Digital Estates Management
for Higher Education Institutions

Achieving financial resilience through data intelligence

provelio

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Director - UK University

EXECUTIVE SUMMARY

Higher Education Institutions (HEIs) are frequently confronted with unprecedented financial challenges and the senior management team are faced with the task of deciding which proactive measures they should take to ensure that their finances are sustainable.

In this document we identify these challenges and explain how they can be resolved by increasing the **amount** of data gathered on estates and by **using** the data to make better decisions more quickly.

There are three main types of decisions which must be made and we define how they are connected.

We introduce **OPAL**, a powerful digital assistant that enables the estate to be managed digitally.

It provides a comprehensive view of an HEI's estate portfolio, allowing for data-informed decision making and scenario testing. With OPAL, HEIs can optimise their estate assets, improve space utilisation, implement energy efficiency measures, generate new revenue streams, reduce costs, invest in sustainable practices, and create partnerships and collaborations, by using technology and data analytics.

We give examples of the diverse ways that OPAL can be deployed.

By taking a comprehensive and strategic approach to estate management, HEIs can not only ensure their financial resilience but also enhance their brand reputation, their appeal to students, staff, and the wider community, fostering a vibrant and sustainable campus environment.

SETTING THE CONTEXT

This paper is intended for the key decision-makers who are responsible for strategic planning in Higher Education Institutions (HEIs).

HEIs are going through a challenging time at present, some more than others. They have met a perfect storm of the difficulty of raising tuition fees, additional pension contributions, reduced international student demand, increased costs, and uncertainty over political direction.

> *Higher education providers face long-term, systemic, pressures on their financial sustainability and viability. The proportion of providers with an in-year deficit has increased in every one of the past four years, from 5% in 2015/16 to 32% in 2019/20. Some providers are heavily reliant on income from overseas students' fees to cross-subsidise research and other activities, leaving them potentially exposed to significant financial risks should assumptions about future growth in international student numbers prove over-optimistic. In the short term, the higher education sector survived the COVID-19 pandemic because of the resilience of individual providers, financial assistance made available by government, no interruption to income from overseas students as had been feared, and the fact that large-scale tuition-fee refunds were not required. Ongoing financial pressures do, nonetheless, increase the risk of providers failing, closing campuses or courses, reducing the quality of teaching, or limiting access, any of which could adversely affect students. In that context, protections for students, in the event of providers facing financial distress, still need strengthening. We are also concerned that student satisfaction, particularly regarding value for money, has fallen in recent years: in 2021, 33% of students viewed their course as good value for money, with 54% saying it was not.*
>
> **House of Commons, Committee of Public Accounts – Financial Sustainability of the Higher Education in England (8 June 2022).**

The process of making investment decisions within higher education presents complexities and challenges. Ensuring that these decisions optimise value and mitigate the risks can be difficult.

The HEI's estate must constantly evolve to deal with backlog maintenance, deliver net-zero carbon and meet the requirements of the considerable amount of new regulation produced in 2021 and 2022.

In addition, it must incorporate new technologies, which can affect operational costs and have an impact on the way that teaching and research is delivered.

The operation and maintenance of an HEI's estate is subject to a wide range of external controls and regulations, emphasising the importance of safety, accessibility and efficiency. **These controls lie outside the direct influence of those making the decisions**. The regulations are set by governmental bodies and external agencies, and compliance requires **constant vigilance and adaptation**. They include:

Fire Safety

Buildings must comply with strict fire safety standards, protecting students, staff, and visitors. This involves not only the design and construction phases but also regular inspections, risk assessments and updates to fire safety protocols.

Building Safety Regulations

HEI estates must adhere to changing building regulations that dictate everything from structural integrity to energy efficiency. These standards ensure that facilities are safe, environmentally sustainable, and conducive to delivering high-quality higher education.

Accessibility

Ensuring that all individuals, regardless of their physical abilities, can access and use education facilities is a legal and moral imperative. This includes considering sensory impairments, and other needs in the design and layout of buildings.

As higher education transforms so will the management of physical spaces where educators and students interact.

DECISION MAKING IN HIGHER EDUCATION

STRATEGIC PLANNING – the big-picture, long-term decisions

The strategic decision that the management team must make is, "what category does our university fall into for the foreseeable future?" The key positions are:

- **The HEI aims to expand**

  - It may do so by planning its extra work and balance income and expenditure to determine its capital programme.

  - Alternatively, it can be done through acquisitions or mergers. It may also require some capital development.

- **The HEI aims to broadly maintain its existing state**

  - This can usually be achieved without major alterations to the buildings.

  - However, if there is a major gap between the income and expenditure of the university, it may be better to consider the overall financial performance of the estate.

- **The HEI aims to contract**

  - This may mean closing some research and teaching services and altering or selling the buildings accordingly.

  - It can also involve a merger with a nearby university or by being acquired.

Under all three scenarios, it is necessary to have a **deep understanding of the condition of the estate**, and how it may be used in the future. This includes intelligence on how you can make the estate compliant with the new building regulation legislation which has changed significantly over the last few years. The other area which will need to be planned is carbon-reduction, to meet the government's climate change targets.

OPERATIONAL PLANNING – the short to medium-term decisions

Operational decisions are crucial for transforming strategic objectives into specific, actionable steps that guide the delivery of educational, research and faculty services, effectively and within budgetary constraints.

The decision-making process is detailed and multi-faceted, involving a series of well-defined steps:

- **Selecting the appropriate mix of teaching, research, and faculty facilities:** This initial step involves a thorough analysis of the organisation's long-term goals and the specific needs of its stakeholders. Decision-makers must evaluate numerous factors such as current and future demands for research and teaching, the integration of new technologies, and potential areas for expansion. The goal is to create a balanced portfolio of facilities that supports both immediate educational needs and long-term research objectives.

- **Determining the methods for delivering these facilities:** This step includes developing a comprehensive workforce plan that aligns with the faculty requirements. It also involves identifying the number and type of staff needed, the skills required, and how these personnel will be deployed across different facilities. This planning ensures that there are adequate human resources to support both the operational needs and the strategic vision of the organisation. It also includes considerations for training, professional development, and possibly recruiting new staff with specific expertise.

These operational decisions are instrumental in bridging the gap between high-level strategic plans and their practical implementation, ensuring that the organisation's facilities are both effective and efficiently managed within the available resources.

Estates planning involves the physical infrastructure of the HEI and the crucial role it plays in providing the service.

The key factors here are:

- **To ensure that the buildings are fit-for-purpose.** This involves assessing the current condition of the HEI's facilities and determining whether it meets the needs of the services being provided. Above all it must be safe and comply with all current regulations. This may lead to renovations, new construction, or repurposing existing buildings to deliver the courses that are appropriate.

- **Adapting to additional departments and new teaching and research methods.** As the teaching and research methods continue to evolve, the physical spaces where educators and students work must adapt, influenced by shifts in the nature of the job and the technology that facilitates it.

ADDITIONAL COMPONENTS OF DECISION-MAKING

The planning and development of an HEI's estate must be visionary, looking decades into the future rather than just focusing on immediate needs. Physical assets in education are significant investments, and their utility spans many years, often outliving the technology, research, and teaching practices they were originally designed to accommodate. This long-term perspective is crucial for several reasons:

Adaptability	Buildings need to be designed and maintained with flexibility in mind, allowing for changes in technology, research or teaching methods.
Sustainability	With increasing emphasis on environmental responsibility, each HEI's estate is planned with sustainability goals at the forefront, reducing energy consumption and minimising waste to achieve a net zero estate. This is important to the HEI and is often led by the students themselves, as the issues are uppermost in their minds.
Cost-effectiveness	Given the substantial investment involved in higher education infrastructure, long-term planning ensures that assets remain fit for purpose for as long as possible, delivering value for money and supporting the financial sustainability of education and research.

TRANSFORMING ASSET MANAGEMENT WITH DIGITAL INFORMATION

The integration of strategic, operational, and estates planning through **digitisation** is critical for the success of HEIs. A single point of truth, facilitated by comprehensive digital information systems, underpins this integration.

Digital information has been encapsulated in the regulatory regime for buildings, which are now mandatory for new high risk buildings. Producing Digital Twins for existing buildings is becoming significantly easier as the technology is moving at a fast pace.

- By **concentrating data**, an HEI can ensure that all levels of planning are aligned and based on the most current and accurate information available. This coherence is essential for anticipating future challenges, optimising resource allocation, and delivering courses that meet the needs of the student population.

- A **unified digital platform** enhances communication and collaboration across different departments and specialties within the HEI. It allows for seamless sharing of information, whilst fostering a more coordinated approach to the delivery of education services. In an environment as dynamic and complex as higher education (where there is a constant need to rationalise the service because the demand changes), the ability to quickly access and analyse reliable data is invaluable.

By integrating digital technologies and data into estates management decision-making, an HEI can address a range of critical questions that are essential for optimising the use and development of its physical assets. Here are some of the key questions that digitisation of the estate can help answer:

01

How does it fit with our strategy?

Identify your strategy. Is it **to expand, broadly maintain your current state or to contract?** This process will help you to decide, because you will have much more intelligence on your buildings.

02

How can we improve our asset utilisation?

Digitisation can provide **detailed insights** into how buildings and spaces are used, identifying underutilised areas, and enabling more efficient allocation of resources.

03

What is the current condition of our assets, and how can we manage maintenance better?

Digital assistants can facilitate **real-time monitoring** of the state of facilities, predicting maintenance needs (before they become critical) and planning preventative maintenance schedules effectively.

04

How can our energy consumption be reduced?

By analysing data on energy use, the HEI can **identify opportunities for energy savings**, implement more sustainable practices, and reduce its carbon footprint.

05
How can we ensure our estates are adaptable to future education needs?

Digital models can **simulate various future scenarios**, from demographic changes to new education and research technologies, helping to plan adaptable and flexible spaces.

06
What are the most cost-effective investments for estate development and refurbishment?

Through data analysis, an HEI can **prioritise investments** based on impact, cost, and long-term sustainability, ensuring that funds are allocated to programmes and projects that offer the greatest benefit.

07
How can we enhance student and staff experiences?

Digitising estates will provide you with data and insights which will lead you to enhanced teaching and research spaces and **improved student and staff experiences**. These are becoming increasingly important as demands are higher than ever before.

08
What are the barriers to implementing new teaching and research technologies within existing infrastructures?

By understanding the current limitations of an HEI's estate, **digitisation can guide the integration of innovative technologies,** ensuring facilities can support the latest educational innovations.

09
How can we improve compliance with regulations and standards?

Digital systems can help **track compliance** with changing health, safety, and building regulations; automating reports, and ensuring that all facilities meet the required standards.

10
How can we manage the complexity of decision-making more effectively?

Digitisation offers a **comprehensive view** of an HEI's estate portfolio, simplifying management tasks, enhancing decision-making processes, and improving communication across various levels of the organisation.

11
Can we enhance the safety and security of our estates?

Digitisation allows for the integration of advanced security systems and ensures compliance with safety regulations through **continuous monitoring and immediate response** capabilities.

By addressing these questions through the digitisation of estates, HEI can significantly enhance its ability to provide high-quality care, improve the efficiency of its operations, and ensure that its physical assets are well-maintained, sustainable, and fully aligned with the future needs of education delivery.

INTRODUCING OPAL

Strategies must be well-considered and scenario-tested, focusing on options that maximise benefits or minimise drawbacks. It is crucial for strategic decision-makers to have access to the most comprehensive and integrated data available. Analysing the data will uncover assorted options and scenarios for comprehensive testing and evaluation, ensuring that decisions avoid unintended consequences and align with the HEI's long-term interests.

We have developed a digital assistant called OPAL, which enables **digital estate managemen**t for large asset-owning clients.

It gains its power from using data, integrated from various sources and systems, brought to life by the way it is **visualised**. It can also link to reputable external data sources such as the Office for National Statistics (ONS) and the Higher Education Statistics Agency (HESA), the Higher Education Strategic Planners Association (HESPA) and with other outside organisations against which benchmarking would be considered beneficial. OPAL is entirely flexible to work with any data that can be provided from any source; whilst maintaining the data securely.

OPAL provides a comprehensive view of an HEI's estate, allowing for **data-informed decision-making** and scenario testing. It can take a holistic campus view and then drive down into the detail of faculties, departments, schools, or research centres.

OPAL can interrogate as deeply as your data will allow, which from our experience in the sector can be down to single rooms within a campus. The digital assistant is fully customisable, scalable, and adaptable, making it a valuable tool for unlocking the value of university estates and enhancing the quality of strategic decision-making.

*The term Operational Alpha was originally coined in the finance industry, where it refers to the **excess returns** generated by an investment manager through the **efficient management of operational activities**, rather than through **investment decisions alone**. (This is based on a recognised index of investment performance).*

*In other words, it integrates **operational** management, with **estate** management.*

OPAL facilitates the digitisation of estates information that can be used to change an HEI's estate to match changes in the operational business. It can also use the estates data to **influence the changes** to the operational business and strategic decision-making. The reason OPAL can do this is because we have created an approach that encompasses the four major estates functions (space, compliance, maintenance and carbon) and integrates them within the three primary parts of digitally managing the estate:

• **Estates Baseline** - Understanding the true performance of your estate

• **Scenario and Decision Engine** - Compare strategic choices with real-time data

• **Digital PMO** - Control and monitor programmes and projects

For example, in cases where there is a huge backlog of maintenance, then this may suggest the **replacement** or a **change in the purpose** of the facilities. This could solve the problem of backlog maintenance, compliance and carbon reduction, because if you must spend a lot of money, you may as well spend it on facilities that are sound in operational terms.

This makes the examination and analysis of the operational business and the estate, truly integrated, in ways that have hitherto been unachievable, and can ensure that the value of the estate increases.

OPAL involves strategic planning, effective utilisation of resources, and adapting infrastructure to meet evolving education and research needs. It therefore **unlocks the value in the estate** by providing a rigorous platform to use for systematic and informed decision-making. As the analysis progresses more and more value is discovered, with each discovery leading to further avenues of interest to pursue.

STRATEGIC OBJECTIVES OF OPAL

OPAL is a digitised approach to get the most from your estate and to enhance the quality of strategic decision-making.

Too often decisions are made with incomplete data or data that is unsuitable in terms of adequacy or maturity. The features and benefits are included on an estate wide and integrated basis.

OPAL uses your existing data, from any source or software that the HEI may be using. The strength of OPAL is that it seeks to **work with what you have**, determine its **maturity,** and then work with the HEI to **improve over time**; and **according to priority**.

The primary goal is to provide the decision-makers with integrated data to make optimal decisions. They can then use OPAL in part or full whether for a specific investment decision or a long-term transformational programme. This makes OPAL entirely scalable.

OPAL was developed specifically for the decision-makers, and the HEI can be sure that it is making sound decisions with high confidence.
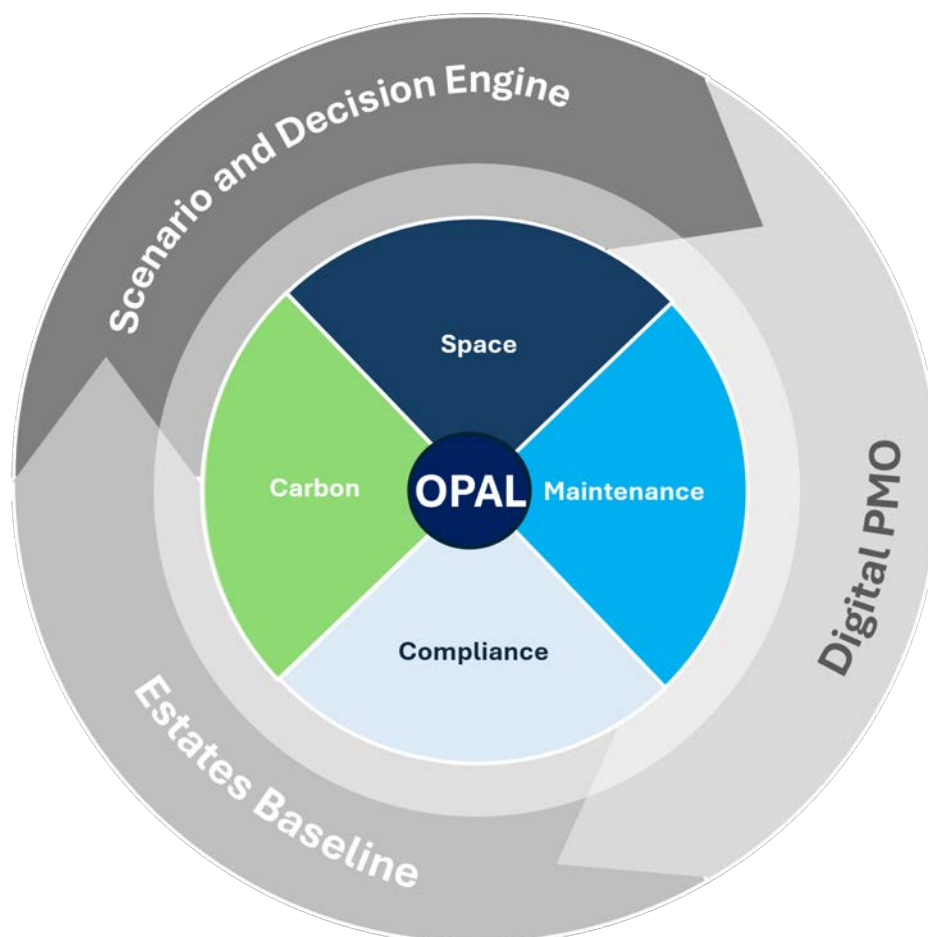
OPAL will transform the way in which you think about your assets in property and estate environment. Decision-makers are presented with options and choices with a clear understanding of the source and nature of the data being used.

The estate typically has the largest impact on borrowing, one of the highest revenue costs and attracts most of the capital investment.

The importance of the estate in reducing costs, increasing revenue, and transforming an organisation is therefore critical.

BENEFITS OF OPAL

Planning and Prioritisation

Business case production

OPAL assists in the production of **business cases and investment appraisals**, for various estate-planning and development scenarios, using data-driven analysis and visualisation. This is for decisions made at a strategic level.


Options and feasibility production

This provides a **flexible and tailored model** for rapidly assessing feasibility options to suit your ways of working. They can be fully linked to provide real-time impact for the business case.

Prioritisation modelling

OPAL facilitates the modelling of all viable options to determine the optimal prioritisation of all projects. It also presents them **in a visual form** so that project & logistical clashing can be avoided.


Scenario testing

This enables the creation of a **bespoke primary decision-making model** to permit the testing and visualisation of various scenarios, as and when they become apparent. It allows options to be analysed very quickly and is the principal reason for making more data available.
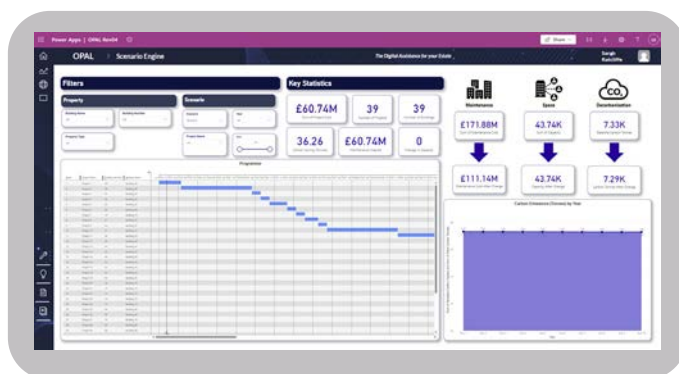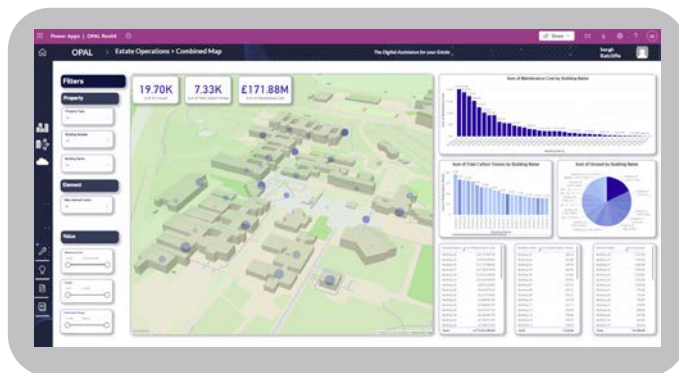
Enterprise Risk

Estates enterprise risk management

We create a **customisable checklist of enterprise risk** for HEI's, which can contribute to any risk management system that may already be used. This allows the integration of risk into decision-making at enterprise level.
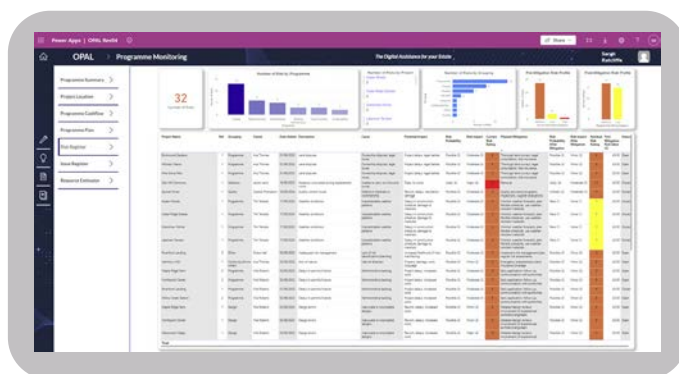
Compliance and Monitoring

Compliance assurance

There are many parts of the compliance of buildings which are mandated by third parties; for example, the Fire Safety Act and the Building Safety Act. We have a number of **templated checklists** for testing existing performance of the existing building, but what is more important is that they are all looked at from first principles. OPAL can automatically generate RAG prioritisation reports and provides the opportunity for running impact assessments of proposed remedial action.
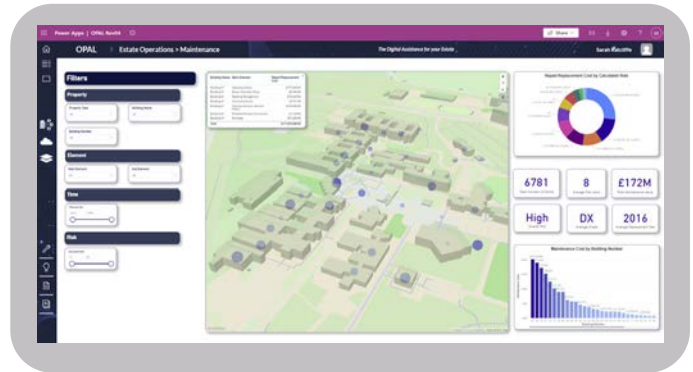

Dashboard controls

We provide **fully customisable dashboards**, so the HEI can emphasise its own priorities and communicate with all stakeholders. These dashboards enable systematic analysis of the portfolio, programme, or project performance.

Key performance indicators (KPIs)

OPAL derives all KPIs **from the data** and integrates them with the business case, programmes, projects, and operational requirements. This benefits from the constantly maturing database for comparing with other HEI's and organisations in the higher education sector.
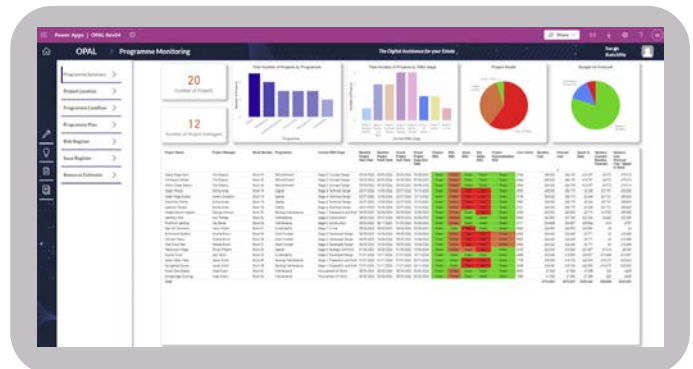
Enterprise Modelling

Fully costed estate

We capture the **entire cost base** of the estate across all functions, so that it can be communicated to all stakeholders, and break down "information silos." The modelling of the shared data creates a single source of truth for reliable modelling, monitoring, and compliance.

Output and capability costing

The fully costed estate paves the way for meaningful output and capability costing with the HEI. This can be used to **model long-term scenarios** and ensures that you look at cost rationalisation and transformational programmes, both of which can be a significant financial boost for the university.

OPAL - INSIGHTS IN THE REAL WORLD

The number of ways that OPAL can direct and plan the future of the HEI's estate is unlimited. Since it uses **your data and systems**, it is only constrained by the demands of the users.

The more an HEI wants to know and explore, the more that OPAL can scale and flex to **answer the questions** that are being posed.

We have already helped clients with large asset-owning estates in the following ways:

Enterprise Level Cost Rationalisation

The consolidation of costs across the entire organisation creates output level costings across all top-level budgets. We have used **organisational data to generate numerous executive team strategies** for cost rationalisation, strategic options analysis, transformation programmes, cost reduction and space changing.

Carbon Reduction Planning

We have prepared multi-year carbon reduction plans that have been scenario tested and monitored to ensure maximum progress with regard to cost. This approach has facilitated programme and project prioritisation alongside backlog maintenance, ensuring that multiple benefits are realised.

Operational Sites Relocation

We have **developed strategic plans** for relocation and rationalisation to fewer operational sites, whilst maintaining "business as usual." It included option analysis and business case modelling for investment decision making, scenario testing and long-term benefits realisation.

Integrated Business Planning

We have captured the **standard approach to business planning** to ensure that outputs are automatically generated in their most useful state. This provides our clients with the ability to consider multiple, overlapping options for acquisition, disposal, refurbishment, or new build.

Programme and Project Controls System

We have **prepared programmes and project level controls system** for managing delivery of both internal and external projects. These systems integrated with finance system for real-time cost management and reporting. We customised multiple dashboards, for rapid identification of key issues, risks, resourcing, and prioritisation.

Operational Excellence

We have developed control systems for integrating all business functions, to provide director-level transparency of business performance and required actions. Working with finance, HR, estates, IT, and other research and teaching departments to consolidate data and allow focus to achieve operational excellence.

Backlog Maintenance Strategies

We have **consolidated all estates data including backlog, planned and reactive maintenance** with functions, including capital projects, carbon reduction and fire improvement works. This creates a decision-making tool for determining project selection and prioritisation. It also enables the decision-makers to significantly reduce forecast costs by consolidating functional budgets into delivery budgets.

SUMMARY

OPAL allows you to effectively analyse all the information you need to consider a wide range of options, with conflicting demands and priorities. Digitising the estate management data **will transform the way** that you can make informed decisions. By employing these strategies, you can adjust your estate to align with changes in the operational business, ensuring that the research and education facilities are well-equipped to meet evolving needs and deliver high-quality courses to your students. OPAL provides you with a **comprehensive solution** that can be implemented rapidly. It allows you to manage:

- Strategic investment decision-making and project selection.

- Capital project monitoring.

- Optimised decision-making through analysis of options.

- Operational performance of your building and assets

OPAL also **integrates the data** from the four primary functions of your estate:

- Space management

- Projects and programmes

- Energy and carbon reduction

- Backlog maintenance, compliance and upgrading the buildings

NEXT STEPS

If you would like a full demonstration of OPAL, we would be delighted to arrange a friendly, practical demonstration, to you and your colleagues. We can do this online, or in person. It requires just one hour of your time and will answer most of your questions. To book a demo or find out more:

📞 **Phone**	🌐 **Web**	✉️ **Email**
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Provelio are an AUDE Business Partner. This guide has been produced by Paul Wilson, Chairman of Provelio. Paul is the author of HEFCE Guide "Guide to the Realisation of Strategic Change and Benefits" and course facilitator for AUDE's "Strategic Thinking for Estates Management".

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