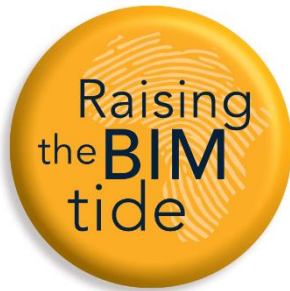




BIMCOMMUNITY
AFRICA



Better Information Management

Practical first steps



Richard Matchett

PhD.Eng, Pr.Eng

Civil Engineer

Biker

Drone Pilot

Technophile

Digital Advisory Lead

at **ZUTARI**

Co-founder – BIMcommUNITY Africa



BIM COMM UNITY AFRICA

- ✓ ***Non-profit***
- ✓ ***Neutral***
- ✓ ***Community Driven***
- ✓ ***Passionate about better delivery of projects and achievement of value to users through Better Information Management***

B

Building

I

Information

M

Modelling

Better

Information

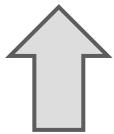
Management

Improved Decision Making

INSIGHT



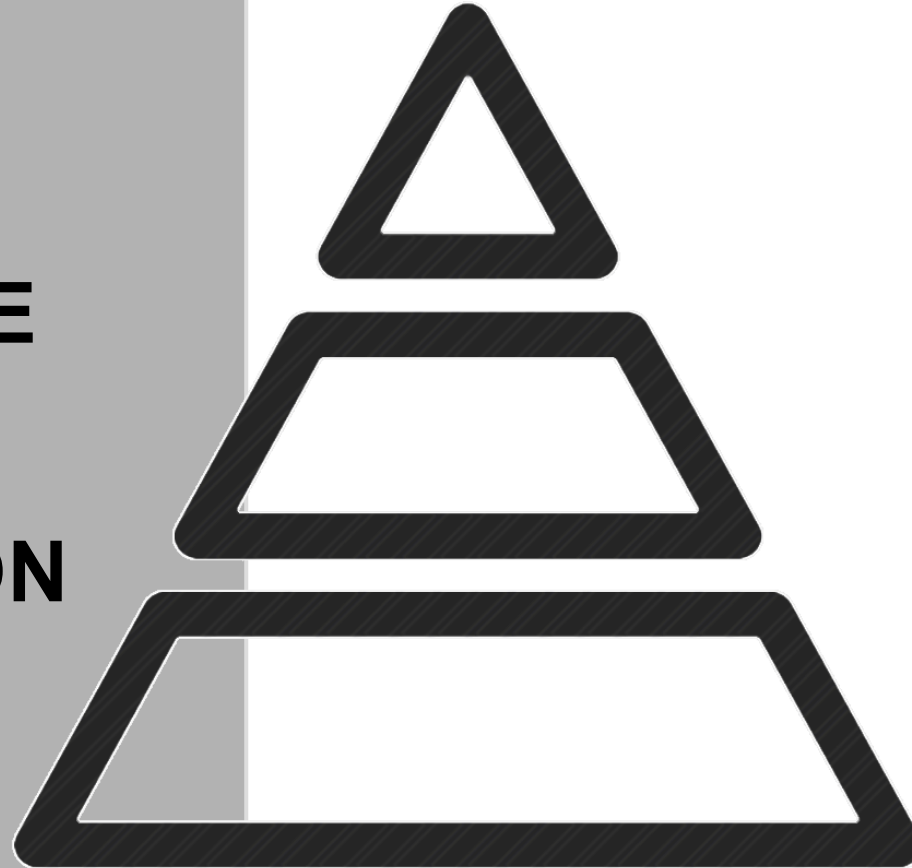
KNOWLEDGE



INFORMATION



DATA



Know-how, experience, insight, understanding and contextualised knowledge

Contextualised, categorised, calculated and condensed information

Facts and figures which relay something specific, but which are not organised

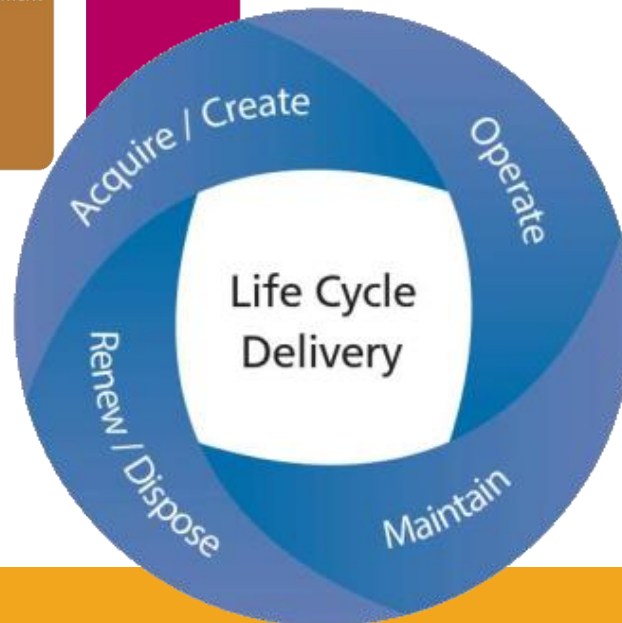
ISO 55000 - Good Management depends on good information



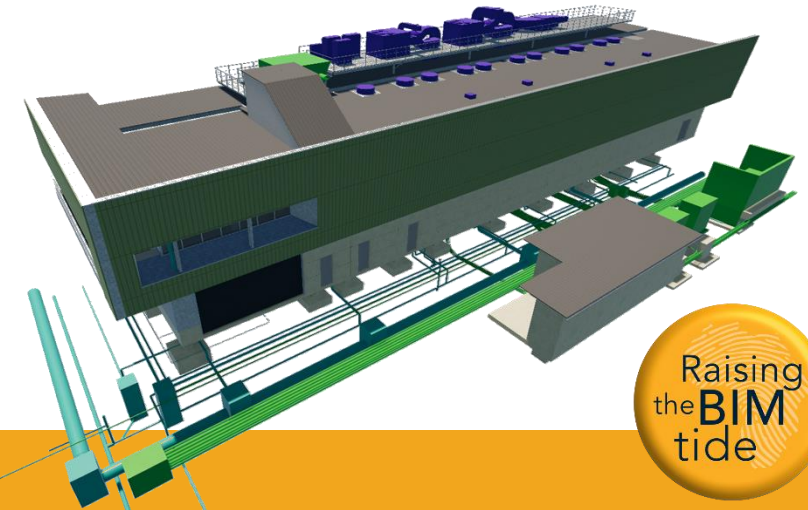
Figure 4: The IAM's 10-box Capabilities Model



**Asset
Information**



-  OEM Operators Manual
-  3D Component view and parts list
-  Configuration and Installation Record
-  Commissioning record and Warrantees
-  Trouble Shooting Guide
-  Keyplan of installations
-  Maintenance Schedule



Information management paradigm – Relevant standards



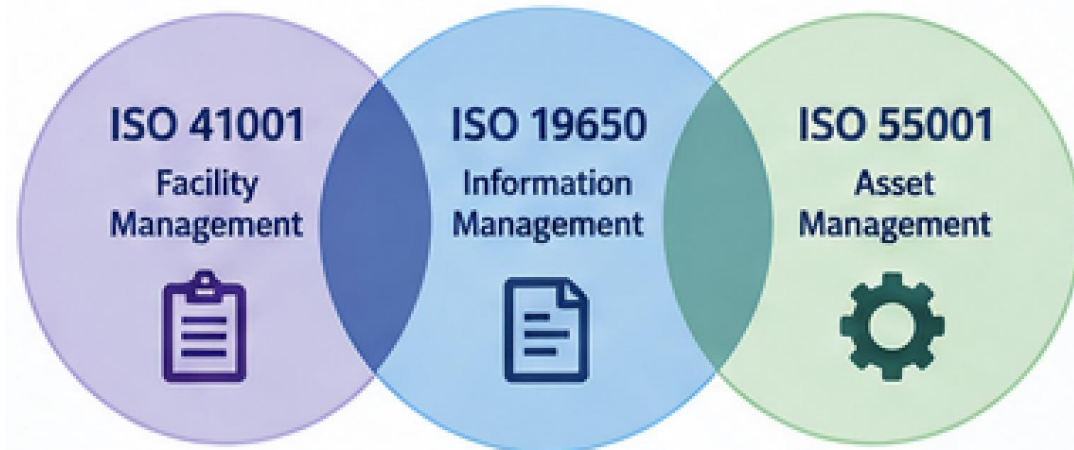
ISO 9001 ensures that project deliverables meet quality standards

ISO 55000 aids in managing equipment, facilities, and infrastructure assets efficiently.

ISO 21500 provides guidance on project management

ISO 1752 & ISO 41000 guidance on facilities management

ISO 19650 enhances collaboration among stakeholders through standardized IM practices.



Why do we need these standards?

is this
your
aspiration?



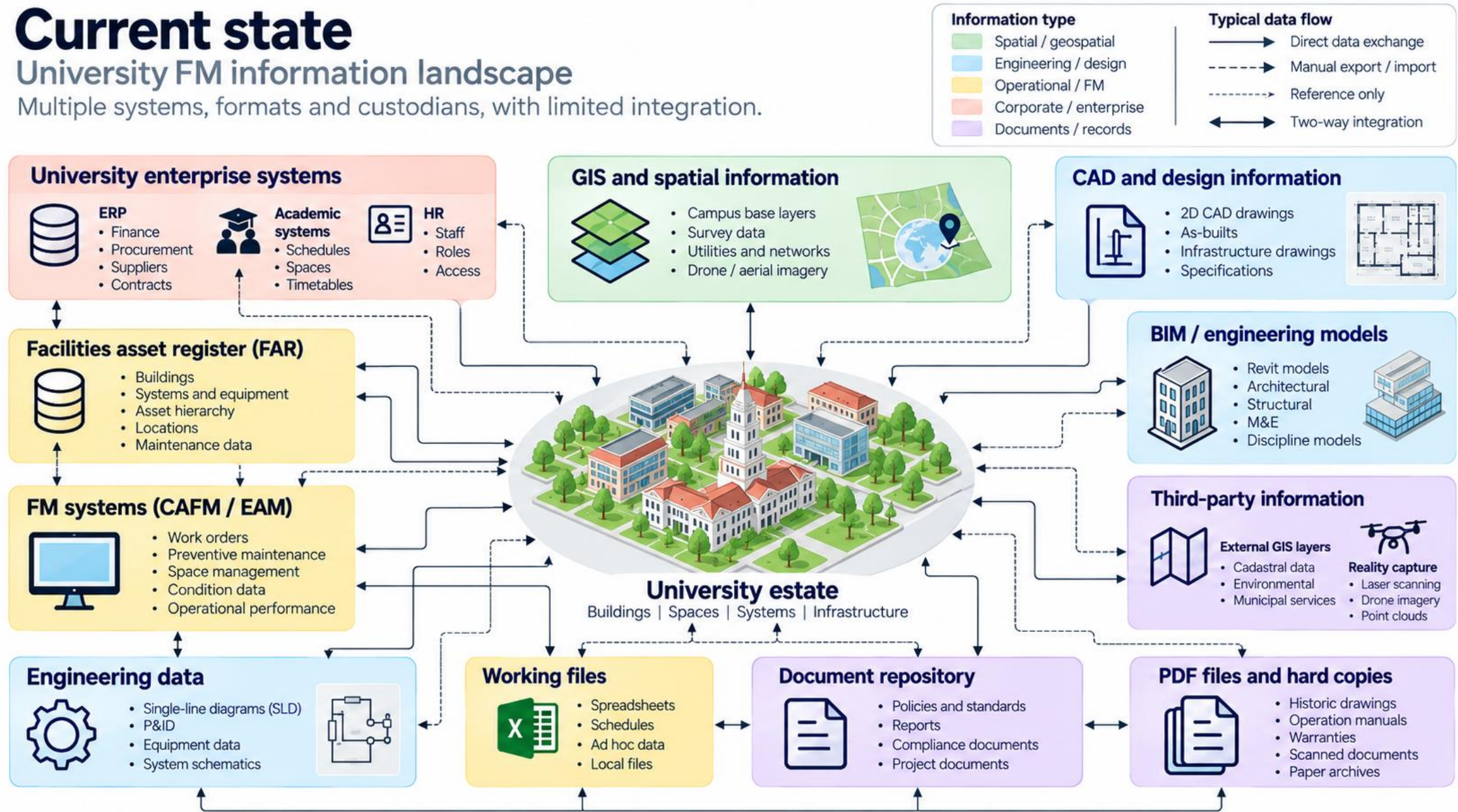
**but
this is your
reality...?**



Current state

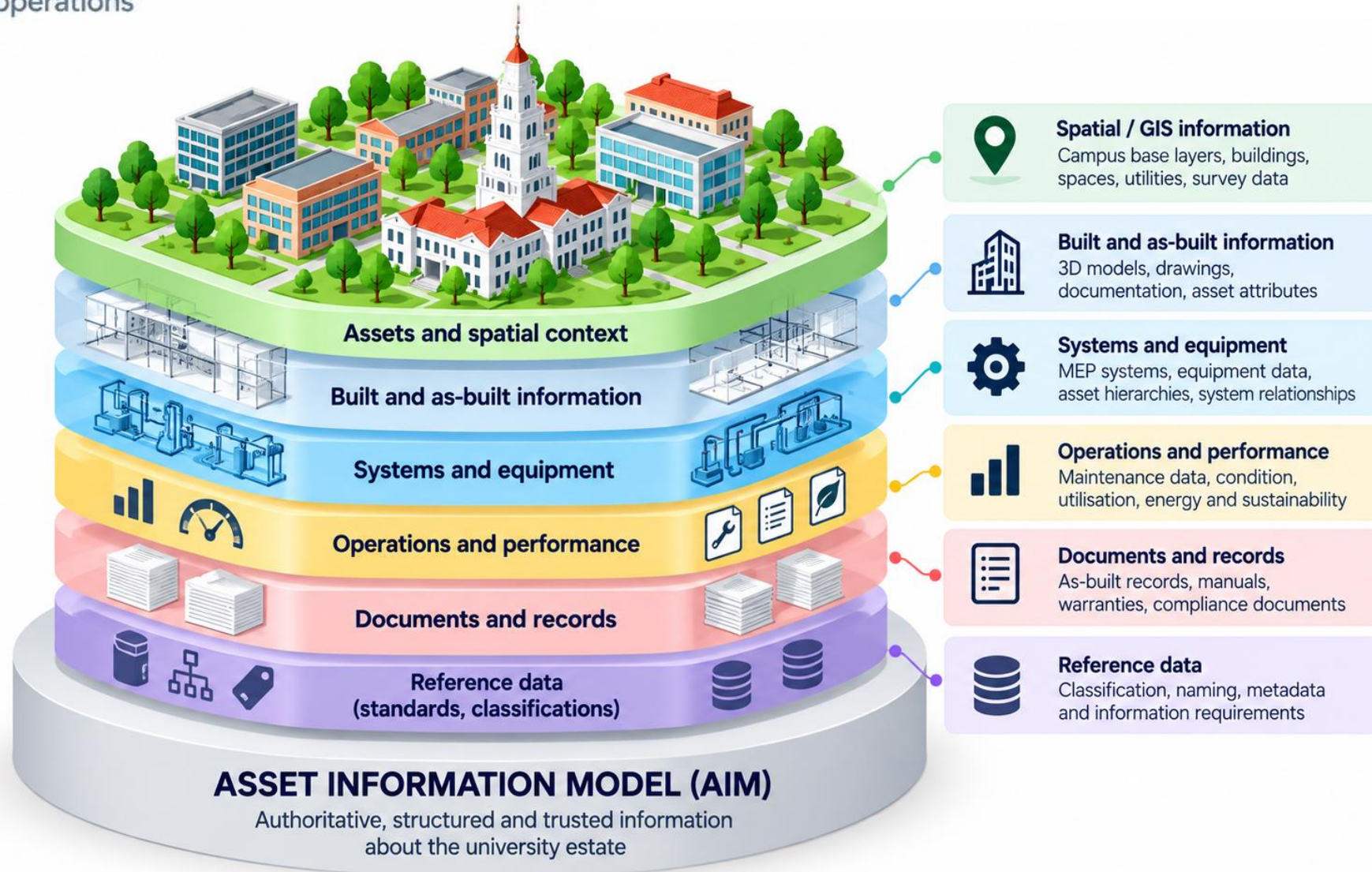
University FM information landscape

Multiple systems, formats and custodians, with limited integration.



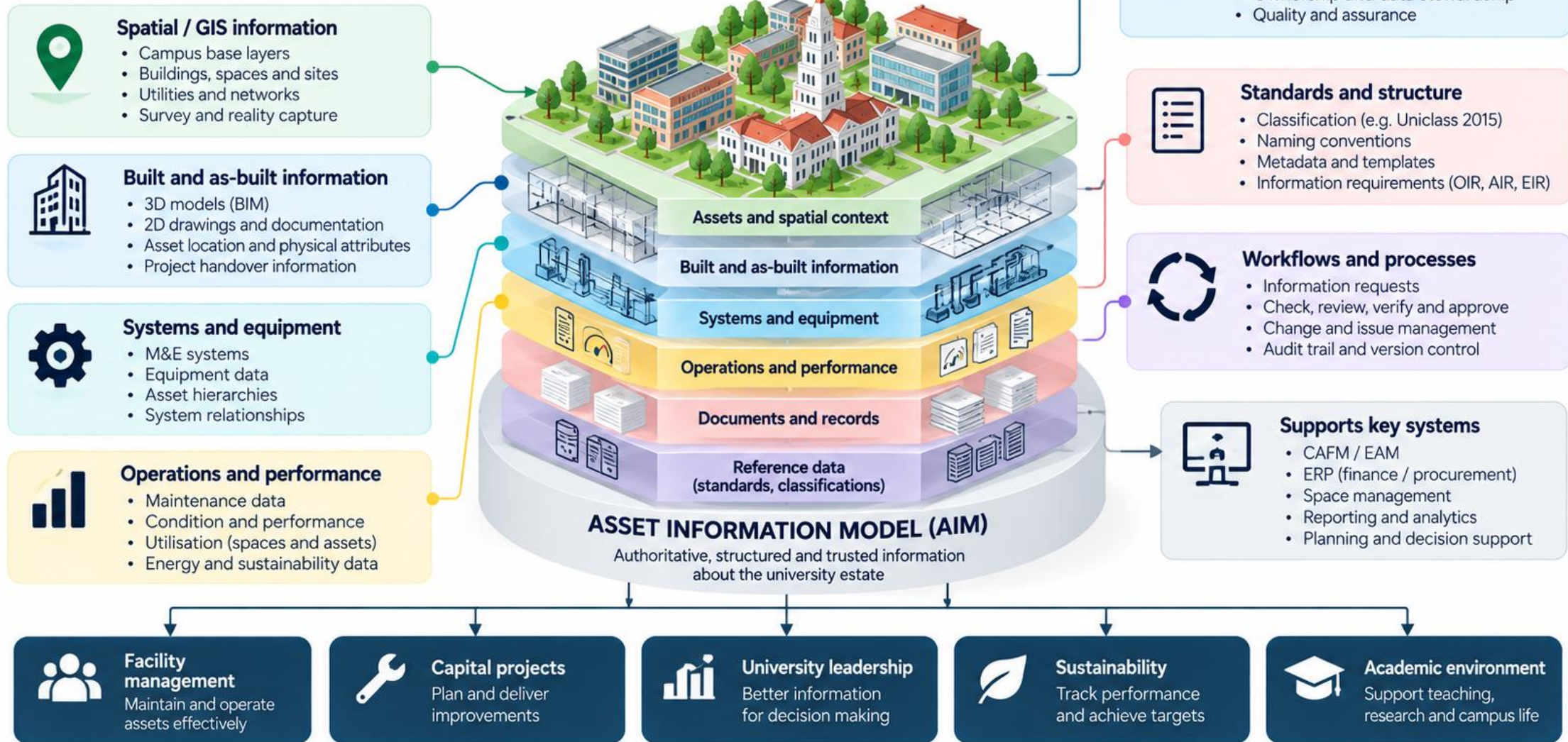
The Asset Information Model (AIM)

A governed, structured and connected information environment to support university operations

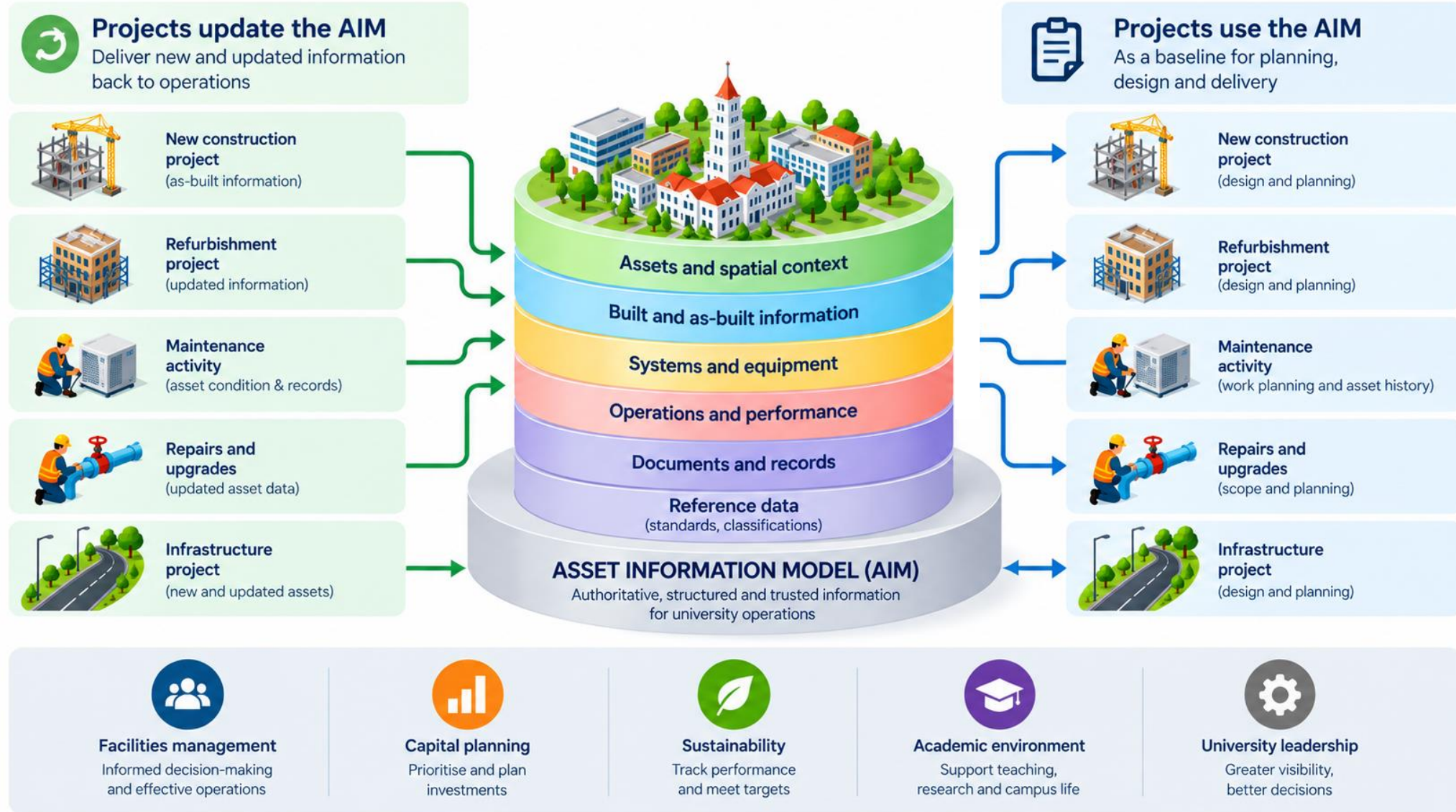


The Asset Information Model (AIM)

A governed, structured and connected information environment to support university operations



The ISO19650 links Projects, Operations and AIM.



Question: what should be in the AIM?

→ the Hierarchy of Information Requirements

Defining YOUR Information Requirements



OIR

Organisational
Information Requirements

What the university needs to achieve

Strategic objectives, facilities management service outcomes, sustainability, compliance.



Student experience



Sustainability targets



Regulatory compliance



AIR

Asset Information
Requirements

What information is needed for facilities and asset management

Facility and asset attributes, performance, condition, lifecycle needs.



Buildings and spaces



Equipment and systems



Infrastructure and services



PIR

Project Information
Requirements

What information is needed for specific projects

Design, construction, refurbishment, integration with operations.



New buildings



Refurbishments



Information for handover



EIR

Exchange Information
Requirements

How information is exchanged

Standards, formats, classification, naming, level of detail, common data environment (CDE).



Standards (e.g. ISO 19650)



Formats and CDE workflows



Classification and naming

Question: How does the AIM relate to projects?

→ the ISO19650 Project Sequence



APPOINTING PARTY

(e.g. asset owner, client, facilities management team)



Define
information
needs



Set
requirements
and standards



Provide and
govern the CDE



Oversee delivery
and accept into
operational use



APPOINTED PARTY

(e.g. lead appointed party, designers, contractors, specialists)



Demonstrate
capability



Develop
pre-BEP and
propose approach



Produce and
share information
in accordance
with requirements



Submit the PIM
for review
and acceptance

1 Prepare



Need, objectives
and strategy

2 Procure



EIR, invite
and evaluate bids

3 Appoint



Appointments
and finalise BEP

4 Mobilise



Set up team,
confirm CDE and
processes

5 Deliver



Produce and
share information

6 Hand over



Check, accept
and incorporate
into operational use



Facilities management involvement

Define needs

Support procurement

Participate in delivery

Prepare to receive

Operate using the information



Common Data Environment (CDE)

Shared information environment throughout the project

UNDERPINNED BY ISO 19650

People

Processes

Information requirements

Information delivery

Shared information environment

Standards

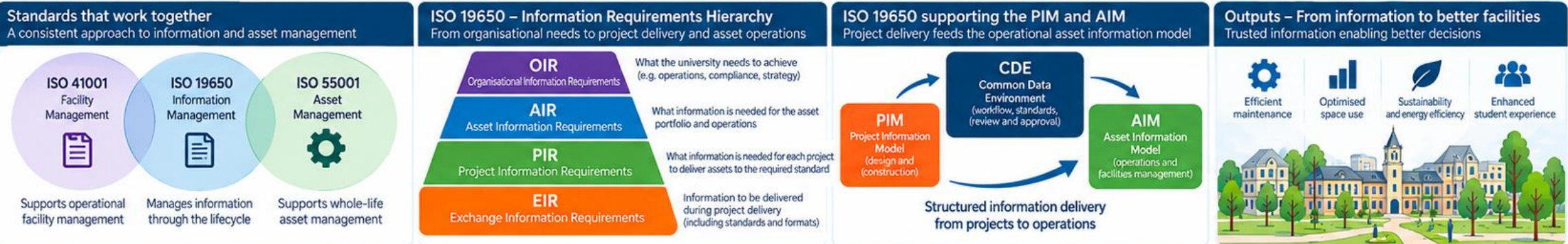
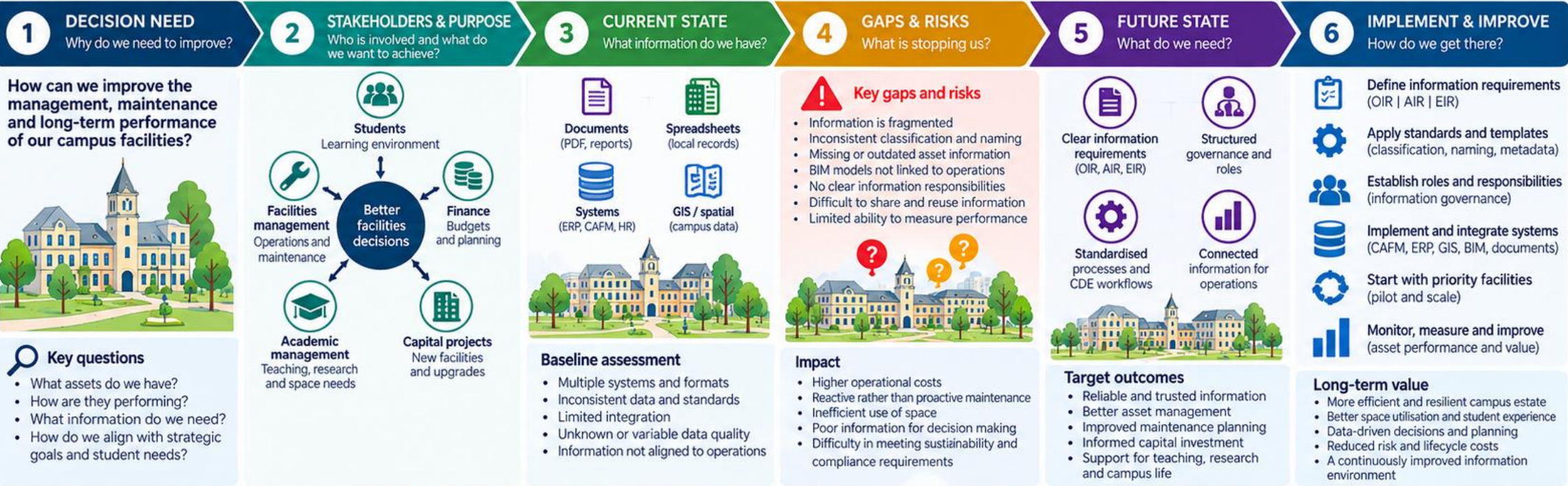
Governance and continual improvement

Where to start:

Get the information house in order.

ISO 19650 for Better Facilities Management in Higher Education

A practical roadmap for improving information, operations and asset decisions





1 DECISION NEED

Why do we need to improve?

How can we improve the management, maintenance and long-term performance of our campus facilities?



Key questions

- What assets do we have?
- How are they performing?
- What information do we need?
- How do we align with strategic goals and student needs?

Think about your own campus:

What do we have?

Buildings, spaces, equipment, infrastructure?

How is it performing?

Condition, maintenance, costs, utilisation?

What do we need to know?

What information is missing or unreliable?

Why does it matter?

Student experience, budgets, sustainability, future growth?

Write Down: What is one important facilities decision you struggle to make because you lack reliable information?



2 **STAKEHOLDERS & PURPOSE** Who is involved and what do we want to achieve?



Think about your own university:

Who needs information?

FM teams, students, academics, finance, management?

What matters to them?

Reliability, comfort, costs, space, sustainability?

What decisions do they make?

Maintenance, budgets, upgrades, planning?

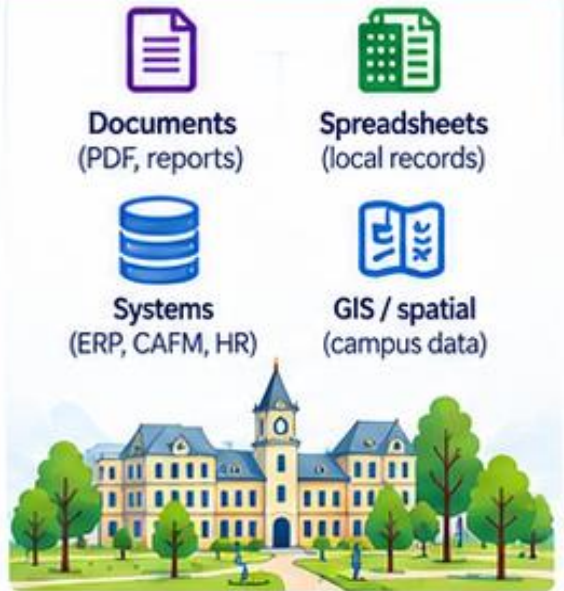
What do they expect from FM?

Better services, fewer disruptions, value for money?

Write Down: Who are your most important stakeholders, and what do they need from facilities management to achieve their objectives?



3 CURRENT STATE What information do we have?



Baseline assessment

- Multiple systems and formats
- Inconsistent data and standards
- Limited integration
- Unknown or variable data quality
- Information not aligned to operations

Think about your university's existing information:

Where is it stored?

Documents, spreadsheets, databases, GIS, paper archives?

Who manages it?

FM, IT, finance, project teams, external consultants?

Can we trust it?

Is it complete, accurate and up to date?

Can we use it?

Is it accessible, connected and useful for decisions?

Write Down: What is your biggest challenge with the information you currently have?



4 GAPS & RISKS What is stopping us?



Key gaps and risks

- Information is fragmented
- Inconsistent classification and naming
- Missing or outdated asset information
- BIM models not linked to operations
- No clear information responsibilities
- Difficult to share and reuse information
- Limited ability to measure performance



Impact

- Higher operational costs
- Reactive rather than proactive maintenance
- Inefficient use of space
- Poor information for decision making
- Difficulty in meeting sustainability and compliance requirements

Think about the weaknesses in your current information:

What is missing?

Asset records, drawings, maintenance histories?

What is unreliable?

Outdated, incomplete or inconsistent information?

What is difficult?

Finding, sharing or updating information?

What is the impact?

Higher costs, delays, poor decisions, operational risks?

Write Down: Which information gap creates the greatest risk or inefficiency for your facilities management team?



5 **FUTURE STATE** What do we need?



Target outcomes

- Reliable and trusted information
- Better asset management
- Improved maintenance planning
- Informed capital investment
- Support for teaching, research and campus life

Think about what better information management would look like:

What do we need?

Reliable, accessible and up-to-date asset information?

How should it be organised?

Common standards, asset hierarchies and an AIM?

Who is responsible?

Clear ownership, roles and approval processes?

How should it work?

Consistent workflows, connected systems and regular updates?

Write Down: What is the single most important improvement you would make to how your university manages facilities information?



6 IMPLEMENT & IMPROVE How do we get there?

-  Define information requirements (OIR | AIR | EIR)
-  Apply standards and templates (classification, naming, metadata)
-  Establish roles and responsibilities (information governance)
-  Implement and integrate systems (CAFM, ERP, GIS, BIM, documents)
-  Start with priority facilities (pilot and scale)
-  Monitor, measure and improve (asset performance and value)

- Long-term value**
- More efficient and resilient campus estate
 - Better space utilisation and student experience
 - Data-driven decisions and planning
 - Reduced risk and lifecycle costs
 - A continuously improved information environment

Think about how your university could get started:

Where do we start?

Which facility or asset group should we prioritise?

What must we define?

Information requirements, standards and responsibilities?

What can we use?

Existing systems, people and processes?

How will we measure success?

Better information, reduced costs, improved performance?

Write Down: What is one practical step your university could take in the next three months to improve facilities information management?

Your answers might look something like this...

(worked example)

Worked Example: From Facilities Challenges to Information Requirements

	Workshop question	Example university response
1. THE DECISION	What important facilities decision do you struggle with because you lack reliable information?	Which buildings and building systems should receive priority for maintenance and capital replacement? We struggle to compare asset condition, maintenance history, criticality and replacement costs across our campuses.
2. THE STAKEHOLDERS	Who are your most important stakeholders, and what do they need from facilities management to achieve their objectives?	University management needs reliable forecasts of maintenance expenditure and capital investment. Academic departments need functional, safe and available teaching facilities. Students need a safe, comfortable and reliable campus environment.
3. THE CHALLENGE	What is your biggest challenge with the information you currently have?	Information is scattered across spreadsheets, drawings, maintenance systems and individual staff members. We do not have a consistent asset register or a reliable way to link buildings, equipment, condition and maintenance records.
4. THE INFORMATION GAP	What information gap creates the greatest risk or inefficiency for your facilities management team?	We cannot reliably identify which critical assets are approaching failure. We lack consistent records of equipment age, condition, maintenance history, location and replacement costs. This leads to reactive maintenance, unplanned expenditure and service interruptions.
5. THE IMPROVEMENT	What is the single most important improvement you want to make to how your university manages facilities information?	Establish a consistent, trusted asset information register for buildings and critical equipment, with agreed information fields, clear ownership and processes for keeping information current.
6. THE FIRST STEP	What is one practical step your university could take in the next three months to improve facilities information management?	Select one building as a pilot. Identify its critical assets, agree on the minimum information required for maintenance decisions, assess existing records, assign information owners and establish a standard asset information template.

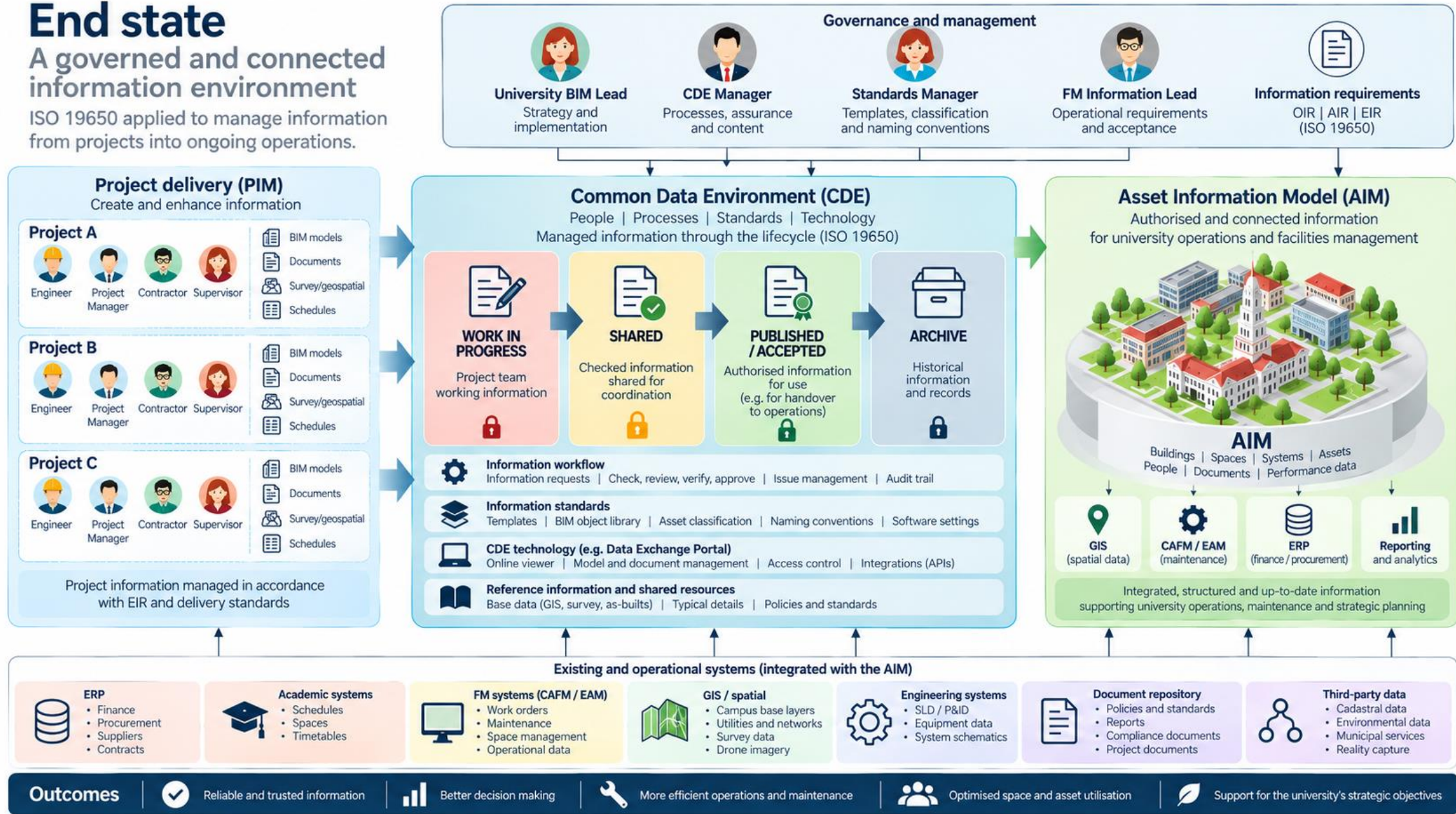
From Workshop Answers to an Information Management Plan

Planning component	What the university needs to establish
Information requirements	Define what information is needed to support maintenance prioritisation, capital planning and operational decisions. Develop the relevant organisational and asset information requirements (OIR and AIR).
Standards and templates	Agree on asset naming, identification, classification, minimum data fields, asset hierarchies and standard information exchange templates.
Roles and responsibilities	Identify who specifies information requirements, who produces information, who verifies and accepts it, and who maintains it throughout the asset lifecycle.
Systems and information environment	Review existing asset registers, maintenance management systems, drawings, document repositories and other information sources. Determine how information should be organised, accessed and exchanged before selecting additional technology.
People and stakeholders	Involve facilities management, maintenance teams, capital projects, finance, IT, procurement and university leadership. Include external consultants and contractors where relevant.
Implementation and governance	Start with a manageable pilot, test the requirements and templates, establish information acceptance procedures and develop a phased approach for extending the process across the university.

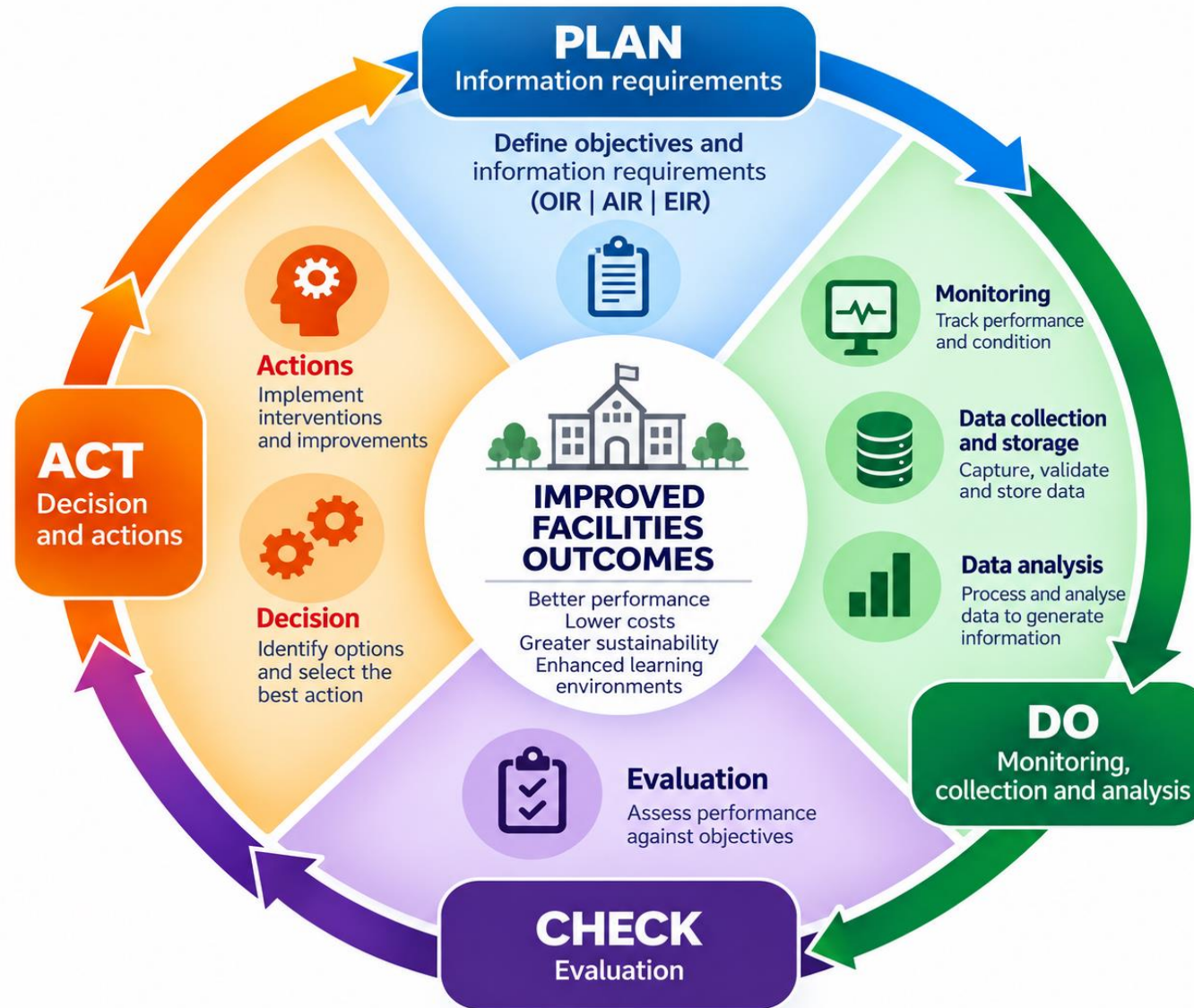
End state

A governed and connected information environment

ISO 19650 applied to manage information from projects into ongoing operations.



Continuous Improvement of Asset Information



Continuous Improvement Cycle for operations



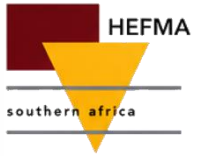
ISO 19650 for Better Facilities Management in Higher Education

A practical roadmap for improving information, operations and asset decisions



Case study (hypothetical)

A university managing a multi-campus estate uses ISO 19650 to establish a trusted and connected information environment, improving operations, maintenance and long-term performance of campus facilities.



How can we improve the management, maintenance and long-term performance of our campus facilities?



Key questions

- What assets do we have?
- How are they performing?
- What information do we need?
- How do we align with strategic goals and student needs?



Baseline assessment

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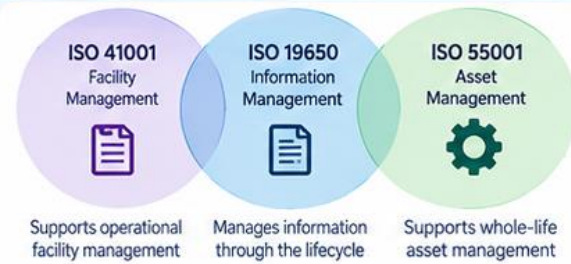


Impact

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- Reactive rather than proactive maintenance
- Inefficient use of space
- Poor information for decision making
- Difficulty in meeting sustainability and compliance requirements



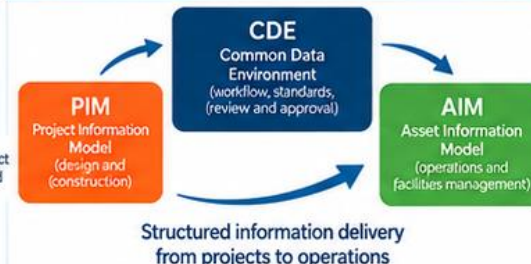
Standards that work together
A consistent approach to information and asset management



ISO 19650 – Information Requirements Hierarchy
From organisational needs to project delivery and asset operations



ISO 19650 supporting the PIM and AIM
Project delivery feeds the operational asset information model



Outputs – From information to better facilities
Trusted information enabling better decisions





Pilot Project



Digital Readiness Assessment



Overall Digital Strategy



Asset Information Management Strategy



Information Management Deep Dive



Define your Information Management Aspirations



ADOPTION
& CHANGE
MANAGEMENT