

We're investing £27.4 billion in the strategic road network (SRN) between 2020 and 2025. Digital, data and technology are critical to our main objective: providing safer, smoother and more reliable journeys for our customers.

Go to **www.menti.com** and use the code **2179 3301**

What was your most disappointing digital purchase?

Mentimeter

Press S to hide image

Section Two

About the School

Our mission

“To be the world class collaboration to enable a more sustainable built environment”

The School is a common approach to...

1. Assessing supply chain sustainability competence
2. Developing suppliers' sustainability knowledge

17,000+ companies

60,000+ individual learners

180+

Partners leading our work

180+ Partners leading our work

180+ Partners leading our work

180+ Partners leading our work

180+ Partners leading our work

180+

Partners leading our work

Our digital mission

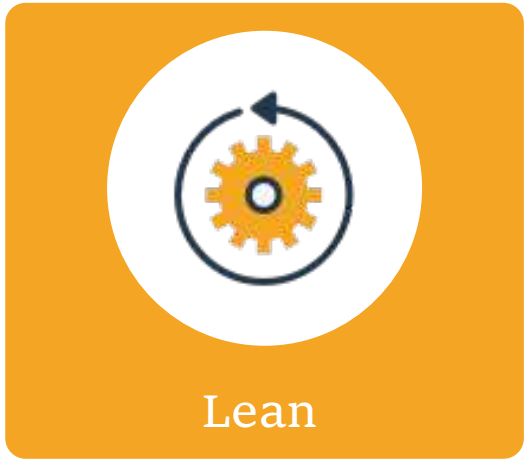
“To accelerate the adoption of digital technologies in the construction supply chain”

Free

Confidential

CPD Accredited

Key topic areas



Variety of learning resources

Video based toolbox talks, 300 selected videos, 90+ e-learning modules

CPD Events & Workshops

Fairness, inclusion & Respect

E-Learning

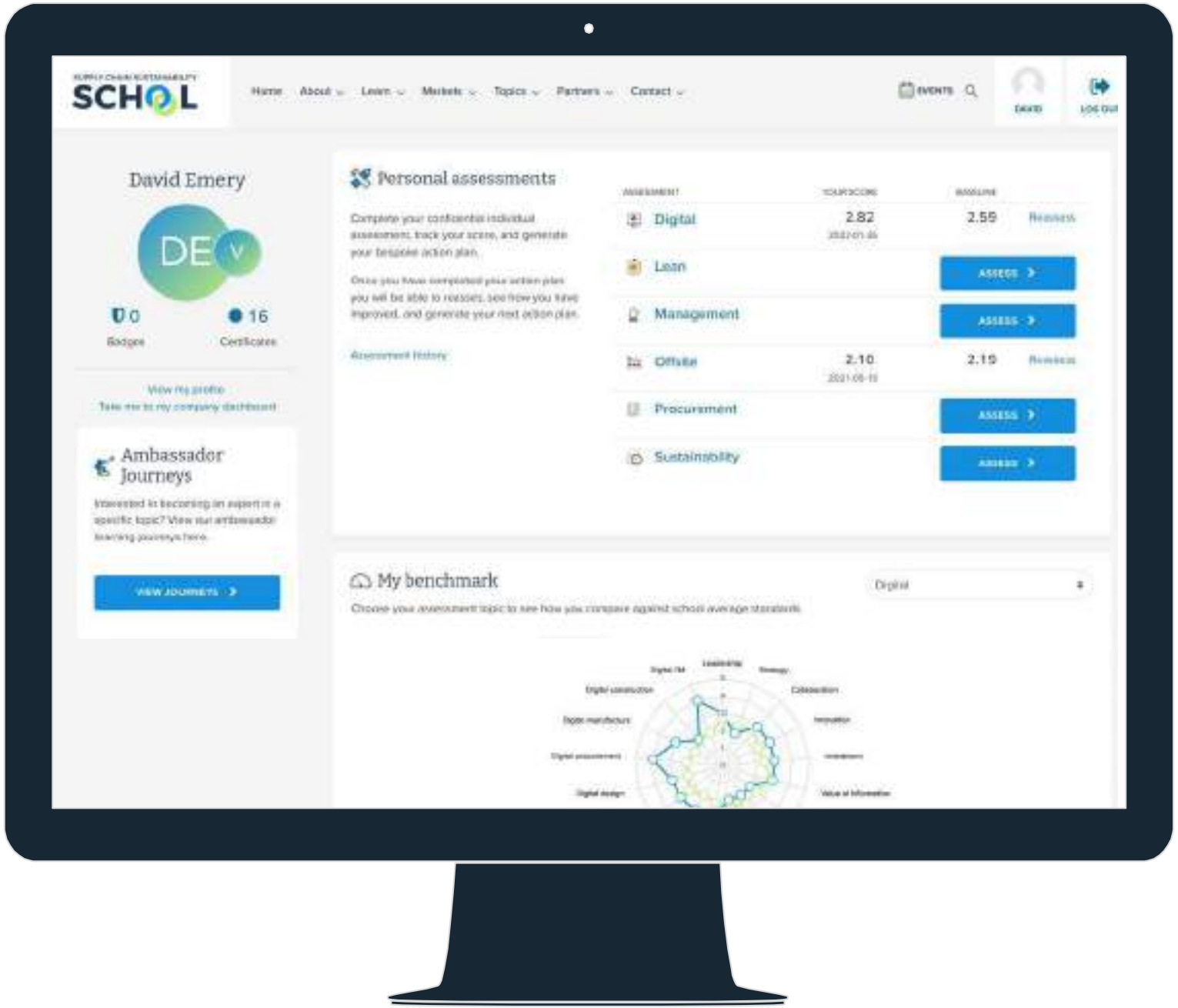
Web Pages

Toolkits

Video Sustainability Shorts

Virtual Training & Meetings

What	Virtual Workshop	Lunch n Learn	Business Bytes	Leadership Groups
Length	1.5-3 hrs	30 mins- 1 hr	1.5-2 hrs	1.5-2 hrs
Attendee limit	25-30	500	500	250
For	Interactive session with break out group and audience engagement	Build knowledge or learning on specific topics or School use	Host a multiple speaker presentation to engage on topics / strategies	Leadership Group or SIG meetings

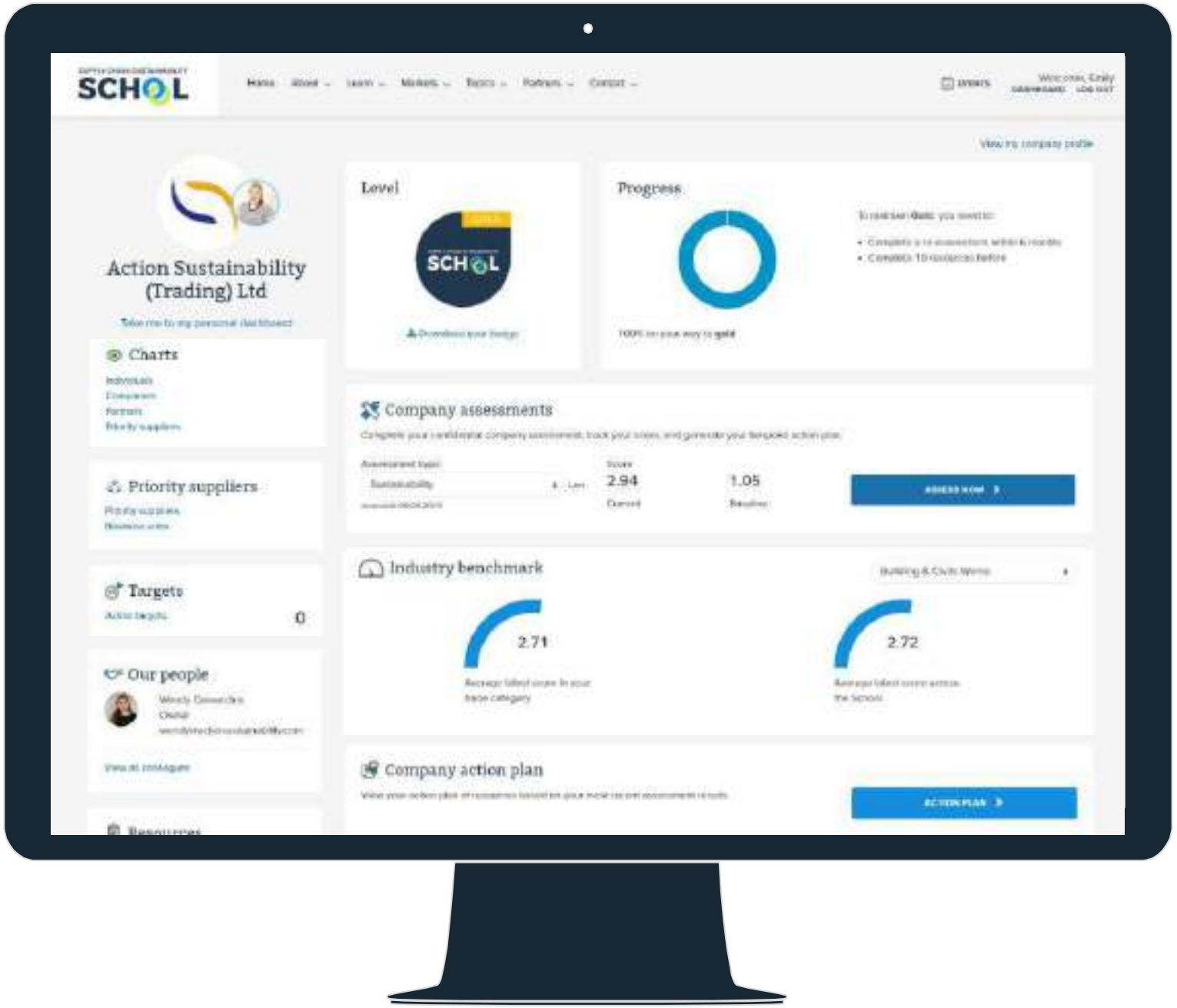


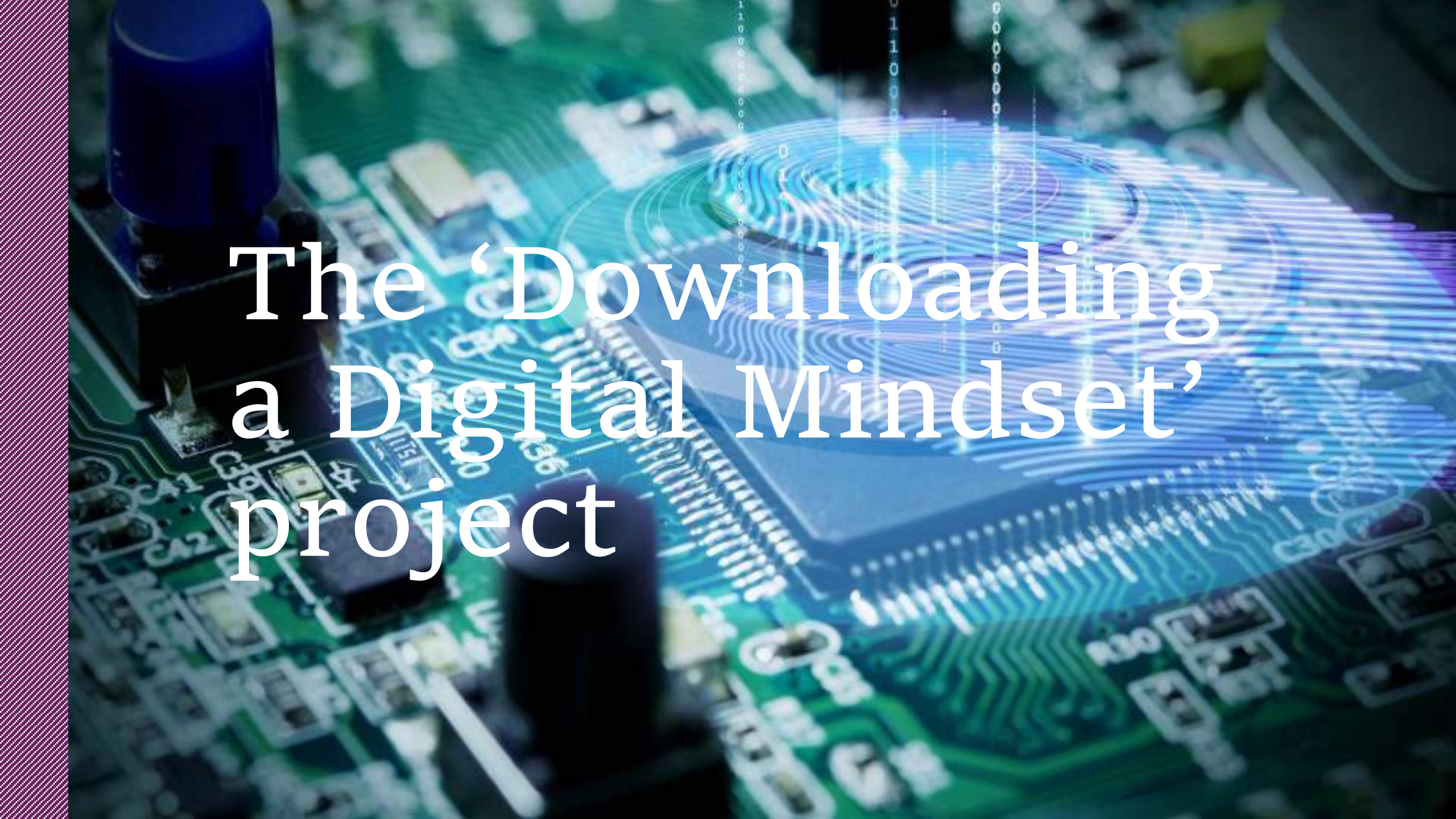
Individual Learning:

Individuals can use the School for their own professional development, and export reports to show resources viewed / CPD time accrued.

Corporate Dashboards:

Each supplier who becomes a member gets their own sustainability dashboard to track progress and action plans.




The ‘Downloading a Digital Mindset’ project

SUPPLY CHAIN SUSTAINABILITY SCHOOL

‘Downloading a Digital Mindset’

Outputs from the project

Online Resource Library

Training Needs Assessment

Digital Maturity Assessment

Outputs from the project (cont'd)

5 New eLearning Modules

10 Digital Bite Videos

Digital Leadership Course

Leadership Group

SUPPLY CHAIN SUSTAINABILITY SCHOOL

HOCHTIEF

MICHELMERSH
Britain's Brick Specialists

CAUSEWAY

NG Bailey

Sir Robert McALPINE

KIER

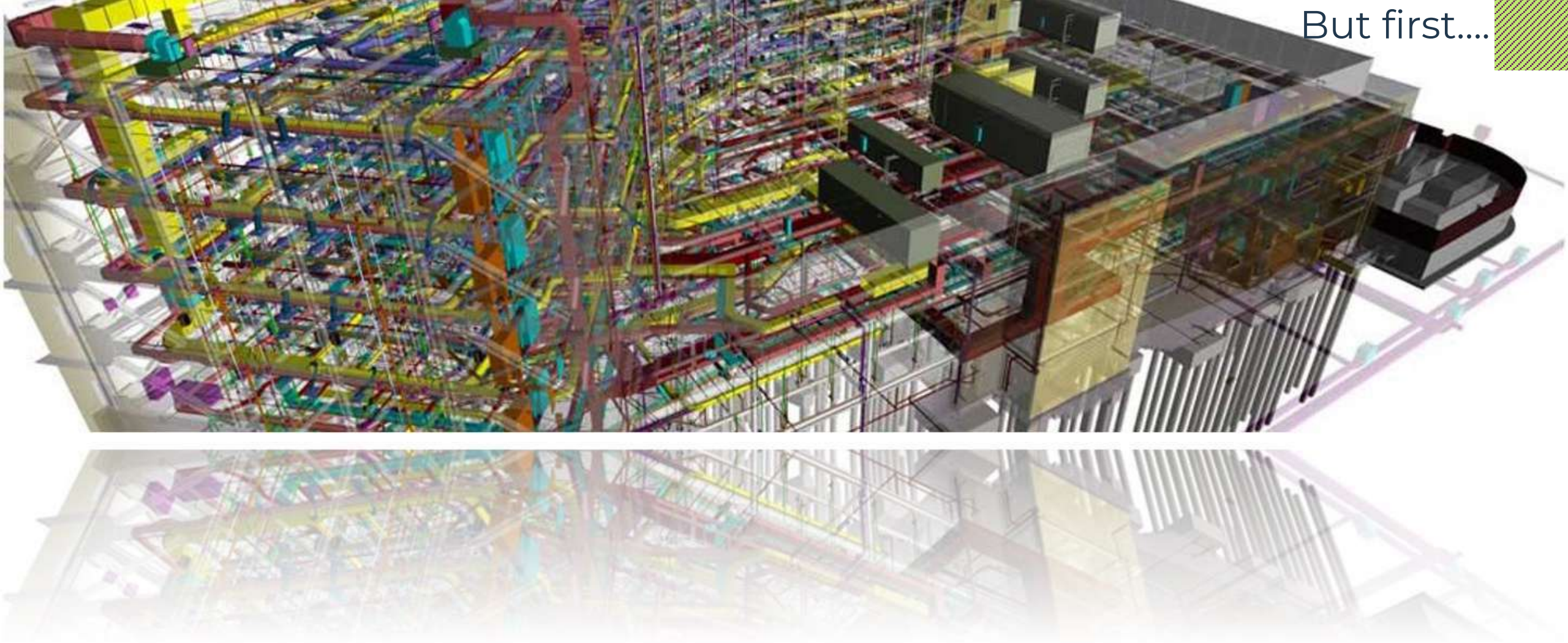
Leadership Group

SUPPLY CHAIN SUSTAINABILITY SCHOOL

SUPPLY CHAIN SUSTAINABILITY SCHOOL

Brand New Digital Leadership Course

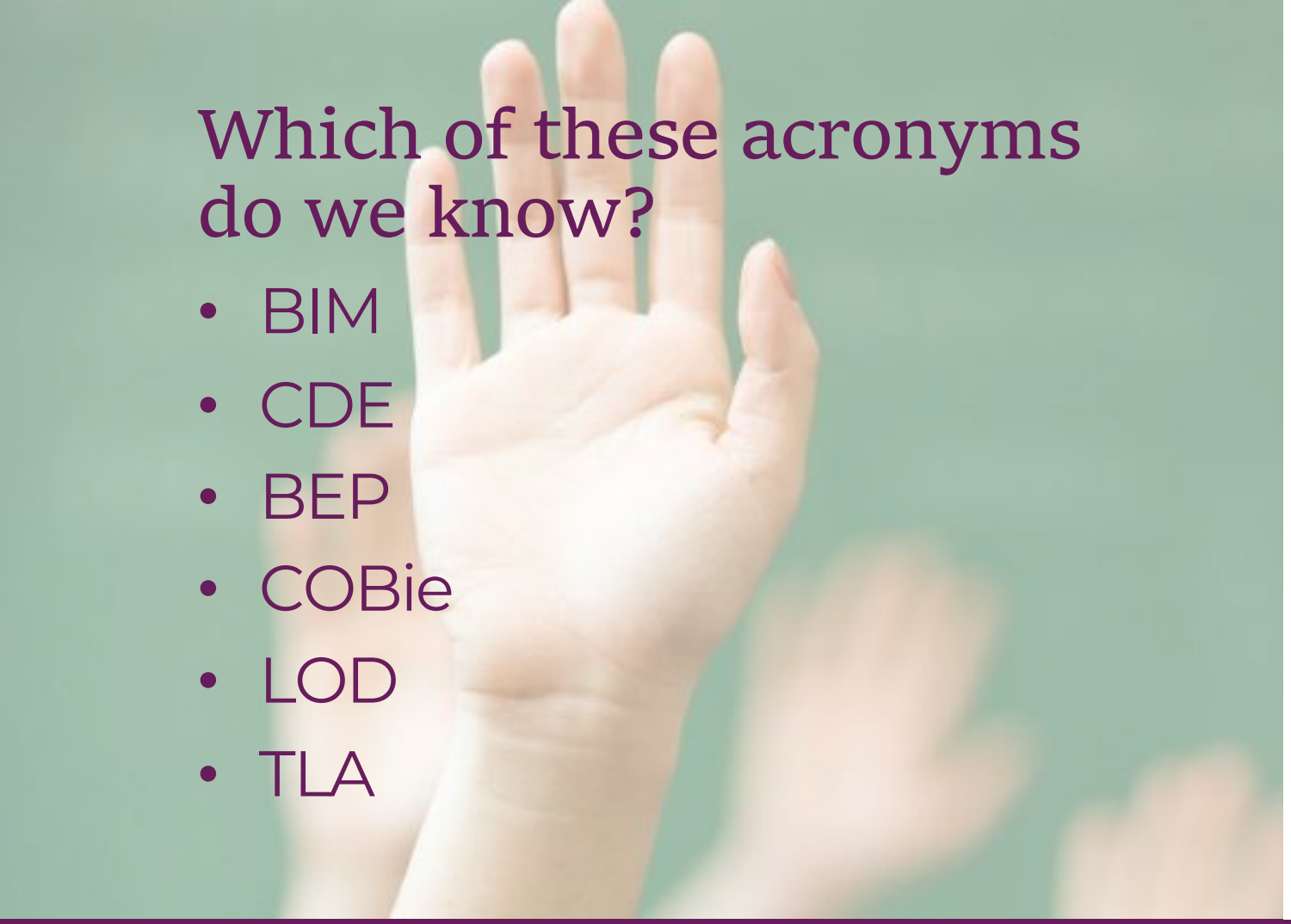
But first....



Where has BIM gone?

Section Four

Your own Digital/ B.I.M. Strategies



Which of these acronyms do we know?

- BIM
- CDE
- BEP
- COBie
- LOD
- TLA

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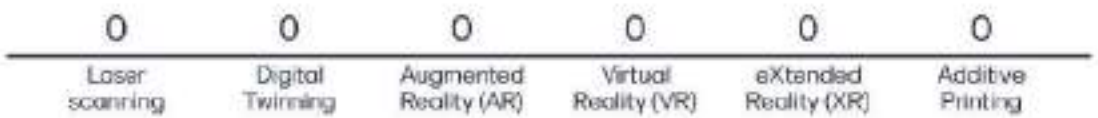
Go to **www.menti.com** and use the code **2179 3301**

Which of these technologies are in use in your company?

Mentimeter



Press ENTER to show correct

Discussion

Your own Digital/ B.I.M. Strategies

Go to **www.menti.com** and use the code **2179 3301**

Name some BENEFITS of BIM in your job

Press S to show image

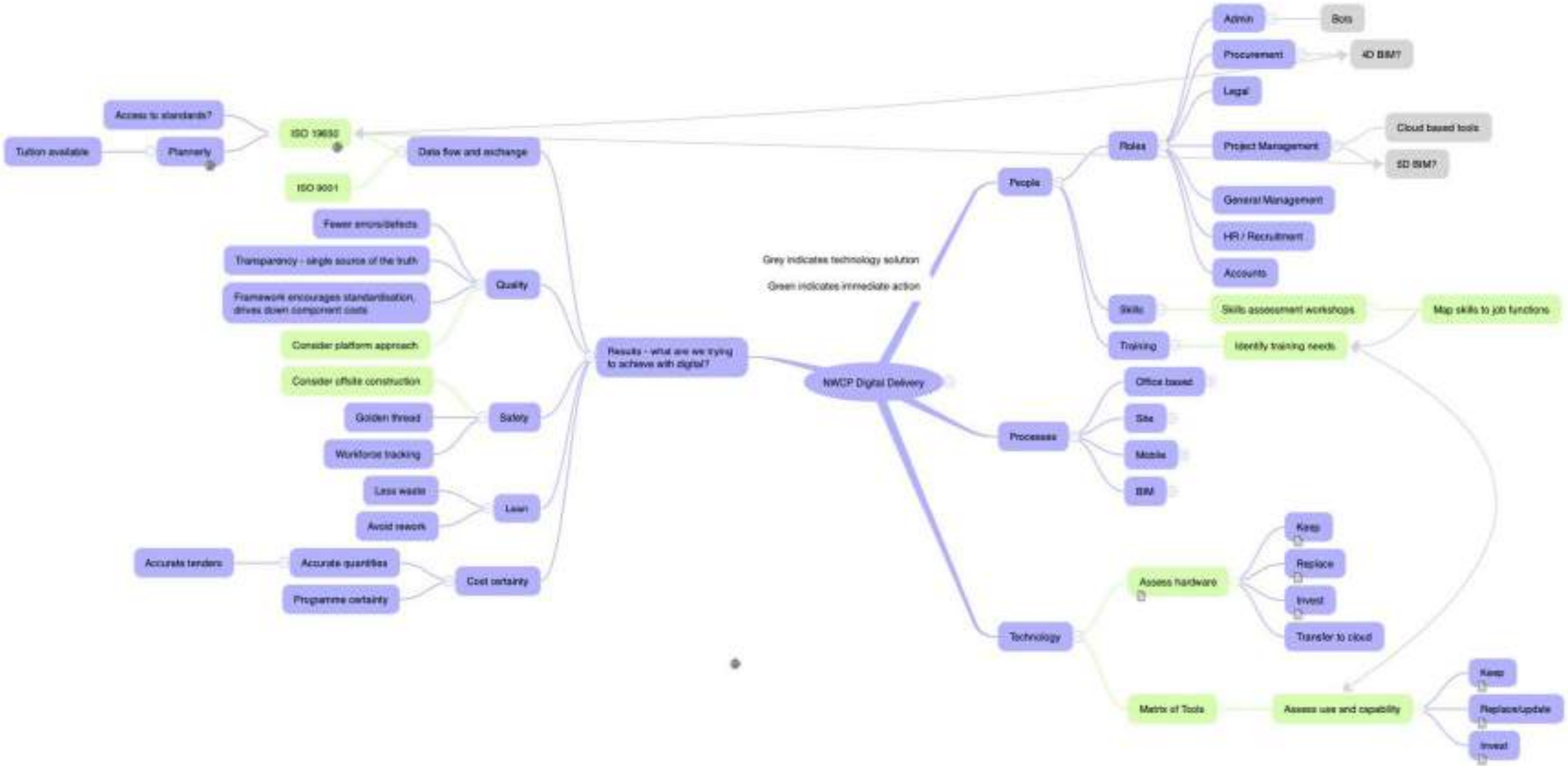
Go to **www.menti.com** and use the code **2179 3301**

Name some RISKS of BIM in your job

Press S to show image

NWCP Digital Delivery.itmz
Edited

Select a single topic to view its note.



80%
Focus

Section Five

The problem with Digital Data

What was your most disappointing digital purchase?

“The amount of data created in the next three years will eclipse the amount created in the previous thirty”

IDC (”The premier global market intelligence firm”)

SUPPLY CHAIN SUSTAINABILITY SCHOOL

How much data?

- This year the world is expected to generate 97 zettabytes (that is: 97 trillion gigabytes) of data. By 2025, it could almost double to 181 zettabytes
- Digitization generated 4% of global greenhouse gas emissions in 2020
- Data centres (responsible for 2.5% of all human-induced carbon dioxide) have a greater carbon footprint than the aviation industry (2.1%).
(Source: World Economic Forum)

Image: Unsplash/imgix

“40% of enterprise data is either inaccurate, incomplete, or unavailable”

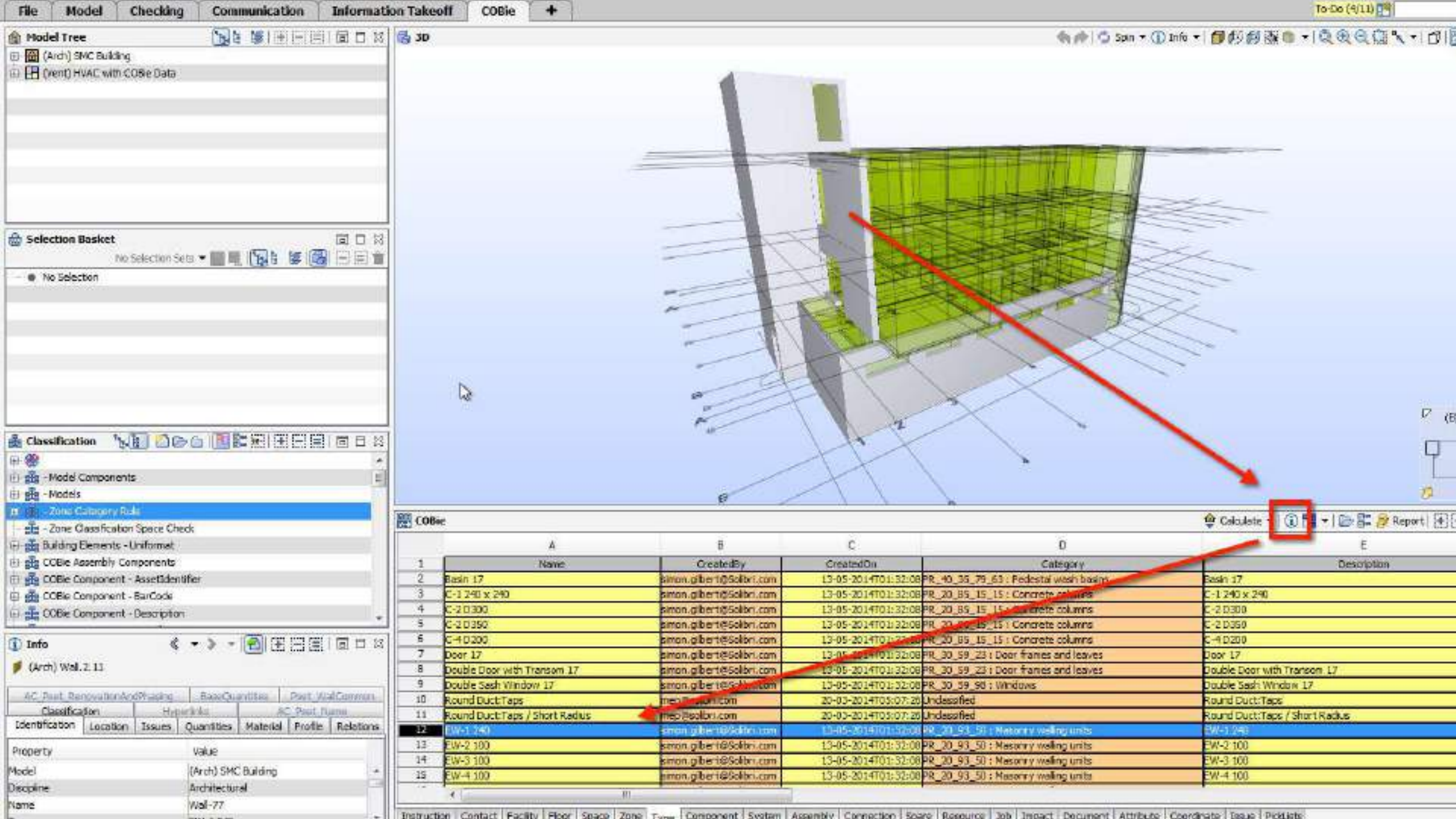
Gartner study

"75% of execs don't have a high level of trust in their data"

HFS research

“We’re not that much smarter than we used to be, even though we have much more information — and that means the real skill now is learning how to pick out the useful information from all this noise.”

statistician Nate Silver in NPR


File
Model
Checking
Communication
Information Takeoff
COBie
Model Tree
(Arch) SMC Building
(rent) HVAC with COBie Data
Selection Basket
No Selection
Classification
- Model Components
- Models
- Zone Category Rule
- Zone Classification Space Check
Building Elements - Uniformat
COBie Assembly Components
COBie Component - AssetIdentifier
COBie Component - BarCode
COBie Component - Description
Info
(Arch) Wall 2.11
Identification
Location
Issues
Quantities
Material
Profile
Relations
Property
Value
Model
(Arch) SMC Building
Discipline
Architectural
Name
Wall-77
3D
Spin
Info
COBie
Calculate
Report
Name
CreatedBy
CreatedOn
Category
Description
Basin 17
C-1 240 x 240
C-2 D300
C-2 D350
C-4 D200
Door 17
Double Door with Transom 17
Double Sash Window 17
Round Duct:Taps
Round Duct:Taps / Short Radius
EW-1 240
EW-2 100
EW-3 100
EW-4 100

… how can the user benefit from digital data?

Data's Journey:

- Collection
- Collation
- Analysis
- Simulation
- Automation

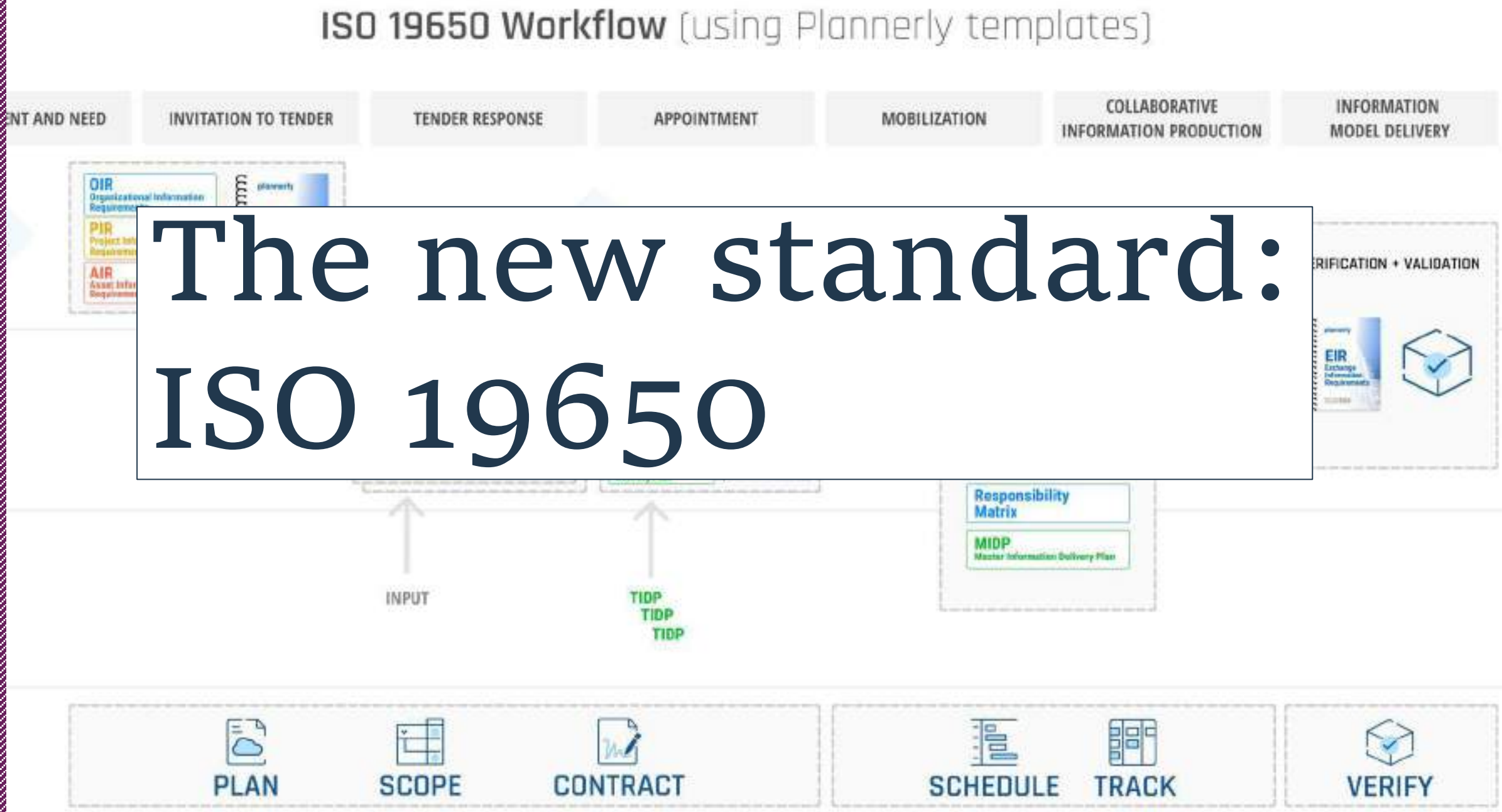
For leaders to become digital leaders,
they will need to develop new skill sets.

Digital Investment Challenges

- Where to start
- Return on Investment
- Complexity
- Implementation
- Digitise or Digitalise?.

Change is inevitable and inexorable

Your biggest risk:
Doing nothing



The new standard: ISO 19650

ICS › 93 › 93.010

ISO 19650-1:2018

Organization and digitization of information about buildings and civil engineering works, including building information modelling (BIM) — Information management using building information modelling — Part 1: Concepts and principles

ICS › 93 › 93.010

ISO 19650-1:2018

Outlines the concepts and principles for information management

at a stage of maturity described as "building information modelling (BIM) according to the ISO 19650 series".

Provides recommendations for a framework to manage information

including exchanging, recording, versioning and organizing for all actors.

Applicable to the whole life cycle of any built asset

including strategic planning, initial design, engineering, development, documentation and construction, day-to-day operation, maintenance, refurbishment, repair and end-of-life.

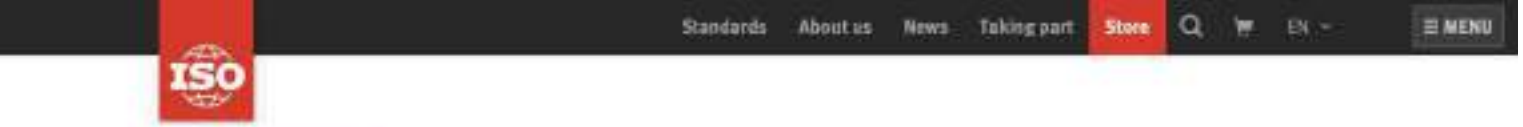
Can be adapted to assets or projects of any scale and complexity

so as not to hamper the flexibility and versatility that characterize the large range of potential procurement strategies and so as to address the cost of implementing this document..

ICS › 93 › 93.010

ISO 19650-2:2018

Organization and digitization of information about buildings and civil engineering works, including building information modelling (BIM) — Information management using building information modelling — Part 2: Delivery phase of the assets



ICS › 93 › 93.010

ISO 19650-2:2018

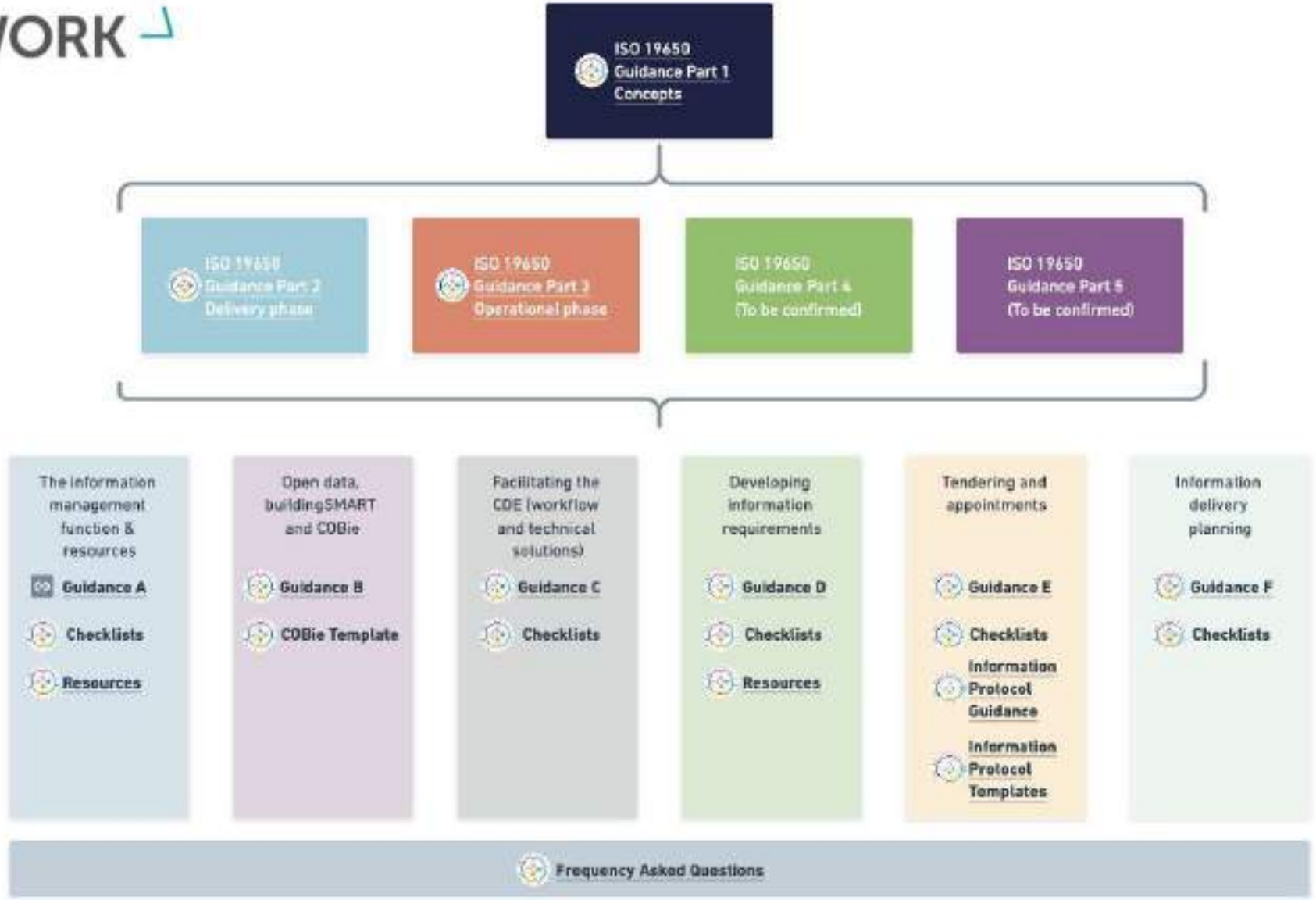
This document specifies requirements for information management

in the form of a management process, within the context of the delivery phase of assets and the exchanges of information within it, using building information modelling.

This document can be applied to all types of assets

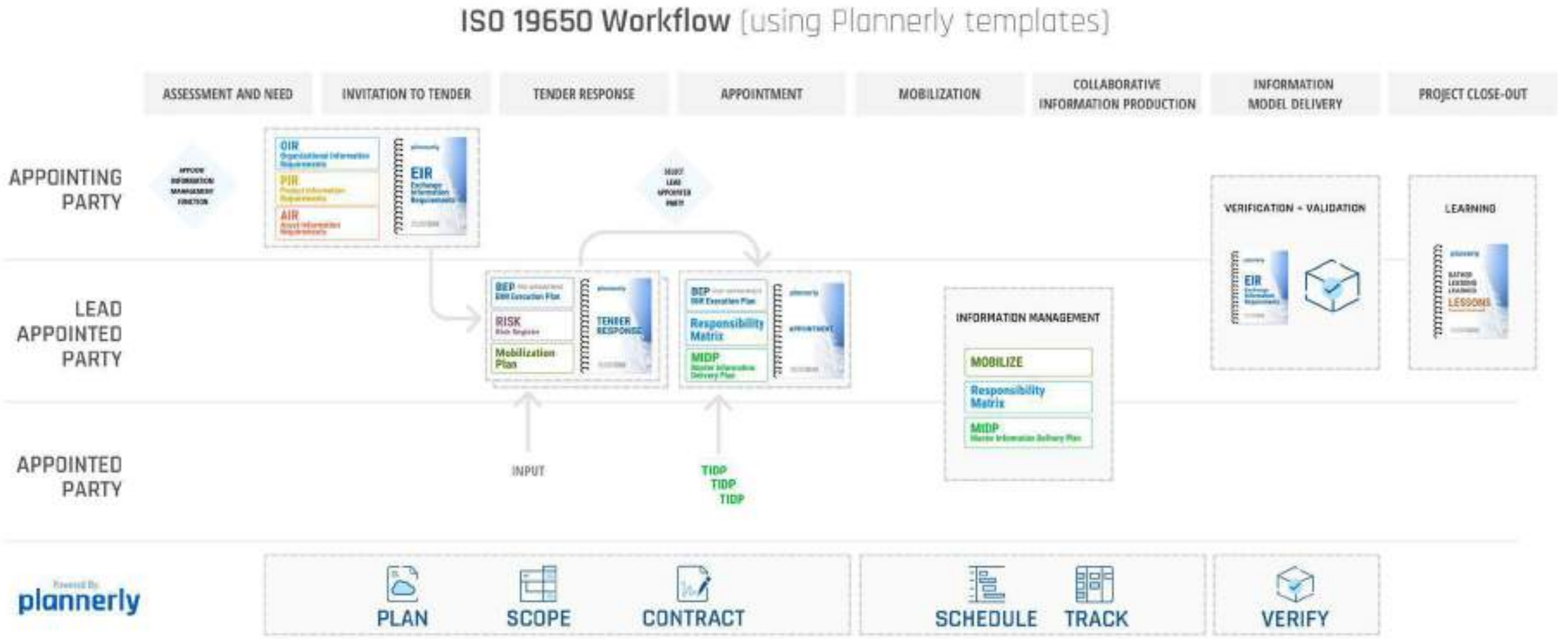
and by all types and sizes of organizations, regardless of the chosen procurement strategy.

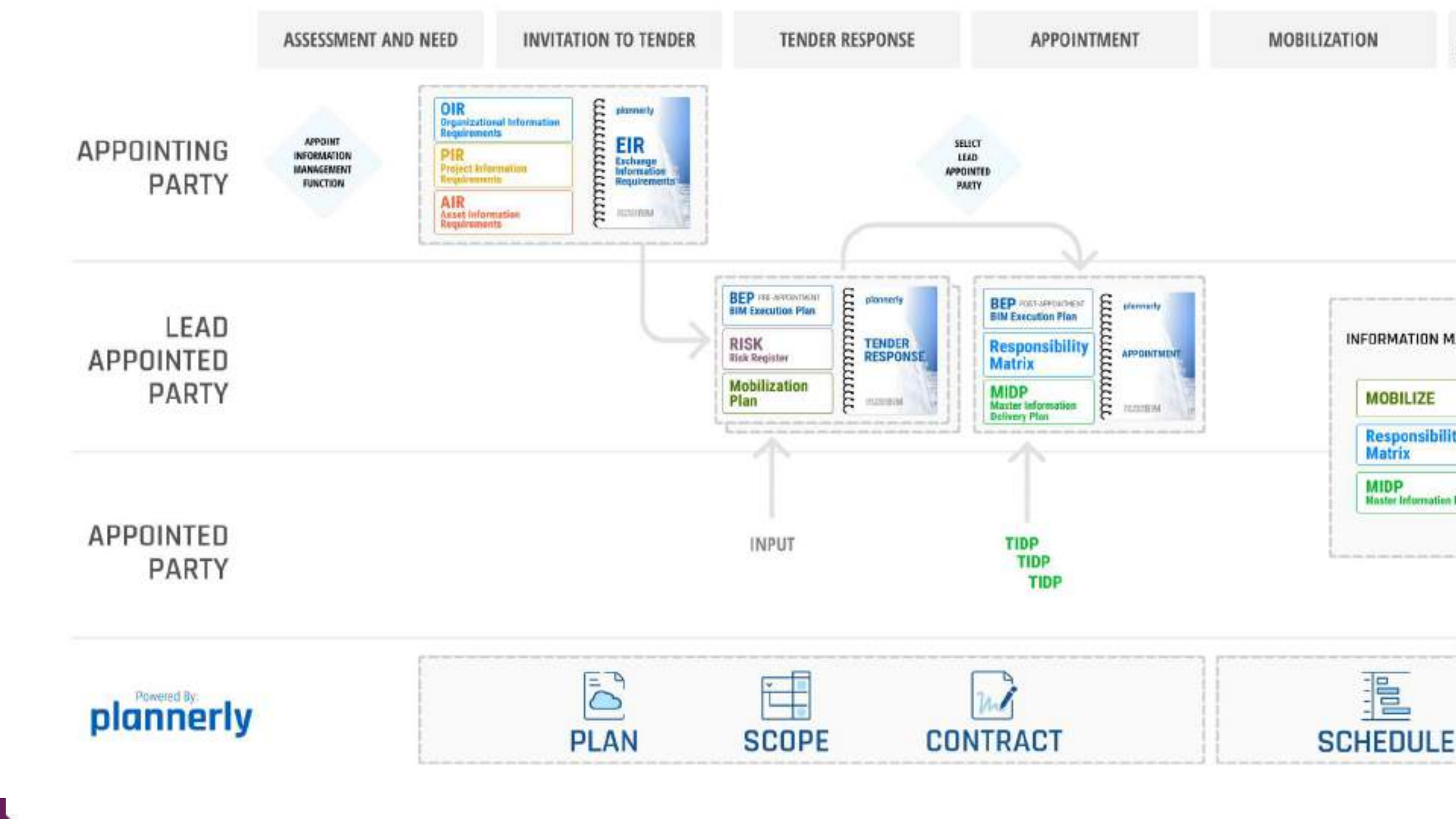
UK BIM FRAMEWORK



https://ukbimframeworkguidance.notion.site/UK-BIM-Framework-Guidance-20a045d01cfb42fea2fef35a7b988dbc

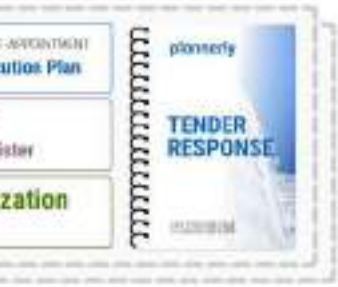
Templates


ISO 19650 Workflow (using Plannerly templates)
ASSESSMENT AND NEED
INVITATION TO TENDER
TENDER RESPONSE
APPOINTMENT
MOBILIZATION
COLLABORATIVE INFORMATION PRODUCTION
INFORMATION MODEL DELIVERY
PROJECT CLOSE-OUT
APPOINTING PARTY
LEAD APPOINTED PARTY
APPOINTED PARTY
OIR
PIR
AIR
EIR
BEP
RISK
Mobilization Plan
TENDER RESPONSE
Responsibility Matrix
MIDP
INFORMATION MANAGEMENT
MOBILIZE
VERIFICATION + VALIDATION
LEARNING
LESSONS
INPUT
TIDP
TIDP
TIDP
PLAN
SCOPE
CONTRACT
SCHEDULE
TRACK
VERIFY
plannerly


ASSESSMENT AND NEED
INVITATION TO TENDER
TENDER RESPONSE
APPOINTMENT
MOBILIZATION
APPOINTING PARTY
LEAD APPOINTED PARTY
APPOINTED PARTY
APPOINT INFORMATION MANAGEMENT FUNCTION
OIR
Organizational Information Requirements
PIR
Project Information Requirements
AIR
Asset Information Requirements
plannerly
EIR
Exchange Information Requirements
SELECT LEAD APPOINTED PARTY
BEP
BIM Execution Plan
RISK
Risk Register
Mobilization Plan
TENDER RESPONSE
BEP
BIM Execution Plan
Responsibility Matrix
MIDP
Master Information Delivery Plan
APPOINTMENT
INFORMATION M
MOBILIZE
Responsibilit Matrix
MIDP
INPUT
TIDP
TIDP
TIDP
Powered By:
plannerly
PLAN
SCOPE
CONTRACT
SCHEDULE

TENDER RESPONSE | APPOINTMENT | MOBILIZATION | COLLABORATIVE INFORMATION PRODUCTION | INFORMATION MODEL DELIVERY | PROJECT CLOSE-OUT

SELECT LEAD APPOINTED PARTY



PUT

TIDP
TIDP
TIDP

INFORMATION MANAGEMENT

MOBILIZE

Responsibility Matrix

MIDP
Master Information Delivery Plan

VERIFICATION + VALIDATION

LEARNING

COPE

CONTRACT

SCHEDULE

TRACK

VERIFY


1 of 6
ISO 19650
APPOINTMENT PROCESS EXPLAINED
START


2 of 6
ISO 19650
Invitation to Tender
SIMPLE PROCESS

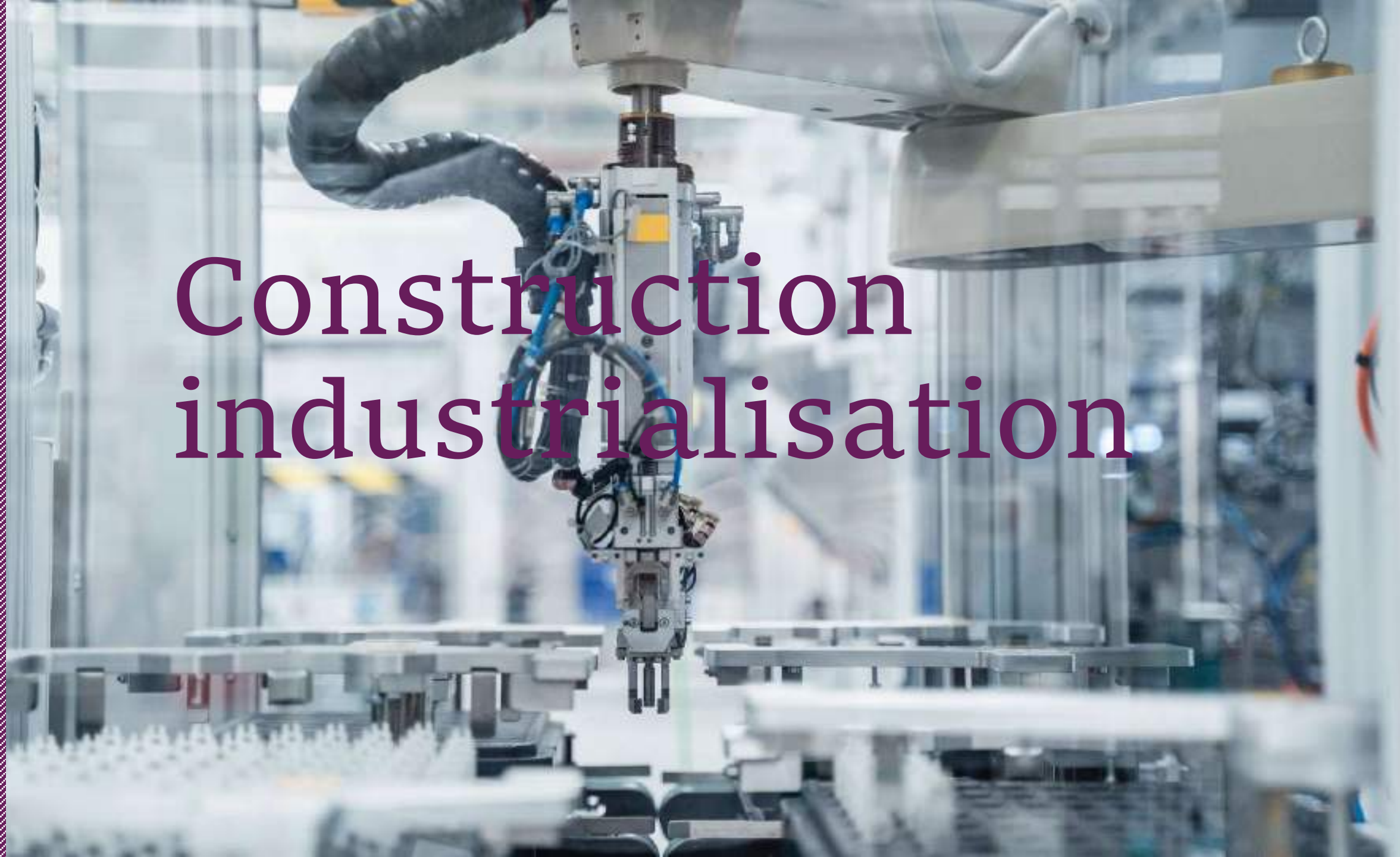

3 of 6
ISO 19650
Tender Response (s)
SIMPLE PROCESS


4 of 6
ISO 19650
Appointment
SIMPLE PROCESS


5 of 6
ISO 19650
Mobilization
SIMPLE PROCESS

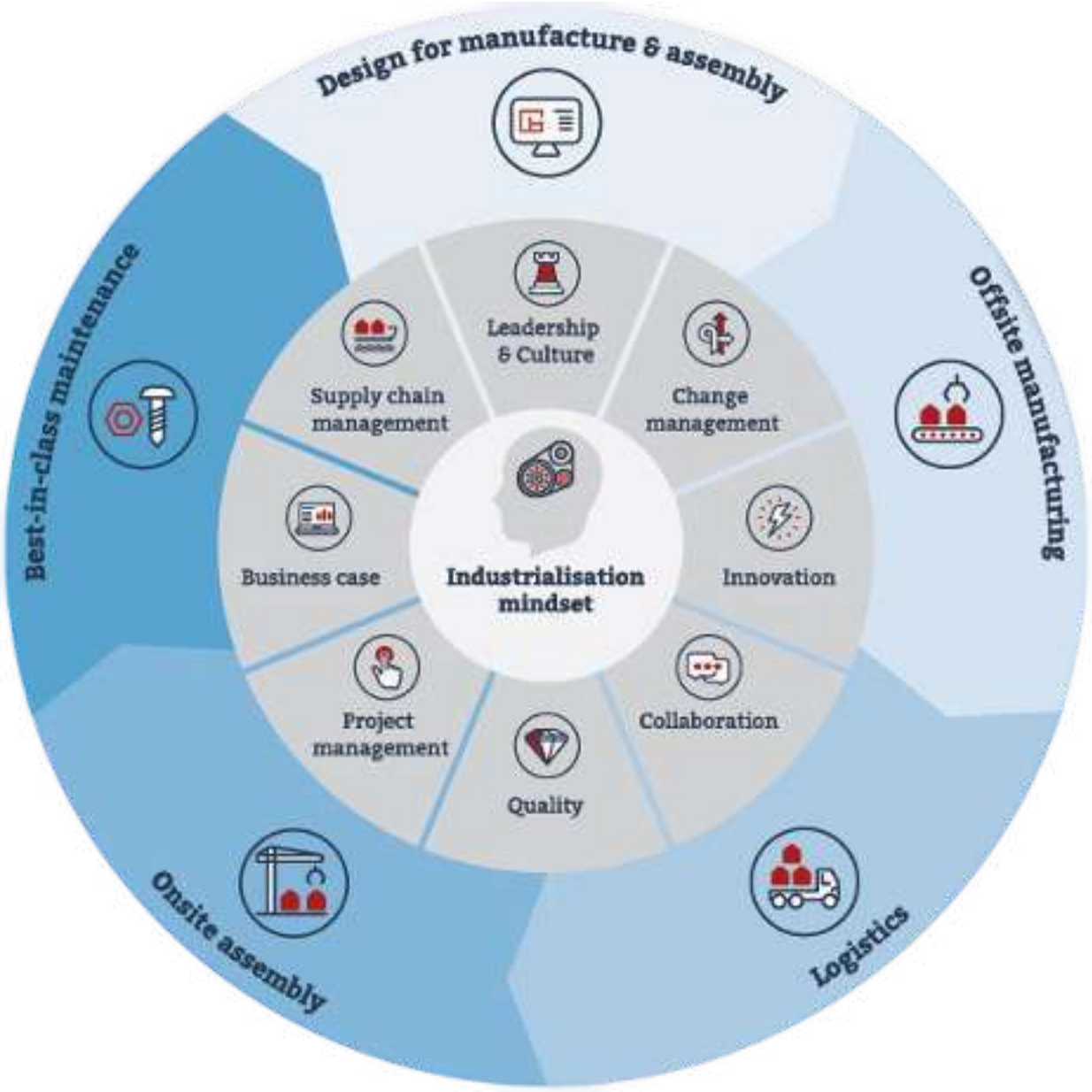

6 of 6
ISO 19650
SUMMARY


More about ISO 19650: bit.ly/ISO19650
All you need to know about
ISO 19650
in 1 hour!
SUPPLY CHAIN SUSTAINABILITY
SCHOOL
Your ISO 19650 Crash Course
Why Care?
What Is ISO 19650?
ISO 19650 Resources
Powered By:
plannerly
0:01 / 52:47



Construction industrialisation

Construction industrialisation



Design (DfMA)

- Standardise

Manufacture

Deliver

Install

Refine

Repeat

THE VALUE OF STANDARDISATION

“Standardisation is the extensive use of components, methods or processes in which there is regularity, repetition and a background of successful practice.”

Value of Standardisation

Does standardisation stifle creativity?

Item Name	Family in 3D	Photos
1- Façade SIP inc. windows		
2- Internal SIP inc. cementitious board on corridor		
3- Non-structural SIP for partitions		
4- Precast Hollowcore Slab		
5- Precast Staircase + Standard Handrail		
6- Precast Cores for stairs and lifts		

Item Name	Family in 3D	Photos
7- Portal Steel Frame		
8- Door sets		
9- Cassette type (VRF Indoor Unit)		
10- Combined lighting and acoustic raft with fire alarm, smoke, CO2 and Wifi		
11- Natural Ventilation with Heat Exchanger (NVHR)		

Item Name	Family in 3D	Photos
12- Condenser		
13- PVs		
14- Curtain Walling		
15- Velux Modular Rooflights		
16- Pre-cut Dado Trucking		

3FE Primary and 10FE Secondary School

With planning, demolition, complex phasing and external works.

Client – London Borough of Barking and Dagenham

Total Value - £48m; **GIA –** 20,000m^2

Contract Type – Design and build

Mid Group Role – Principal Designer, Principal

Through the phases, continuous improvement has realised a 2.5% saving on cost and EPC scores have reduced from 21 to 10

The OCLA; Optimised Component-Led Approach was created for phase one of this scheme.

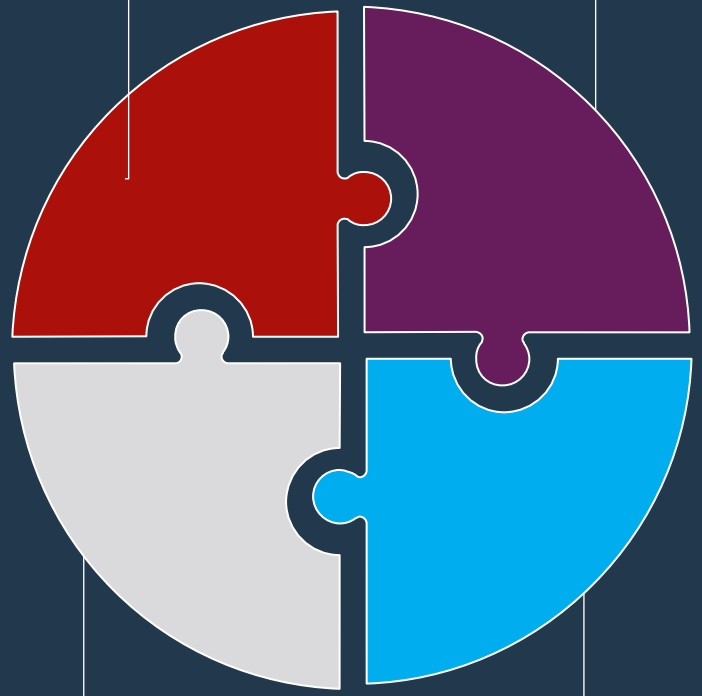
- DfMA principles applied, all rooms modelled and broken into components, ensuring standardised construction
- Full offsite solution
- Design Team and Supply chain same as proposed for framework


Standardisation does NOT equal design inflexibility

Value of Standardisation

SUITABILTY OF BUILDING

- Some types of building are ‘standard’, e.g. hotels, student accommodation etc.
- Once project is ‘spatial’ it becomes cost effective
- Feasibility studies easier



STABLE SUPPLY CHAIN

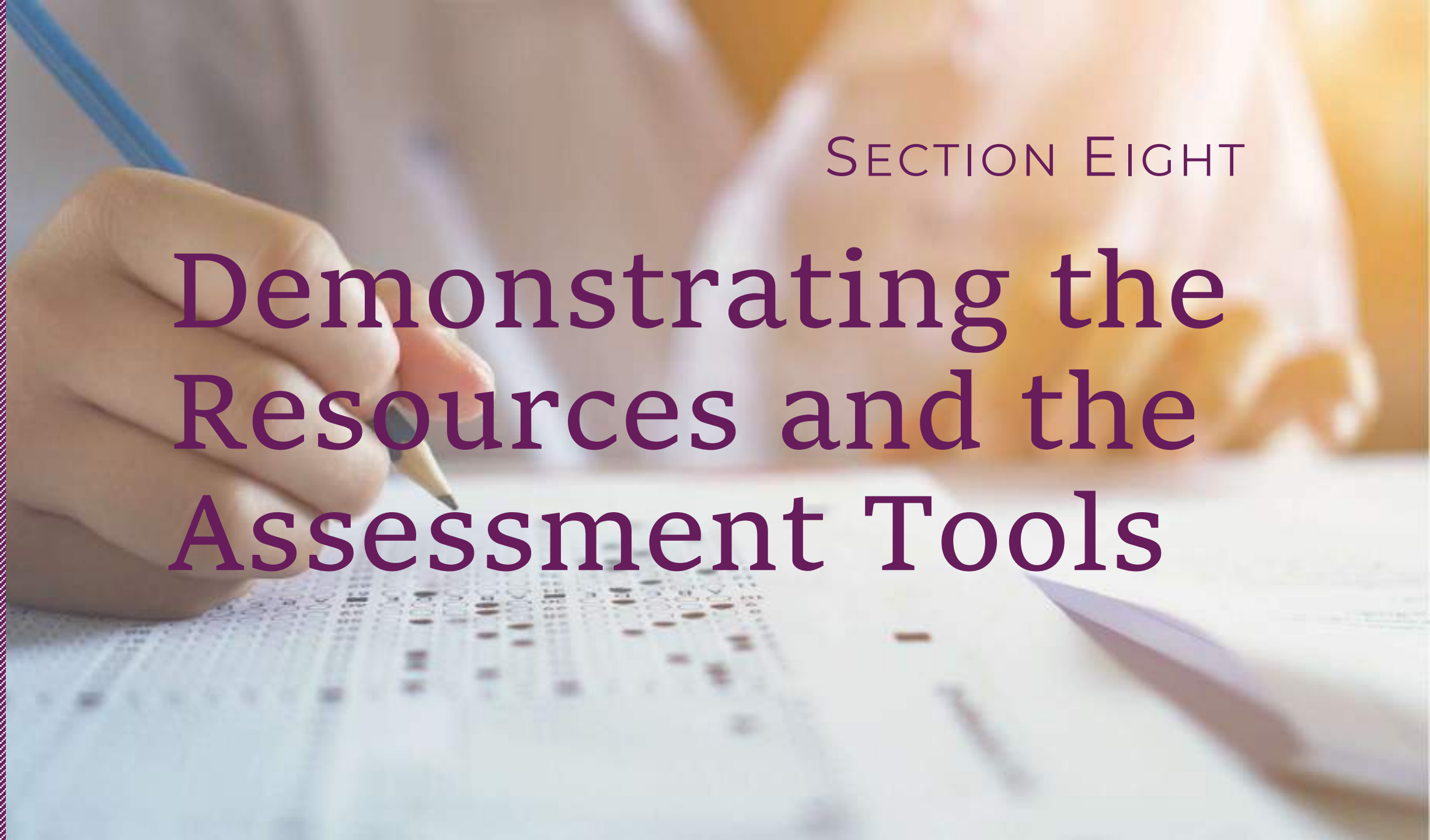
Creates certainty when evaluating future developments

PREDICTABILITY

Creating predictability in an uncertain environment is a key driver.

QUALITY

Repetition as long as you have good control should improve quality



Section Eight

Demonstrating the Resources and the Assessment Tools

Behind the scenes of the Training Needs Assessment Tool

Section Nine

Benefits and Risks

Think about....

What might be some of the benefits of digitalisation in your business?

3D printing

5G

Artificial intelligence & Machine learning

Big Data

Blockchain

BIM

Cloud computing

Internet of Things

Proximity sensors

Robotics & Drones

CITB believes that

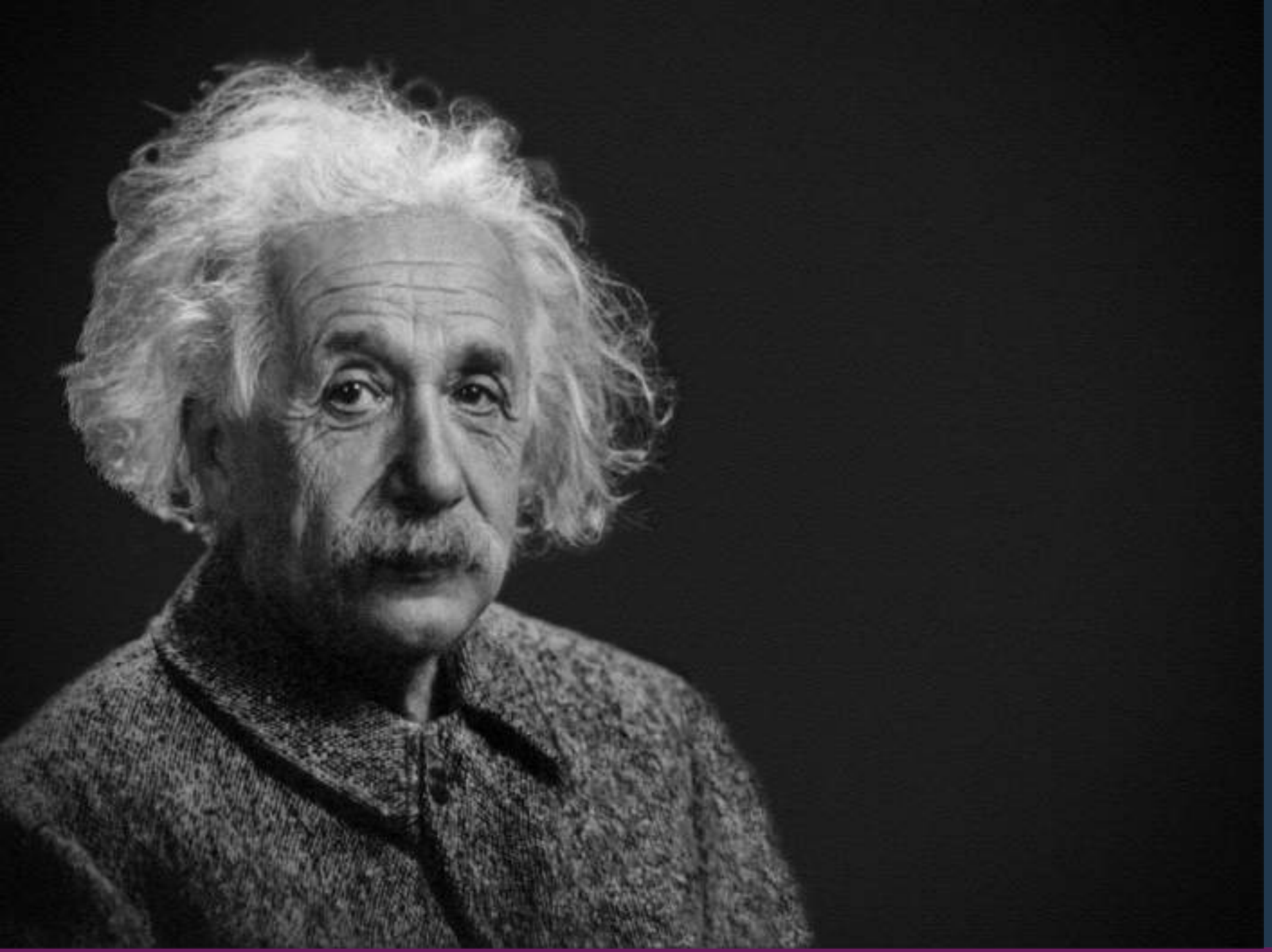
. . ."Digital technology and the wider understanding of its benefits are the vital next steps for modernisation.

Digital technology will be a cornerstone of the construction sector's reform to productivity, efficiency, and quality of delivery.

[It] can also support the attraction, retention and inspiration of new generations of talent for our sector".

“A UK industry that leads the world in research and innovation, transformed by digital design, advanced materials and new technologies, fully embracing the transition to a digital economy and the rise of smart construction”.

'Construction 2025 - Industrial Strategy: government and industry in partnership'



“The world cannot be changed without changing our thinking”

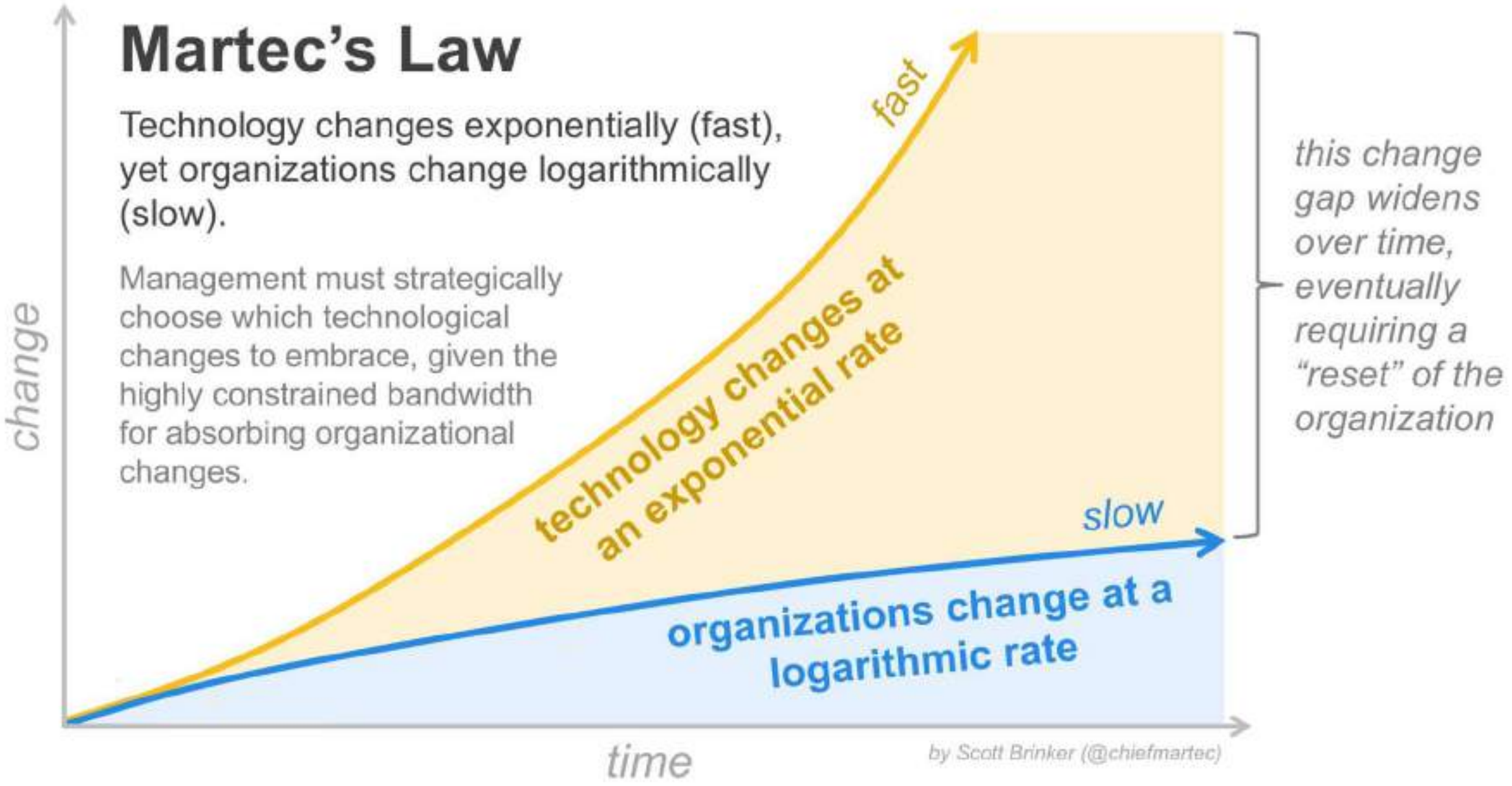
"The greatest barrier to data success today is business culture, not lagging technology"

Q: What percentage of business executives do you think agreed with this statement?

A: 50%
B: 60%
C: 75%
D: 90%

Answer: 90%

Source: MIT Survey


Martec's Law
Technology changes exponentially (fast), yet organizations change logarithmically (slow).
Management must strategically choose which technological changes to embrace, given the highly constrained bandwidth for absorbing organizational changes.
change
time
fast
slow
technology changes at an exponential rate
organizations change at a logarithmic rate
this change gap widens over time, eventually requiring a "reset" of the organization
by Scott Brinker (@chiefmartec)

Failing to grasp the opportunity

Technological Issues


LONDON'S SUPER SEWER
PLAY FULL VIDEO

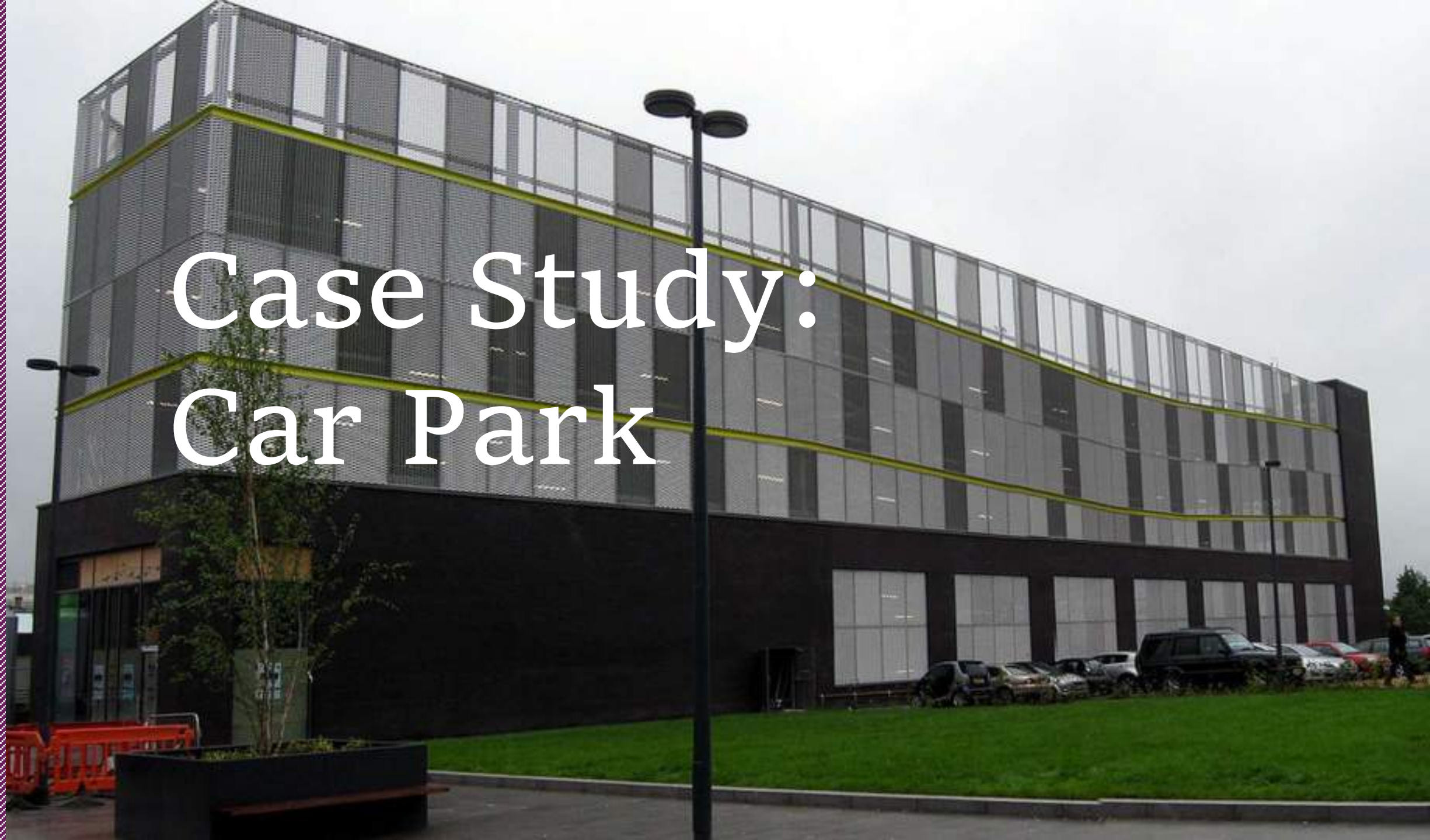
Late delivery

Cyber risks


Michael Born
VP, Cyber & Technology
Lockton Companies

Section Ten

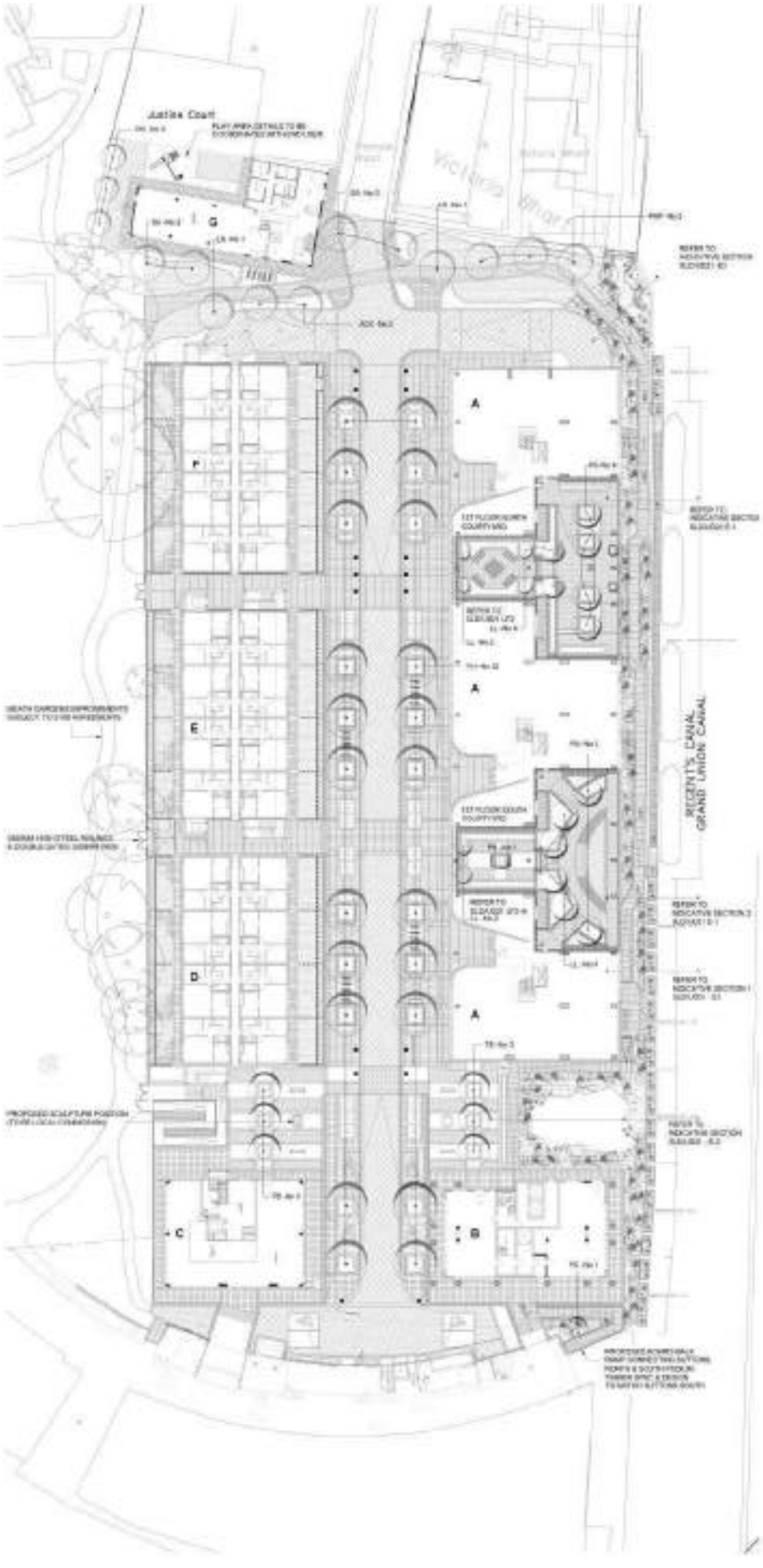
Case Studies



Case Study: Car Park

Case Study: Hospital


Case Study:
Apartments



PLANT SCHEDULE TO CANAL EDGE

PLANT SCHEDULE TO GENERAL AREAS

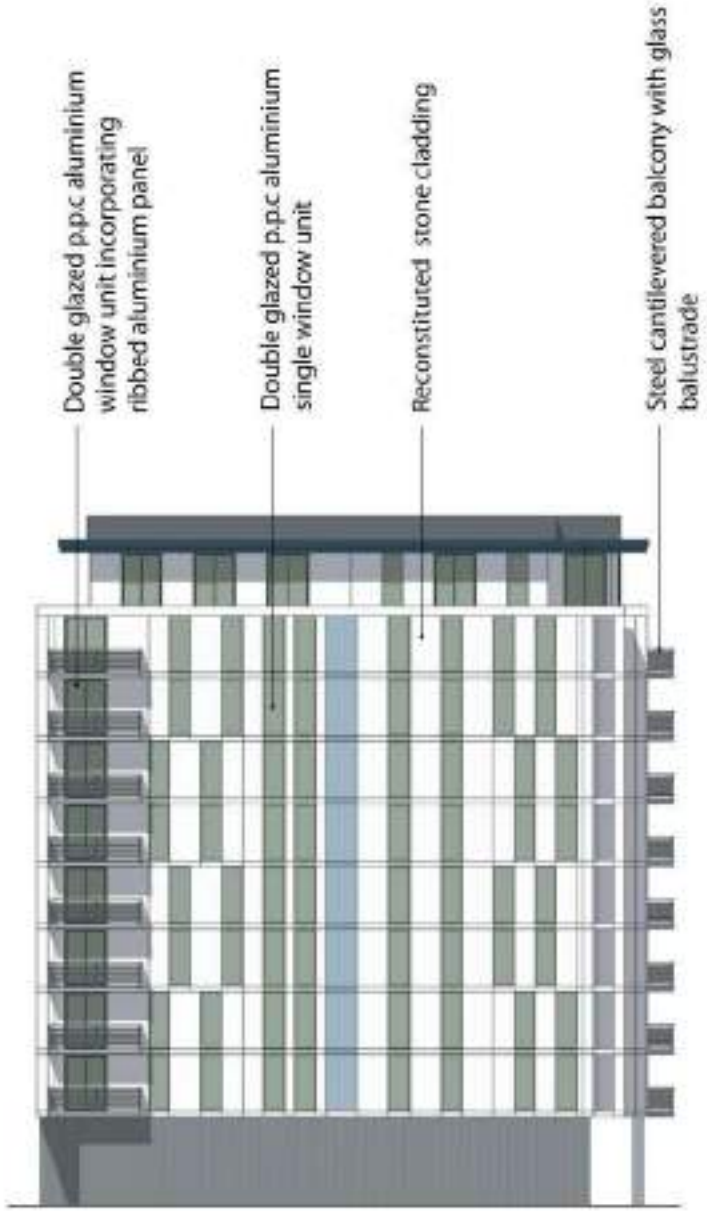
East elevation from canal

Block B - North elevation

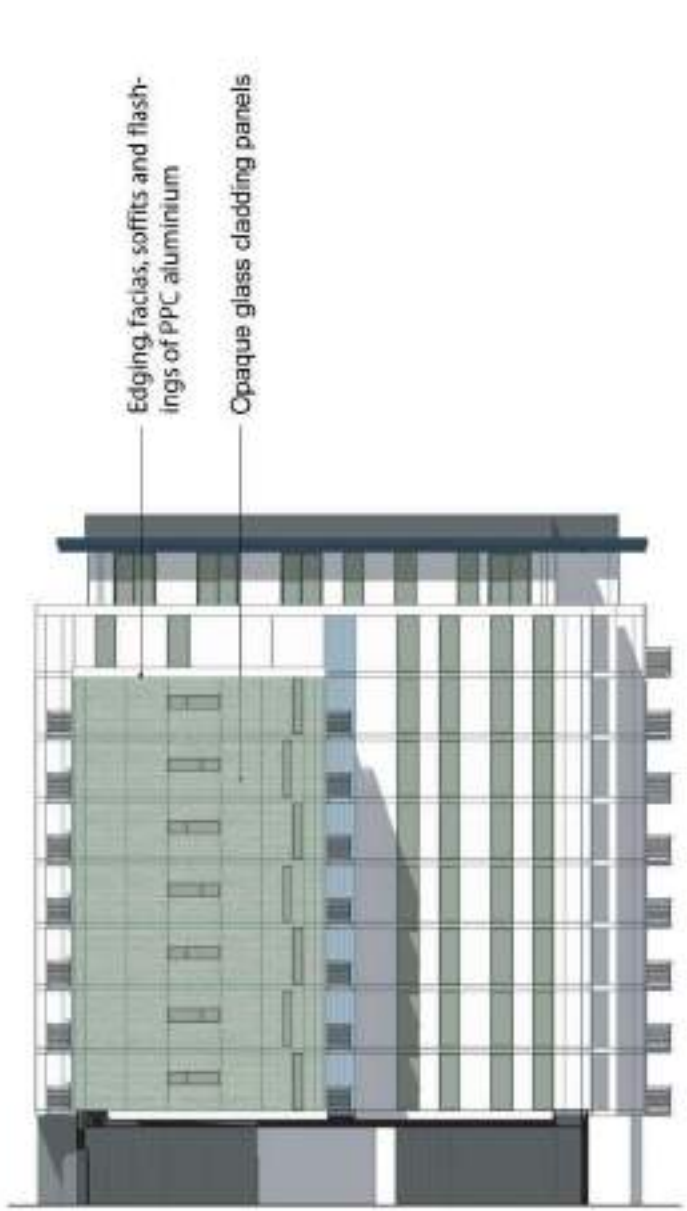
Block A - North elevation
Northern wing

Central wing

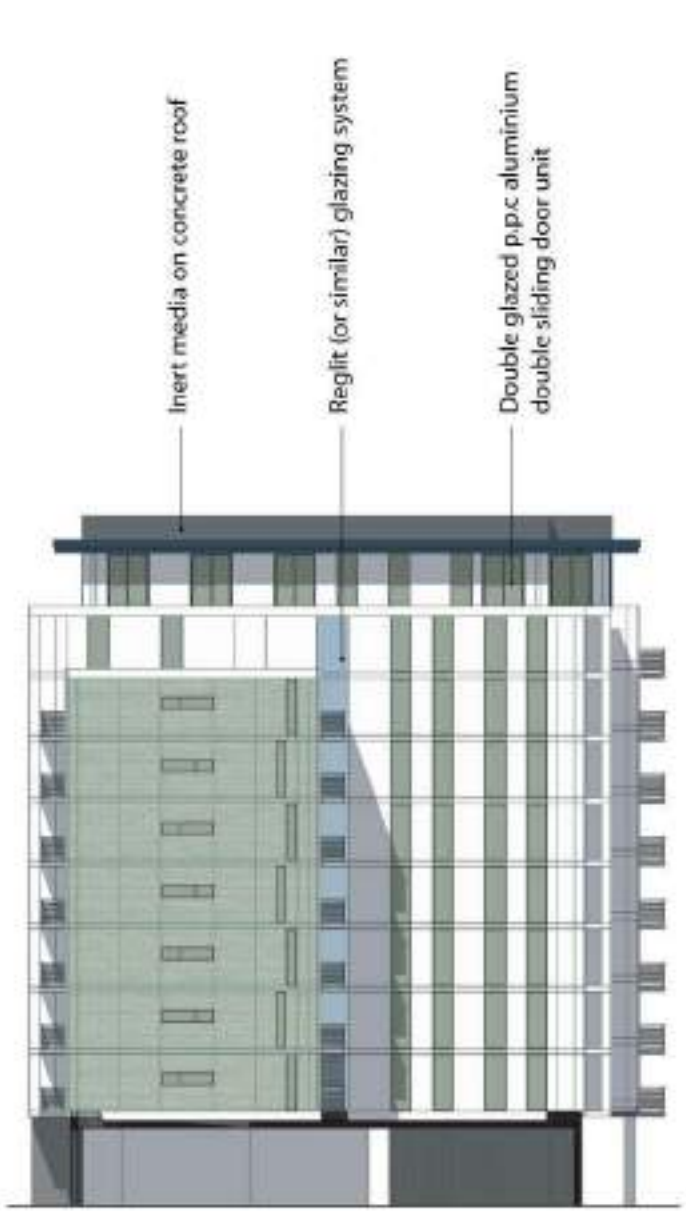
Southern wing



South Elevations_ Southern Wing

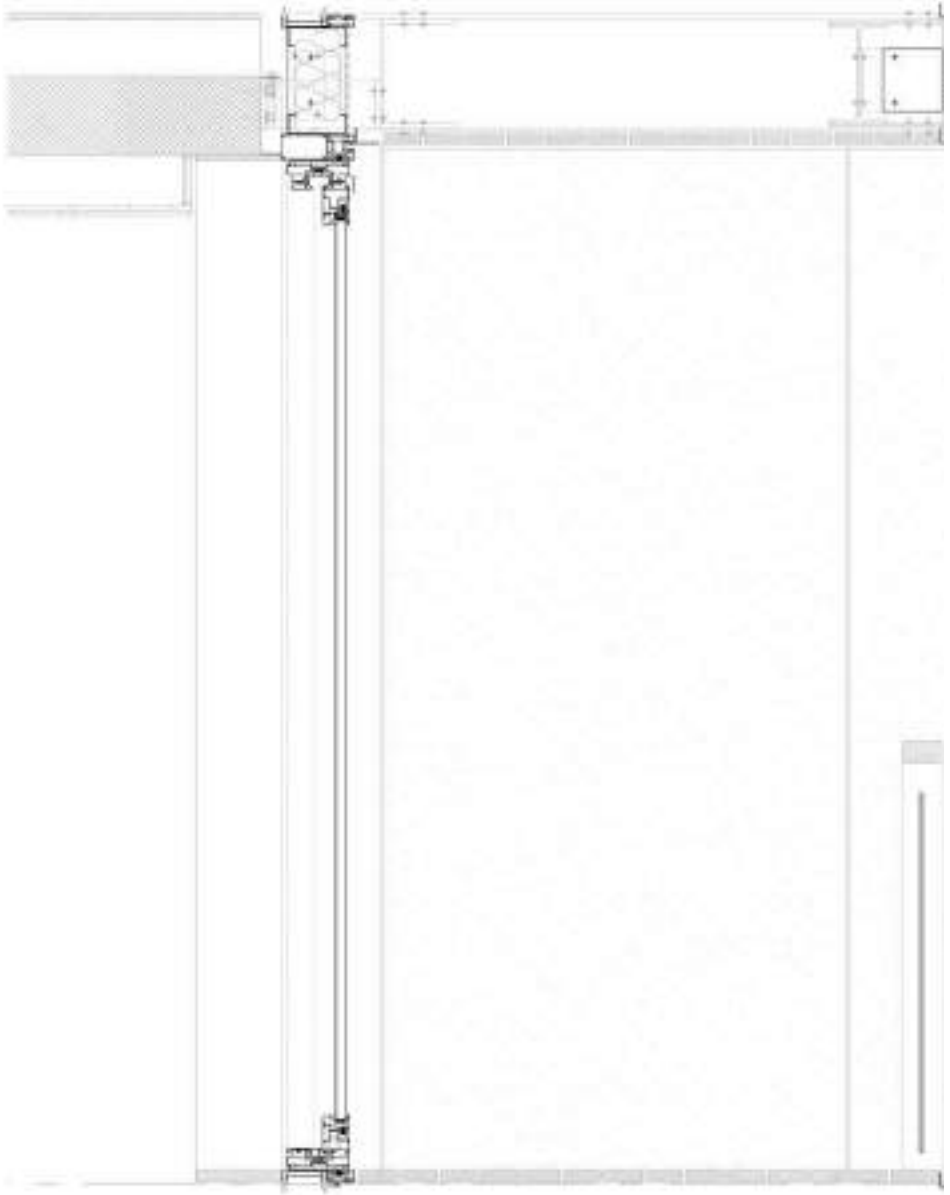


South Elevations_ Central Wing

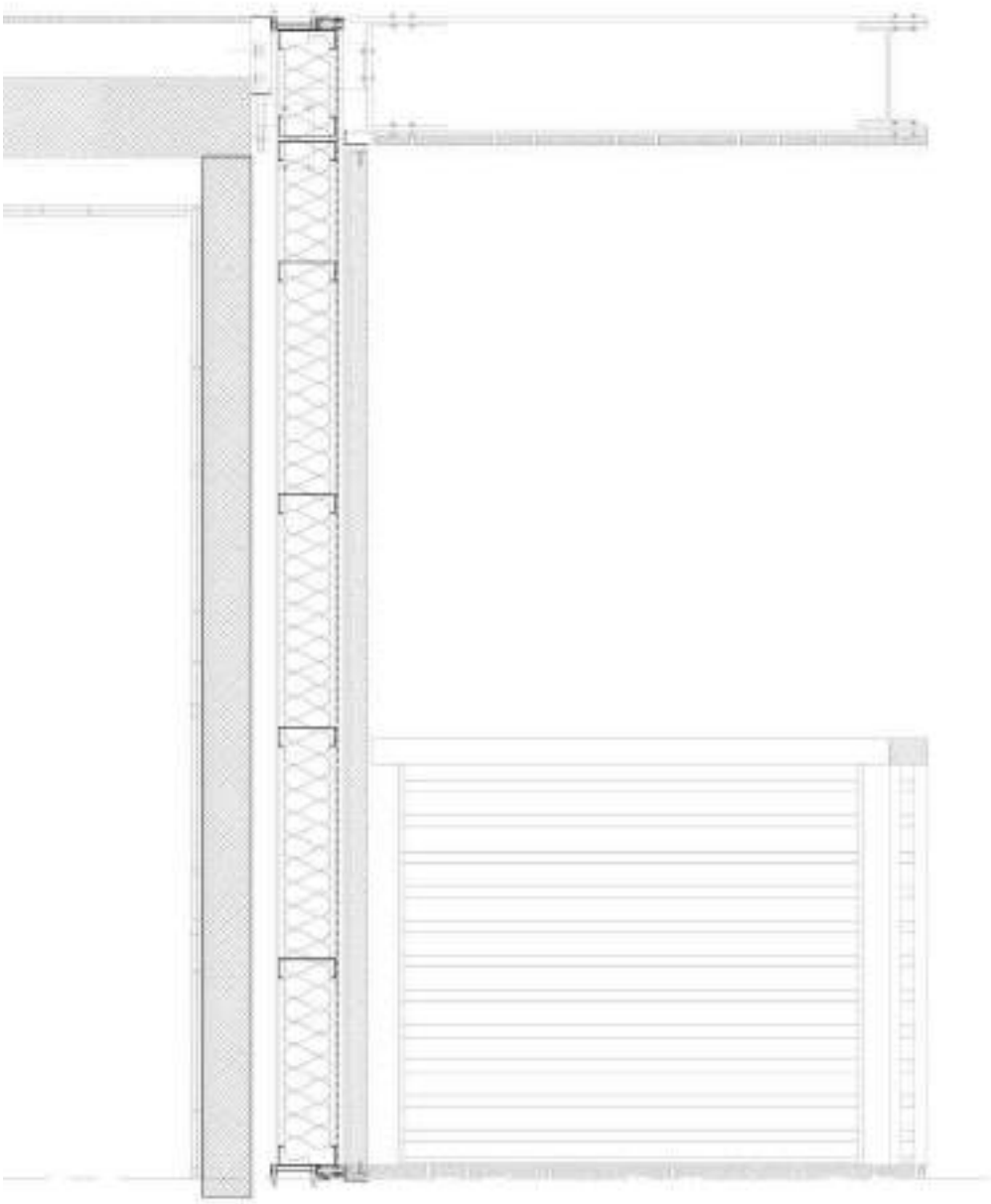


South Elevations_ Northern Wing

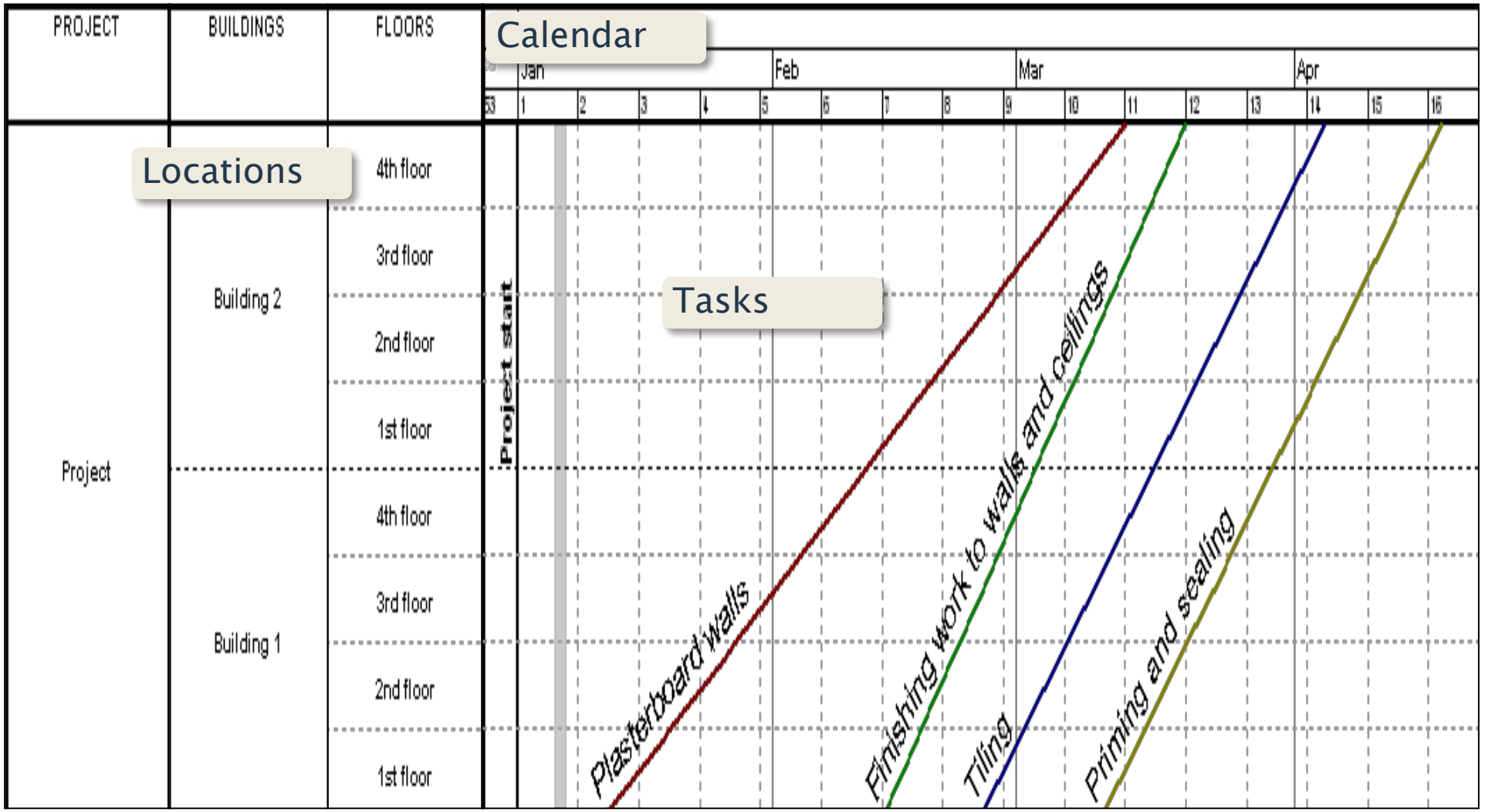
South Elevation



PANEL DETAILS
SLIDING DOOR ON TO RECESSED BALCONY - GLASS BALUSTRADE



PANEL DETAILS
RECONSTITUTED STONE CLADDING ON TO STEEL BALCONY - TIMBER BALUSTRADE

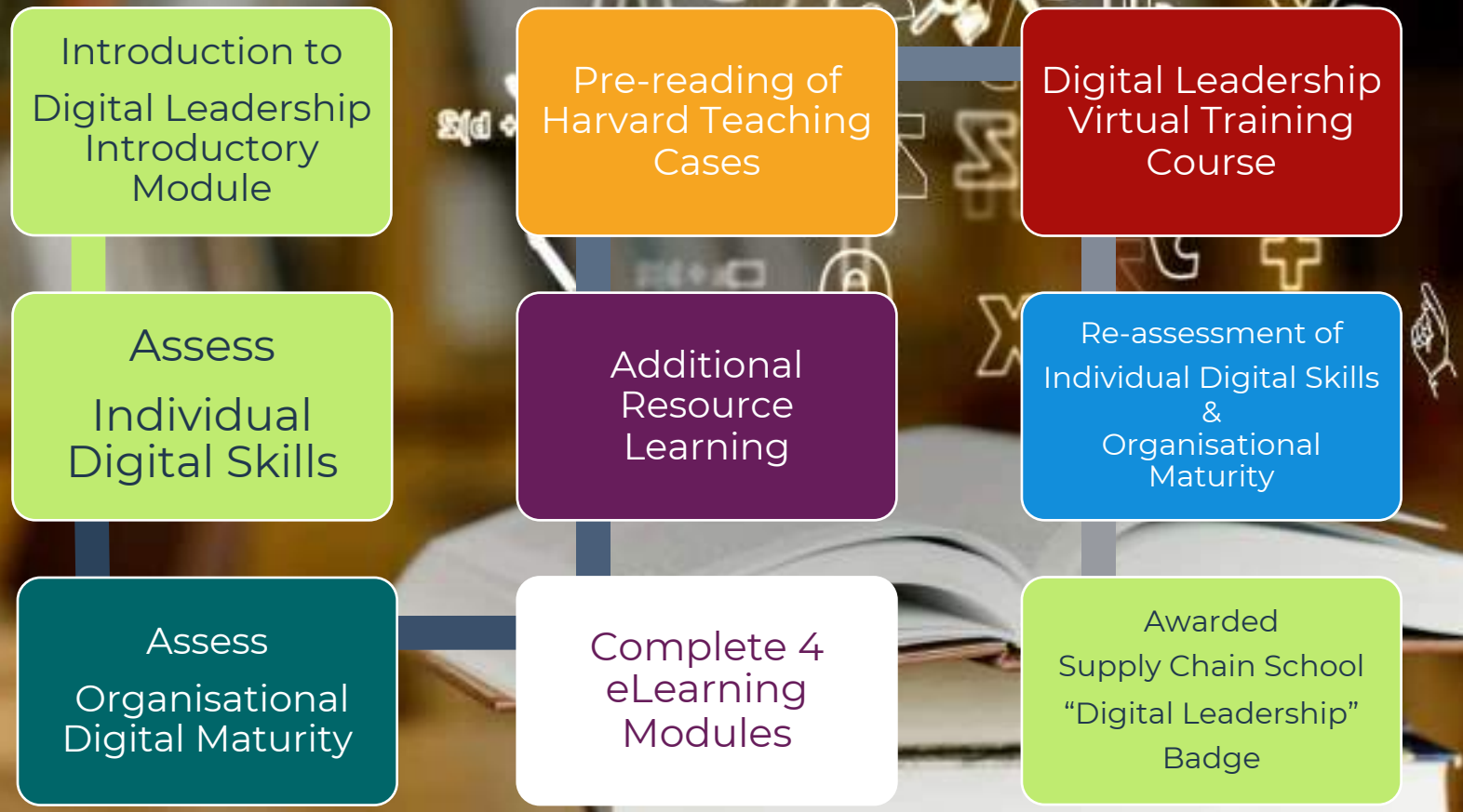

PROJECT
BUILDINGS
FLOORS
Calendar
Jan
Feb
Mar
Apr
53
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
Locations
Tasks
Project
Building 2
Building 1
4th floor
3rd floor
2nd floor
1st floor
4th floor
3rd floor
2nd floor
1st floor
Project start
Plasterboard walls
Finishing work to walls and ceilings
Tiling
Priming and sealing

Feedback please

https://forms.office.com/r/xijDxMTnXK

SUPPLY CHAIN SUSTAINABILITY SCHOOL

The Digital Leadership Student's Journey



Characteristics of a Digital Leader
Making the business case
Digital in use
Cyber security
Using the Assessment Tools
Digital Strategy
Using data to drive better business outcomes.

Feedback about our digital content

"It has helped those not directly involved with our digital transformation to gain a good understanding of the subject"

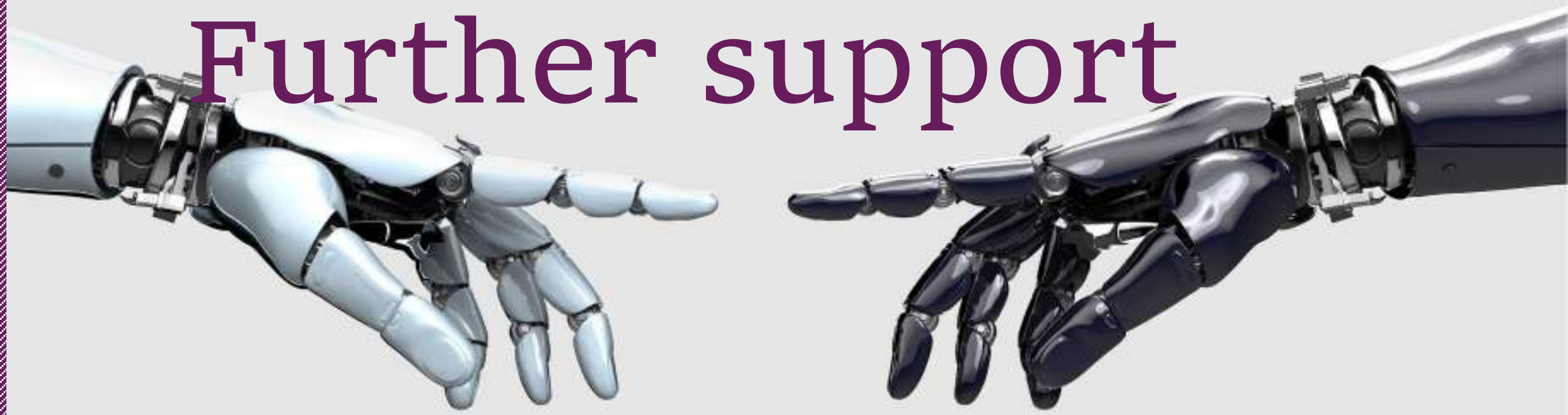
"It has opened our minds to the options available and the benefits to the business"

"Both facilitators were excellent and engaged very well, making for a truly enlightening and meaningful workshop. Thank you and keep up the good work."

"It has helped us to Increase our knowledge about the digital technologies that are available in the marketplace."

"It has helped to support the dissemination of knowledge about this important sphere of activity in our industry across our wider business"

Further support



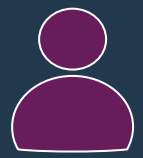
Further learning

SUPPLY CHAIN SUSTAINABILITY SCHOOL

https://www.supplychainschool.co.uk/topics/digital/

SUPPLY CHAIN SUSTAINABILITY SCHOOL

Thank you



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Feedback please

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