



ASSOCIATION OF UNIVERSITY  
DIRECTORS OF ESTATES

**Excellence in Estates  
and Facilities**

# Delivering Value from the Higher Education Estate

Diamond Review Phase II: Efficiency and Effectiveness in Higher Education

# Foreword



**SIR IAN DIAMOND**  
Vice-Chancellor  
University of Aberdeen

Higher education is a jewel in the UK's crown. We continue to possess, by a number of measures, one of the strongest university systems in the world, despite the fact we invest a smaller percentage of our wealth on higher education than many of our competitors. We have achieved much towards scaling the twin peaks of efficiency and excellence over the last ten years, however, we are not complacent, and we recognise that there is more to be done.

This is why, since 2010, I have led Universities UK's extensive work on efficiency, effectiveness and value for money, as Chair of the UUK Efficiency Task Group. We have sought to discover and champion the excellent work from across the sector towards improving efficiency, effectiveness and value for money within universities, and to demonstrate that investment that supports the improvement of teaching, research and knowledge exchange is a critical priority for all institutions.

Building on our earlier findings, I have recently launched our second report 'efficiency, effectiveness and value for money' in February 2015. Through an extensive process of engagement with experts from across the sector, we have been able to document and report the excellent progress in delivering efficiencies and innovation over a number of thematic areas, including: the higher education estate; workforce considerations; efficiency in the

research base; unlocking value from open data; asset sharing; shared services and procurement; all of which support and build on our world-leading higher education system.

My report finds that universities have met the efficiency challenges of the last decade and are looking towards the future. For example, in England alone, universities have delivered over £1billion of efficiencies over the last three years. It is right to recognise the Association of University Directors of Estates (AUDE) at the forefront of these efforts, and we have seen efficiency gains through better use of university space alone estimated at £886 million over the last ten years. This is a shining example to everyone working in higher education of what can be achieved through appropriate tools, shared learning and mutual ambition.

The evidence base developed by our colleagues at AUDE has been invaluable to our work, as has their input. By laying down reliable metrics and by offering helpful counsel, we are confident that our message is clear and that our recommendations are robust and achievable.

I believe that we must, as a sector, continue to communicate our achievements, learn from our experiences and always strive for improvement. For this reason, we must recognise this work by AUDE for its importance – it forms the basis of our own analysis and the starting point for future developments as the sector seeks out and shares information, opportunities and support towards achieving excellence in all that we do.

Professor Sir Ian Diamond  
Principal and Vice-Chancellor, University of Aberdeen  
Chair, Universities UK Efficiency Task Group

# THIS REPORT ON DELIVERING VALUE FROM THE HIGHER EDUCATION ESTATE FORMS PART OF PHASE II OF SIR IAN DIAMOND'S REVIEW INTO EFFICIENCY AND EFFECTIVENESS IN HIGHER EDUCATION.

The results of the work led by Sir Ian Diamond are set out in Universities UK's report Efficiency, Effectiveness and Value for Money. This highlights the economic impact of UK universities:

- Contributing at least £73 billion a year to the national economy
- Responsible for over £10 billion in export earnings
- Supporting more than 700,000 jobs across the UK
- Generating more gross domestic product (GDP) per unit of resource than health, public administration and construction
- Creating 117 jobs in the wider economy for every 100 people employed directly in universities.

The report states that universities' impact on the economy and society is grounded in providing world-class education; in excellence and diversity in research and innovation; in supporting the needs of business and industry; and in their global reputation for quality higher education.

The sector is moving towards a ten-year track record in delivering efficiencies. Universities have had to work hard to continue delivering value for money. They are responding to a more competitive environment, with the needs of a diverse student population paramount. There is an imperative to invest in facilities in a more restrained public funding environment, and to ensure that a world-class workforce is available to serve the needs of learners and deliver excellent research.

## DELIVERING VALUE FROM THE ESTATE

Delivering value from the estate is a core element of the Phase II Review. The estate work stream covers:

- Investigating the extent of progress made in the sector in delivering efficiency gains and value from the higher education estate
- Benchmarking UK higher education space efficiency against international comparators
- Recommending strategies and tools for enabling further improvements in efficiency and effectiveness to be delivered in the future.

The work stream was undertaken by the Association of University Directors of Estates (AUDE) working with Universities UK, supported by the British University Finance Directors Group (BUFDG) and the Higher Education Funding Council for England (HEFCE). Kilner Planning and London Economics carried out research for the project.

## CONTEXT

Higher education institutions (HEIs) have undertaken major investment to adapt and improve their estates to meet changing demand and accommodate growth, but this has taken place within the constraints of a comparatively inflexible building stock.

The distinctive characteristics of the HE estate present challenges for maximising space utilisation. The estate is highly diverse and complex, accommodating a very wide range of activities. Nearly two thirds of the non-residential estate was built before 1980. In general, older buildings are less flexible and fit for purpose. Sixteen per cent of HEIs' floor area on average is in listed buildings which is a major restriction on the scope for adaptation and reconfiguration.

Space use is not a discrete space management issue. It is the product a number of factors including not only estate quality and flexibility, but academic practice, student choice, research funding, and student and staff expectations.

Recent research identifies estates and facilities as key factors for students and staff with high quality facilities as one of the most important attributes of universities. Research by the Higher Education Design Quality Forum found that when students are deciding which university to study at, over a third rejected institutions because of the quality of their buildings, facilities and physical environment.





## PROGRESS IN ACHIEVING EFFICIENCY GAINS AND INCREASING VALUE FROM THE ESTATE

These factors set the context for the research into the extent of progress in delivering efficiency gains and value from the non-residential estate. The research focused on three areas:

- The extent of improvements in the quality of the estate
- Changes in the efficiency and effectiveness of space use
- Trends in the value, or income, derived from the estate and property costs.

The statistical analysis focuses on HE sector-wide trends over a ten year period from 2003-04 to 2012-13 and uses Estate Management Returns from the Higher Education Statistics Agency (HESA). All cost and income variables have been adjusted to eliminate the effect of inflation.

### QUALITY INDICATORS

Sector-wide trends computed for the sample of HEIs with no missing data for the ten year period show a marked improvement in the quality of the estate over the period measured in terms of improvements both in building condition and fitness for purpose.

- The percentage of space rated as Condition Codes A (as new) and B (sound, operationally safe and exhibiting only minor deterioration) has increased by over 19 per cent to 78 per cent.
- There has also been a marked increase in the proportion of space rated as being fit for purpose. The percentage of space rated as functional suitability Grades 1 (excellent) and 2 (good) is now 85 per cent, an increase of nearly 22 per cent.

### SPACE USE INDICATORS

Analysis of space indicators for the constant sample of HEIs over the ten year period shows that the sector has increased its effectiveness and efficiency of space use.

- Although the size of the non-residential estate has grown over the past ten years, the expansion in the size of the estate has been outpaced by growth in student and staff numbers. Factors such as improvements in functional suitability and effective space management have enabled

space to be used more effectively to accommodate the expansion in student numbers, leading to an overall reduction in the space per student by over eight per cent.

- All the indicators by types of space reflect increasingly efficient use over the period, with the exception of support space per student and specialist research space per research student.
- Over the ten year period, the ratio of space per student declined until 2011-12, followed by a spike in 2012-13. The hypothesis was tested that the spike was the result of a fall in undergraduate numbers following the change in the fee regime in England. Counterfactual scenarios created for the space indicators involving taught students show that without the recent reduction in student numbers, the ratios of space per student would have continued to decline while support space per student would only have increased slightly.
- Staff office space ratios show reductions in the office area per person. Within the total, the reduction was only slight for academic staff offices, but over ten per cent for support staff.
- Analysis of trends in the utilisation of teaching space reveals that overall utilisation increased by over nine per cent. The utilisation rate is a combination of a frequency of use rate (how often rooms are used) and an occupancy rate (how full they are when they are in use).
- The frequency rate rose faster than the occupancy rate. Frequency of use increased by nearly nine per cent, whereas occupancy rose slightly – just under three per cent. Occupancy rates are highly dependent on student patterns of attendance.

### INCOME AND PROPERTY COST INDICATORS

Across the sector, HEIs have delivered increasing value for money from the estate over the past ten years.

- Total income per student and staff FTE increased by over 21 per cent over the period.
- Income per square metre increased by over 34 per cent over the same time.
- Thus the increase in the ratio of income per square metre exceeded the income generated per student and staff FTE, indicating more efficient and effective use of space over the period.
- In terms of different types of income, the lowest rate of growth income per square metre was associated with research space (just over 16 per cent) and the highest with the category designated as other income at 87

per cent. This suggests that the sector has been diversifying its income base and increasing sources in addition to teaching and research.

- Property costs per square metre have increased, rising by 26 per cent, primarily as a result of increased spending on maintenance and the rising cost of electricity.
- Although property costs per student have also risen, they have increased at a lower rate than the cost per square metre (just above 15 per cent) as a result of increases in the effectiveness of space use.
- The ratio of maintenance costs and capital expenditure to insurance replacement value is often used as a guide to the level of annual expenditure needed to maintain an estate in good condition and keep it for purpose through upgrading or redevelopment. Sector-wide, this ratio has seen a recent decline, with the fall being marked since 2010-11.

A major issue of concern in the sector is that income from Government is not increasing and therefore reducing in real terms. At the same time, staff costs and other operating costs are increasing by at least inflation. As a result, surpluses are becoming increasingly difficult to achieve, and within time will turn into deficits and cash reserves are being used. This will inevitably lead to a decline in estates and facilities expenditure and investment. This is particularly illustrated by the reduction in the ratio of maintenance costs and capital expenditure.

### IMPACT OF EFFICIENCY GAINS – COST AND CARBON SAVINGS

The overall reduction in space per student FTE indicates that the sector has used its space more effectively to accommodate the expansion in student and staff numbers.

This project estimated what the size of the non-residential estate would have been had the sector not delivered this efficiency in space use over the ten years to 2012-13. The cumulative efficiency savings are estimated to total £7.2 billion (£6.29 billion savings in capital expenditure and £886 million on property costs such as maintenance and energy).

For the period 2003/04 – 2012/13, it is estimated that an additional 1,178 million Kg CO<sub>2</sub>e would have been produced in the absence of efficiency gains in space usage.



### CASE STUDIES

The project undertook a series of case studies. These illustrate not only how individual institutions are making efficiency gains but also how they are working to deliver increased value from their estates for the benefit of student and staff experience and attainment, and for the benefit of local communities and the wider economy.

**Coventry University** Engineering and Computing Building

**Imperial West** Imperial College's campus in White City

**Loughborough University** new uses for a historic building

**Manchester Metropolitan University** delivering a far reaching strategy

**University of Strathclyde** the Technology and Innovation Centre

**University of Sunderland** Sciences Complex Refurbishment project

### INTERNATIONAL COMPARATORS

Results from the international benchmarking space measures indicates that the UK has less space per student than the comparator groups in North America and in Australia, New Zealand and Hong Kong. The Tertiary Facilities Management Association (TEFMA) with data for HEIs in Australia, New Zealand and Hong Kong reports more detail on utilisation than UK HEIs report through EMR. TEFMA data includes a breakdown by space type and two reporting periods – daytime and evening.

### RECOMMENDATIONS FOR THE FUTURE

The estate work stream makes a series of recommendations for further enabling strategies and tools and strategies designed to support future improvement in the performance of the estate and to promote further efficient and effective space use.

#### 1. Key performance indicators

It is recommended that eight key performance indicators (KPIs) are adopted and reported on an annual basis.

##### Efficiency

- Area per student and staff FTE (GIA m<sup>2</sup>)
- Total property cost per m<sup>2</sup> (GIA)

##### Quality

- Percentage of GIA in condition grades A and B
- Percentage of GIA in functional suitability grades 1 and 2

##### Value

- Income per m<sup>2</sup> (GIA)
- Insurance replacement value as a proportion of total income

## Sustainability

- Maintenance and capital expenditure as percentage of insurance replacement value (rolling average of three years)
- Carbon emissions scope 1 and 2, tonnes by m<sup>2</sup>

All definitions are as HESA's Estates Management Record with the exception that total property cost excludes rateable value. It is recommended that if national results are collated and reported through HEFCE or HESA that the ability to report results by TRAC<sup>1</sup> Peer Group is included to enable comparisons of similar institutions.

The estate has a critical role to play in student and staff satisfaction. At such time as the National Student Survey, it is recommended that an additional question is included to ask about students' satisfaction with the estate and campus facilities. Similarly institutions may consider collecting and reporting on this measure independently of the National Student Survey for both students and staff. This would complete the value elements of the estate and balance the measures.

## 2. Governance, strategic planning and decision making

Effective governance, strategic planning and decision making are critical success factors in delivering future improvements in the KPIs.

It is recommended that the goal of improving KPI performance is integrated with wider institutional planning and decision making and that to support this recommendation, guidance for governing bodies and HEIs is updated.

This will include revision, rationalisation and updating of the AUDE Self Assessment Tool (AUDESAT) to reinforce the role of governance and build in a greater focus on the delivery of efficient and effective use of the estate and delivery of the KPIs in each of the core competencies: leadership, strategy, processes, people, resources and outcomes. The update will focus on which actions/decisions will assist in improving performance.

## 3. Enabling models and tools

It is recommended that models and tools used by estates professionals and institutional leaders for managing the efficiency and effectiveness of space use are reviewed and updated to make them fit for purpose for the future. These include the model for benchmarking the size of the estate, tools for assessing space needs and tools for measuring space utilisation.

<sup>1</sup> Transparent Approach to Costing

# About the authors

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Ghazwa is a chartered civil and structural engineer with 28 years' experience in the private, public and not-for-profit sectors. She gained both her BSc and PhD at the University of Leeds and started her career in Yorkshire as a structural engineer then moved to bridge engineering and from there into Project Directorship roles at BAA, the Prince's Foundation and the NHS. She then held a role as Chief Operating Officer of a shared service in the NHS.

Ghaz joined the higher education sector 7 years ago and is Director of Estates and Campus Services at the University of Roehampton in London. She chairs the London Region of AUDE and is Deputy Chair of AUDE.

She was a member of the Oversight Panel for the UUK's Diamond II review of efficiency and effectiveness in HE and the lead for the work stream focussing on space efficiency in UK HE.

**Sian Kilner**, Director, Kilner Planning

Sian is a Director of Kilner Planning. She has worked with some 40 individual HEIs on projects including space management, space utilisation, space needs assessments, estate strategies, business plans and project appraisals. Sian carries out research and assists with the preparation of guidance for the education sector on estate strategies and space management, including the UK Funding Councils' Space Management Project, the development of the Sustainable Estate Toolkit for AUDE and the National Audit Office Space Management Good Practice Guide.

Sian is a chartered surveyor and town planner, and has worked in both the public and private sectors.

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Patrice Muller is a Senior Partner at London Economics, a specialist economics and policy consultancy advising clients in both the public and private sectors on economic and financial analysis, policy development and evaluation, business strategy, and regulatory and competition policy.

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