

IBOS – International Building Operations Standard

Global
1st edition

DRAFT

1 Introduction

The COVID-19 pandemic has accelerated the adoption of technologies to support remote working. It has also placed added value on activities that support the health and well-being of building users, which make the office, factory or educational establishment a place that people want to occupy.

In parallel, the climate crisis and net zero carbon ambitions of organisations across all sectors have raised the profile of asset management activities that seek to optimise the use of resources. The creation of social value is also a clearly defined and explicit target outcome for many public, private and third sector organisations.

With a changing social, economic and environmental landscape, it is important for those with responsibility for property assets at all stages of the property life cycle to adopt a multidimensional and people-centric approach to assessing performance.

There is also a well-established awareness in the property and facilities management industry that the effectiveness of building occupiers is directly determined by the way the building is managed and operated. The industry is also mature in terms of certifications and accreditations that rely on taking a snapshot of the systems, infrastructure and technologies in place.

Finally, there is both an increasing body of stakeholders with an interest in the way property assets are managed throughout their life cycle, and an increasing number of ways in which the value of a property asset to its occupier can be measured.

These trends demand a fresh look at property asset performance. The climate is therefore right for the introduction of a new, simple-to-operate, multidimensional International Building Operations Standard (IBOS).

1.1 Purpose of IBOS

The purpose of IBOS is to support organisations that wish to measure the operational performance of their property assets in a consistent manner – irrespective of the type of property or its location. IBOS cuts across asset types and geographical boundaries.

Efficient and effective asset performance is contingent on accurate and timely data being available. That data must look at multiple facets of performance simultaneously, such as utilisation, cost in use and environmental performance.

IBOS adds another dimension – **the user experience** – and in doing so reaches beyond the more traditional technical aspects of operational performance that have become tried and tested over many decades.

Introducing the user experience into the framework for measuring the operational performance of assets sets IBOS apart from all other methodologies. By reflecting the needs and perceptions of users in a simple but unique approach to holistic property performance assessment, RICS has developed a methodology that is entirely new to the market.

Not only does IBOS introduce the occupier dimension as a separate consideration when assessing overall property performance, it recognises that the technical performance of an asset also affects the experience of the user. For example, consider how alternative approaches to space utilisation, maintenance, cleaning or life cycle replacement can impact directly or indirectly on the ability of a workplace to effectively support the needs of the occupier.

By focusing on specific dimensions of performance, entitled 'pillars', IBOS is designed to:

- be easy to use
- capture a sufficiently broad range of data to deliver a rounded picture of operational performance
- enable benchmarking of performance across a portfolio or between portfolios
- create a core body of knowledge regarding asset performance that can be augmented by users according to their particular requirements, asset types, etc. and
- identify a range of performance indicators that should be considered, rather than confirming the precise level of performance that is appropriate.

The last point is very important. While the **desired performance measures** selected by users will relate to factors such as the prevailing legislative framework, good practice guidelines and of course the type of property asset and its location, IBOS provides insights to help arrive at the optimum balance of performance across many indicators.

The common bond that integrates many performance indicators is the experience of the user.

Finally, it is important to note that IBOS represents an approach to property asset performance assessment that can inform strategic asset management planning and decision-making. It also provides a valuable tool to support the appraisal of options and the associated preparation of business cases.

2 Stakeholders

There may be many different stakeholders with a potential interest in the performance of a property asset, particularly if the asset is customer-facing and/or supports a number of functions.

For simplicity, the potential portfolio of stakeholders has been categorised as 'internal' or 'external', as shown in Figure 1.

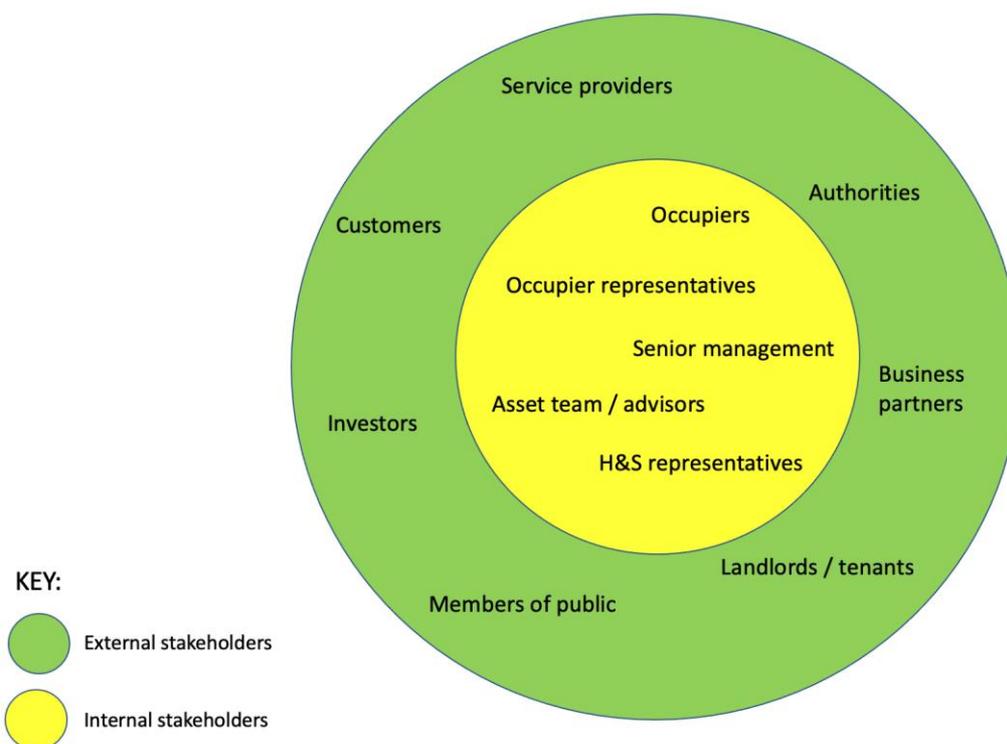


Figure 1: IBOS stakeholders

Given the broad range of potential stakeholders and the scope of the data to be captured and analysed, there are many corresponding uses of IBOS, including:

- internal portfolio benchmarking
- portfolio comparison against those of other parties
- day-to-day asset management
- strategic portfolio planning
- capital planning and prioritisation
- workplace and workforce planning
- compliance assessment and
- user satisfaction assessment.

3 The five pillars of performance

Operational property assets are, by definition, acquired and managed to support the core business of an organisation. While it can sometimes be helpful to consider alternative use potential, rental value and similar measures, operational asset performance should be measured using metrics and standards that are different to those recommended for use with an investment portfolio.

The five pillars of performance that form the foundation of IBOS approach performance from different perspectives but with a single unifying thread: the user experience.

The five pillars are:

- **Compliant:** how well the building complies with relevant statute, best practice and guidance on the working environment and its drivers such as temperature, air quality, ventilation, lighting levels, and health and safety compliance. As indicated in section 1.1, IBOS does not aim to specify the 'correct' level or measure of performance. Instead, it is for the user to understand the specific statutes, best practice and guidance that are appropriate for their assets – and act accordingly. Acting accordingly means capturing and analysing data, reporting on the findings, and acting to incrementally improve asset performance and the user experience.
- **Functional:** the suitability of the building to meet occupier needs in terms of issues such as connectivity, configuration, flexibility and utilisation, but also 'people factors' such as the user experience and the effectiveness of FM and asset management services. IBOS describes the datasets to be captured as the first step in the journey of continuous improvement to create a more functionally efficient and effective asset.
- **Economic:** the building's operating and life cycle costs, and how they are assessed, managed and optimised. Full occupancy costs should be captured, together with longer-term planned capital investments. The occupancy costs should capture any costs incurred by landlords and re-charged via service charges or similar. Planned capital investments can be informed by condition survey reports or other proposals to maintain or enhance the condition and functionality of the asset.
- **Sustainable:** the building's social and environmental impacts such as decarbonisation, energy use, social impact, accessibility and transport arrangements. IBOS addresses the growing global consciousness of the social and environmental impact of buildings and the operations they accommodate. Compliance with the standard requires not simply the capturing and analysis of relevant datasets but also the preparation of, and adherence to, certain policies and strategies.
- **Performing:** the ability of the building – and the way it is managed – to effectively support the performance, satisfaction, user experience, health and well-being of occupiers.

A unique feature of IBOS is the interplay between the pillars. For example, IBOS requires data on user satisfaction to be captured and analysed when assessing performance against indicators such as:

- thermal comfort
- air quality
- workspace optimisation and
- connectivity.

The fifth pillar, 'Performing', is also entirely focused on the support the asset provides for the user.

Figure 2 summarises the centrality of data and the user of the assets to the application of IBOS.

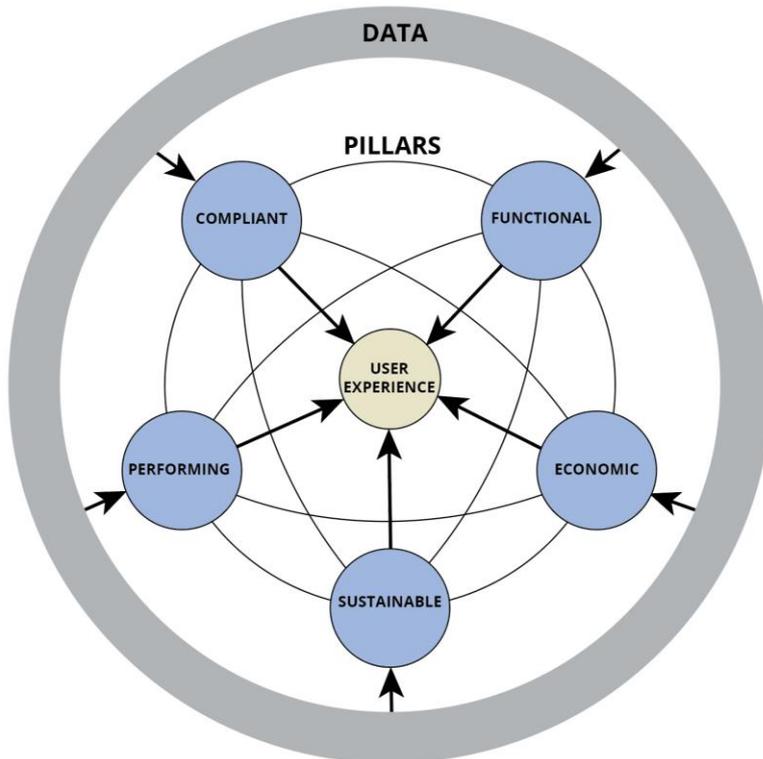


Figure 2: IBOS summary

3.1 Interface with third-party standards

There are two ways in which IBOS interacts with other standards:

1. When adopting IBOS, the asset manager captures data in a manner consistent with good practice and other relevant standards – such as [International Property Measurement Standards](#) (IPMS) for measurement and RICS NRM 3 for estimating life cycle costs (plus ICMS 3 with carbon).
2. They then use this data to derive performance measures and compare the outputs to relevant good practice, benchmarks and other targets.

IBOS is consistent with emerging global standards, certifications and methodologies that address the quality of the sustainability, communications technology and support for the well-being of users; see Annex A for a sample of existing tools that can be applied. While IBOS does not require the adoption of any specific standards, certifications or methodologies, it is recognised that there is a growing list of tools and techniques that will help demonstrate adherence to the principles of IBOS.

4 Indicators

The foundations of IBOS are the five pillars, each of which addresses asset performance by means of indicators.

To align with IBOS, follow these key steps. A fuller description of the process is provided in section 6.

1. **Establish the pillars** against which performance is to be assessed, noting that maximum benefit is obtained by adopting all pillars. Each of the five pillars has a set of indicative performance indicators.
2. **Capture and analyse data** for each performance indicator.
3. **Capture and analyse the processes** by which that data is itself captured and analysed.
4. Undertake a **gap analysis**:
 - The **data** or performance metric is **compared** to relevant benchmarks, statutory requirements, good practice guidelines, etc. and any **gaps identified**.
 - The **processes** for capturing, analysing and reporting on data or performance metrics are **compared** to best practice, and any **gaps identified**.
5. Prepare a **value creation plan** to close any gaps, with costs and benefits identified.
6. Identify and report on the **outcomes** achieved.

Figure 3 shows the hierarchy of pillars and indicators.

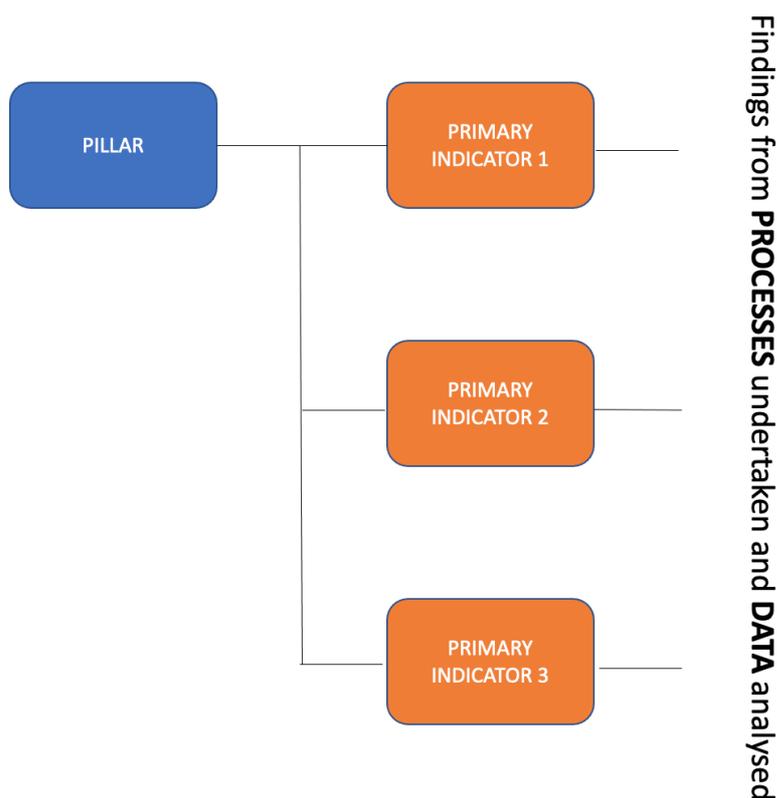


Figure 3: Hierarchy of pillars and indicators

The examples below illustrate the interaction between pillars, indicators, processes and data.

Example 1: the 'Functional' pillar includes an indicator entitled 'Density'

The **processes** to be noted include how space is measured, how space use is monitored, how user needs for space are determined, and how user needs for space and user satisfaction with the space configuration are monitored.

The **data** to be captured and analysed includes data on space and how it is used, numbers of workstations (if appropriate), definitions of user needs for space and user satisfaction feedback on the suitability of space.

Example 2: the 'Sustainable' pillar includes an indicator entitled 'Operational energy use'

The **processes** to be noted include how energy use and CO₂ emissions are monitored and measured, how energy source by type is categorised and how objectives for energy use are set.

The **data** to be captured and analysed relates to items such as space occupied, asset type, CO₂ emissions, energy sources and energy consumption.

Example 3: the 'Performing' pillar includes an indicator entitled 'User experience'

The **processes** to be noted include how the perceptions held by occupiers of the workplace and the methods of managing the workplace are monitored.

The **data** to be captured and analysed relates to items such as feedback, perceptions, scores or ratings of various aspects of the workplace and the way it is managed.

5 Measuring performance

The tables in this section summarise each pillar's indicators of performance, the data to be captured and analysed for each indicator, and the units of measurement for performance with indicative performance measures.

In all instances, it is assumed that 'core' data is captured for the relevant workspaces, which consists of:

- floor area
- number of occupants and
- functional description of the space, e.g. office, workshop, store, etc.

In many instances, data should be captured from any helpdesk system in operation, relating to relevant complaints or issues raised, and from user satisfaction survey findings addressing the indicator.

5.1 Pillar 1: Compliant

Indicator	Data to be captured and analysed	Unit of measurement/indicative performance measure
Temperature	<ul style="list-style-type: none"> ○ Temperature readings ○ Legislative/good practice target or threshold ○ Helpdesk data ○ User satisfaction data 	Degrees centigrade
CO₂	<ul style="list-style-type: none"> ○ CO₂ level ○ Legislative/good practice target or threshold ○ Helpdesk data ○ User satisfaction data 	CO ₂ parts per million
Ventilation rate	<ul style="list-style-type: none"> ○ Air flow ○ Legislative/good practice target or threshold ○ Helpdesk data ○ User satisfaction data 	<ul style="list-style-type: none"> ○ Litres per second per person
Noise	<ul style="list-style-type: none"> ○ Noise level ○ Legislative/good practice target or threshold ○ Helpdesk data ○ User satisfaction data 	<ul style="list-style-type: none"> ○ Decibels
Lighting	<ul style="list-style-type: none"> ○ Lighting level ○ Legislative/good practice target or threshold ○ Helpdesk data ○ User satisfaction data 	<ul style="list-style-type: none"> ○ Lux
Health and safety	<ul style="list-style-type: none"> ○ Incident logs ○ Findings and recommendations from audits ○ Risk assessments and recommendations 	<ul style="list-style-type: none"> ○ Number of incidents per person/full-time equivalent

	<ul style="list-style-type: none"> ○ Legislative requirements and good practice recommendations ○ Helpdesk data ○ User satisfaction data 	(FTE)/area/time period
--	---	------------------------

5.2 Pillar 2: Functional

Indicators	Data to be captured and analysed	Unit of measurement/indicative performance measure
Workspace optimisation – fitness for purpose of workspace	<ul style="list-style-type: none"> ○ User requirements ○ Workspace protocols ○ User satisfaction data 	<ul style="list-style-type: none"> ○ Existence of clear user requirements ○ Existence of workplace protocols
Density – utilisation of workspace	<ul style="list-style-type: none"> ○ Occupancy level ○ Utilisation records ○ Helpdesk data ○ User satisfaction data 	<ul style="list-style-type: none"> ○ m² ○ m² per person/FTE/workstation ○ FTE per workstation
Business continuity	<ul style="list-style-type: none"> ○ Business continuity plan (BCP) ○ BCP testing regime ○ Recommendations arising from tests 	<ul style="list-style-type: none"> ○ Existence of BCP ○ Frequency of testing
Location optimisation	<ul style="list-style-type: none"> ○ Self-defined measures to optimise location(s) ○ Asset strategy 	
Connectivity	<ul style="list-style-type: none"> ○ ICT infrastructure availability ○ Incidence of failure ○ Data in support of WiredScore certification (or equivalent) ○ User satisfaction data 	<ul style="list-style-type: none"> ○ Connectivity failure rate – number per FTE/annum ○ Connectivity rating or equivalent

5.3 Pillar 3: Economic

Indicators	Data to be captured and analysed	Unit of measurement/indicative performance measure
Life cycle costs	<ul style="list-style-type: none"> ○ Floor area ○ Condition assessments ○ Backlog maintenance ○ Costed CAPEX plans ○ Asset strategy ○ Maintenance records ○ Helpdesk data ○ User satisfaction data 	<ul style="list-style-type: none"> ○ Cost per m² ○ Cost per m² per annum ○ Existence of costed CPEX plan and asset strategy
Operating costs	<ul style="list-style-type: none"> ○ Floor area ○ Condition assessments ○ Backlog maintenance ○ Property running costs – rent, local taxes, insurance, service charge, utilities, FM, advisors, etc. ○ Asset strategy ○ Maintenance records ○ Helpdesk data ○ User satisfaction data 	<ul style="list-style-type: none"> ○ Cost per m² ○ Cost per m² per annum ○ Existence of condition assessment and asset strategy
Personnel costs	<ul style="list-style-type: none"> ○ User defined 	

5.4 Pillar 4: Sustainable

Indicators	Data to be captured and analysed	Unit of measurement/indicative performance measure
Operational energy use	<ul style="list-style-type: none"> ○ Floor area ○ kWh energy consumed ○ Proportion of energy from sustainable sources ○ Litres of water consumption ○ Cost of utilities ○ Net zero carbon strategy ○ Condition assessments ○ Data in support of BREEAM, LEED, Green Star or equivalent certification ○ User satisfaction data 	<ul style="list-style-type: none"> ○ kWh per m²/FTE ○ Embodied carbon ○ CO₂ emissions ○ Litres per m²/FTE ○ Environmental rating or equivalent
Waste	<ul style="list-style-type: none"> ○ Volumes and type of waste disposed of ○ Methods of disposal ○ Costs incurred ○ Legislative requirements and good practice recommendations ○ Helpdesk data 	<ul style="list-style-type: none"> ○ m³ or kg of waste material ○ Waste recycling rate ○ Proportion of waste to landfill ○ Cost of waste disposal per FTE/annum

Indicators	Data to be captured and analysed	Unit of measurement/indicative performance measure
	<ul style="list-style-type: none"> ○ User satisfaction data 	
Social value	<ul style="list-style-type: none"> ○ Stakeholder/community engagement plan ○ Social value strategy ○ Social value generated 	<ul style="list-style-type: none"> ○ Existence of engagement plan ○ Existence of social value strategy ○ Social value generated per annum
Transport	<ul style="list-style-type: none"> ○ Number of EV charging points ○ Green travel plan ○ Shower provision for cyclists 	<ul style="list-style-type: none"> ○ Charging points per FTE/total number of parking spaces ○ Existence of green travel plan ○ Number of showers per FTE

5.5 Pillar 5: Performing

Indicators	Data to be captured and analysed	Unit of measurement/indicative performance measure
User experience	<ul style="list-style-type: none"> ○ Helpdesk data ○ User satisfaction data ○ Leesman or equivalent sentiment survey findings 	<ul style="list-style-type: none"> ○ User experience rating or equivalent
Responsiveness of FM Services	<ul style="list-style-type: none"> ○ KPIs relating to responsiveness ○ Performance against KPIs ○ Helpdesk data ○ User satisfaction data 	<ul style="list-style-type: none"> ○ Response rate per KPI
Well-being	<ul style="list-style-type: none"> ○ Helpdesk data ○ User satisfaction data ○ Data in support of WELL, Fitwel or similar certification 	<ul style="list-style-type: none"> ○ Well-being rating or equivalent

6 How to apply IBOS

Figure 4 summarises the principal stages of the application of IBOS from the identification of the pillars to apply through to the measurement of outcomes and a repeat of the process to deliver continuous improvement.

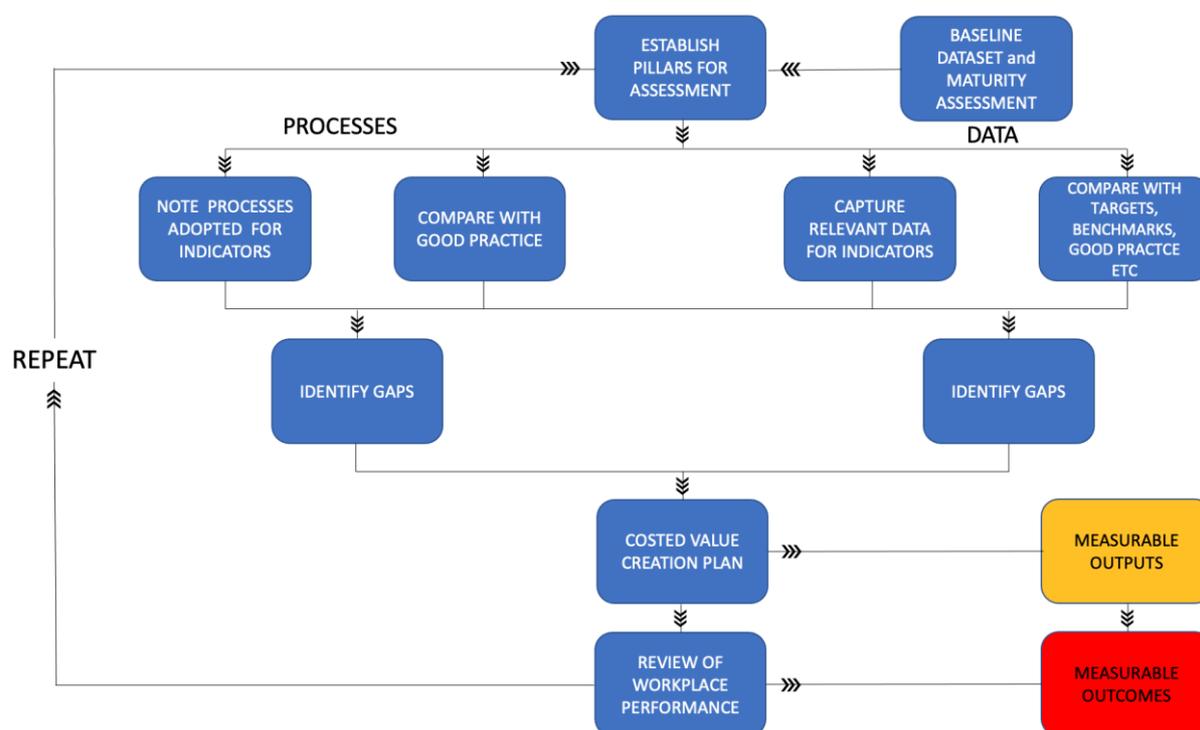


Figure 4: Stages in the application of IBOS

6.1 Stage 1: Establish the pillars

It is important to note that, while best value is obtained by assessing performance against all pillars, it is possible to focus on one or more pillars according to the circumstances. The selection of pillars will be driven by factors such as the prevailing priorities of the organisation and the maturity of data in its possession.

6.2 Stage 2a: Capture and analyse data

1. Assemble data for each relevant indicator – this may be ‘live’ data or may need to be captured manually on an ad hoc basis.
2. Analyse data to create performance metrics if appropriate to the indicator, e.g. operating cost per m², space per FTE, CO₂ emissions per m².
3. Create a baseline dataset for each pillar.
4. Assess level of maturity for capturing and analysing data.
5. Compare current data and performance metrics with targets, benchmarks and good practice, e.g. prevailing statutory requirements, targets from industry codes of practice or benchmarking, and/or targets sets internally.

Performance metrics can be created relating to the space occupied, the number of occupants, the number of workstations or other such denominators. These datasets will need to be captured and analysed in a consistent manner across a portfolio, but also consistently with comparators if meaningful outputs are expected from benchmarking or comparison with industry-standard performance metrics.

6.3 Stage 2b: Capture and analyse processes

1. Note current processes for capturing and analysing data, for example:
 - Is data captured automatically or manually?
 - What is the frequency of data capture?
 - Is user satisfaction assessed and, if so, how are the findings integrated with 'hard' data?
 - What sort of data analysis is undertaken to provide meaningful information to support decision-making?
 - Are established standards, certifications and methodologies being applied or in place?
 - Are targets set and, if so, what is the basis of the target setting? For example, is it a statutory requirement, adherence to good practice and/or a means of achieving continuous improvement?
 - How is the data used to support tactical or strategic decision-making?
2. Compare the current processes with prevailing good practice.

6.4 Stage 3: Perform gap analysis

- Note any gaps between current data and performance metrics and targets, benchmarks or good practice, and understand why they exist.
- Note any gaps between current processes and good practice, and understand why they exist.
- Consider how the gaps can be bridged, e.g. through additional targeted investment in the asset, asset rationalisation or automation of processes.

6.5 Stage 4a: Prepare value creation plan

- Prepare and communicate a value creation plan to improve processes, data quality and asset performance, with associated costs and benefits.
- This value creation plan may include:
 - capturing information in a more systematic and automated manner
 - capturing new datasets
 - analysing information in a different (and potentially automated) manner and enhancing the level of maturity
 - broadening the scope of issues addressed when seeking to understand the user experience
 - integrating data on user satisfaction with data on, for instance, the use of space, the standard of maintenance or the quality of the working environment, and
 - setting new and stretching targets for asset performance.

6.6 Stage 4b: Identify and report on outputs

- Note the measurable and more immediate outputs from the implementation of IBOS and the emerging value creation plan.
- Identify any noticeable changes to underlying business performance and whether they can be attributed to property asset performance.
- Identify trends where data is captured over a period of time.
- Establish reasons for different performance levels over time, or between assets at any point in time.
- Report to stakeholders such as senior management team and building occupiers.

6.7 Stage 5a: Undertake performance review

1. Review the impact of the changes that have been implemented to determine the outcomes achieved for the organisation, its employees, etc.
2. Repeat the process periodically or after a relevant event, such as a relocation or significant investment in the workplace.

6.8 Stage 5b: Identify and report on outcomes

- Note the measurable, longer-term and sustainable outcomes from implementation of IBOS and the supporting value creation plan.
- Report improved outcomes to stakeholders within the organisation.
- Use learnings from the implementation of the value creation plan to seek further incremental improvements.

DRAFT

7 Application of IBOS

IBOS does not specify the precise tools or techniques required to comply with it. Since IBOS relies on the capture and analysis of multiple datasets, there is a powerful argument in favour of automating the process as much as possible, particularly where the performance of a portfolio is to be assessed.

While regular monitoring of asset performance in line with the principles of IBOS will provide early warning of emerging performance issues, IBOS users should carefully consider their approach to the monitoring of user satisfaction to avoid 'questionnaire fatigue'.

Periodic monitoring may however be acceptable to occupiers if results are shared and benefits are seen to result from, for example, asset managers taking steps in line with concerns raised.

Table 1 sets out a range of levels in the capturing, analysing and reporting of performance against each indicator in terms of their maturity.

Maturity level	Characterised by...
Undeveloped	<ul style="list-style-type: none"> No systematic monitoring or measurement of at least half of the data sources for the indicator
Basic	<ul style="list-style-type: none"> Systematic monitoring and measurement of at least half the data sources for the indicator against a set of benchmarks
Developing	<ul style="list-style-type: none"> Systematic monitoring and measurement of all data sources for the indicator against a set of benchmarks
Good	<ul style="list-style-type: none"> Systematic monitoring and measurement of all data sources for the indicator against a set of benchmarks Regular reporting to the board/equivalent on performance against IBOS
Exemplar	<ul style="list-style-type: none"> Systematic monitoring and measurement of all data sources for the indicator against a set of benchmarks Regular reporting to the board/equivalent on performance against IBOS Technology used to automate the capture and analysis of data

Table 1: Maturity level of IBOS data capture and analysis

An honest self-assessment of maturity can be an important first step in the application of IBOS by setting a baseline in terms of data management. By developing and implementing a value creation plan, steps can be taken to expand the scale and sophistication of data management through automation and the report of findings.

The ability to achieve exemplar maturity status will depend on a range of factors such as the existing approaches to data capture and the supporting systems and technology in place.

Various technological solutions could be adopted in support of IBOS, such as:

- business intelligence software to draw together data from multiple sources and create highly visual performance dashboards
- building sensors to capture data on the use of space and air quality
- off-the-shelf building management systems or tailored software, or
- a combination of the above.

8 Outputs and outcomes from IBOS

The application of IBOS does not stop at the collation and analysis of data. Instead, it requires users to develop value creation plans to enhance asset performance and the experience and well-being of occupiers. The actions taken are then expected to result in improved outcomes for the organisation and its internal and external stakeholders.

This is entirely consistent with the theme of **adding value to the organisation** through asset management, which is highlighted in the current edition of the RICS guidelines [Strategic public sector property asset management](#).

Figure 5 identifies some of the immediate outputs of the application of IBOS and the potential outcomes for an organisation, its workforce and wider stakeholders.

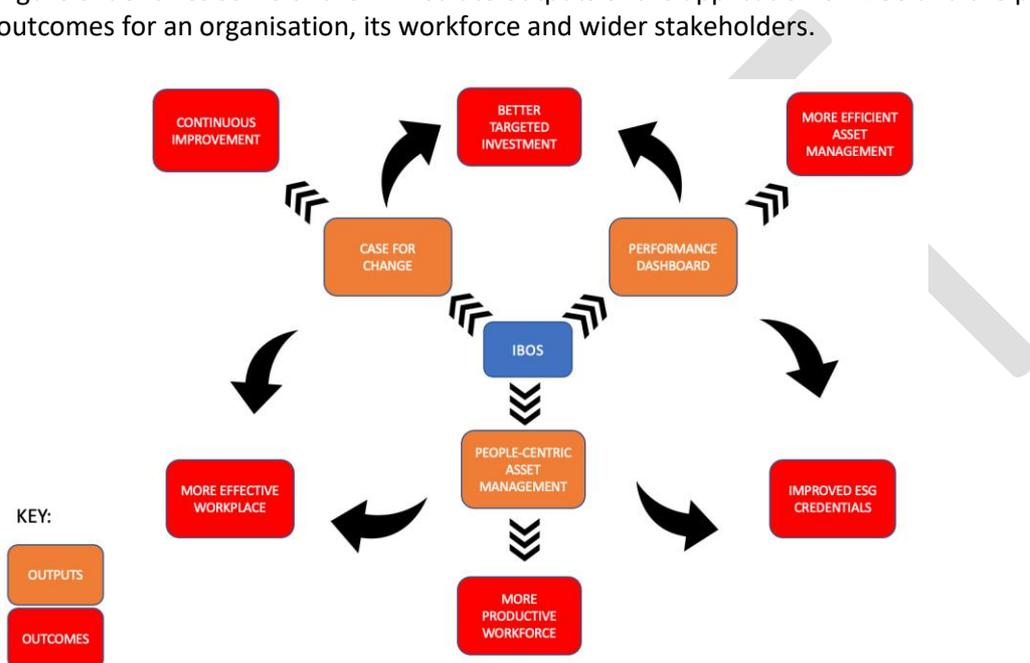


Figure 5: IBOS outputs and outcomes

The principal **outputs** of the application of IBOS include:

- **Performance dashboard:** users can assess their asset and workplace performance with reference to a wide range of quantifiable measures of performance, but also the activities or processes performed to, for example, collate and analyse data, and report on performance.
- **People-centric asset management:** IBOS places the user at the centre when measuring asset performance. Engagement with users is fundamental to measuring performance against many of the 'technical' indicators of IBOS, while also being at the core of the 'Performing' pillar.
- **Case for change:** IBOS helps asset managers to identify where and how asset performance, including the user experience, can be improved through investment or other interventions. Problems can be identified, but so too can opportunities to take forward. A well-constructed action plan will set out the costs and benefits, both financial and non-financial, and support a robust case for change. This may also involve the preparation of a formal business case or a less formal case for investment depending on the governance arrangements in place.

These immediate outputs can then, either independently or in combination with other outputs, support the delivery of positive outcomes and thereby add value.

The outcomes expected from the robust and systematic application of IBOS are likely to include the items identified in Figure 4:

- **More efficient asset management:** by identifying where, for example, costs are out of line with benchmarks and other comparators, or space is being under-utilised.
- **Improved ESG credentials:** by helping to identify opportunities to implement, for example, more sustainable operations and generate social value with stakeholders, including the community.
- **More productive workforce:** by identifying and addressing issues that will improve the user experience and delivering a responsive asset management service.
- **More effective workplace:** by adapting the workplace in response to changing user needs.
- **Continuous improvement:** by developing and implementing value creation plans.
- **Better targeted investment:** by highlighting where and how investment can improve asset performance and the user experience, and potentially the value of the asset.

DRAFT

Annex A: Schedule of standards, certifications and methodologies

Standard/certification	Coverage
WELL	Health and well-being
Fitwel	Health and well-being
Leadership in Energy and Environmental Design (LEED)	Sustainability
Green Star	Sustainability
Green Globe Certification	Sustainability
Energy Star	Sustainability
Building Research Establishment Environmental Assessment Method (BREEAM)	Sustainability
SKA Rating	Sustainability
National Australian Built Environment Rating System (NABERS)	Sustainability
WiredScore	ICT Connectivity
JSA-S 1001 Employee Satisfaction Standards	Occupier satisfaction
ISO 10018:2020 Quality management – Guidance for people engagement	Occupier satisfaction
Leesman	Occupier satisfaction
International Property Measurement Standards (IPMS)	Measurement of built assets
International Cost Management Standard (ICMS)	Costing of projects