



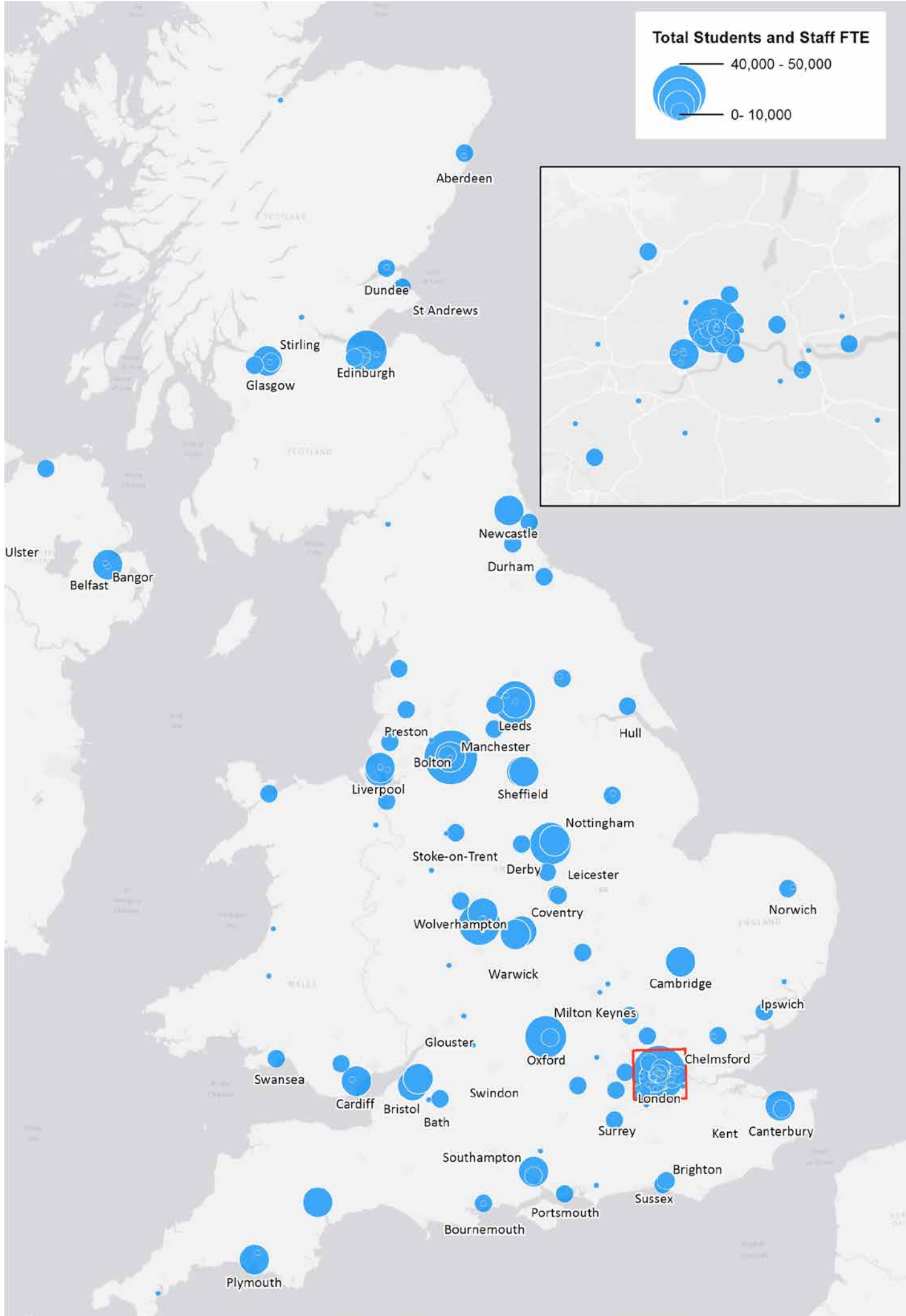
ASSOCIATION OF UNIVERSITY  
DIRECTORS OF ESTATES

**Excellence in Estates  
and Facilities**

# AUDE Estates Management Report 2016

Summary, insights and analysis of the 2014/2015 academic year





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### AUDE WOULD LIKE TO THANK –

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Membership of AUDE is organisational, with 156 universities in membership, almost the entire sector. Through networking, training and knowledge sharing, AUDE helps support university estates staff in their jobs and careers. AUDE's regional groups provide a lively programme of meetings and events, run by the members and for the members.

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## Sir Ian Diamond

Over the past few years UK higher education has been through a period of great change; austerity, changing higher education policies across the nations of the United Kingdom; and most recently the results of the Referendum on EU membership have all impacted on strategic decisions within individual institutions. The current Westminster Higher Education Bill and the evolving impact of the European Referendum mean that a changing policy environment will continue to be central to the thoughts of all those who work in universities.

Yet, despite this turbulent period of policy upheaval one thing remains clear: UK universities continue to deliver world class education, undertake world class, often impactful research and engage with their communities in a multitude of exciting ways. And they do this because, first, UK universities are peopled with brilliant staff and students, recruited from across the world, who are committed to excellence in everything that they do; and second,

these people are able to work and study in increasingly excellent facilities that enable innovations in teaching and research that are at the heart of the university endeavour. Indeed, excellent facilities are often enabling features in the recruitment of staff and students and the experience they have.

So far so good, but the improvements in facilities have been driven, at a time of austerity, alongside major reductions, across the UK, in the amount of capital funding coming from the public purse; when every university penny is a prisoner; and where maintenance needs are increasing both to keep ageing buildings fit for purpose; and to improve the energy efficiency of current buildings, as seen in the excellent case study from the University of Reading. Given this context, the achievements described in this, the 2016 Estate Management Report are truly wonderful.

Over the past few years, as I have been privileged to lead the Universities UK work on efficiencies, and have been continually impressed by the innovative and exciting interventions across the sector. The new main building at the University of Aston is a fine illustration of how space use in higher education is constantly evolving and becoming ever more efficient. And I recognise this takes time. The inspirational case study from the University of Derby, featured in the report, shows precisely what can be done with careful assessment of needs, a clear strategic direction and a consistent delivery across the journey. But sometimes we have little time and I recognise the agility to respond to opportunities that is also apparent in this report.

A real feature of the evolution of the higher education estate in recent years has been the manner in which the local community is able to use the estate or in which developments are in partnership with the community, often driving jobs and growth for the region and beyond. These trends are encapsulated in the report by the case studies from the Universities of Sheffield and Hertfordshire both of which, in their different ways, show how great facilities, imaginatively developed can support and enhance higher education's contribution to the economy and to society. It is also heartening to see this acknowledged at a national level by the Scottish Government's decision, in 2016/17 to allocate extra funds for maintenance, where those funds can be shown to impact on the local economy.

Finally, this report is a wonderful celebration of the quality and commitment of estates staff across the sector. Throughout the report, the evidence of estates scaling the twin peaks of excellence and efficiency is clear. There are statistics that show how well all aspects of the estate are progressing; and I know that no-one is complacent as we move on to ever greater heights. I commend this report to everyone.



Professor Sir Ian Diamond DL FBA FRSE FAcSS  
University of Aberdeen

# 1 INTRODUCTION





## EXECUTIVE SUMMARY

For more information visit [www.aude.ac.uk/emr](http://www.aude.ac.uk/emr) or contact [info@audd.ac.uk](mailto:info@audd.ac.uk), 01509 22 88 36.

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The report this year shows how the sector is continually improving its facilities and responding to the efficiency and effectiveness agenda in the backdrop of an ever-changing environment.

**Student numbers** have remained constant since last year, which in itself represents a positive outcome given the demographic shift which sees a declining number of home students for the next five years. Notwithstanding the level of student numbers, **teaching income** has continued to increase by 6% per annum, as income from research and other income has risen by 12% and 10% respectively.

**Capital expenditure** has also risen to the highest seen in the last decade. Universities have been able to develop, in some instances, long and inter-related capital programmes to address backlog issues and buildings at the end of their lives. We have seen new campuses built, large new complex scientific buildings as well as substantial improvements in the environment for taught students.

**Total property costs** have risen slightly, despite the size of the estate increasing by 110,000m<sup>2</sup>, however the majority of costs have seen no or very marginal increases across the sector. Again this shows the degree of management involved in ensuring that costs don't escalate as buildings become more highly technical and require more specialist skills to maintain.

Again, the metrics included within this report show the **condition and functional suitability** of the sector's estate continues to improve. Year on year differences are marginal, but over the decade there have been great strides made. Given the size of the whole estate, even with the capital being spent, it takes time for impacts to be made on the whole estate and **backlog maintenance** needs to be closely monitored. This is also true for the efficiency metrics, whilst new buildings may have better efficiency metrics (or be more complicated and require higher and more costly servicing levels) it is difficult to see the improvement across the whole sector on a year by year basis. The efficiency of the estate continues to improve with **income per m<sup>2</sup>** improving year on year. Environmental sustainability metrics show that **carbon emissions** have been reducing, both per unit area and also per FTE.

The **residential estate** continues to be a key focus for the sector. An increasing amount of capital is being spent by Universities on university-provided accommodation, and there is substantial evidence of many and varied ways the sector is working with private providers to deliver accommodation. The role accommodation plays in recruitment and selection of institutions, particularly for the parents of students, is vital. Not only is the quality key, but also the level of rent, as affordability becomes even more of an issue. This has given rise to issues in London this year in particular.

The situations for Scotland and Wales are slightly different than for the UK as a whole hence we have produced separate sections covering these regions. The difference in government in both countries has impacted on the University sector and these are highlighted in the later sections.

With the UK political environment continuing to change, the sector must respond to the challenges presented. These are both in relation to Brexit and the Higher Education and Research Bill currently going through Parliament, that aims to deliver greater competition and choice to promote social mobility, boost productivity in the economy, ensure students receive value for money from their investment in higher education and strengthen the UK's world-class capabilities in research and innovation. Greater competition will be delivered through new providers being granted degree awarding powers, a continued focus on the student experience and even greater transparency. The creation of the Office for Students and the use of the Teaching Excellence Framework (TEF) will continue to drive focus on student's needs. Also, the possible introduction of two year accelerated degrees and the credit transfer system, all need careful consideration and the physical estate will need to continue to demonstrate it is efficient and effective and highly valued by the student.

For more information visit [www.aude.ac.uk/emr](http://www.aude.ac.uk/emr) or contact [info@audd.ac.uk](mailto:info@audd.ac.uk), 01509 22 88 36.

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Income in the sector has increased in all areas. Teaching income is up 6%, research income up by 12% and other income (1) up by 10%, which in itself shows how diverse the income is. In total (excluding residential income) the sector generated over £30bn in income over the 2014/15 academic year.

Distribution of income remains similar, with a number of very much larger institutions dominating the histogram. We have again shown two histograms, one including income from teaching, research and other income, and one including only the academic income associated with teaching and research<sup>1</sup>.

It is still the largest institutions which generate substantial income from other activity, seven institutions generate over £100m from other income.

When looking at academic income only (i.e. Teaching and Research income), there are two institutions which now generate over £1bn from academic enterprise, and 17 institutions which generate over £400million from academic income.

About a quarter (39/159) of the total number of institutions generate over £200m, with three quarters of institutions under this figure. The median size of institution is £120m.

It is also the largest institutions which dominate the research income. Research income forms a major part of those institutions which generate over £200m in academic income. With the exception of a few specific research institutions, smaller institutions generate much less of their income from research.

The relationship between income and estate remains clear. In 2014/15 institutions generated an average of £1,284 per m<sup>2</sup> GIA. The scatter diagram shows the degree of correlation. As in previous years there is a much higher correlation with the smaller institutions. This is because these institutions are more dominated by teaching income, where space use is much more similar across institutions. The larger institutions which undertake more research may well have quite different spatial demands which results in a different income per m<sup>2</sup>.

### Brexit

The UK's vote to leave the European Union has shaken virtually every aspect of business in the UK and the higher education sector is no exception.

It is impossible to predict the impact it will have on the sector, however there are clearly areas where it is likely to have an impact.

There are issues related to recruitment of both EU students at undergraduate and postgraduate levels as well as issues relating to recruitment of EU staff. We are aware that any interim arrangements and key government messages are likely to have a significant impact on issues of choice and funding and need to ensure we work to support our students and staff. Uncertainty in itself is likely to have an impact on recruitment.

Construction costs are likely to be more volatile with any changes in currency value. Importation of key components as well as labour will be impacted, and this will have to be factored into the costing models.

Regional funding for universities in receipt of it will be at risk, although the Government has agreed to meet any lost funding in this regard.



<sup>1</sup> NB, 'other income' is that which is generated from overseas campuses, wholly owned subsidiary companies and other income such as investment property and share portfolios. Income generated from conference and catering is included within residential income, rather than 'other income'.



## UUK ANALYSIS

EU research funding generates more than 19,000 jobs across the UK, £1.86 billion for the UK economy and contributes more than £1 billion to GDP, according to new figures published today.

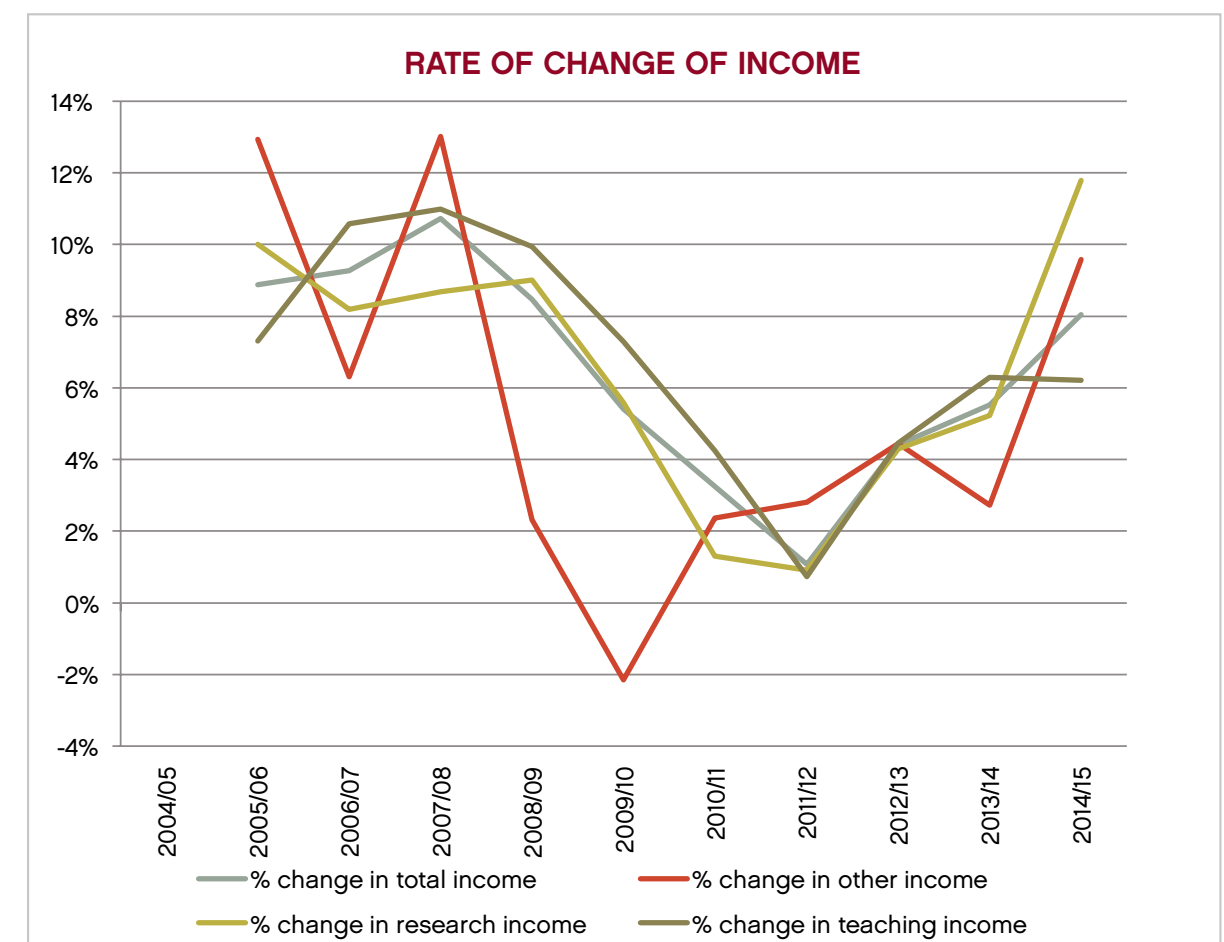
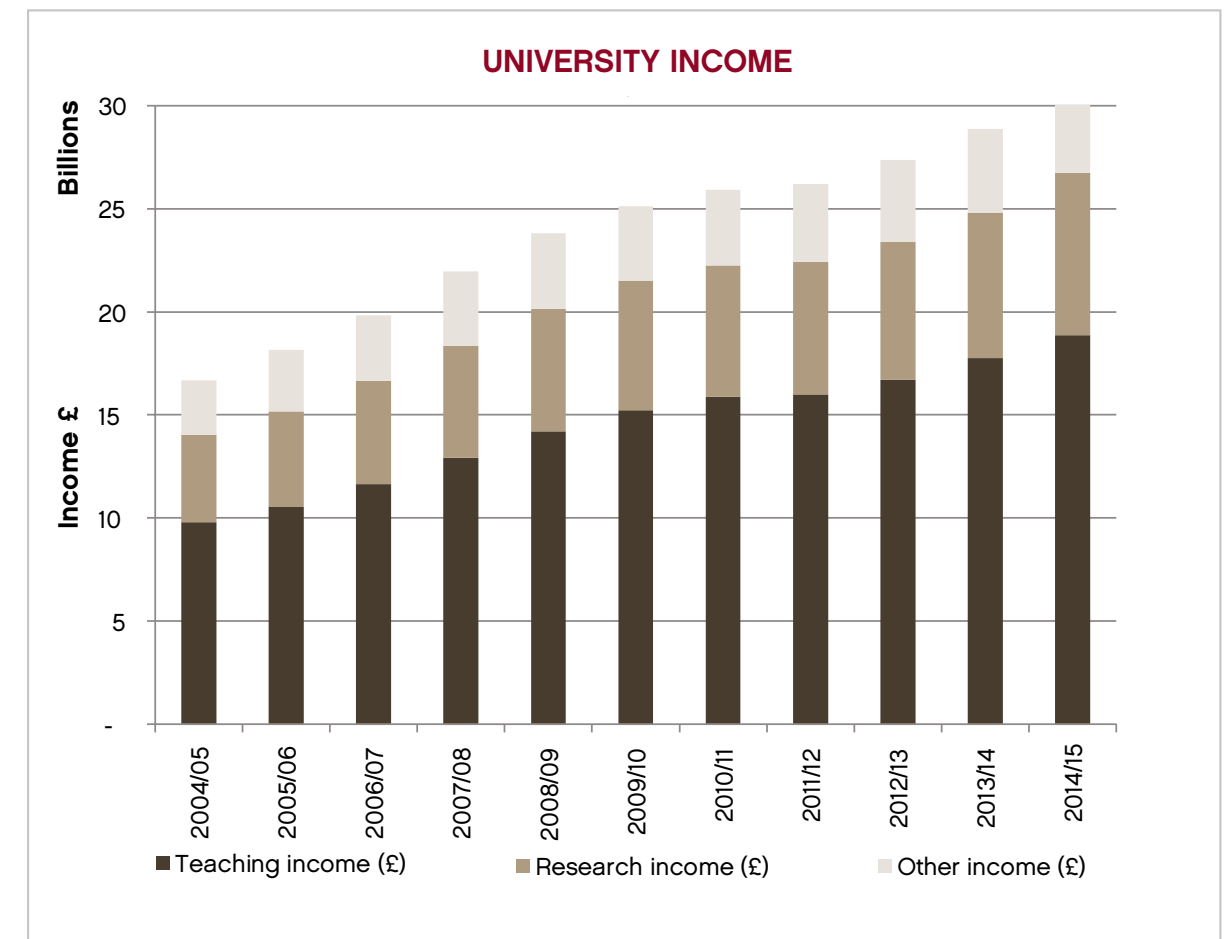
The universities UK analysis (available at <http://www.universitiesuk.ac.uk/policy-and-analysis/reports/Pages/economic-impact-on-the-uk-of-eu-research-funding-to-uk-universities.aspx>) of data for the year 2014-15 – showed that UK universities attracted more than £836 million in research grants and contracts from EU sources.

This represented 14.2% of all UK income from research grants and contracts in that year. The UK does disproportionately well in securing EU research funding, securing 15.5% of the funding allocated under the previous EU research and innovation programme. However, the impact on the economy and the pound is already noticeable.

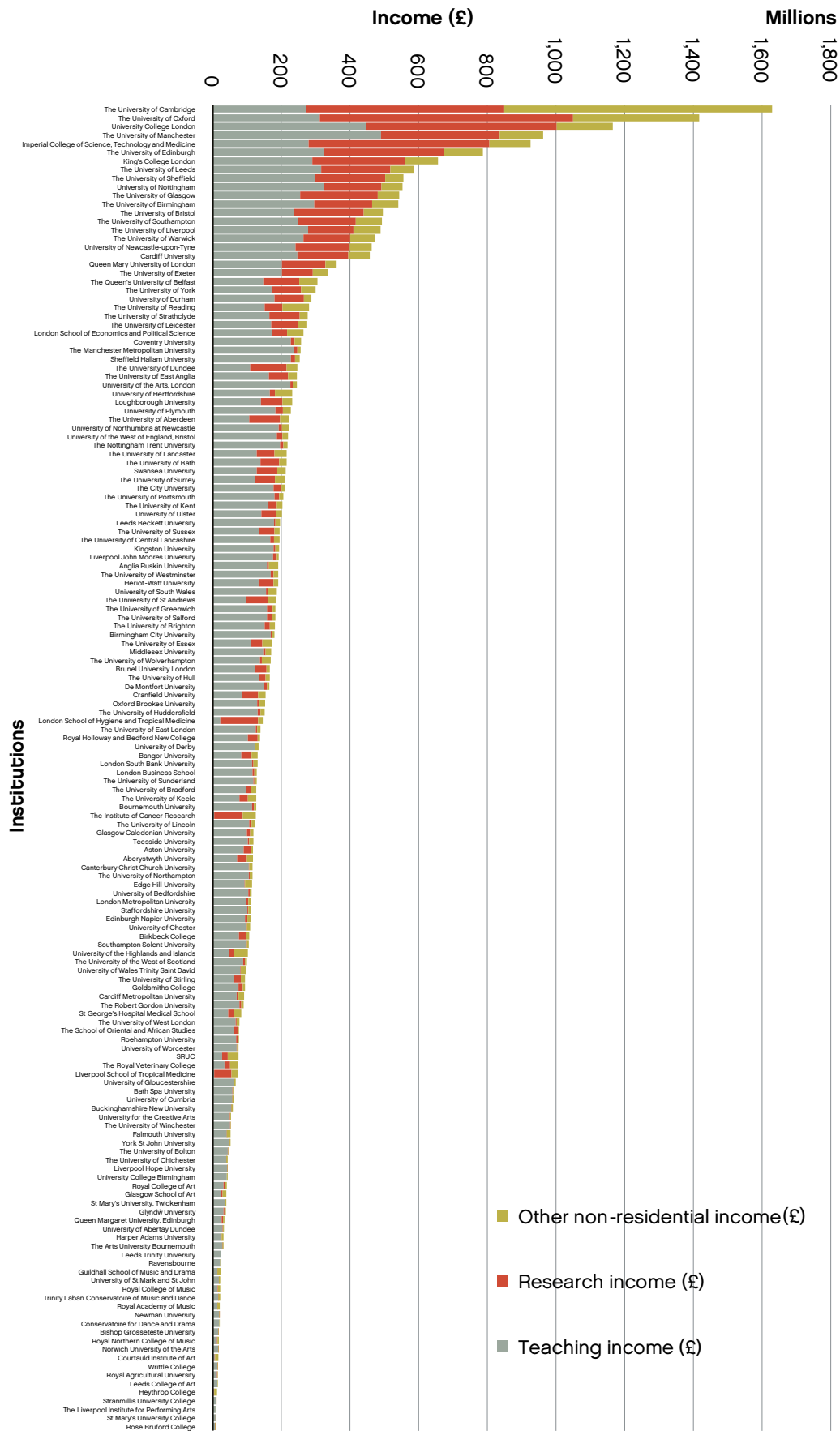
### Value For Money

Value for Money (VFM) has always been important to universities and the role of estates and facilities has been key to demonstrating both sector efficiencies and value. The use of EMR statistics to evidence VFM is standard in most universities and the development of the AUDE KPIs have been part of demonstrating value. Four of these key metrics are likely to be critical to formalising future VFM reports, and they are covered in this report.

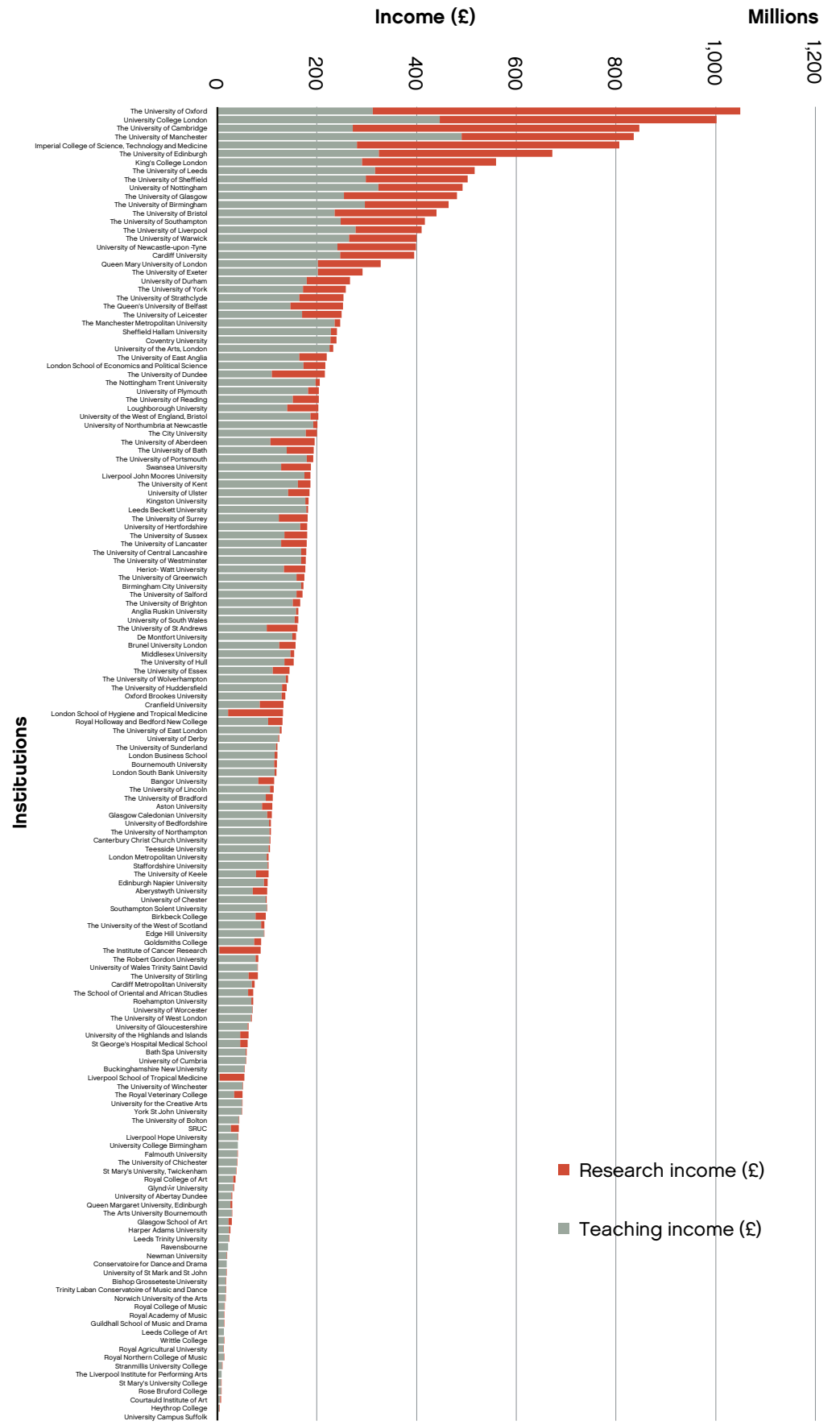
- Total property costs
- Area per student and staff FTE m<sup>2</sup>
- Percentage of GIA in condition A and B
- Income per m<sup>2</sup>



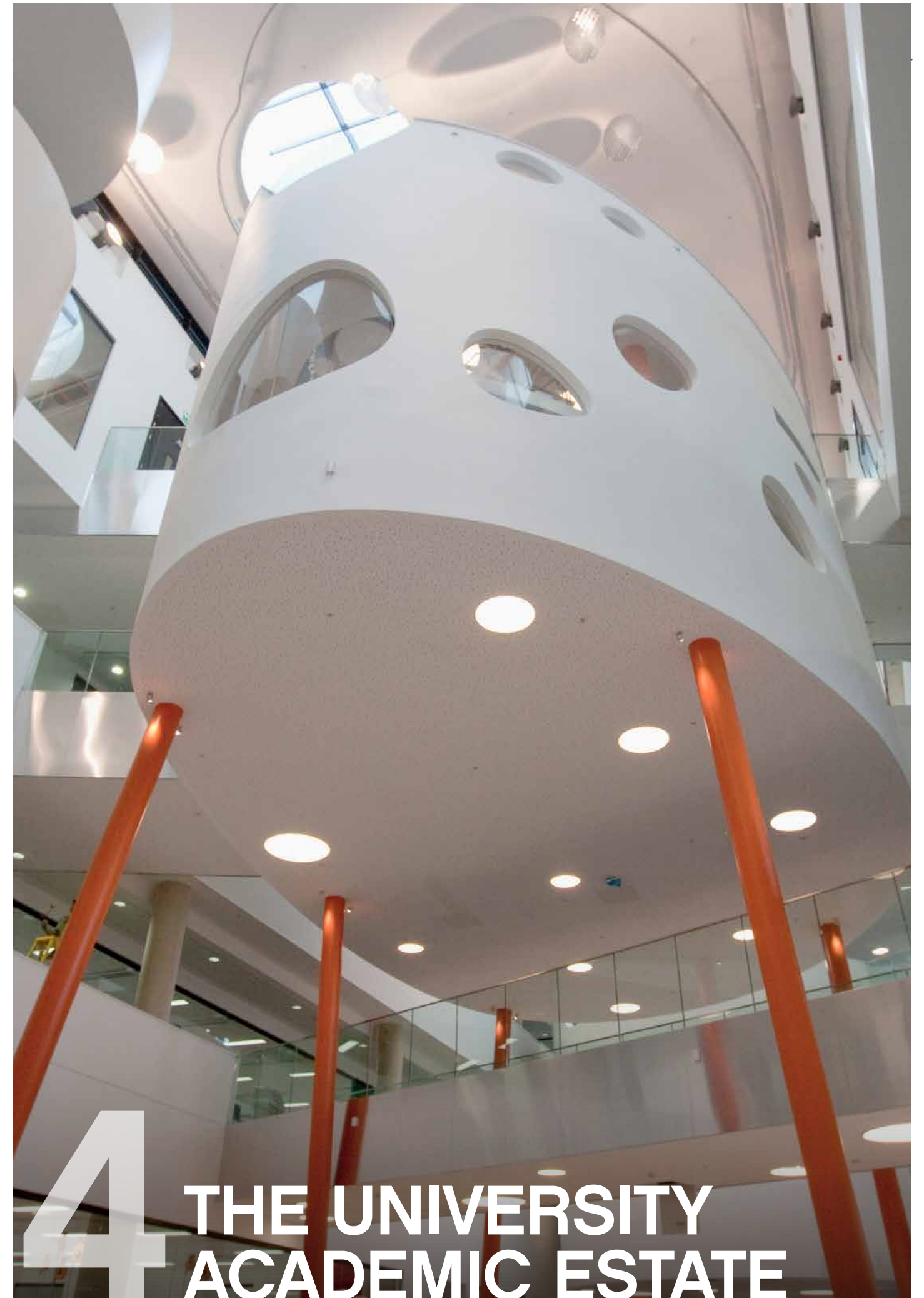
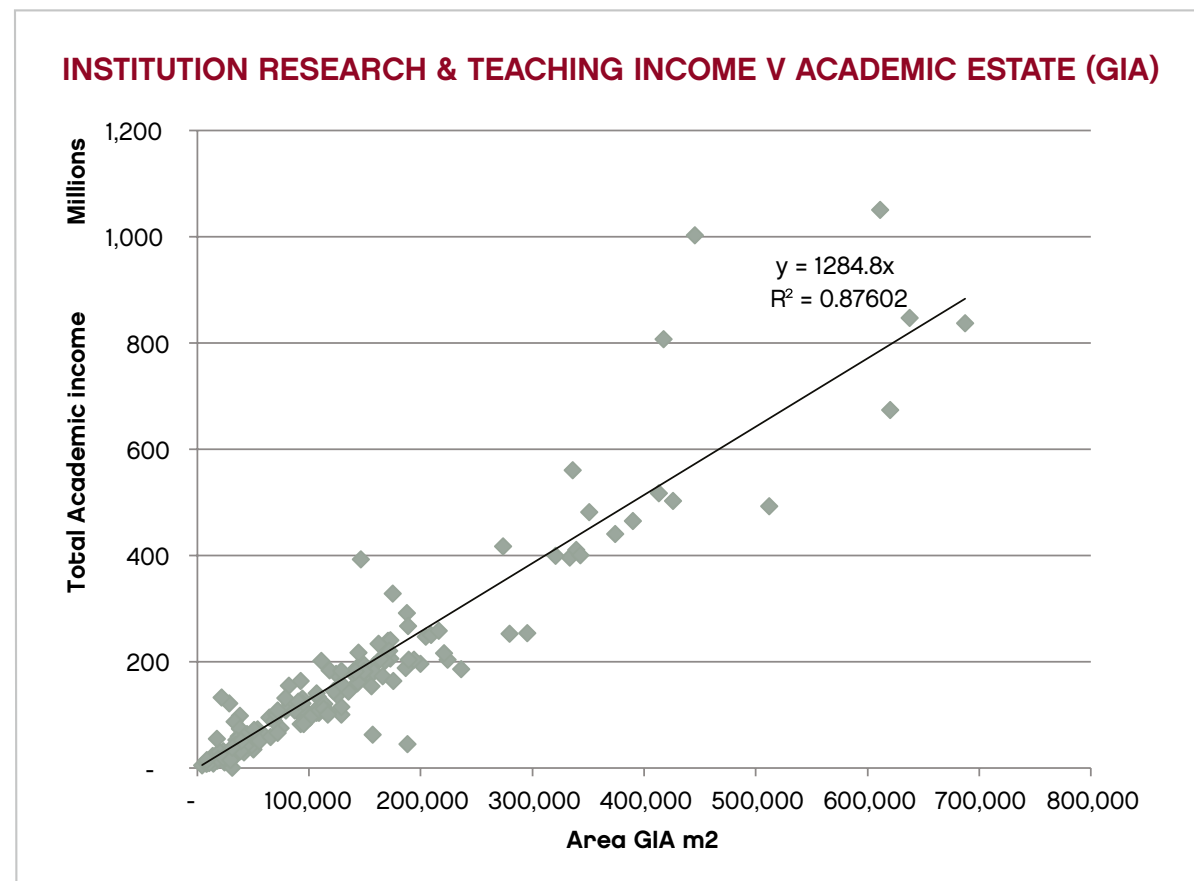
## TOTAL INCOME (NON-RESIDENTIAL) BY INSTITUTION



## TOTAL ACADEMIC INCOME (TEACHING AND RESEARCH) BY INSTITUTION







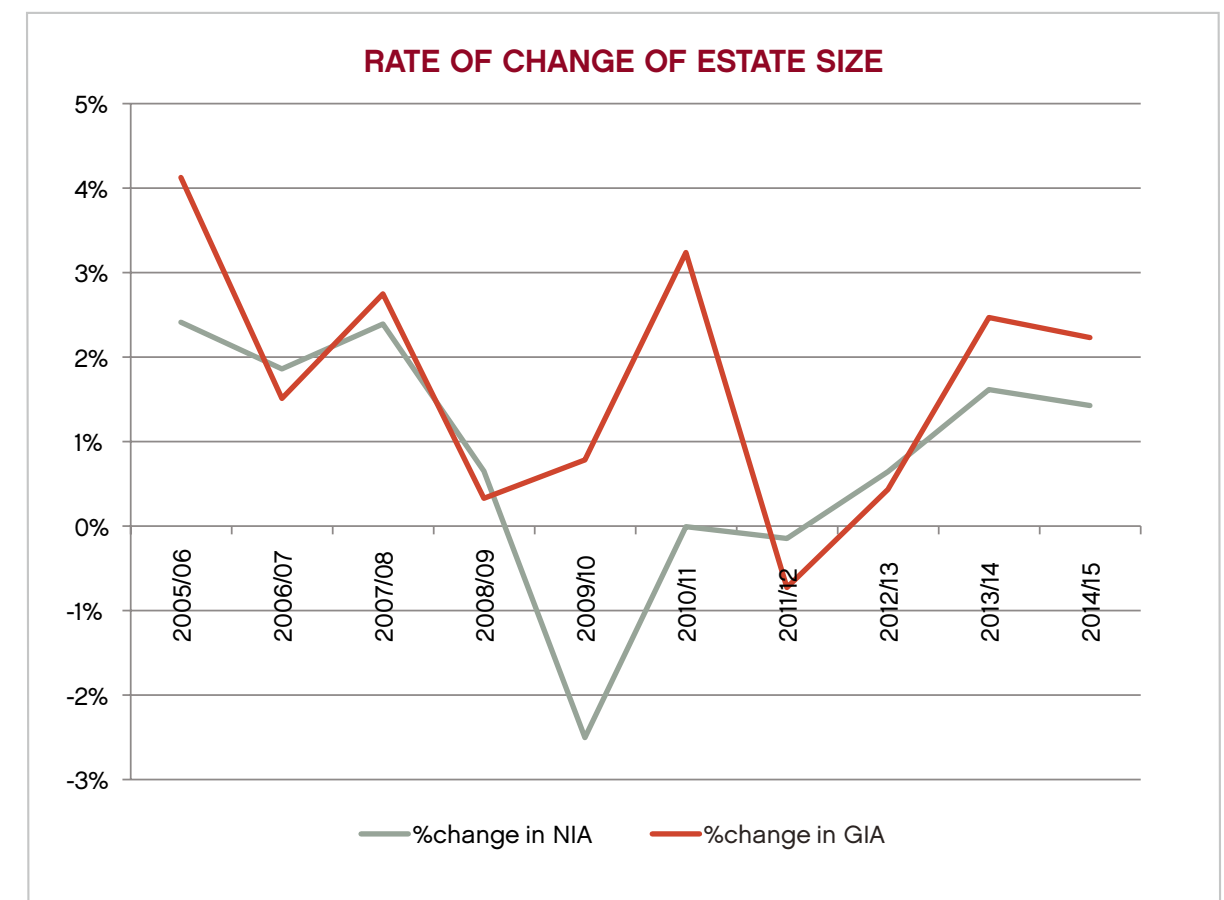
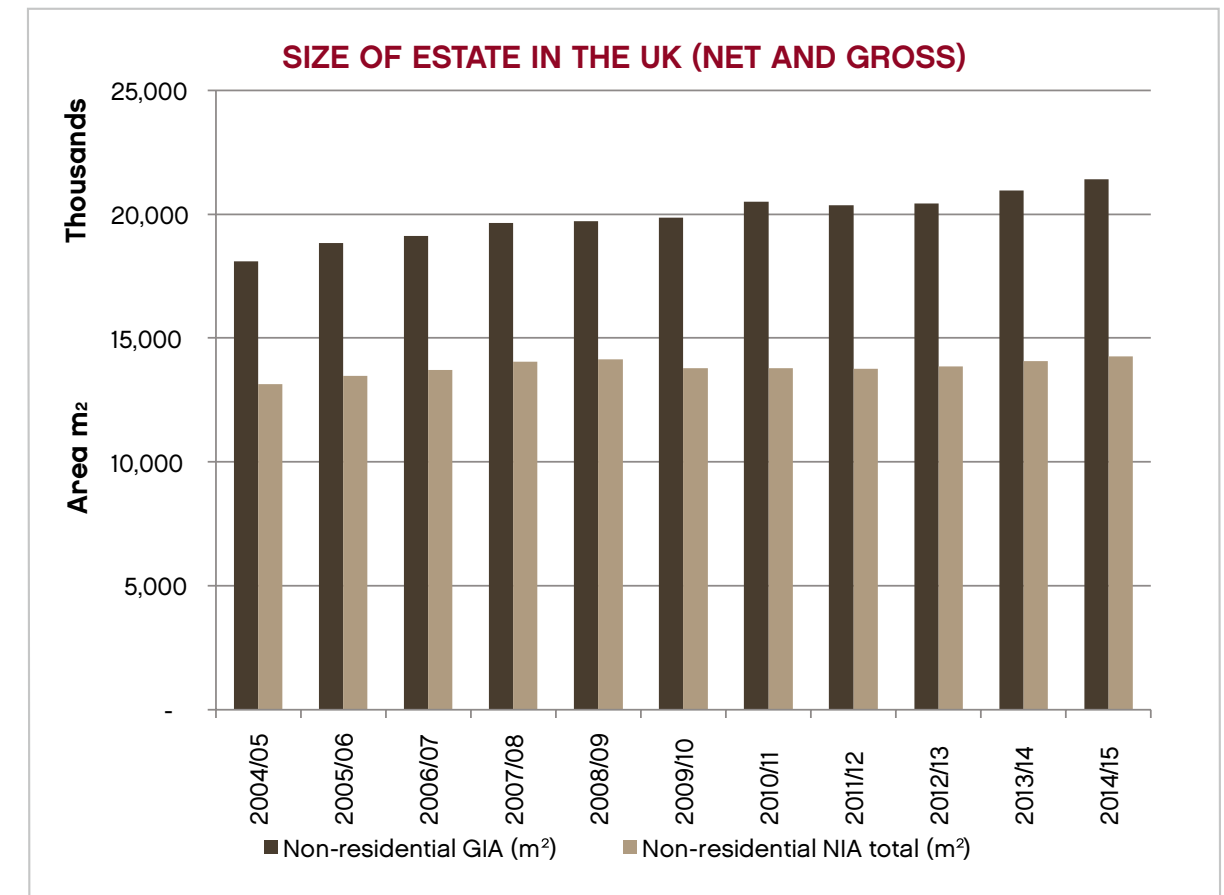


In 2014/15 the NIA for the University estate is 14,270,000m<sup>2</sup> which is an increase of 200,000m<sup>2</sup> since 2013/14. (The GIA has increased 466,000m<sup>2</sup> to 21,411,000m<sup>2</sup>). This represents a significant increase in the estate (the Shard has a total GIA of 127,000m<sup>2</sup> and NIA of 85,000m<sup>2</sup> thus the total academic space in the sector equates to 170 times the space in the Shard).

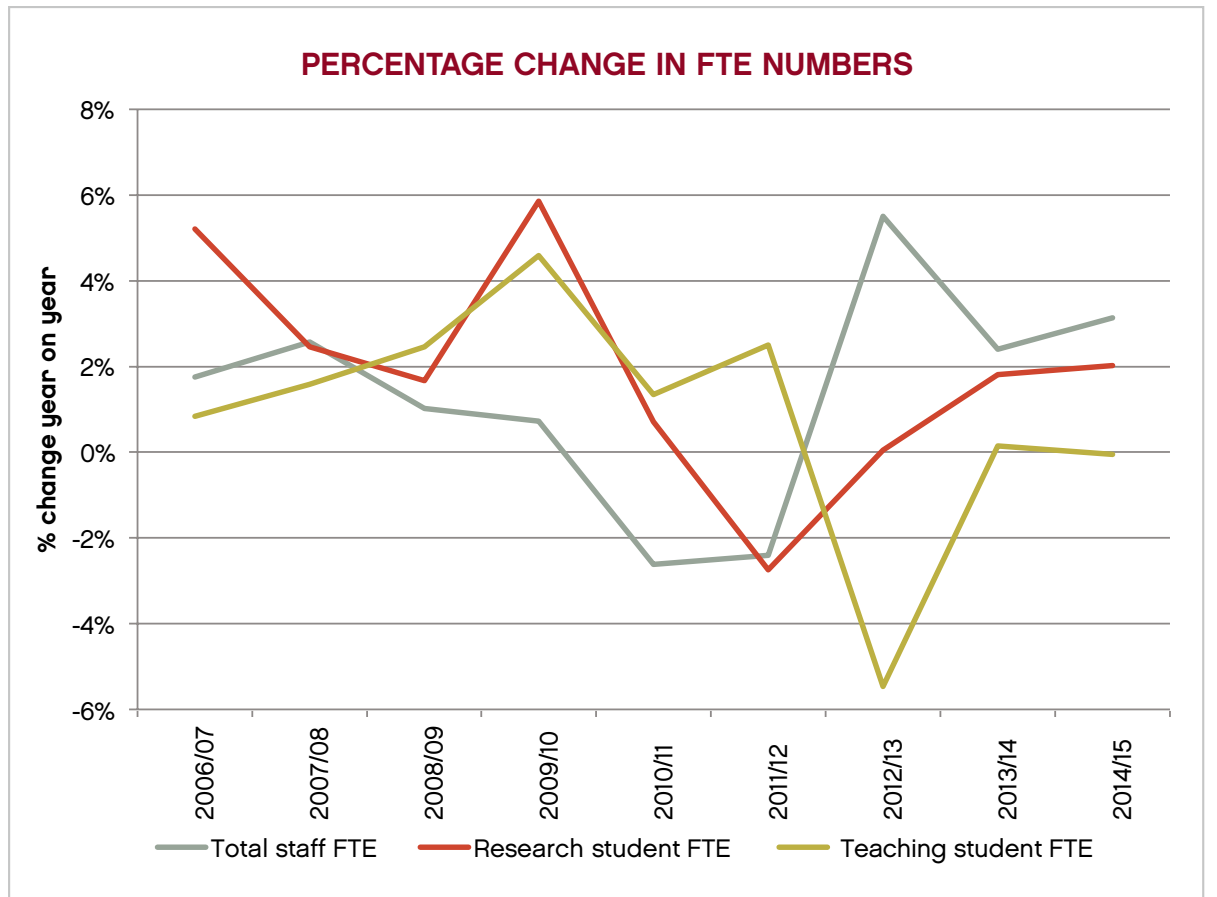
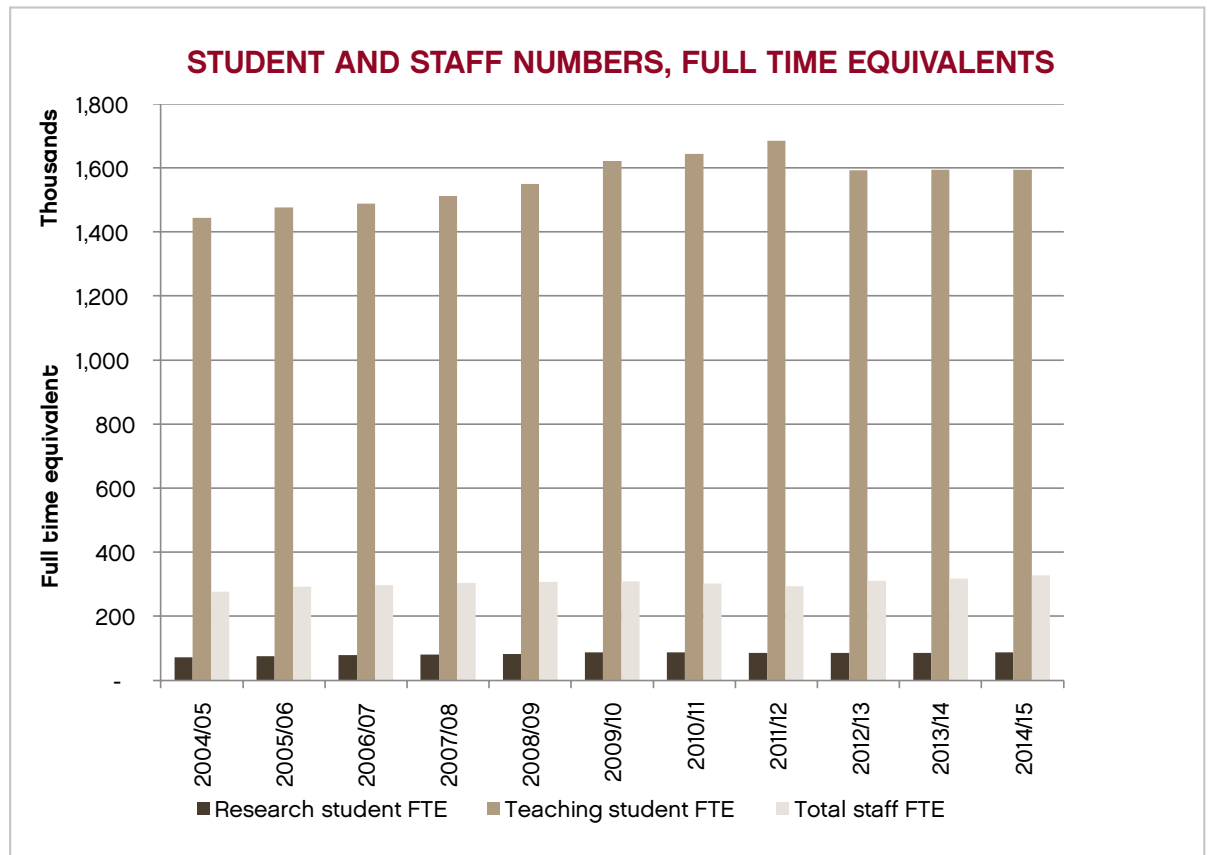
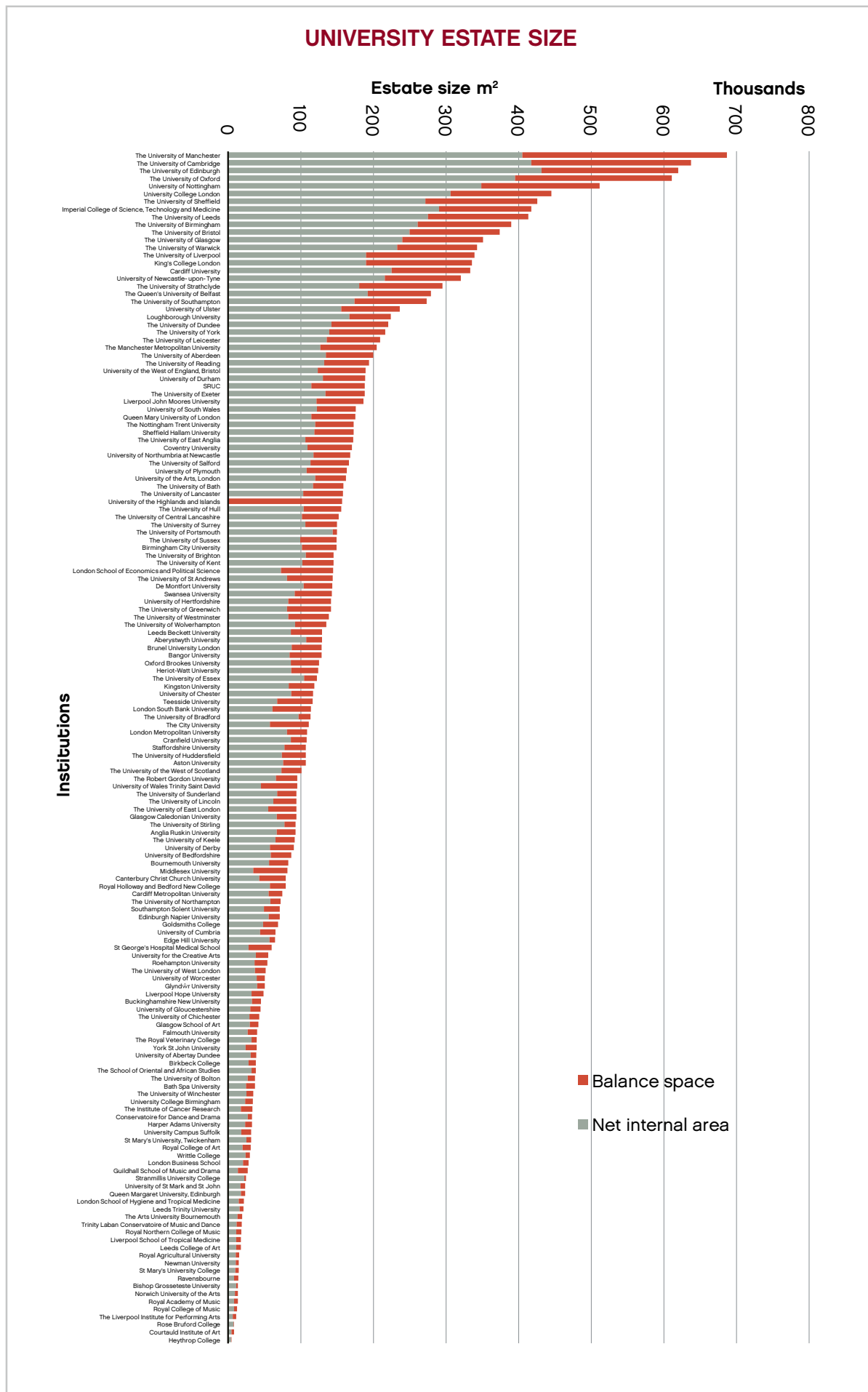
The histogram showing the range of estate size continues to show the substantial variation in the size of the estates within the sector. For the past two years the rate of increase in estate has been 2% (slightly higher for GIA than for NIA). There are nine institutions with academic estates in excess of 400,000m<sup>2</sup>, and a further eight with an estate between 300,000 and 400,000m<sup>2</sup>. However to understand the distribution, there are 26 institutions with estates over 200,000m<sup>2</sup> and 134 further institutions with estates smaller than 200,000m<sup>2</sup>. Whilst these may be small in the context of the larger institutions, they are still very substantial estates when put into the context of other business occupiers.

The figures also include vacant space and space being held for disposal or demolition which are included within the estates information return.

In terms of student and staff numbers, UG numbers remain level (only a reduction of c700 students), research students increased by 10,000 and staff numbers increase by 2,000. This has to be considered against the demographics which are seeing a reduction in the number of young people for the next six or seven years. Maintaining the number of students in the HE sector is clearly a success for the sector. Given the fact that fee levels for home undergraduates have not risen yet, this equates to the fact that teaching income has not grown in the last year.









# UK, EU AND NON-EU STUDENTS

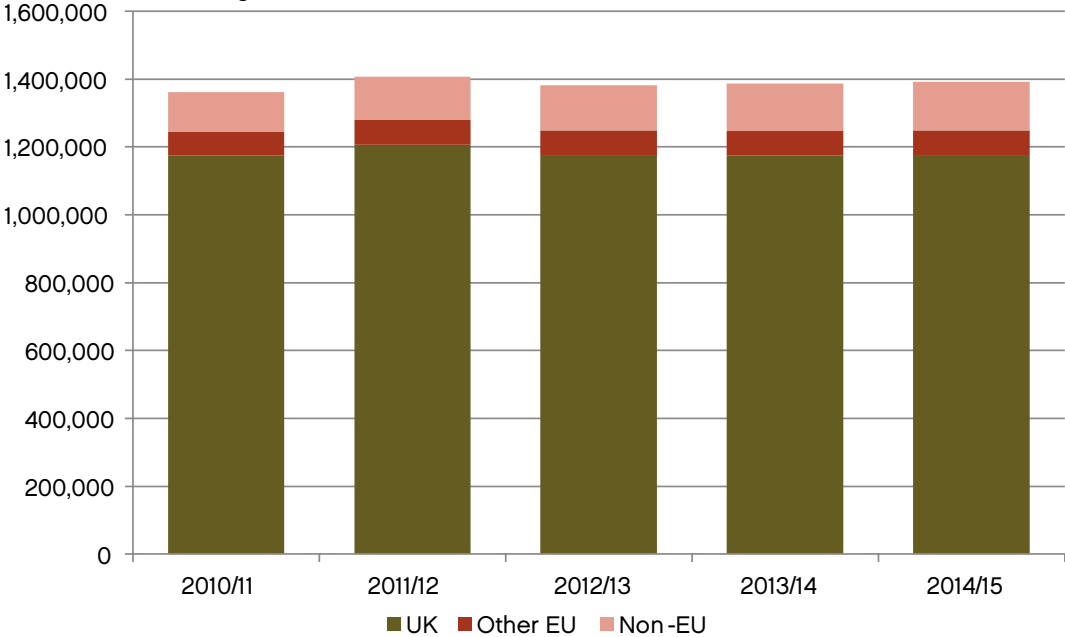
Many institutions have focussed effort on expanding their offering to students from outside the EU given the ability to charge unrestricted fees to these students.

Currently the number of Non-EU undergraduates amounts to 142,500 out of a total undergraduate population of 1,392,000 and represents 10% of total undergraduates; the % of overseas students has remained at 10% for the last five years.

The number of Non-EU postgraduates amounts to 141,500 out of a total postgraduate population of 305,000 and represents 46% of total postgraduates; the % of overseas students has remained at 45% for the last five years.

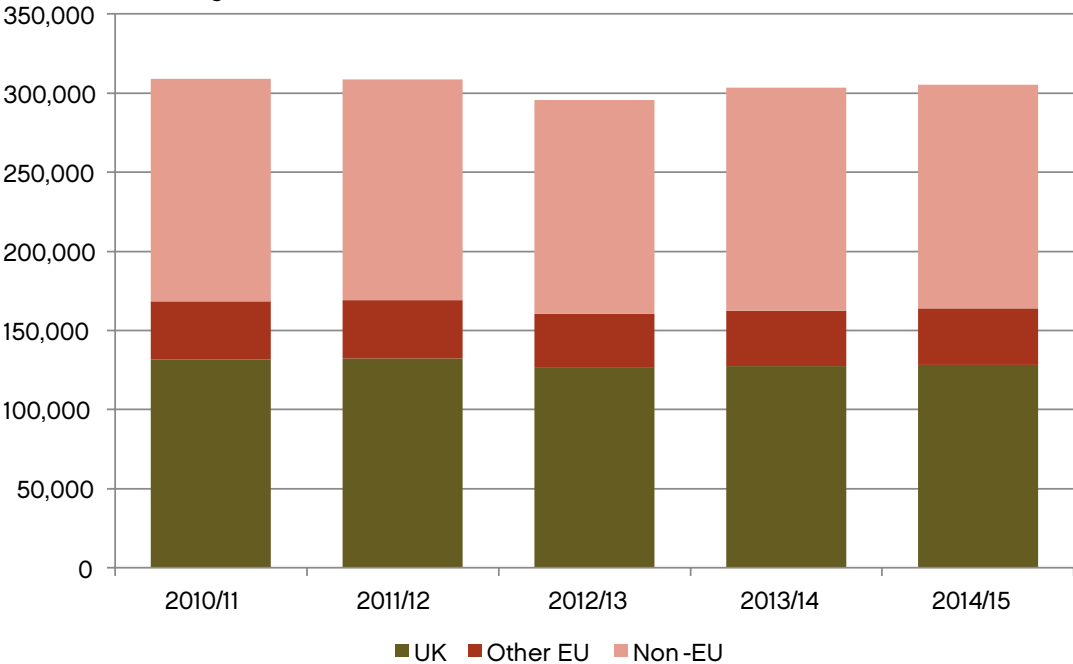
## UNDERGRADUATE STUDENTS BY DOMICILE MARKER

Undergraduate students

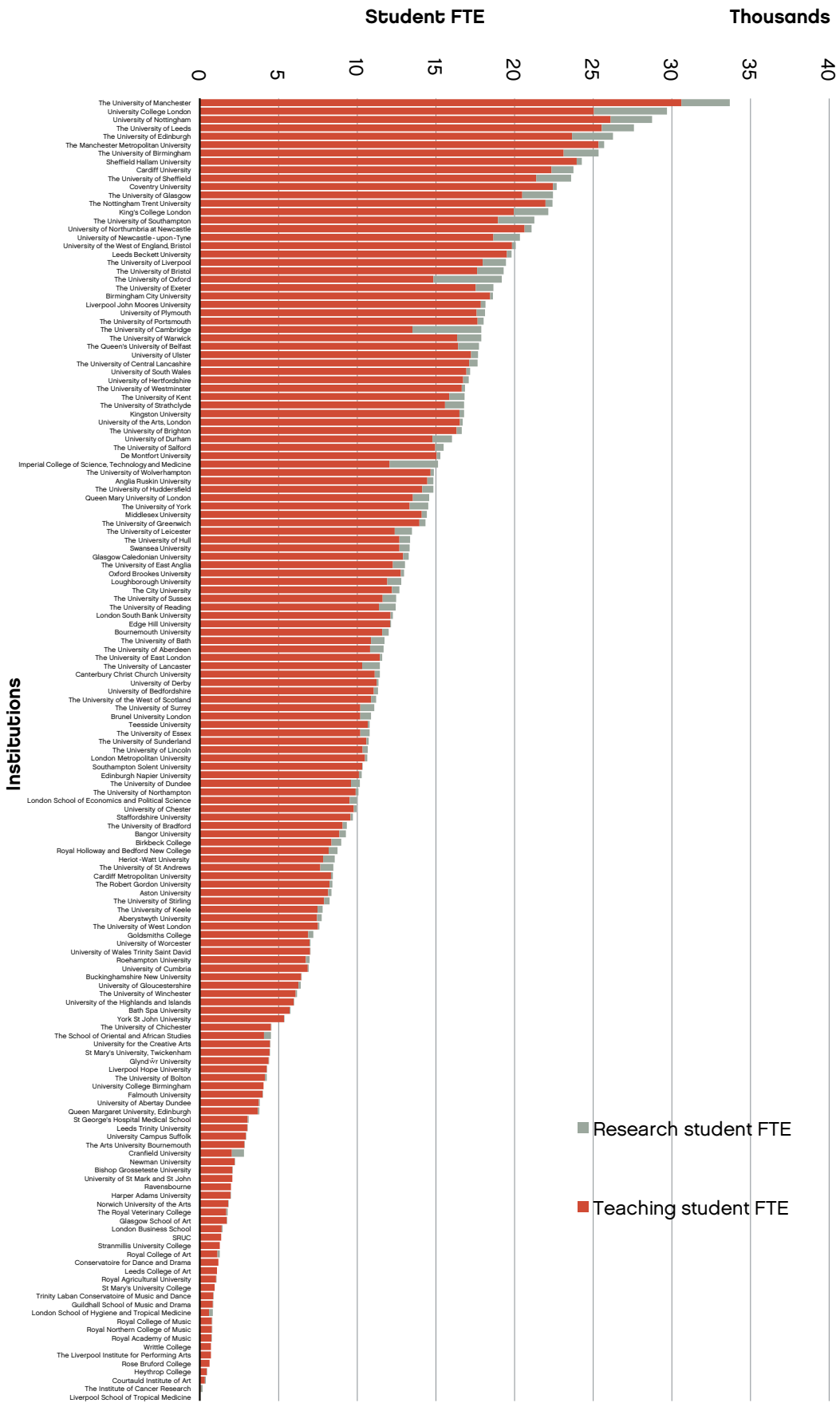


## POSTGRADUATE STUDENTS BY DOMICILE MARKER

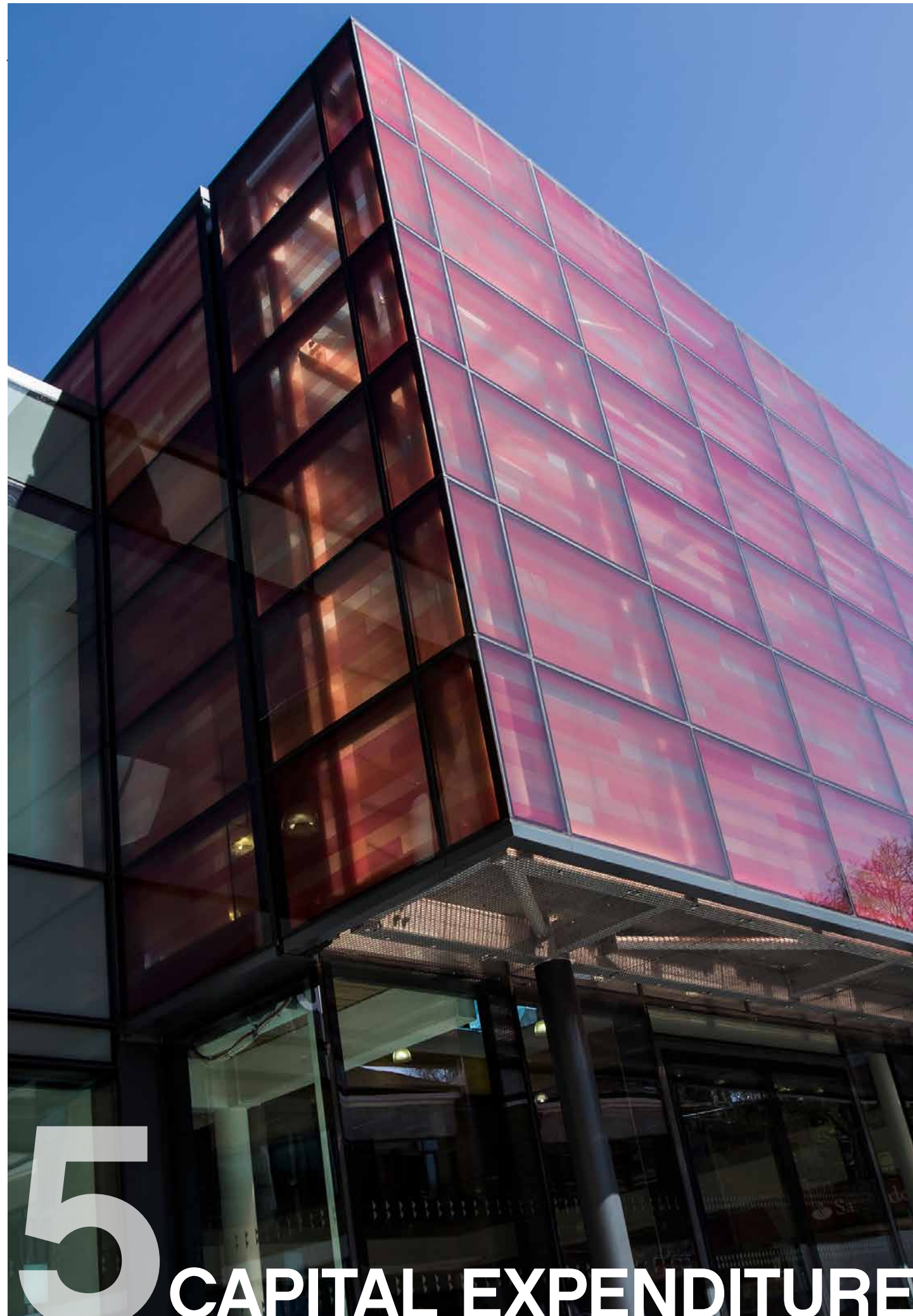
Postgraduate students



## SIZE OF INSTITUTIONS, STUDENT FTE (TAUGHT AND RESEARCH)







## TOTAL CAPITAL EXPENDITURE

The University sector continues to remain competitive. Individual institutions recognise it is important to ensure the physical environment is appropriate and attractive for their staff and students.

As a consequence of this, universities continue to invest in their estate. Capital investment in building (both new-build and all other capital) is in excess of £2.5bn for the second year in succession. Spending in 2014/15 was £2.75bn, an increase of 5.6% and the highest level seen in a decade.

This report highlights investment from 2014/15 noting a continued increase in capital spend. There is a concern at HEIs ability to continue these levels of investment, particularly in a period of continual change and uncertainty. There are also concerns with rising construction costs, general economic uncertainty and the capital markets having less confidence, potentially resulting in more expensive debt. There is a strong concern that such market trends would impact on the ability to deal with major capital investment and historic backlog issues, the latter being a major concern with an increasing aging estate. At the same time, a significant reduction in investment could lead to a loss of competitive edge for the sector internationally.

The amount of money available to institutions by way of grants from government is very limited indeed. Institutions are now seeking a variety of different sources of funding for their capital programmes; as noted in previous years, this includes some innovative funding options including bond offers, annuity funding options as well as bank debt.

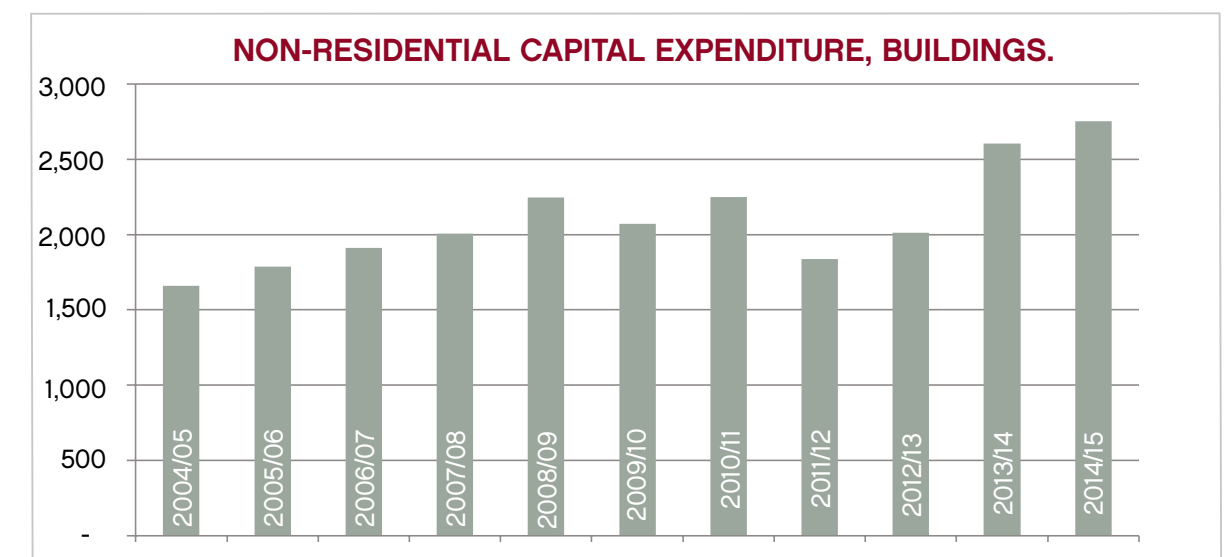
Whilst across the sector the capital expenditure is quite substantial, this is also reflected in the programmes that some institutions are undertaking. There are four institutions which have spent more than £100m in 2014/15, six that spent between £50m and £100m, and 35 institutions which spent between £20m and £50m during the academic year. This excludes any off balance sheet funding invested by University private sector partners in, for example, accommodation projects.

As we have discussed here before, some institutions have undertaken very substantial capital programmes that will last in excess of 10 years and deliver many individual projects to achieve the overall aim of the institution.

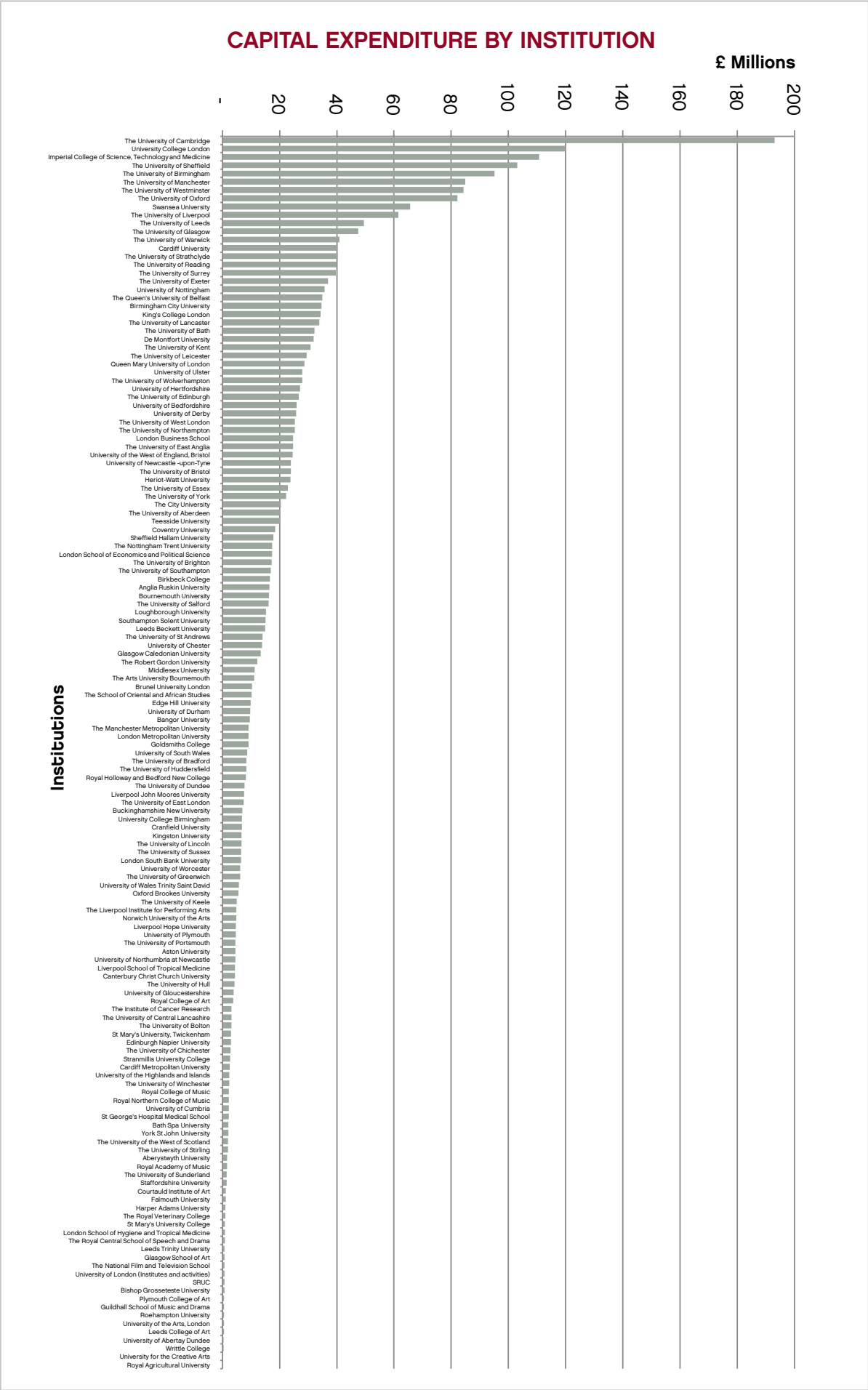
We continue to see (as we suggested last year) institutions investing in their estate. We have suggested this is in part a consequence of the following:

- Competition for students and staff, particularly with the lifting of the cap on student numbers,
- The need to provide an improved teaching and research environment,
- The need to replace end of life buildings and,
- The availability and cost of debt.

We would suggest that as institutions continue to have a clear hold on their finances, this level of capital expenditure is likely to continue at least in the medium term. We understand most institutions are striving to generate surpluses year on year, and it is this ability to generate a surplus which is enabling institutions to plan for longer term investment plans. This should enable institutions to continue to upgrade and replace building stock as it comes to the end of its life. This is particularly relevant as the large quantity of buildings built during the 1960s and 1970s are increasingly beyond their design life. Many institutions have been addressing the backlog of maintenance and poor suitability that these buildings now present, however there is a substantial amount of buildings of this age to be addressed.









AUDE published eight KPIs within four categories. We have used these four categories (Efficiency, Quality, Value and Sustainability) as the main headings to summarise both the AUDE KPIs and the additional ones included in this report which may be of interest to institutions to give a wider view of performance.

These metrics have been produced to help institutions understand how the performance of their estate compares to others within the sector.

## EFFICIENCY

We have included the following metrics

- Total Property costs per m<sup>2</sup>
- Changes in property costs as a % of total property costs
- Space (GIA m<sup>2</sup>) per FTE (staff and student)
- Research space (not offices) per research student
- Staff numbers and office space area
- Office space per academic staff FTE and per administrative staff FTE

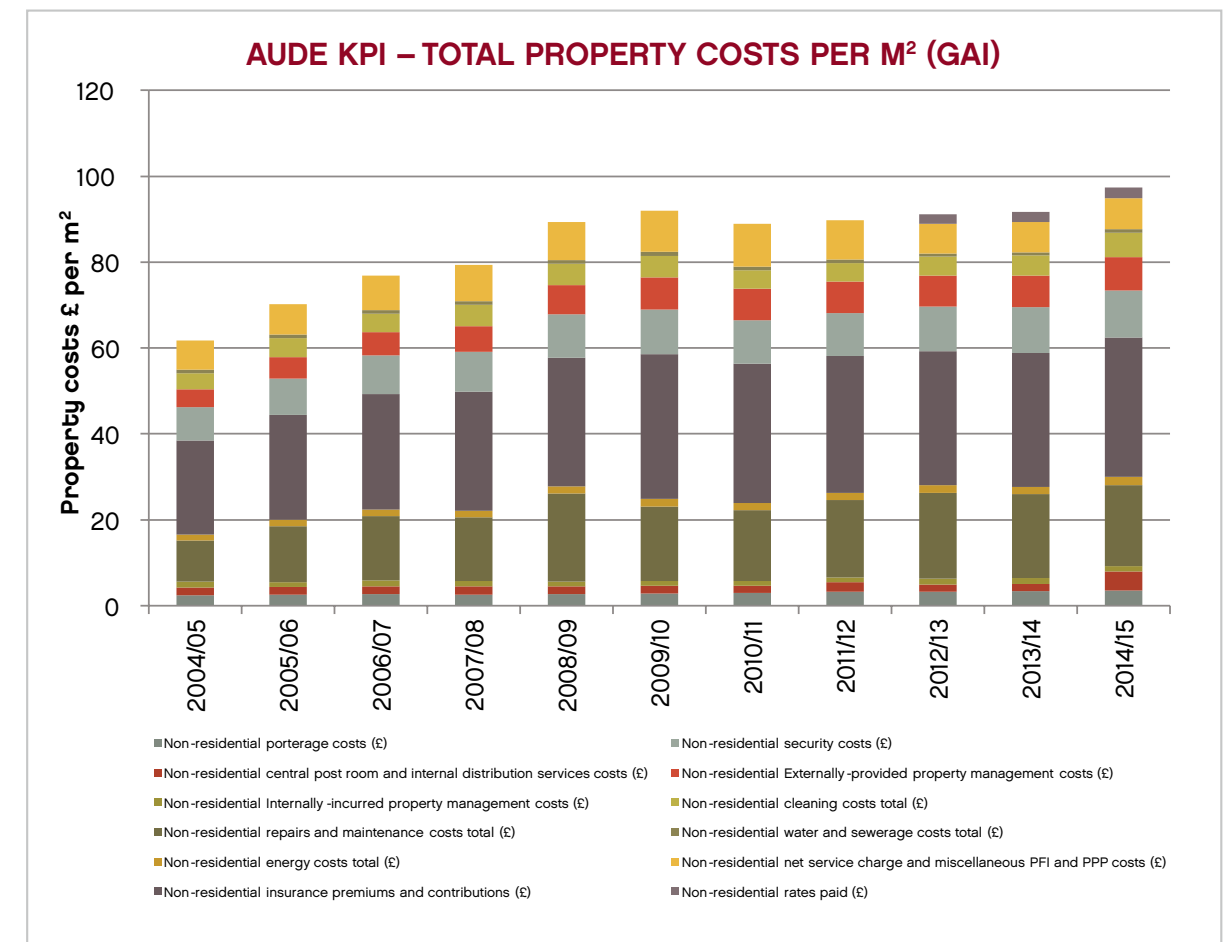
**The most significant thing to note about all of these metrics is the very limited changes in them over time.**

Total property costs have remained relatively level for six or seven years, with a small increase since last year, with the mean moving up from £95 to £98 per m<sup>2</sup> in total. This is a strong performance, particularly given the inflationary pressures. Whilst there are some outliers at the expensive end of the spectrum, over 50% of institutions have a total cost per m<sup>2</sup> of between £75 per m<sup>2</sup> and £125 per m<sup>2</sup>.

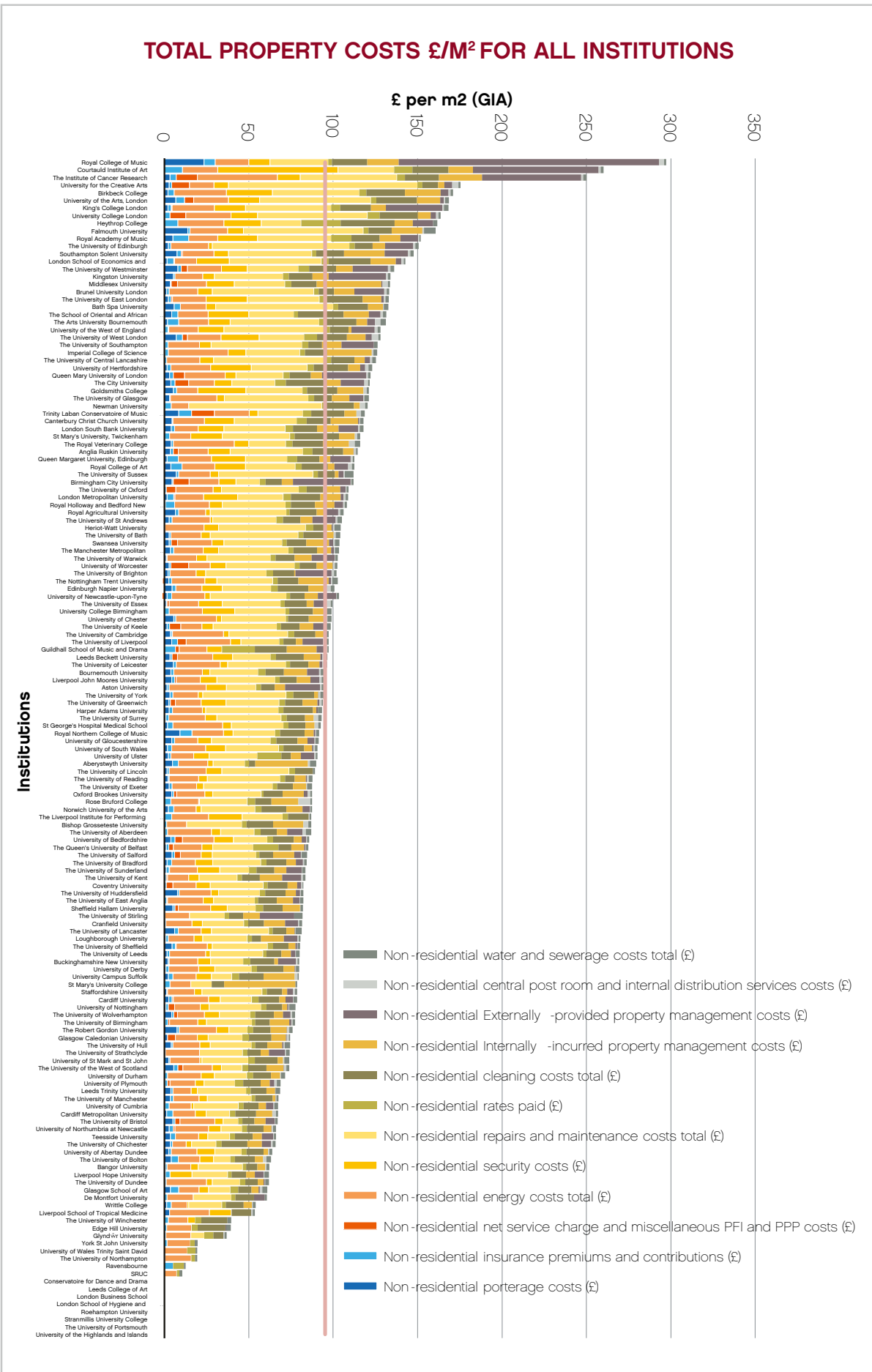
There has been a peak in the cost of insurance. This needs more detailed analysis to understand if this is limited to a few institutions, or is a more widespread phenomenon.

In terms of space metrics, these need to be looked at in the context of the growth or otherwise in student and staff numbers, and the relatively small growth in the size of the estate overall. Hence these are relatively stable over time. One figure of note is the increase in teaching space (not offices), i.e. the actual space used for teaching students, has risen in the last four years from just over 2m<sup>2</sup> per FTE to just below 2.5m<sup>2</sup>. Whilst this may not seem very significant, this is against an overall increase in the number of students. It perhaps reflects the fact that institutions are focussing on student experience and ensuring there is adequate space to undertake all teaching activities.

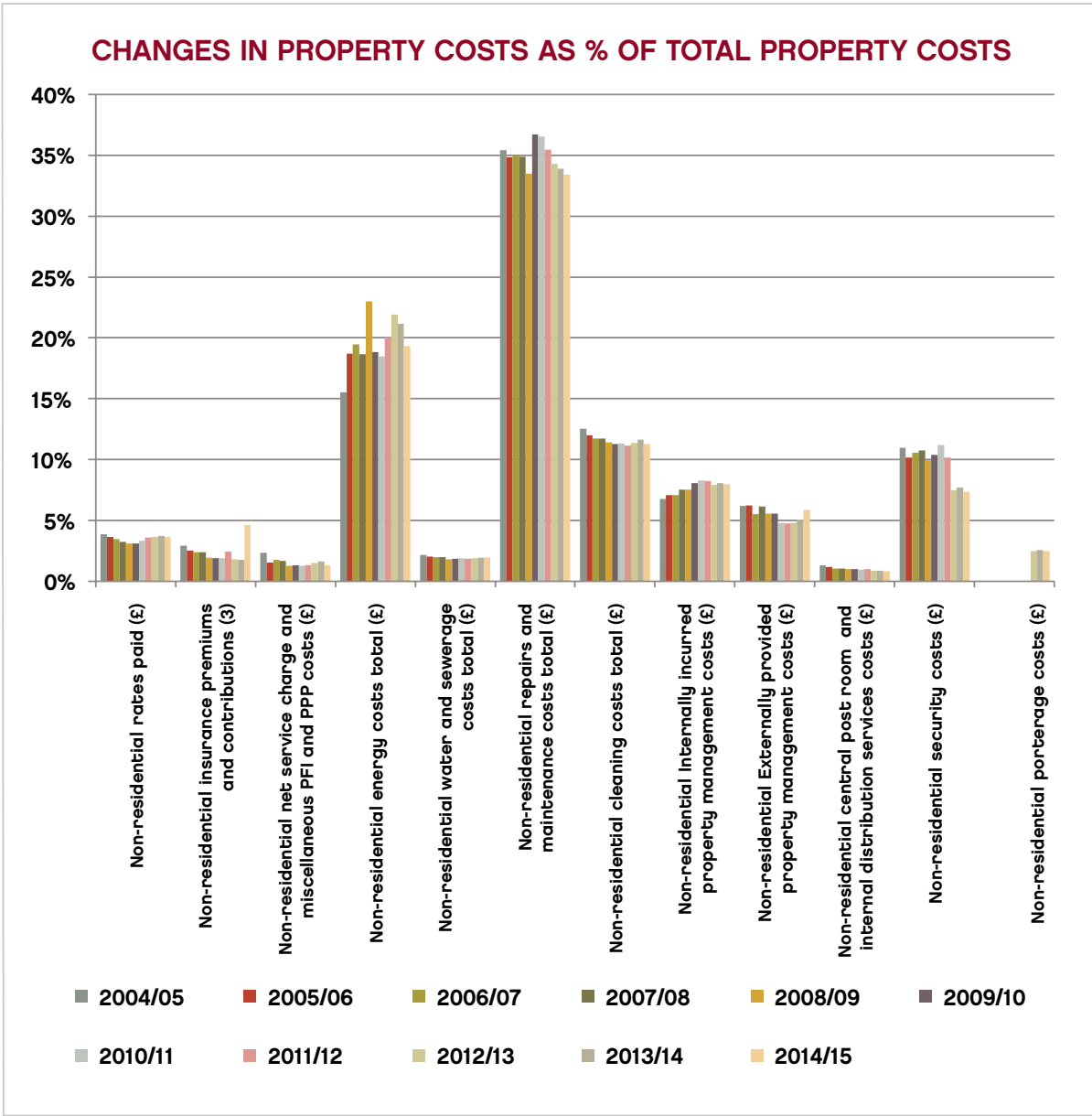
We note that additional income is usually generated out of teaching time and running costs include this additional bottom line cost. The sector is also designing and operating buildings to support a variety of activities all year round.

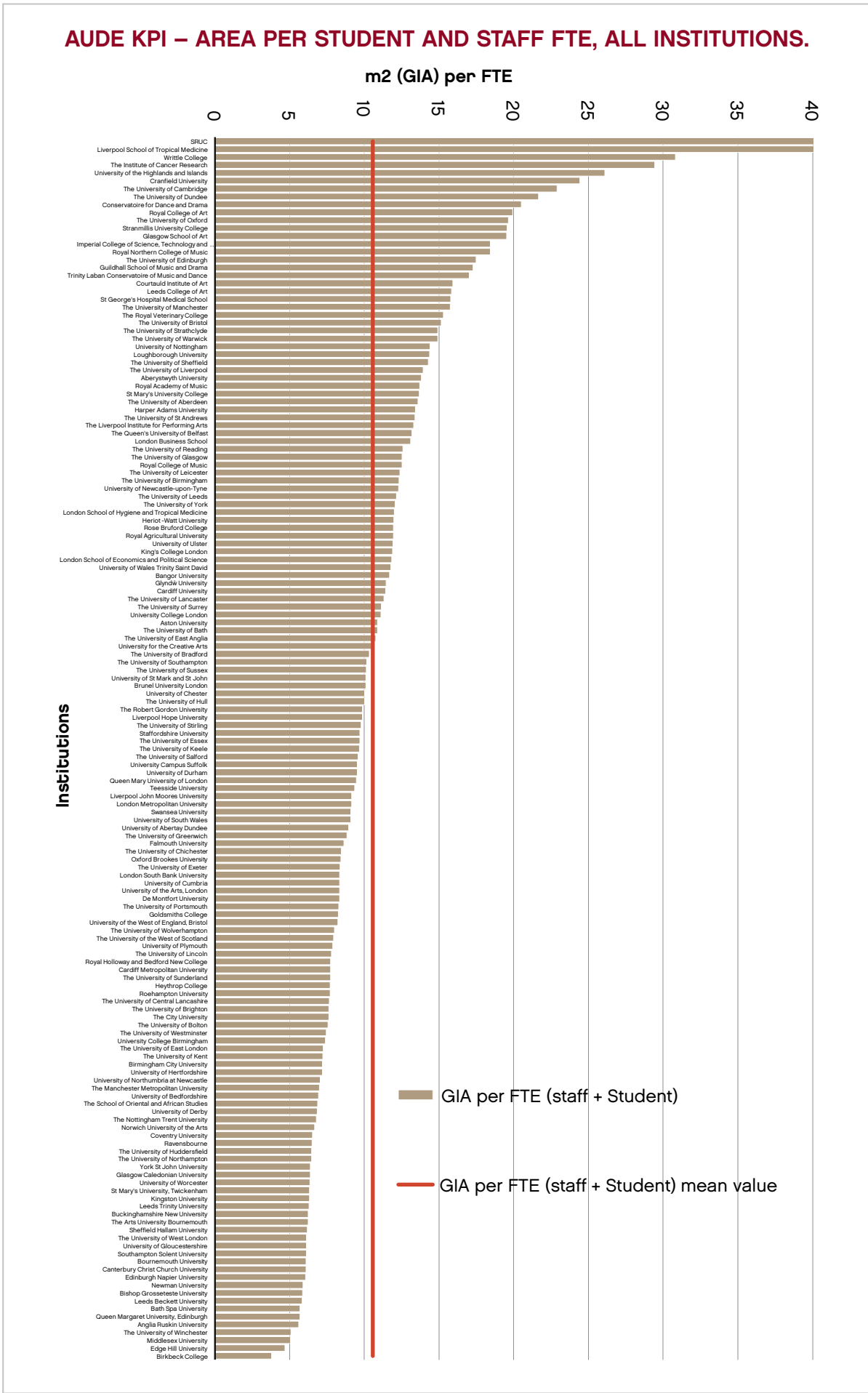
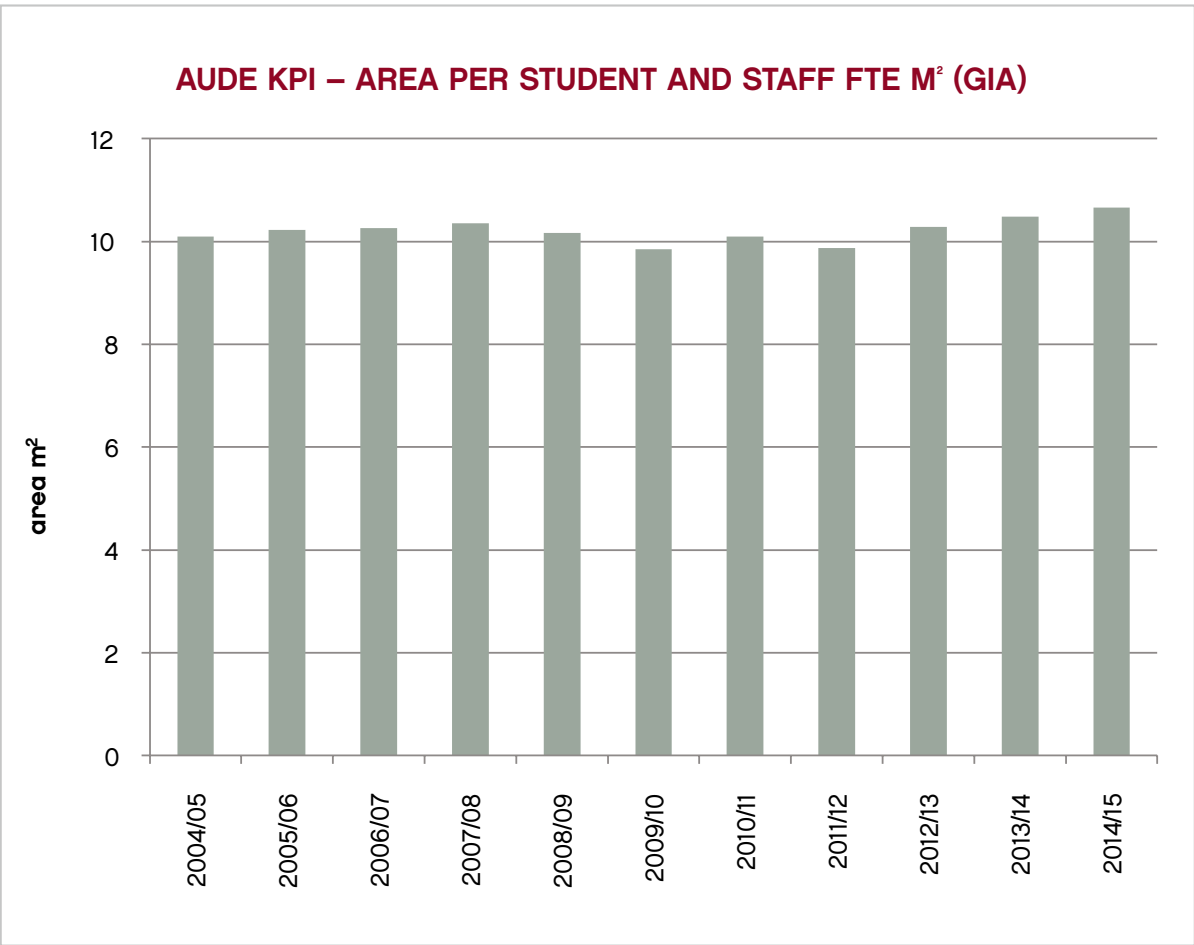




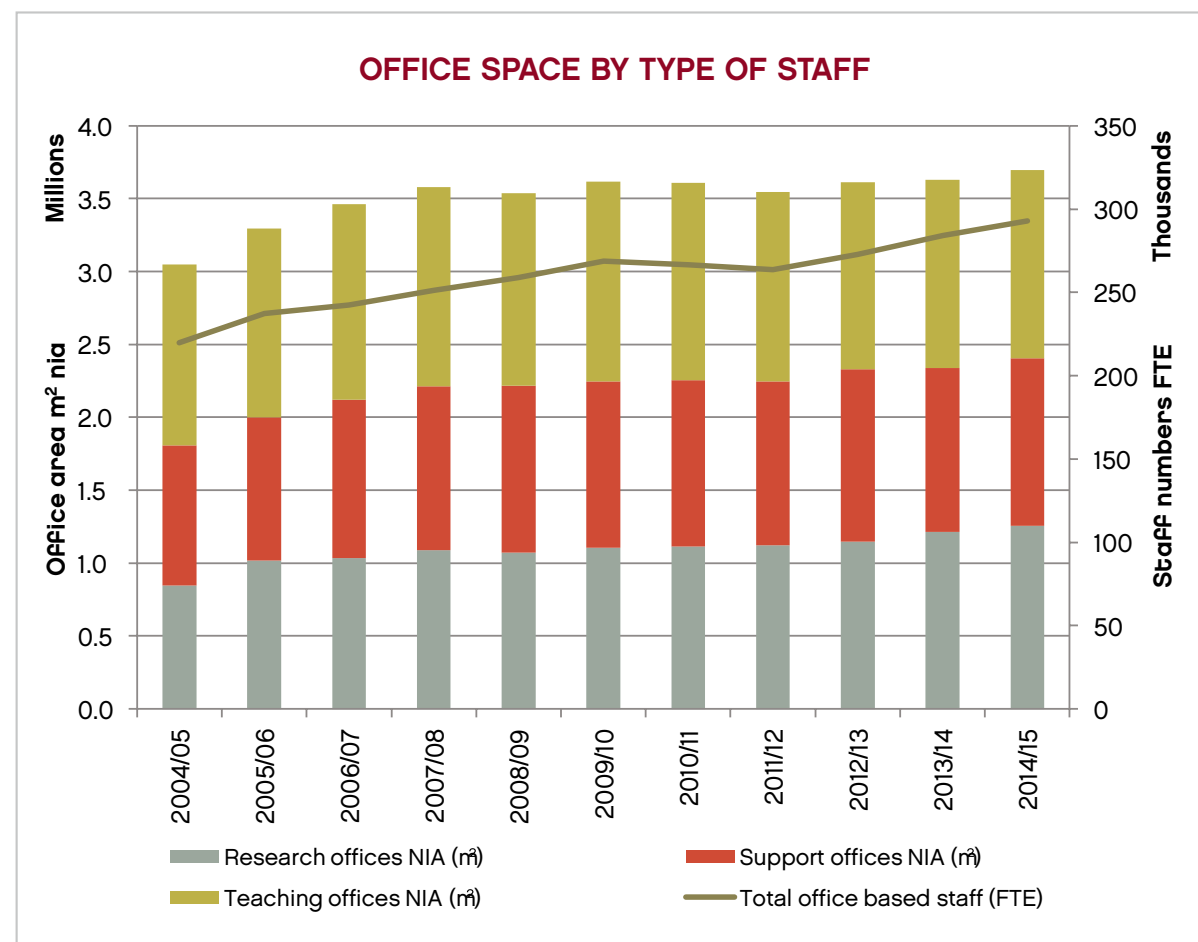
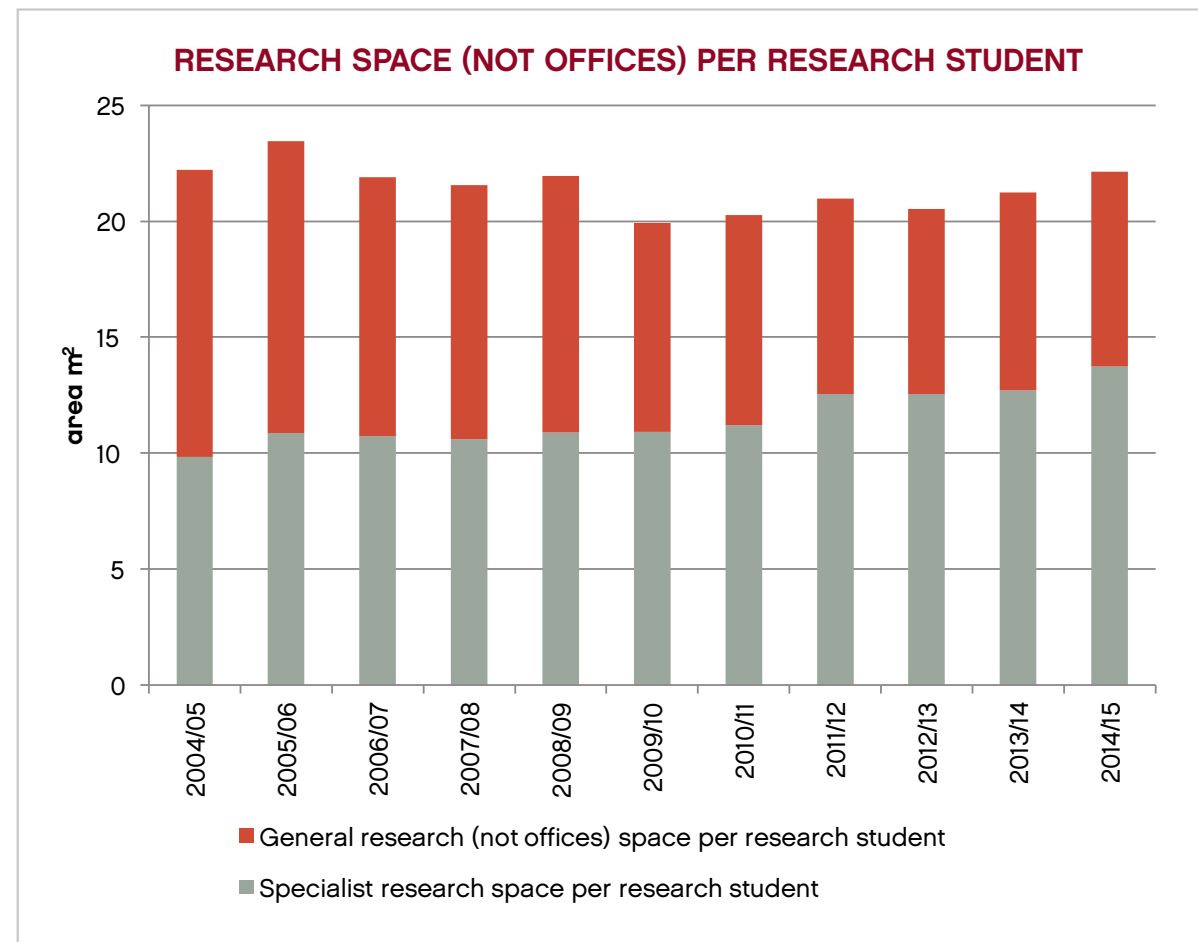


**TOTAL PROPERTY COSTS, ALL INSTITUTIONS.**









## CASE STUDY: ASTON UNIVERSITY

### A new academic workspace



#### The challenge

Aston University has an ambitious growth plan and, as three of the five schools will be accommodated within the existing estate, fresh thinking was required to overcome the challenges posed by Aston's Main Building.

The Main Building, designed in the 1920s, has historically comprised many large singular academic offices 20m² to 25m² each with a long and thin configuration. This historical design was imposed primarily by physical building restrictions; particularly the positioning of columns, deep floorplate and central corridor. This set up was extremely inefficient, did not support the University's growth or environmental strategy and entrenched views of space entitlement.

The Biology and Pharmacy groups involved were located disparately on separate floors which produced little cohesive group feeling or identity and there was no facility to encourage interaction to promote research generation. A prime objective was to co-locate research teams and to provide an appropriate workspace that included academics, researchers and postgraduate research students together. The design of the space should encourage interaction, provide the quality expected to showcase to industrial partners and also provide privacy where required whilst allowing access to staff for undergraduate students.

#### The process and the solution

Under Aston's capital plan much of the Main Building will be refurbished and to pave the way an 'office concept feasibility study' was conducted to investigate how to make better use of space within the constraints of the building, including smaller offices. Academics, support staff and postgraduate research students were consciously included in the study to gain a rounded input from those who would ultimately use these spaces.

Several layout options were detailed at the conclusion of the study which aligned to varying staff/researcher ratios which would be used as the blueprint for all future developments. This proved a hugely valuable exercise and set the scene for this first refurbishment whilst also generating champions from the School who then worked closely with the Estates team and the architect through-out the project and helped to bring colleagues on board.



The design comprised back to back offices to take advantage of the deep floorplate with a central spine access corridor and shared researcher areas at each end; this provided undergraduate students easy access to staff whilst maintaining privacy for staff and student researchers who share the researcher offices. The inner staff offices have no direct access to windows, however high glazing and restricted height blinds allows light to traverse which renders them light and bright. Staff offices have reduced to 8m<sup>2</sup> or 10m<sup>2</sup> dependent upon building elevation and meeting/tutorial rooms were provided based on surveyed usage to support the use of smaller offices.

The main entrance into the workspace comprises a kitchen and social area which increases the possibility of chance meetings and interaction. The whole area has a clean, bright, professional feel with a high quality fit-out including high specification glazing to address concerns regarding noise transfer.

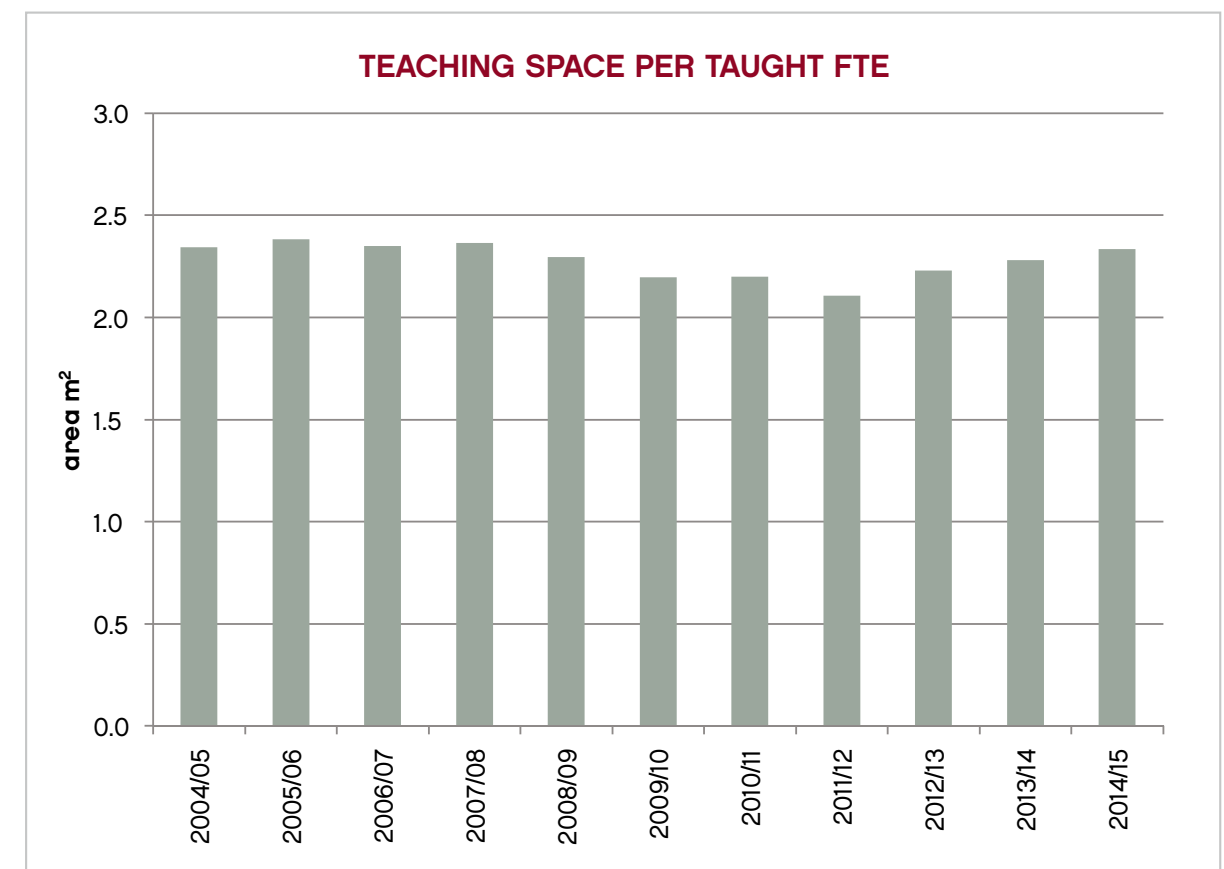
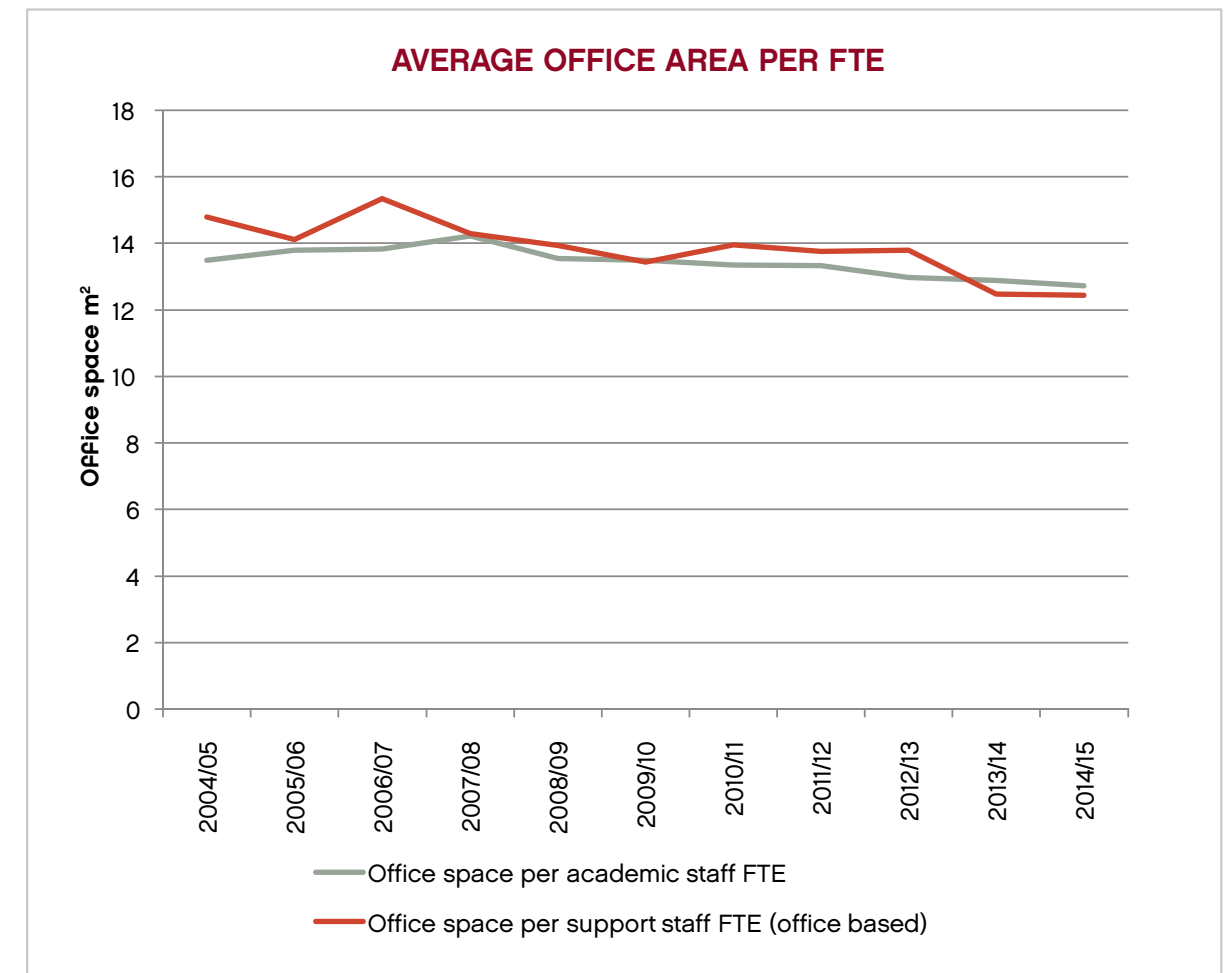
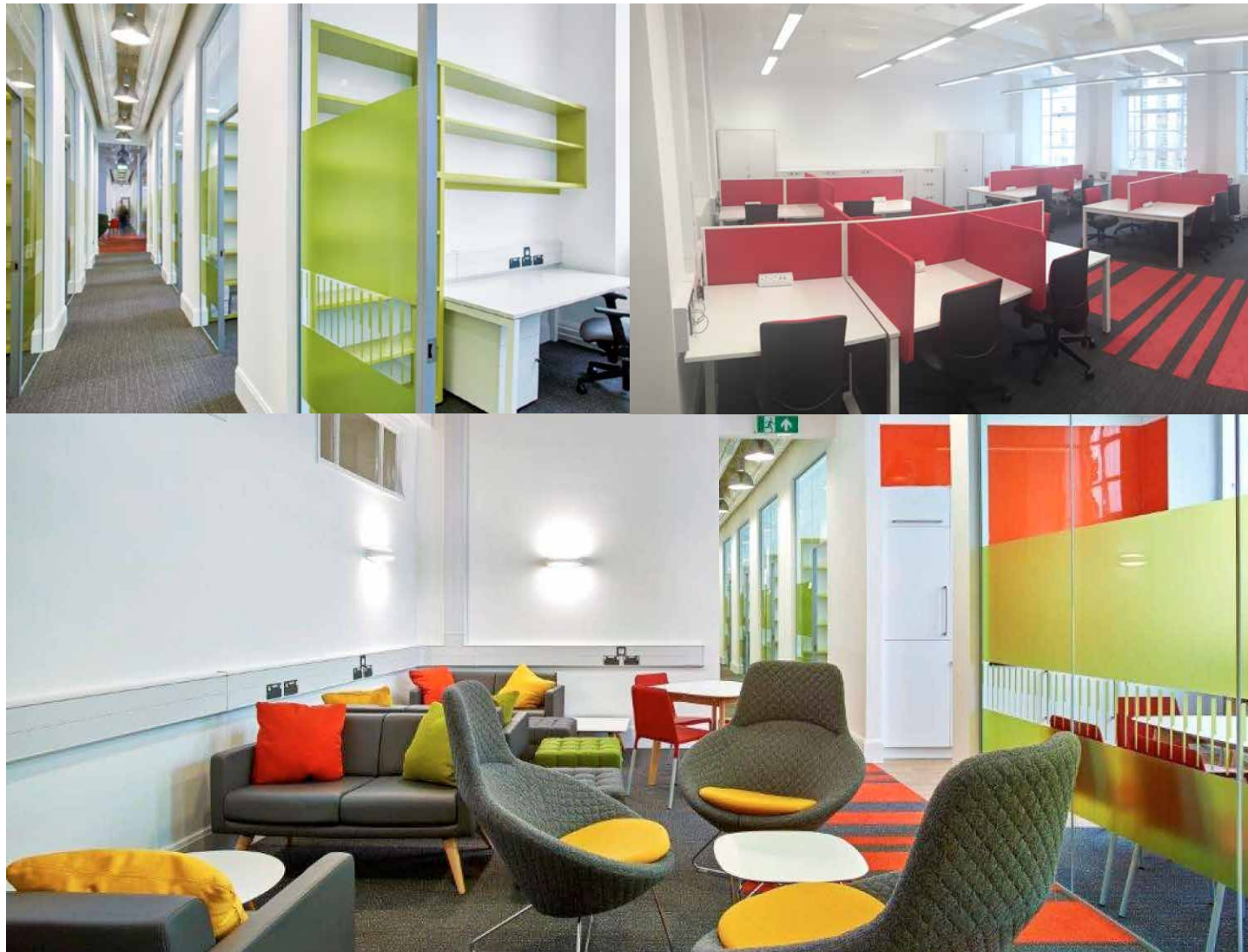
## The Result

Via a project working group, staff were actively involved in shaping the initial blueprint design to include team specific requirements, staff had a great deal of input into the project and feel that they own the design. The whole process went very smoothly and the response from the users has been overwhelmingly positive.

Despite the design necessity for an access corridor the space is now much more efficient;

- staff offices have reduced from an average of 19.2m<sup>2</sup> in this part of the building spanning both elevations to an average of 8.7m<sup>2</sup>.
- space per person has reduced from 21m<sup>2</sup>/person to 6.5m<sup>2</sup>/person overall.

Other departments that have yet to undergo redevelopment are now keen to be next in line having witnessed the benefits of the design and fresh, modern aesthetic; a successful project which we hope to build upon in future developments.





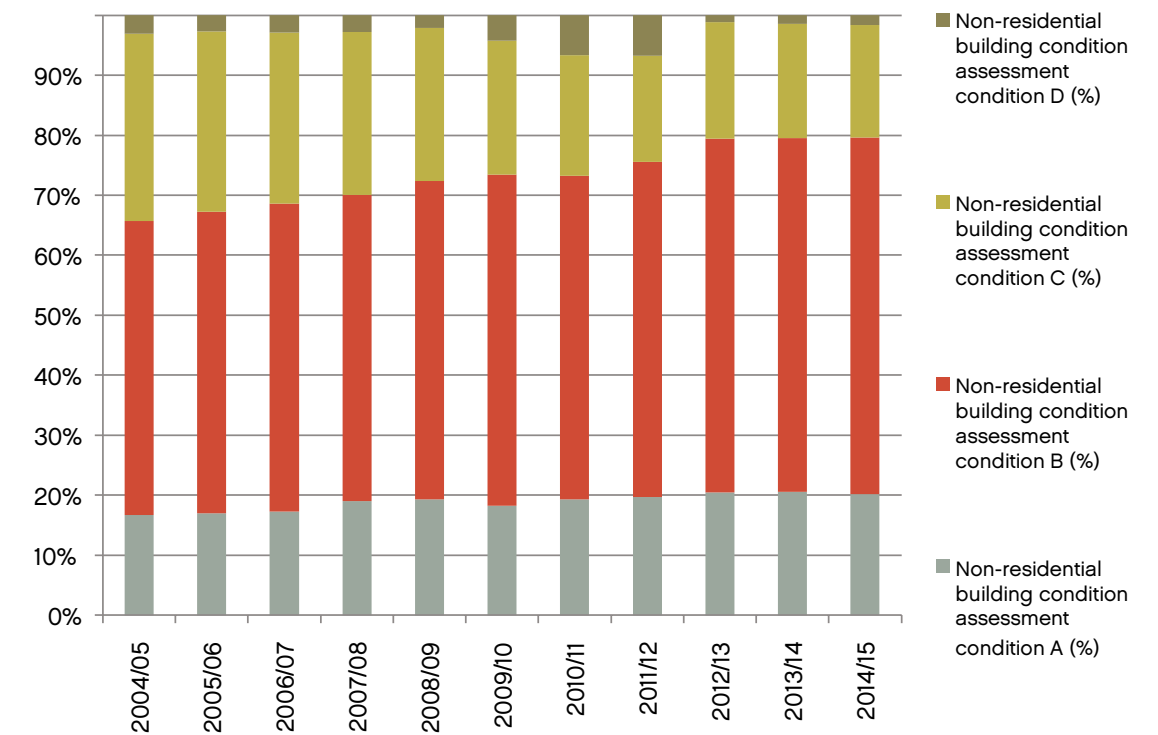
## QUALITY

The condition and functional suitability of the University estate remains consistent with last year. It has significantly improved over the decade, however year on year improvements are difficult to measure on an annual basis. It is apparent however that institutions are much more concerned with the provision of an appropriate environment for their staff and students, and as such these remain important measures.

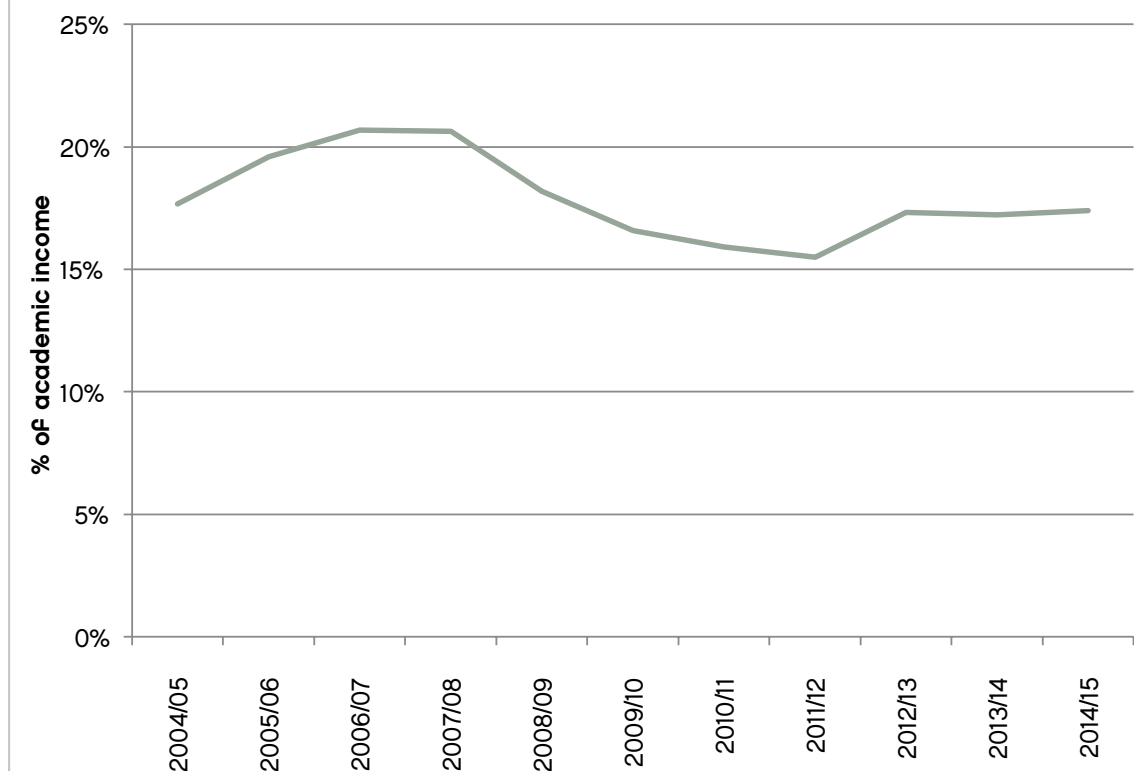
Quality remains a key driver in terms of attractiveness of institutions. The cost to upgrade may include property that is being held for disposal. *Cost to upgrade is calculated at an institutional level on a gross meterage basis and may mask costs of improving the estate to a standard required to meet rising student expectations and fully enable HEIs to compete in the increasingly competitive global market.*



### AUDE KPI – PERCENTAGE OF GIA IN CONDITION A AND B

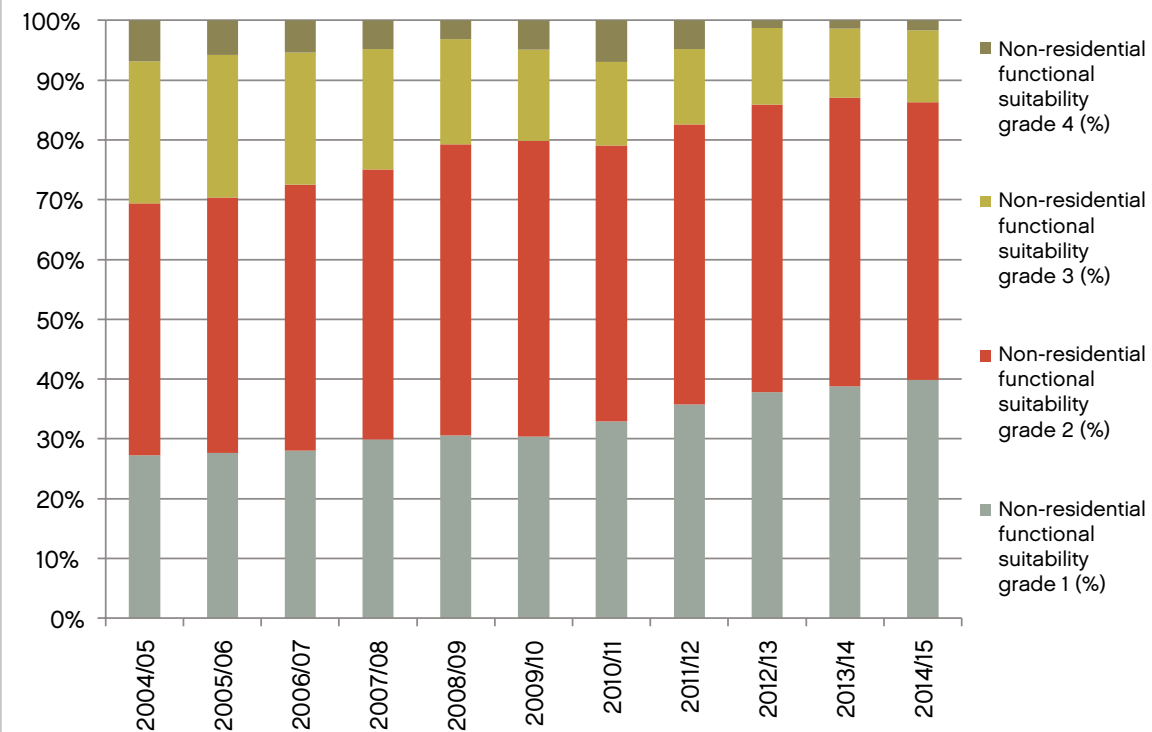


### COST TO UPGRADE TO B AS % OF INCOME

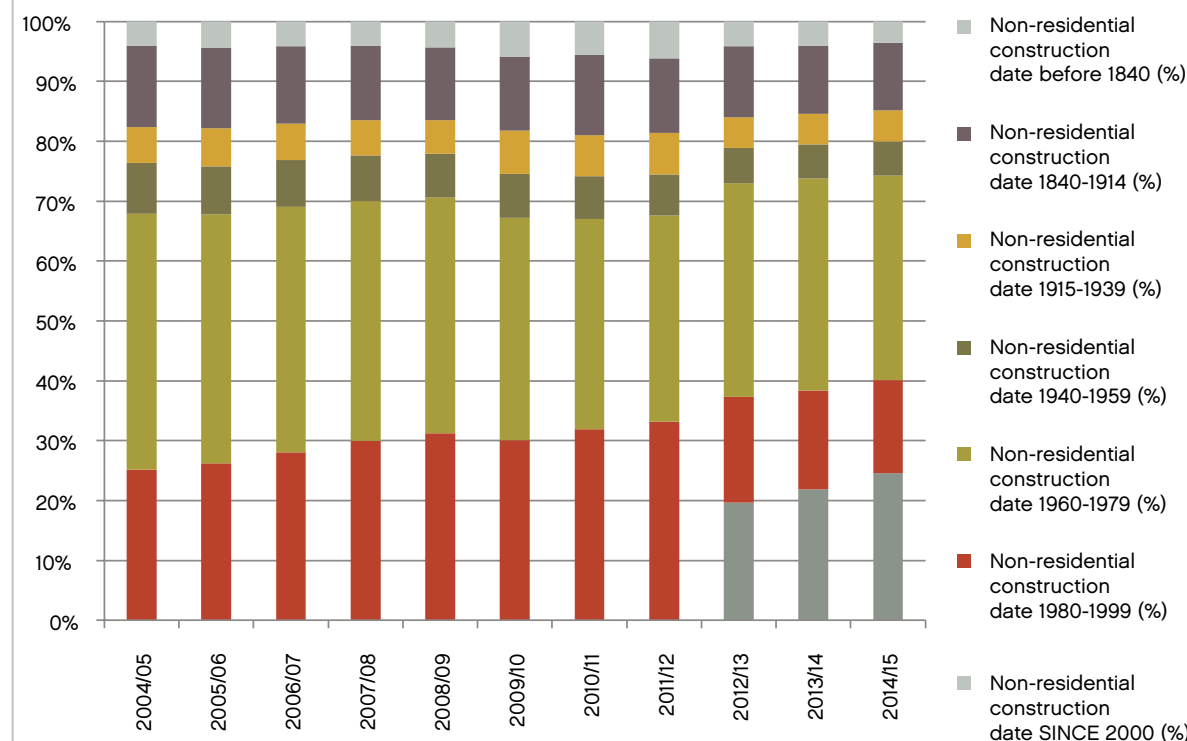




**AUDE KPI – PERCENTAGE OF GIA IN FUNCTIONAL SUITABILITY GRADES 1 AND 2**



**AGE**



## CASE STUDY: UNIVERSITY OF SHEFFIELD

### Advanced manuFacturing research in Sheffield City Region



#### The challenge

Over the last 15 years, the University of Sheffield has built an international reputation as the place to come for innovation in advanced manufacturing, with many impressive examples of ground-breaking research resulting in game-changing applications.

We needed our facilities to match this reputation.

The University's Department of Estates and Facilities Management has played a central role in delivering the land and infrastructure to support this achievement.

#### The process and the solution

We began the developments at Catcliffe, near to the M1, with the original AMRC Factory of the Future with Boeing – a 6400m<sup>2</sup> facility including workshops, laboratories, offices and conference space. Other developments on that site include the Nuclear Advanced Manufacturing Research Centre and the AMRC Training Centre, which offers high quality training for up to 600 apprentices.

The incredible success of those first developments meant that we ran out of space on the original site, so in 2014, we signed a deal to secure 50 acres of land at Sheffield Business Park – just over the road – to support our exciting plans to create a critical mass of hi-tech advanced manufacturing businesses along the Parkway corridor. That land purchase was recognised regionally with the award of Deal of The Year by Property Insider for both Sheffield City Region and for Yorkshire as whole. The securing of this volume of land means that an AMRC Research Campus will be developed, with up to 1.25m square feet of accommodation over the next circa 6 years.

We've developed a masterplan for the entire site to create a hub for developing the next generation of advanced manufacturing industries, with University research centres co-located with manufacturing businesses, sharing knowledge and expertise to bring fundamental change to the regional and national economy.





## The results

Factory 2050, the first development on the new site, is already complete. This stunning award winning, circular building combines a range of technologies, including advanced robotics, flexible automation, unmanned workspace, off-line printing in virtual environments linked to plug-and-play robotics, 3D printing from flexible automated systems, man-machine interfaces and new programming and training tools.



This is a major capital investment for the University and the anchor project to create a critical mass of innovative, hi-tech, advanced manufacturing and assembly buildings on a new advanced manufacturing research campus.

Through independent economic analysis the University's site at Sheffield Business Park will deliver over 4000 jobs and generate over £210m per annum in GVA (gross value added) to the Regional Economy when fully developed.

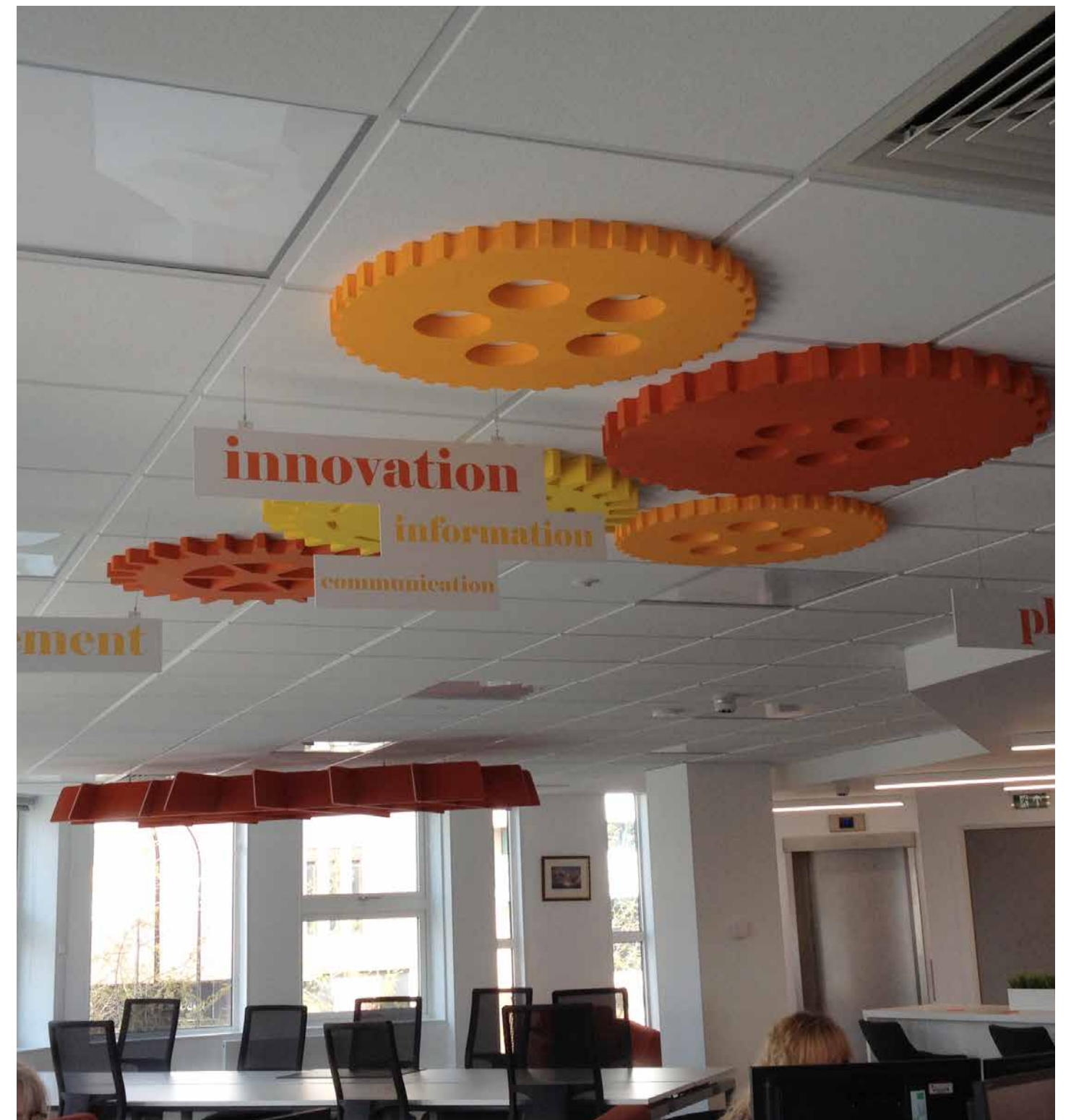


## VALUE

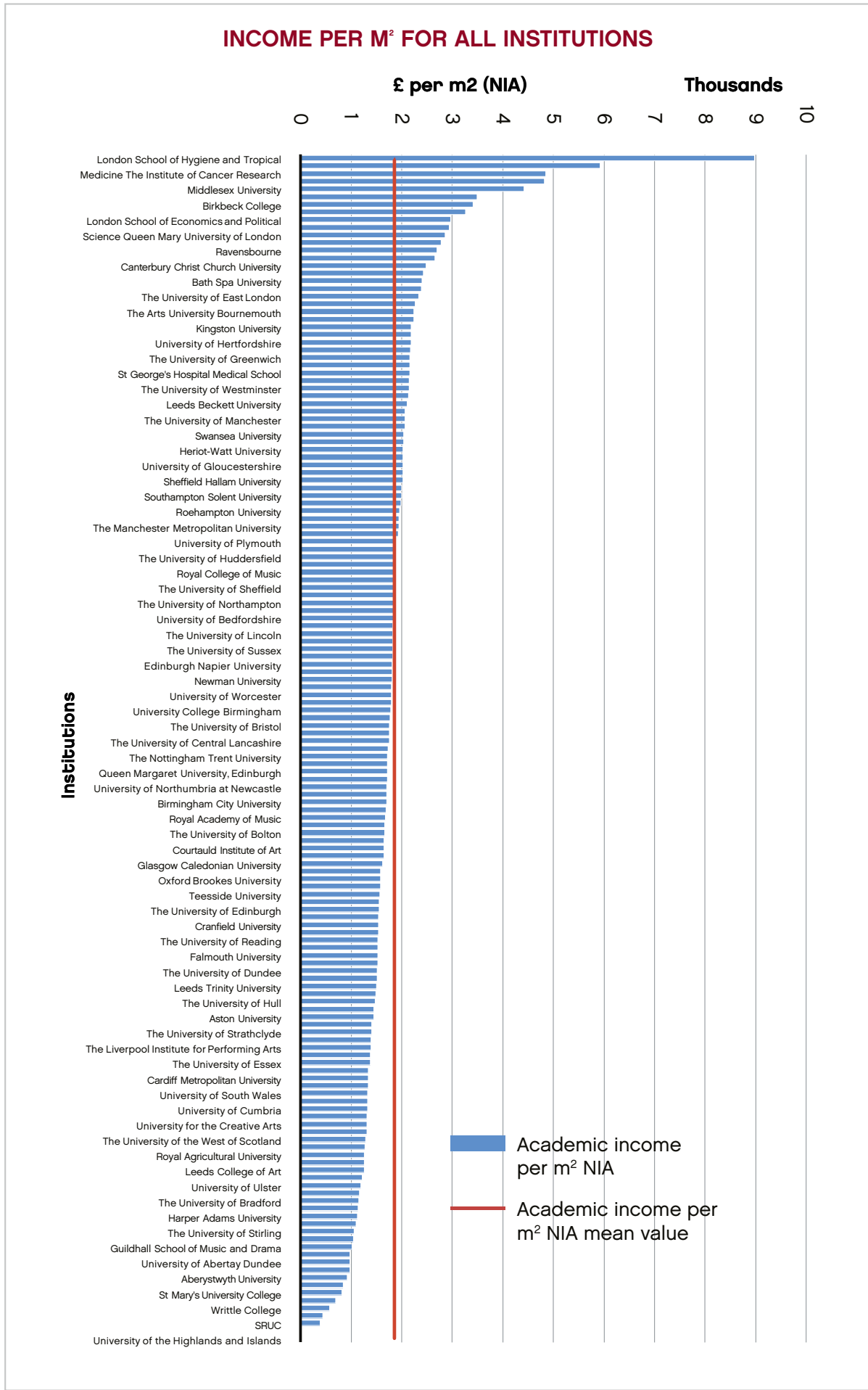
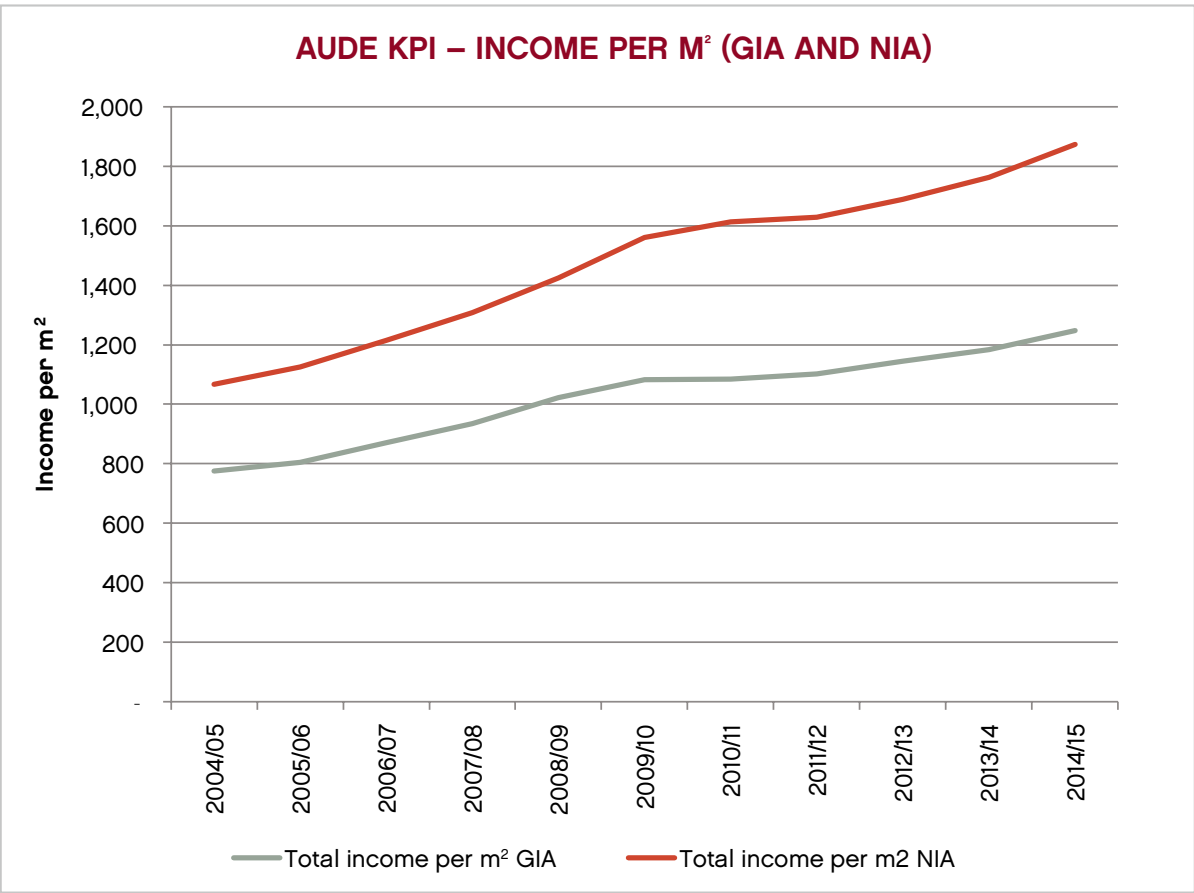
Income per m<sup>2</sup> is an important measure of how effectively the sector utilises its estate. It can enable comparisons between different types of institutions, and different activities. There are a handful of institutions which generate substantial income per m<sup>2</sup> (in excess of £3000/m<sup>2</sup> net internal) these tend to be very specific research institutions. 75% of institutions generate between £1,000 and £2000 per m<sup>2</sup>, with 50% generating between £1,500 and £2,000 per m<sup>2</sup>.

In general the income generated per m<sup>2</sup> across the estate continues to increase, as institutions generate greater activity from their estate.

It is also apparent that income per m<sup>2</sup> for research has remained relatively flat, compared to that for teaching, which continues to increase.







## CASE STUDY: THE UNIVERSITY OF HERTFORDSHIRE

### Generating income for every metre squared

University of  
Hertfordshire **UH**

#### The challenge

As the funding for universities becomes more challenging, it is important that institutions consider other ways of boosting income through commercial deals and links with business.

As a new university, the University of Hertfordshire cannot rely on legacies or historic investments but instead has had to make the best use of its estate and in particular capitalise on the benefits of a campus with proximity to business and the capital.

#### The process and the solution

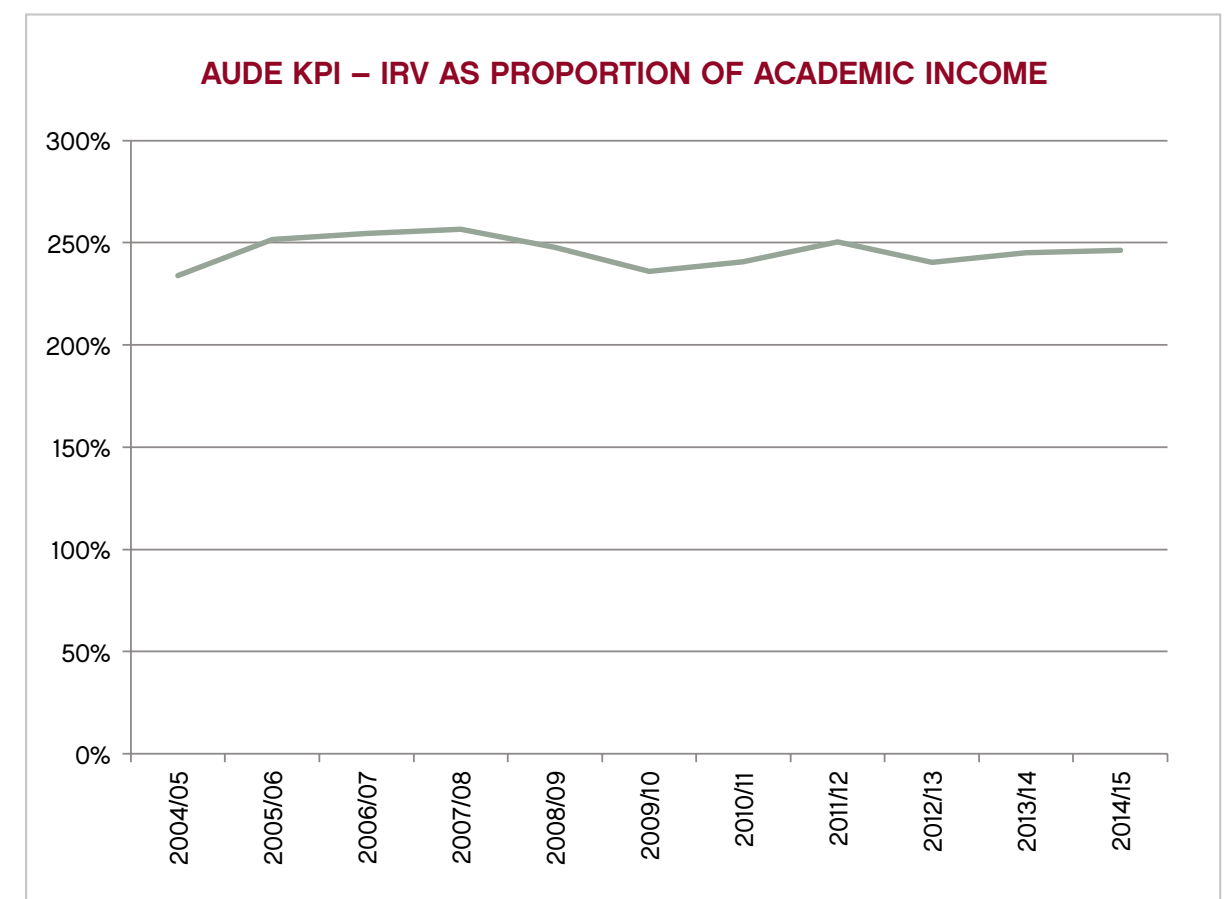
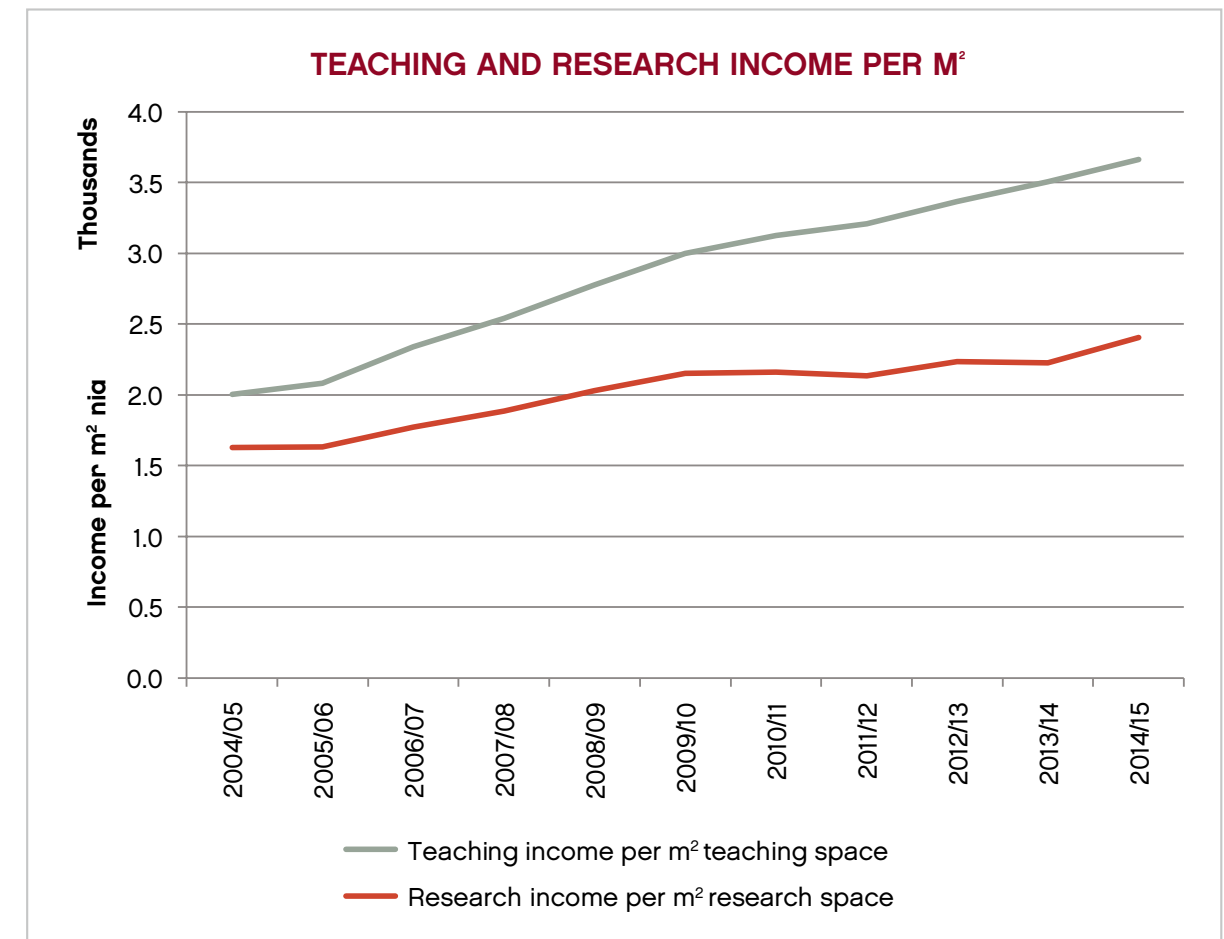
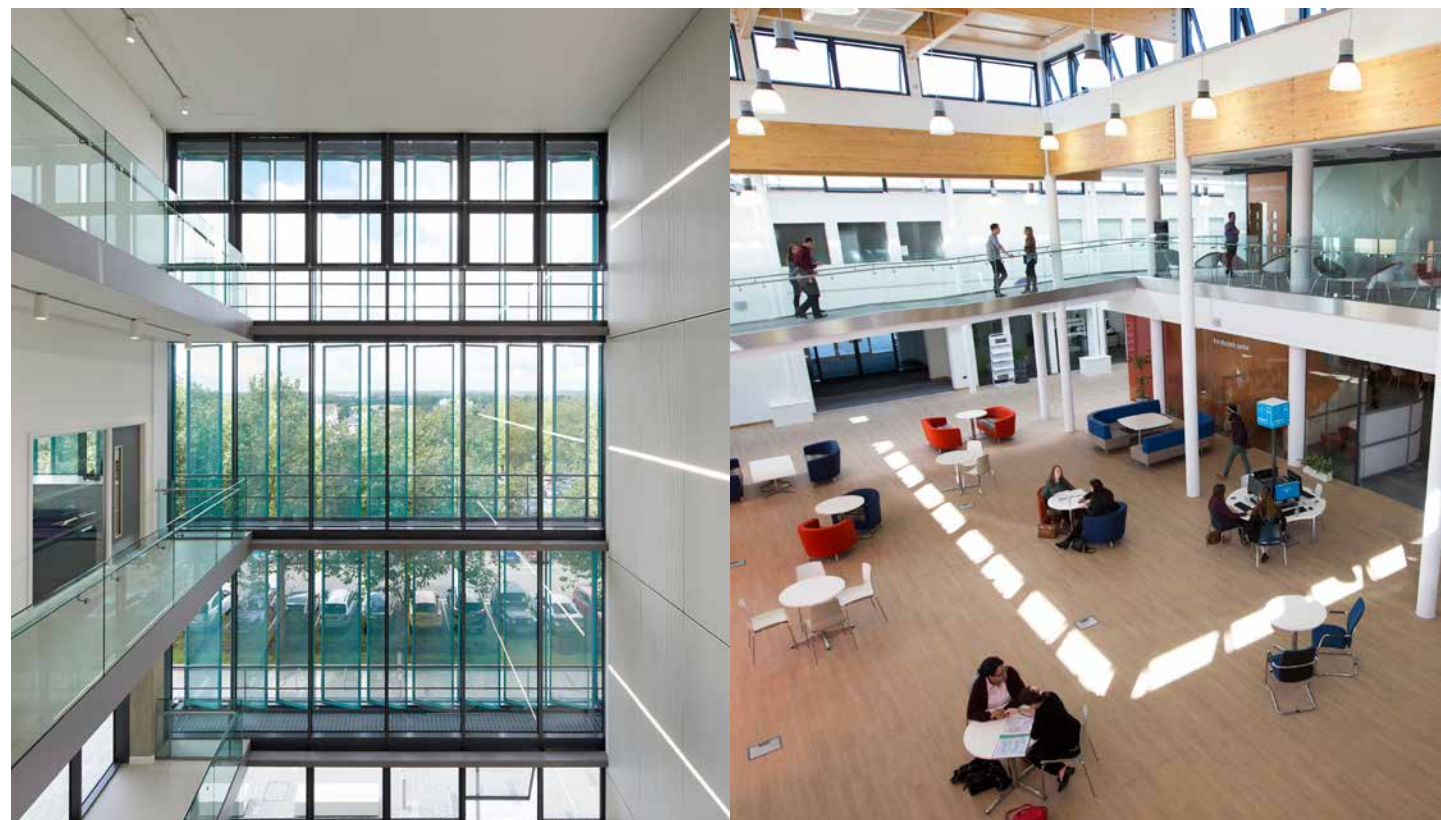
The University of Hertfordshire took the strategic decision to focus on increasing income on non-core business through the following means:

- Commercial deals with companies such as Ocado and Regus for office space,
- A commercial lease with Santander for an on-campus bank facility,
- A commercial lease with the NHS for a GP's surgery located on campus which also benefitted our students and staff
- Letting laboratory space to over a dozen SMEs at our Bio Science facility,
- Letting office space to SMEs in our Innovation Centre.

#### The result

The University of Hertfordshire income/m<sup>2</sup> GIA was £1,476.91 in 2014/15, an increase of 6% in income per m<sup>2</sup> between 2012/13 and 2014/15. During the same period, the available commercially let space has only increased by 0.8%.

At this level of income, the University of Hertfordshire is in the upper quartile of universities for income per m<sup>2</sup> according to the 2014/15 EMR statistics from HESA.



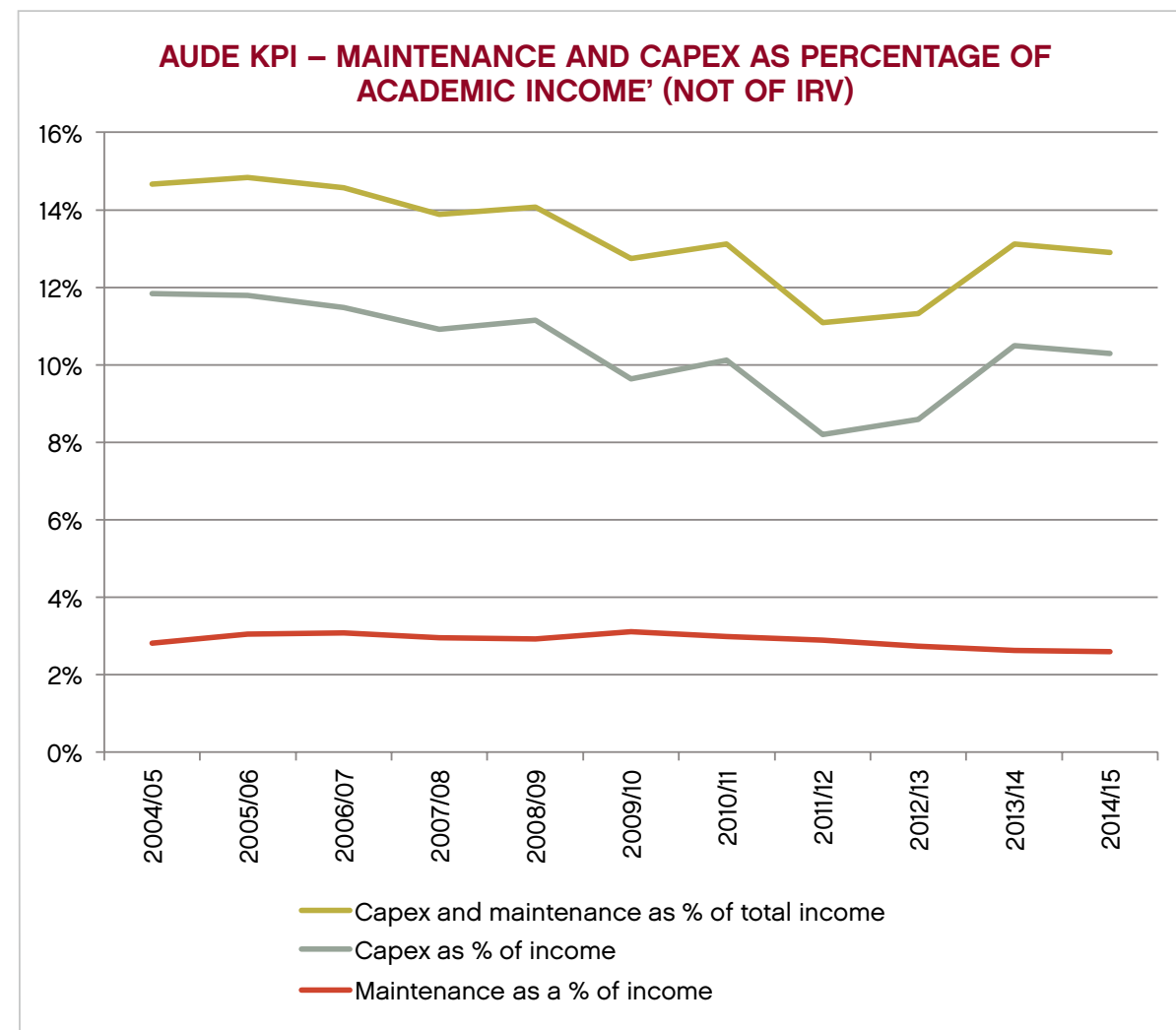


## SUSTAINABILITY

Although the level of capital expenditure in absolute terms has increased since last year to £2.75bn, this represents a small reduction in the percentage of the academic income. However, it is still close to the 14% of academic income suggested as the target for sustained investment.

Looking at the spread of expenditure as a percentage of income, there are six institutions which have spent substantially larger proportions of their academic income (i.e. in excess of 25%). These are all smaller institutions which have had major projects. These are typically once in a generation types of expenditure (such as a whole new campus). What is more typical are the 50% of institutions which are spending between 5% and 15% of their academic income on capital expenditure. This should be seen in the light of the more sustained ability to deliver a surplus and the recognised need to constantly invest in the estate to maintain the appropriate level of condition.

In terms of environmental sustainability, carbon emissions have been reducing both in terms of Kg per m<sup>2</sup> and also Kg per FTE. Energy costs, which had recently been a source of considerable concern in terms of their anticipated rises, have fallen slightly, reducing the cost per m<sup>2</sup> across the sector.



## CASE STUDY: UNIVERSITY OF DERBY



### Planned Preventative Maintenance

#### The challenge

In 2006/7 the University of Derby embarked on a full, campus wide condition based survey that formed a major part of the overall commitment to estate property in the 2010 Estates Strategy 3.

The importance of having a 'fit for purpose' estate provision cannot be underestimated in the long term future and sustainability of the University. Having committed to developing the estate portfolio, it was imperative that we continued to maintain our estate to the highest possible standard and desired condition.

#### The process and the solution

A significant part of this strategy is a commitment to preserving a replacement programme for all the key components of the buildings to ensure that we deliver an effective and efficient operation and a learning environment that contributes positively to a high overall student satisfaction.

A Condition Survey of all building stock, including residential and specialist business units was completed, encompassing building elements internally (including fixed units), external facade and all Mechanical & Electrical infrastructure services (including mains incoming services).

The survey assigned a priority rating to help categorise the importance of the element should it fail and so provide an additional metric to assist with financial and logistical planning should costs / resources be prohibitive.

Life Expectancy is based on the finite expected life cycle of the element. This is based on industry norms where known and professional experience for estimates. This is further qualified with a physical inspection and a review of how much maintenance has been carried out on the element to date in relation to its prescribed maintenance regime and anticipated life cycle.

The rating assigned to each element is linked to how critical it is to business continuity with categorisation in line with the Universities severity of risk rating criteria used for corporate risk management.

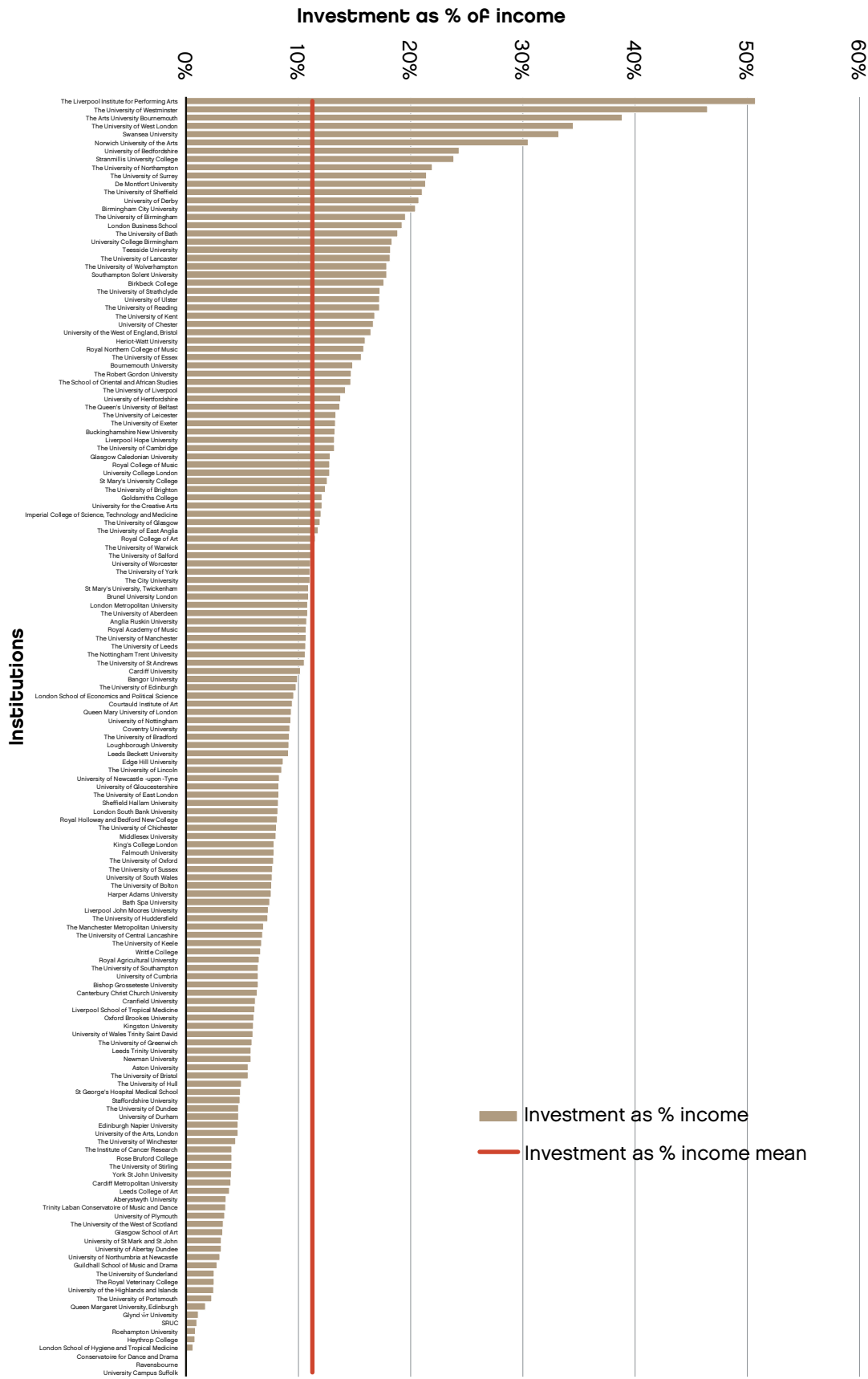
#### The results

The survey has been used to inform the Planned Preventative Maintenance programme and also produce financial estimates for all building elements that will require replacement within the next five years and on a rolling five year process.

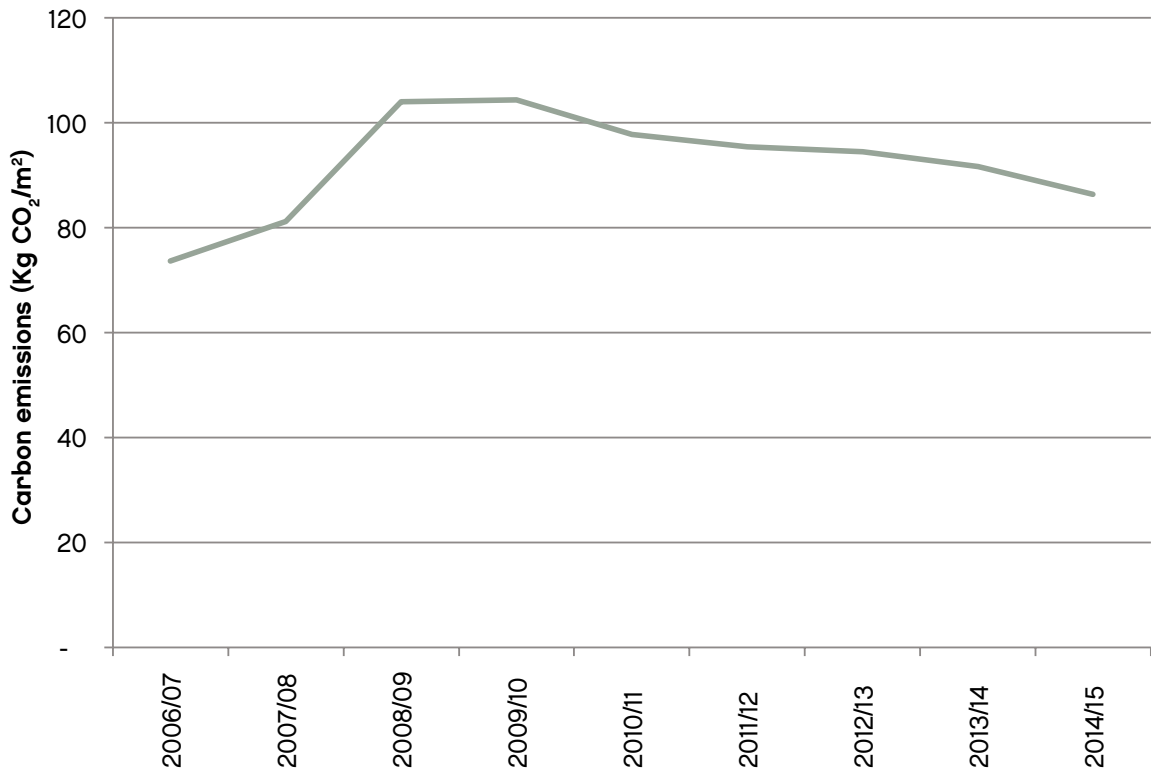
Since the introduction of the planned maintenance programme, the allocated funding and in line with other estate development projects the overall condition of the University of Derby estate has gone from 48.8% condition A/B in 2003 to a sector leading position of 97.4% in 2016.



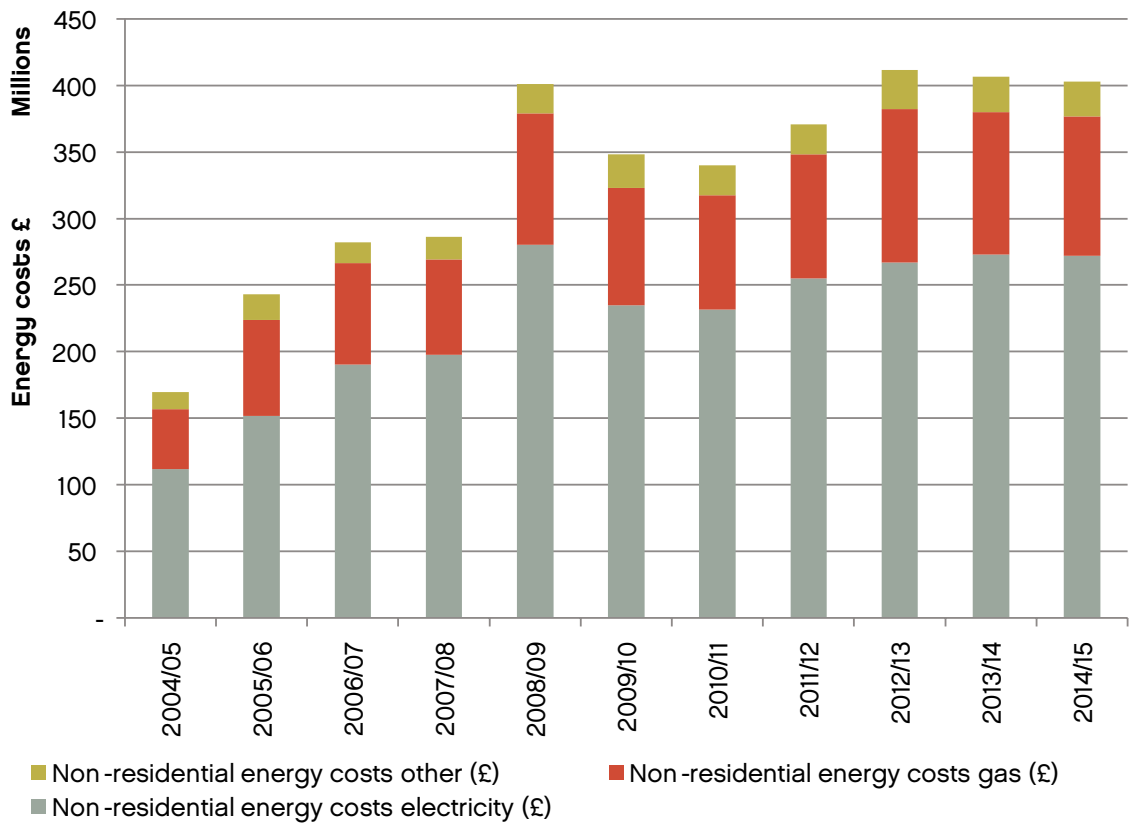
## CAPITAL AND MAINTENANCE EXPENDITURE AS A % OF INCOME, ALL INSTITUTIONS



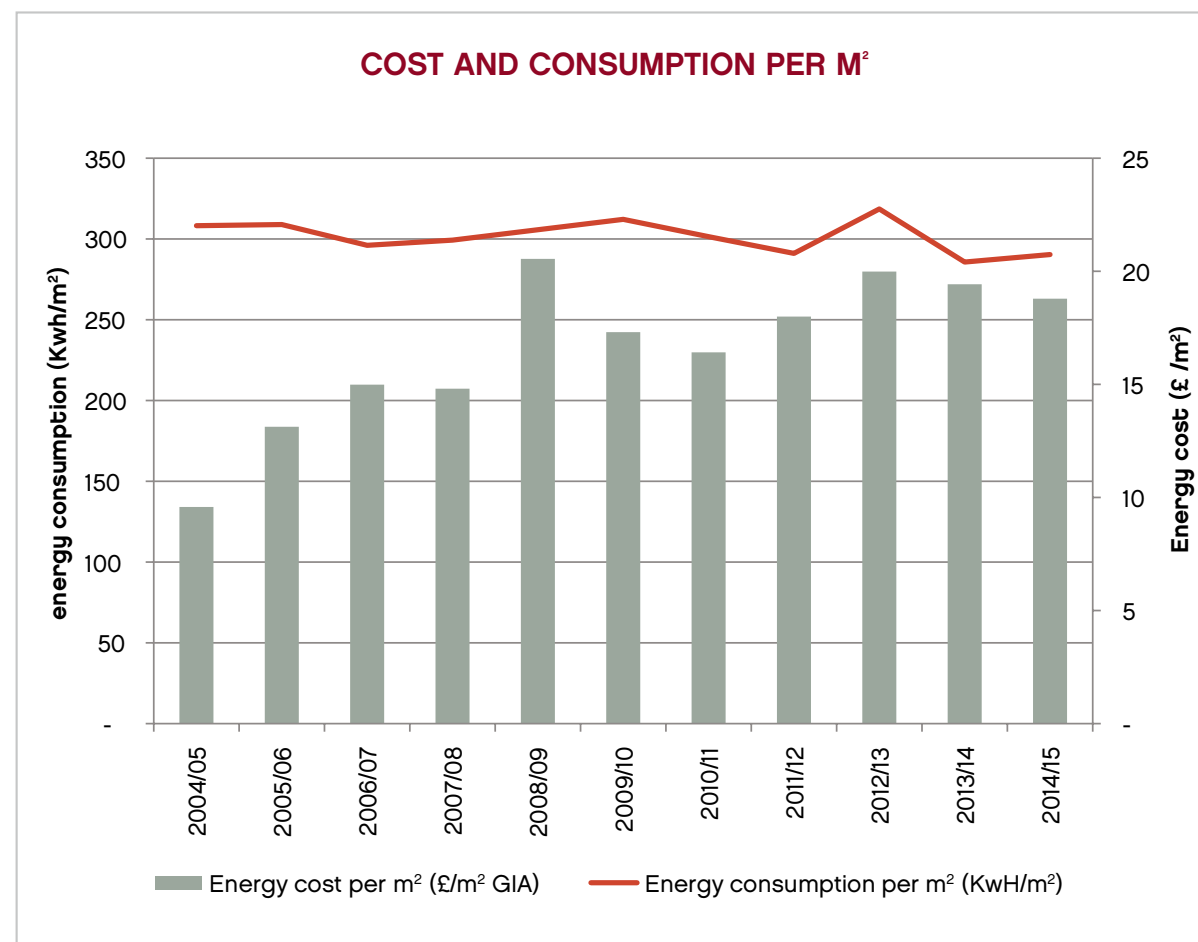
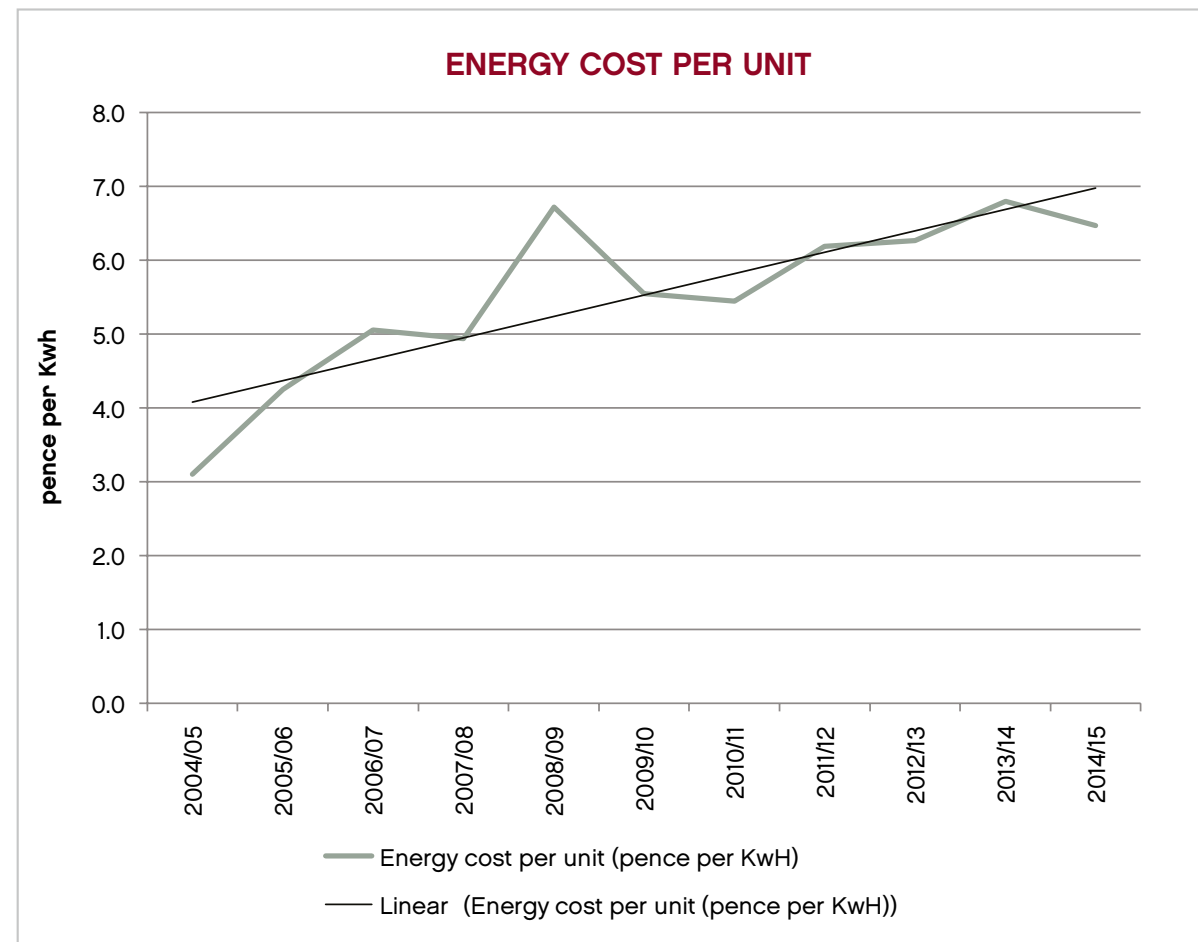
## AUDE KPI – CARBON EMISSIONS SCOPE 1 AND 2 PER M<sup>2</sup>



## ENERGY COST BY TYPE







## CASE STUDY: READING UNIVERSITY



### Carbon Management

#### The challenge

Increasing utilities costs and consumption were accounting for an increasing proportion of the University's expenditure each year; 6% of all non-staff costs at the University.

Reducing carbon emissions from our operations also has become increasingly important. The clear links to global climate change fuelled our desire to reduce our environmental impacts, while the sector-wide aim to reduce emissions by 43% by 2020 and the practical consideration of the new CRC scheme were further important drivers.

Reducing utilities costs and carbon emissions, while at the same time managing some major estate changes, presented a both a challenge and an opportunity for the University.

#### The process and the solution

In 2011, the university set out ambitious plans to reduce its carbon emissions by 35% by July 2016. Through a comprehensive programme of delivery, it identified that a £3.5 million investment (later increased to £4 million) could result in cumulative savings of £18.5 million (later increased to £19.6 million).

This required senior level commitment both to investment required and the overarching commitment to delivering this reduction target. Regularly monitoring progress, reporting back and managing the annual reduction programmes have been essential elements in delivering against this target.

At a time of major estate changes, it was essential to ensure that major capital investments also contributed to this ambitious carbon reduction target. The University has seen a net increase in its student halls' bedroom space over the last few years, through new on-campus developments replacing the disposal of TWO large off campus sites. Our London Road campus also faced major refurbishment, facilitating the subsequent disposal of our Bulmershe campus.

#### The results

By July 2015, our energy efficiency investments of £3.1 million had delivered a 26% cut in our carbon emissions compared to our 2008/09 baseline, saving 44,220 tCO<sub>2</sub> and £9.9 million on a cumulative basis for the university. A further £2 million has been achieved for and by our partner organisations on the estate (included in the original baseline emissions/costs).

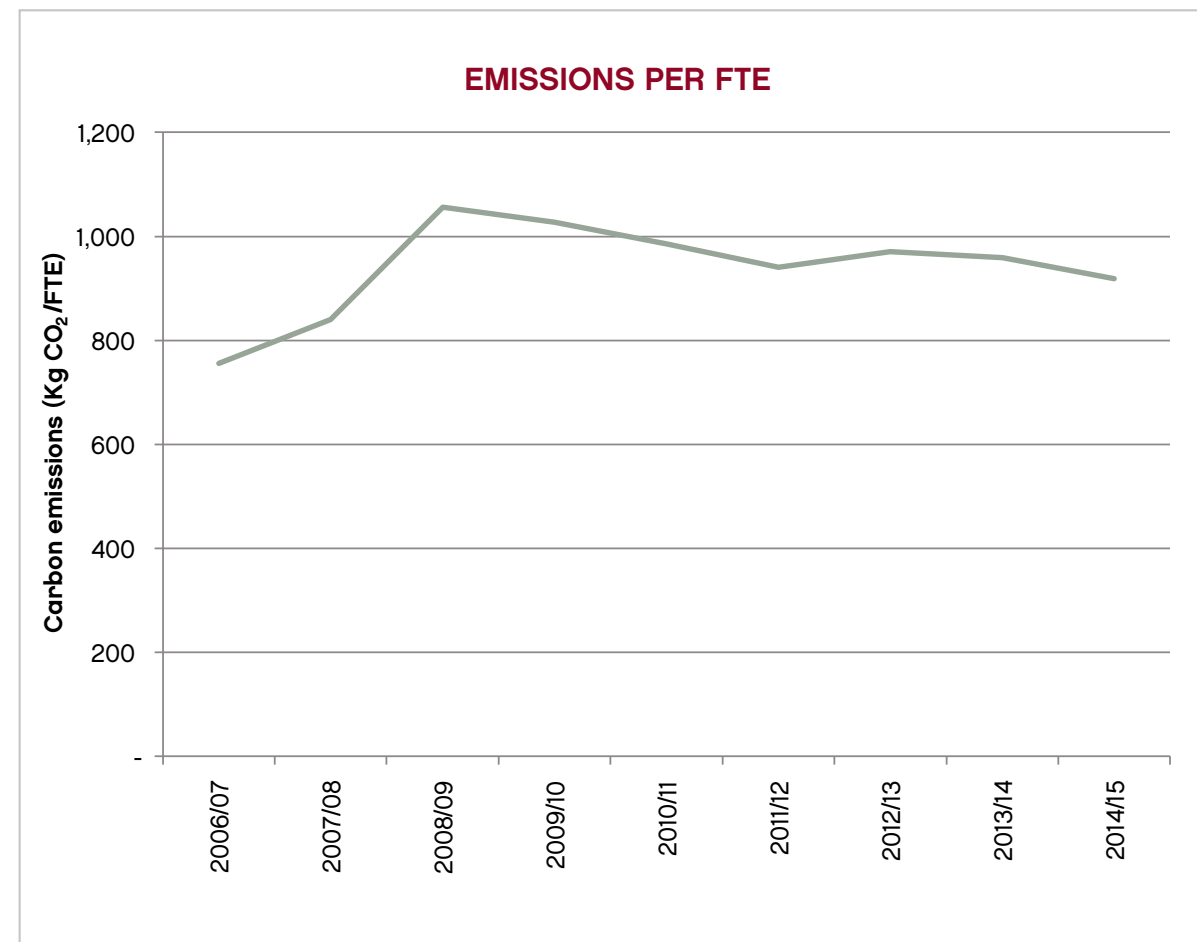
At the time of writing (Feb 2016), the University expects to deliver at least a 30% reduction in its carbon emissions by July 2016; with expected cumulative financial savings of £13.5 million to the University and a further £3.7 million for our partner organisations. This has come from energy efficiency investments expected to total £4.1 million, alongside savings from major estate developments.



Estate changes account for approximately a 5% reduction in total emissions, whilst non-estate changes to July 2015 breakdown (in tCO<sub>2</sub> terms) as follows:

- Insulation programme – plantroom pipe lagging, roof insulation and draught proofing saving 1,100 tCO<sub>2</sub> annually
- IT server upgrades – saving 1,200 tCO<sub>2</sub> annually
- Lighting upgrades – efficient lighting with intelligent sensors – saving 775 tCO<sub>2</sub> annually
- BMS/controls expansion and upgrades – saving 550 tCO<sub>2</sub> annually
- Fume cupboard ventilation upgrades - saving 620 tCO<sub>2</sub> annually
- Heating plant/control upgrades - saving 650 tCO<sub>2</sub> annually
- Ventilation and air conditioning upgrades – saving 400 tCO<sub>2</sub> annually

These technical improvements have been complemented by ongoing awareness and behaviour change initiatives. In addition, a new £13 million replacement LTHW district heating network is now complete, which is anticipated to deliver a further annual saving of approx. £400,000 and 1,250 tCO<sub>2</sub>.



# ARUP

## CASE STUDY: ARUP

### The Green Scorecard

#### The challenge

Sustainability is a topic that is open to interpretation and has many grey areas. The Green Scorecard has provided the sector with a new way to examine estates-specific issues in a way that is structured enough to encourage a broad view of the issues but flexible enough to be relevant to most institutions.

#### The process and the solution

The fact that it is the result of such extensive consultation and that it focuses on estates issues has provided the scorecard with a validity that has inspired confidence in those engaging with it. It is what the sector said it wanted and is directly relevant to those using it.

An example is that a number of institutions have told us that climate change adaptation had not previously been prioritised but its inclusion in the scorecard has been welcomed as it highlights the fact that it is an issue the wider sector sees as important and on which progress should be made at institution level.

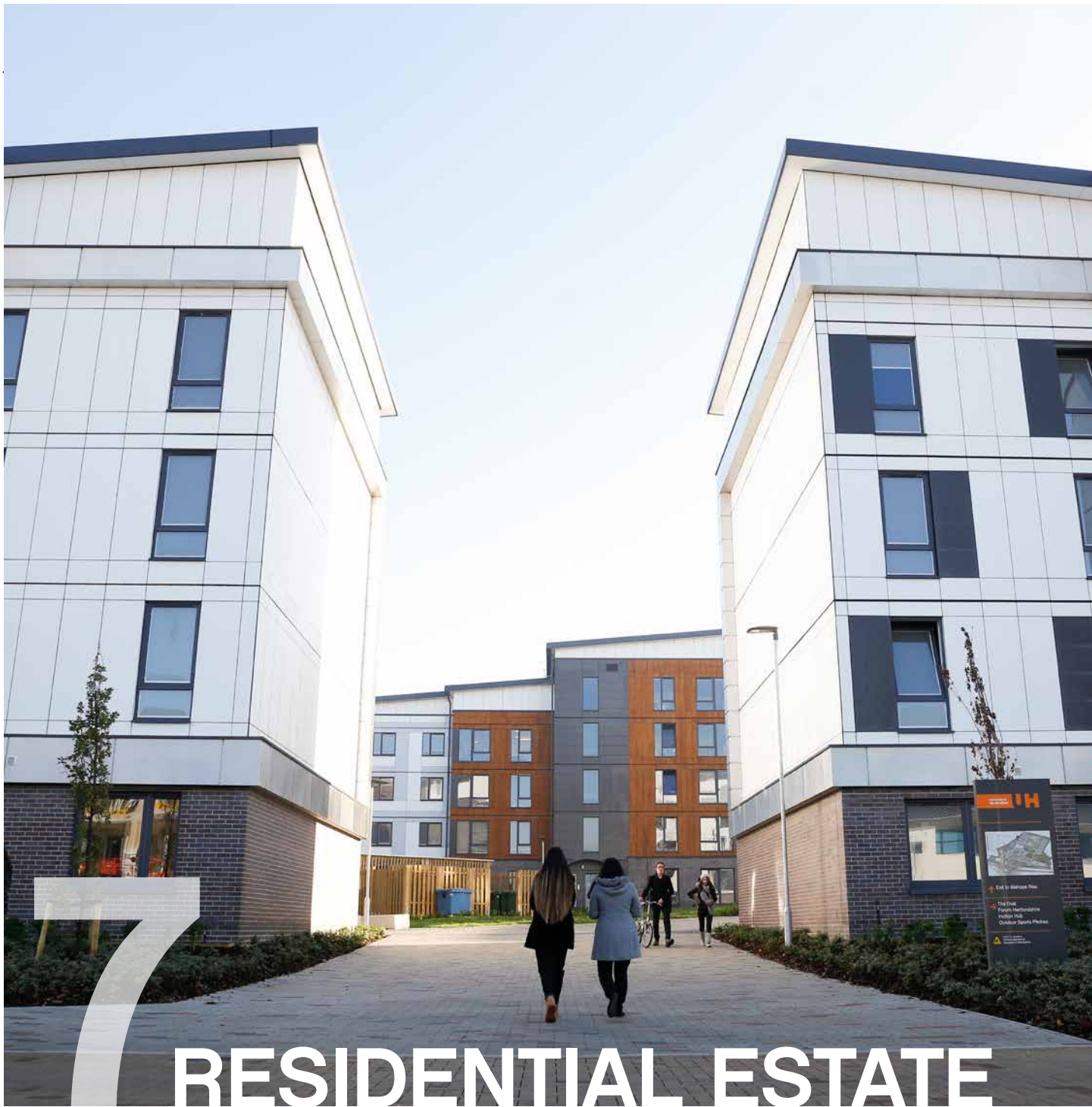
#### The results

We have had many conversations with those completing the scorecard in institutions. The self-appraisal nature of the tool is encouraging people to reflect and analyse their own performance, considering where they are on the 'journey' of improvement within each indicator (particularly those not supported by existing data). It provides a way of accurately communicating the excellent work that has already been undertaken by many in the sector.

Looking forwards, peoples' appraisal of their targets goes also beyond simply asking what is needed to score the next point, but is a deeper consideration of how the topics covered by indicators needs to be applied to their specific institution.

It has also provided a new communication tool that encourages discussion – the interpretation of the performance requires an understanding of the context.





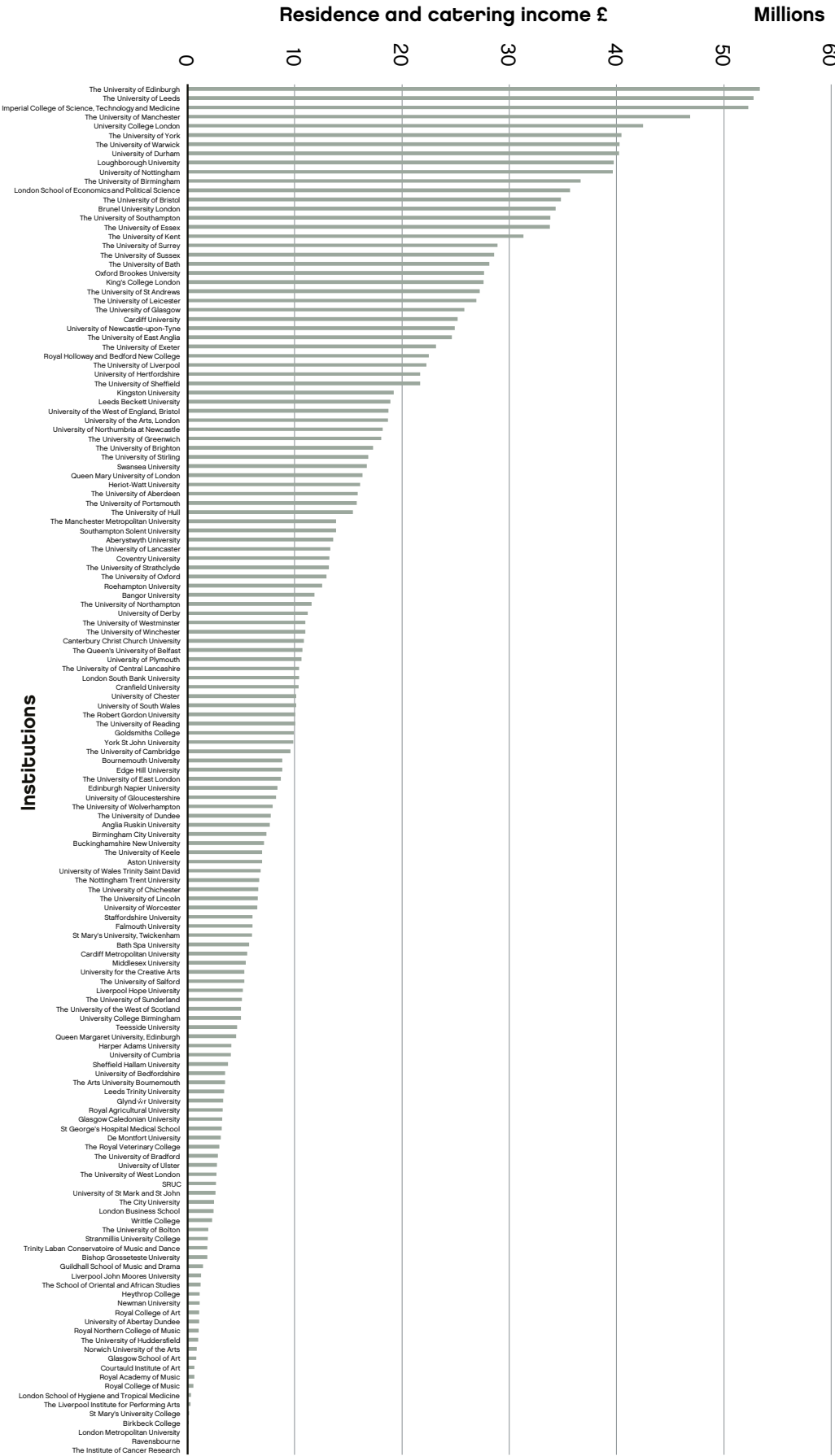
Income generated by the residential estate is significant; with a total income within the sector of approaching £2bn in 2014/15 (this currently includes all residential income as well as conference and catering income). Three institutions generate over £50m per annum, and 16 generate over £30m.

The residential estate continues to be a critical part of the Higher Education estate. Not just the space owned and managed by institutions themselves (which accounts for over 330,000 bedspaces) but the increasing number of private sector beds (110,000 bedspaces) and the 'other rented accommodation' (520,000 bedspaces). The impact of these beds on local communities is often one of the most sensitive aspects of university/community relations.

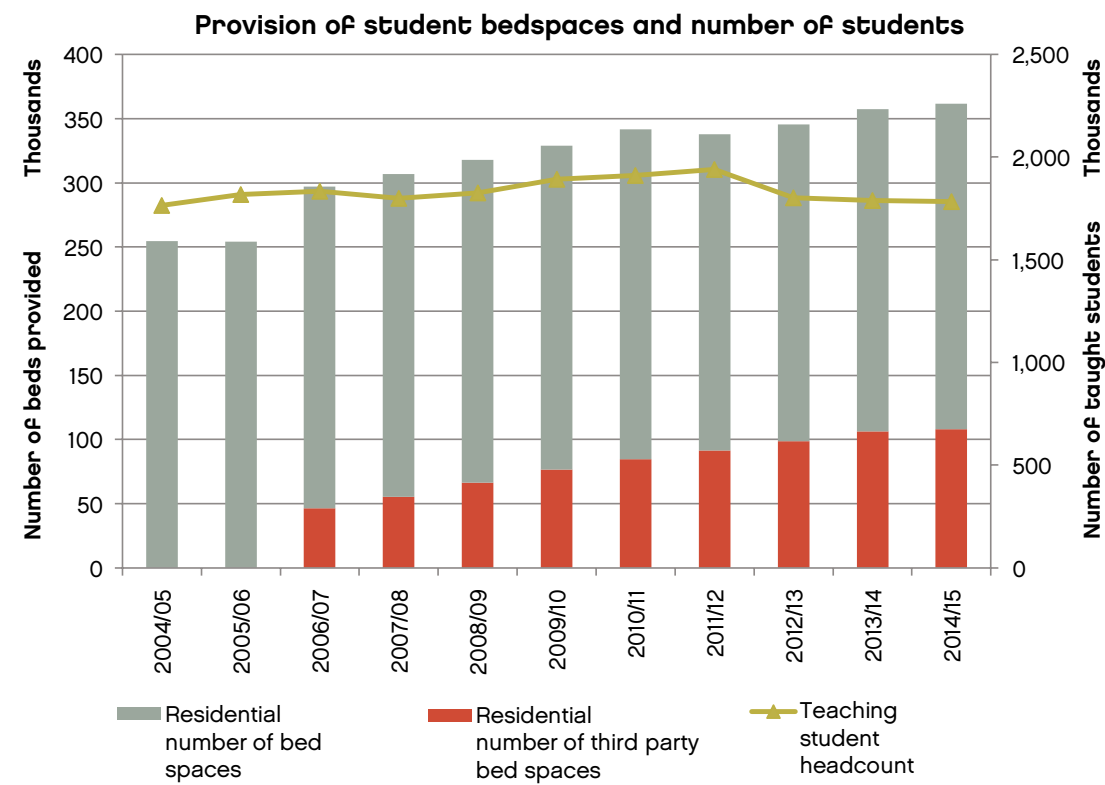
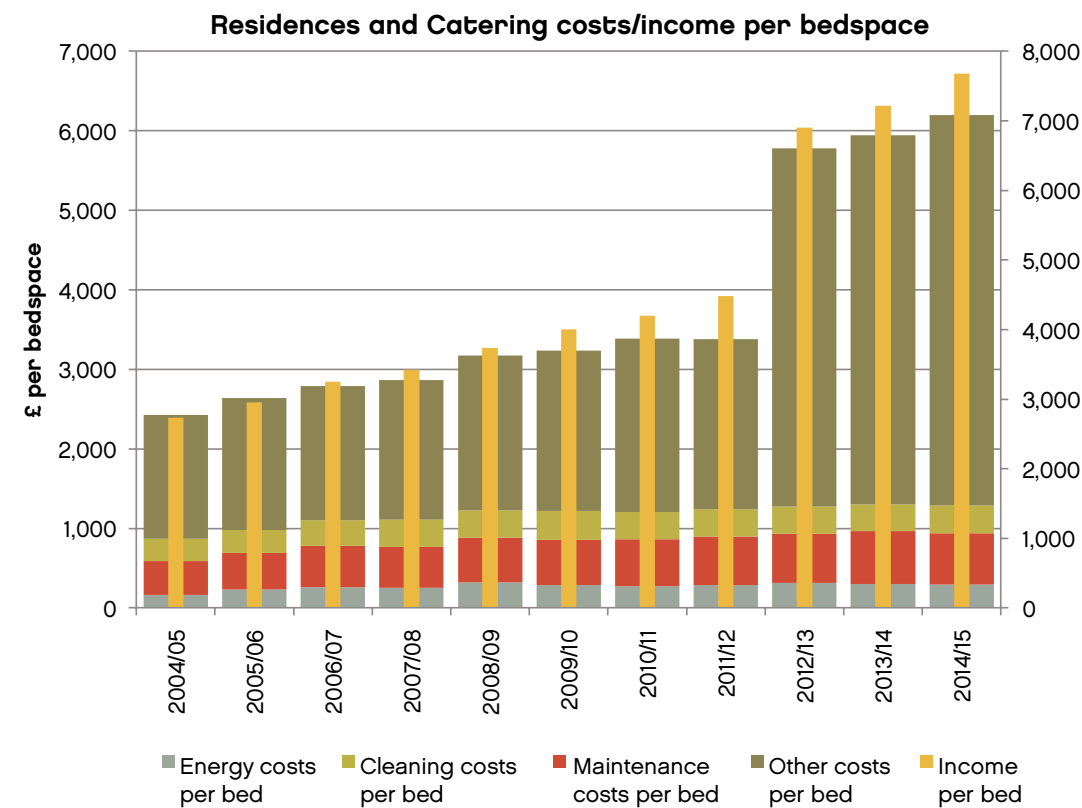
Institutions have increased their investment in their own accommodation, spending nearly £600m on the residential estate in 2014/15. The percentage of the residential estate in condition A and B remains relatively similar to last year, but has improved over the last decade. The condition of this estate continues to be very significant in terms of recruitment. It is a critical element of particularly for parental support, in university selection. It is also important in support of conference business.

Institutions continue to work innovatively with the private sector to provide access to additional accommodation. Institutions are working in a variety of different ways to ensure that students have an equivalent experience whether they are in private sector accommodation, nominated accommodation or within the University's own accommodation.

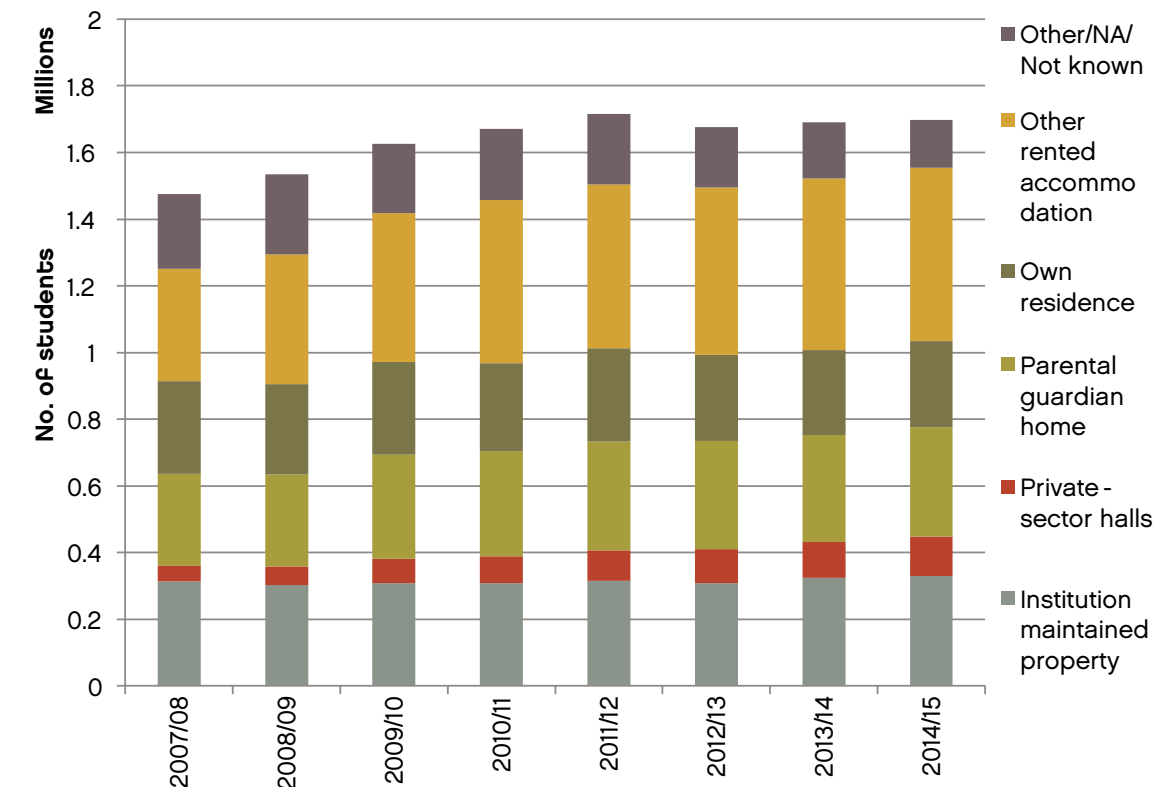
RESIDENCE AND CATERING INCOME BY INSTITUTION



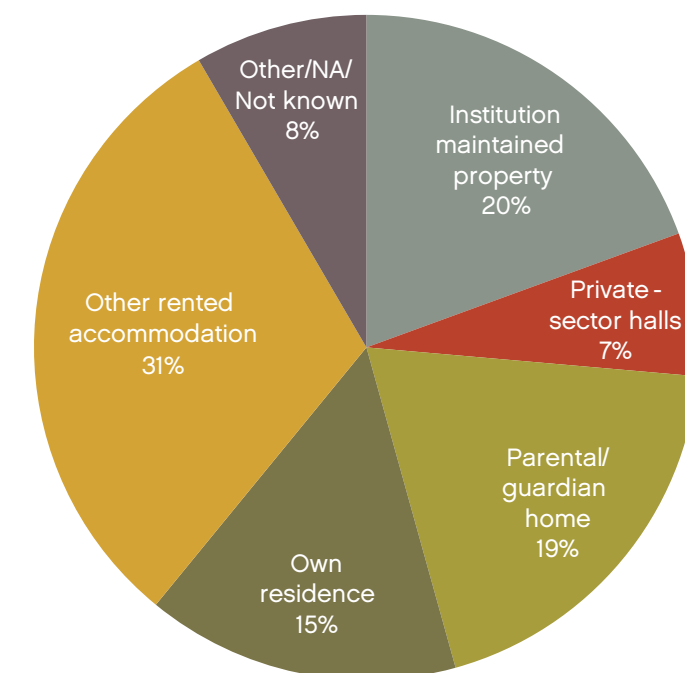
## INCOME / EXPENDITURE PER BED



## TYPE OF TERM TIME ACCOMMODATION

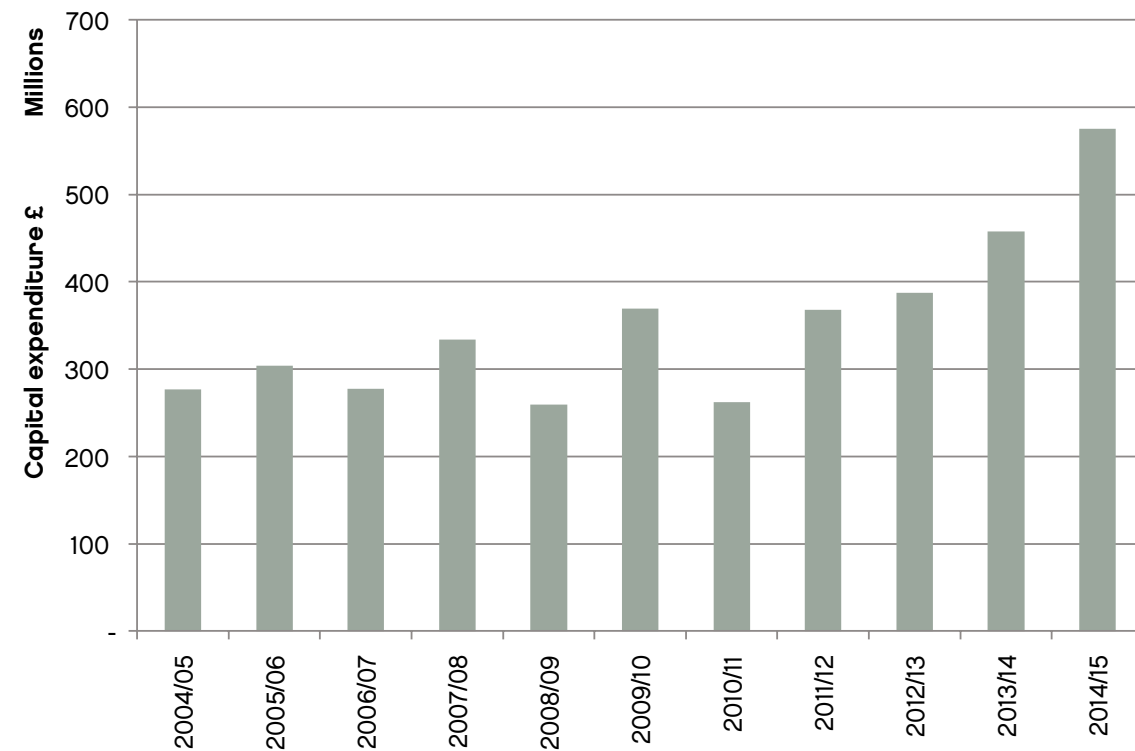


## TERM TIME ACCOMMODATION 2014/2015

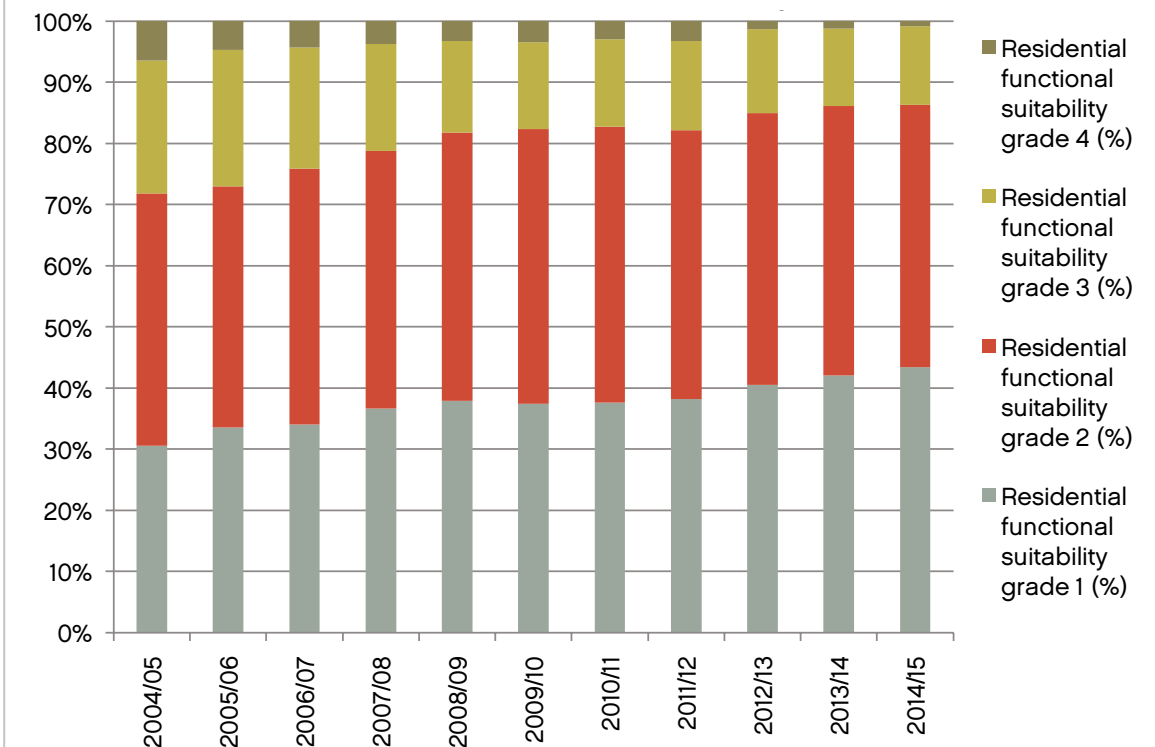




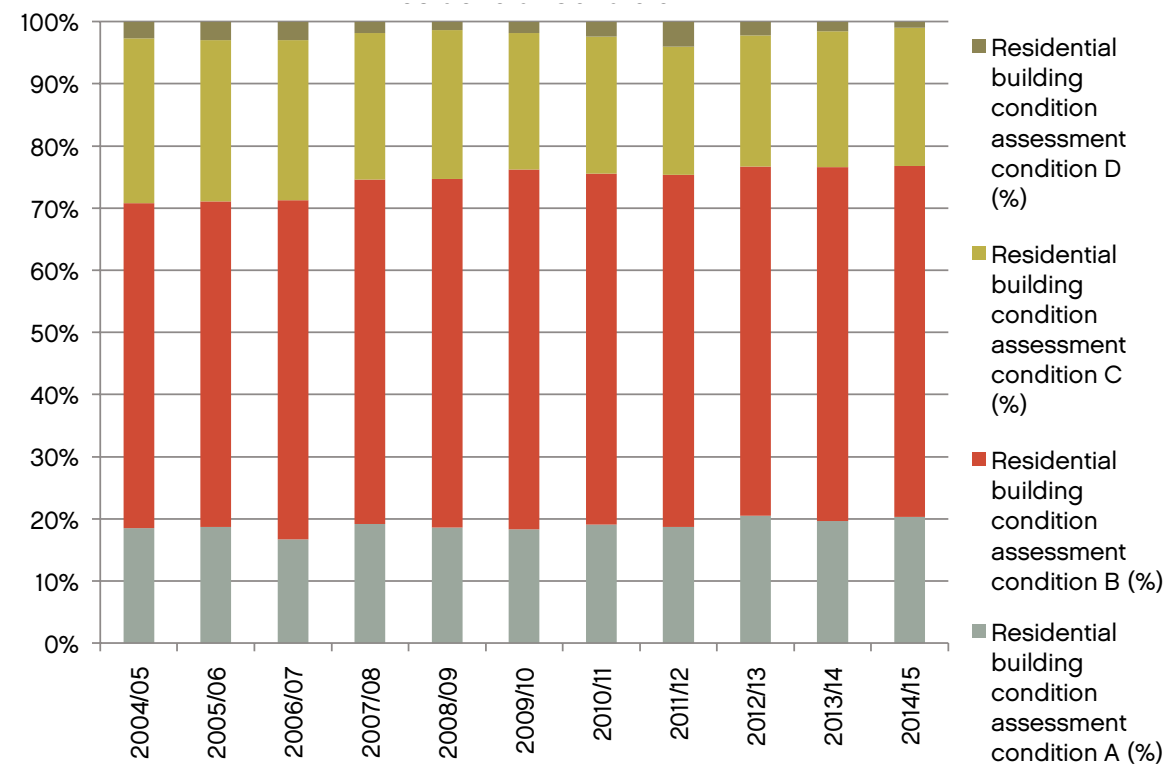
### RESIDENTIAL CAPITAL EXPENDITURE



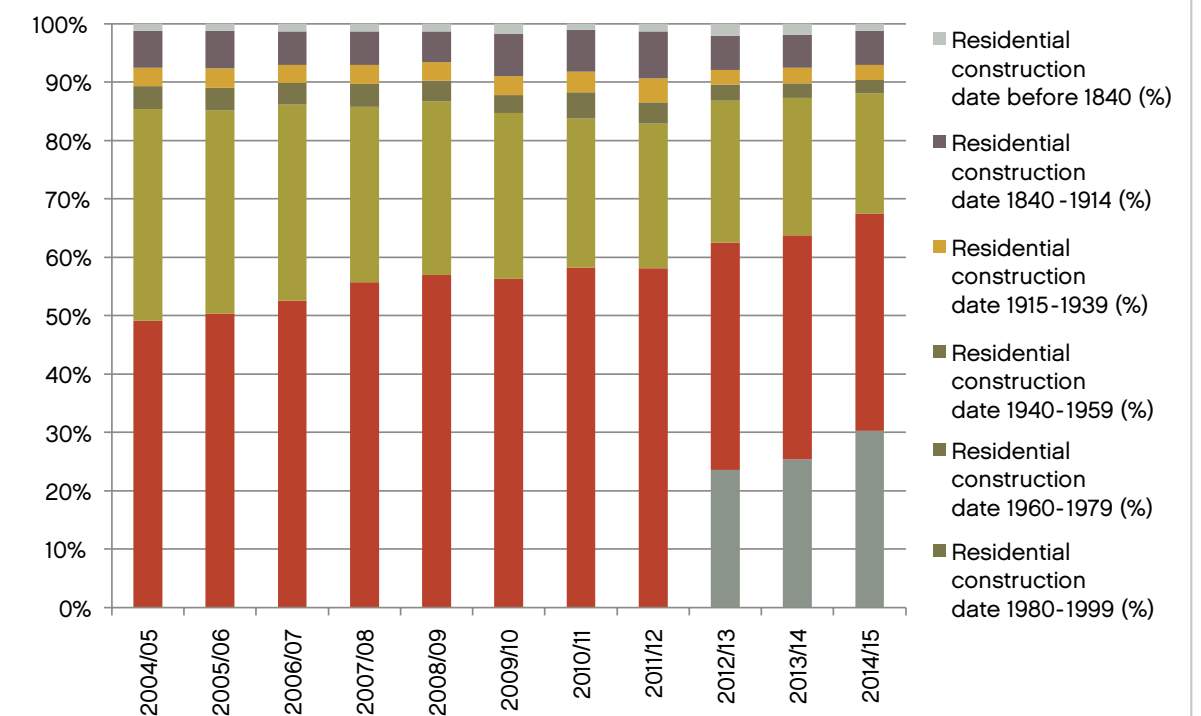
### RESIDENTIAL FUNCTIONAL SUITABILITY

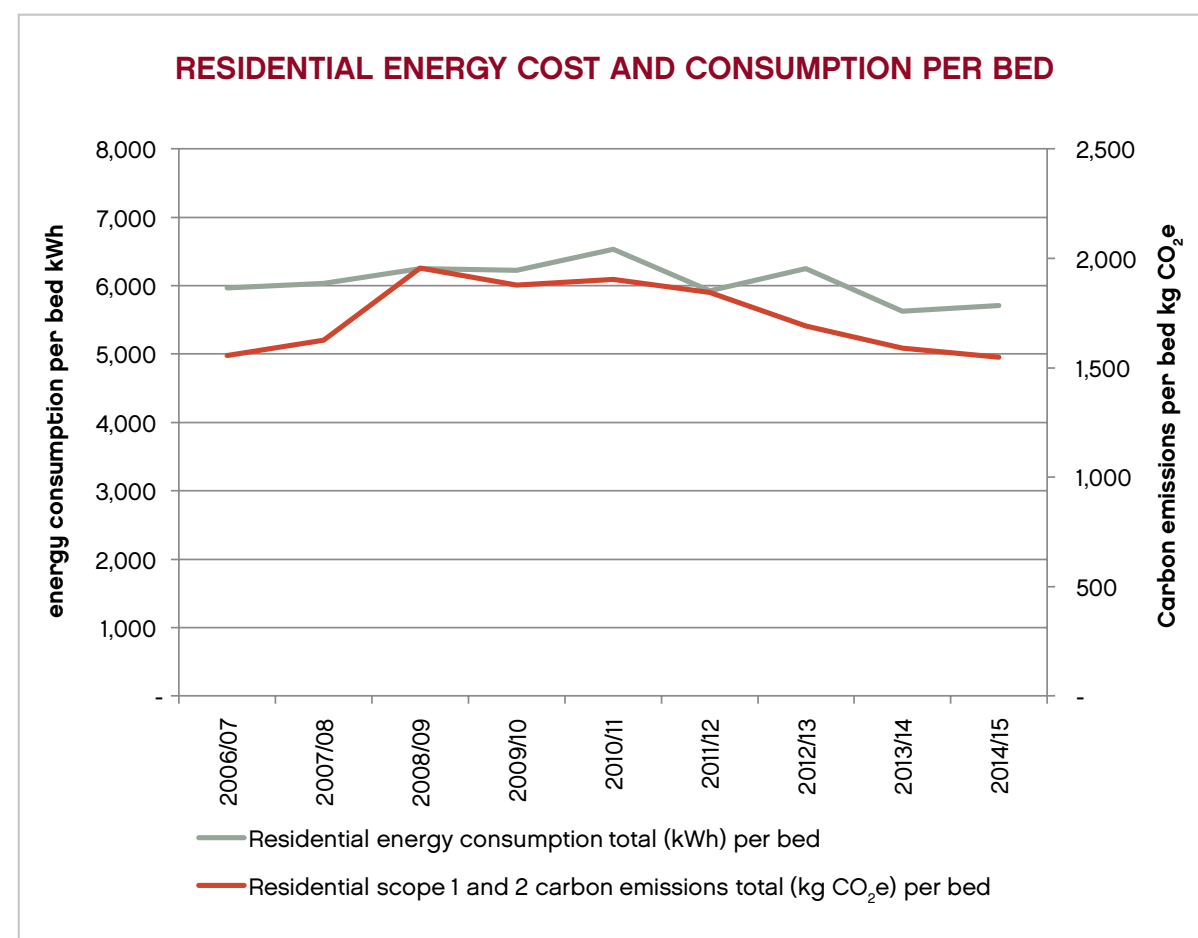
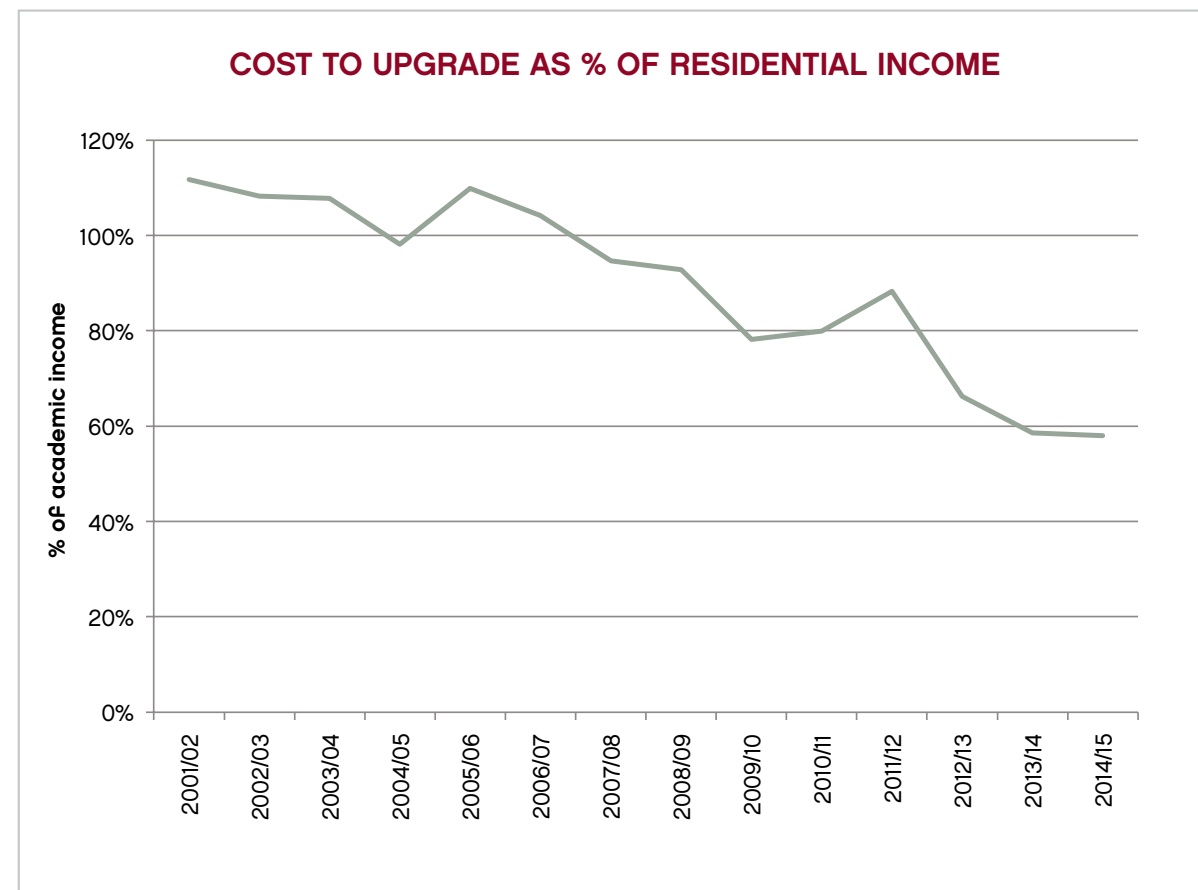


### RESIDENTIAL CONDITION



### RESIDENTIAL AGE





The fee situation in Scotland differs from the rest of the UK with tuition fees for eligible students paid by the student awards agency. Fee levels having reduced in real terms since 2009/10 but despite this Scotland has seen the overall level of income continue to increase. This is largely a result of an ongoing rise in the number of students to around 230,000.

In contrast with the UK position capital expenditure in Scotland is decreasing which has resulted in reduced investment in the estate.

Scotland exhibits a higher proportion of its estate as being in condition Category C and D. The cost of upgrading to category B as a percentage of insured replacement value and as percentage of academic income is significantly higher than that of the rest of the UK.

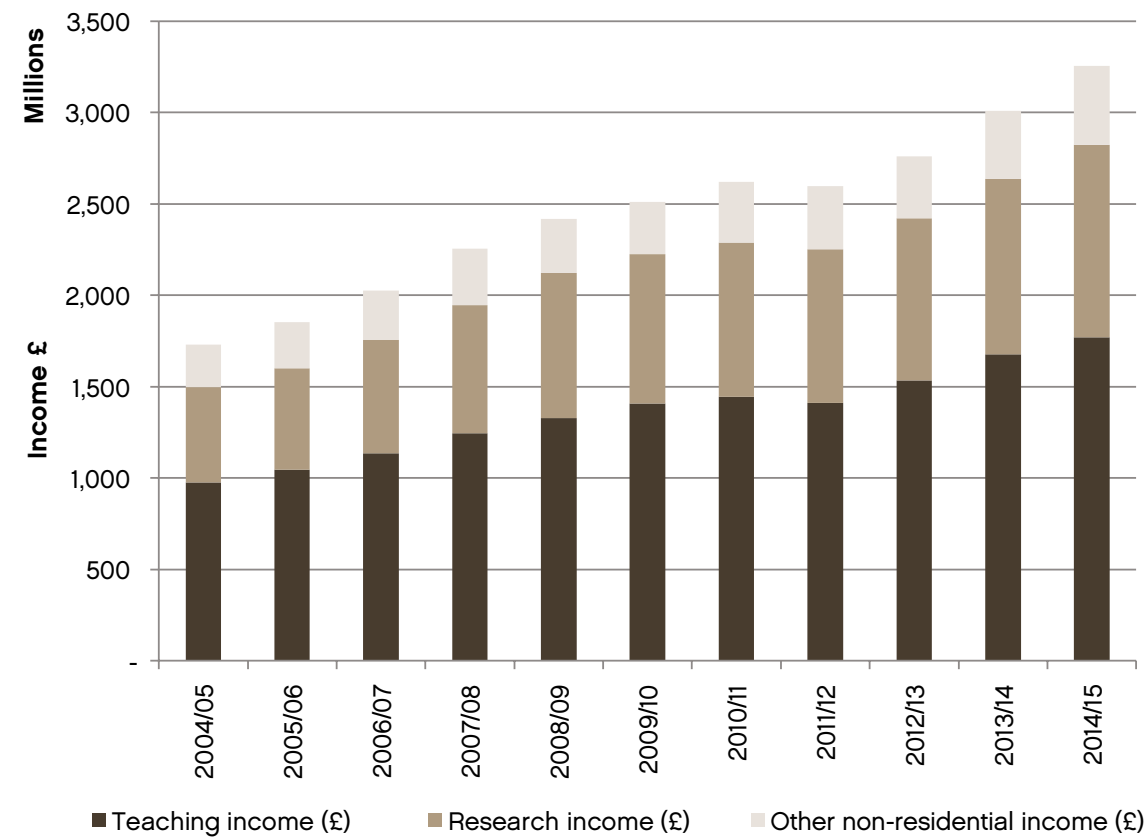
The KPIs indicate Scotland's total property costs are significantly lower than those of the UK as a whole, this following a similar pattern to the UK, with significant focus since 2008/09 to reduce costs.

Space per student is higher than the UK's mean, this has an impact on the income per metre squared figure, which, whilst increasing, is substantially lower than the mean for the UK as a whole (£1,400 per m<sup>2</sup> NIA against at UK mean of £1,800/m<sup>2</sup> NIA).

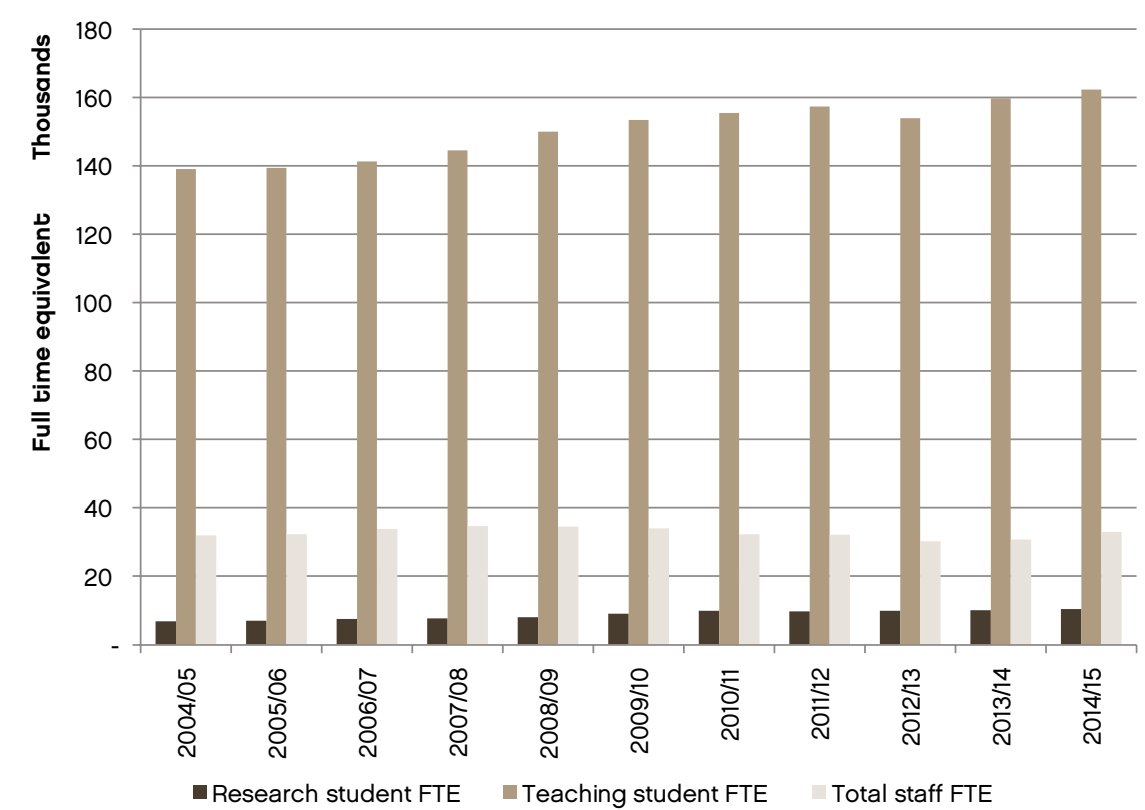
Carbon emissions continue to reduce from a peak in 2009/10.



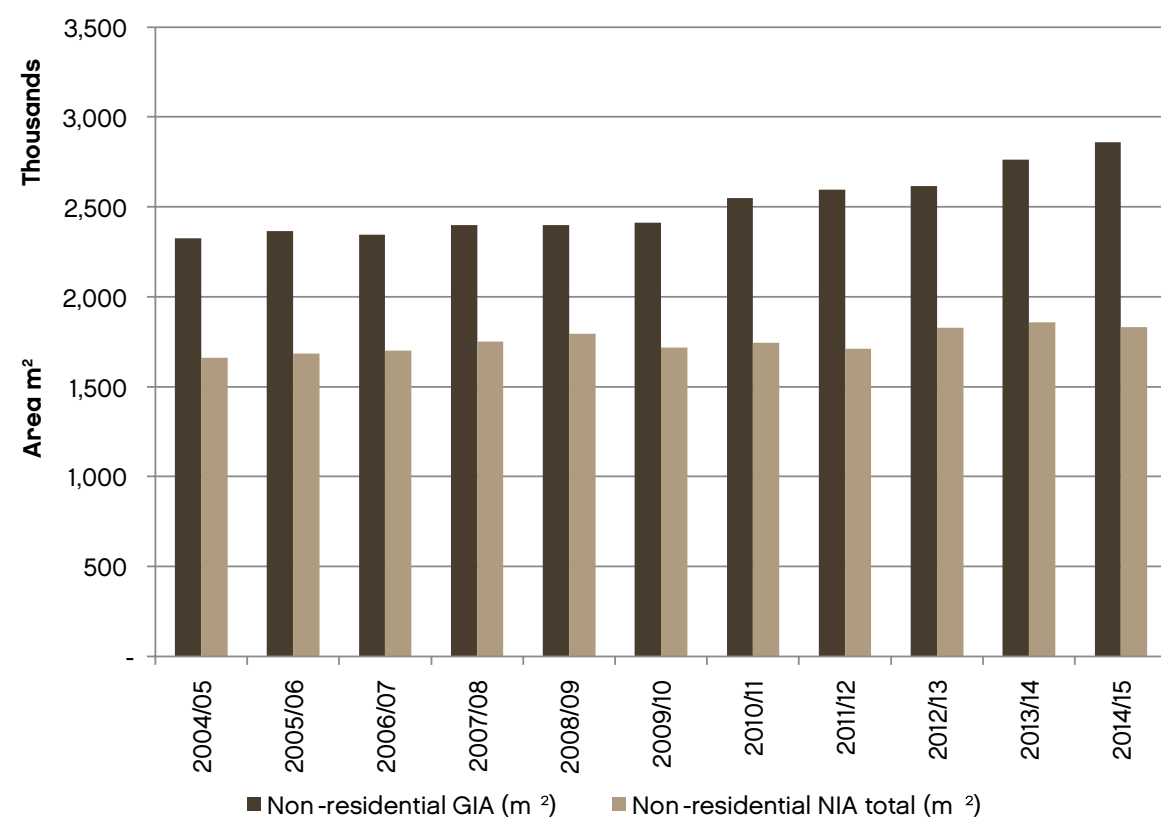
### INCOME



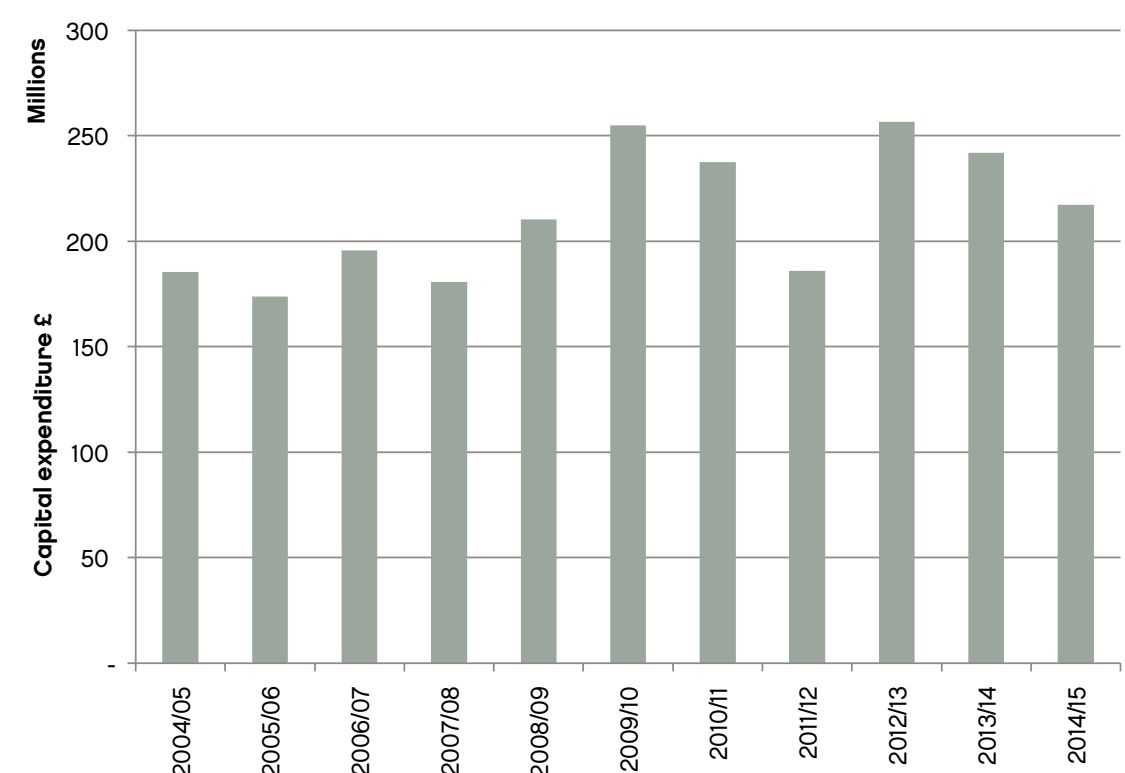
### STUDENT NUMBERS



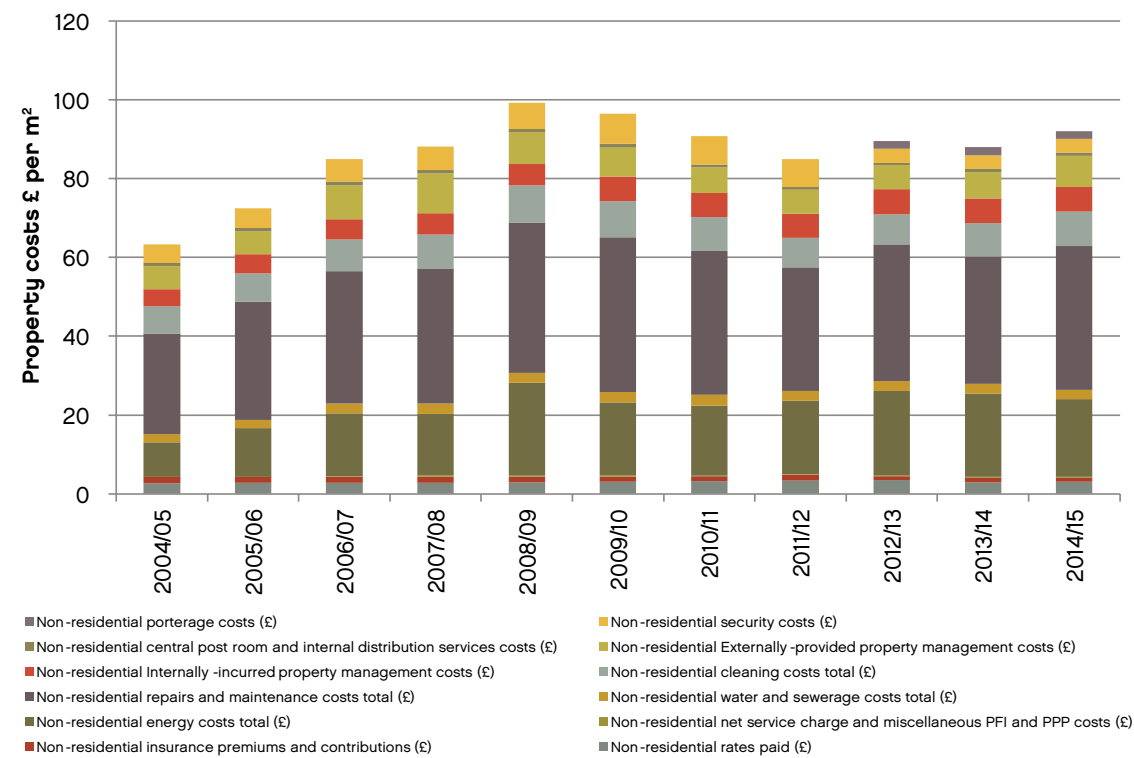
### SIZE OF ESTATE



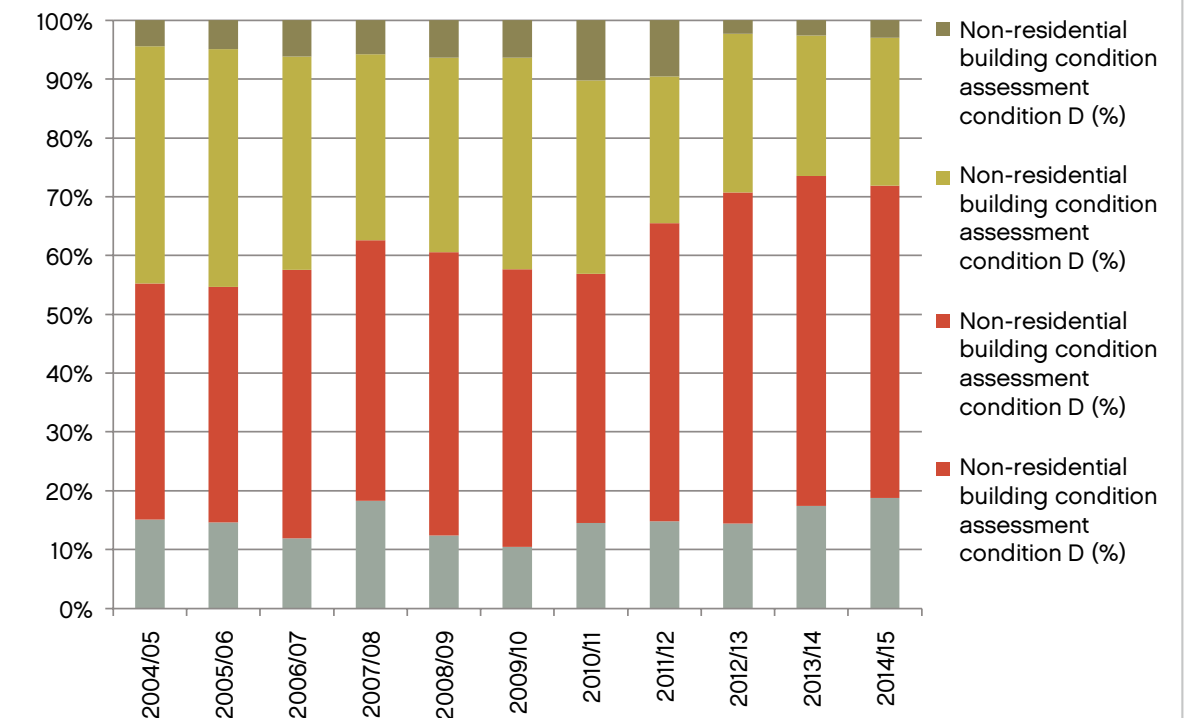
### NOM-RESIDENTIAL CAPITAL EXPENDITURE BUILDINGS



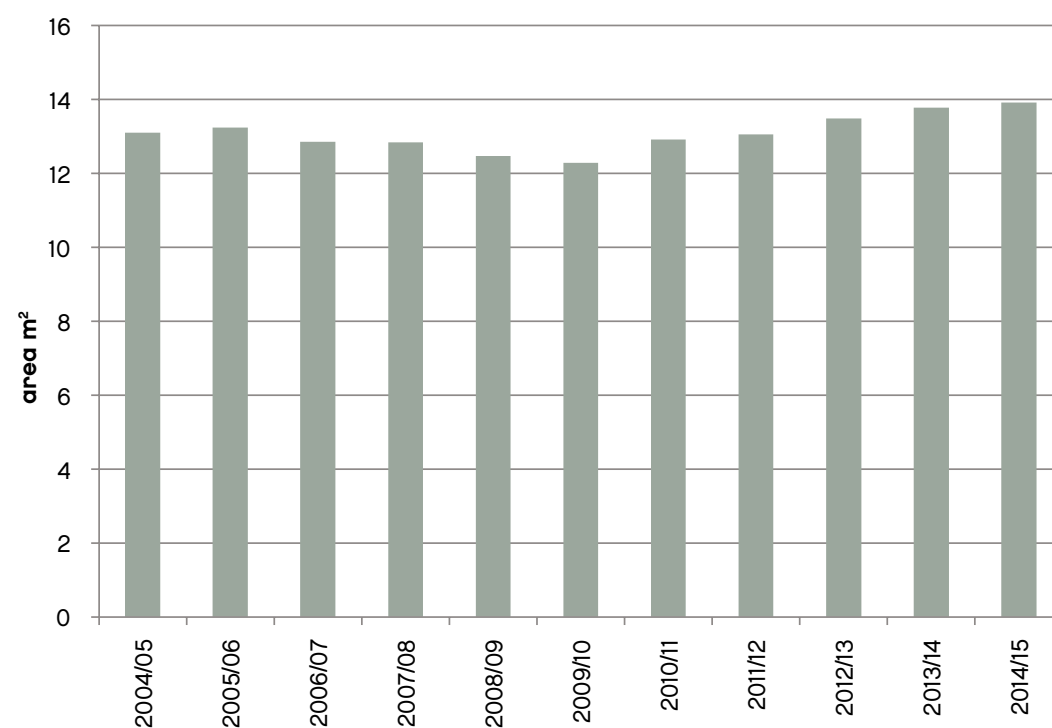
**AUDE KPI – TOTAL PROPERTY COSTS PER M<sup>2</sup> (GIA)**



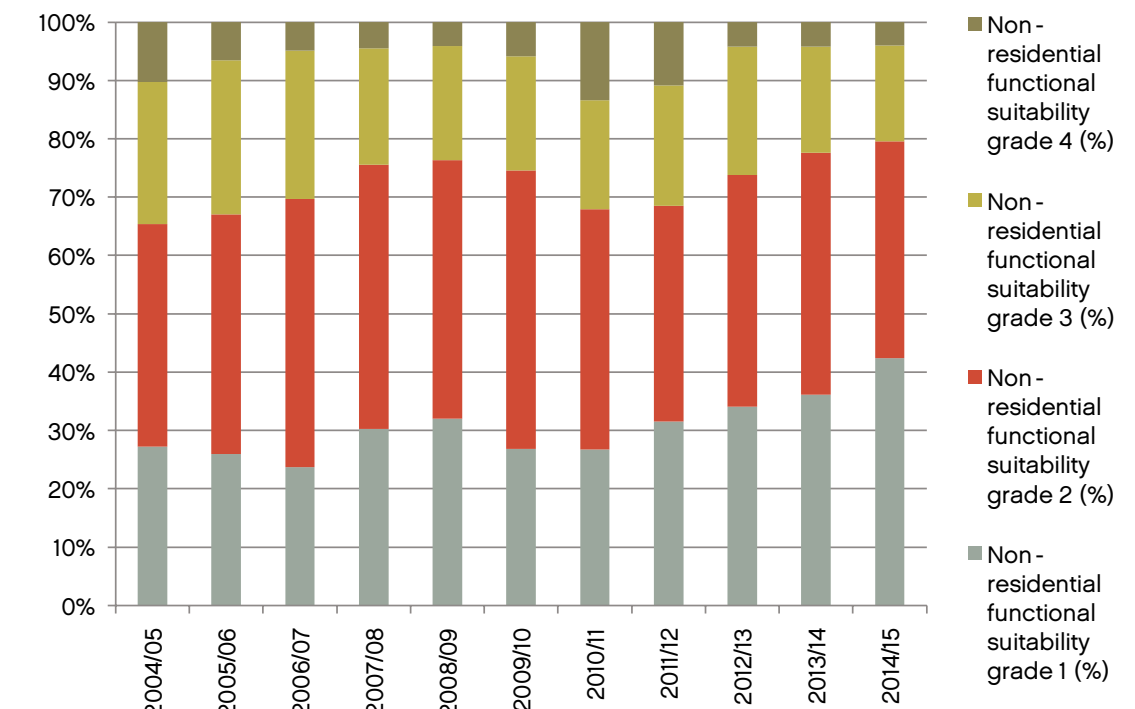
**AUDE KPI – PERCENTAGE OF GIA IN CONDITION A AND B**



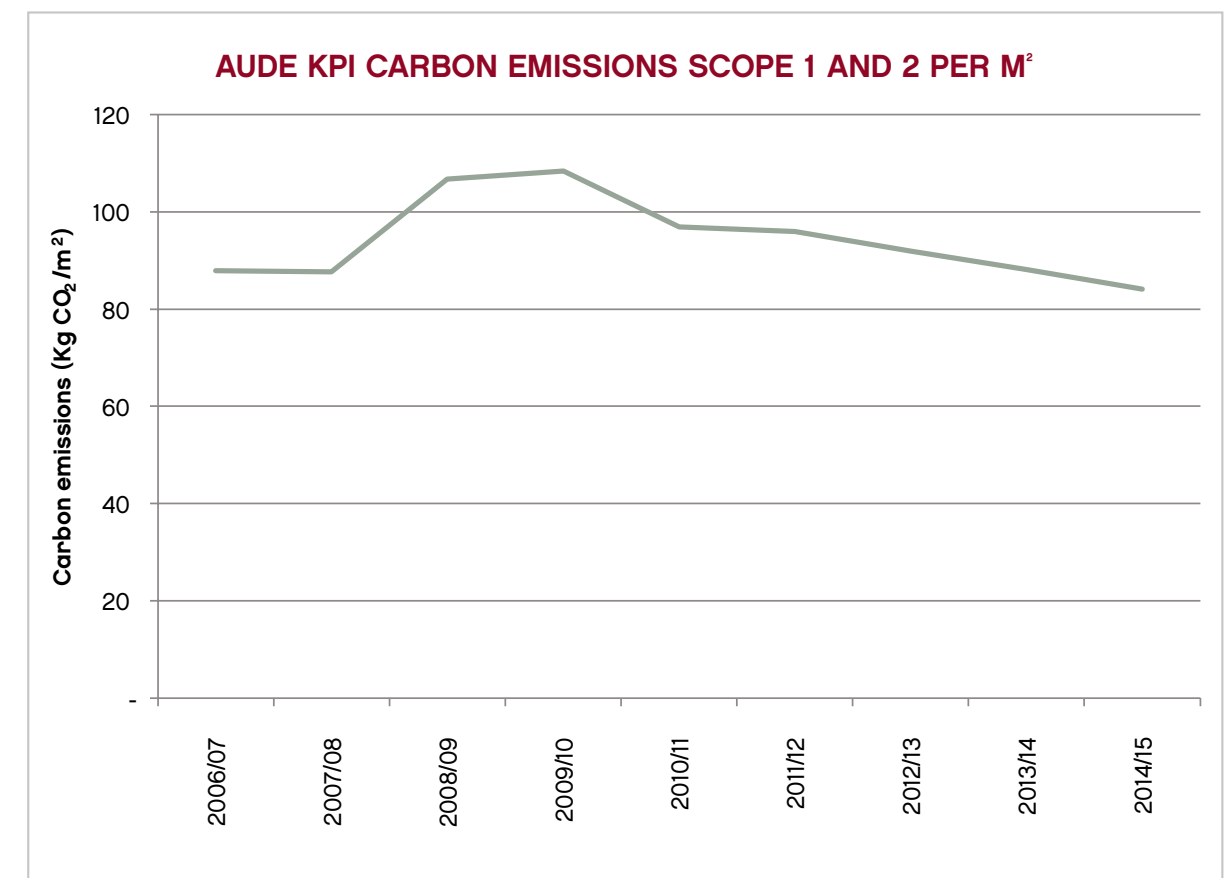
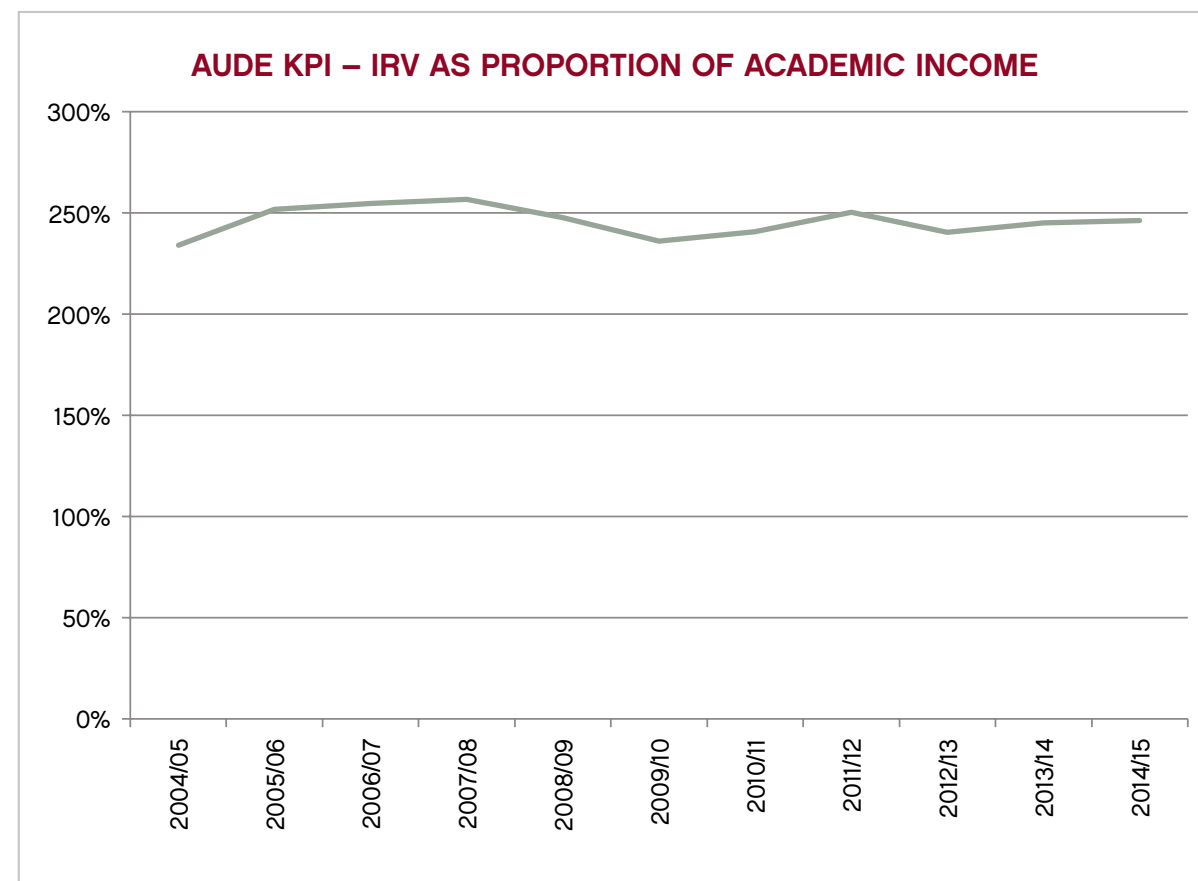
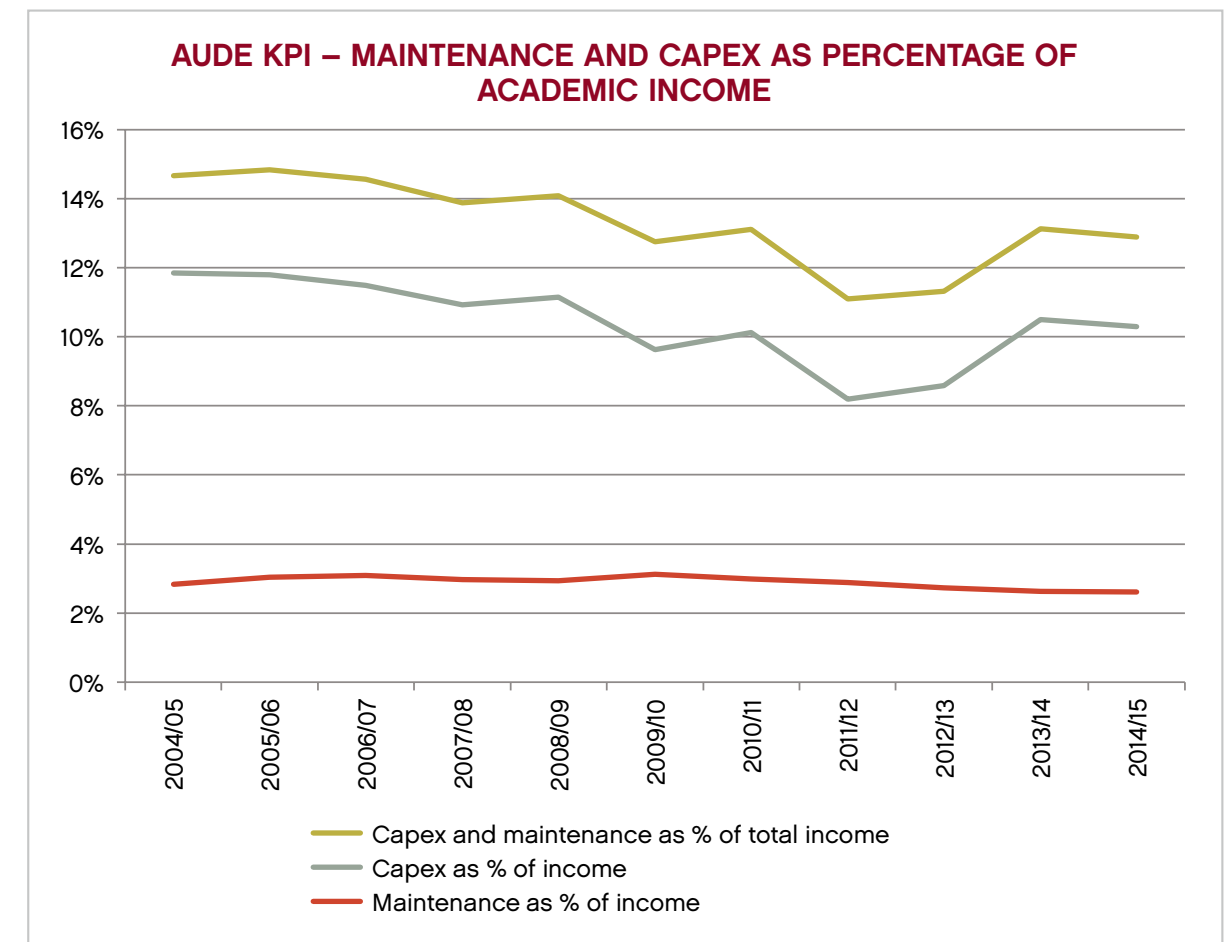
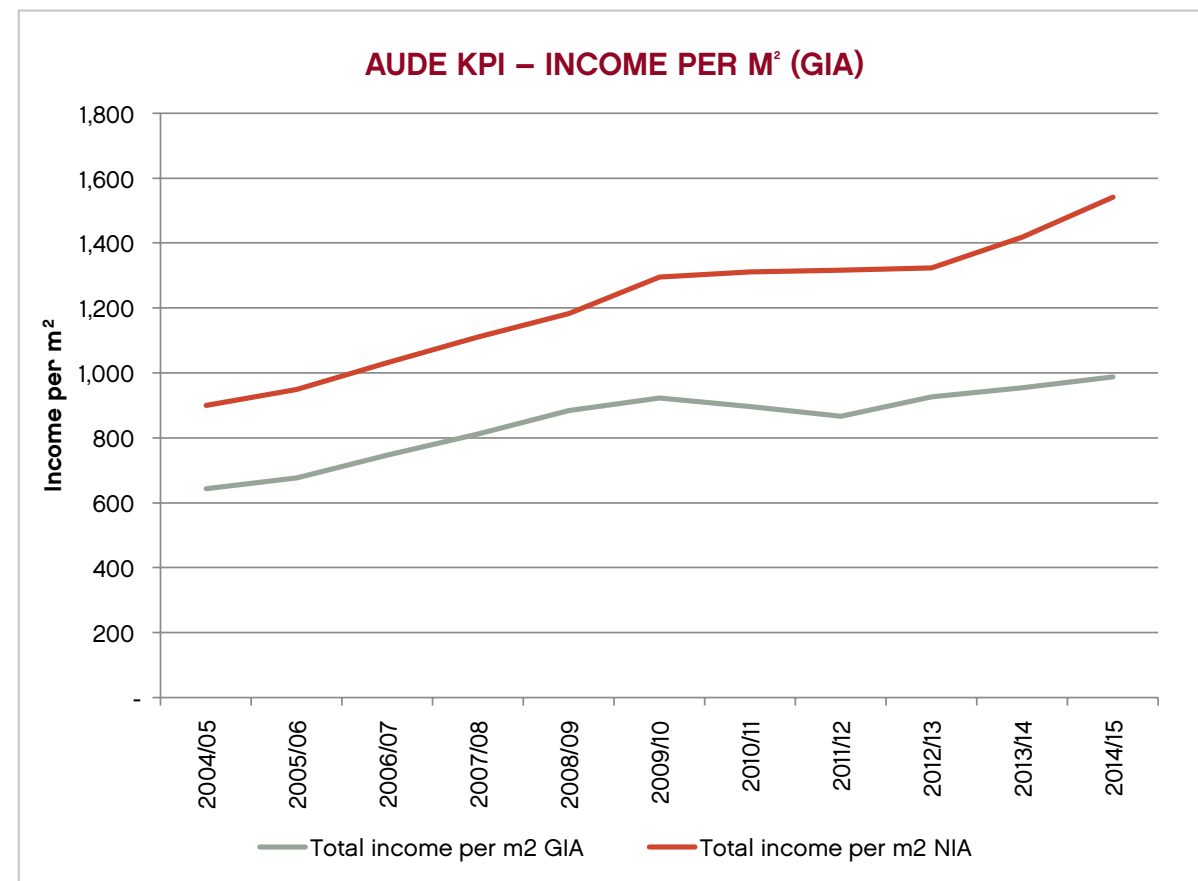
**AUDE KPI – AREA PER STUDENT AND STAFF FTE M<sup>2</sup> (GIA)**



**AUDE KPI – PERCENTAGE OF GIA IN FUNCTIONAL SUITABILITY A AND B**









The HE situation in Wales has a number of challenges, (including a demographic shift, funding regime and estate condition), however after a period of limited growth in income between 2009/10 through to 2012/13, the sector in Wales has seen substantial increases for both 2013/14 and 2014/15, with income up to £1.33bn (from £1.18bn in 2013/14).

The size of the estate in Wales has for the first time decreased by 20,000m<sup>2</sup> (GIA) to 1,131,000m<sup>2</sup>. There has been estate rationalisation at one or two institutions in the last year.

Student numbers follow a similar profile to that of the UK as a whole with a peak in 2011/12 (for Wales this was at 99,000 in 2011/12) and with numbers almost stable now at just below 90,000 (although there has been a slight reduction year on year to 2014/15).

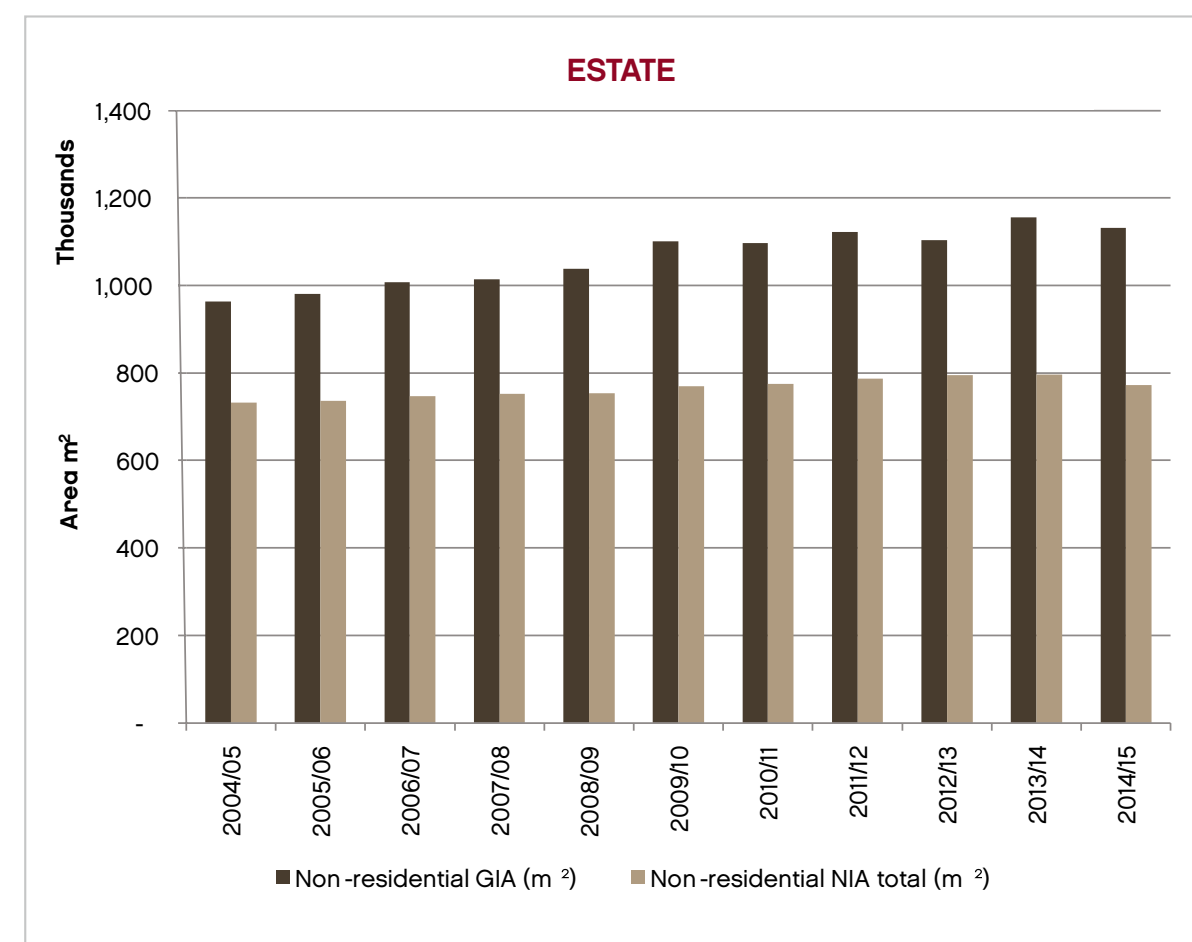
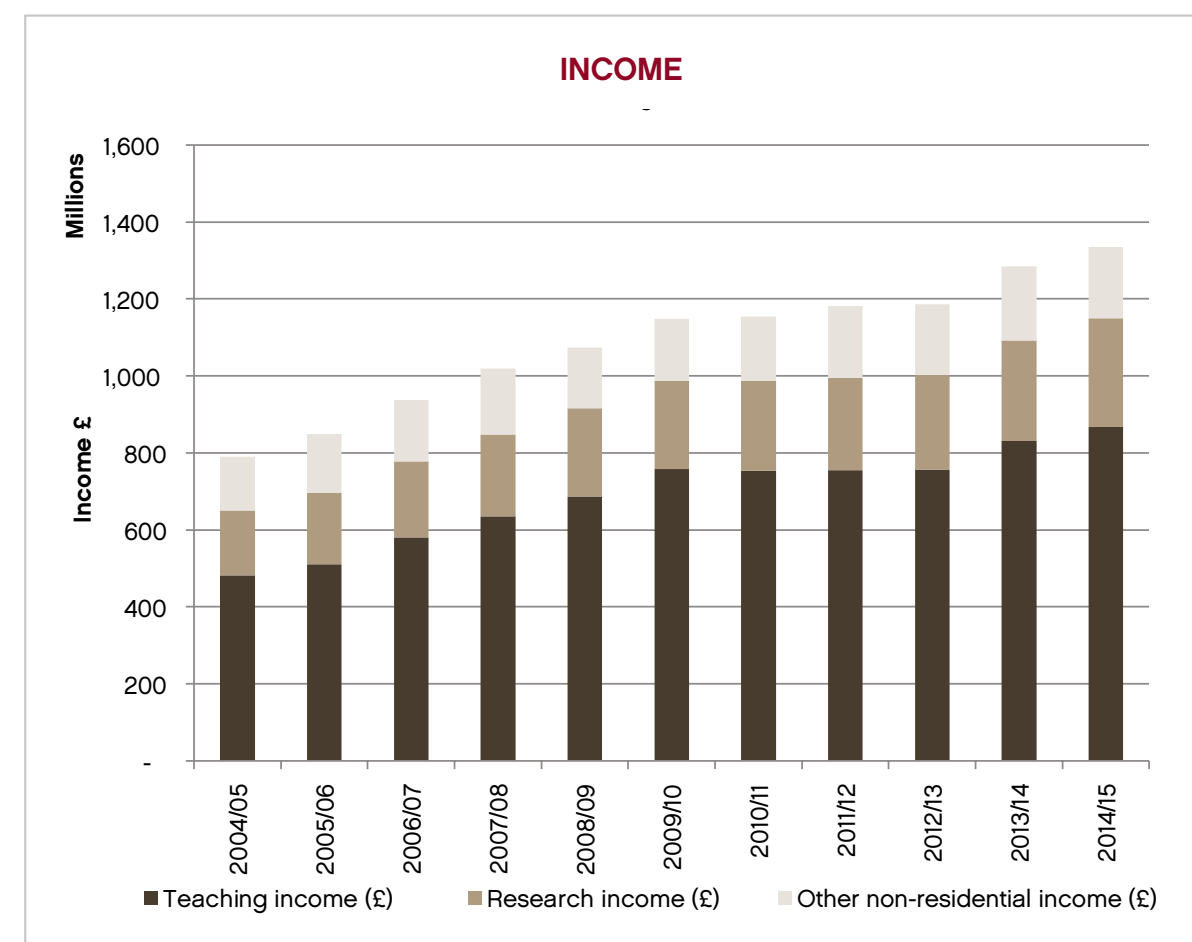
Capital expenditure has been higher for the last two years than ever before in the preceding decade; spending in 2014/15 was £134m down from £155m in 2013/14.

Total property costs have risen to £75/m<sup>2</sup> after five years (since 2009/10) remaining at £68/m<sup>2</sup>. This is still substantially lower than the mean for the UK as a whole.

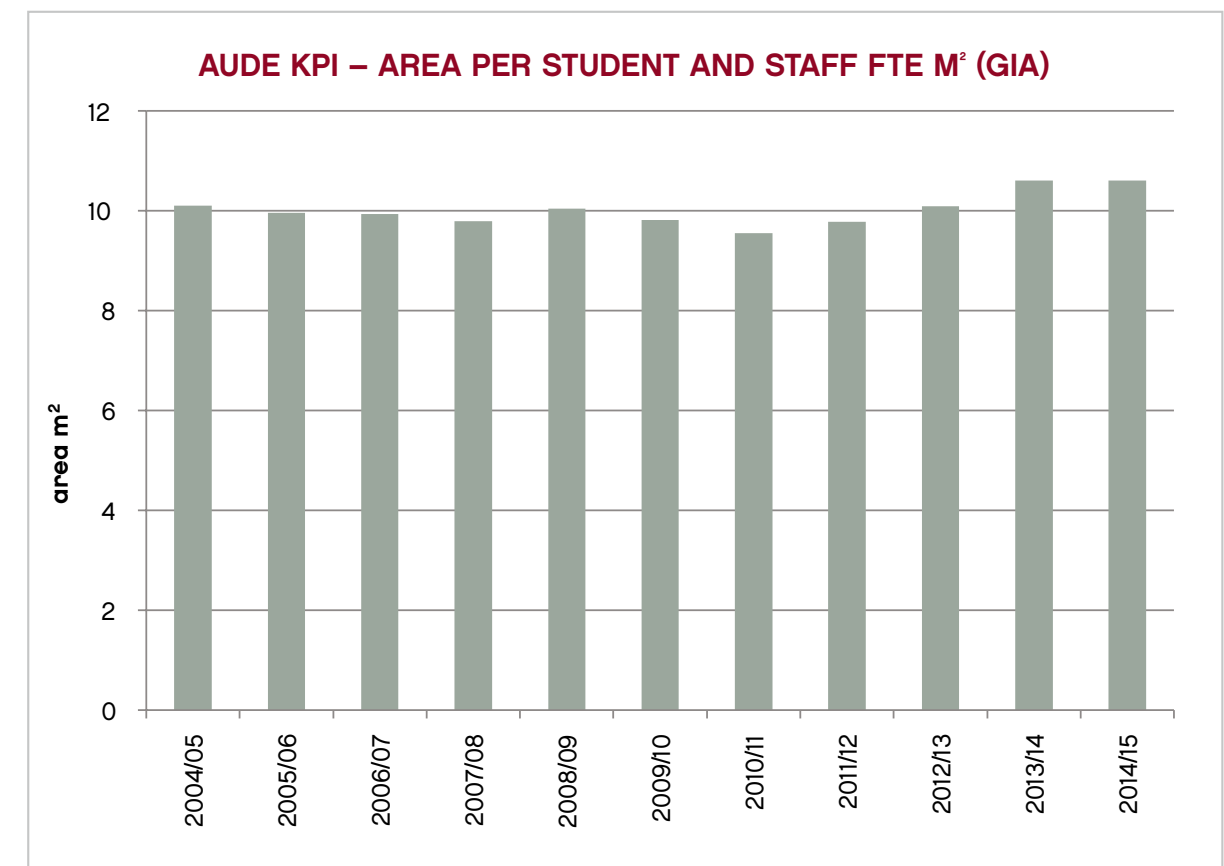
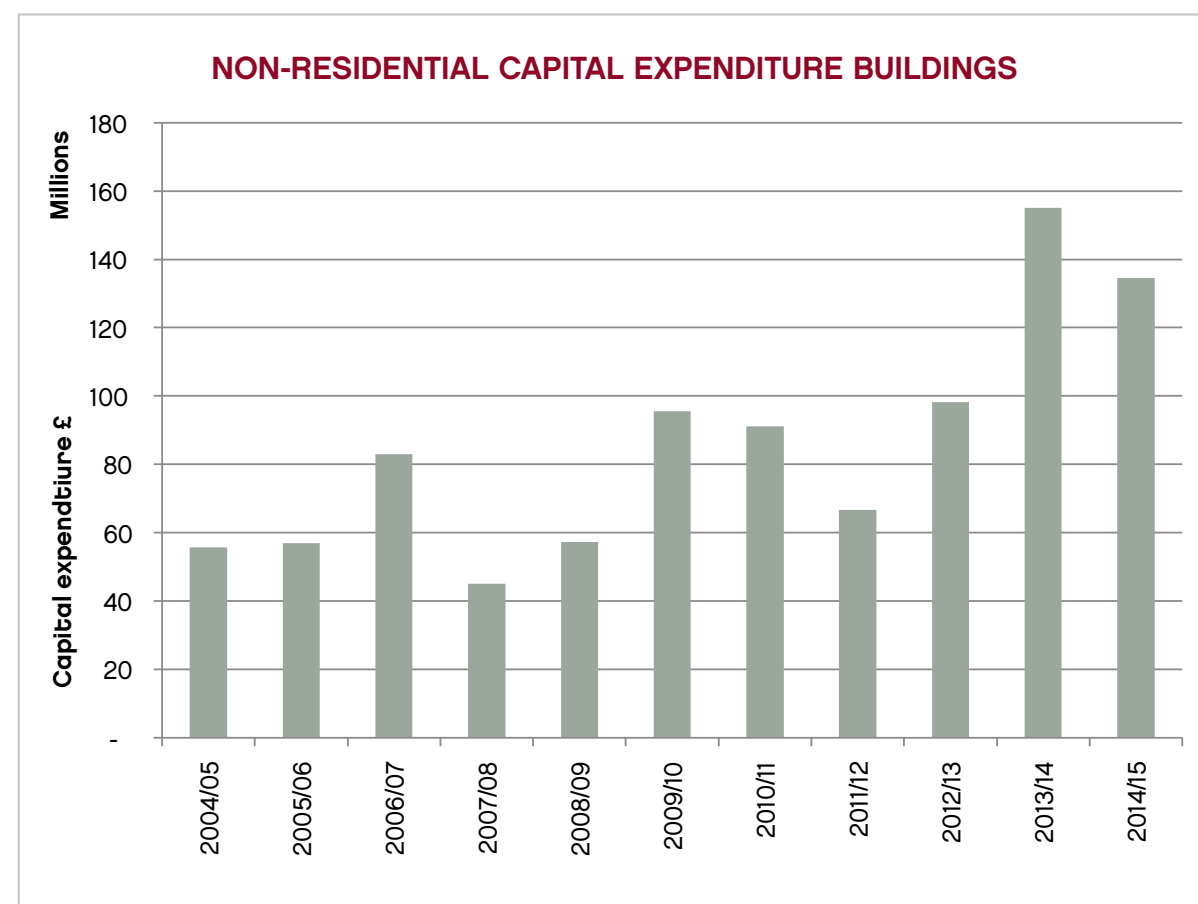
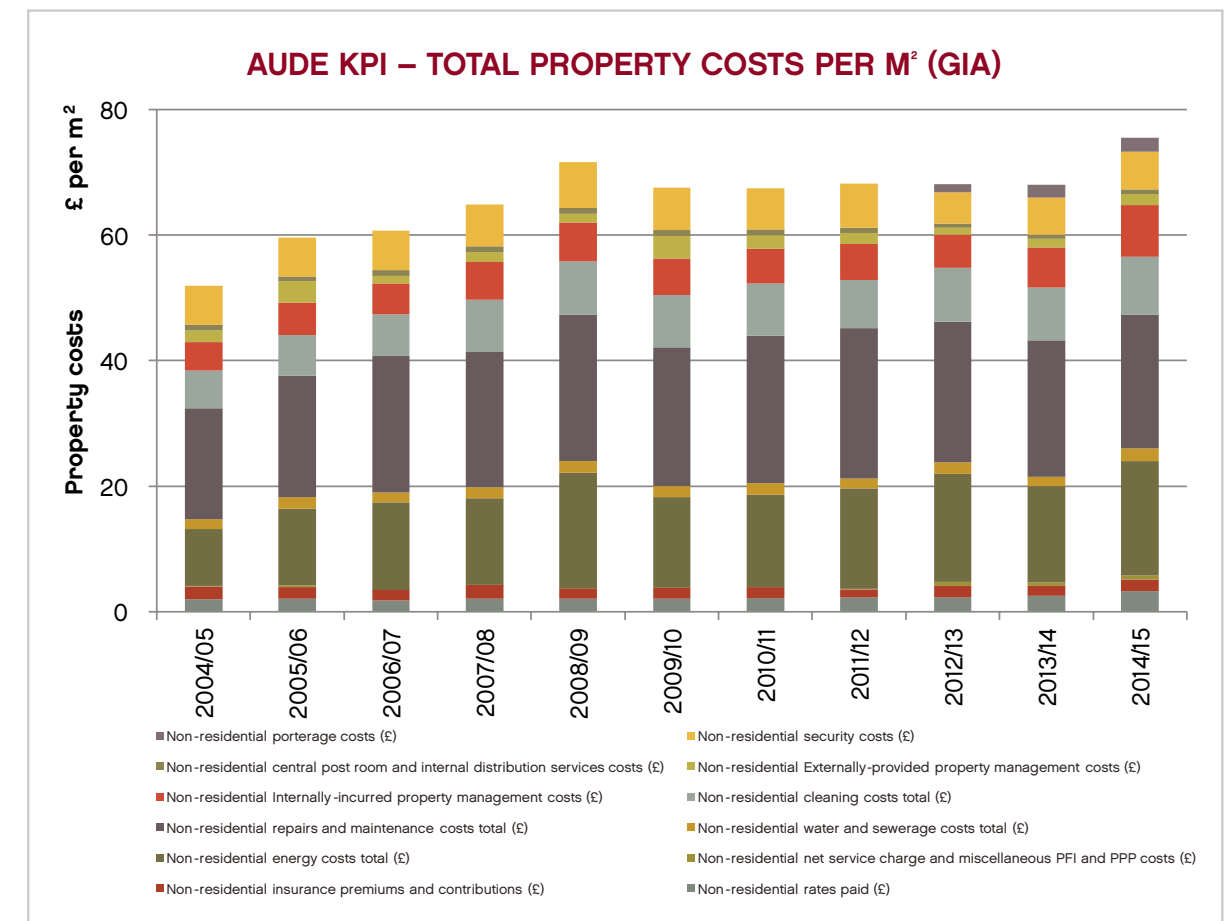
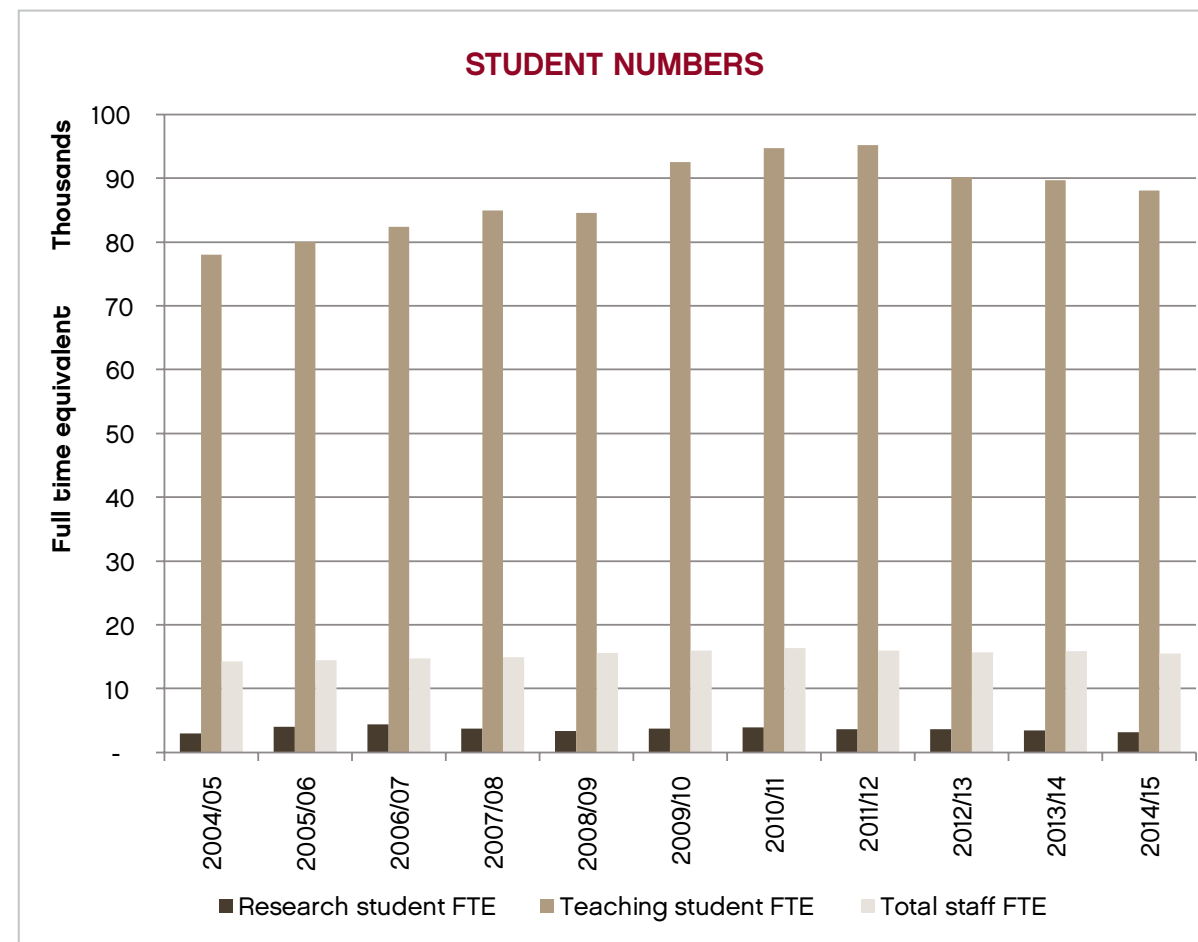
Space utilisation is similar to the UK as a whole being close to 10m<sup>2</sup> per FTE, the change in student numbers since 2011/12 has caused this metric to reduce as student numbers have reduced (without a similar reduction in estate size).

The Welsh HE estate has continued to improve in terms of its condition and functional suitability, showing that the capital expenditure is being put to improvements in the estate.

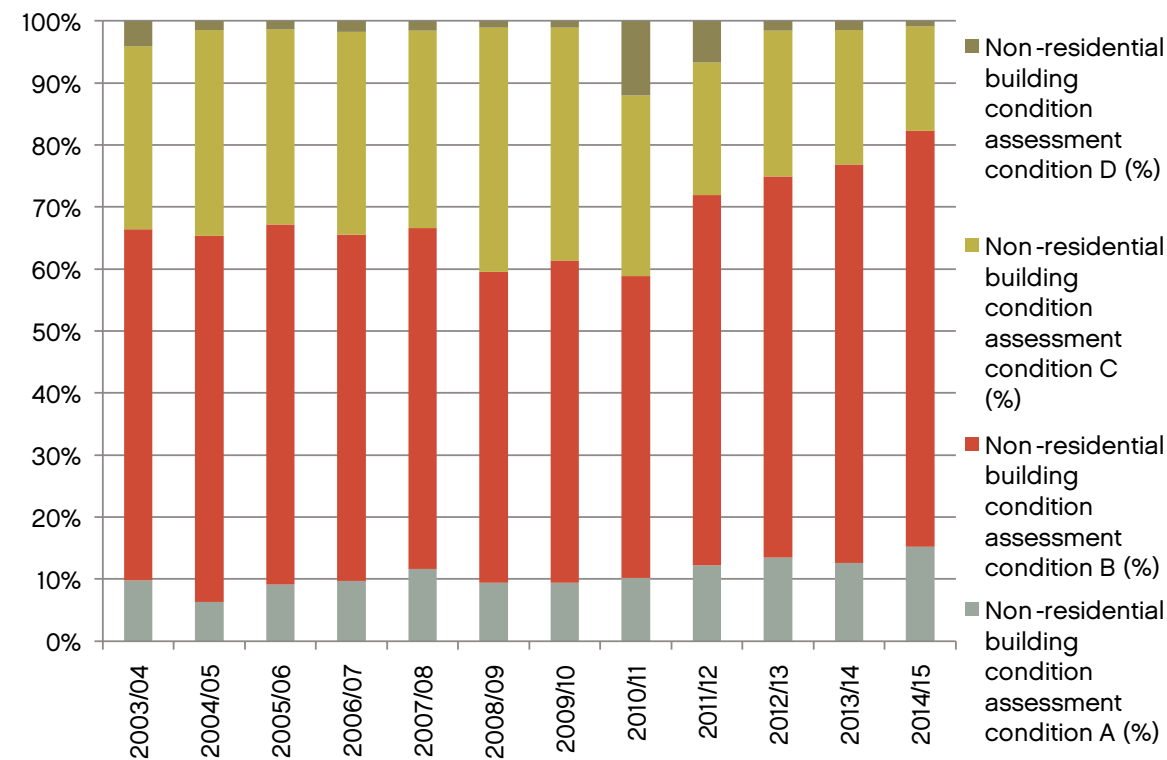
The mean Income per m<sup>2</sup> is lower than the UK mean, which highlights the need for increasing efficiency in space utilisation in the light of lower student numbers.



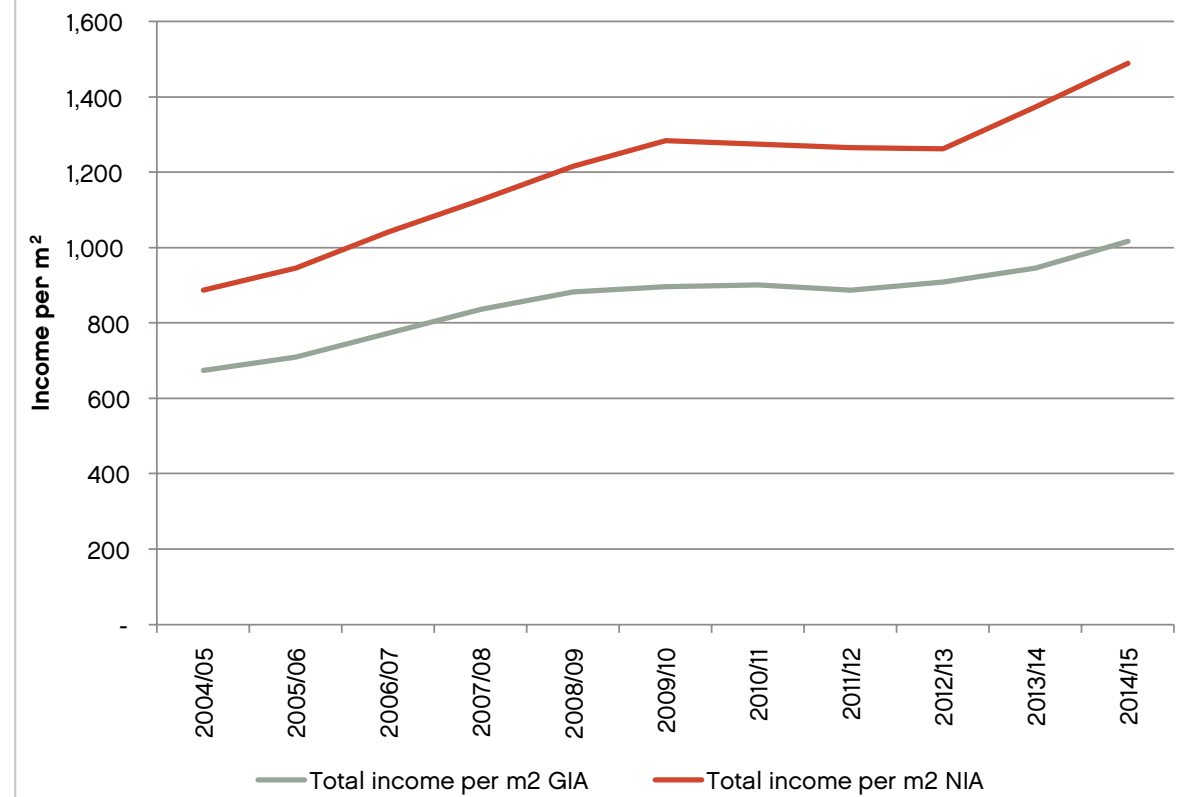




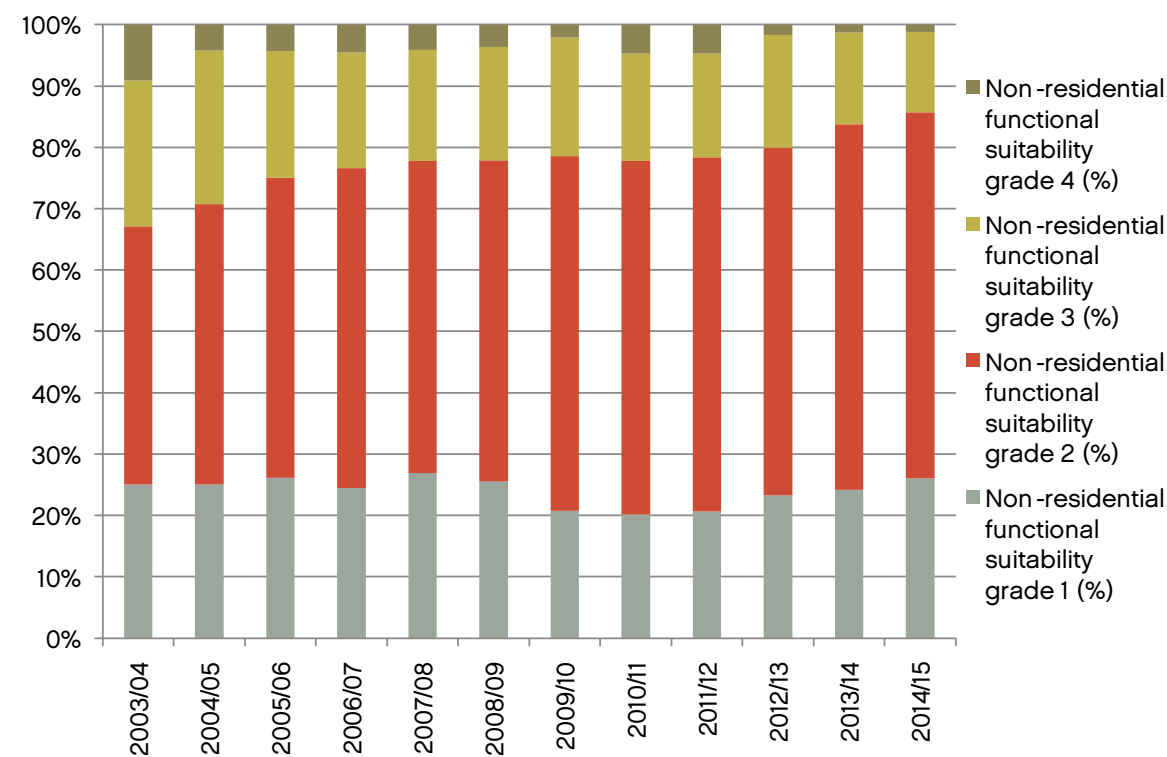
**AUDE KPI – PERCENTAGE OF GIA IN CONDITION A AND B**



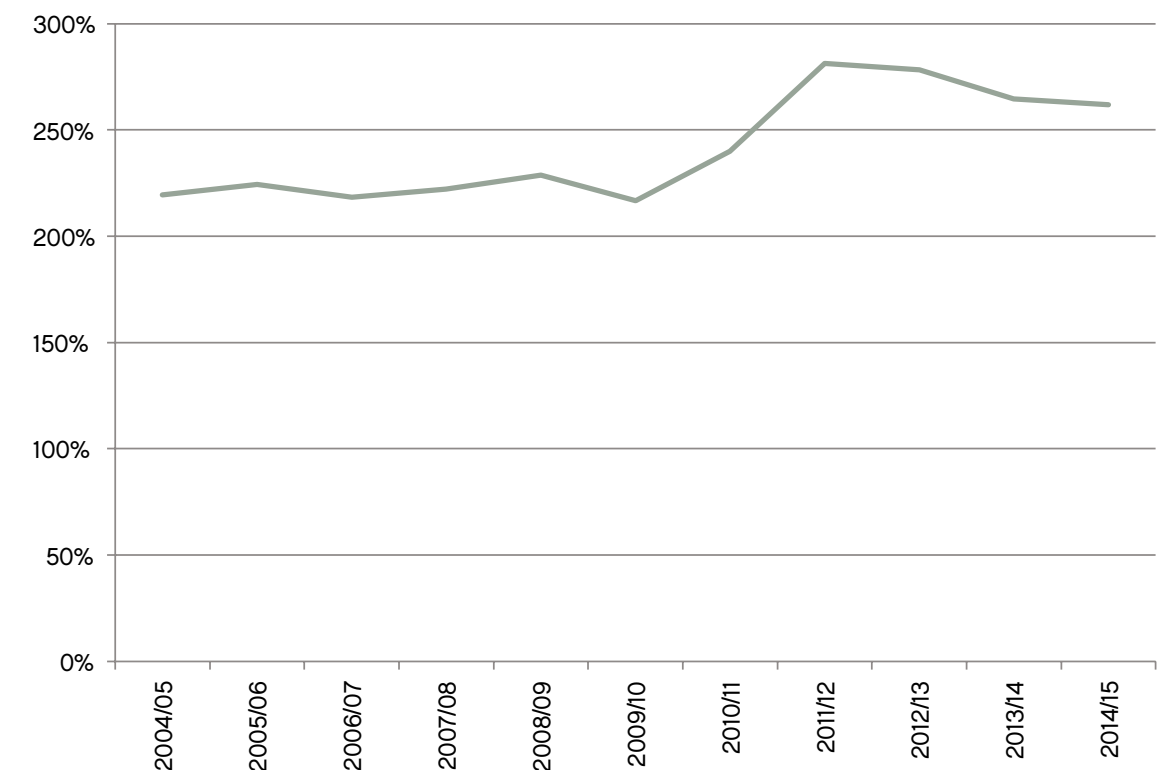
**AUDE KPI – TEACHING AND RESEARCH INCOME PER M<sup>2</sup> (GIA)**



**AUDE KPI – PERCENTAGE OF GIA IN FUNCTIONAL SUITABILITY A AND B**

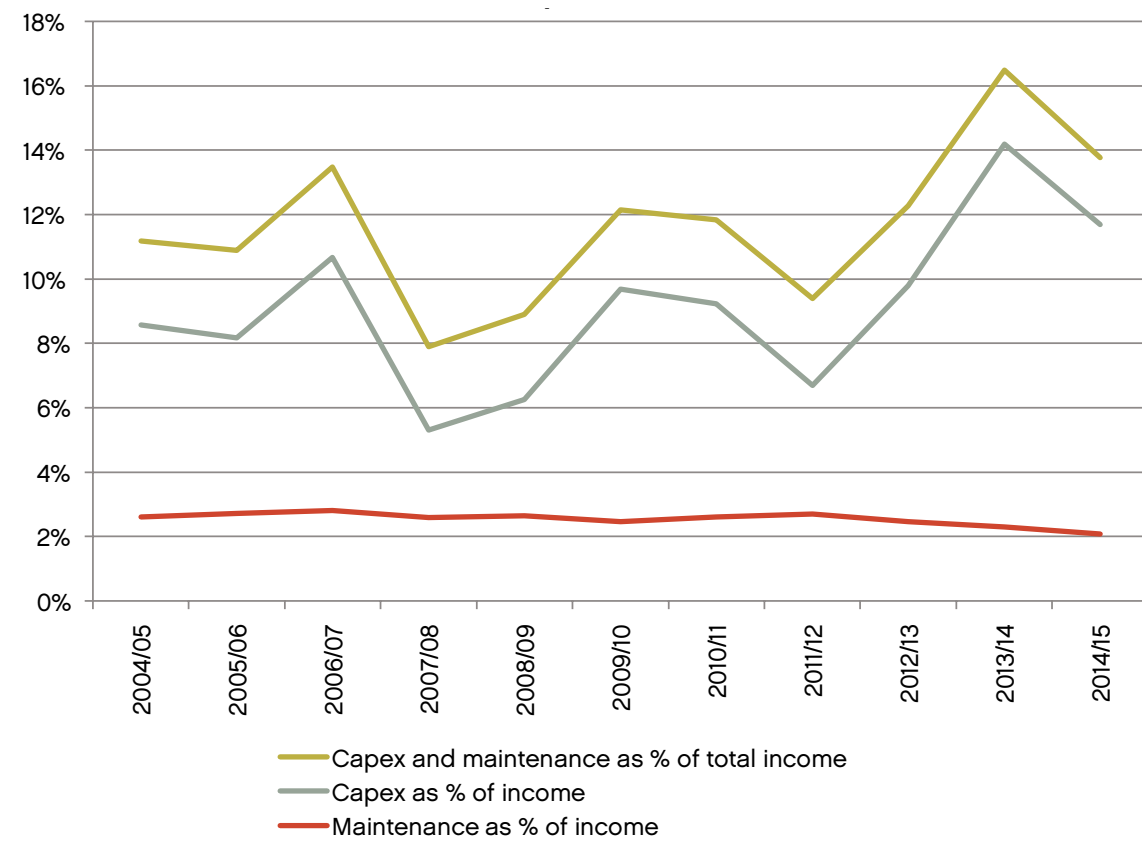


**AUDE KPI – IRV AS PROPORTION OF ACADEMIC INCOME**

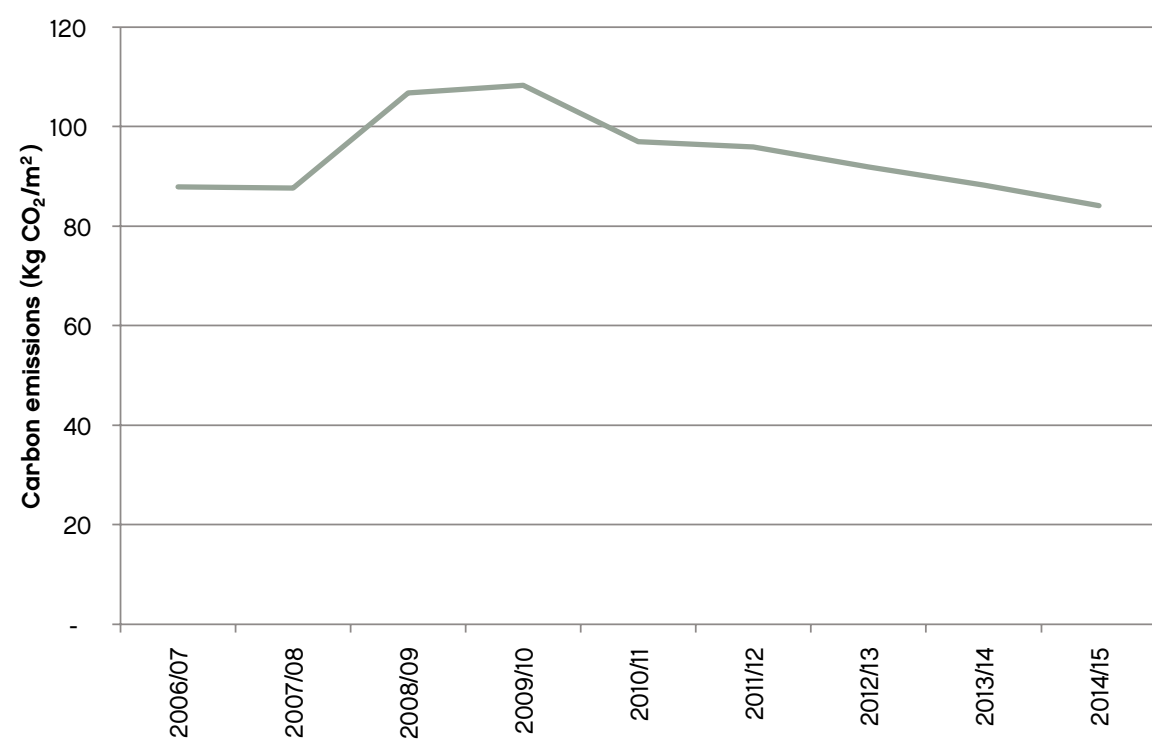




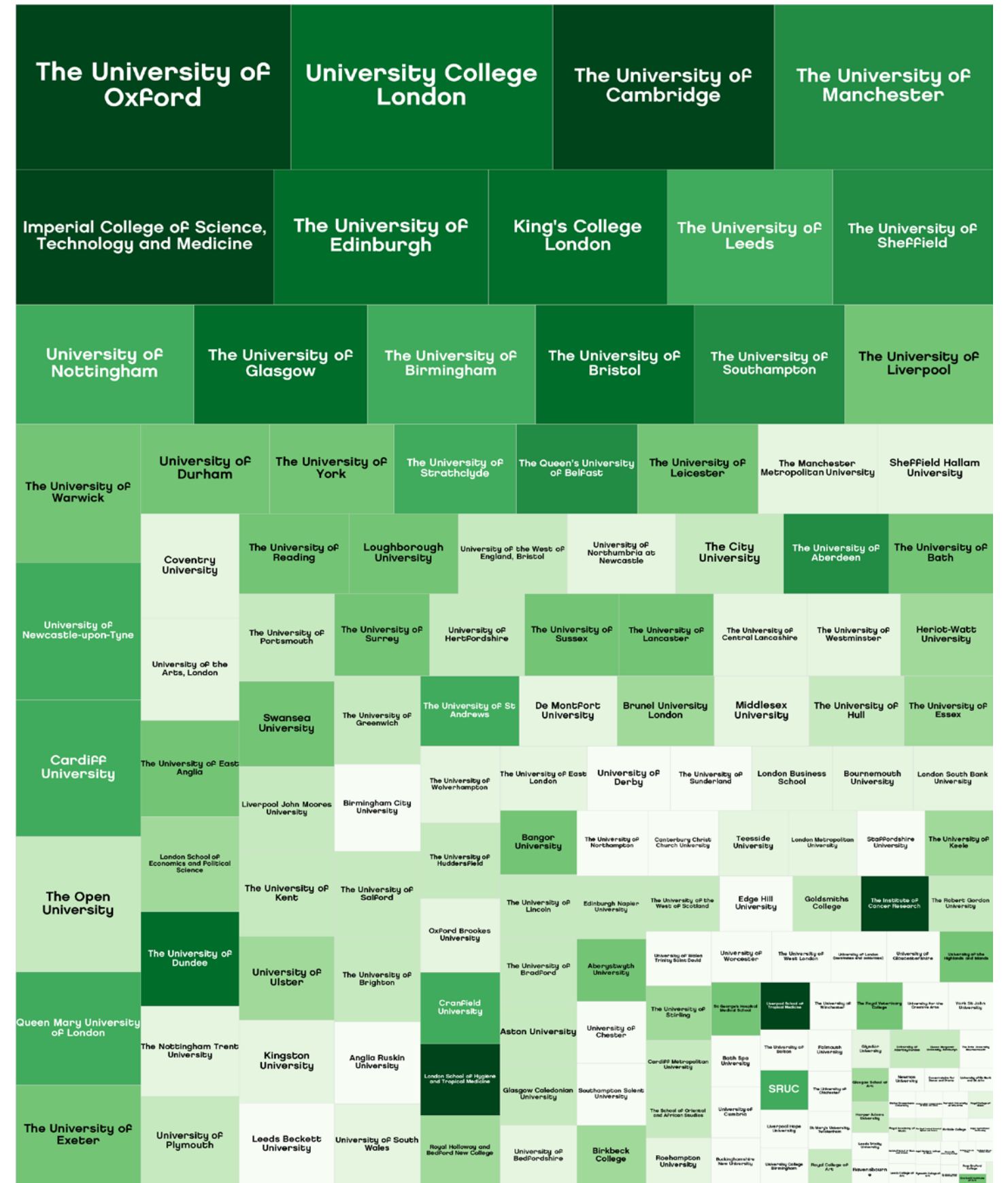
AUDE KPI – MAINTENANCE AND CAPEX AS PERCENTAGE OF ACADEMIC INCOME



AUDE KPI – MAINTENANCE AND CAPEX AS PERCENTAGE OF IRV



## University income



### Academic income of HEIs in the UK

Size of box represents Academic Income. Colour shows % income generated by research.

