


**Built asset optimisation
& resilience through
Assure Information
Management System
(AIMS) and a Digital
Estate approach**

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&

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Advancement Manager
Bentley Systems



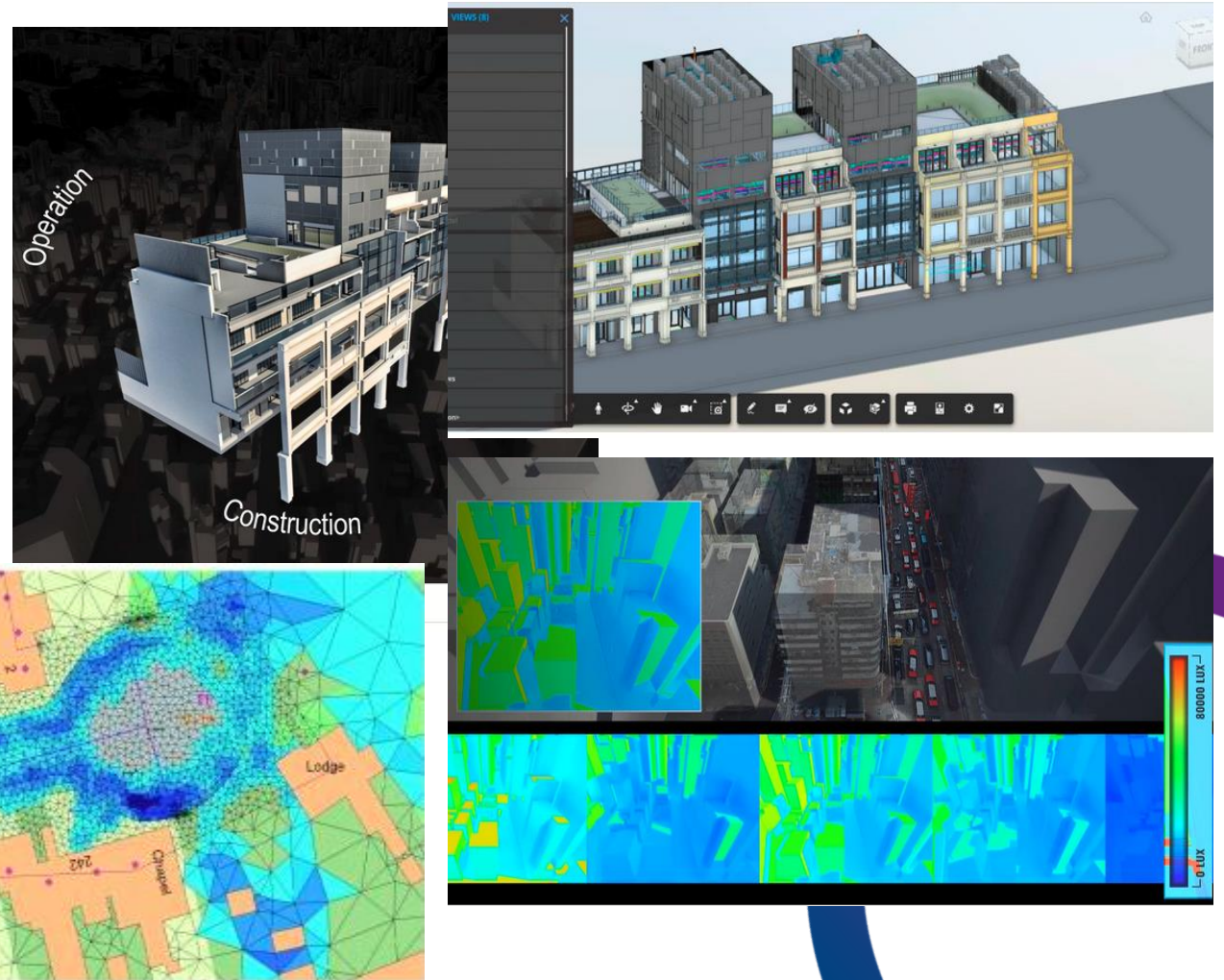
**NHS Scotland
Assure
Conference**

A new built environment model

Digital technology and innovative use of data is changing the way **NHS Scotland** plan, build, maintain and use our existing healthcare infrastructure.

Building Information Modelling (BIM) and Information Management are already **transforming the construction industry** and NHSS Boards.

This technology is increasingly combining with **Geomatics**, the **internet of things** (providing sensors and other information), **advanced data analytics** and the **digital economy**.

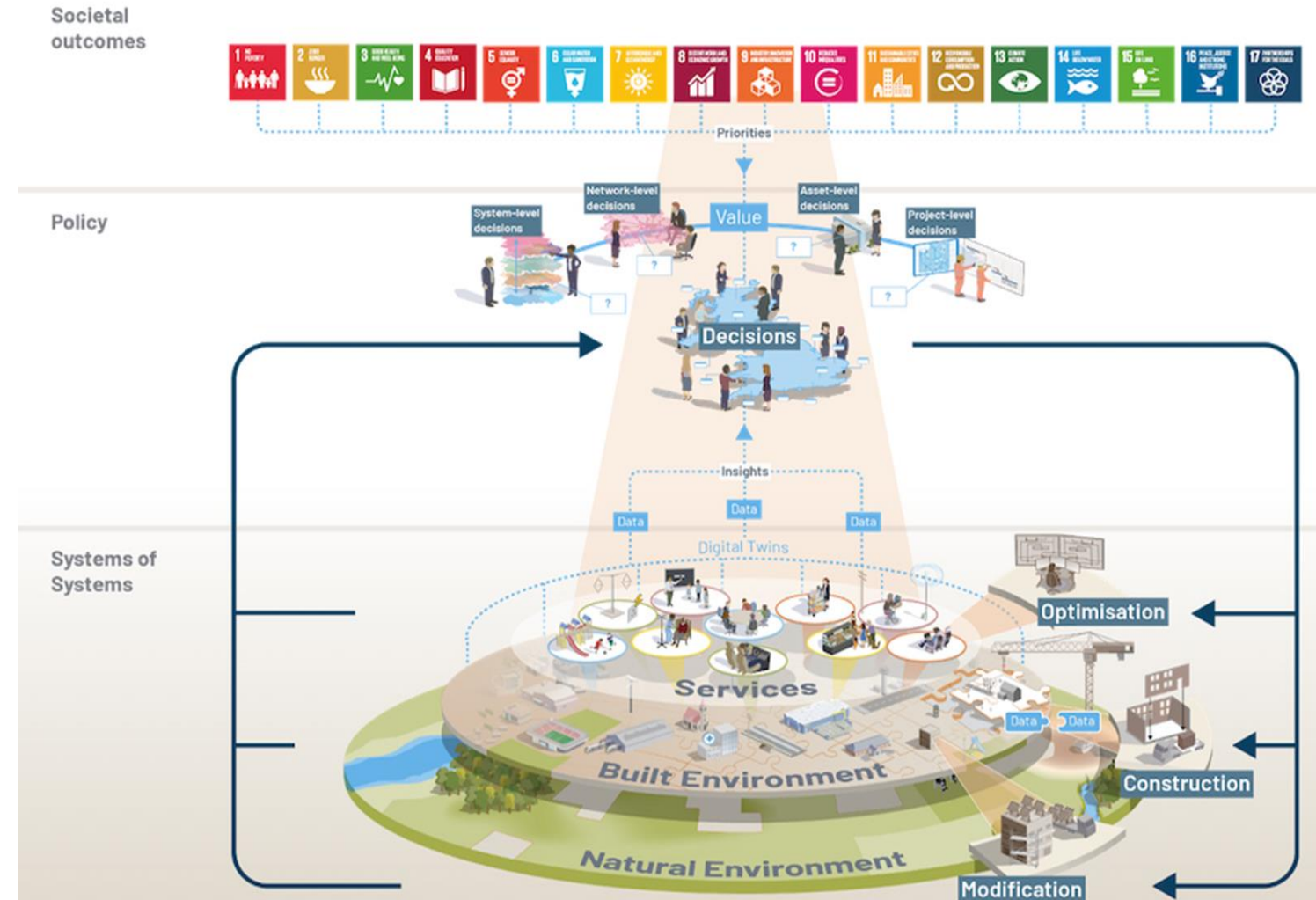


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The NHSS simple hypothesis

“Better use of digital information and security minded information management processes will facilitate more efficient and effective decisions across the NHS Scotland estate. AIMS is a key enabler and will support built asset optimisation and resilience ”

Why AIMS?



Why AIMS?

Importance of information management

Trigger events leading to tragic situations such as the Grenfell Fire and the falling masonry at Oxfangs Primary school in Edinburgh have highlighted the need for centralised, indexed data.



Oxfangs Primary School

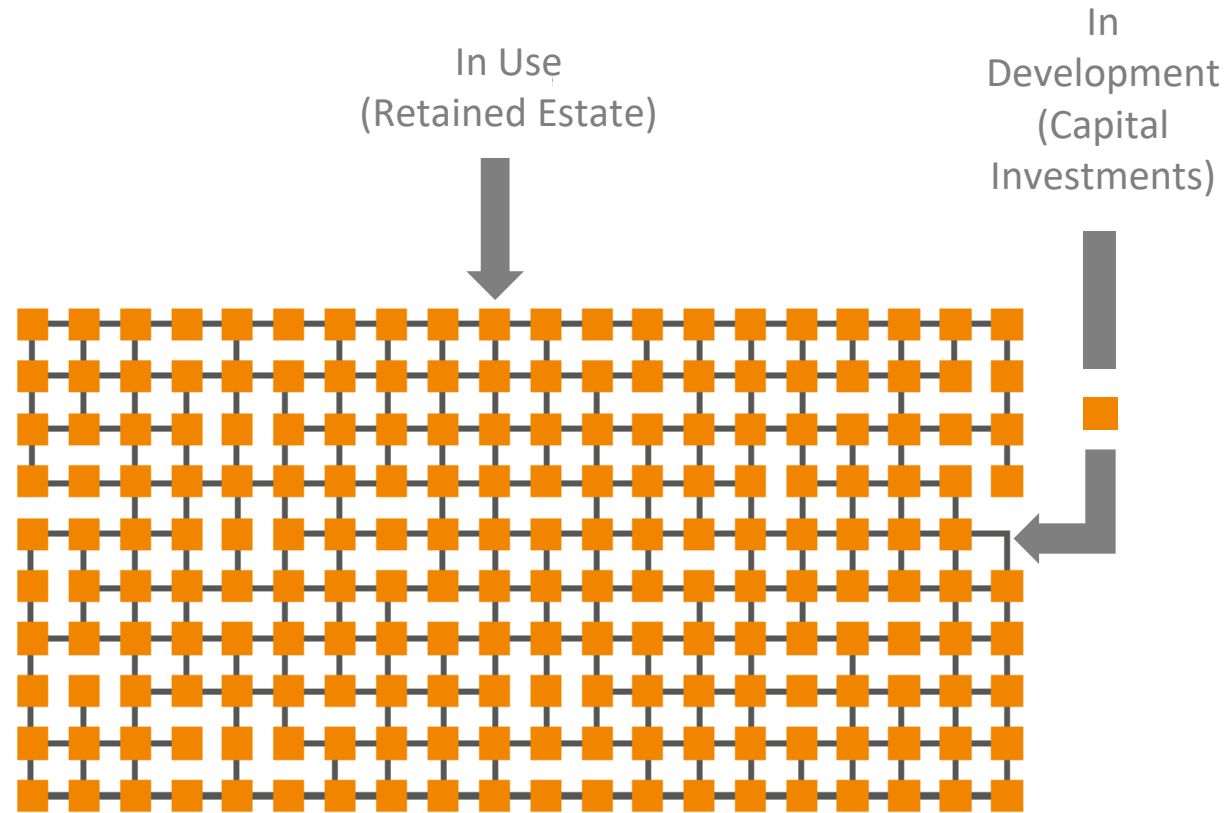
Why AIMS?

Importance of Net Zero Carbon Transition

Information to support carbon insight, resilience and digital-enabled analysis of embodied emissions.



Collection and use of built asset data



Healthcare facilities in use and development

The drive to deliver better outcomes from our healthcare estate applies both to new projects and existing sites. Getting the most out of our existing built assets, and systems means improving availability, capacity and resilience; while reducing emissions and running costs, and the need for new build.


Improving the performance of existing assets is important if we are to make a material impact in the coming years and decades.

Having good quality data and information is key to improving maintenance efficiency and optimising asset life.



Why do we need AIMS?

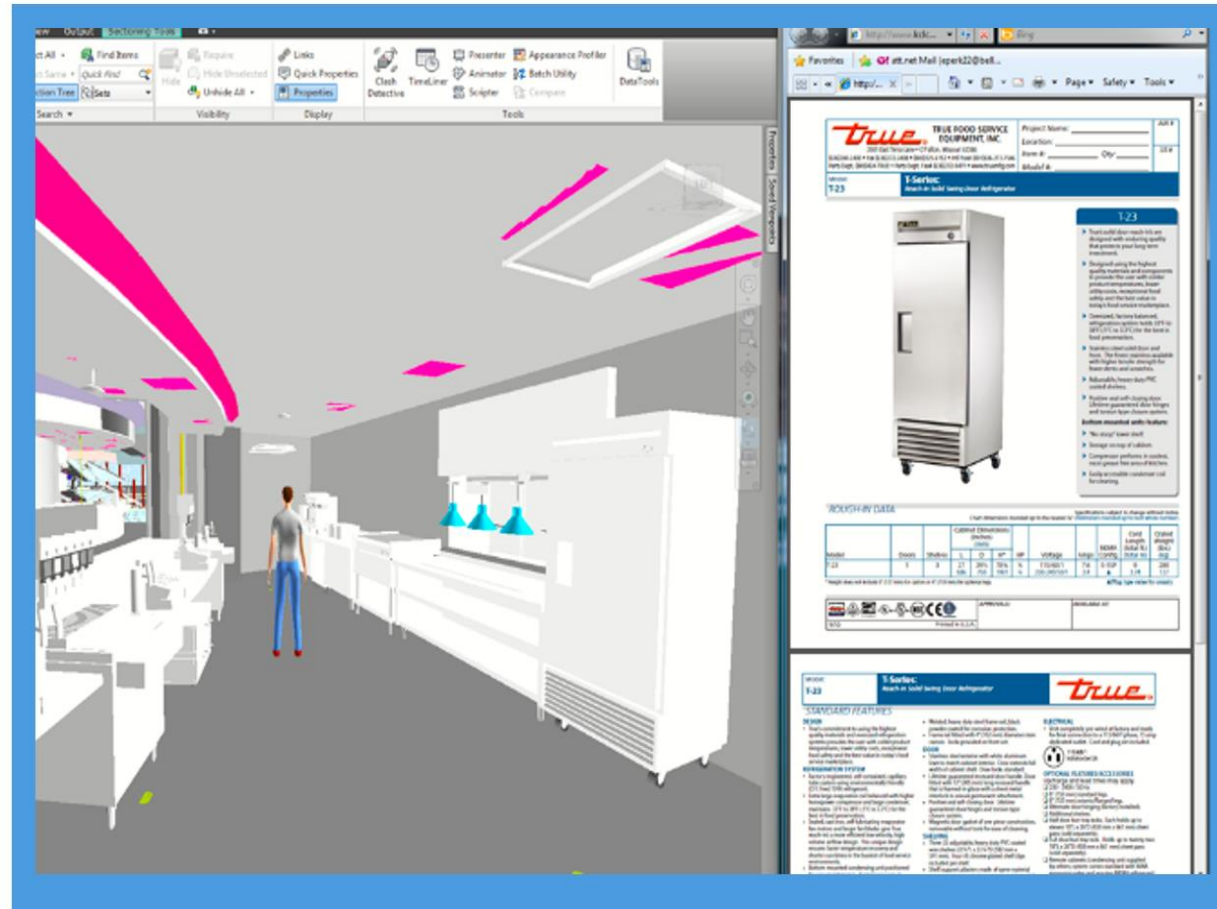
The need for AIMS (CDE's) and their importance have been underlined across industry in a variety of ways :

- 1 A requirement to comply with Scottish Governments SPPN 01/2017.
 - 2 Effective asset management and standards (ISO 55000) require effective information management.
 - 3 Improved information management of the estate will reduce building failure and better prepare public bodies in the event of failures within their estate.
 - 4 AIMS will improve efficiencies through the whole asset lifecycle.
 - 5 Good information management and collaborative systems will save time and money.
 - 6 To embrace future technology advancements, a robust information platform is required.
- 

What is AIMS?

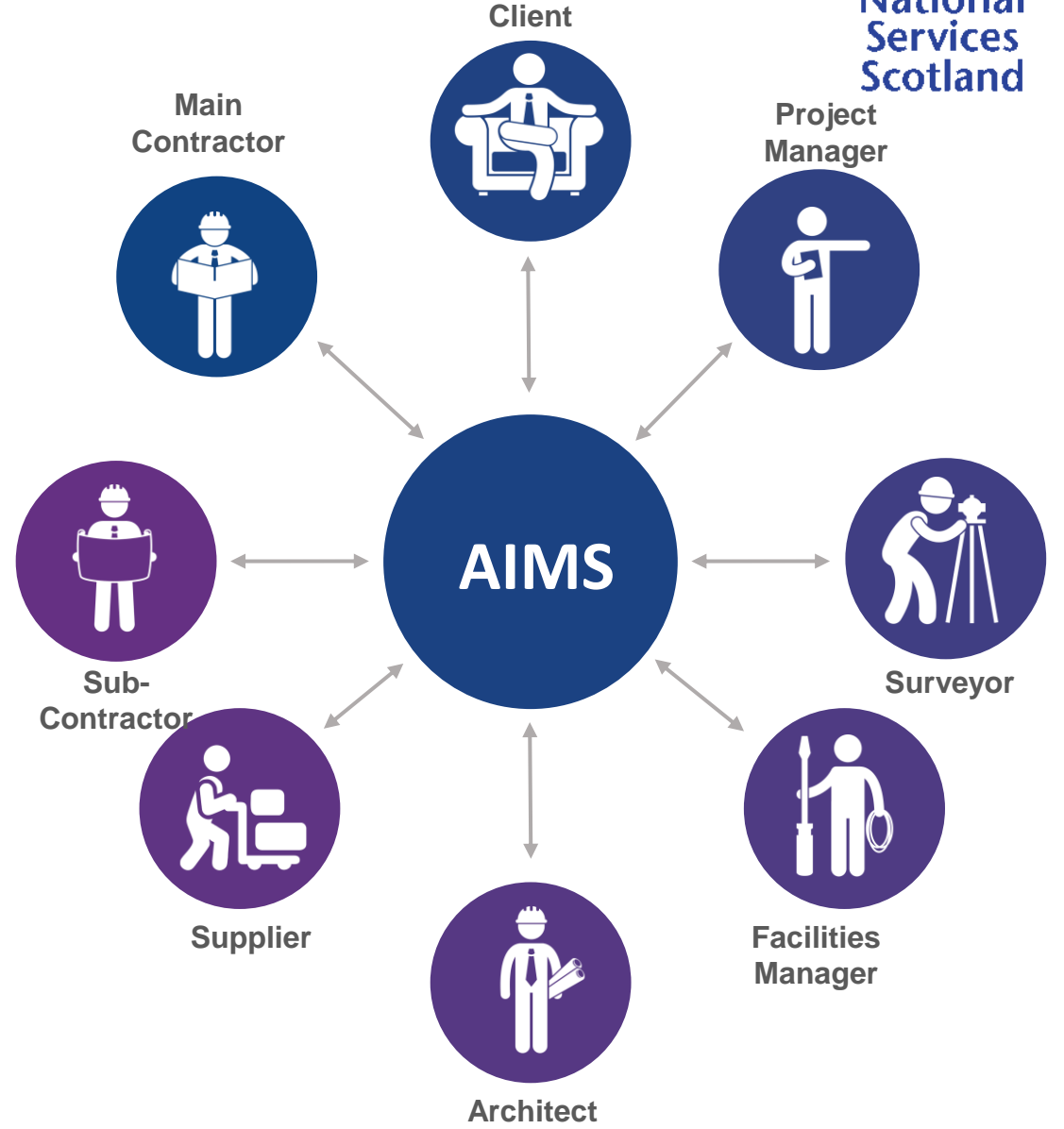
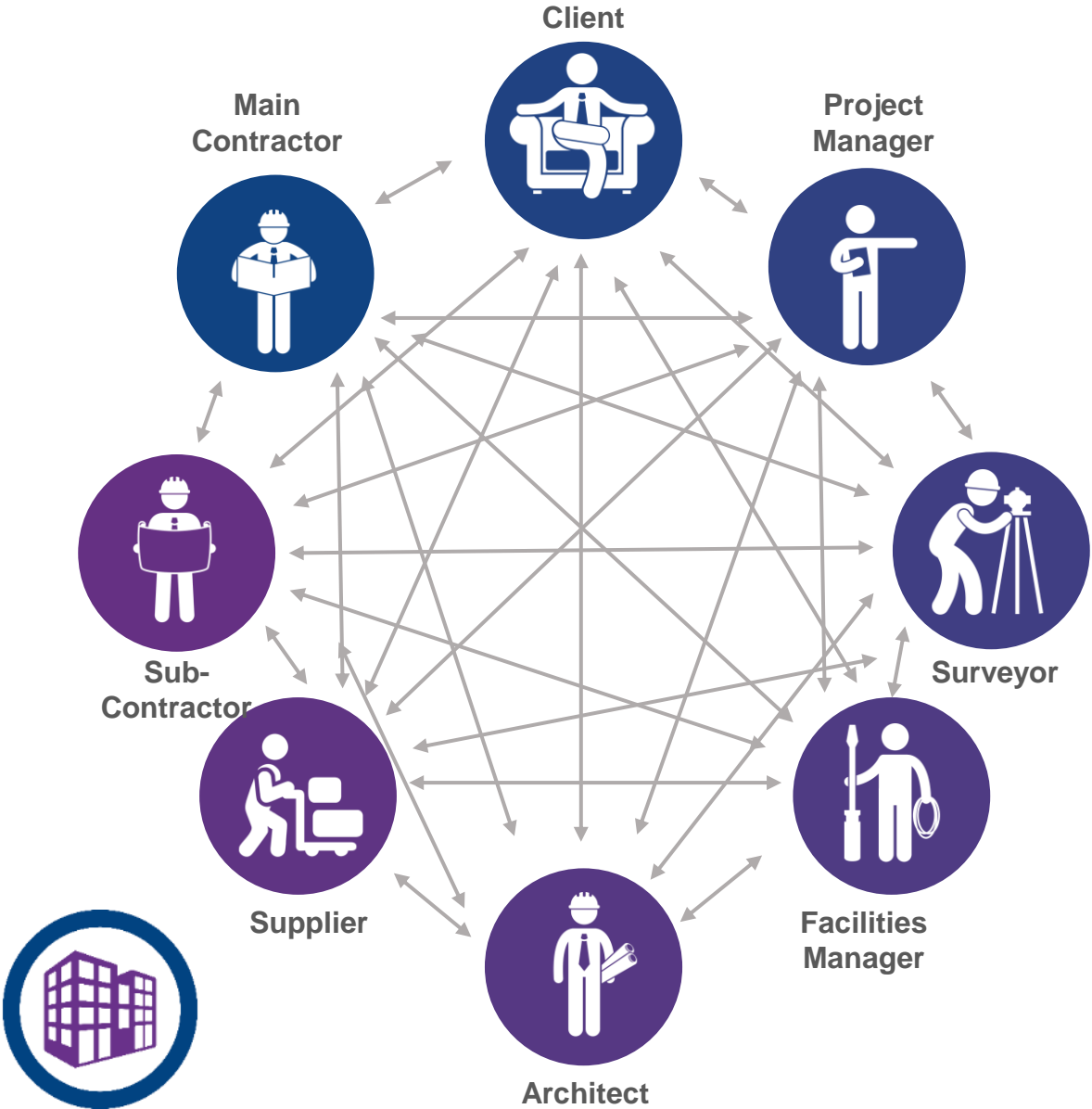
Organized Data & Information Delivery

Handover usable, digital, indexed design and construction documentation

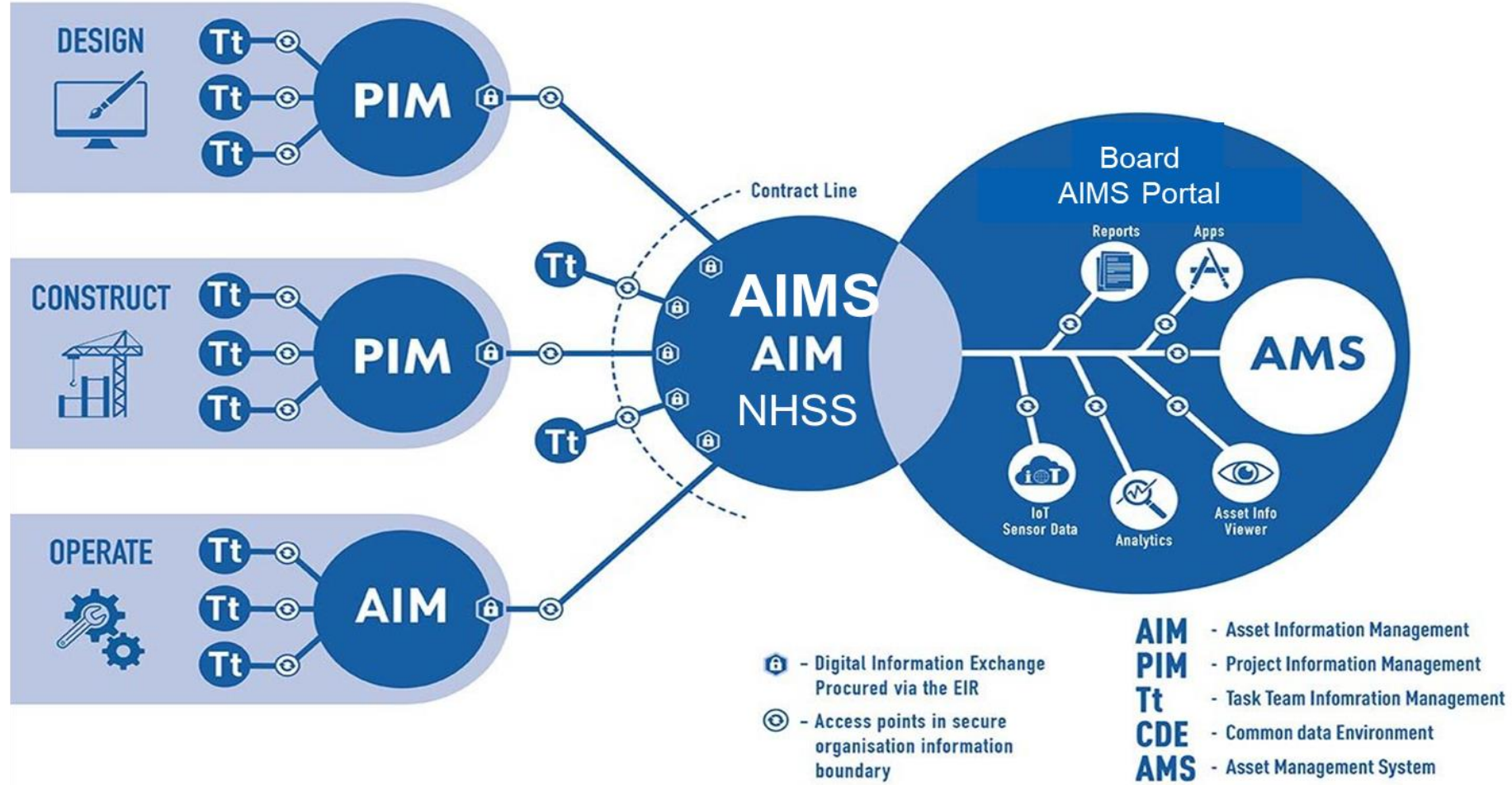


Images courtesy: AECOM

Traditional Information Sharing VS AIMS



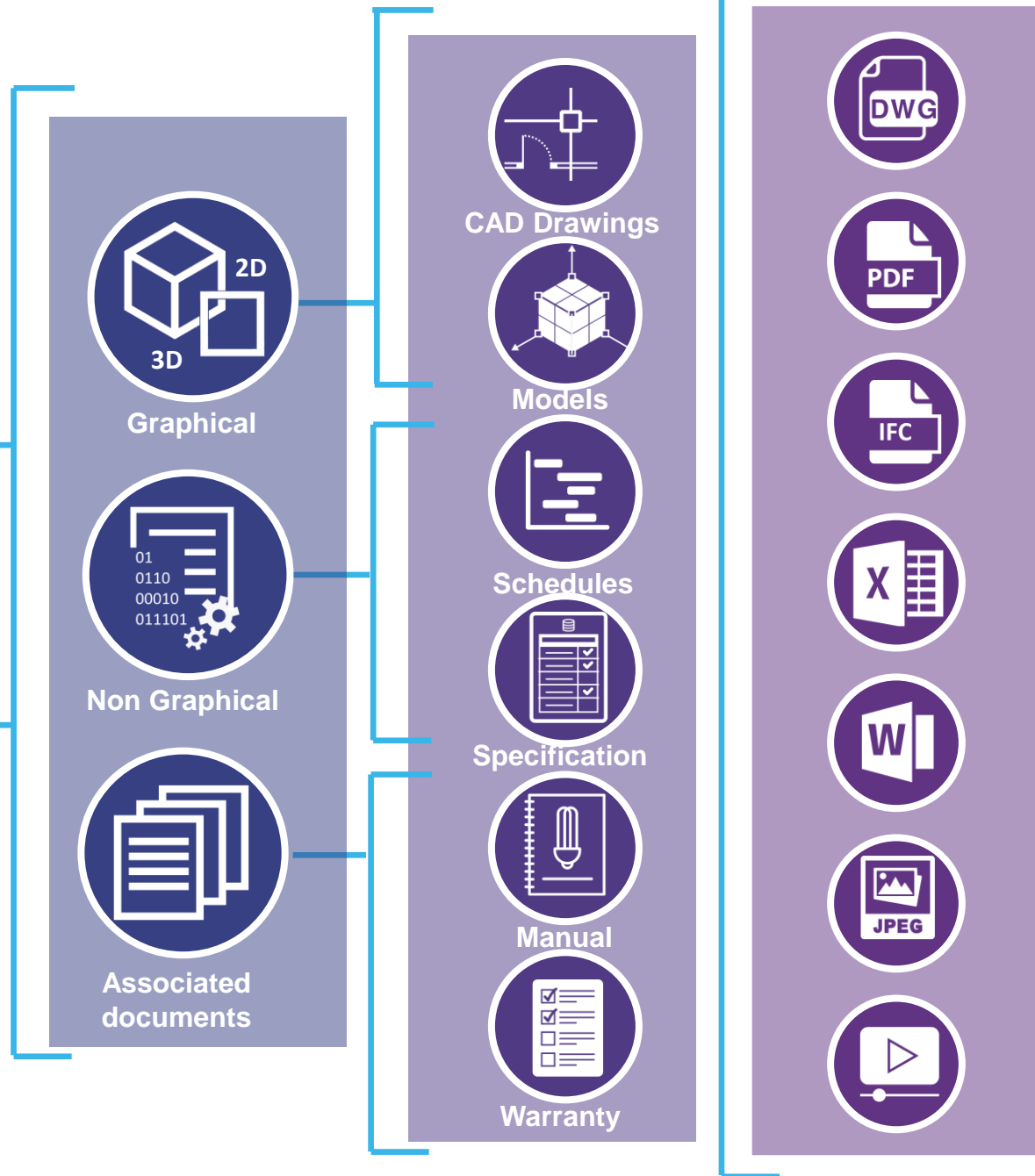
What is AIMS?

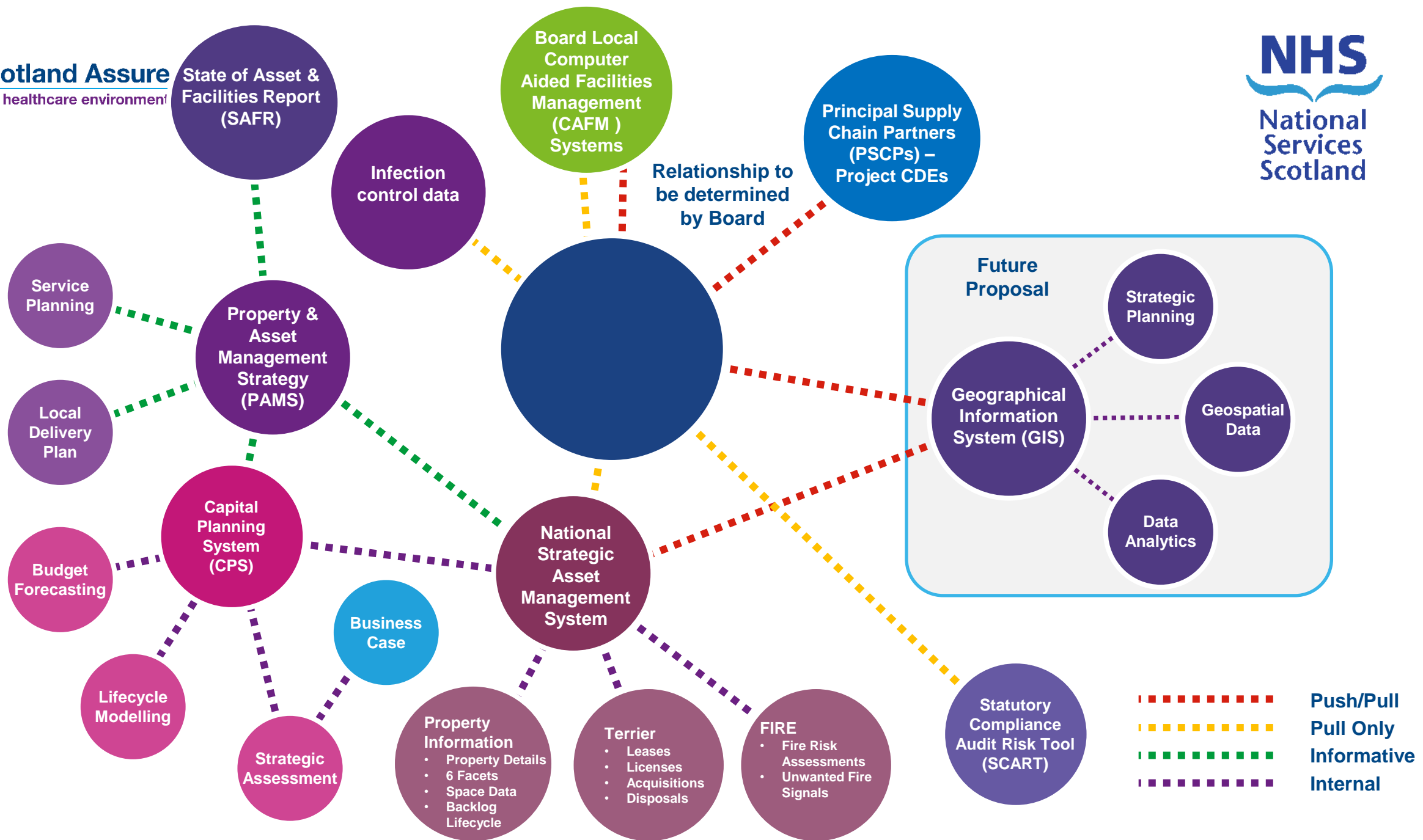


The AIMS Concept

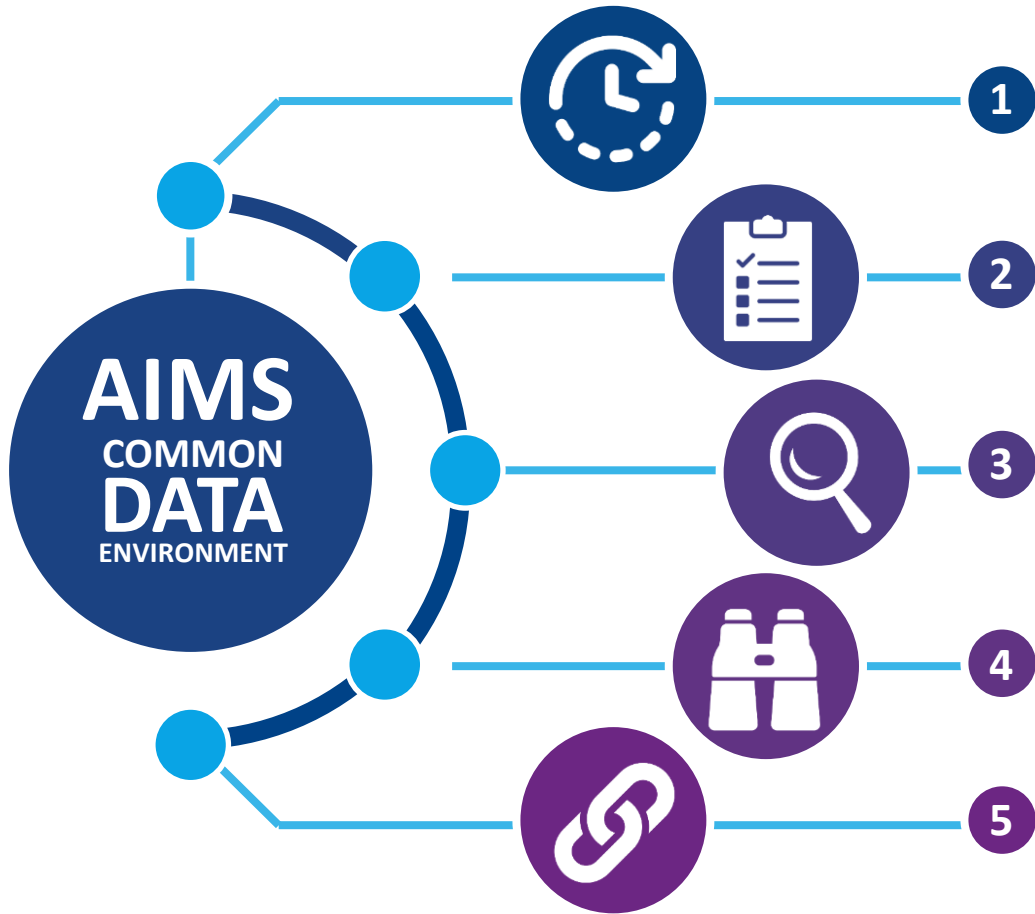


- PIM (CapEX)
- AIM (OpEX)
- Document Types
- Document Types
- File Types





The Benefits of AIMS



1 Reducing the time and effort required to check, version and reissue information / Save time to transfer accurate and complete information from construction to operational stages.

2 Provides an audit trail of documents and drawings and can store information and comments against these, authorisations etc.


3 Easy access to relevant and reliable information in the event of failure / Searchability of information using simple key word searches.

4 Built in CAD viewer with functionality to overlay different versions of cad drawings which highlight specific differences between versions.

5 Ability to link with other systems in real time which may include: National Strategic Asset Management System, Statutory Compliance Audit Reporting Tool (SCART), local Computer Aided Facilities Management Systems (CAFM), infection control data, Geographic Information Systems (GIS) etc.

The NHSS Digital Estate

An information management led approach which facilitates the digitisation, integration and curation of appropriate digital models (unifying existing data and records) to enable efficient management of NHSS real-estate portfolios.

A network diagram with various icons representing digital assets and healthcare facilities. The icons include a building, a hospital, a car, a Wi-Fi symbol, a laptop, and a smartphone, all connected by lines to form a network. The background is a blurred image of a cityscape with a blue and purple color scheme.

Getting the most out of existing NHSS assets means improving how Health Boards produce, manage and use data. This is combined with integrated technologies and systems to inform strategic asset management and facilities management.

Updating workflows



Information Hierarchy Container Structure

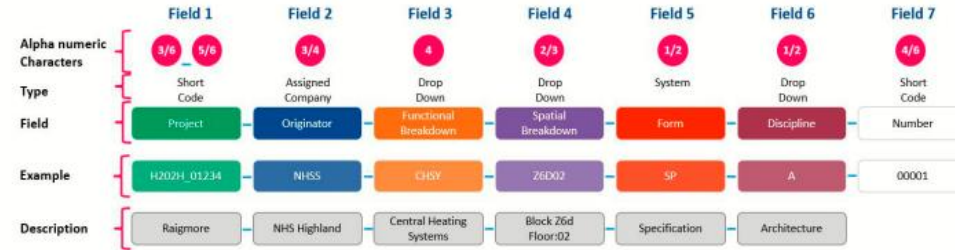
When establishing your current as-is process, you will begin to ascertain what (if any) consistent naming conventions have been used. You may find that naming conventions vary from Board to Board, department to department and from project to project and may be a mixture of consistent naming through to ad hoc.

It is important that Boards use and apply an agreed naming convention and create and maintain project codes. This is becoming more vital as more and more information is shared digitally, requiring the need for structured, consistent and understandable naming conventions.

The NHSScotland Naming Convention sets out the naming conventions (both mandatory and optional fields) for information container meta-data that should be applied to information being transitioned to AIMS.

Boards and their teams can use the 'Naming convention guide' which has a step-by-step methodology to follow and the necessary codes.

For specific steps on how to apply the naming convention and meta-data within AIMS, including using placeholders, refer to the Bentley User Protocol which can be found within the 'How-To' section of AIMS.



NHSScotland Naming convention

	Field	Summary	Example
1	Project	What project does this information container relate to?	H202H_01234
2	Originator	Which party is responsible for producing this information container?	NHSS
3	Functional Breakdown	Which functional aspect of the project does this information container relate to? – e.g. system	CHSY
4	Spatial Breakdown	Which spatial aspect of the project does this information container relate to? For example location and floor level.	Z6D02
5	Form	What is the nature of this information container?	SP
6	Discipline	Which (technical) branch is responsible for producing this information? e.g., architectural/HAI	A
7	Number	Sequential/grouped number to make the ID unique when all other fields are taken into account	00001



Information Container Metadata



A GLOBAL COMPANY
WITH RICH DOMAIN EXPERIENCE



>4,000 colleagues ▶▶

43%

30%

27%

0 WHO

WHERE

64 languages

1104 master's degrees

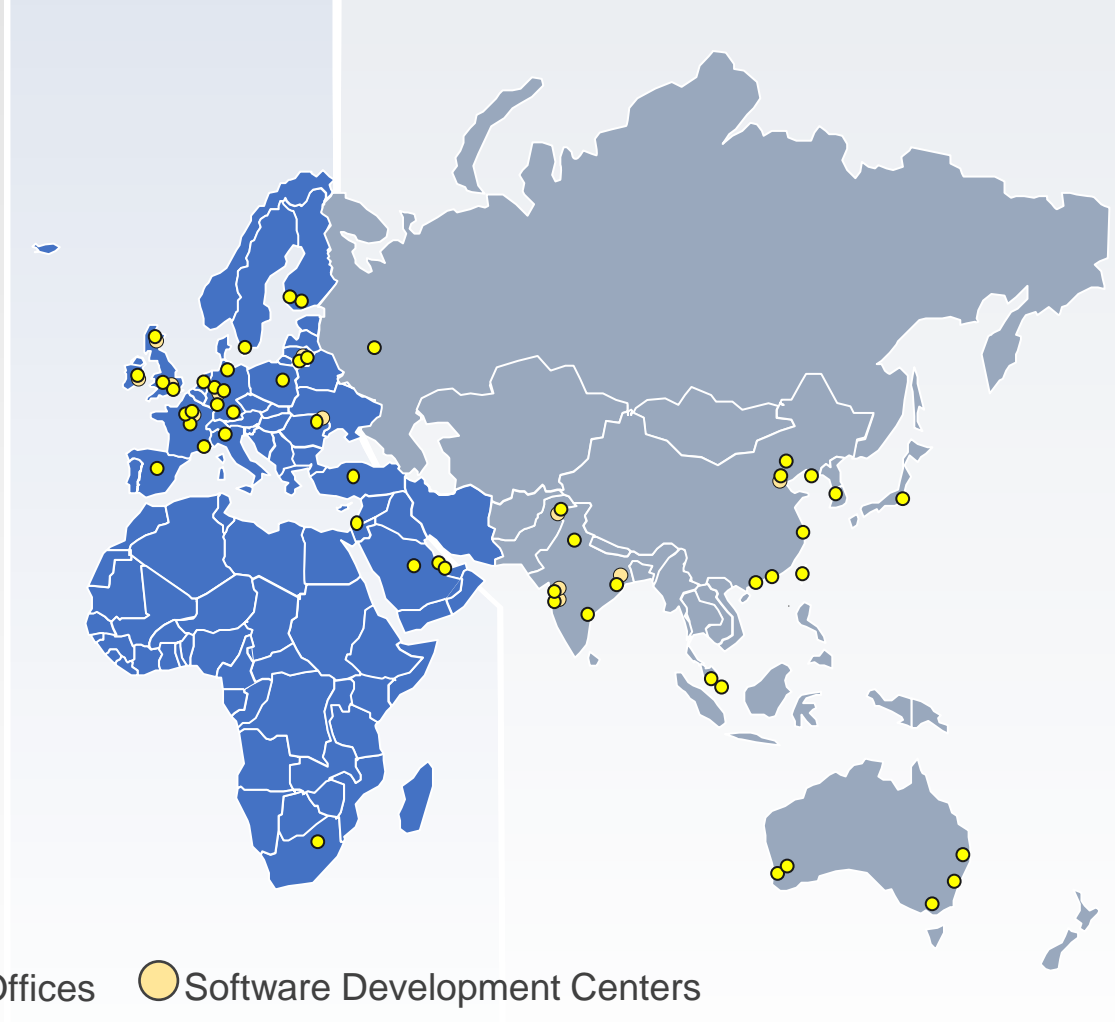
94 doctoral degrees

859 engineers

186 countries

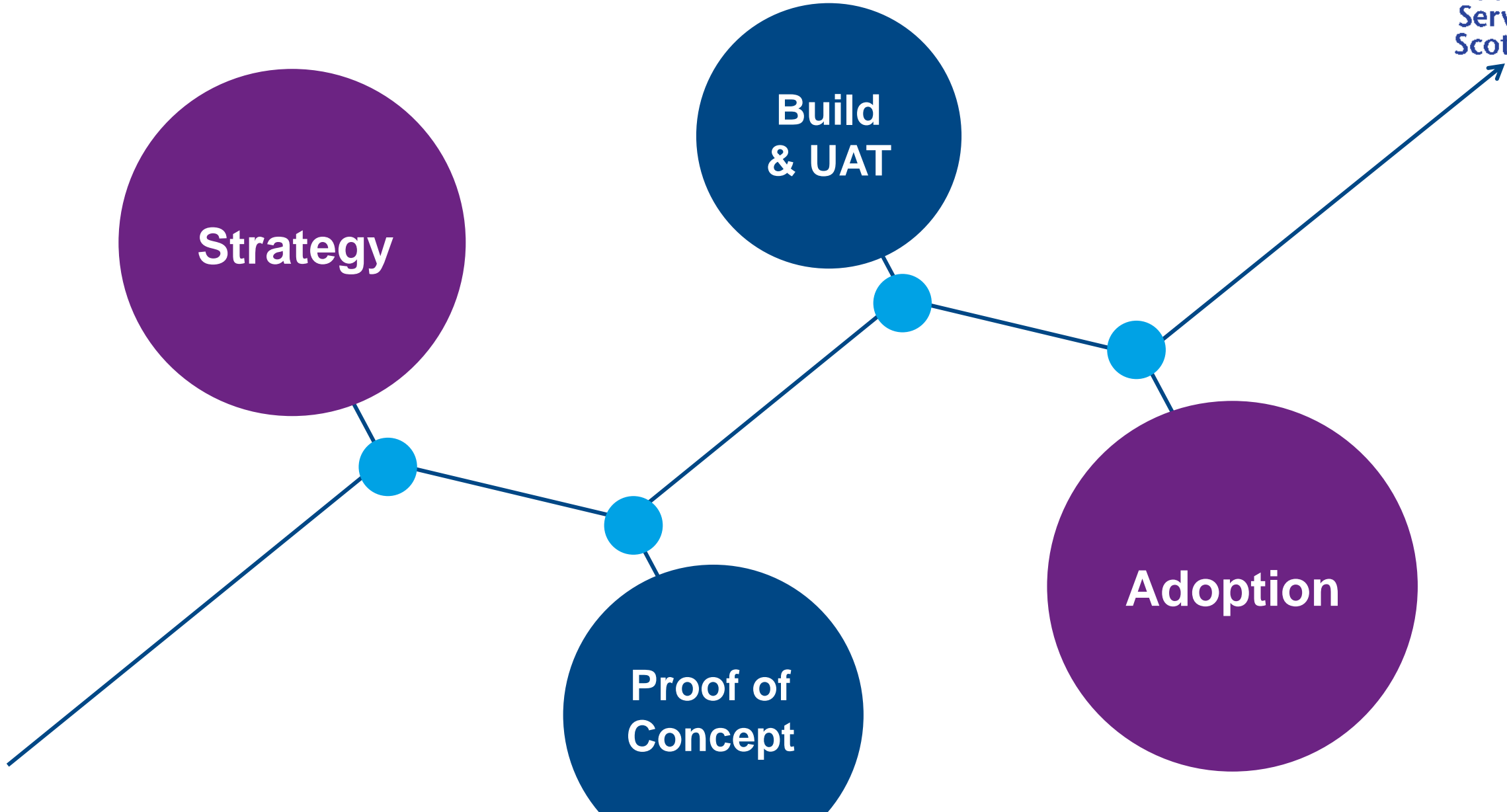
94 offices and development centers

Bentley Locations



● Offices ● Software Development Centers

The journey to date



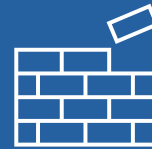
NHSS AIMS

BCDE is NHSS Assure Information Management System (AIMS)

Powered by Bentley BCDE 



Design



Build



Operate

Digital Twin  iTwin[®]
Platform



Trusted globally by Government, Defence and Critical National Infrastructure Projects



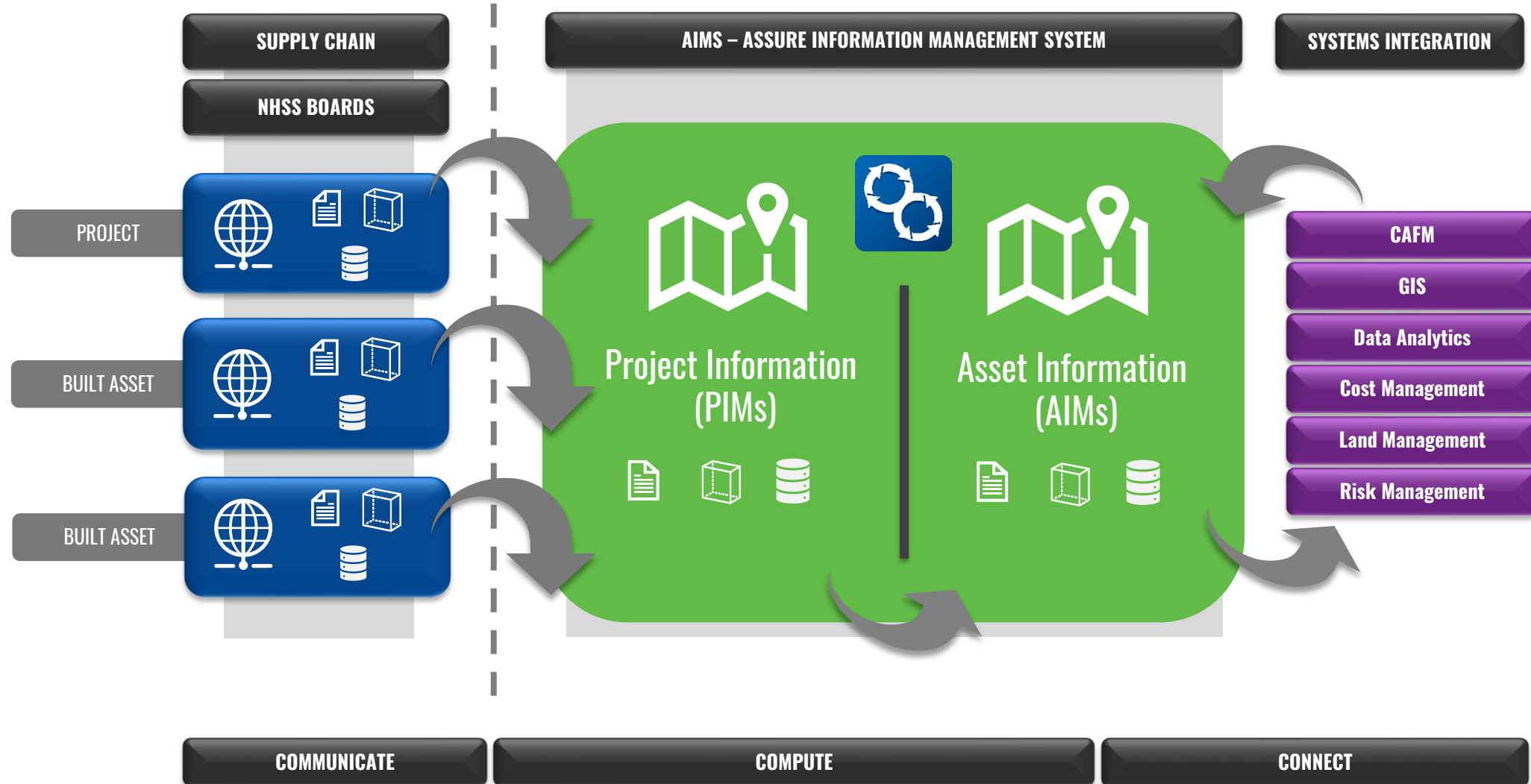
Modular Security Architecture

- Data at Rest Encryption
- Active Threat Monitoring
- Protection from Distributed Denial of Service (Ddos)



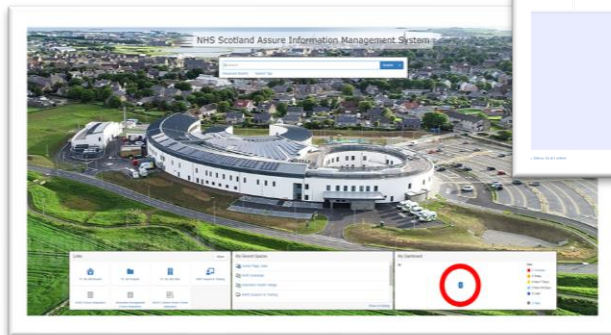
ISO27001 UK Data Centres

How do we get there?



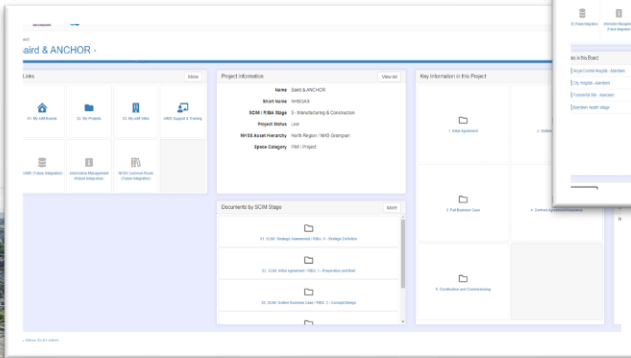
How do we get there?

Managing Individual Project & Asset Information



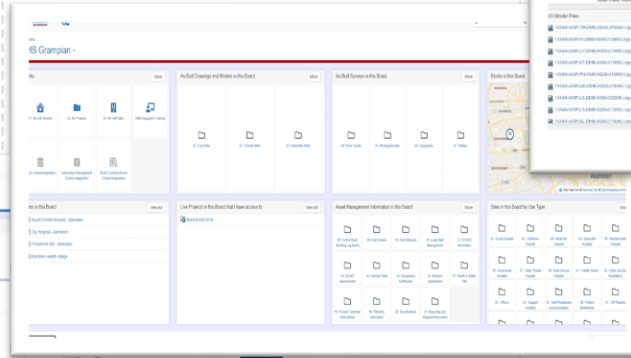
PROJECT

Managing and reporting across Built Assets



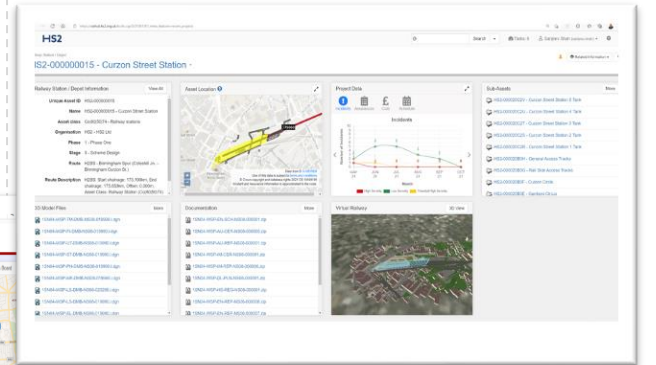
BUILT ASSETS

Managing and reporting across Programmes



PROGRAMMES

Toward the goal of a Digital Twin



DIGITAL TWIN

AIMS – Assure Information Management System

NHS Scotland Assure Information Management System

Search... Search

Advanced Search Search Tips

BC Consultant (bconsultant)

Links

- 01. My AIM Boards
- 02. My Projects
- 03. My AIM Sites
- AIMS Support & Training
- EAMS (Future Integration)
- Information Management (Future Integration)
- NHSS Common Room (Future Integration)

My Recent Spaces

- Home Page Links
- NHS Grampian
- Aberdeen Health Village
- AIMS Support & Training

My Dashboard

2

Due

- 2 Overdue
- 0 Today
- 0 Next 7 Days
- 0 Next 28 Days
- 0 Later

2 Total

AIMS – Assure Information Management System

AIM Board
NHS Grampian -

👤 Listing ↑

<p>Links More</p> <ul style="list-style-type: none"> 01. My AIM Boards 02. My Projects 03. My AIM Sites AIMS Support & Training EAMS (Future Integration) Information Management (Future Integration) NHSS Common Room (Future Integration) 	<p>As-Built Drawings and Models in this Board More</p> <ul style="list-style-type: none"> 01. CAD Files 02. Domain BIMs 03. Federated BIMs 	<p>As-Built Surveys in this Board More</p> <ul style="list-style-type: none"> 04. Point Clouds 05. Photogrammetry 06. Topography 07. Utilities 	<p>Blocks in this Board More</p> <p>Map Tiles from © OpenMapTiles © OpenStreetMap contributors</p>
<p>Sites in this Board View All</p> <ul style="list-style-type: none"> Royal Cornhill Hospital - Aberdeen City Hospital - Aberdeen Foresterhill Site - Aberdeen Aberdeen Health Village 	<p>Live Projects in this Board that I have access to View All</p> <ul style="list-style-type: none"> Baird & ANCHOR 	<p>Asset Management Information in this Board More</p> <ul style="list-style-type: none"> 08. Control Book (Building Log Book) 09. User Guides 10. O&M Manuals 11. Asset Risk Management 12. COSHH Information 13. SCART Assessments 14. Training Plans 15. Compliance Certificates 16. Statutory Applications 17. Health & Safety File 18. Product Technical Data Sheets 19. Warranty Information 20. Specifications 21. Recycling and Disposal Information 	<p>Sites in this Board by Use Type More</p> <ul style="list-style-type: none"> 01 - Acute Hospital 02 - Childrens Hospital 03 - Maternity Hospital 04 - Specialist Hospital 05 - Mental Health Hospital 06 - Community Hospital 07 - Older People Hospital 08 - Multi Service Hospital 21 - Health Centre 22 - Clinic (inc Day Hospitals & GP Practice) 23 - Offices 24 - Support Facilities 25 - Staff Residential Accommodation 26 - Patient Residential 41 - GP Practice

AIMS – Assure Information Management System

Project
Baird & ANCHOR -

Listing

Links More

01. My AIM Boards

02. My Projects

03. My AIM Sites

AIMS Support & Training

EAMS (Future Integration)

Information Management (Future Integration)

NHSS Common Room (Future Integration)

Project Information View All

Name Baird & ANCHOR

Short Name NHSGAS

SCIM / RIBA Stage 5 - Manufacturing & Construction

Project Status Live

NHSS Asset Hierarchy North Region / NHS Grampian

Space Category PIM / Project

Key Information in this Project More

1. Initial Agreement

2. Outline Business Case

3. Full Business Case

4. Contract Agreement/Assurance

5. Construction and Commissioning

My Recent Project Documents

You have no recent documents for this Space.

Documents by SCIM Stage More

01. SCIM: Strategic Assessment / RIBA: 0 - Strategic Definition

02. SCIM: Initial Agreement / RIBA: 1 - Preparation and Brief

03. SCIM: Outline Business Case / RIBA: 2 - Concept Design

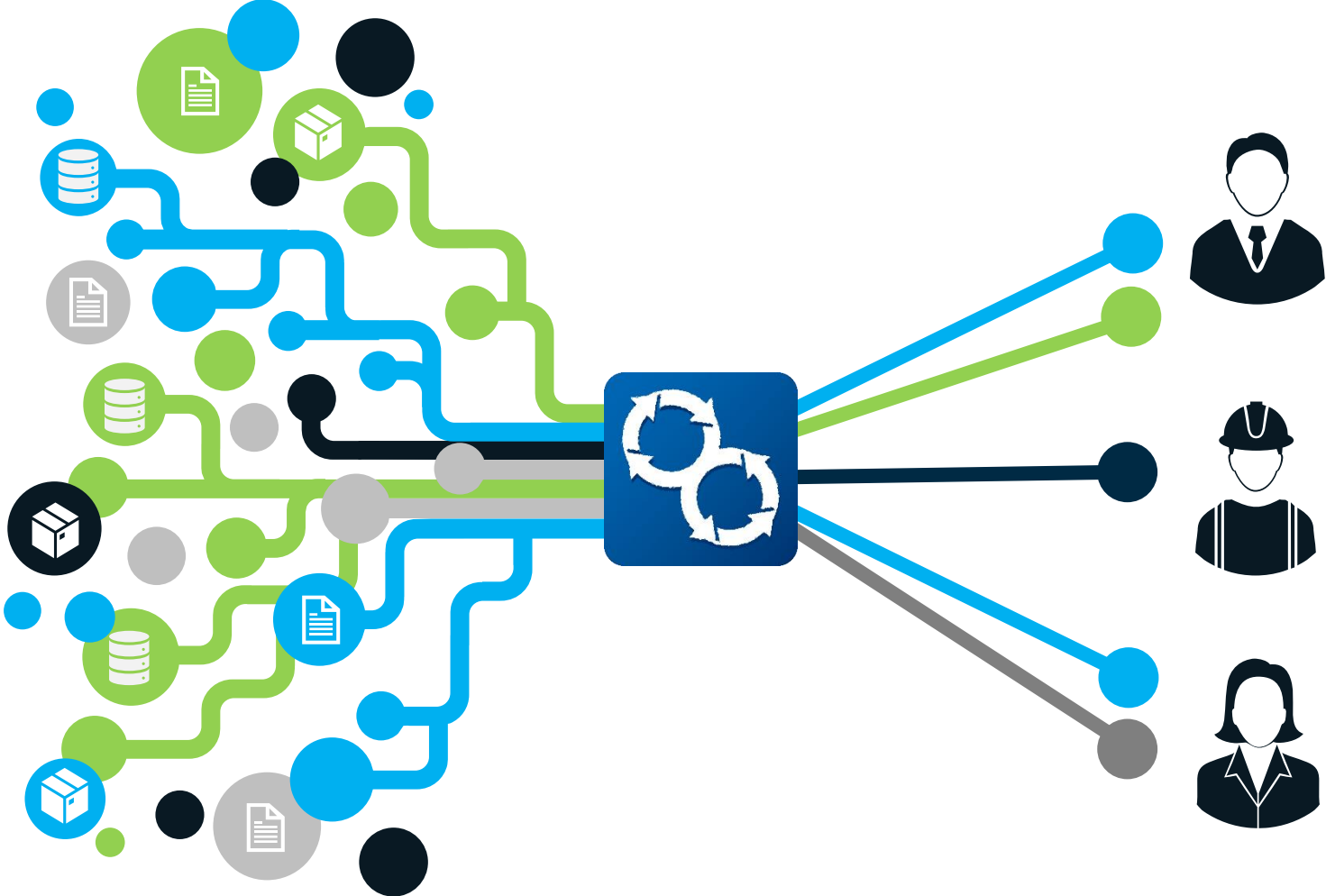
My Dashboard

In

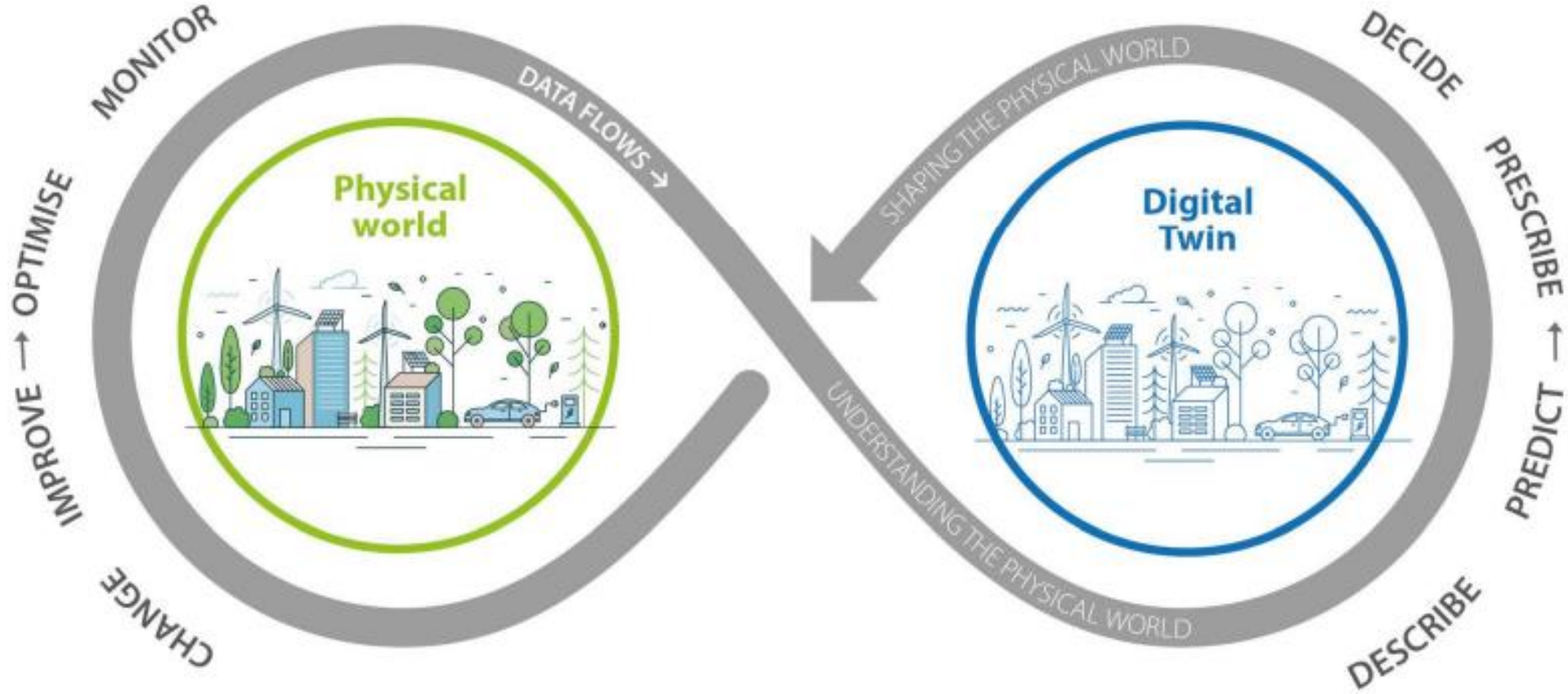
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- 0 Today
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- 0 Next 28 Days
- 0 Later
- 0 0 Total

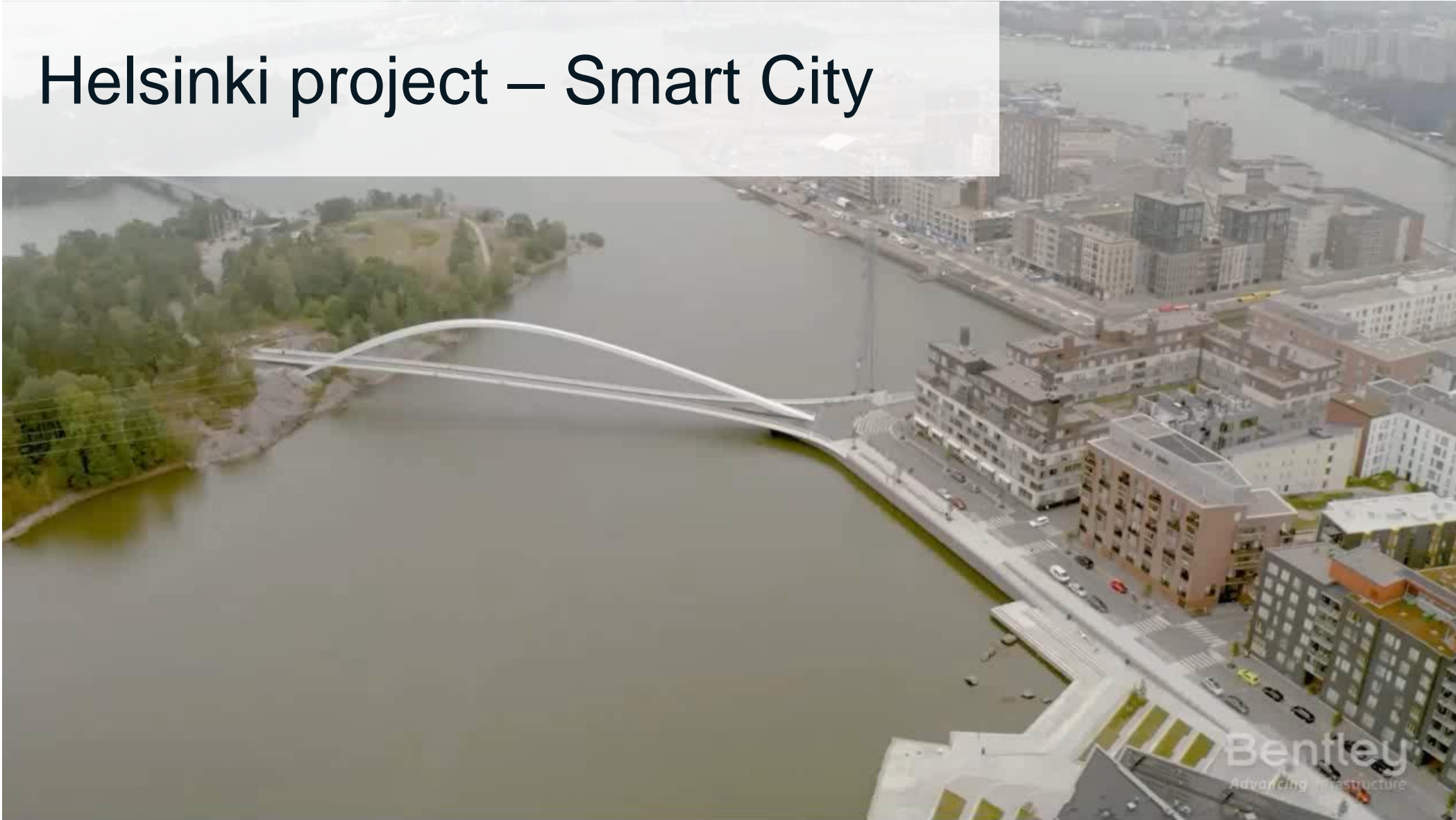
Unlock the power of data



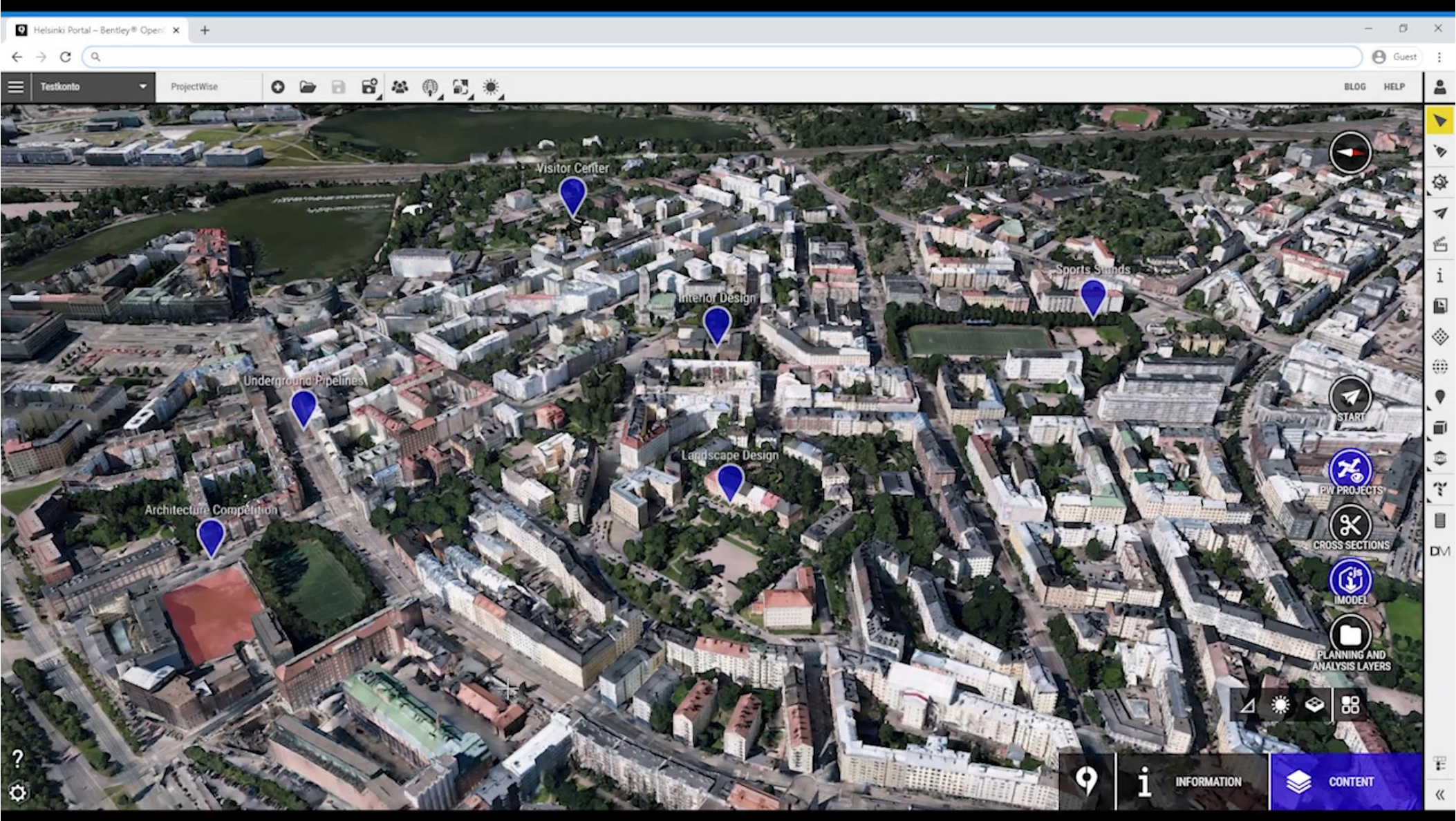
What is a Digital Twin



Helsinki project – Smart City

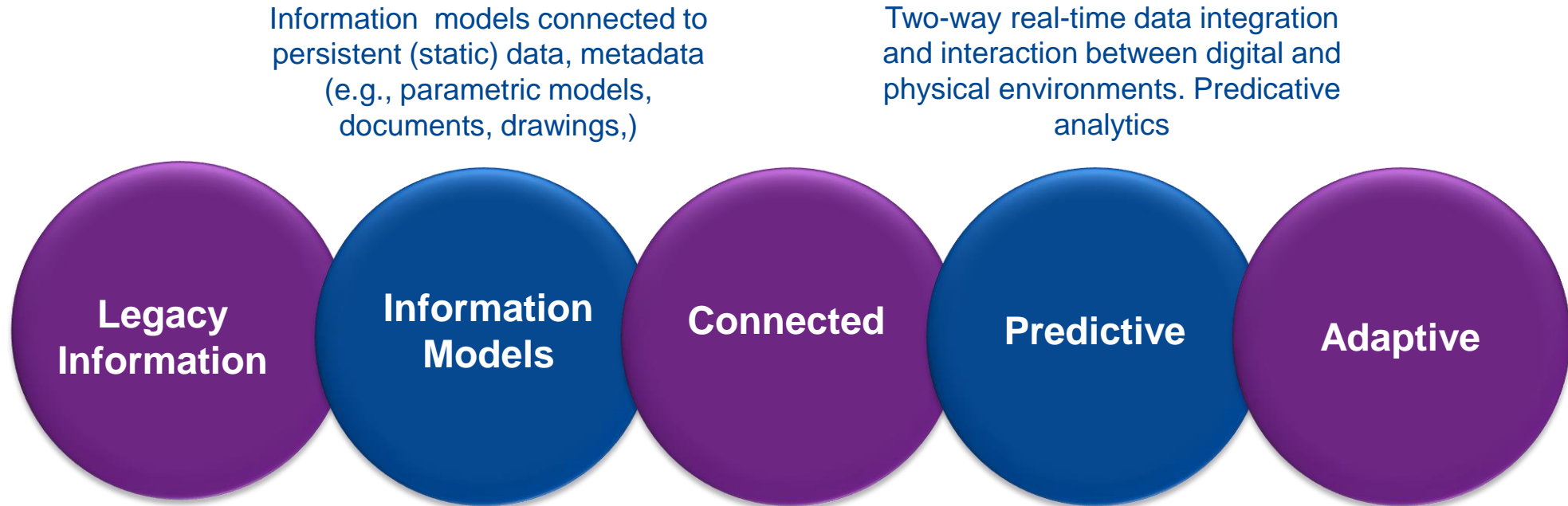


Digital Twin – An entire city!





Key takeaway – a value driven digital journey



Reality capture of existing conditions (e.g., condition survey data, point clouds, photogrammetry, GIS survey data or CAD)

Models enriched with connected data AMS / CAFM and (real-time data monitoring (e.g., from IoT, sensors, BMS, SCADA, Edge controls

DT enriched with advanced analytics and decision support tools – probabilistic simulation and autonomous adaptive interventions.



NHS Scotland Assure Support

NSS.DEandAMTeam@nhs.scot

- Support initial user onboarding,
- Provide administrator training,
- Set up of initial environments at site and block level,
- Provide guidance on related templates, best practice and knowledge networks,
- Custodians of central AIMS registers e.g. originator and function codes.

Questions?