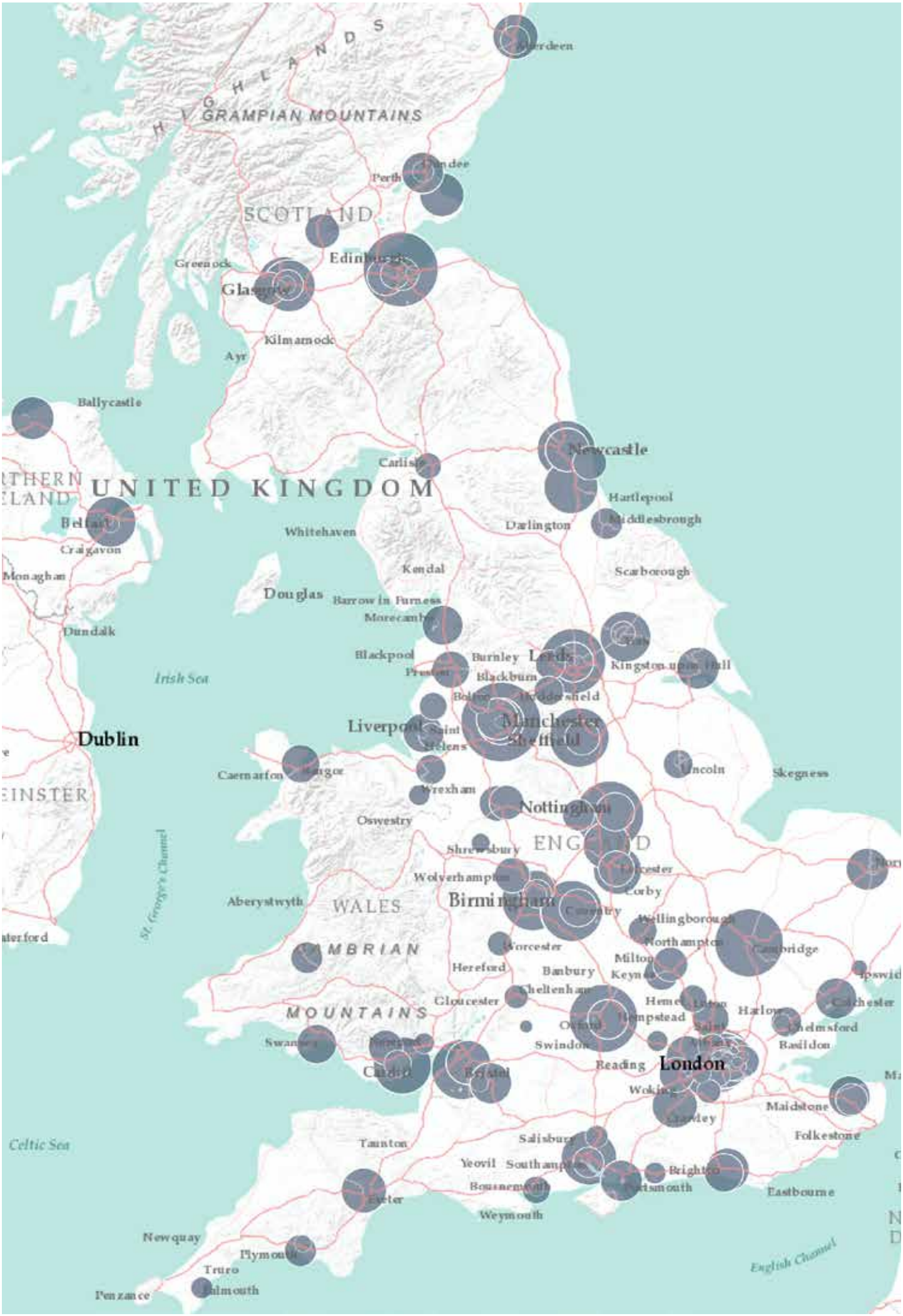
Higher Education estates statistics report 2014

September 2014


HIGHLANDS
GRAMPIAN MOUNTAINS
Aberdeen
Dundee
Perth
SCOTLAND
Edinburgh
Greenock
Glasgow
Kilmarnock
Ayr
Ballycastle
Carlisle
Newcastle
UNITED KINGDOM
Hartlepool
Middlesbrough
Darlington
Whitehaven
Belfast
Craigavon
Monaghan
Kendal
Scarborough
Douglas
Barrow-in-Furness
Morecambe
Dundalk
Blackpool
Burnley
Leeds
Kingston upon Hull
Irish Sea
Blackburn
Liverpool
Manchester
Sheffield
Dublin
Lincoln
Skegness
Caernarfon
Bangor
Wrexham
Nottingham
Oswestry
ENGLAND
Shrewsbury
Leicester
Wolverhampton
Corby
Birmingham
Coventry
Aberystwyth
WALES
Wellingborough
Northampton
Cambridge
Worcester
Milton Keynes
Hereford
Banbury
Cheltenham
Gloucester
Hemel Hempstead
Harlow
Colchester
MOUNTAINS
Oxford
Chelmsford
Swansea
Swindon
Basildon
Reading
London
Cardiff
Bristol
Woking
Maidstone
Crawley
Folkestone
Celtic Sea
Taunton
Salisbury
Yeovil
Southampton
Brighton
Bournemouth
Portsmouth
Eastbourne
Exeter
Weymouth
Newquay
Plymouth
Truro
Falmouth
Penzance
English Channel

Contacts

Association of University Directors of Estates

Compass House
Vision Park
Chivers Way
Histon
Cambridge
CB24 9AD

For report inquiries please contact -

Sue Holmes, AUDE Chair Elect
sholmes@brookes.ac.uk
01865 482772

For media inquiries please contact -

Clare Richardson
clare.richardson@kindredagency.com
0207010 0800

CBRE **Report data written and analysed by Associate Director George Griffith, CBRE Ltd.**
Email: george.griffith@cbre.com Tel: 0117 943 5760

The Association of University Directors of Estates (AUDE) is the membership organisation for university estates and facilities. AUDE supports estates professionals in providing best value, a high quality student and staff experience and to ensure estates are run in a professional, innovative, efficient and effective manner.

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.

Contents

Thank you to University of Manchester, University of Bristol and Oxford Brookes for providing photography for this report.

Foreword


Sir Ian Diamond, Vice-Chancellor
Aberdeen University

The UK has an outstanding higher education sector. Across our diverse group of institutions we provide brilliant education and pathbreaking research, both of which contribute hugely to not only our economy and society but to others across the globe.

The role that our estates and facilities management teams play across our Higher Education Institutions should never be underestimated. University Estates and Facilities are worth nearly £27bn every year and are relevant to 2.4 million members of the British population as in many areas the facilities are accessed by local communities along with students and staff. As well as laboratories, lecture halls and accommodation, we are able to boast impressive learning, teaching and research facilities, social spaces, entertainment venues, sports facilities, restaurants and cafes, theatres, libraries, hospitality and accommodation for start-up companies and new enterprises. The university estate is core to enabling the delivery of the academic mission, so it's key that those who work in the sector make sure they get this right.

That is why the annual Association of University Directors of Estates (AUDE) Estates Management Statistics report is a vital 'state of the nation' and a key management tool allowing our HEIs to see trends, showcase efficiency, examine questions around sustainability and support best practice.

It is remarkable that, whilst voluntary, every UK-wide institution has filled in the EMS data which means we have a robust and complete picture for the entire sector – to my knowledge no other country in the world has an Estates report of this scope published. It is a magnificent base for policy at all levels and I would like to thank and commend AUDE for providing it.

What it shows is that despite half a decade of budget restrictions, estate professionals continue to take care of the sector to meet demands in a challenging , ever changing environment. When a UUK group, under my chairpersonship reports to BIS next year I will be including some of these data and best practice suggestions, not only as exemplars of how well we, as a sector, are performing but to show our hunger to improve even more.

The report shows that, once again in the higher education sector, we manage to scale the twin peaks of excellence and efficiency as we demonstrate that we seek to spend every pound wisely whilst maintaining our quality and global competitiveness.

I trust that you find this report as useful as I have and that it will support you in the important roles that you fulfil as we all continue to strive for excellence in Estates and Facilities.

Sir Ian Diamond
Foreword for AUDE EMS Report 2014

Introduction

The size of the University sector is not something that everyone readily grasps. **The turnover of the sector (£27.3bn)** would put it in 4th place in the FTSE 350 top revenues (against Tesco; £63bn, Vodafone; £38.3bn, SSE; £30.6bn and ahead of Sainsbury's; £23.9bn). The **capital expenditure on estates, excluding residential is £2.0bn** in 2012/13. This is greater than the expenditure on CrossRail (total budget £14.8bn over 9 years between 2009 and 2018). The **revenue costs** of supporting the University estate **is £1.9bn per annum.**

The management of this infrastructure is a complex business and the success of the sector relies upon the skill and expertise of many, including Estates and Facilities professionals.

The sector has seen substantial changes over the last 5 years with tuition fees trebling, income declining in real terms and competition growing. Up to 2010 the sector saw year on year increases in income, greater than inflation; this period has ended and income is declining in real terms. The projection is that this situation is likely to continue which will put even greater pressure on revenue and capital budgets. Student numbers have fallen this year for the first time in many years, however the reasons for this are clearly understood. The clear expectation is that numbers will be up again in September 2014 as the sector responds to this unprecedented change.

The sector has coped with the fact that its income, whilst growing, has not been growing as fast as costs. Institutions have generated surpluses, but these are under significant pressure. To sustain this, costs have been held down to the same level as last year. This despite the increasing inflationary pressures on estates costs, of which energy is one well known example.

The sector has continued to make substantial investment in the estate. The sector invested £2bn in its academic estate (excluding residences) in 2012/13 and is likely to continue at this level for some time. Increasingly this investment is made from internal funding (that is surplus and debt) rather than Government support.

The challenge for the sector is how to respond to this change and, in particular, how AUDE members are at the cornerstone of facilitating this change.

Last year, in an attempt to give an understanding of the size of the UK HEI estate, we said the estate was 7 times the size of Tesco's estate. This year we look at it in the light of NHS estates and the Government's own estate. The NHS is slightly larger (30 million m2 to **the HEI 26million m2**), and the Government's is much smaller (10 million m2). The higher education sector is also as equally evenly distributed across the UK as the NHS, and clearly significantly less London centric than the Government's estate. The economic importance of the sector should not be underestimated especially in many towns and cities where the two largest employers are the Hospital and the University. The impact on the local economy is not just limited to staff wages and student expenditure, but also the construction industry that continues to benefit from the capital expenditure. Universities will continue to be successful; students will want to attend and research will be funded. Increasing competition will drive efficiencies and AUDE members have a fundamental part to play in delivering these efficiencies, so that institutions can continue to invest to provide an environment that is recognised across the world and ultimately for the benefit of staff and students.

AUDE Executive
Andrew Burgess, AUDE Chair (Loughborough)
Sue Holmes (Oxford Brookes)
Ghazwa Alwani-Starr (Roehampton)
Stephen Godber (South Wales)
Alan Burrell (Open)
Andrew May (Hertfordshire)
Keith Lilley (Sheffield)
Colin Davies (Liverpool John Moores)
Karen Plouviez (Stirling)
David Corless (Southampton Solent)
Roger Bond (UEA)
Gary Jebb (Edinburgh)
Stephen Godber (S. Wales)
Bob Wilson (Warwick)

Sourcing: Report prepared using data from HESA, academic year 2012-13.

1 EXECUTIVE SUMMARY

The Sector has seen unprecedented political and economic change with Universities having to deal with and respond to changes that have not been seen on this scale for a generation. Macro changes include:

- Tuition fees have trebled in England with expectations rising as a consequence,
- Income reducing and not increasing by inflation - in effect reducing in real terms,
- Greater competition with Universities being able to recruit students with AAB or ABB grades (English student numbers uncapped in 2015).

The way in which Universities respond to these changes are going to be key to their future success and the contribution from Estates Directors and their teams to the corporate strategy of individual institutions is of upmost importance.

Universities will demand reductions in revenue expenditure, improvement in facilities, growth in commercial business and all of this to be done in a sustainable way that improves the student, staff and visitor experience whilst continuing to serve the communities in which we operate.

Excellent work has been done across the sector to date and a theme of continuous improvement is apparent. This report highlights some of the key trends to date, examples of which include:

a The size of the estate remaining stable with older buildings demolished and new buildings producing more balanced space,

b Investment in the academic estate, (excluding residential) of over £2 billion, a rise of £170m from 2011/12, or 9%,

c Total Property Costs slightly reducing, despite significant upward pressure on the increasing cost of energy and other factors outside the control of Universities,

d Improved income per m^2,

e A reduction in space with efficiencies being introduced and greater utilisation,

f Overall carbon emissions remaining stable, showing the previous upward trend has been halted, and reducing when calculated by FTE,

g Functional suitability and condition of buildings improving and the age of the estate getting younger,

h Increased residential capital expenditure.

However, much work remains and Estates and Facilities Directors should not under estimate the positive role they, and their respective teams, play in responding to this change.

2 THE SECTOR

The University sector (26.6 million m^2 excluding residential space) is comparable in size to the NHS, and is also evenly distributed around the entire of the United Kingdom. It has less of a London weighting than the Government's estate.

The income in the sector increased slightly above the prevailing trend (which had seen income levelling off), this was due to the increase in student fees with research and other income remaining level. The pressure to deliver a healthy surplus continues as costs rise and income remains flat.

Student numbers fell for the first time in many years, although this is widely accepted to be a short term reaction to the imposition of increased fees. Student numbers for next year are expected to return to previous levels with a small increase anticipated.

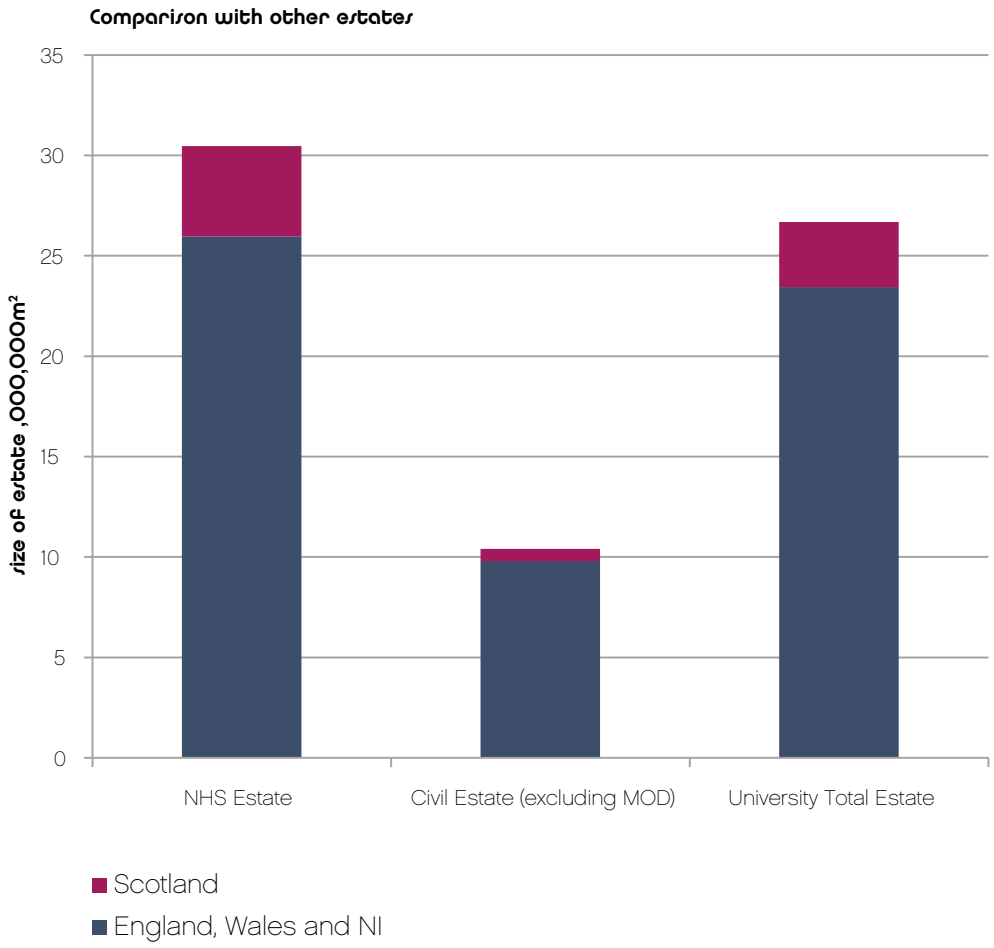
Capital expenditure is increasingly dependent on institutions delivering surpluses (and by increasing debt), and there is a continued demand for institutions to develop their estates; capital investment has remained high.

The University estate has slowly increased in size, however, it has also entered a period of significant improvement and replacement. There are many capital projects which seek to refurbish and replace outdated buildings and this is reflected in the fact that the size of the estate remains relatively stable. Our experience is that buildings are becoming more complex with greater demands and this is examined later.

We also show here how economic activity is closely related to estate size (once we look closely at teaching and research income in particular) and that small or large institutions have estates where efficiency can be compared.

Please note all graphs exclude residential income.

2.1 THE UNIVERSITY SECTOR IN COMPARISON



This data shows the relative size of each of these estates including the NHS, the Government and the University sector with Scotland shown separately.

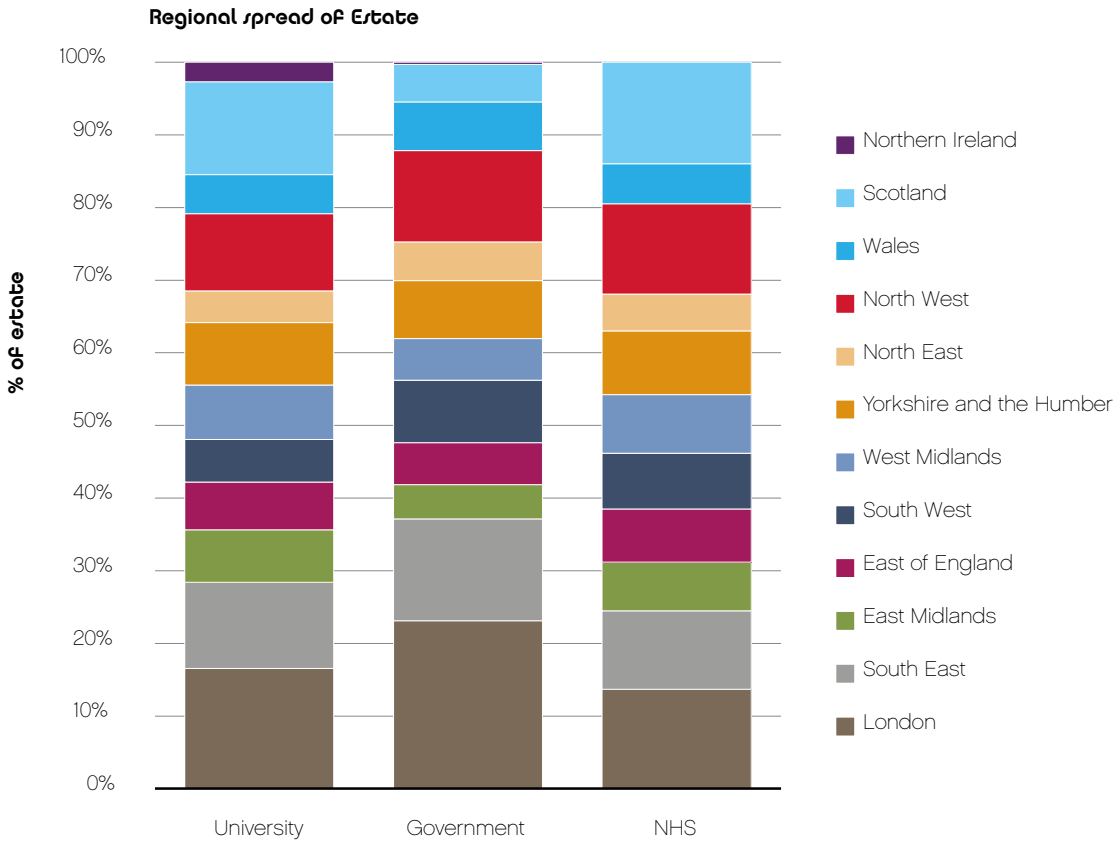
The NHS estate includes all acute hospital trusts, mental health trusts as well as space previously occupied by Primary Care Trusts (which are now variously occupied by other Trusts). It excludes GP premises where these are held by the practices themselves.

The Government estate includes all Central government property but excludes Ministry of Defence operational property (such as Army barracks etc.) and the Prison estate. The estate does not include local government offices.

The University estate includes all types of space including both academic and residential.

The chart shows that the Higher Education estate is nearly as large as the total NHS estate and that both of these are significantly larger than the Government's mandated estate.

2.2 DISTRIBUTION OF ACADEMIC ESTATE BY REGION AND COUNTRY



We have reviewed how the estate for these three large organisations is spread across the country, examining each by Government office regions.

What is clear is that the University estate is spread quite evenly across the country; whilst London is a dominant region, it is not overly dominant given the strength and size of the London economy with 16% of the total estate.

The benefits of the sector are spread widely across the UK; often in many towns the University or HEIs generally may be one of the largest employers in the area.

London and the South East have a particular dominance in all three of the estates, accounting for 28% of the University estate, 37% of Government estate and 30% of the NHS estate. In this regard, both the NHS and the University estate are more regionally orientated than the Government estate.

We have included a section examining Wales and Scotland later on in the report. Scotland, Northern Ireland and Wales account for 20% of teh total UK sector estate.

2.3 UNIVERSITY INCOME

The University sector continues to generate an increasing amount of income.

The largest part of the income comes from teaching activities accounting for over £16bn in 2012/13. Despite a drop in student numbers, the income from teaching has increased over last year as a result of the imposition of increased student fees.

Research income has held relatively stable over the last four years, and has certainly not seen the increases that teaching income has seen.

British Universities Finance Director's Group reports that the sector is as a whole running a 3.5% surplus and that this surplus is increasingly under pressure. Issues cited include cost pressures, pension deficits and risks associated with students numbers as a consequence of greater competition.

The impact of tuition fees has seen an increase in teaching income (notwithstanding the fall in student numbers) however, this has had a number of other impacts. Students are increasingly more 'consumer' focussed and this is requiring a constant assessment of the provision of estates, and this in turn is driving expenditure, both revenue and capital.

Income had been constantly rising until 2009/10; since then income has risen below inflation, meaning that the sector has in real terms reduced in income. With tuition fees not increasing in line with inflation, this trend is set to continue.

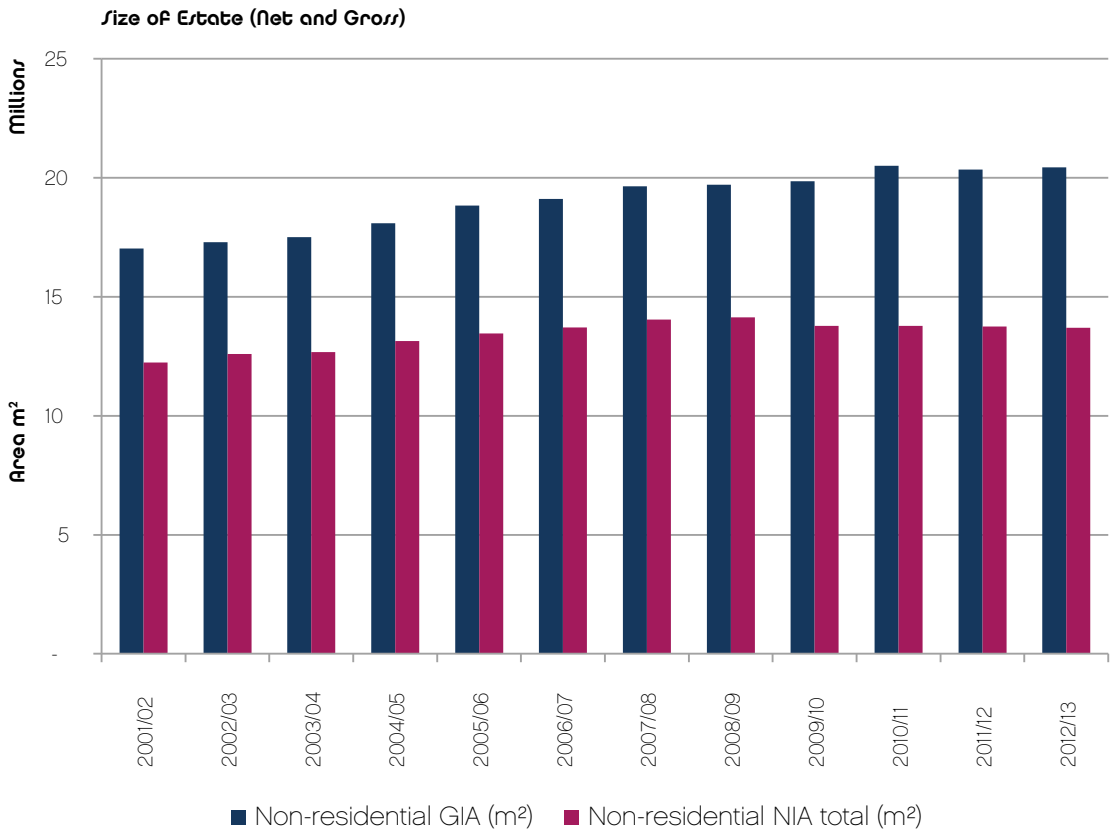
Other income adds substantially to the University sector. We show this separately from teaching and research activity as this income comes from activities that are ancillary to the core function of the University (for example, Cambridge University generates over £300m from its 'examination and assessment services', whilst Oxford University generates an additional £50m from the activities of The Oxford University Press).

2.4 SIZE OF ACADEMIC ESTATE

The size of estate across the UK has remained relatively stable over the last three years. Total gross internal area has remained at around 20.4 million m^2. The net internal area (i.e. the area that generates the activity) remains at 13.7 million m^2 (a net to gross ratio of 67%).

What is also clear is that net internal area has slightly fallen over the last five years (despite a small rise in gross internal area). This is likely to do with a number of reasons including:

- More complex buildings requiring greater plant area (and a lower net to gross ratio)
- Demolition of older buildings, which had a higher net to gross ratio (less balance space such as toilets and primary circulation space)
- Newer buildings providing more balance space in the form of toilets (for statutory reasons)
- Newer buildings requiring additional balance space (such as foyers) to better service teaching accommodation



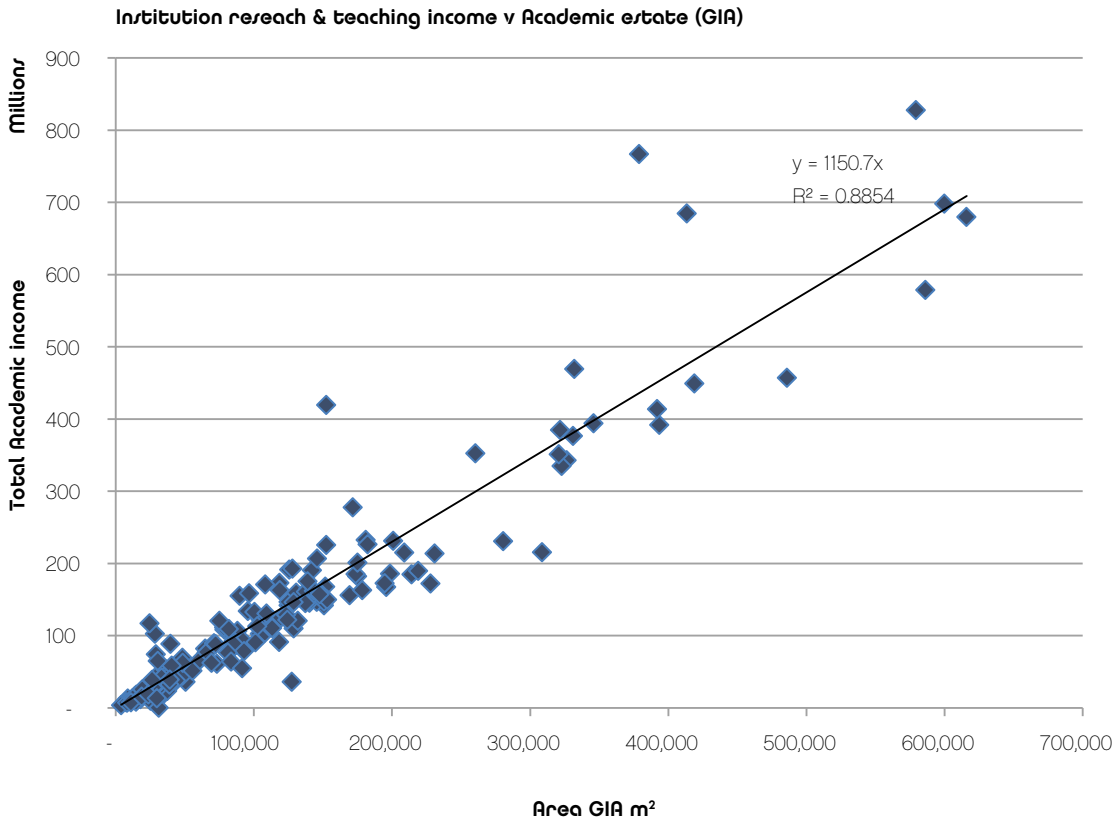
2.5 INSTITUTION INCOME AGAINST ESTATE SIZE

The size and nature of individual institutions varies greatly, here we have plotted the estate size (GIA of academic estate) against the income generated by the institution. It shows the huge range of estate size and income within the sector from the largest estate at somewhere over 600,000m^2.

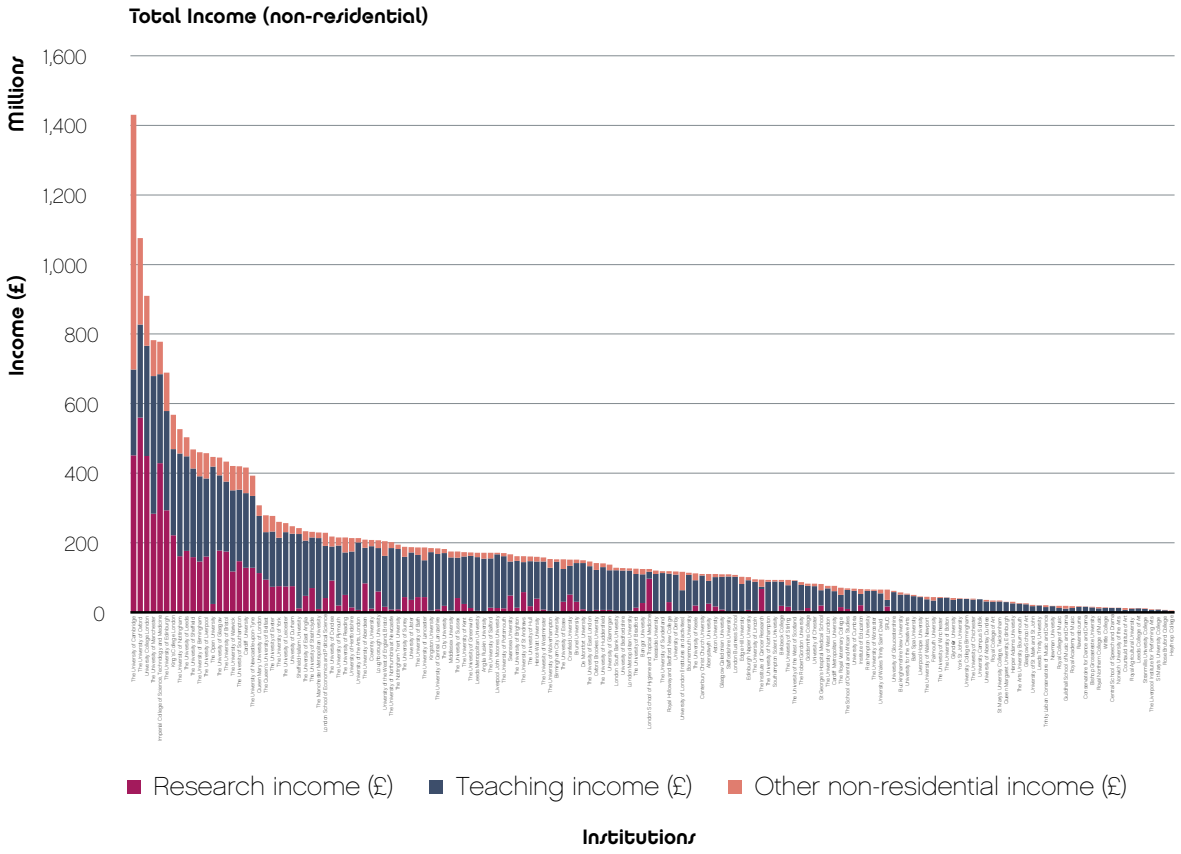
It also shows that there are a large number of institutions which operate with a much smaller estate, the majority of institutions have less than 200,000m^2.

The chart also shows the huge range in financial size of the institutions. The smallest has an income of around £7m per annum and the largest an income of in excess of £800m generated through teaching and research activity, although most institutions have income of between £100m and £200m.

This shows that there is a correlation between the size of the institution's estate, and the income it generates. However there are a substantial number of institutions which vary from the line of best fit.



2.6 INSTITUTION INCOME



This chart shows the income generated by individual institutions. In general most institutions generate most of their income from teaching and research income. The 15 institutions with the largest 'other' income generate £2,100m from these sources of income, this is the same as the entire rest of the sector's 'other' income.

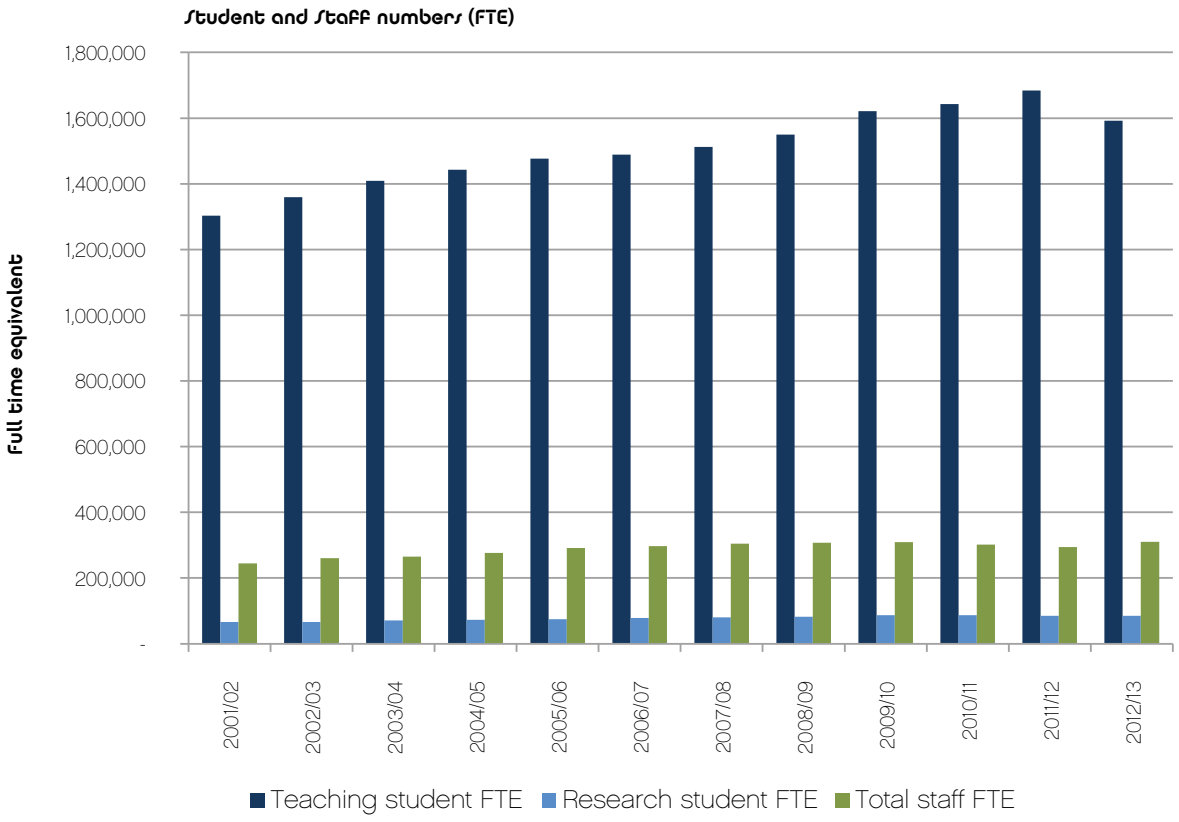
Although we recognise how critical this 'other' income is to the financial stability and success of institutions, we have excluded it from a number of estates related performance measures. This is because the income is not generated in the estate reported in the EMR returns, and as such, ensures that the figures measured give a more accurate representation of the activity of that estate and are not skewed by 'other' income that some insitutions could not reasonably expect to generate.

2.7 STUDENT AND STAFF NUMBERS

Student numbers have been steadily growing over the last decade and currently stand at 1,592,000 taught FTE (down from 1,683,000 in 2011/12) students. At the same time, staff numbers have increased by 5.5% to 310,000. 2012/13 saw a decline in the numbers of taught students which is generally linked to the introduction of higher fees. The increase in students in 2011/12 is thought to be exacerbated by students not taking a gap year, and hence they increased the student population for 2011/12 with the consequence being that starters in 2012/13 were reduced. The anticipation is that student numbers will return to a similar number as 2010/11 next year were there to be no further changes to admissions.

With the removal of the student number cap in 2015, there is the potential for student numbers to increase beyond this level although, the increased competition may impact some institutions adversely. Overseas student numbers are predicted to continue growing, although government policy on immigration may impact non-EU students.

Whilst this represents the position in the whole sector, there are clearly some institutions which are growing in numbers, and there must be other institutions which have seen a reduction in numbers. An increase in students wishing to attend HE will benefit the sector..

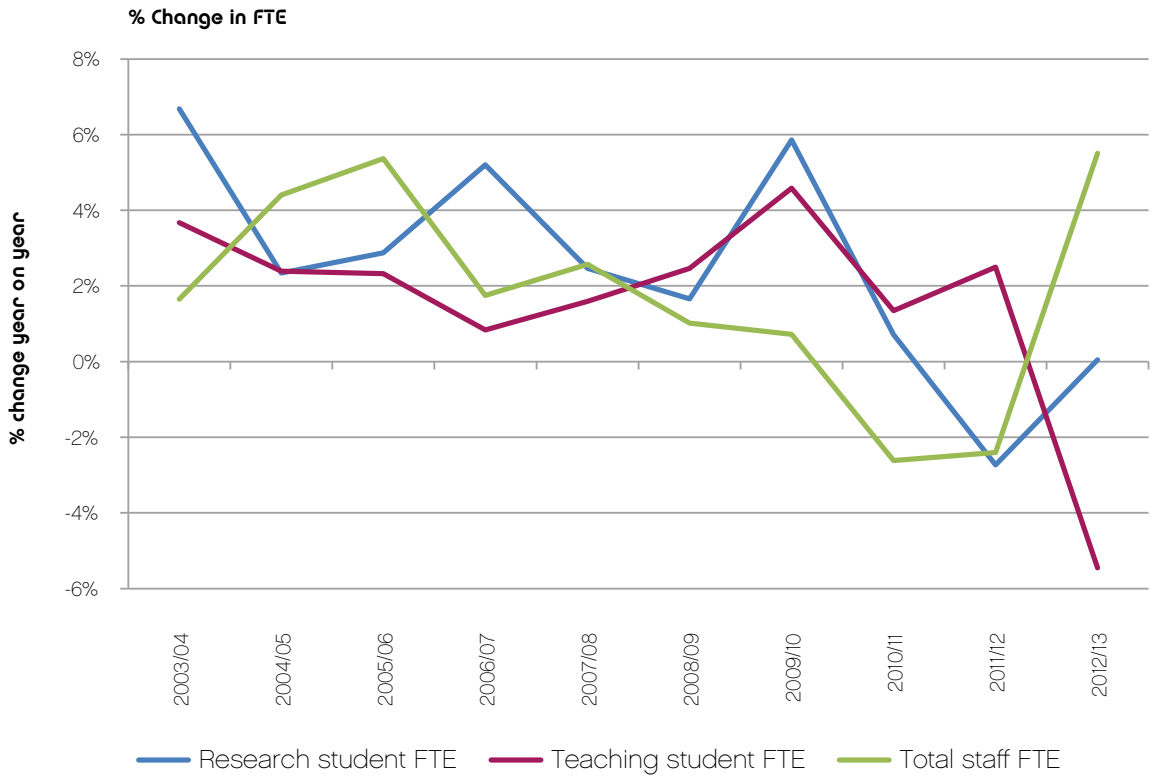


2.8 CHANGE IN STUDENT AND STAFF NUMBERS

This chart shows the percentage year on year change in numbers for research students, taught students and staff numbers.

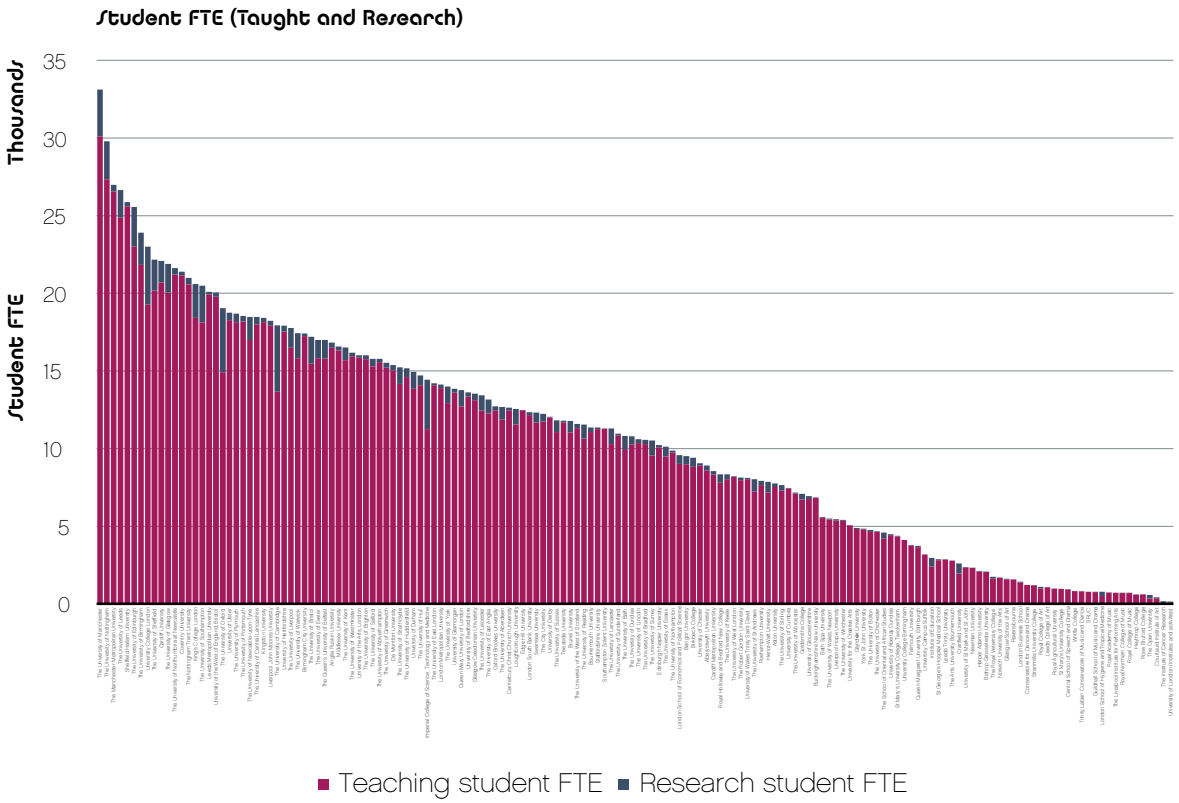
Research students remained the same as last year, after a two year period of reduction. This comes after a period of sustained growth to 2009/10. This is reflected in the fact that income from research has been flat for the last four years.

Staff numbers have increased by 6% on 2011/12. This reverses the previous two years when staff numbers fell by 2% per annum. This may be linked to student expectations with rising tuition fees.



2.9 STUDENT NUMBERS

This chart shows the spread of student numbers across the institutions in the UK. The largest institution has over 30,000 students and there are 17 institutions with fewer than 1,000 students. What is an interesting feature is that there isn't a plateau of a typical size for institutions but that there is an even distribution of institutions across the spectrum. It also shows that with few exceptions, by far the largest proportion of an institution's students are taught undergraduates.



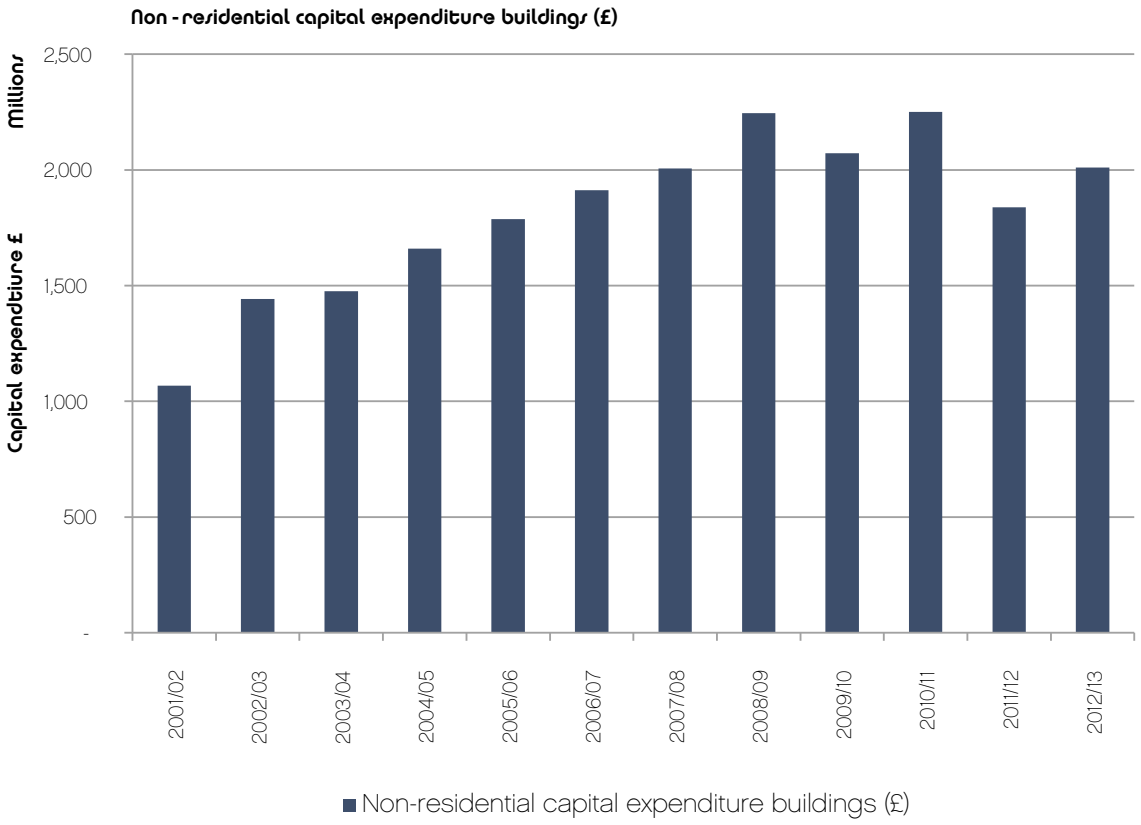
Please note - the figures for the Open University (OU) are not comparable to traditional universities as student numbers only include those studying on site. The OU has 170,000 distance learning students in the UK which are not included in these figures.

2.10 CAPITAL EXPENDITURE

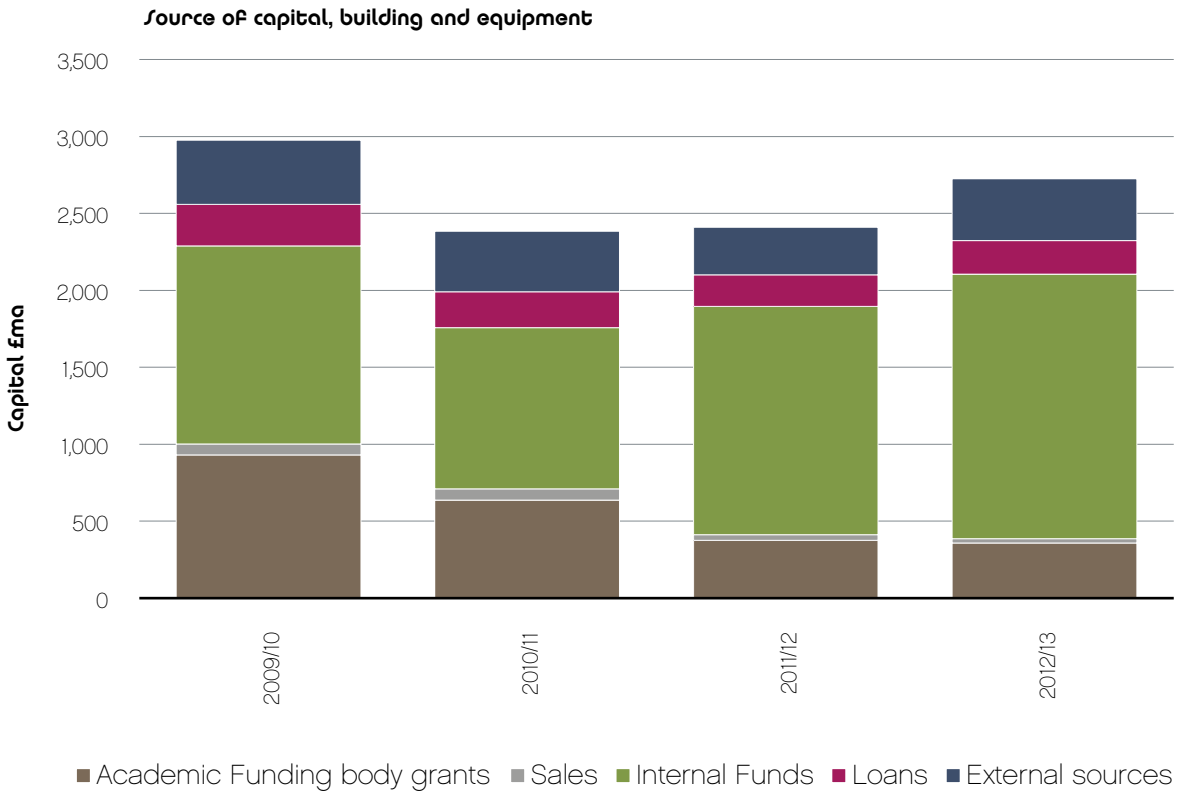
Institutions continue to invest very heavily in their estates. Last year we saw a substantial reduction from the investment levels of 2010/11 and 2007/08, and we wondered if this might be the beginning of a substantial reduction in capital spend. But this appears not to be the case. Investment in the estate has increased to over £2billion in the year. This represents a rise of £170m from 2011/12 or 9%. This is capital investment in the academic estate and excludes any residential expenditure. Capital expenditure includes new build projects as well as significant refurbishments.

Part of this is likely to be driven by the need to provide an outstanding environment to ensure continued recruitment of students. Again it is no doubt linked to student expectations as tuition fees have risen. This could be in new learning buildings (providing social learning space as an adjunct to more traditional learning or library resources), as well as substantial investment in more traditional academic space including teaching and research space.

One point to note is that as the economy recovers, and the property industry improves, there is the potential for tender prices to rise as more construction is undertaken. This will have an impact on the HE sector where either more capital will have to be found, or projects may have to be reduced in scale.



2.11 SOURCES OF CAPITAL FUNDING



This data includes capital expenditure on buildings and equipment.

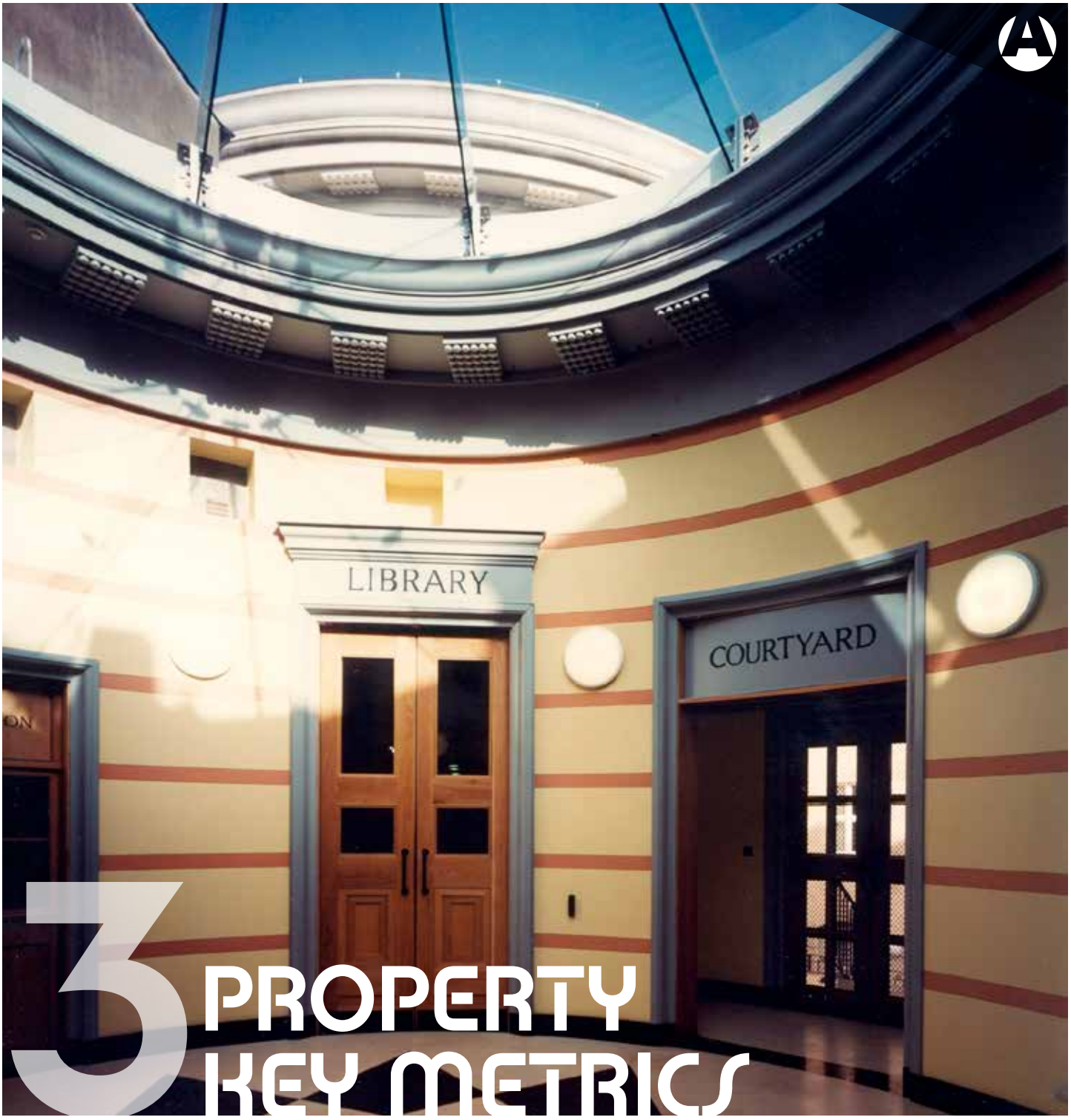
Institutions are increasingly relying on internal funds to pay for their capital programmes. This will include use of surplus, as well as debt. Academic funding body grants have substantially reduced and the general anticipation is that this is unlikely to increase in the near future.

Sales of land and property feature only very marginally as a source of funding.

External sources (such as donations) remains a substantial source of funding, this is likely to be relevant to only a few select institutions where substantial donations are a key part of their funding strategy.

As mentioned previously, given that income is not increasing by inflation and staff costs and other costs are, surplus is under significant pressure. Debt has substantially increased within the sector (however, from a relatively low base given institutions historic reluctance to borrow) for a number of reasons, not least the relatively cheap cost of debt. Universities have also entered the bond market to finance capital expenditure. This is a result of the good covenant that universities are seen to have. However, rules for borrowing are changing (not least with the changing in lease accounting treatment), and this, along with the inevitable increase in the cost of debt, may well have an impact on the levels of debt in the sector.

A cautious view would be that these sorts of levels of capital expenditure are only likely to continue in the short term, with a likely reduction both as surplus generation becomes more difficult, money becomes more expensive and regulation limits the debt individual institutions can take on.



3 PROPERTY KEY METRICS

The sector has a wealth of information to hand to help understand its performance. AUDE has been developing some key metrics to help institutions understand how well they are performing both within the sector overall, and within an appropriate peer group.

The list of AUDE's guide key performance indicators are included in the appendix and a number of the key measures are included here.

The metrics analysed here include all institutions. Institutions should ensure that they work with an appropriate peer group when examining their performance in detail, or set targets for improvement for future years from their own baseline, and that the right data is used. HEFCE have used, and are likely to use in the future, some of these metrics to determine institution performance when assessing capital funding.

Please note all graphs exclude residential income.

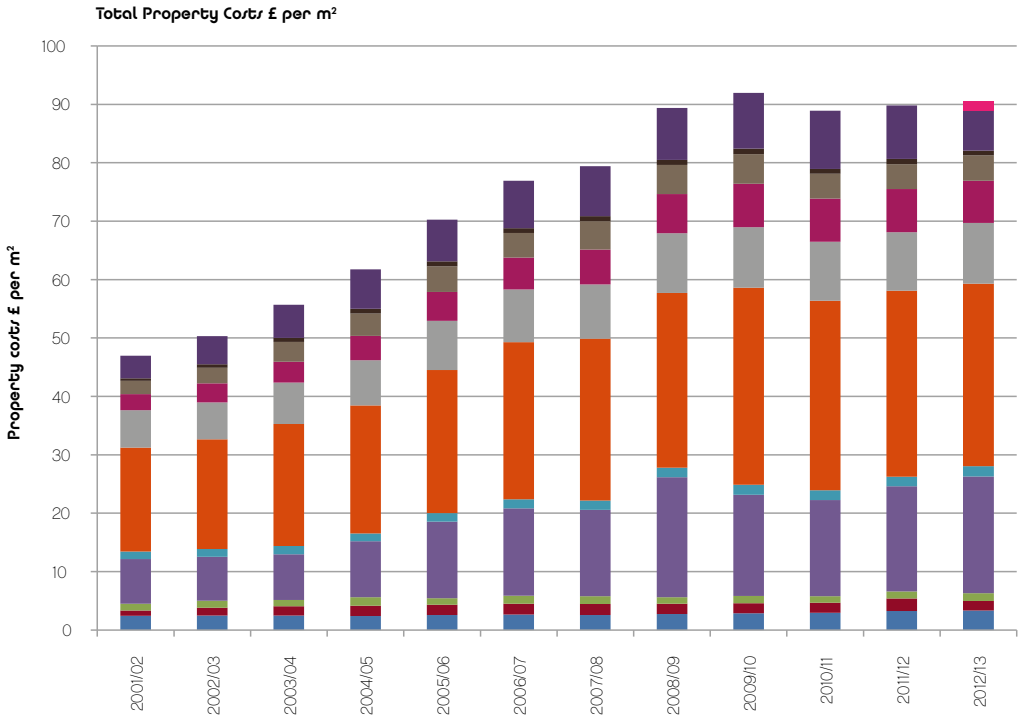
3.1 TOTAL PROPERTY COSTS PER M²

We have updated Total Property Costs to include both security costs and portering (including mail and internal distribution). As with last year, we have excluded Rateable Value. The costs used are ones that would typically be within the management of a typical Estate and Facilities Directorate. They are also all of what would be termed Hard and Soft Facilities Management costs.

As last year, we continue to see that the total property costs per m² have remained at about the same level (£90 per m² GIA). This is a sterling effort from the sector as cost pressures have all been upwards. This has come from the increasing costs of imported materials, the increasing costs of energy, the increasing requirement for the provision of a quality learning environment and the increasing use of space.

This is further compounded by the fact that a significant number of these cost areas have significant cost factors that are outside the control of the Estates Director. Costs such as Energy are very dependent upon the weather and the supply price. Management experience can ensure decent purchasing, and the implementation of energy saving initiatives, but nothing can prevent costs associated with cold winters and hot summers! Also, a significant amount of maintenance costs are associated with routine testing and replacement; as buildings get more complex, the need for this rises, and is driven by the buildings' needs.

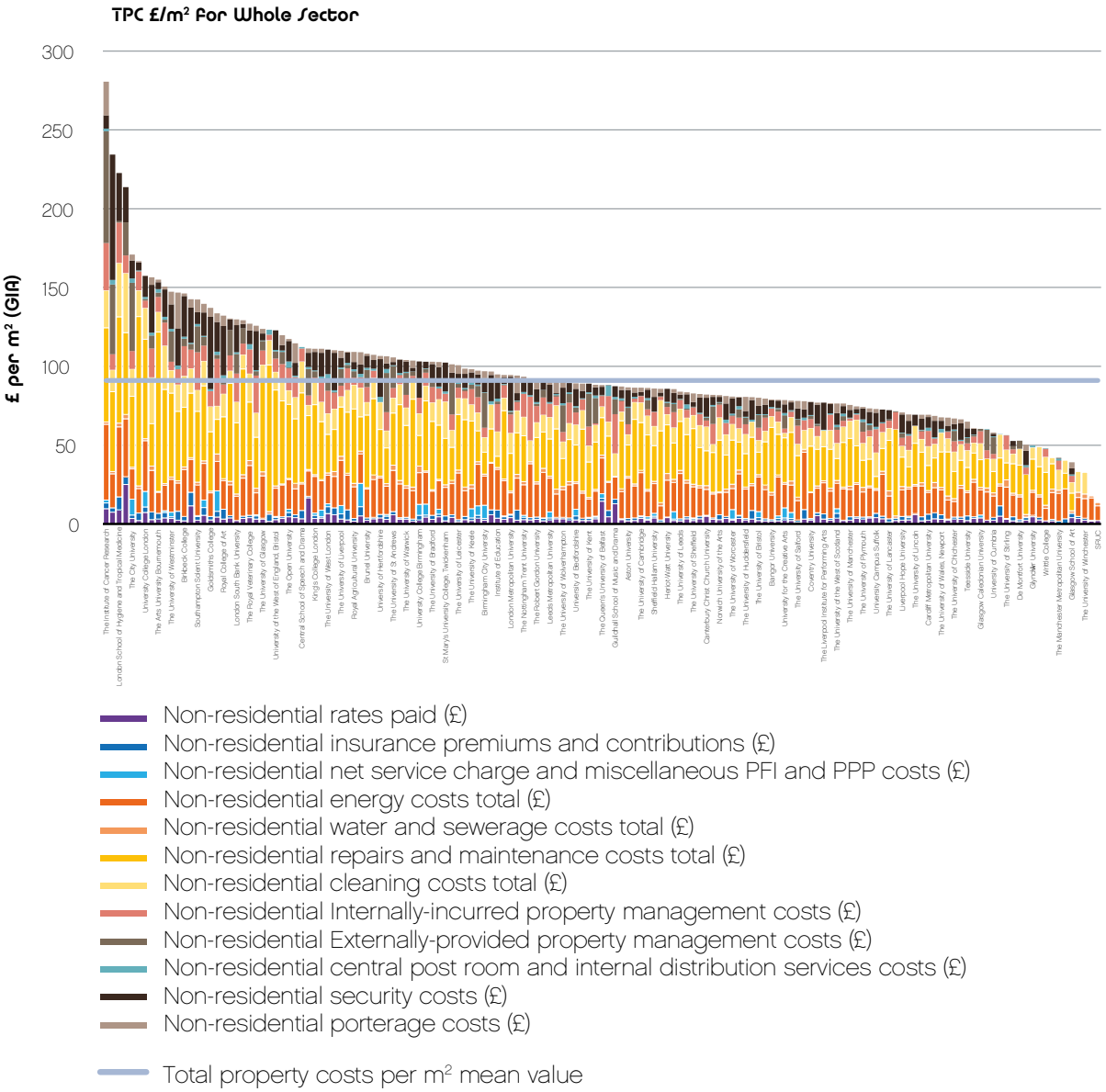
Given these upward pressures on some costs, there has been a greater downward pressure applied in the institutions to areas where influence can be made. This typically includes soft FM costs such as cleaning, security, waste and grounds maintenance.



3.2 TOTAL PROPERTY COSTS PER M²

This chart shows the spread of Total Property Costs across all institutions in the sector. What it shows is that, notwithstanding some significantly high costs, the bulk of institutions have very similar property costs that don't vary far from the mean of £90 per m².

Some institutions do have very high costs; these typically are associated with very specialist institutions typically in Central London. It may be that a significant rental cost is included, or that certain FM services are provided in a different way.

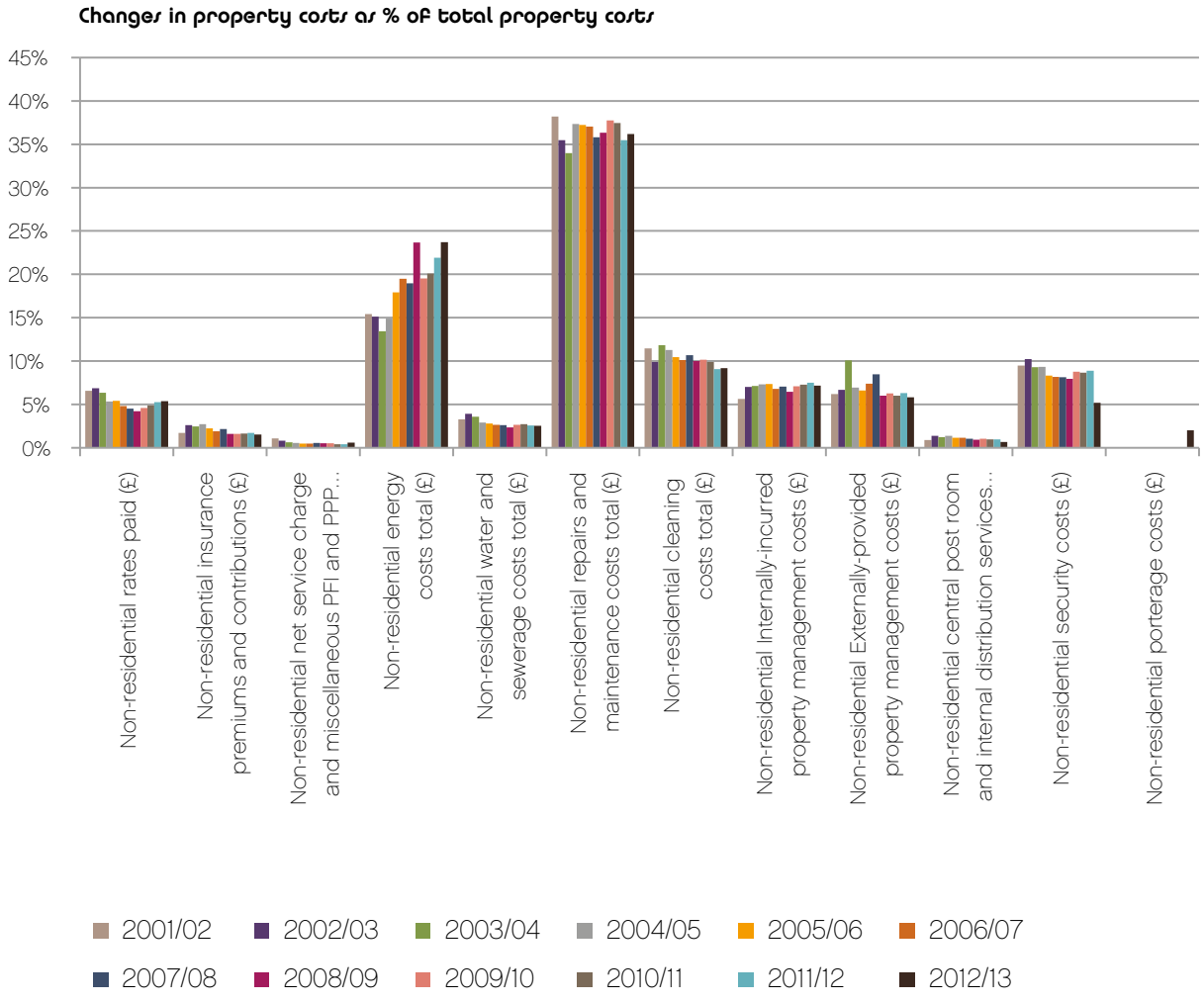


3.3 CHANGES IN PROPERTY COSTS

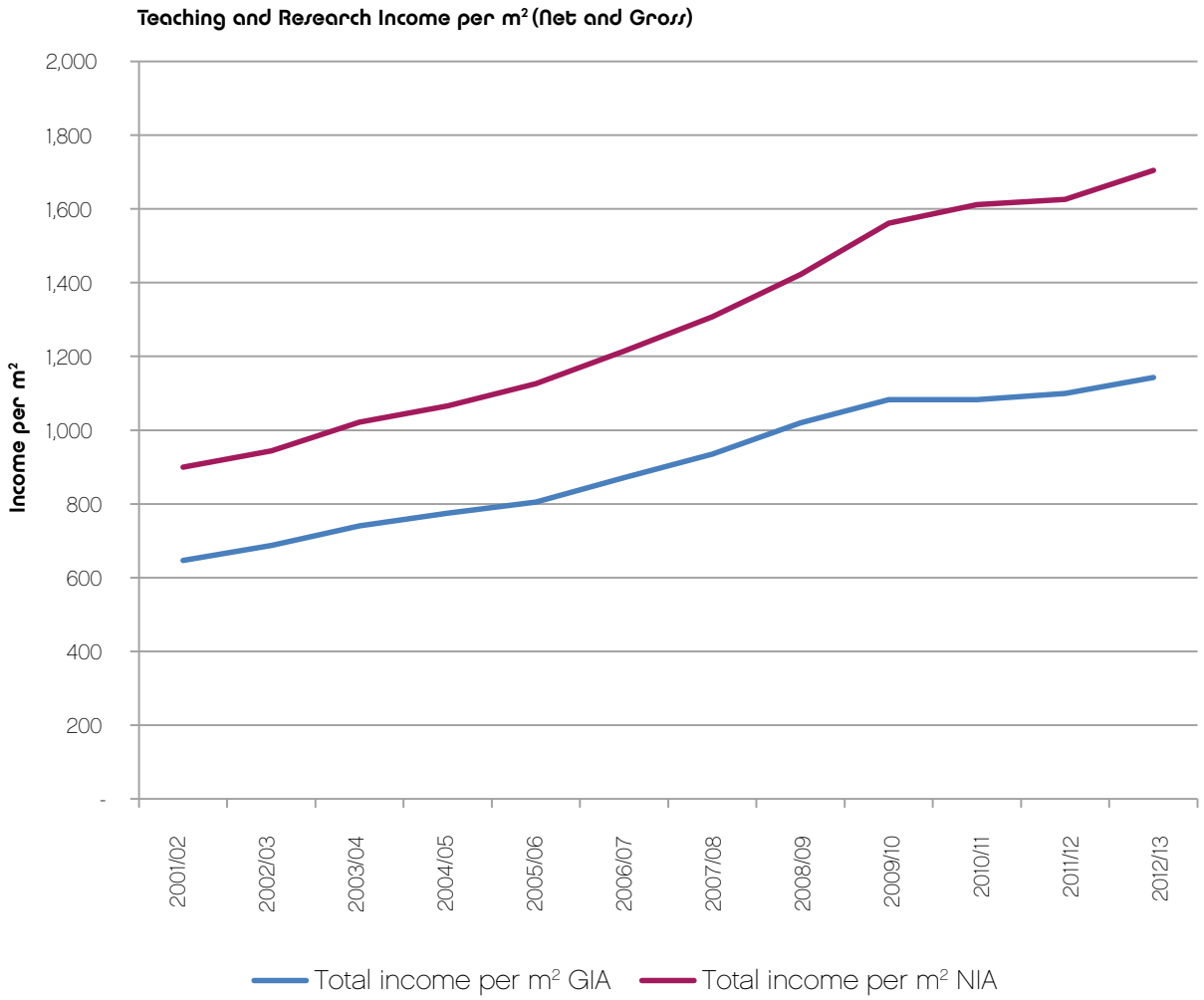
This chart shows the percentage of the total property costs associated with each different cost area and how it has changed over time.

It is clear how energy has increased in dominance of the total property budget, up to over 22% of total budget (against a low of less than 15%). As a consequence other areas have reduced, although internal management costs have formed an increasing percentage of total costs. Soft FM costs such as cleaning have reduced as a percentage.

It is worth noting that non-domestic rating forms a very small part of the institution's property costs for virtually all institutions. Most institutions (with the exception of those in Northern Ireland) benefit from the ability to claim 'charitable relief' amounting to 80% on their rates bills. This is a substantial saving against private sector property holdings.



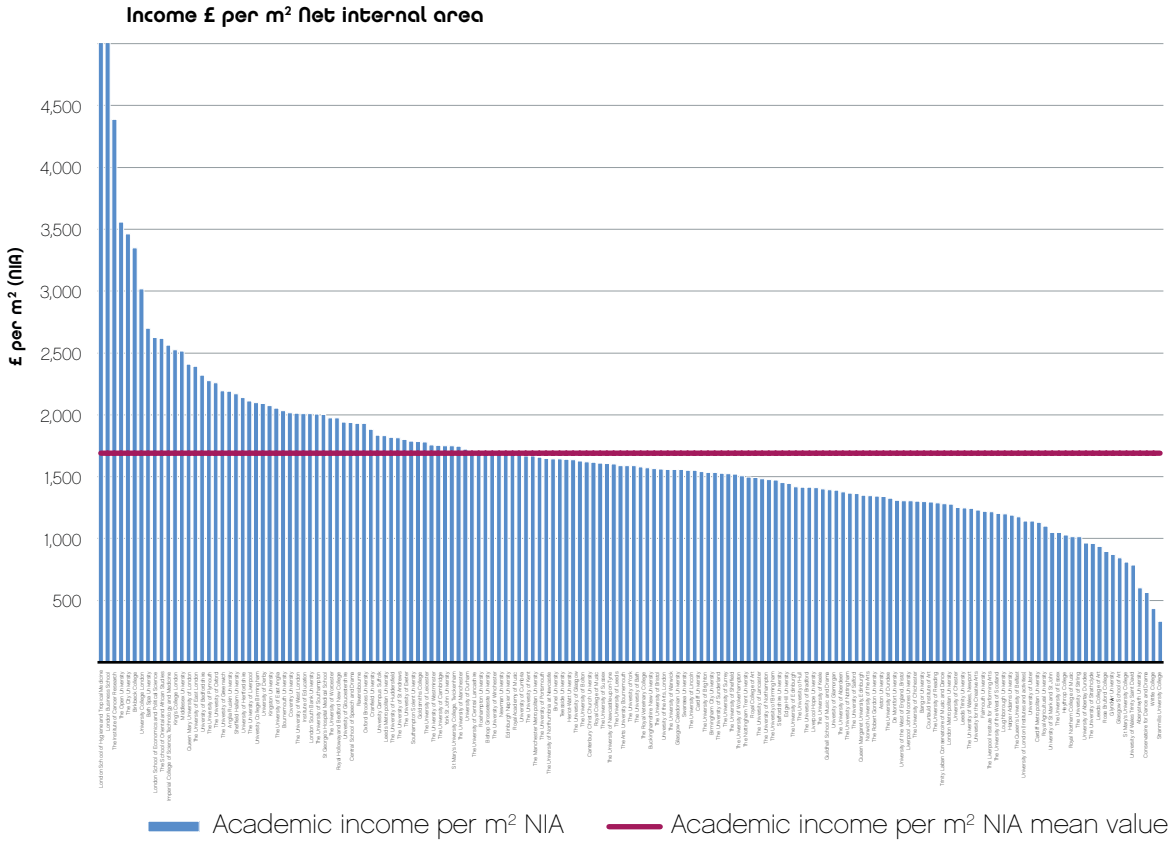
3.4 INCOME PER M²



This chart shows the total of Teaching and Research income per m² and is a fair representation of the increasing efficiency of the total estate at undertaking its core functions. For this analysis we have excluded 'other' income (as discussed earlier) using only teaching and research income ensures that the activity undertaken in the University's relevant estate is being measured. Using Net Internal area is the most appropriate measure as this shows how the space that is actually able to be used, is being used to generate economic activity.

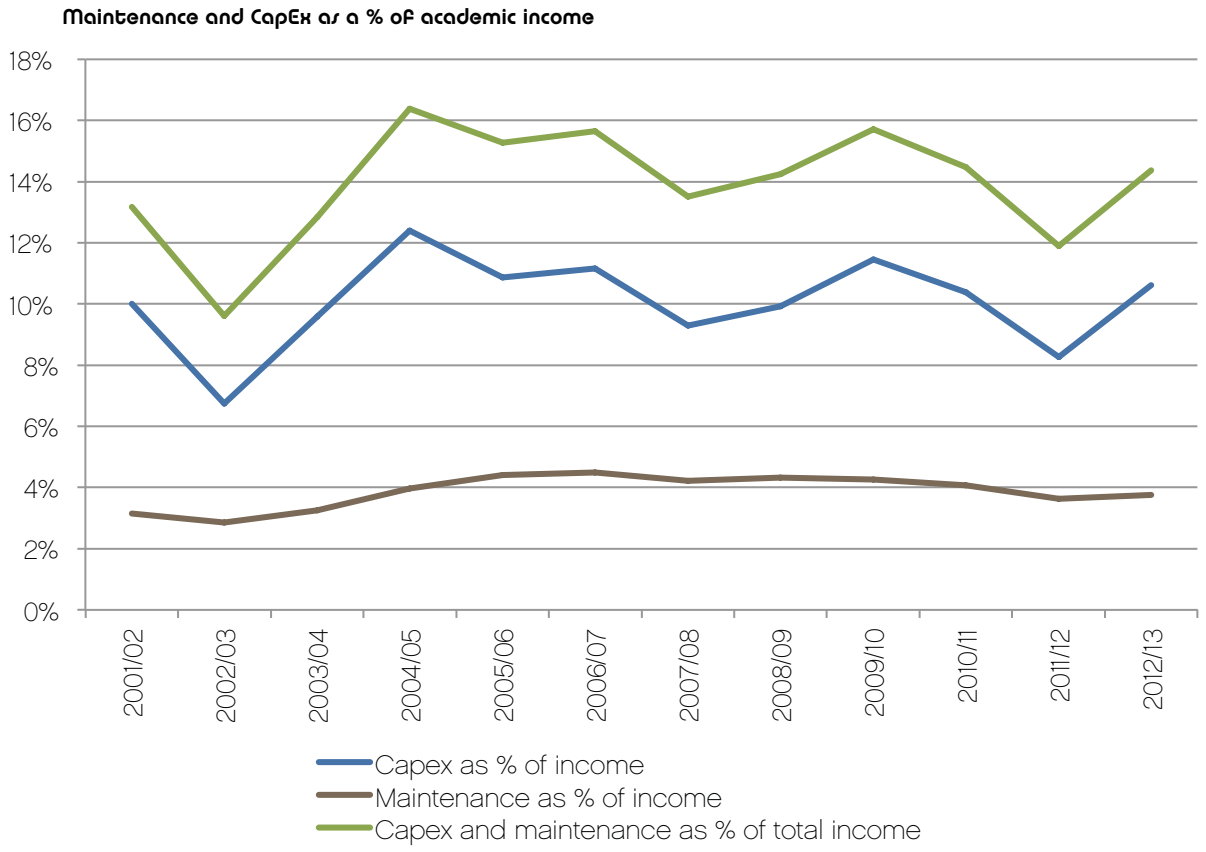
This shows that the estate is being used more efficiently year on year, and in particular the last year has seen a substantial rise in income per m², to £1,705 per m² net internal area. Whilst this can be explained by space being better utilised, part of the explanation could also rest on the fact that buildings may have a less efficient net to gross ratio. This would mean that the net area is being more heavily used, however to achieve this, there is a need for more balance space to support this increased activity. Income generated per m² gross internal area has not increased at such a rate, reflecting this point.

3.5 INCOME PER M²



The chart above shows the distribution of income per m² and how a substantial part of the sector generates between £1,500 and £2,500 per m². This chart includes only teaching and research income (excluding 'other – non-residential income') Institutions should see their figures in the light of these (i.e. excluding 'other' income) to ensure that their aspirational figures are achievable, and not generated by other income that they are unlikely to be able to generate. Very few institutions generate in excess of £3,000 per m², and these are typically specialist institutions.

3.6 INVESTMENT, CAPITAL EXPENDITURE AS % OF INCOME



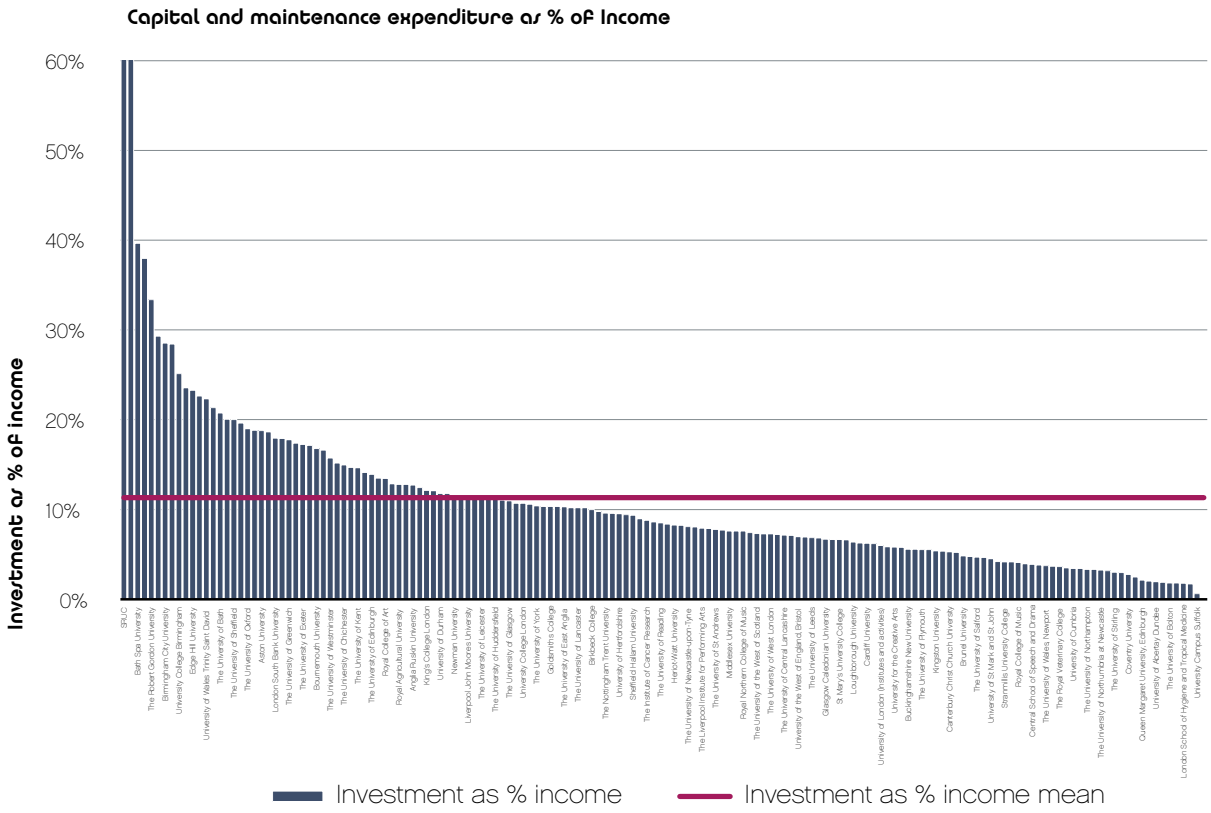
This measure has been developed within the sector to give an understanding about the ongoing investment in the estate. By combining maintenance and capital expenditure (which itself includes new-build and refurbishments), the intention is to understand the total required investment in building, maintaining and refurbishing buildings, reflecting the life-cycle of the buildings.

Whilst there is no proven minimum required to manage the lifecycle issues of buildings, this metric enables institutions to compare their investment against other institutions based on the percentage of the total income that other institutions commit to estates lifecycle issues.

As a percentage of total income, it has been relatively stable at around 14% until 2010, but has seen a reduction as income increases and capital expenditure has reduced. Whether it is possible for institutions to invest as much as 14% of income in their estates in future will depend on the availability of capital as well as the need to continue investing at this level.

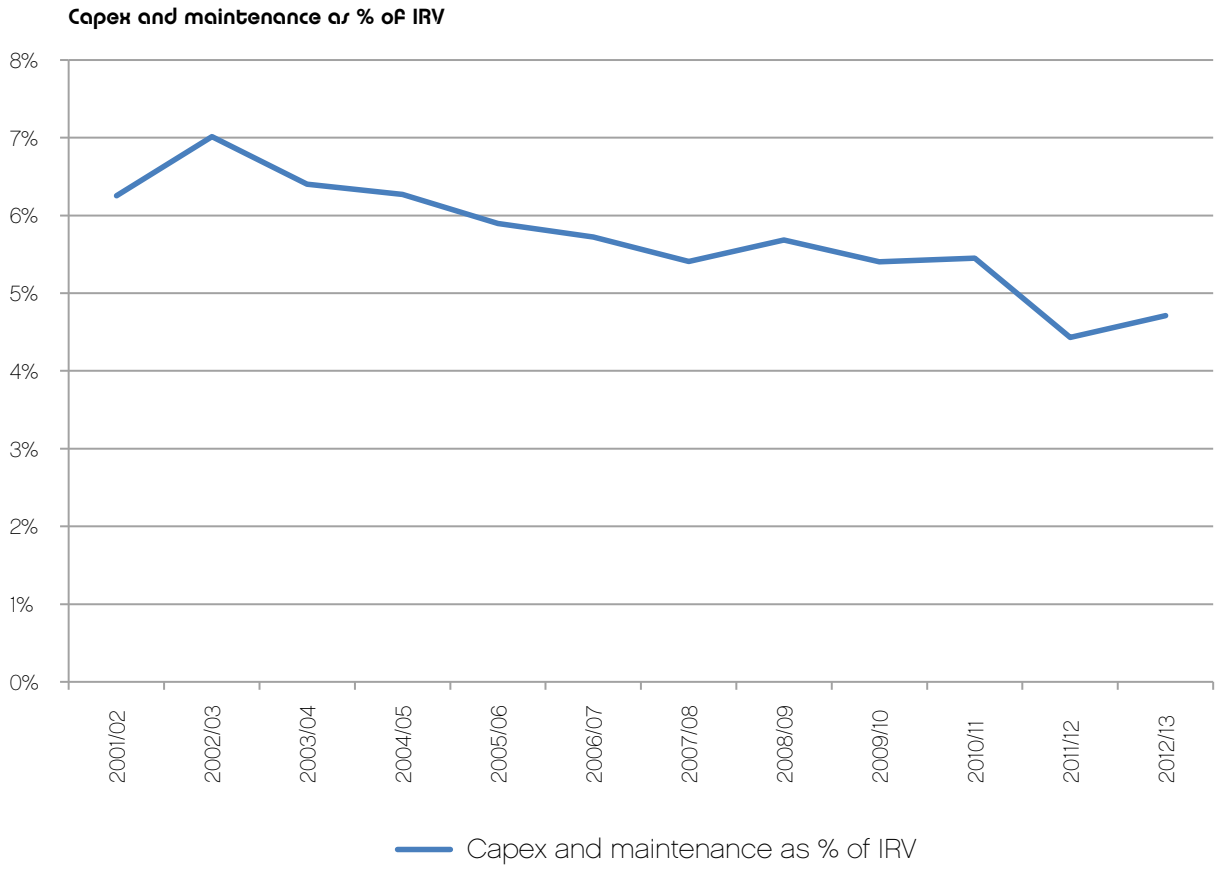
Recently it has fallen, and this is explained by the reduction in capital expenditure seen in the last two years, as well as the reduction in maintenance expenditure. This was also occurring in two years (2010/11 and 2011/12) where institution income was level. Again, this is representative of the pressure to reduce costs to protect surpluses.

The last year has seen a slight increase in the figure due to the increase in capital expenditure, although this is moderated by the fact that income has also risen.



This distribution shows that most institutions capital investment is close to the mean. Most institutions spend between 7 and 15% on their capital and maintenance. Those institutions with significantly high figures (i.e. those over 20%) are likely to be small institutions which are embarking on large projects. The immerciary of these projects means that their investment figures are very high for a short period, followed by a longer period when investment levels are lower. Whilst larger institutions may well undertake larger projects, they are unlikely to be quite such a significant part of their total income.

3.7 CAPITAL EXPENDITURE AS A % OF INSURANCE REPLACEMENT VALUE



Universities do not report their capital value as part of the HESA EMR returns. It is often argued that some form of proxy for Capital Value is required so that it can be used to understand income and expenditure against this proxy value.

Insurance replacement value is a figure that can be used as a proxy for capital value. IRV is usually calculated by using building area and a construction cost multiplier. This varies for different types of buildings depending on the complexity of the construction. Unlike a Depreciated Replacement Cost valuation, IRV does not discount for the age of the building, as it is a replacement value.

Capital expenditure and maintenance has been reducing as a percentage of IRV over the past 10 years. This is despite a substantially increasing capital expenditure over the same period. There has been a sharper dip in the two years previous to the last year, which reflects the substantial cut back in capital. The rise in the last year is due to the increase in capital expenditure.

It has been argued that 4.5% represents the level of expenditure that institutions should be making to ensure their estate remains in good condition. This level has not been achieved for some years, and would require capital expenditure in the region of £2,700million (currently £2010million) to be 6% of the total IRV (currently £56bn).

4 SPACE ANALYSIS

The reduction in student numbers this year (as mentioned previously) has a significant impact on any ratio that includes student numbers. Size of estate takes a long time to alter, and cannot react to annual fluctuations of student numbers which can make some elements difficult to trend. Hence all figures where the denominator is student FTE will appear to have deteriorated.

Space use, and efficient use of space, is directly related to how the estate enables the institution to undertake activity in its estate. Efficient use of estate helps keep costs focussed on core activity.

The challenge is that the sector academic estate is diverse. There are many different types of space all required to enable the delivery of the core activities. In order to attempt to understand space use, the metrics have to operate at different levels. In this case there are a number which look at the whole estate (such as GIA per FTE, and Income per m^2). Then there are metrics which seek to understand the performance of certain types of space (teaching space per taught FTE, and office space per staff FTE). It is only by looking at a number of metrics that an institution can begin to understand how it performs, and in which areas there is scope for improvement.

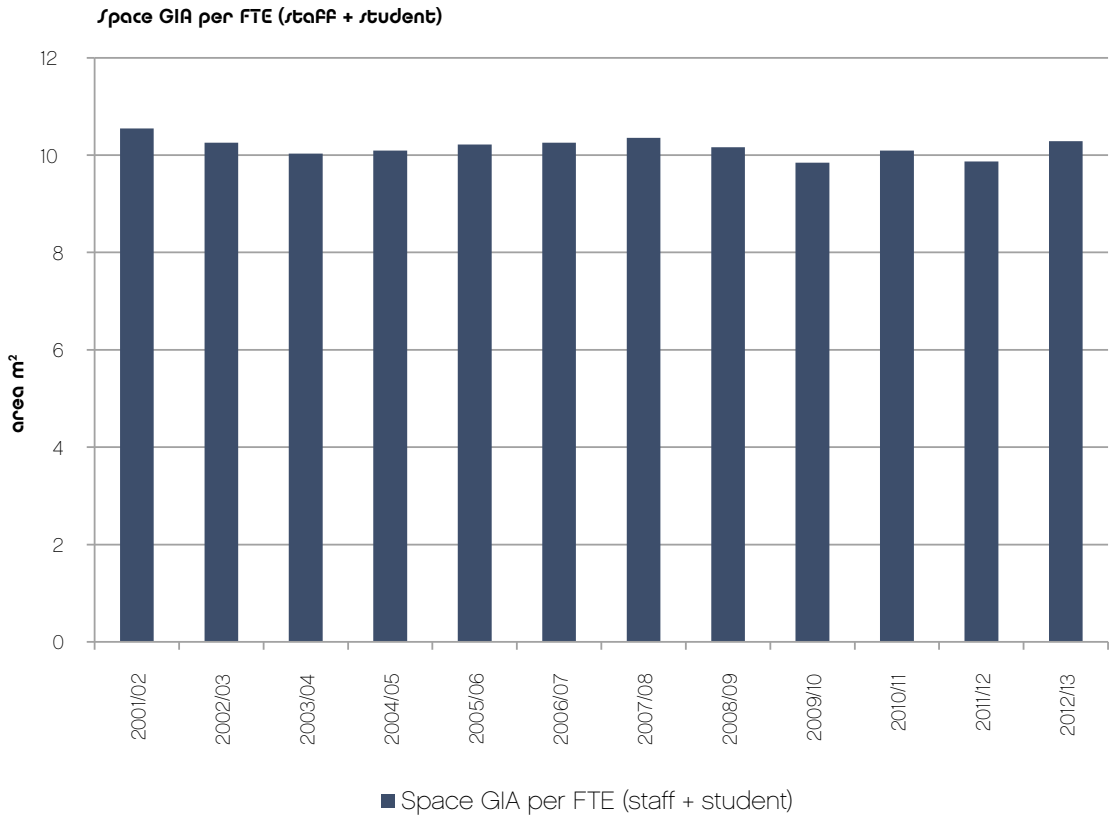
This figure is seen as a simple interpretation of how effectively an institution uses its space. It takes the total academic space (Gross internal area) and divides it by the total number of Full Time Equivalents (including staff and both taught and research students).

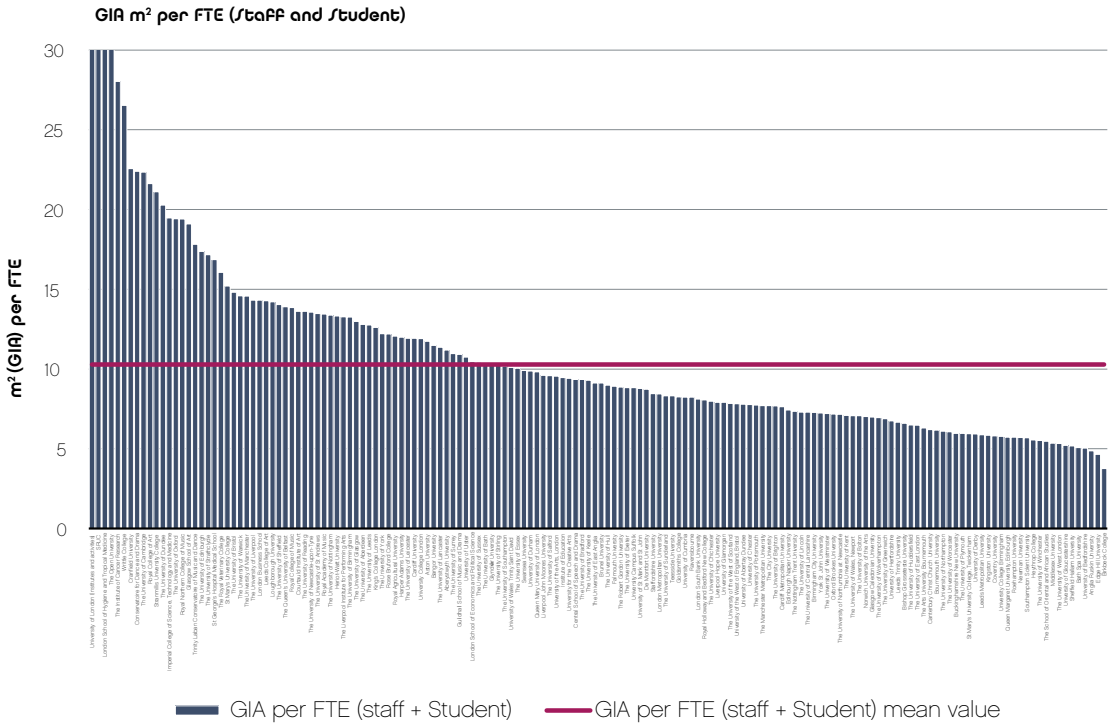
The figure had remained fairly level at about 10m^2 per total FTE but has seen a slight increase in the figure in the last year. This is entirely to do with the drop in taught FTE numbers whilst the estate has remained the same size.

Actual institutions should ensure an appropriate peer group to benchmark against as research intensive institutions have a much larger estate per FTE given the size of research space.

This bar chart shows the distribution of space per FTE by institutions. Those with very high figures on the left are typically specialist institutions (with large space requirements, or with few or no taught undergraduates). Predominantly institutions have between 7.5 and 15 m^2 per FTE, which is quite close to the mean of 10.

4.1 GROSS INTERNAL AREA BY TOTAL FTE

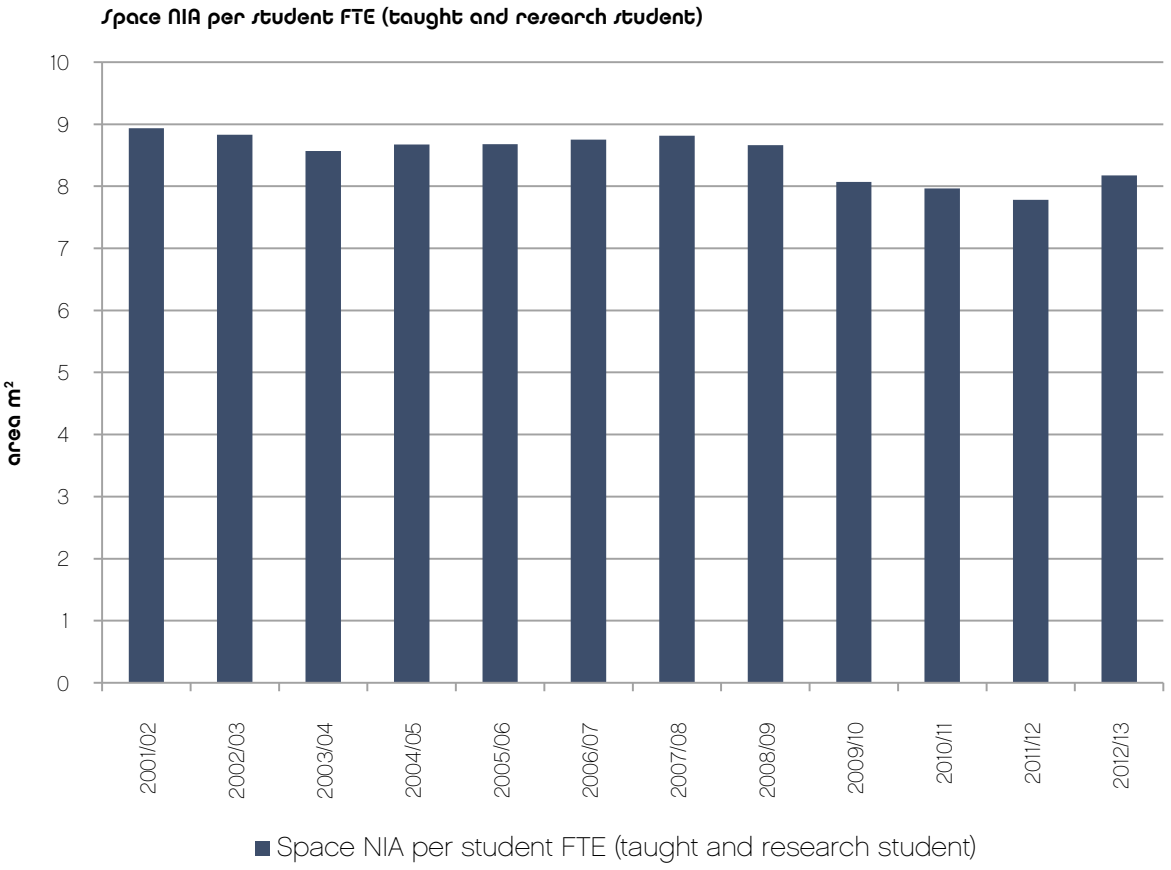




Please note the figures for the Open University (OU) are not comparable to traditional universities as student numbers only include those studying on site. The OU has 170,000 distance learning students in the UK which are not included in these figures.

4.2 NIA SPACE BY STUDENT FTE

This chart develops a more detailed picture than the previous chart. It seeks to show a more accurate picture in relation to academic accommodation. What it shows is NIA per student (taught and research) and doesn't include staff numbers. It shows a more obvious reduction in space or improvements in space use showing that some efficiencies are being made. Again the upturn at the end is entirely to do with the reduction in student numbers in the current year.



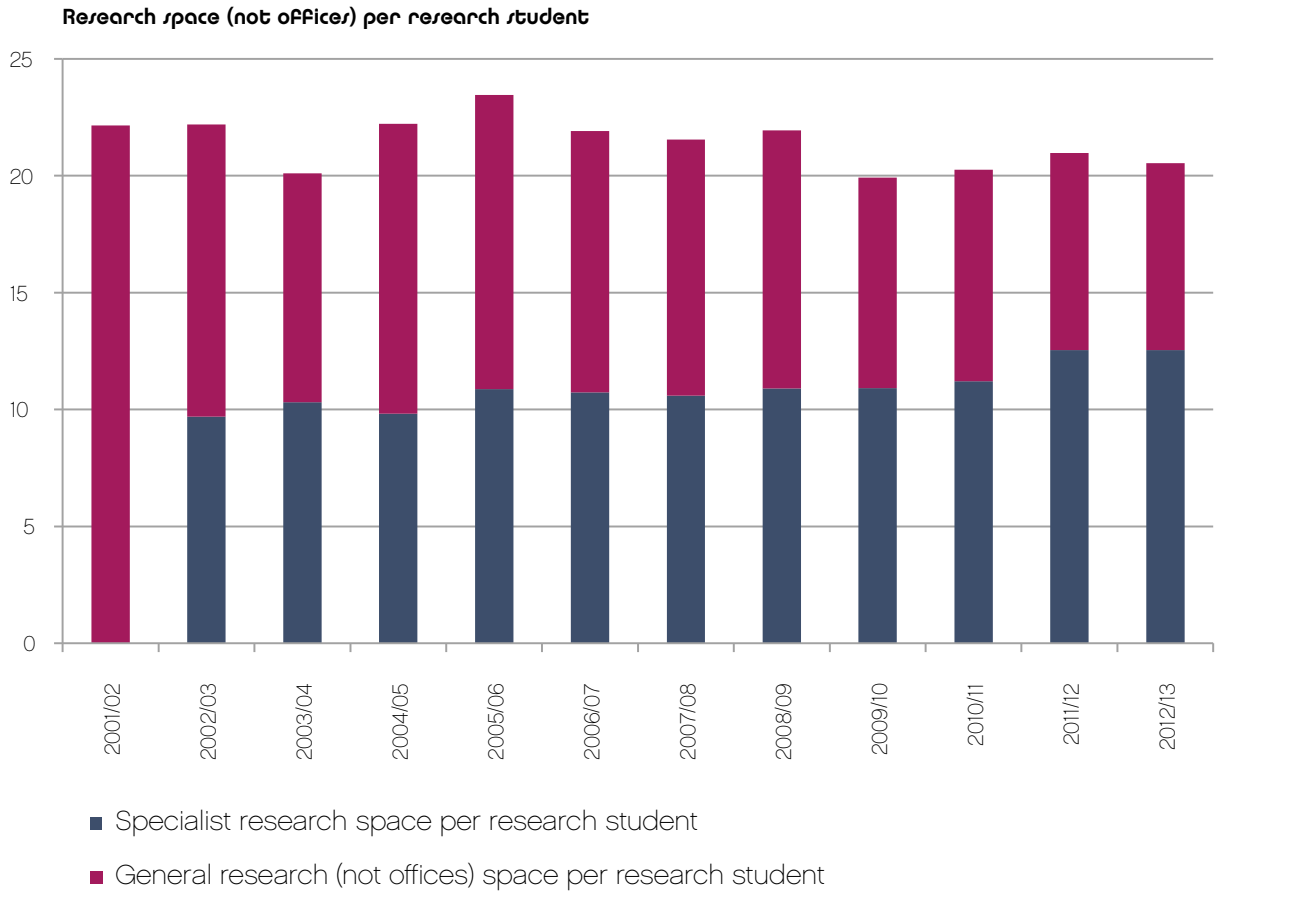
4.3 RESEARCH SPACE BY RESEARCH FTE

This chart shows research space per research student. Research space is split into specialist research space (which typically includes space for which its primary and only function is the undertaking of research) and general research space (space which is used for research, but could easily have another function). Excluded from the analysis is research office space.

What is clear is that specialist research space has been slowly increasing per FTE, whereas total space has varied around about 20m^2 per FTE.

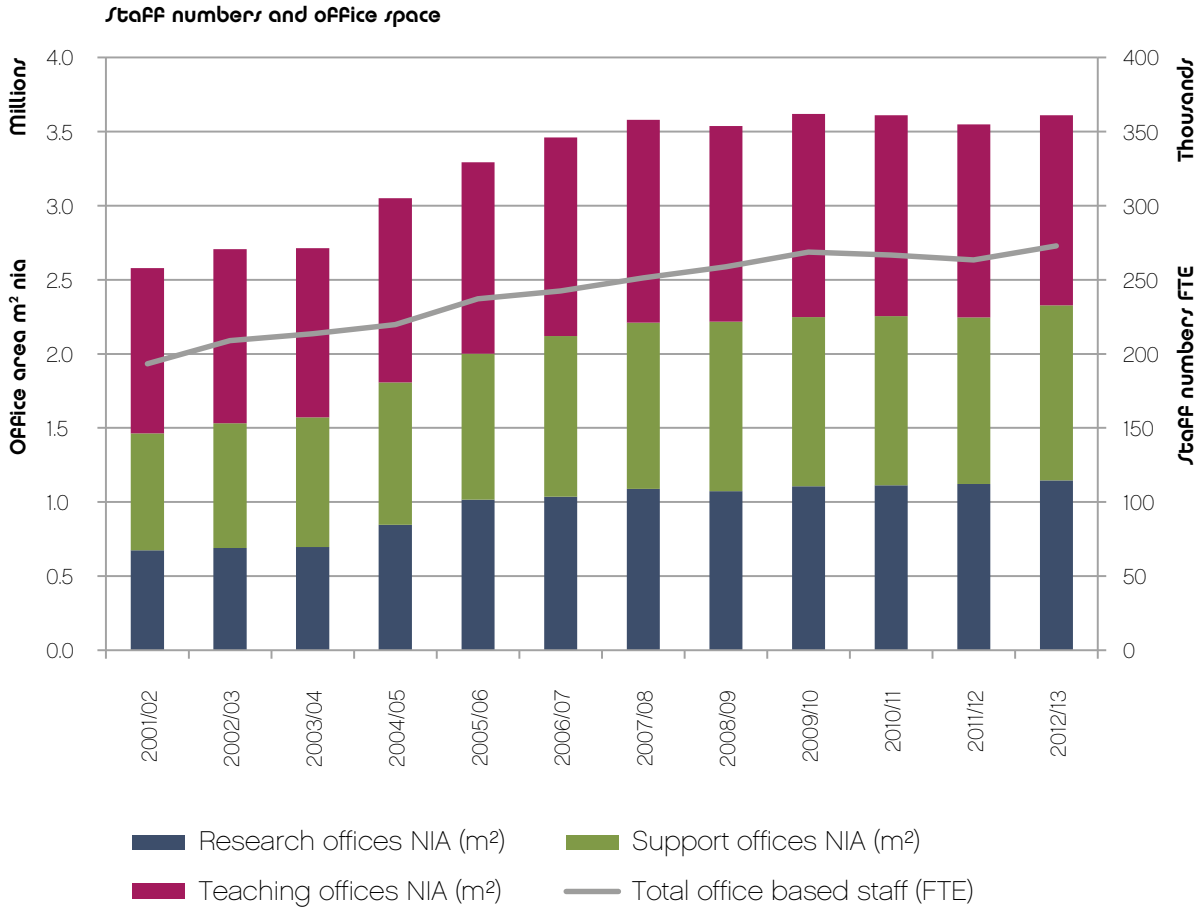
There appears to have been some overall reduction in space over the period, but the data is not conclusive given the variation in figures.

It could be argued that specialist space retains its use irrespective of variations in funding, and that the general space may be more easily changed from one use to another depending on the availability of funding. This could perhaps explain why general space has varied, whereas specialist space has remained relatively fixed and increasing.

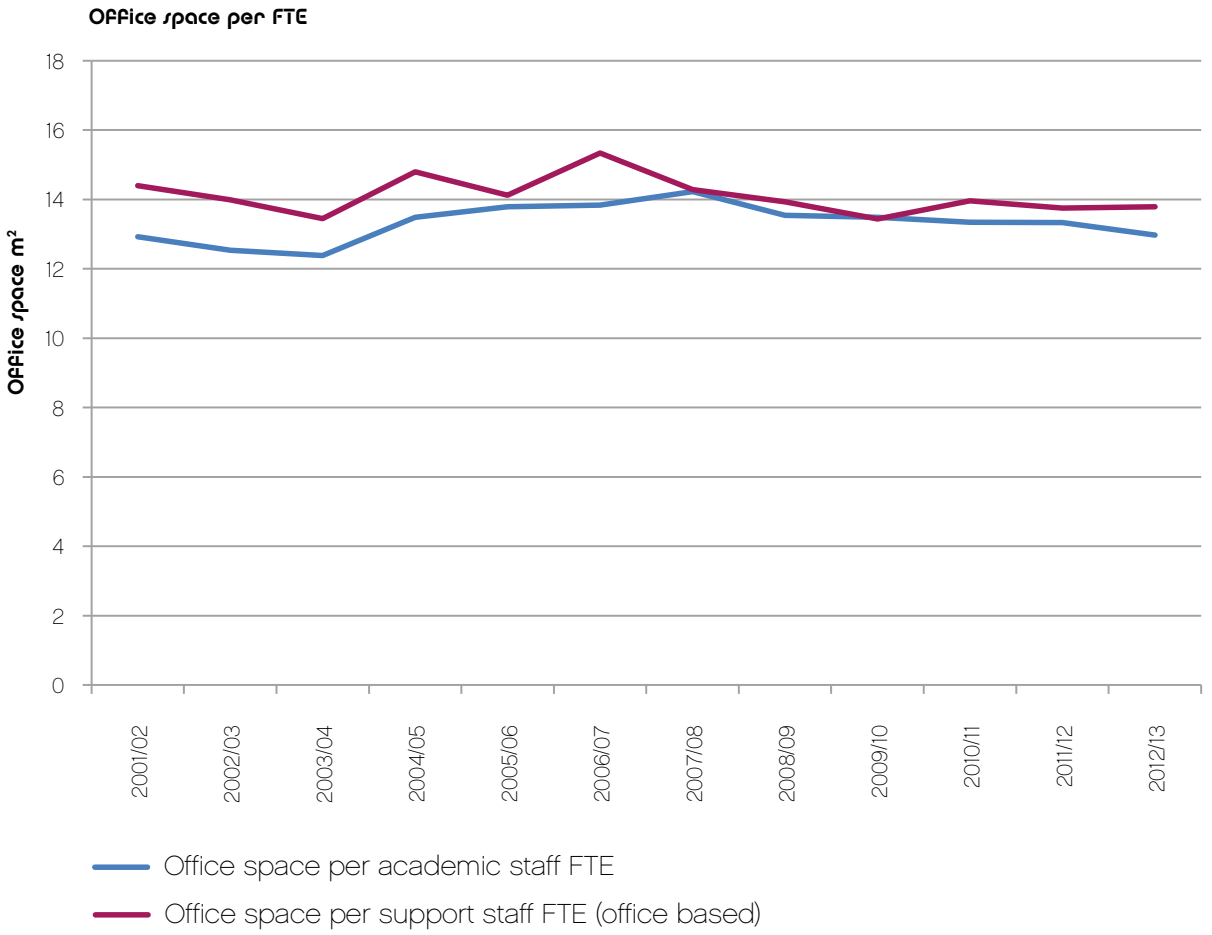


4.4 OFFICE SPACE

This graph shows the total number of office based staff (FTE) and the total amount of office space (split into teaching, research and support). What is clear is that as staff numbers rise, naturally, so does the office space used to accommodate staff.

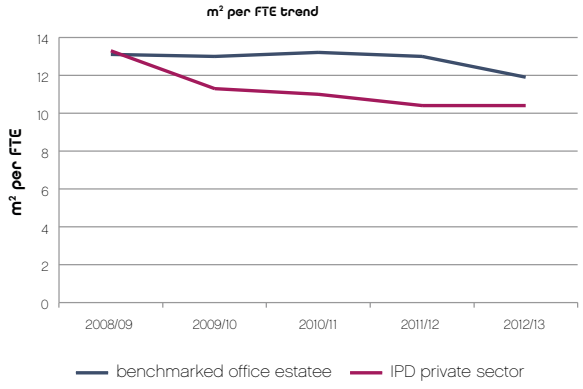


4.5 AVERAGE OFFICE AREA PER FTE

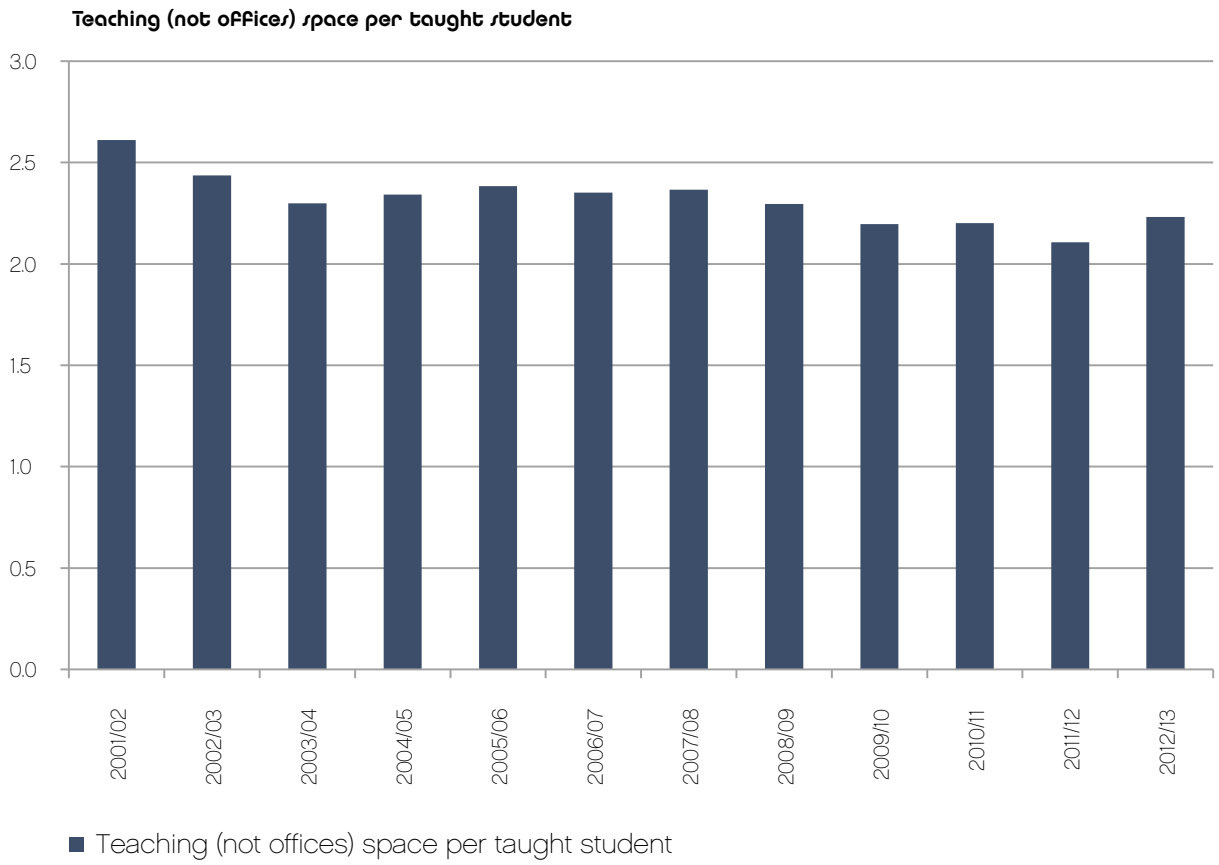


This chart shows the average occupancy of office space, differentiated between academic (i.e. teaching and research) and support staff. There is very little difference between the occupancy of two types of staff, and furthermore, the efficiency with which office accommodation is used has varied very little over time.

It is worth noting that this is very similar to the performance of the mandated government estate. In the State of the Estate 2013 report published by the Government, the Government office space per FTE has reduced from 13 m^2 per FTE to a figure of 11.9m^2.



4.6 TEACHING SPACE PER TAUGHT FTE



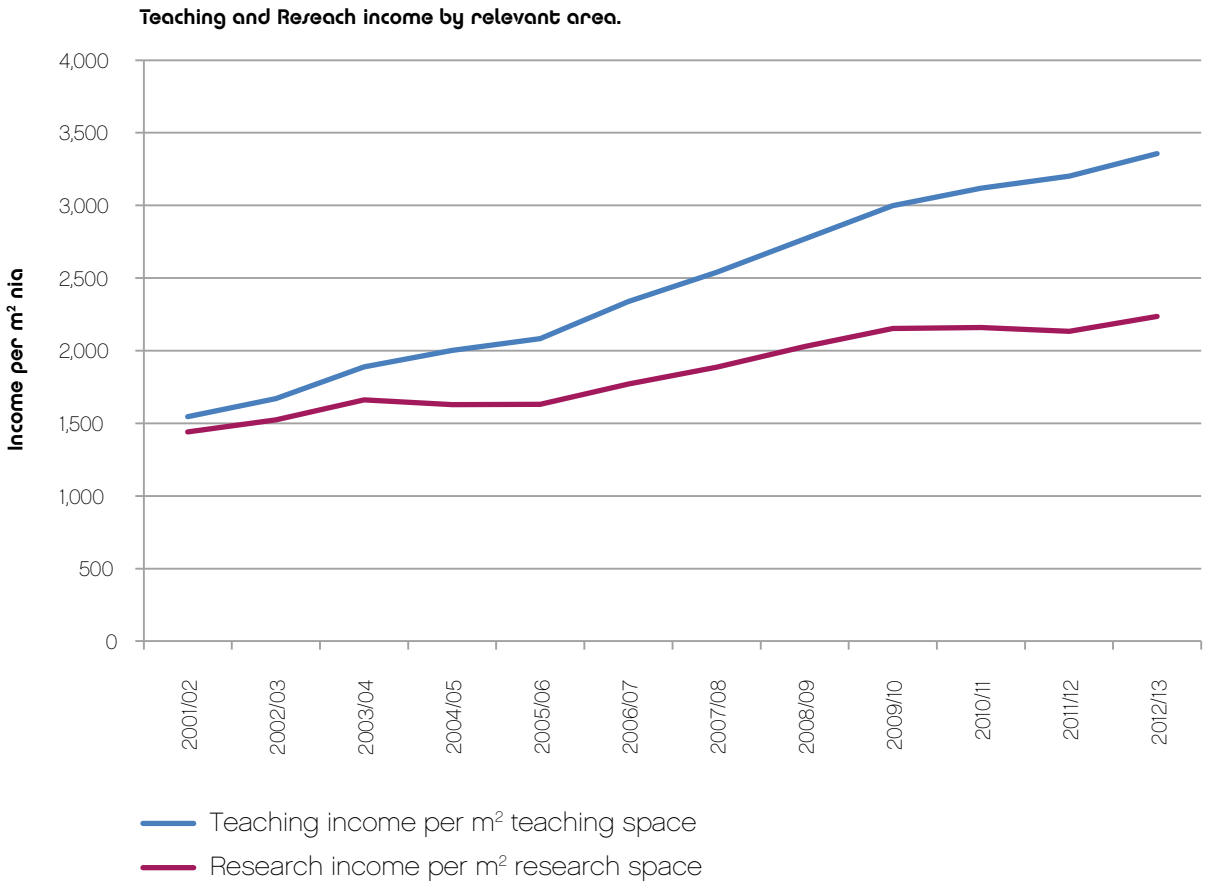
This chart shows the space utilisation as it relates to teaching space in institutions. The chart shows the total amount of teaching space (excluding office accommodation) and has divided this by the total number of taught FTEs. Over the period of the chart, utilisation has increased.

Space per taught FTE has reduced from over 2.6m^2 per student FTE to a figure of 2.1m^2 although this has risen for 2012/13 due to the reduction in student numbers.

This does show that the sector is getting more efficient in the way it provides teaching accommodation, partly as a result of more efficient means of timetabling making better use of available space.

Institutions should use these figures, but again be careful about the type of peers as different subject mixes will impact upon the space required to undertake the different teaching demands.

4.7 TEACHING AND RESEARCH INCOME PER M²



This chart shows separately the income generated by teaching and by research activity divided into the total space allocated to each activity.

What it shows is that teaching income per m² has continued to rise. We can understand this as teaching income has been rising (as student numbers have increased, and fees increased), and also space per taught FTE has been reducing. Hence income per m² for teaching accommodation has also been increasing. This clearly shows the increasing utilisation of teaching accommodation as more income is derived from the same amount of space.

Research income per unit area has not increased at anything like the same rate. This will be because research income has been relatively flat over the last 4 to 5 years, and as shown in previous graphs, the amount of space allocated to research has not reduced measurably. Hence income per m² has remained relatively constant.

5 ENERGY AND EMISSIONS

Energy costs continue to rise and have now exceeded the previous peak cost in 2008/09.

The anticipation is that utility costs will continue to increase.

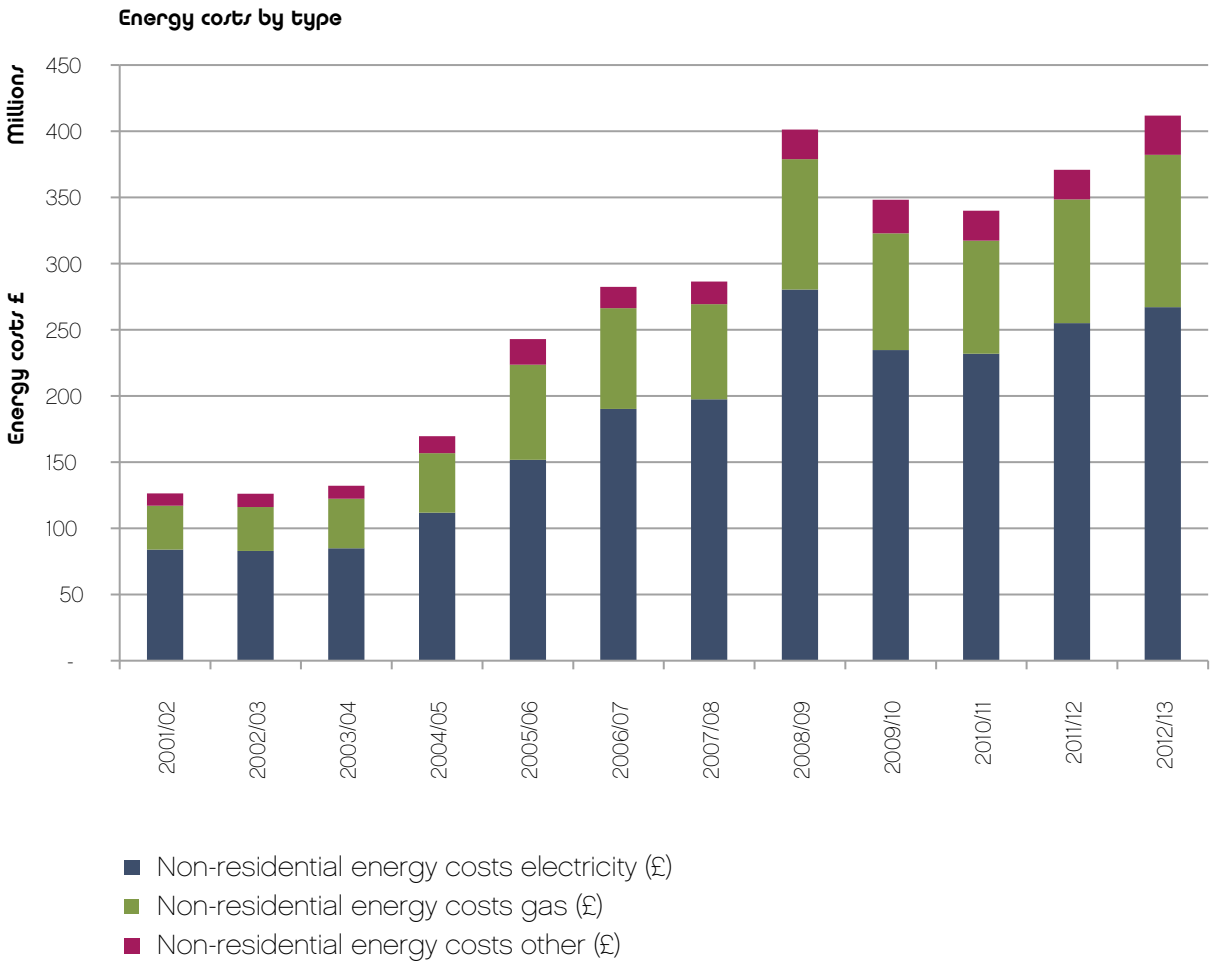
Buildings are continuing to become more complex, and to be used for longer hours resulting in a greater demand for energy.

Carbon strategies are in place and there are some excellent examples across the sector of carbon projects. The impact of these strategies is essential to counter the effect of increasing demand for energy made by, for example, data centres and other heavy users of energy. The sector continues to innovate and lead the way in new developments, such as the zero carbon research development at the University of Nottingham and the zero carbon residences at Hertfordshire..

Cold winters and hot summers increase energy demand, and as buildings become more complex they are more able to sustain comfortable environments despite extremes of temperature. Whilst this provides a more comfortable environment, it comes at a cost.

Energy remains one of the most challenging areas for the estates directorate; prices are set to continue rising, and weather is unpredictable. Our expectation is for buildings to be warm in winter and cool in summer, but this will continue to increase the cost, notwithstanding our endeavours to reduce our carbon emissions.

5.1 ENERGY COSTS AND COSTS BY TYPE



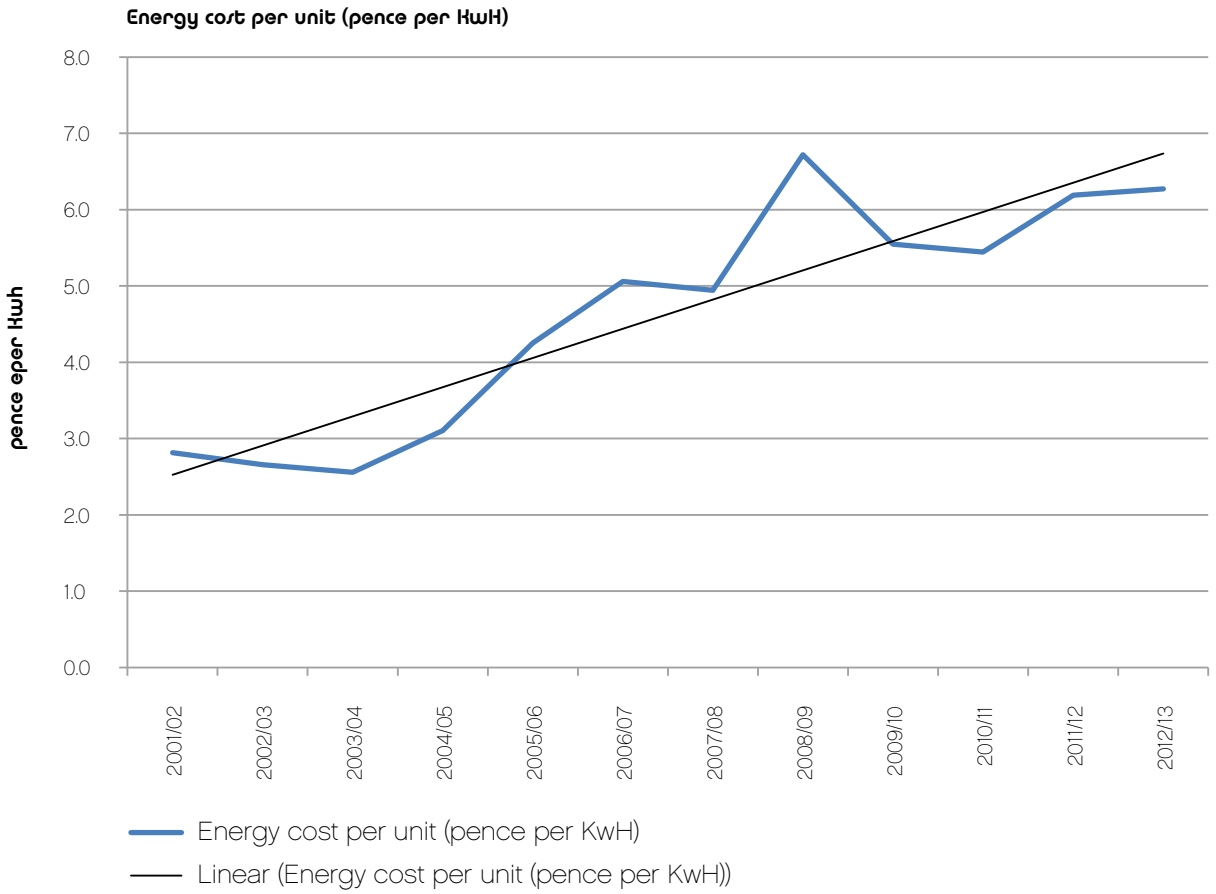
Energy costs have now reached the same level as at the peak in 2008/09 at over £400million across the whole sector.

The cost of energy is a factor of both consumption and price. Whilst institutions are putting significant effort in to the management of consumption, there is less that is achievable in the longer term on the cost of energy, which has been showing a constant increase.

This is in particular related to the increasing use and cost of electricity which has increased year on year for the last three years. Some universities are experiencing increased costs fromincreased research activity of space.

The projection is for energy costs to continue to rise; this coupled with increasing complexity and the extended use of buildings is likely to mean that energy expenditure will continue to rise.

5.2 ENERGY COST PER KWH

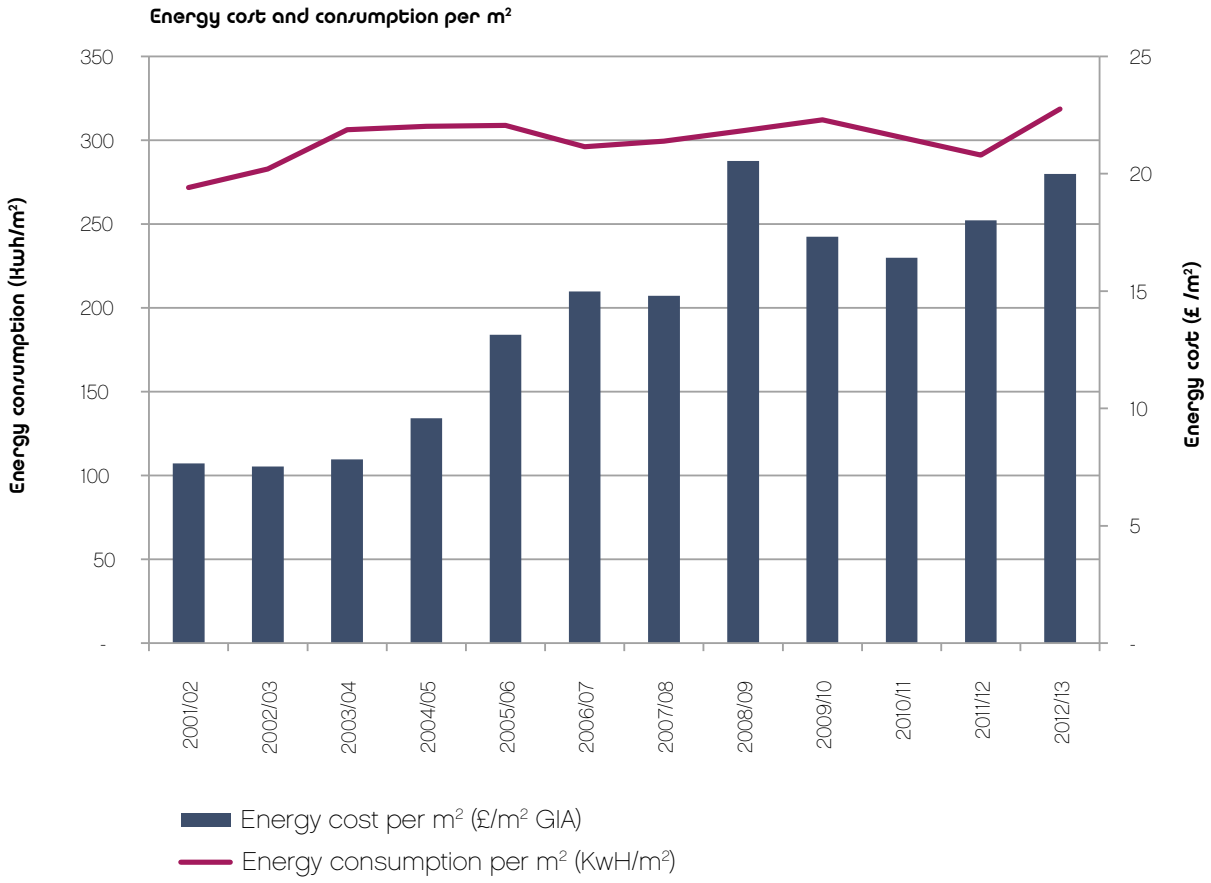


This chart shows the combined cost per unit of energy of all energy types (predominantly gas and electricity).

The trend line shows an of average 0.4 p/kwh price rise annually since 2001/2.

The general consensus is that energy market prices will continue to rise although costs have not yet returned to the peak cost of 2008/09.

5.3 ENERGY COST AND CONSUMPTION PER M²

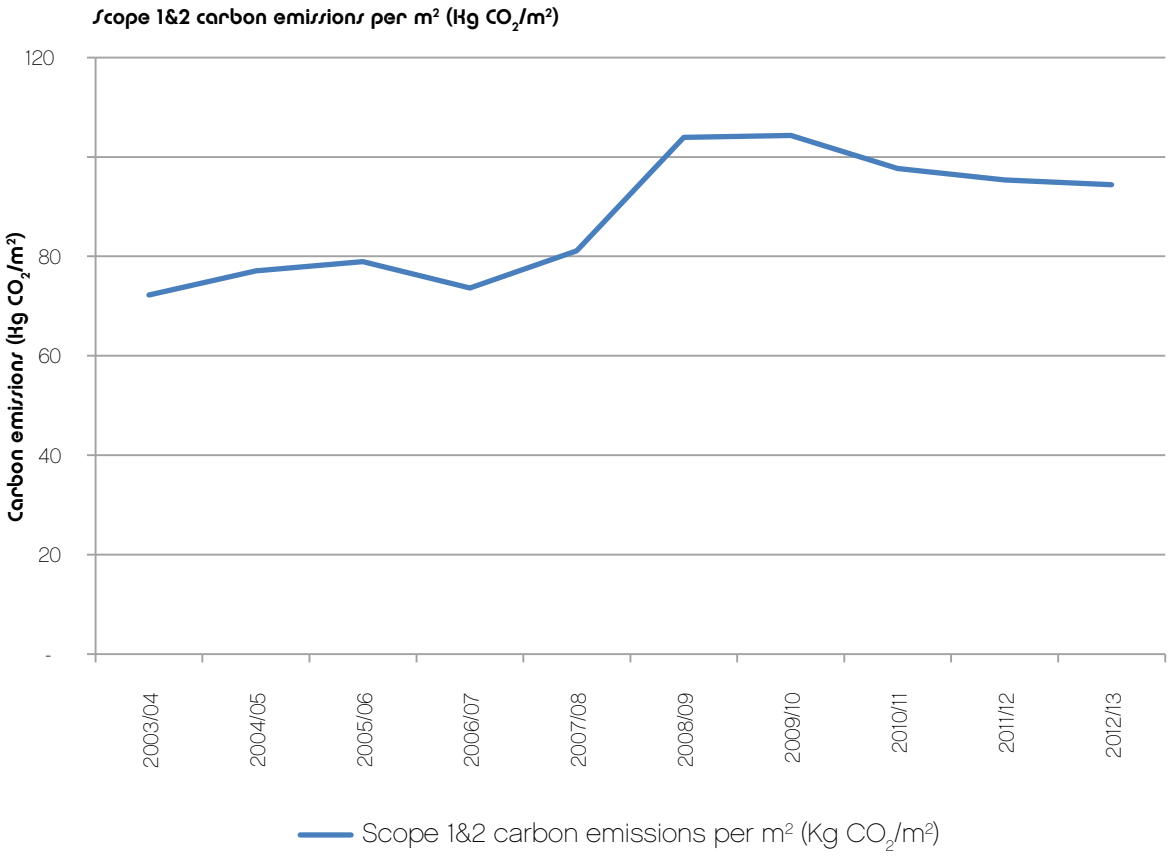


Energy costs have been rising, and this is reflected in the cost per m² which continues to rise as it has for the last 3 years, nearly reaching the same cost per m² as at the highest level in 2008/09 (currently £20 per m²). This is a factor of both the cost of energy (which is rising) and also the consumption of energy.

Consumption has remained relatively static at about 300 KwH/m² for the past 10 years, and in the preceding two years this appeared to be reducing. 2012/13 figures have shown a substantial rise up to 319 KwH/m².

We have previously argued that buildings are increasingly complex, and that they're used for longer hours than previously and also that people expect better environments (warm in winter and cool in summer). This we argued was being achieved whilst not increasing consumption due to the implementation of energy saving schemes. There is no easy answer to the 6% rise in consumption unless it can be attributable to adverse weather conditions during the year (and there was a particularly cold winter).

5.4 SCOPE 1 AND 2 EMISSIONS BY M²

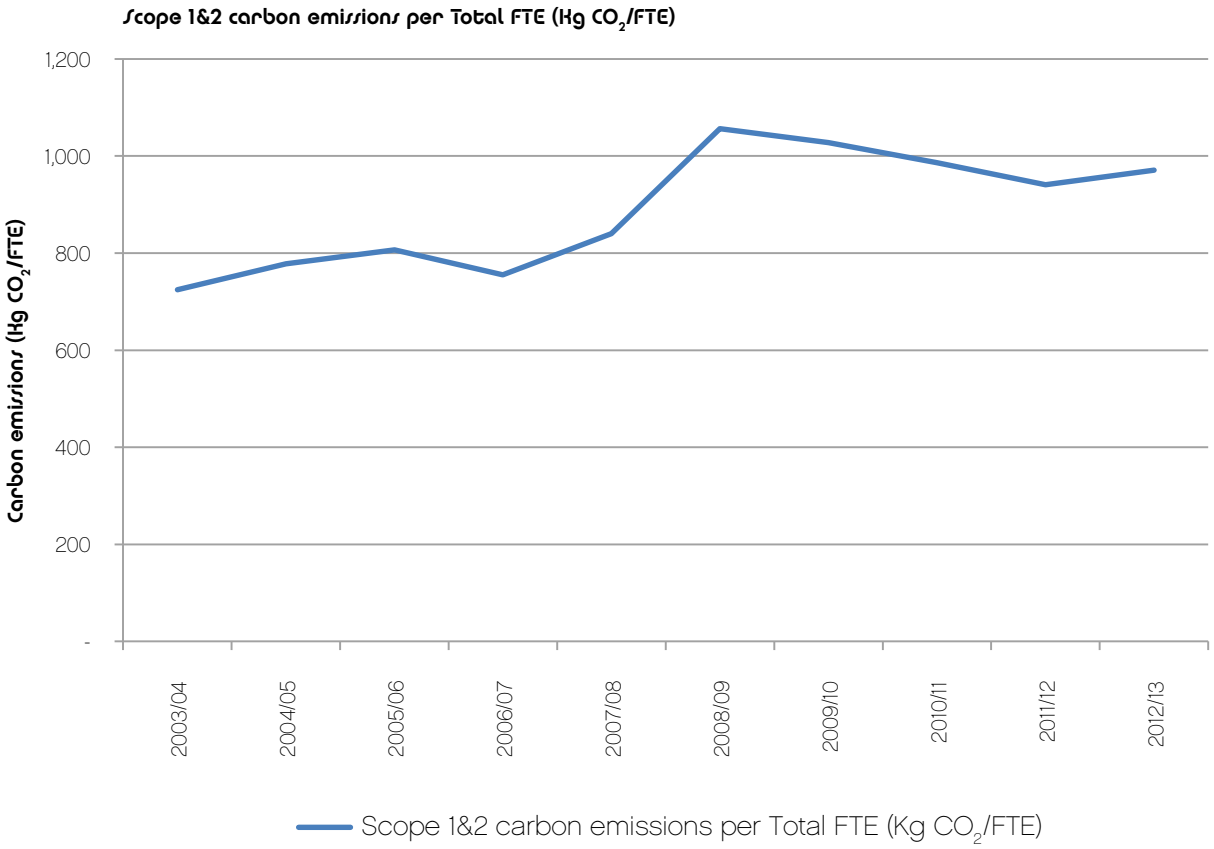


Emissions are very closely related to consumption (although emissions are also dependent on the type of energy used). Here we can see that emissions per m² have, like consumption, been relatively stable for the last 5 years.

Emissions, as with consumption, are a factor in the complexity of space as well as the prevailing weather conditions.

The HEFCE baseline for carbon reduction was set at 2005/06, which is some way below where the current emissions are which therefore continues to represent a substantial challenge for institutions to return to this level of emissions to meet 2020 targets.

5.5 SCOPE 1 AND 2 EMISSIONS BY FTE



When calculated by FTE carbon emissions have slowly been falling since a peak in 2008/09. This is potentially as much to do with the increase in student numbers as it is to do with the effective management of carbon emissions. This demonstrates the work of estate and facilities professionals in addressing consumption and investment in carbon saving reduction measures.

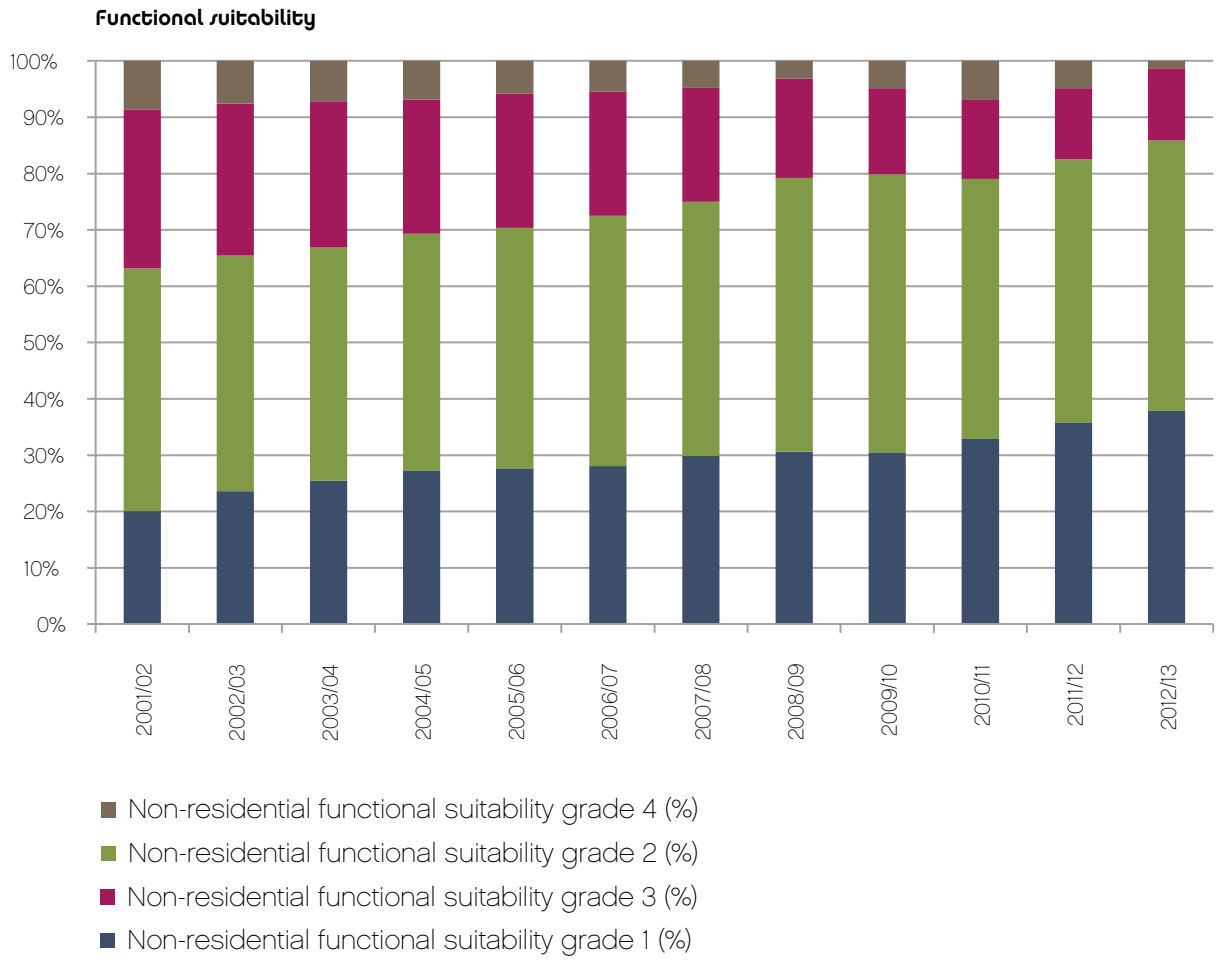
Last year saw an increase in emissions per FTE, as has been discussed earlier, this is largely to do with the reduction in student numbers this year.

6 CONDITION AND AGE

The sector has been investing substantially in the estate over the last decade. The evidence of this investment is shown in the fact that functional suitability is improving, condition is improving, and the age of the estate is getting younger.

One of the key challenges for the sector was the substantial growth in the sector in the late 1950s and 1960s. Typically these buildings will have anticipated a life of say 30 years, and the refurbishment and replacement of this estate has been a significant part of many universities capital programmes for a number of years.

6.1 FUNCTIONAL SUITABILITY (PERCENTAGE OF ESTATE IN EACH CATEGORY)



There has been a steady and sustained rise in the functional suitability of the sector's estate. 86% of the sector's estate is in grade 1 or grade 2 which compares to 62% in 2001/02.

Given the size of the estate, and the strides in improvement in suitability, this must be due to new building projects and substantially as a result of refurbishment of existing less suitable space to create more suitable accommodation.

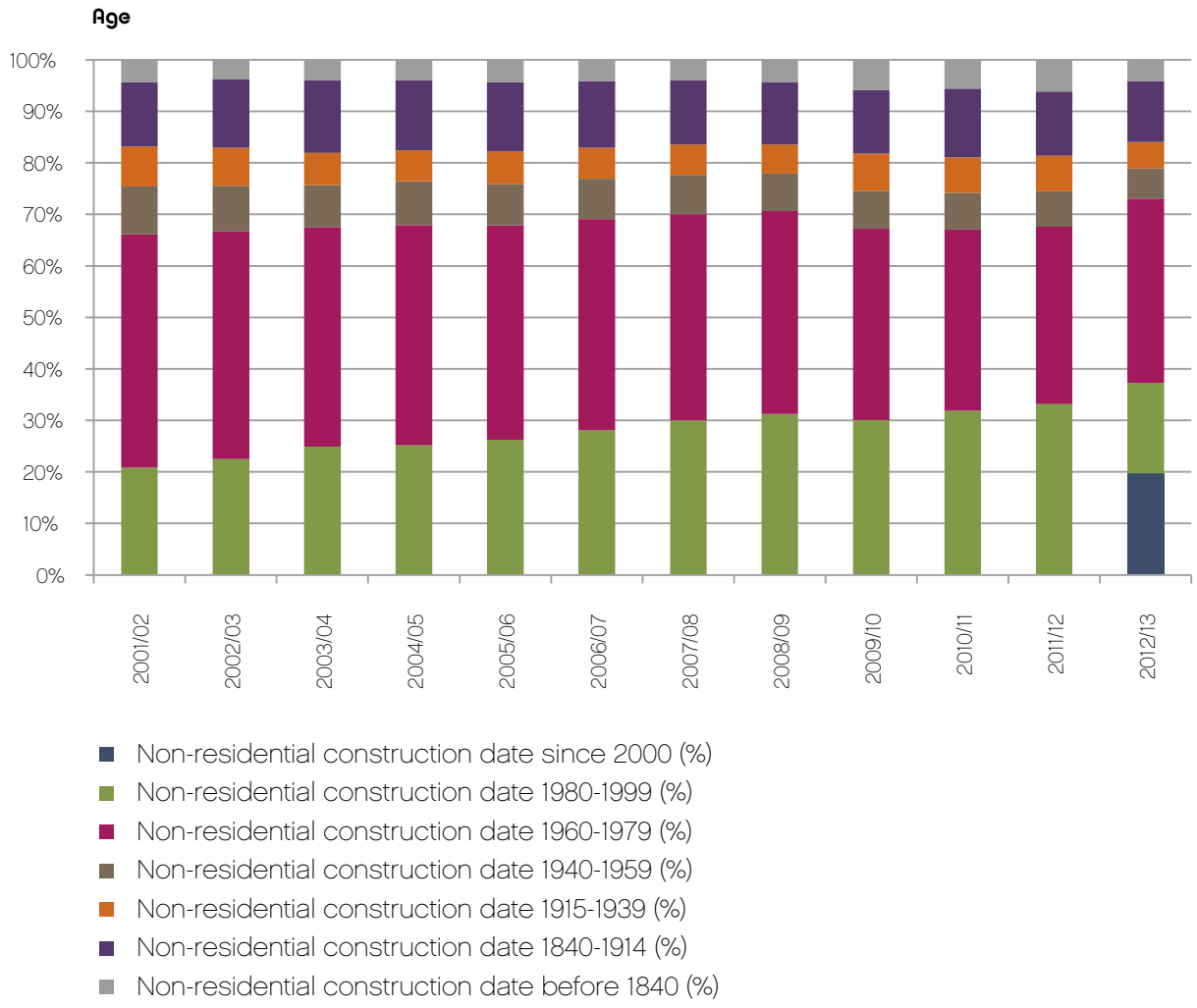
6.2 CONDITION (PERCENTAGE OF ESTATE IN EACH CATEGORY)

The general condition of the sector's estate has also increased since 2001/02. Now 80% of the estate is in conditions A and B (that is, new or as good as new). This is against a figure of 63% in 2001/02.

Again, this is due to the capital that has been spent by the sector in the intervening years. Not only have new buildings been built, but refurbishment has meant more buildings in condition B from condition C.

It is also likely that buildings in condition D have been disposed of or demolished and replaced.

6.3 AGE (PERCENTAGE OF ESTATE IN EACH AGE GROUP)



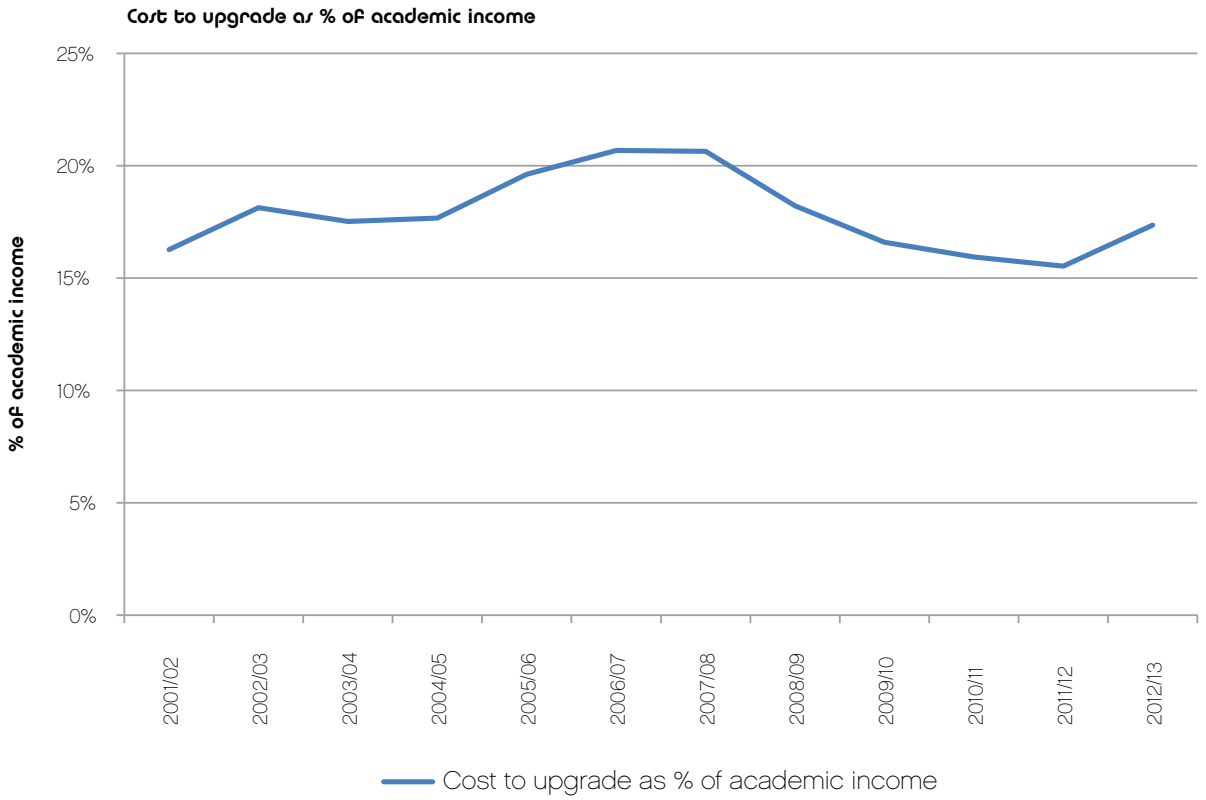
Please note residential construction date data has recently changed introducing a post-2000 section and replacing post 1980 with 1980 to 1999.

The new age category (buildings built post 2000) shows that 20% of the University estate has been built since 2000.

This is approximately the same as the % of the estate that had been built between 1980 and 2001.

Buildings built in the 1960s and 70s have decreased from 45% to 36%.

6.4 COST TO UPGRADE C&D TO B AS % OF INCOME



This graph shows the cost to upgrade condition C and D buildings to condition B as a percentage of the academic income. Cost to upgrade represents the backlog of poor buildings that remain to be addressed by capital spending. The data also reflects costs to upgrade buildings which may be due for disposal or demolition.

This graph shows that the capital expenditure has been having an impact on backlog, and that the cost required to upgrade the remaining poorer quality buildings has fallen as a percentage of academic income.

7 RESIDENTIAL ESTATE

With the continued focus on ensuring that the physical environment supports an institution's growth ambitions, the residential estate is clearly an important part. No open day is complete without a tour of the residential accommodation, and it is certainly one where parents and carers are always very interested as well as potential students. The residential estate may play a part in generating other income over vacant periods.

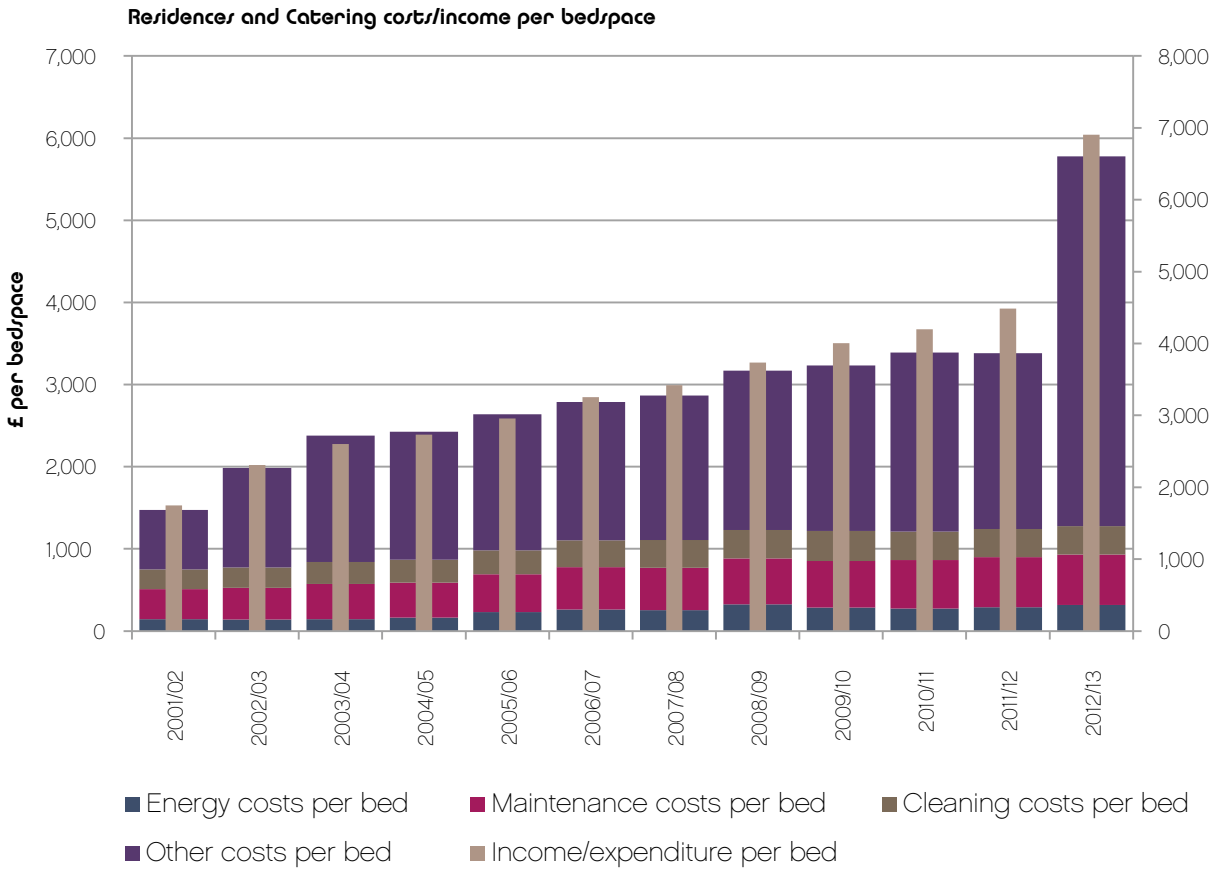
As such, institutions are keen to see that their residential accommodation plays a key part. We have undertaken some analysis here which shows the key challenges and the way the sector is responding.

We see significant capital investment in the improvement of estate.

We also see that the private sector is increasingly providing accommodation directly for institutions (in partnership, rather than just in competition with).

There is clearly substantial scope for continued investment in the residential estate, as the condition and suitability could clearly be improved.

7.1 INCOME/EXPENDITURE PER BED

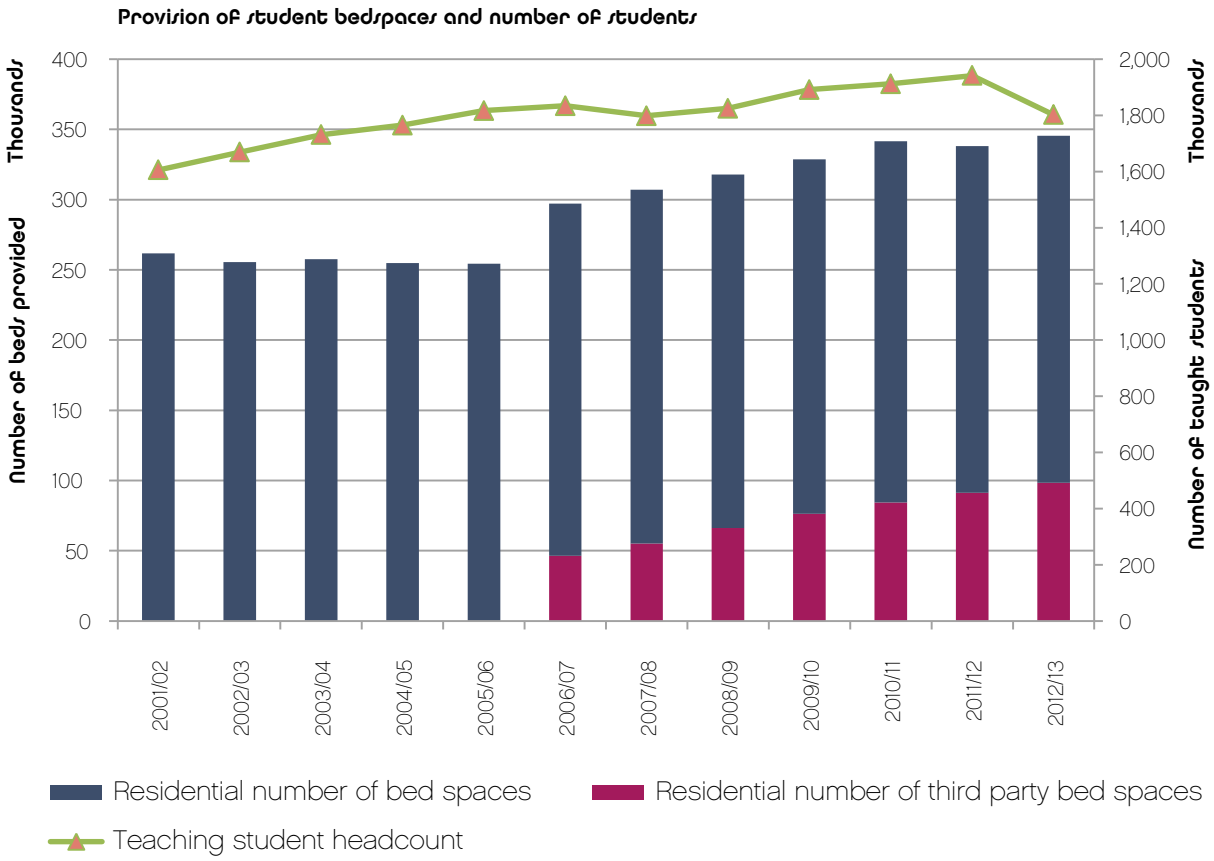


In 2012/13 HESA included conference/catering income and expenditure in the total residential income and expenditure data.

As a consequence of this, the data does not show the same value as it has in the past, as a per bed analysis is less sensible when these costs and income are included.

In future, catering/conference income would ideally be quoted separately in order to understand the residential estate performance on a per bed basis.

7.2 NUMBER OF STUDENT BEDS

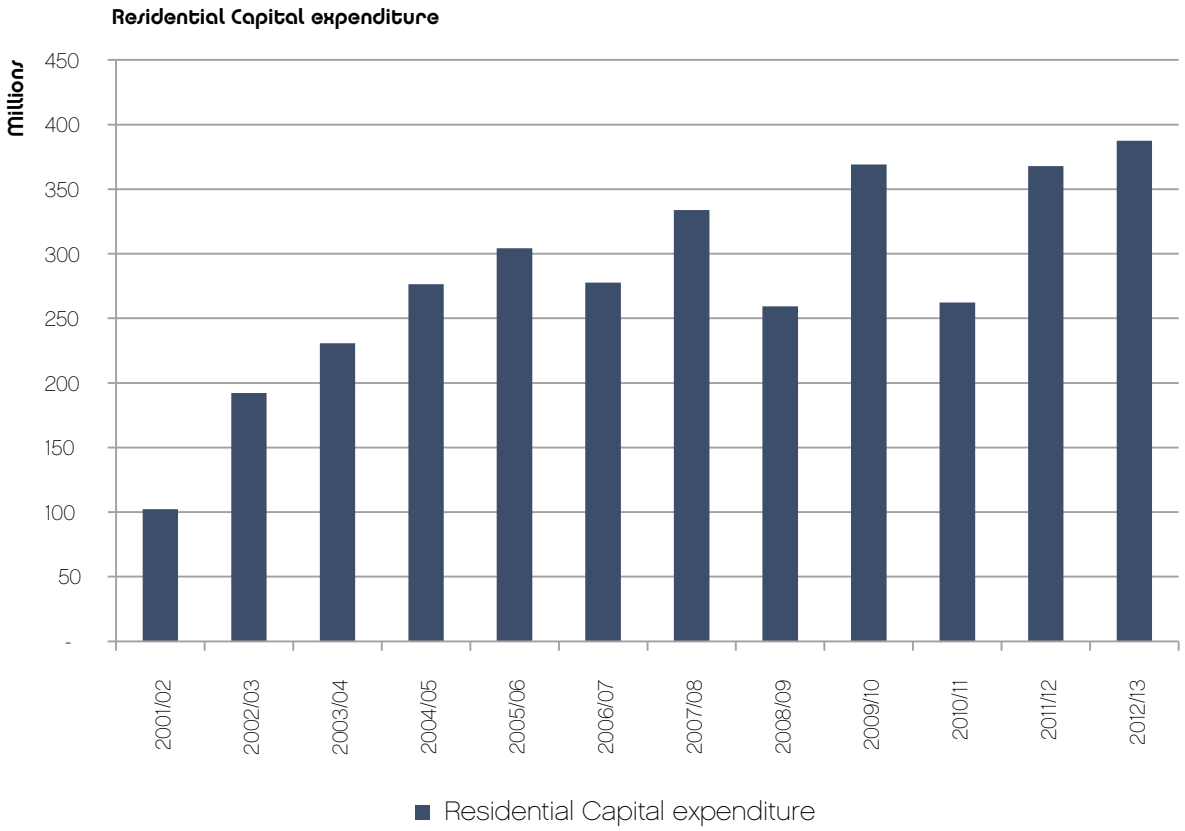


The number of beds provided by institutions continues to slowly reduce from a peak of 260,000 in 2001 to the current provision of 247,000. Private sector provision has transformed the landscape and now provides over 100,000 of beds for institutions (these are beds that are considered part of the institution's own provision via lease or hard nominations agreements).

In 2001/2 the amount of beds represented 16% of the total number of taught students, now the percentage is 13%. However if the private provision is also included, this represents 19% of the student headcount.

Accommodation is clearly a very important provision, and increasingly can be seen as a key differentiator between otherwise similar institutions.

7.3 RESIDENTIAL CAPITAL EXPENDITURE



Residential capital expenditure has held up and increased on the level of last year.

Institutions recognise the need to provide a good level of accommodation as part of their recruitment campaign. It is a key issue particularly for parents and carers to ensure that a student is provided with a safe and appropriate environment, especially in their first year away from home.

Institutions recognise this, and are partly expending their own capital to ensure that provision is adequate. They are also working in partnership with the private sector to ensure appropriate provision is secured for their students.

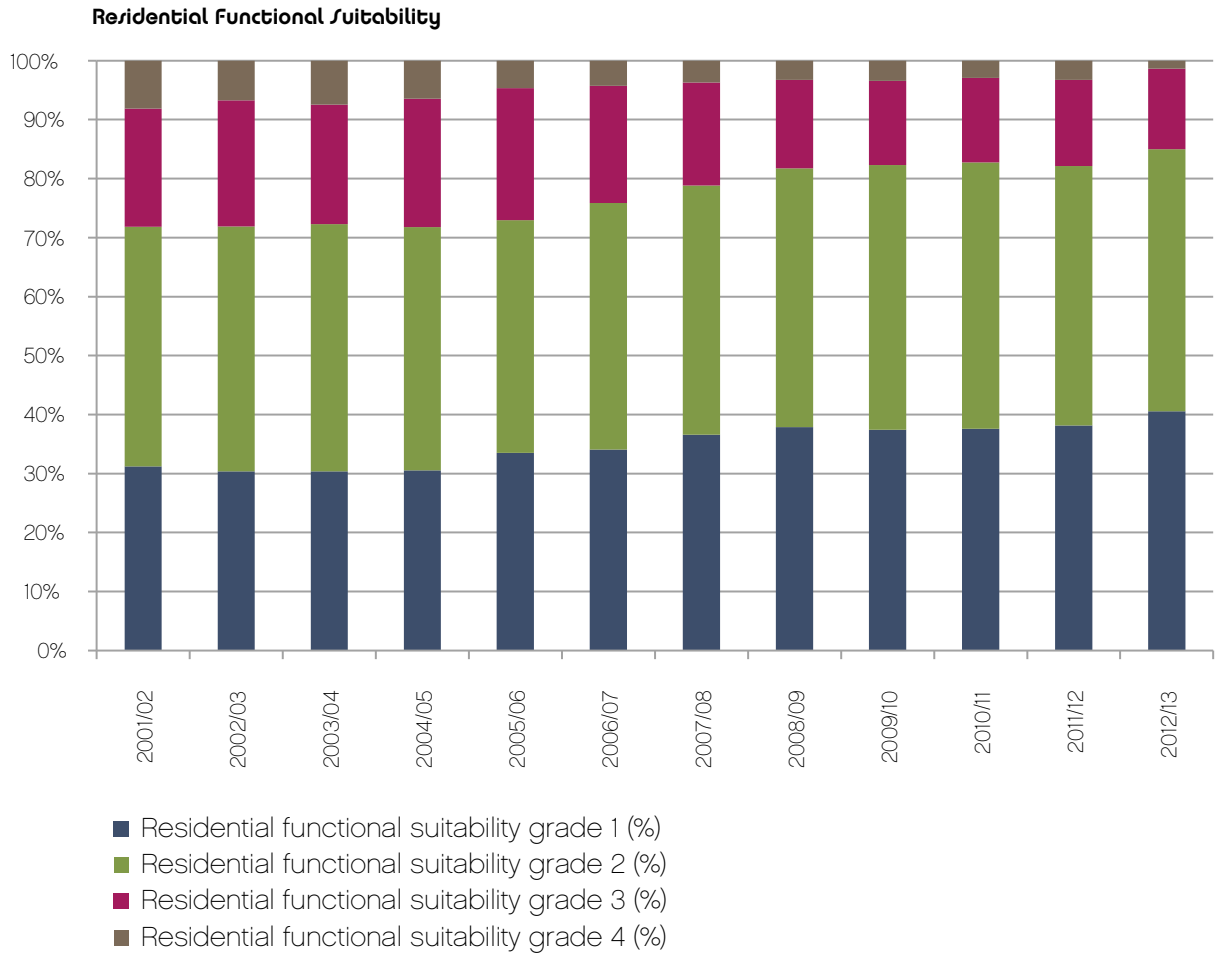
7.4 TYPE OF TERM TIME ACCOMMODATION

The number of students in term time accommodation has reduced, in line with the reduction in student numbers.

It appears that the impact has been felt mostly on students who live in their own residence (typically more mature students), and those in the 'other' category.

Other rented (i.e. typical student rented housing) has also continued to rise, this represents the majority of student accommodation providing 30% of total spaces.

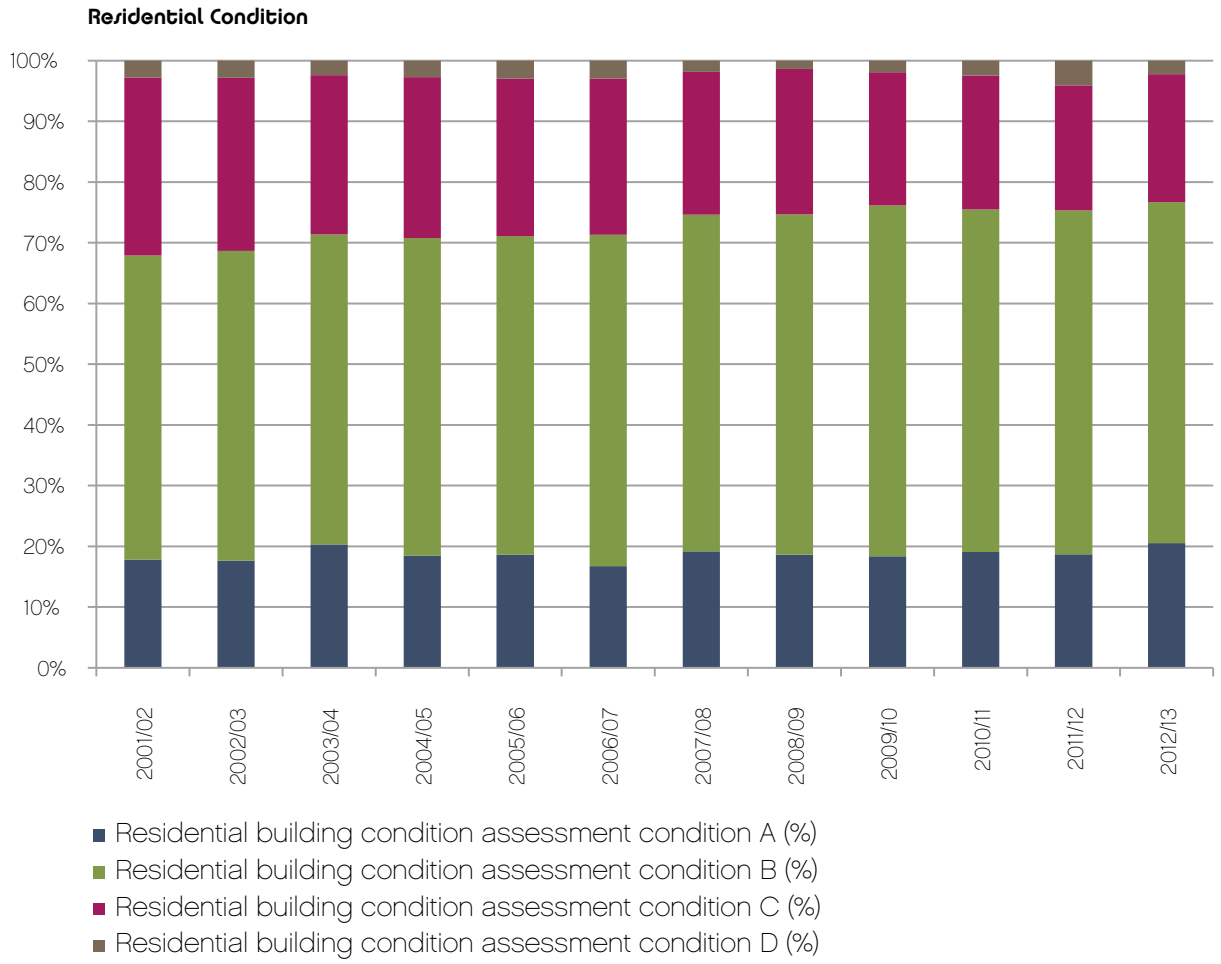
7.5 FUNCTIONAL SUITABILITY



Functional suitability of the residential estate continues to improve with over 83% now in grade 1 and 2.

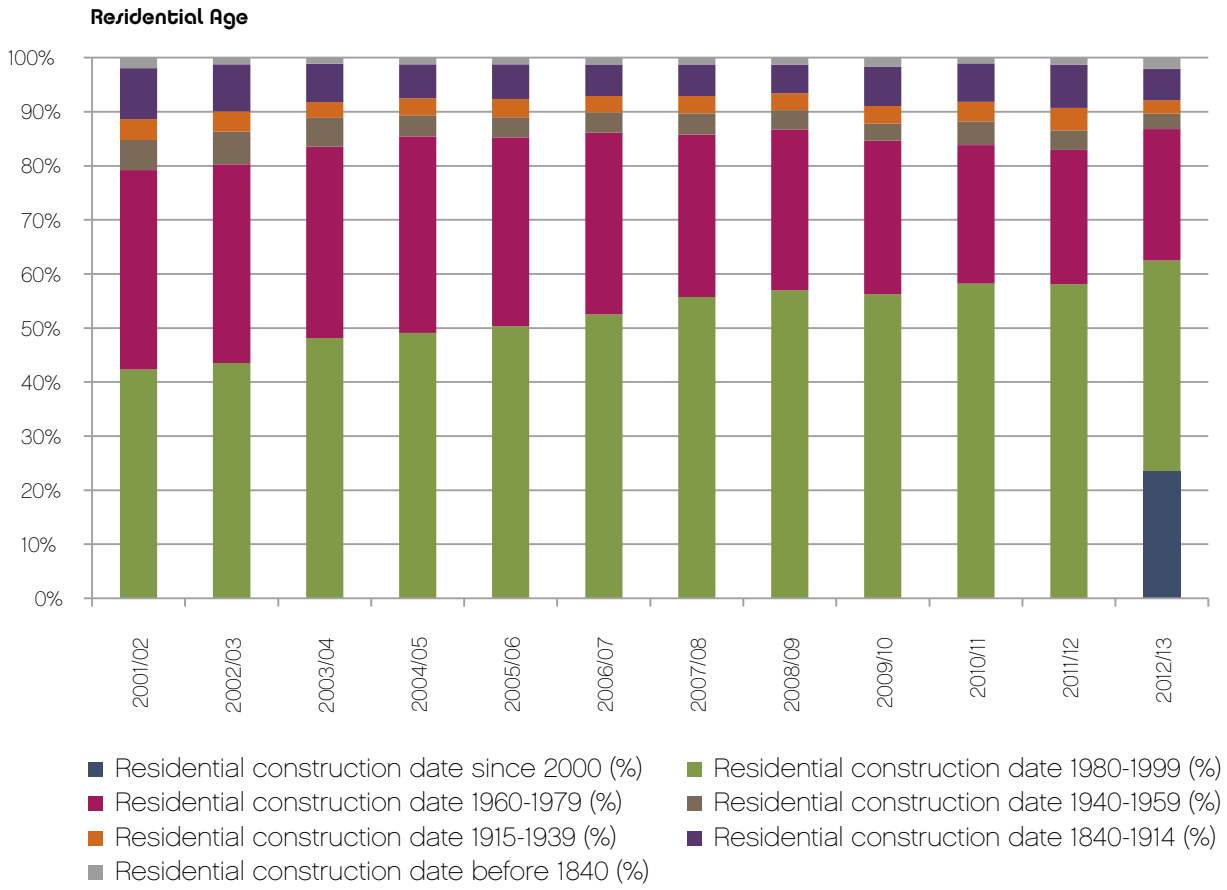
Institutions clearly have been addressing accommodation that is in category 3 and 4 which still accounts for 16% of all accommodation.

7.6 CONDITION



Residential accommodation has improved in condition over the past decade, however 23% of accommodation is in condition C and D. Given the importance that residential accommodation is regarded by students and their parents, institutions will wish to ensure that this poorer quality accommodation does not have an adverse impact on recruitment.

7.7 AGE

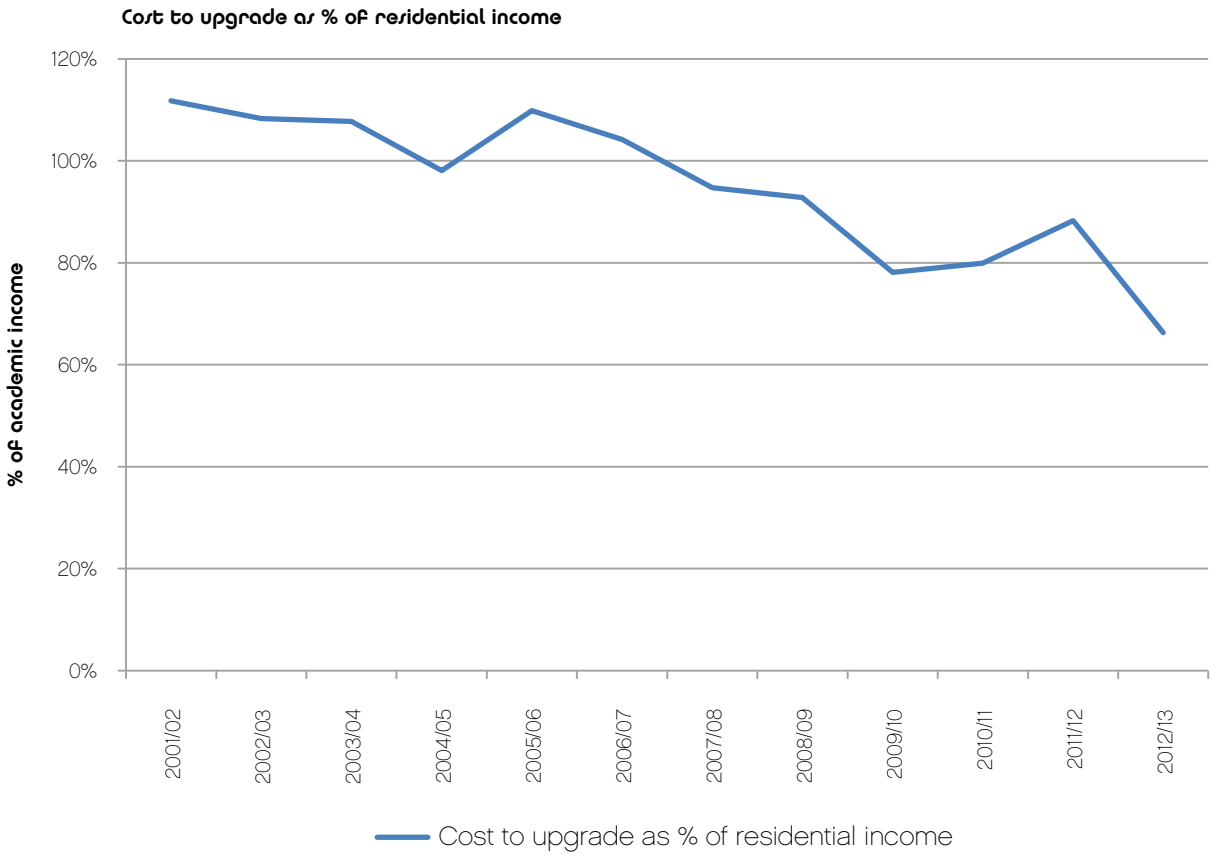


Please note residential construction date data has recently changed introducing a post-2000 section and replacing post 1980 with 1980 to 1999. 60% of the current estate has been built since 1980. However, changes in demands have been significant and increasingly students are more demanding. Not only do students increasingly expect ensuite accommodation (or a very high level of shared provision), but there is an expectation for more communal space and a social learning space with excellent Wi-Fi facilities.

It is unlikely that older accommodation will be able to provide for this increased demand and institutions will have to continue to invest to ensure that provision is in line with expectations.

In some areas the private sector may well be able to make the appropriate provision, but it is sometimes more difficult for the private sector to meet the needs of first year students on campus. There will inevitably be some continued need for institutions to invest their own capital into the provision of residential accommodation.

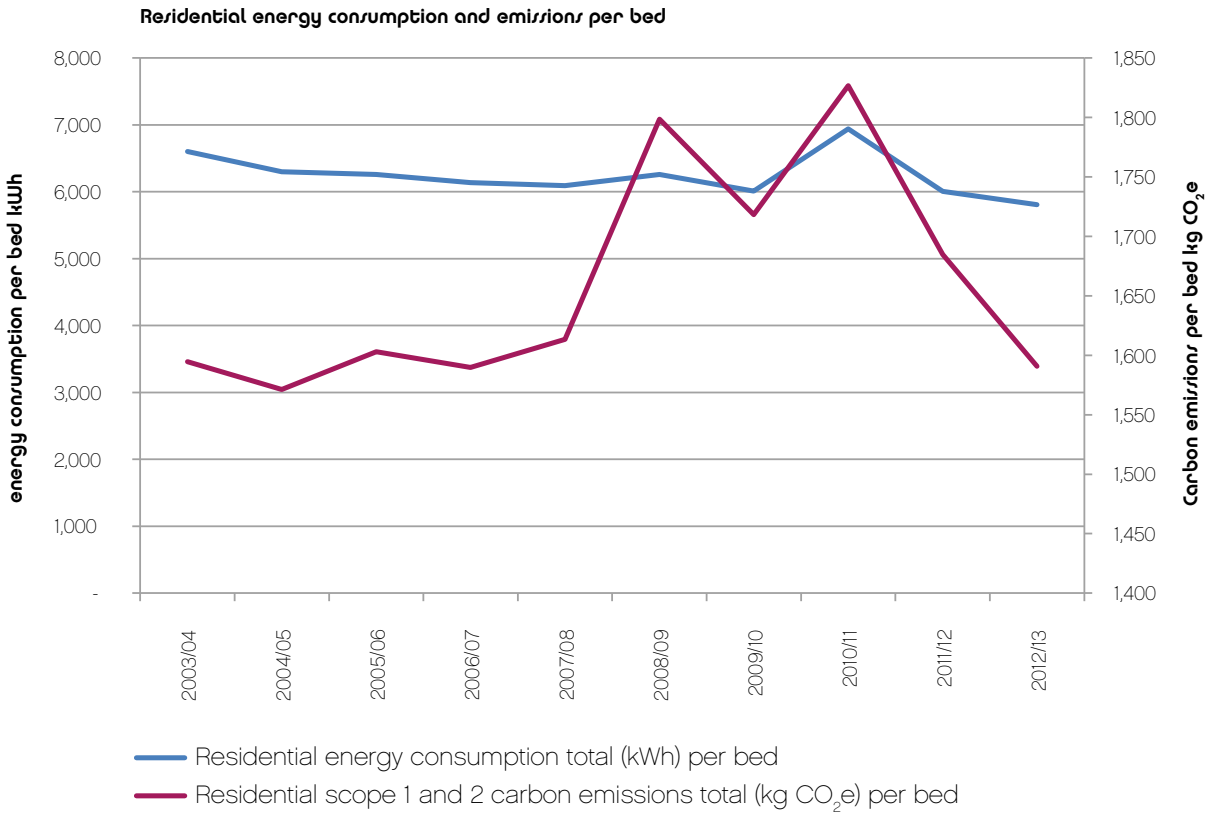
7.8 COST TO UPGRADE C AND D TO B



Cost to upgrade had been reducing as a % of residential income, this was partly as upgrading had taken place, and also perhaps due to the increase in residential income.

The figure is now less relevant as the income figure includes conference and catering income, this is why there has been a reduction from 88% of income to 66%.

7.9 RESIDENTIAL ENERGY CONSUMPTION AND EMISSIONS



Consumption and emissions per bed have remained relatively flat over the past 10 years with a peak in 2010/11 potentially due to a cold winter.

As accommodation is replaced, the anticipation is that energy consumption should reduce as buildings become more efficient. This has not yet been proven within university accommodation.

There is evidence to support the effectiveness of residential carbon strategies given the reduction in energy consumption since 2009/10. This is likely to be as a direct result of the implementation of these strategies increasing the efficiency of accommodation. The sector is increasingly seeing some very innovative developments such as the zero carbon residential development at the University of Hertfordshire.

Anecdotal evidence suggests that power and energy consumption in student residential accommodation is a significant issue with two key challenges that remain out of the control of the accommodation manager: use of power in the room (for example, powering TVs or other devices and use of hot water in showers.

8 SCOTLAND AND WALES

Whilst the majority of this report looks at the sector across the whole of the United Kingdom, we have been asked to review the data looking at specific parts of the UK. Here we have refined the data to include institutions for Scotland and Wales separately. Of the UK's total University estate, Wales has 1,103,000m^2 (or 5.4%), Scotland has 2,615,000m^2 (or 12.8%).

We have not repeated the whole report, but have identified a number of the key measures and produce them here separately for Scotland and Wales. Our comments are limited to where there is a distinct difference from the figures for the whole of the UK.

8.1 SCOTLAND

HEI income in Scotland (at £2.761bn) is roughly 10% of the UK's total, and shows broadly the same profile, with an increase in teaching income in 2012/13.

The size of the HEI estate has been increasing over time (currently 1,829,000m2 NIA), with as much as 120,000m2 (NIA) coming on-stream during 2012/13.

Student numbers (154,000 taught FTEs) did not fall in Scotland in the way they did in the whole of the UK showing a small increase of 2% (against a small fall the year previously). Staff numbers continue to fall significantly, which is different for the whole of the UK where an increase has been seen.

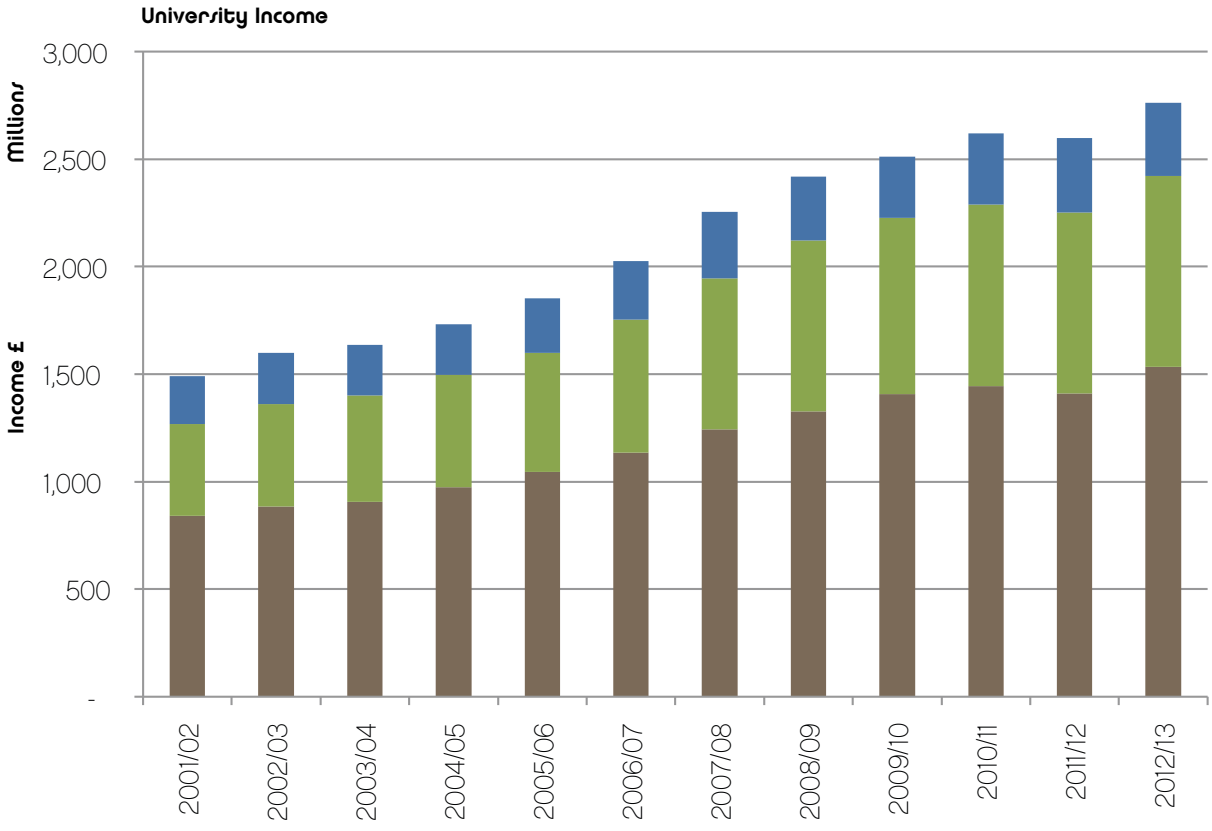
Capital expenditure has returned to the level spent in 2009/10 which at £250milllion is about 12.5% of the investment in the UK as a whole.

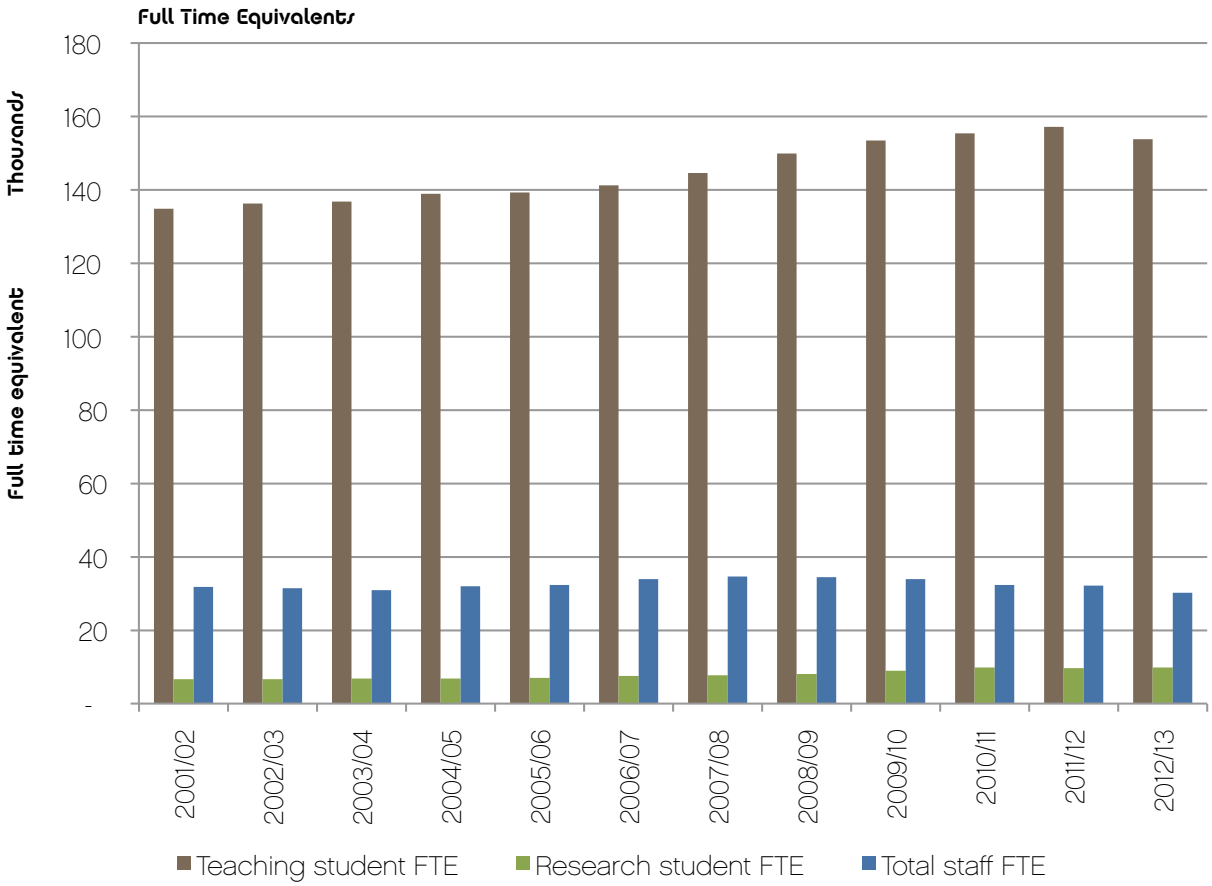
Total Property costs had got higher than the UK during 2008/9 reaching £100 per m2, but have now reduced considerably and are now much more in line with total UK expenditure.

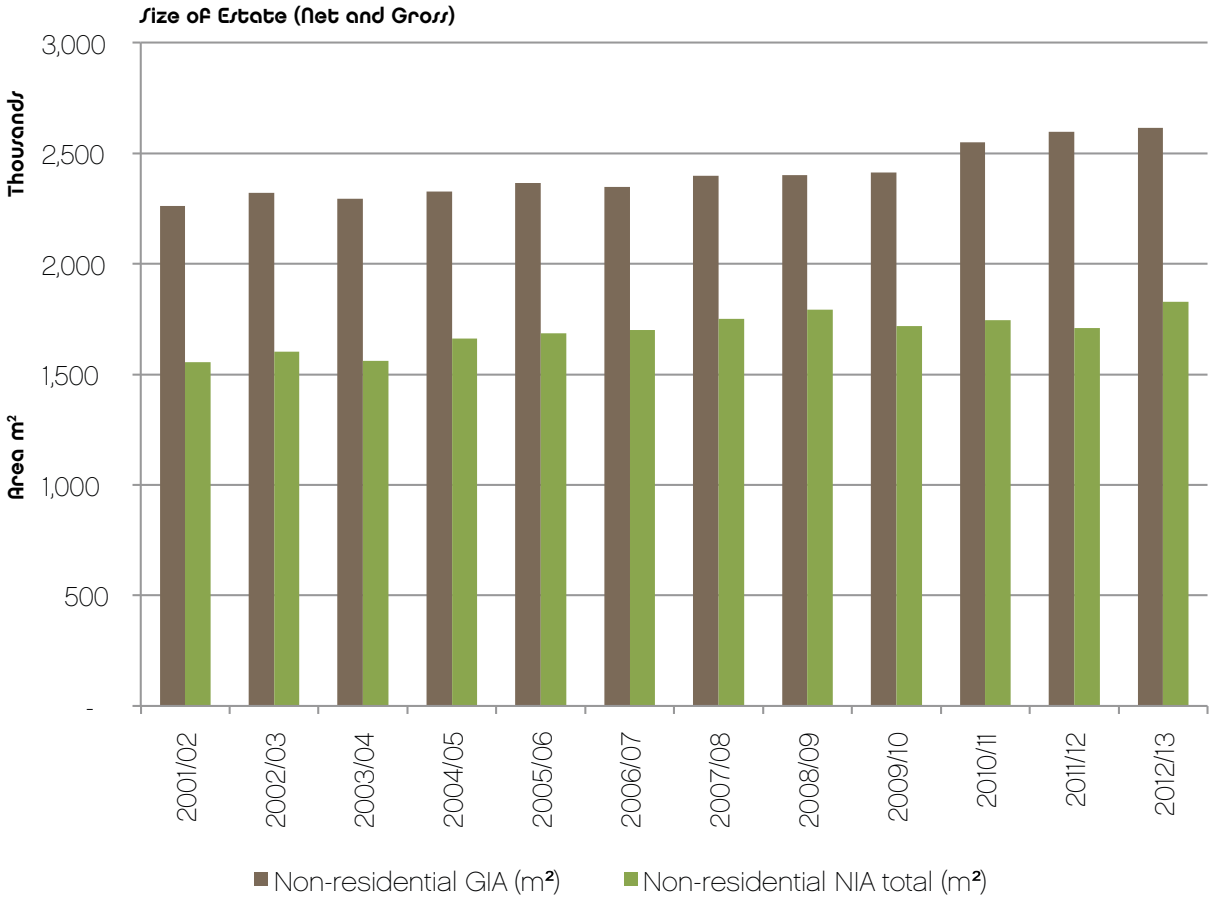
Space per staff and student FTE has been slightly increasing over the last 4 years to a value of over 13m2 per FTE. This compares with a figure of 10m2 per FTE for the rest of the UK. This indicates that Scotland has more estate for the level of activity than the rest of the UK.

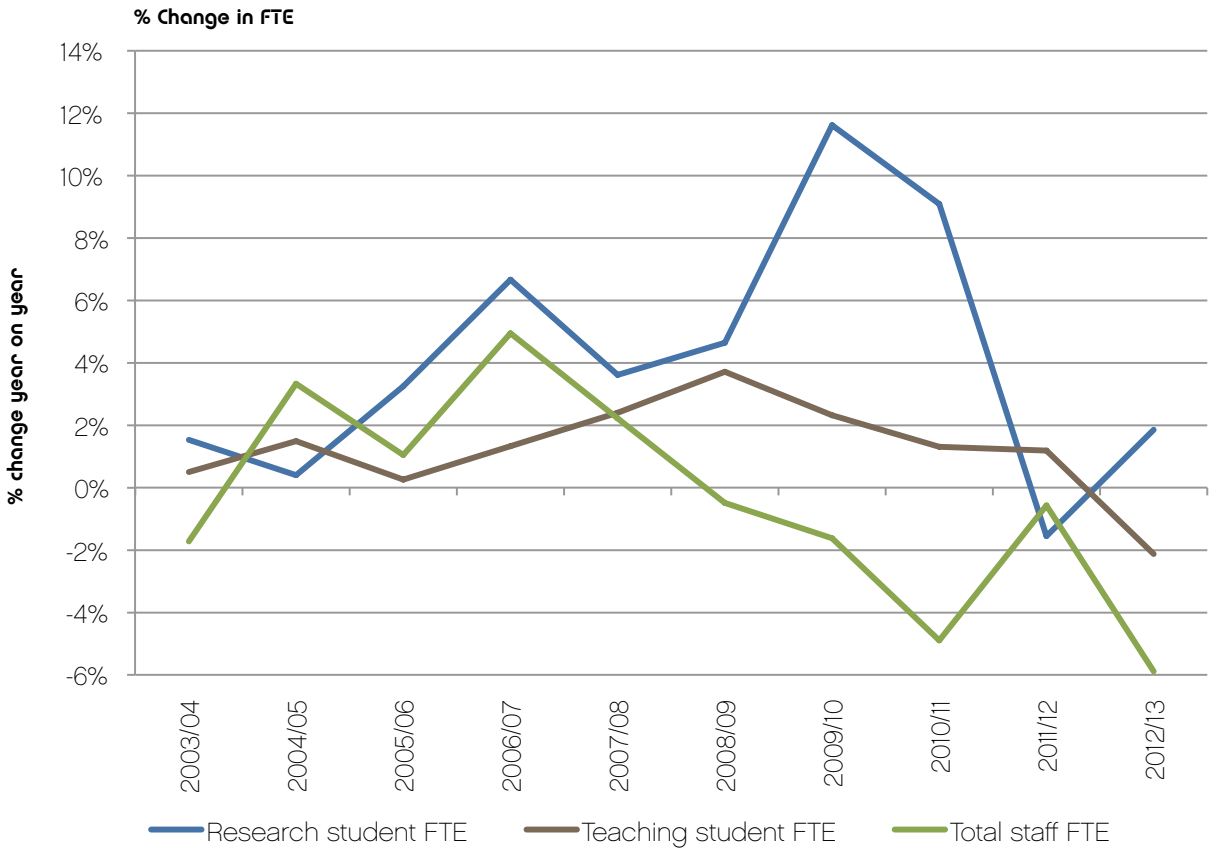
This translates into a lower Income per m2 figure than the whole of the UK and one that has remained relatively flat over the last 4 years. At £1,300 per m2 this is substantially lower than the UK mean of £1,750 per m2 (NIA)

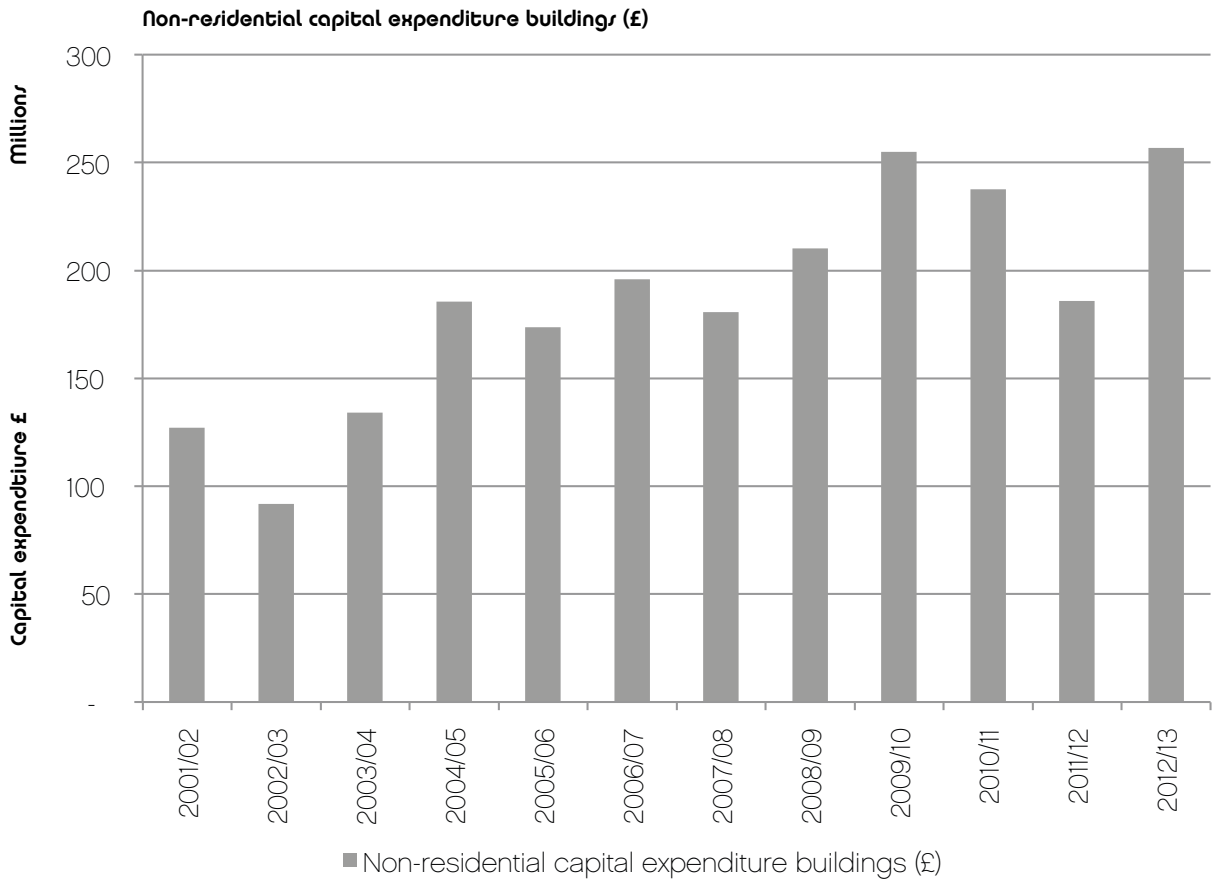
Provision of student accommodation is very similar to the whole of the UK in bed provision is about 19% of total taught students, and similarly private sector provision makes up an important element to the total provision (although, as a % less than the whole of the UK).

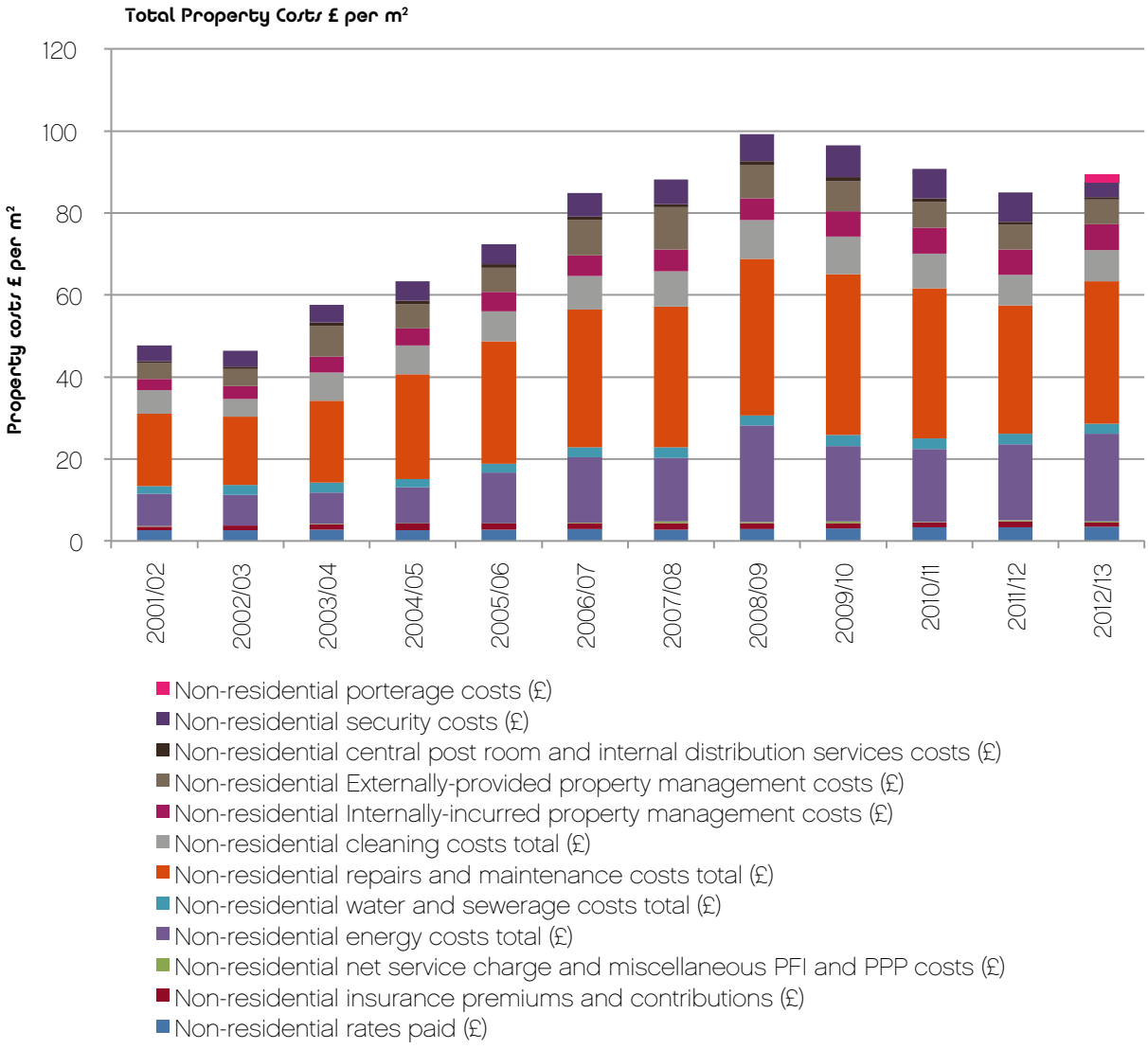


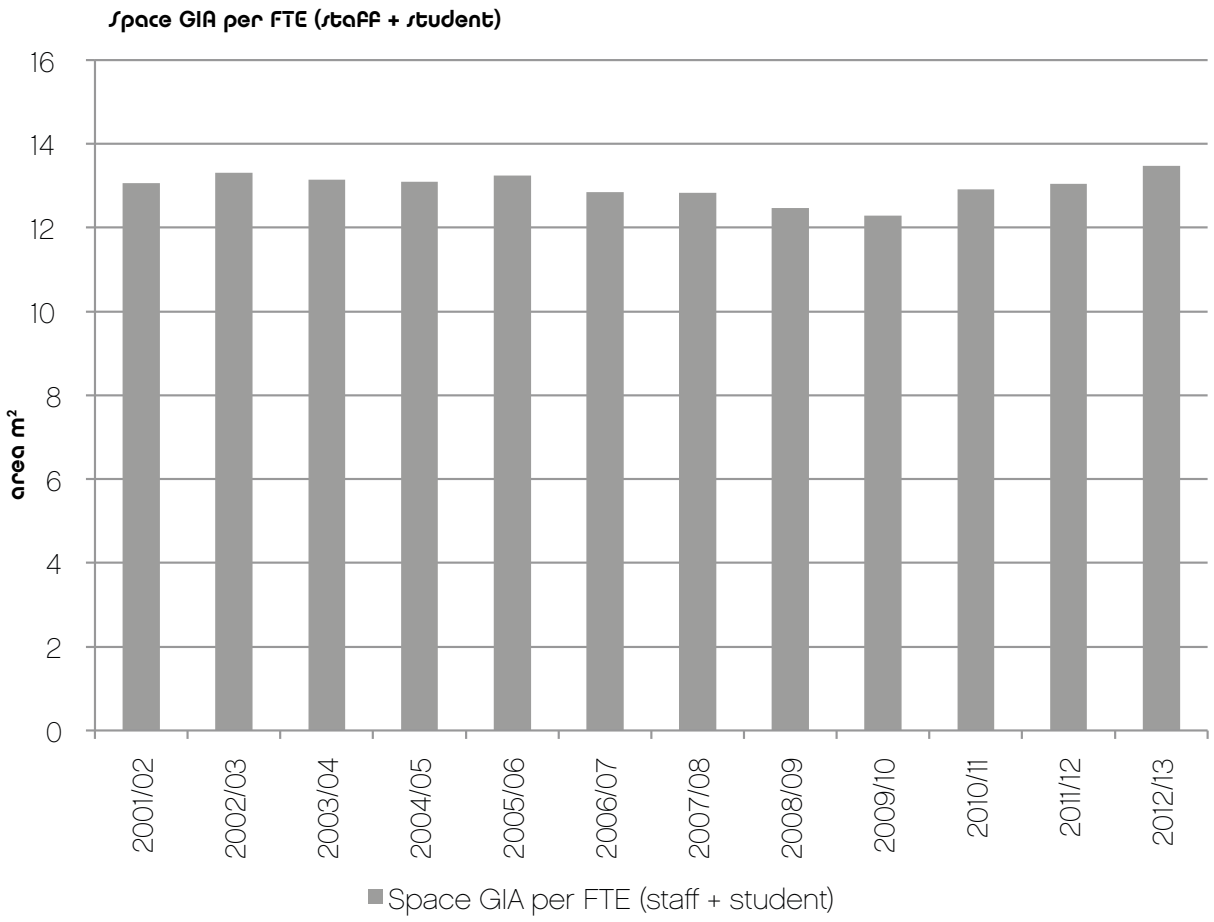

Full Time Equivalents
Thousands
Full time equivalent
180
160
140
120
100
80
60
40
20
-
2001/02
2002/03
2003/04
2004/05
2005/06
2006/07
2007/08
2008/09
2009/10
2010/11
2011/12
2012/13
Teaching student FTE
Research student FTE
Total staff FTE

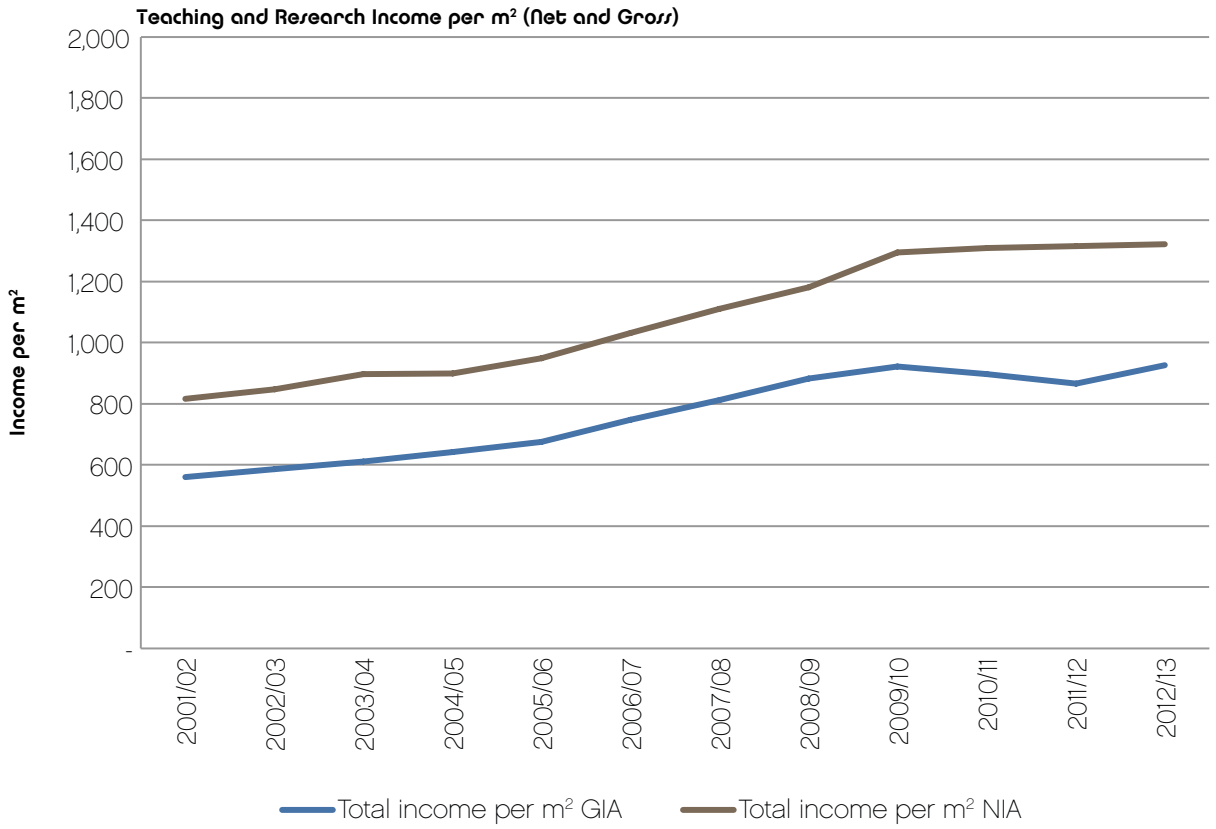

Size of Estate (Net and Gross)
Thousands
Area m²
3,000
2,500
2,000
1,500
1,000
500
-
2001/02
2002/03
2003/04
2004/05
2005/06
2006/07
2007/08
2008/09
2009/10
2010/11
2011/12
2012/13
Non-residential GIA (m²)
Non-residential NIA total (m²)

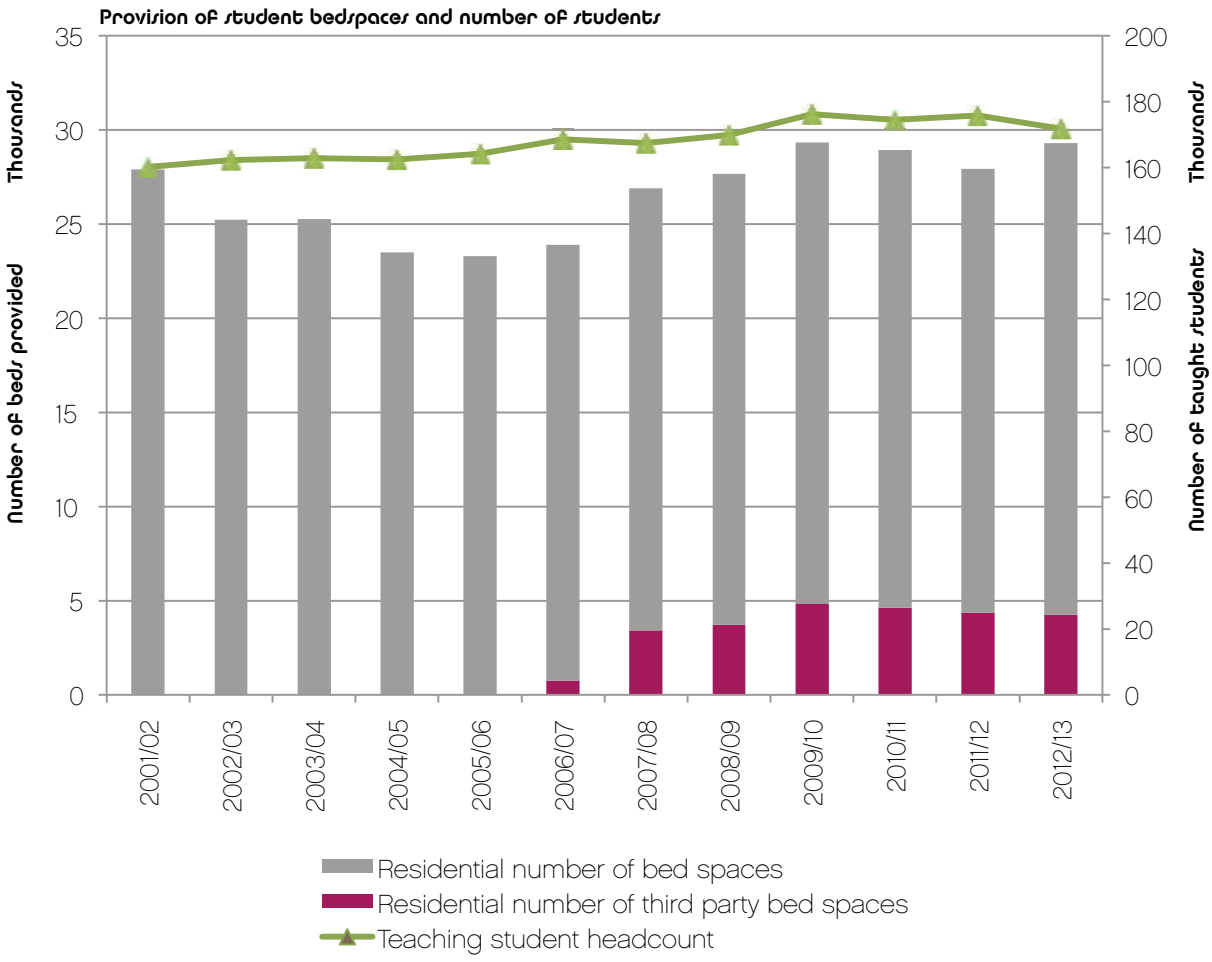

% Change in FTE
% change year on year
14%
12%
10%
8%
6%
4%
2%
0%
-2%
-4%
-6%
2003/04
2004/05
2005/06
2006/07
2007/08
2008/09
2009/10
2010/11
2011/12
2012/13
Research student FTE
Teaching student FTE
Total staff FTE


Non-residential capital expenditure buildings (£)
Millions
Capital expenditure £
300
250
200
150
100
50
-
2001/02
2002/03
2003/04
2004/05
2005/06
2006/07
2007/08
2008/09
2009/10
2010/11
2011/12
2012/13
Non-residential capital expenditure buildings (£)


Total Property Costs £ per m²
Property costs £ per m²
120
100
80
60
40
20
0
2001/02
2002/03
2003/04
2004/05
2005/06
2006/07
2007/08
2008/09
2009/10
2010/11
2011/12
2012/13
Non-residential porterage costs (£)
Non-residential security costs (£)
Non-residential central post room and internal distribution services costs (£)
Non-residential Externally-provided property management costs (£)
Non-residential Internally-incurred property management costs (£)
Non-residential cleaning costs total (£)
Non-residential repairs and maintenance costs total (£)
Non-residential water and sewerage costs total (£)
Non-residential energy costs total (£)
Non-residential net service charge and miscellaneous PFI and PPP costs (£)
Non-residential insurance premiums and contributions (£)
Non-residential rates paid (£)


Space GIA per FTE (staff + student)
16
14
12
10
8
6
4
2
0
area m²
2001/02
2002/03
2003/04
2004/05
2005/06
2006/07
2007/08
2008/09
2009/10
2010/11
2011/12
2012/13
Space GIA per FTE (staff + student)


Teaching and Research Income per m² (Net and Gross)
Income per m²
2,000
1,800
1,600
1,400
1,200
1,000
800
600
400
200
-
2001/02
2002/03
2003/04
2004/05
2005/06
2006/07
2007/08
2008/09
2009/10
2010/11
2011/12
2012/13
Total income per m² GIA
Total income per m² NIA


Provision of student bedspaces and number of students
Number of beds provided
Thousands
Number of taught students
Thousands
35
30
25
20
15
10
5
0
200
180
160
140
120
100
80
60
40
20
0
2001/02
2002/03
2003/04
2004/05
2005/06
2006/07
2007/08
2008/09
2009/10
2010/11
2011/12
2012/13
Residential number of bed spaces
Residential number of third party bed spaces
Teaching student headcount

8.2 WALES

HEI income (£1.185bn per annum) in Wales has been very nearly static for the last 4 years after a period of considerable growth. Wales has not seen the increase in income that the rest of the UK saw in 12/13.

The University estate (794,000m2 NIA) has grown slightly (with a decrease in the GIA) suggesting that new estate has replaced old.

There has been a quite significant reduction in taught FTE (from 95,000 to 90,000 students) which is a proportionately larger reduction that in the whole of the UK.

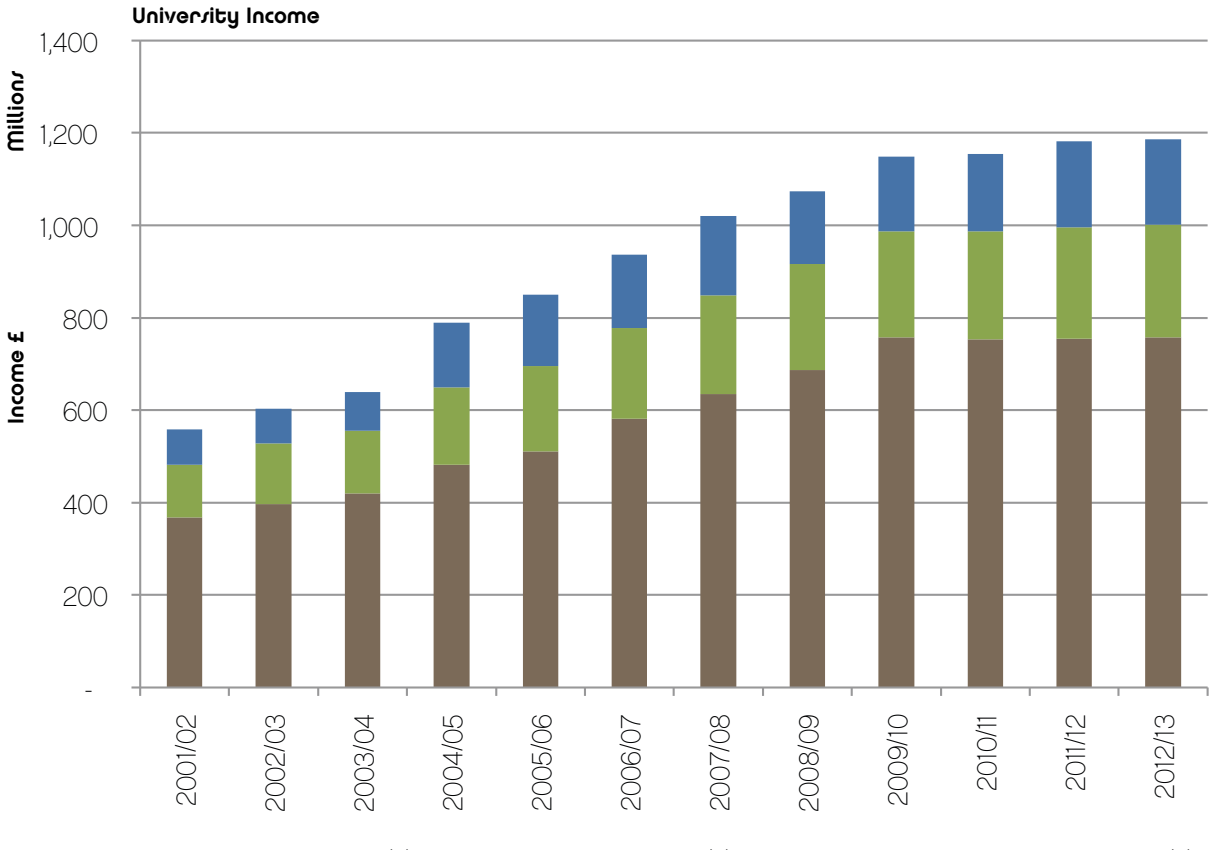
Capital expenditure is at its highest level for a decade, greater than in 2009/10 at about £100m.

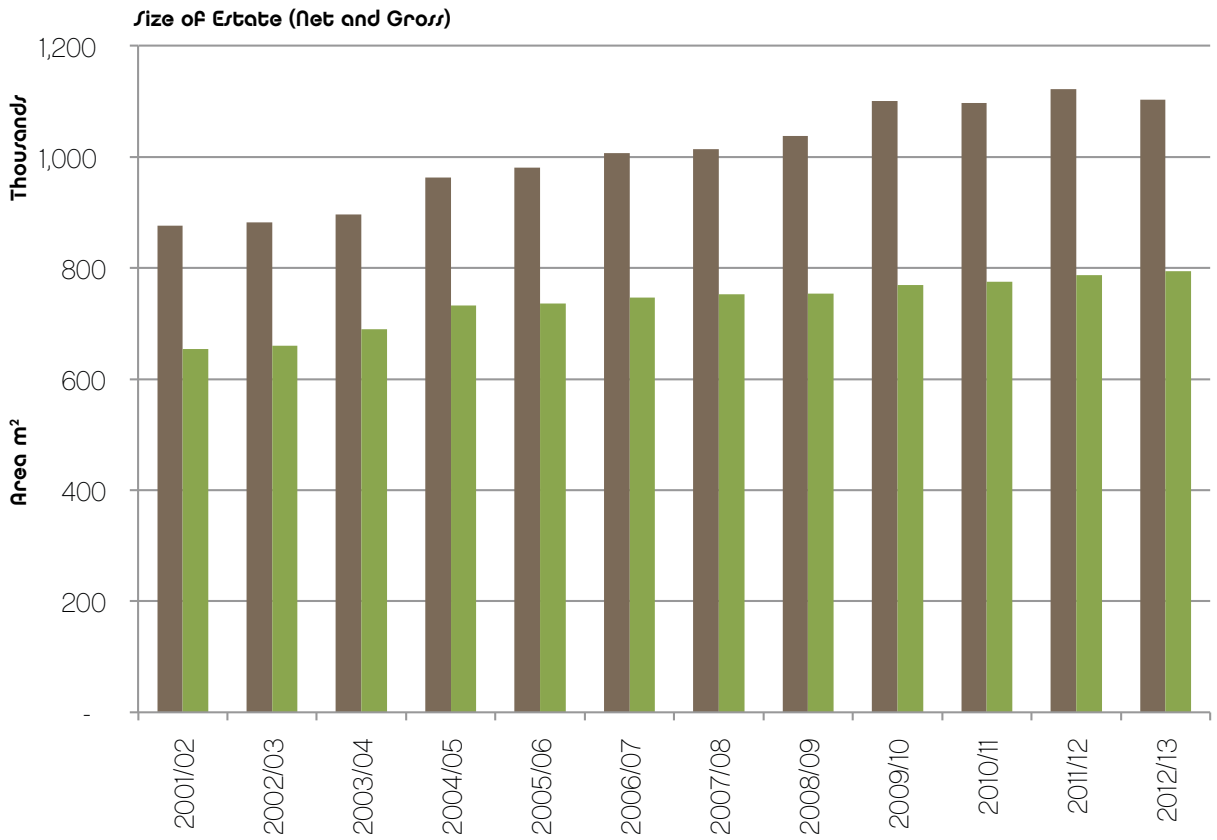
Total property costs have levelled off at a level slightly lower than the peak in 2008/9 and at below £70 per m2, this is substantially lower than in the UK as a whole.

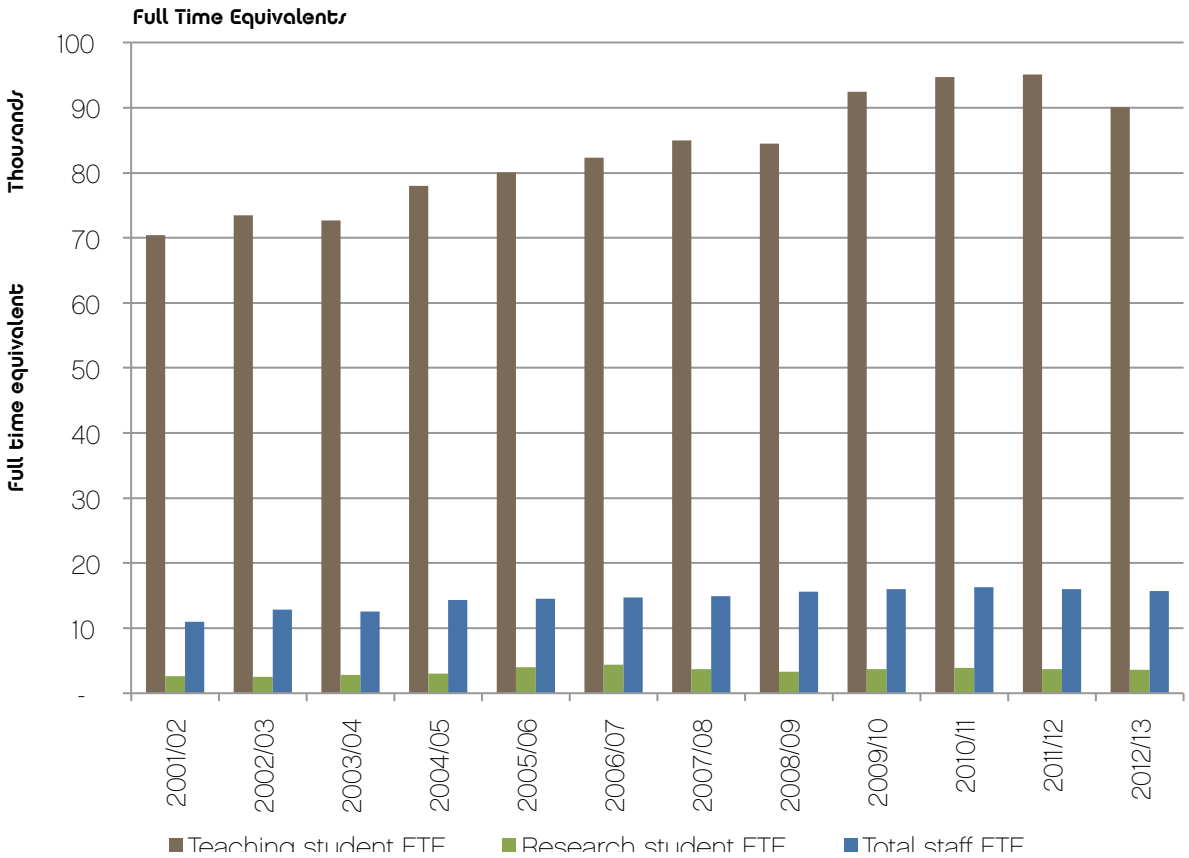
The amount of space per staff and student FTE is very much in line with the UK as a whole with a mean of 10m2 per FTE.

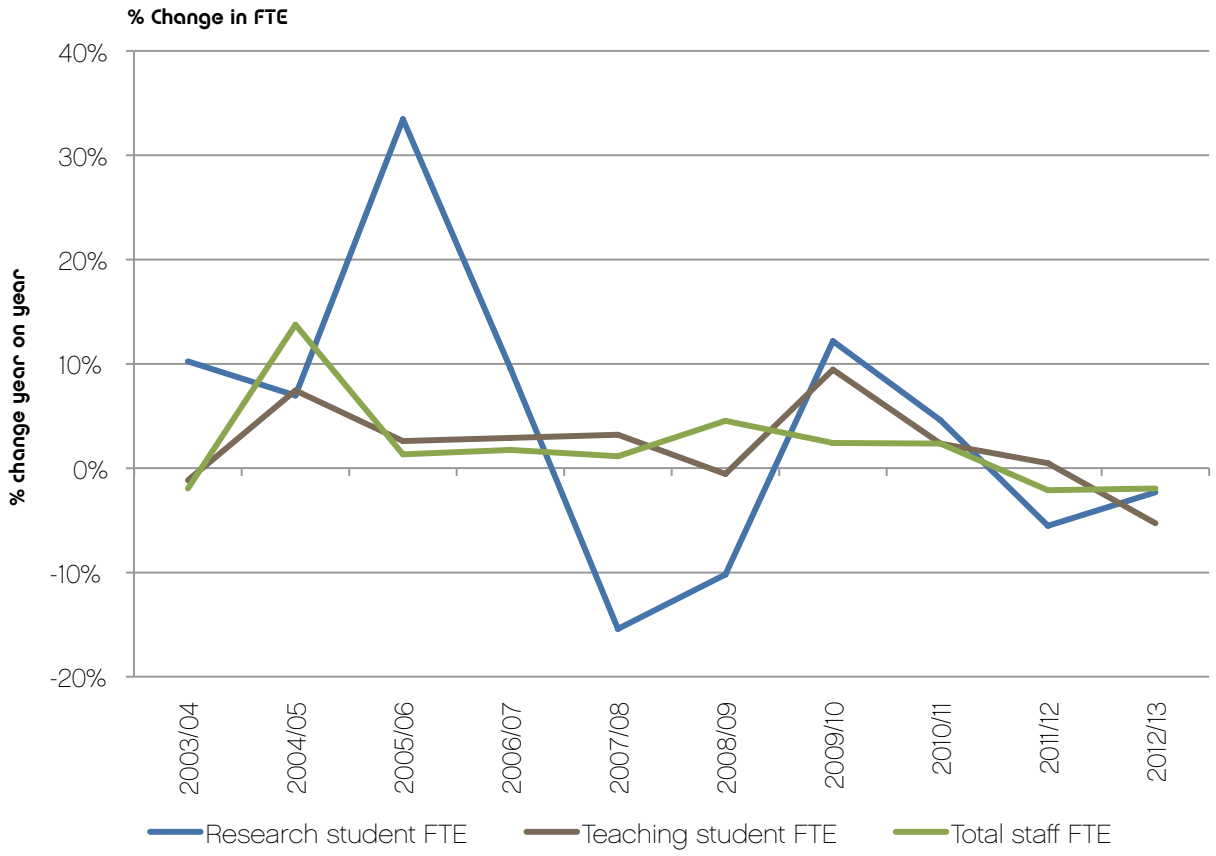
Income per m2 has remained relatively level in Wales over the last 4 years; at £1,300 per m2 this is substantially lower than the UK as a whole (£1,750 per m2).

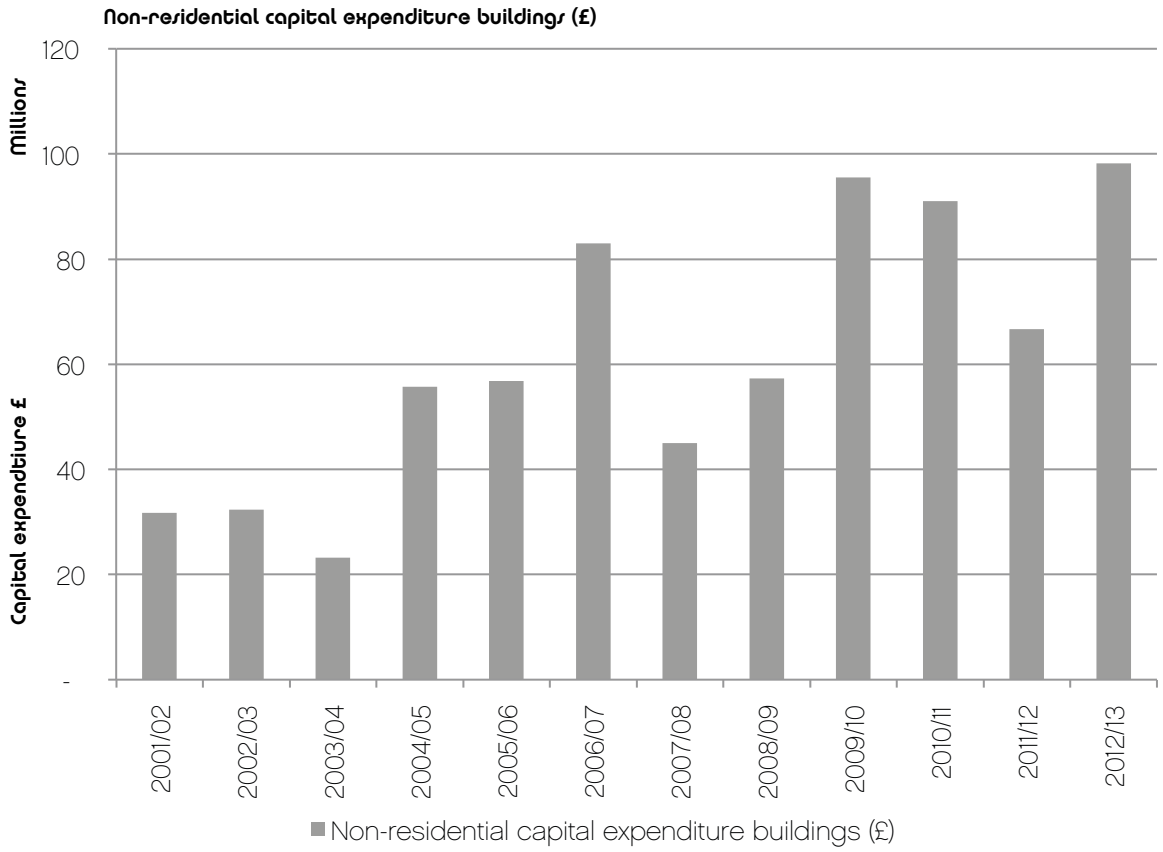
Student accommodation is provided at the same sort of rate in terms of % of taught students (18%), although the drop in student numbers has increased this substantially over the last year.



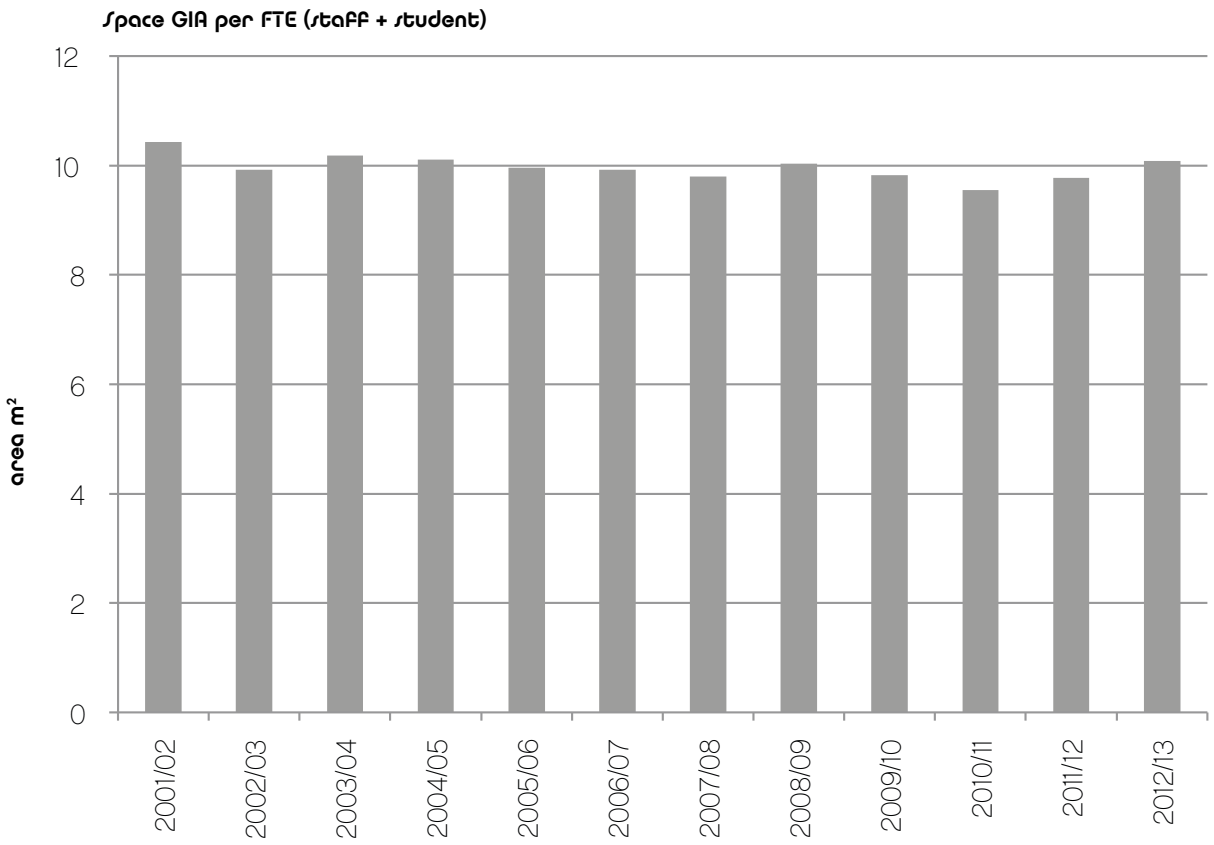

Size of Estate (Net and Gross)
Thousands
Area m²
1,200
1,000
800
600
400
200
-
2001/02
2002/03
2003/04
2004/05
2005/06
2006/07
2007/08
2008/09
2009/10
2010/11
2011/12
2012/13

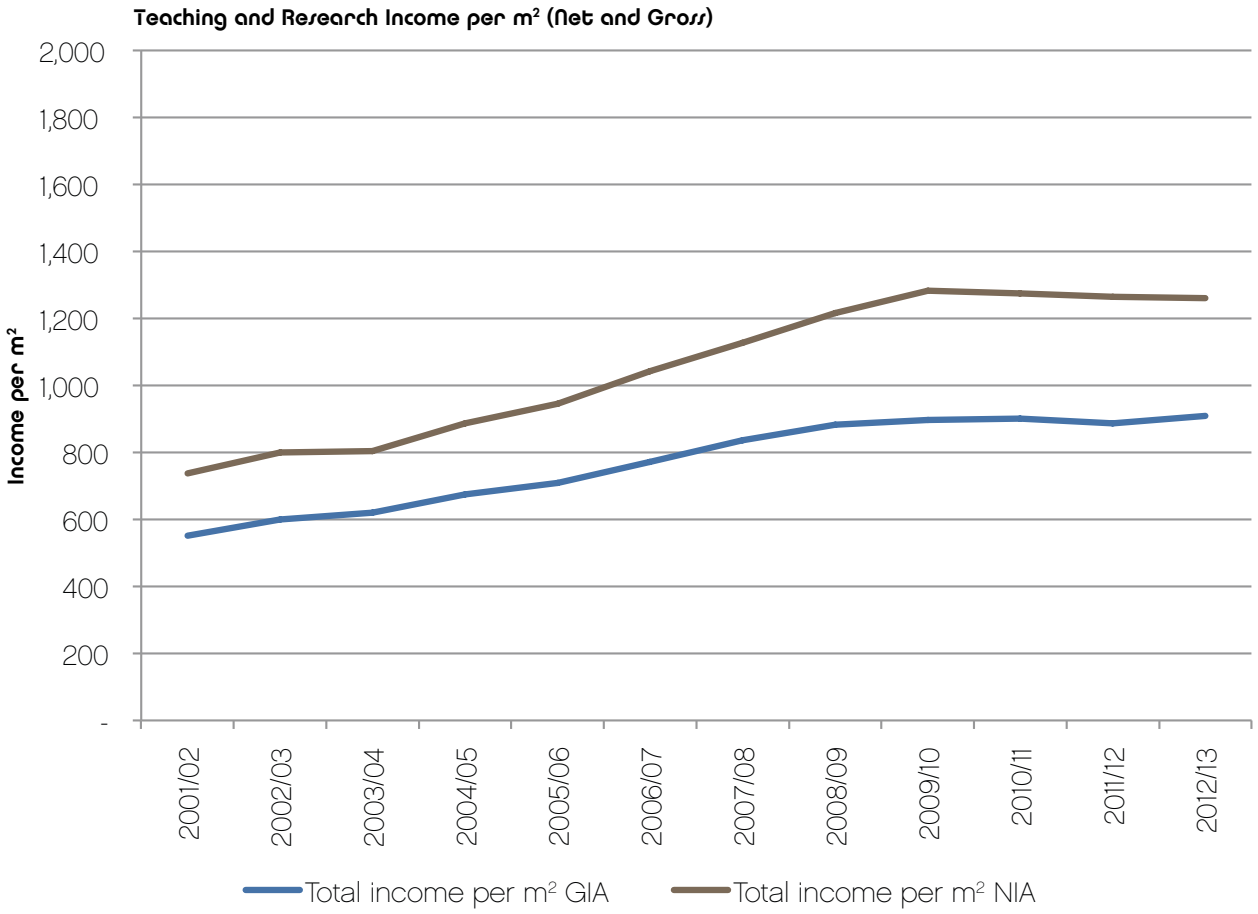

Full Time Equivalents
Thousands
Full time equivalent
100
90
80
70
60
50
40
30
20
10
-
2001/02
2002/03
2003/04
2004/05
2005/06
2006/07
2007/08
2008/09
2009/10
2010/11
2011/12
2012/13
Teaching student FTE
Research student FTE
Total staff FTE

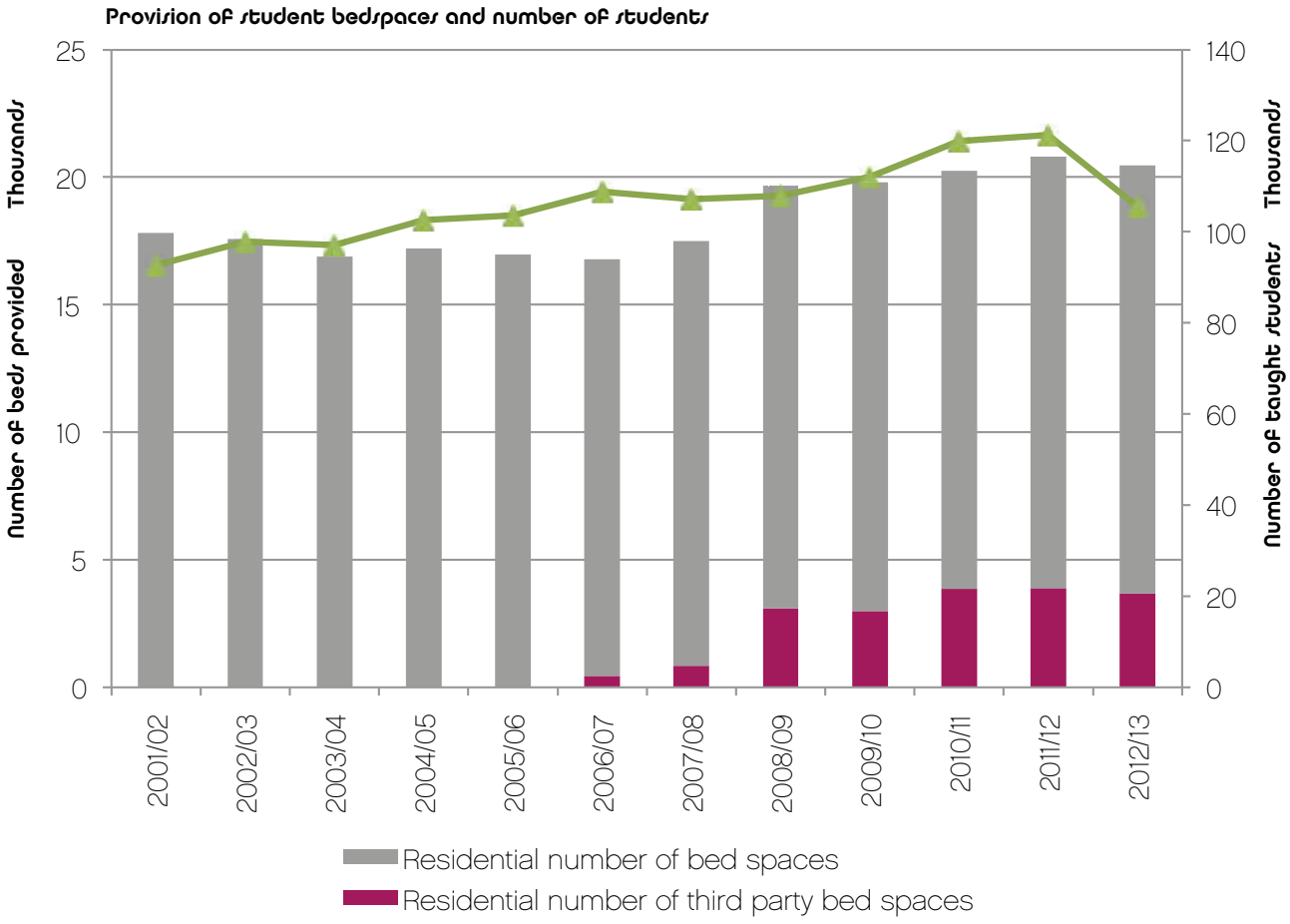

% Change in FTE
40%
30%
20%
10%
0%
-10%
-20%
% change year on year
2003/04
2004/05
2005/06
2006/07
2007/08
2008/09
2009/10
2010/11
2011/12
2012/13
Research student FTE
Teaching student FTE
Total staff FTE


Non-residential capital expenditure buildings (£)
Millions
Capital expenditure £
120
100
80
60
40
20
-
2001/02
2002/03
2003/04
2004/05
2005/06
2006/07
2007/08
2008/09
2009/10
2010/11
2011/12
2012/13
Non-residential capital expenditure buildings (£)


Total Property Costs £ per m²
Property costs £ per m²
80
60
40
20
0
2001/02
2002/03
2003/04
2004/05
2005/06
2006/07
2007/08
2008/09
2009/10
2010/11
2011/12
2012/13
Non-residential porterage costs (£)
Non-residential security costs (£)
Non-residential central post room and internal distribution services costs (£)
Non-residential Externally-provided property management costs (£)
Non-residential Internally-incurred property management costs (£)
Non-residential cleaning costs total (£)
Non-residential repairs and maintenance costs total (£)
Non-residential water and sewerage costs total (£)
Non-residential energy costs total (£)
Non-residential net service charge and miscellaneous PFI and PPP costs (£)
Non-residential insurance premiums and contributions (£)
Non-residential rates paid (£)


Space GIA per FTE (staff + student)
area m²
12
10
8
6
4
2
0
2001/02
2002/03
2003/04
2004/05
2005/06
2006/07
2007/08
2008/09
2009/10
2010/11
2011/12
2012/13


Teaching and Research Income per m² (Net and Gross)
Income per m²
2,000
1,800
1,600
1,400
1,200
1,000
800
600
400
200
-
2001/02
2002/03
2003/04
2004/05
2005/06
2006/07
2007/08
2008/09
2009/10
2010/11
2011/12
2012/13
Total income per m² GIA
Total income per m² NIA


Provision of student bedspaces and number of students
Number of beds provided Thousands
Number of taught students Thousands
25
20
15
10
5
0
140
120
100
80
60
40
20
0
2001/02
2002/03
2003/04
2004/05
2005/06
2006/07
2007/08
2008/09
2009/10
2010/11
2011/12
2012/13
Residential number of bed spaces
Residential number of third party bed spaces

9 AUDE KEY PERFORMANCE INDICATORS

AUDE has been working to create a suite of key performance indicators to help institutions understand the performance of their estate. This list of 12 are those suggested as being the most relevant to the overall performance of the estate. These include:

- Total property costs per m^2 GIA
- Non residential Income per m^2 GIA
- m^2 GIA per fte (staff and student)
- % of estate in condition A and B
- Investment - capital expenditure as % income
- % of HEIs income spent on maintenance
- Cost of Maintenance, Capital expenditure and combined as a % of IRV
- Carbon emissions scope 1 and 2, tonnes by m^2
- Water consumption m^3 of water per m^2 GIA
- Energy consumption per m^2 GIA
- % recycled waste from total waste
- Residential Income/expenditure per bed space

9.1 ALL UK HEIS

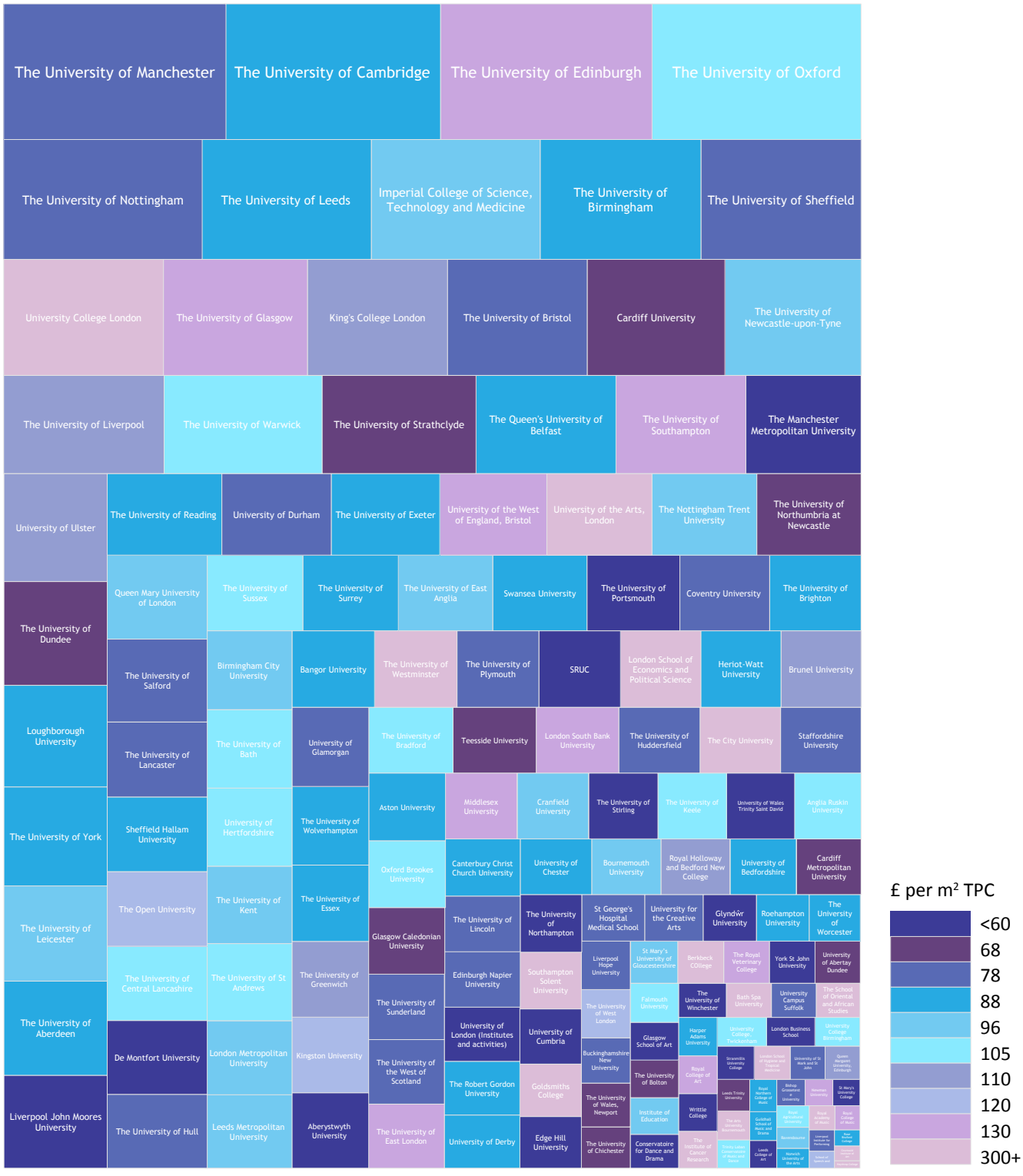
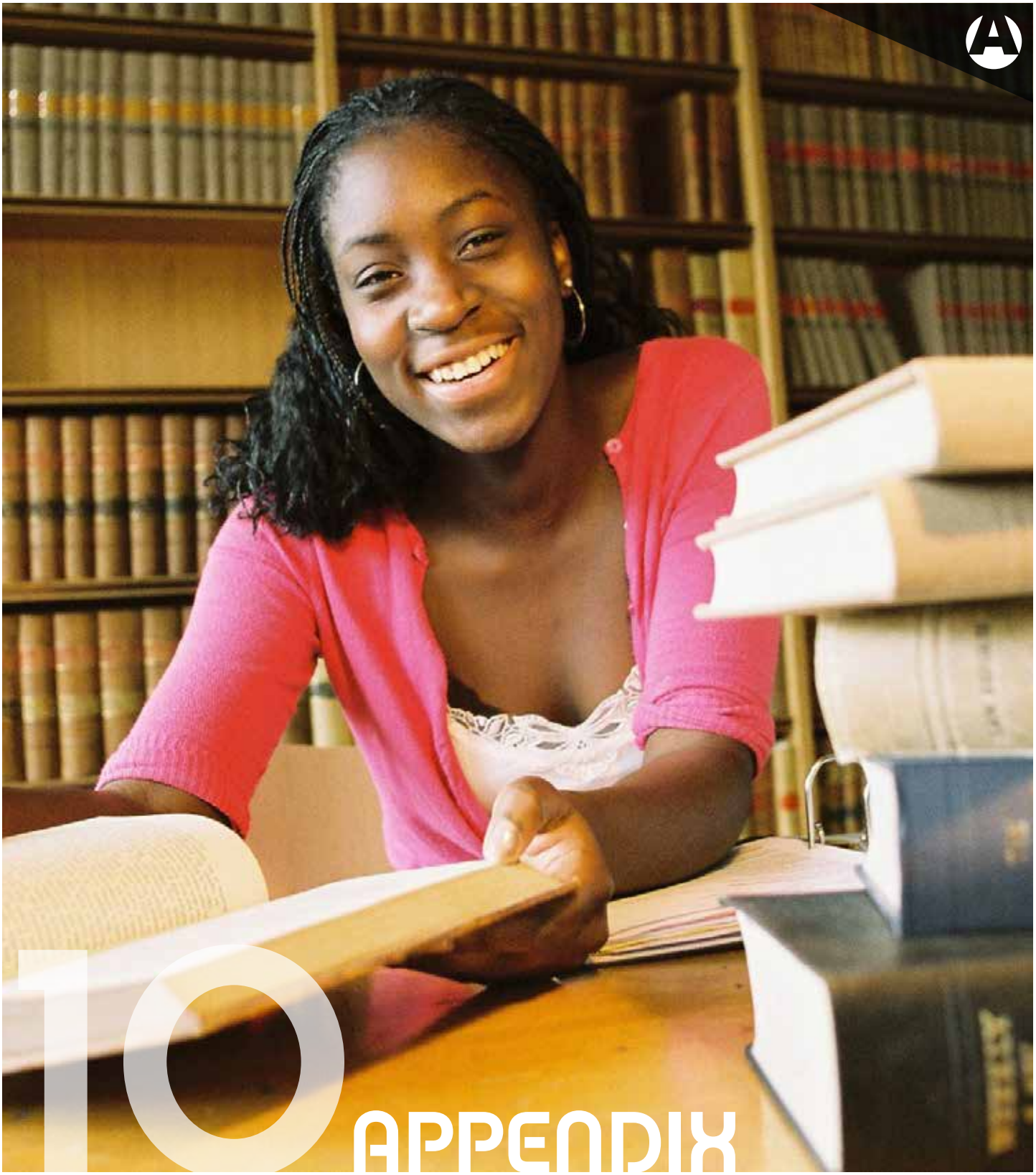


Chart shows size of University estates and TPC per m². Each box is proportionate to the Gross Internal Area of the Institution, thus the whole diagram represents the total University estate. The colour of each square represents the costs per m².



10 APPENDIX

2. THE SECTOR

2.1 Comparison with other estates

NHS Estate, data from Estates Return Information Collection

http://data.gov.uk/dataset/eric-annual-returns

Government estate data from Gov.UK State of the Estate 2013 https://www.gov.uk/government/collections/state-of-the-estate

2.2 Distribution of academic estate by region and country

Data as above.

For the following tables, data comes from the Higher Education Statistics Agency, Estates Management Record 2012/13. The Field Name, and the Short Name are listed below so that institutions can identify their own record from their HESA return.

2.3 University Income
Teaching Income, (FITEI)
Research Income, (FIREI)
Other non-residential Income, (FINRIO)

2.4 Size of Estate
Non-residential GIA (m²), (SMGIANR)
Non-residential NIA total (m²), (SMNIANRT)

2.5 Institution research and teaching v academic income GIA
Total academic income = Teaching Income (FITEI) + Research Income (FIREI)
Area GIA = Non-residential GIA (m²) (SMGIANR)

2.6 Total Income (non-residential)
Teaching Income, (FITEI)
Research Income, (FIREI)
Other non-residential Income, (FINRIO)

2.7, 2.8 and 2.9 Student and Staff Numbers, Change in Staff/Student FTE, Student FTE
Teaching Student FTE (STFTETE)
Research Student FTE (STFTERE)
Total Staff FTE (SFFTET)

2.10 Capital Expenditure
Non-residential capital expenditure building (FNRCEX)

2.11 Source of Capital Funding,
Capital expenditure (from HESA Finance data, categories of expenditure)
This covers all expenditure which increases the value of an institution's (or a subsidiary undertaking's) fixed assets, including the purchase of land, buildings, and those items of equipment which are included in the institution's register of fixed assets and shown in the balance sheet.
Capital expenditure incurred is split into residences and catering operations (including conference operations) and other operations (non-catering and non-conference operations), each sub-divided into expenditure incurred on buildings (land and building projects) and the purchase of equipment.
Sources of capital expenditure funding are categorised as:
funding body grants includes capital grants allocated by the funding bodies, used to provide assets which have been capitalised.
Retained proceeds of sales includes the contribution from proceeds of sales of exchequer funded properties after surrendering the appropriate amount to the Treasury.
Internal funds includes the amount of internal funds utilised to finance expenditure.
Loans includes all sums borrowed from external sources to fund expenditure.
Other external sources include amounts provided as bequests, donations or all other external sources.

3 PROPERTY KEY METRICS
3.1, 3.2 and 3.3 Total Property Costs per m2, TPC per m2 for whole sector, Change in Property Costs as % of total property costs.
Non-residential rates paid (£) (FNRRP)
Non-residential insurance premiums and contributions (£) (FNRIPCO)
Non-residential net service charge and miscellaneous PFI and PPP costs (£) (FNRNSCM)
Non-residential energy costs total (£) (FNRECTOT)
Non-residential water and sewerage costs total (£) (FNRWSCT)
Non-residential repairs and maintenance costs total (£) (FNRRMCG)
Non-residential cleaning costs total (£) (FNRCCT)
Non-residential Internally-incurred property management costs (£) (FNRIIPMC)
Non-residential Externally-provided property management costs (£) (FNREPPMC)
Non-residential central post room and internal distribution services costs (£) (FNRPRIDSC)
Non-residential security costs (£) (FNRSCO)
Non-residential porterage costs (£) (FNRPOC)

Area GIA = Non-residential GIA (m²) (SMGIANR)

3.4 Teaching and Research Income per m2
Total academic income = Teaching Income (FITEI) + Research Income (FIREI)
Per m2 Non-residential GIA (m²), (SMGIANR) and Non-residential NIA total (m²), (SMNIANRT)

3.5 Income per m² NIA
Total academic income = Teaching Income (FITEI) + Research Income (FIREI) per
Non-residential NIA total (m²), (SMNIANRT)

3.6 Capex and Maintenance as % of total income
Non-residential capital expenditure building (FNRCEX) + Non-residential repairs and maintenance costs total (£) (FNRRMCG) as a % of Teaching Income (FITEI) + Research Income (FIREI)

3.7 Capex and Maintenance as % of IRV
Non-residential capital expenditure building (FNRCEX) + Non-residential repairs and maintenance costs total (£) (FNRRMCG) as a % of Non-residential Insurance Replacement Value (BNRIRV)

4 SPACE ANALYSIS
4.1 Space, GIA per FTE (staff and student)
= Non-residential GIA (m²) (SMGIANR) / (Teaching Student FTE (STFTETE) + Research Student FTE (STFTERE) + Total Staff FTE (SFFTET))

4.2 Space NIA per Student FTE
= Non-residential NIA (m²) (SMNIANR) / (Teaching Student FTE (STFTETE) + Research Student FTE (STFTERE))

4.3 Research space (not office) per research student
Research not offices specialist academic area (m²) (SMRESAA)
Research not offices NIA (m²) (SMNIARE)
Both figures per Research Student FTE (STFTERE)

4.4 Staff Numbers and office space
Research offices NIA (m²) (SMNIAREO)
Support offices NIA (m²) (SMNIASO)
Teaching offices NIA (m²) (SMNIATEO)
Total office based staff = Total teaching and research staff FTE (SFTERET) + Support offices staff FTE (SSFTEOF)

4.5 Office space per FTE
Office space per academic staff FTE = (Research offices NIA (m²) (SMNIAREO) + Teaching offices NIA (m²) (SMNIATEO)) / Total teaching and research staff FTE (SFTERET)
Office space per support staff FTE = Support offices NIA (m²) (SMNIASO) / Support offices staff FTE (SSFTEOF)

4.6 Teaching (not offices) space per taught students
= Teaching not offices NIA (m²) (A SMNIATE) / Teaching Student FTE (STFTETE)

4.7 Teaching and Research income by relevant area
Teaching income per m2 teaching space = Teaching Income, (FITEI) / Teaching NIA total (m²) (SMNIATET)
Research income per m2 Research space = Research Income, (FIREI) / Research NIA total (m²) (SMNIARET)

5 ENERGY
5.1Energy Costs by type
Non-residential energy costs electricity (£) (FNRECELE)
Non-residential energy costs gas (£) (FNRECGAS)
Non-residential energy costs other (£) = Non-residential energy costs oil (FNRECOIL) + Non-residential energy costs other (FNRECOTH)

5.2 Energy cost per unit (pence per KwH)
Non-residential energy costs total (£) (FNRECTOT) / Non-residential energy consumption total (kWh) (ENRECT)

5.3 Energy cost and consumption per m2
Non-residential energy costs total (£) (FNRECTOT) / Non-residential GIA (m²) (SMGIANR)
Non-residential energy consumption total (kWh) (ENRECT) / Non-residential GIA (m²) (SMGIANR)

5.4 Scope 1 and 2 Carbon emissions per m2
Non-residential scope 1 and 2 carbon emissions total (kg CO2e)(E12CENRT) / Non-residential GIA (m²) (SMGIANR)

5.5 Scope 1 and 2 Carbon emissions per FTE
Non-residential scope 1 and 2 carbon emissions total (kg CO2e)(E12CENRT) / (Teaching Student FTE (STFTETE) + Research Student FTE (STFTERE))

6 CONDITION AND AGE
6.1 Functional suitability
Non-residential functional suitability grade 1 (%) (BNRFSG1)
Non-residential functional suitability grade 2 (%) (BNRFSG2)
Non-residential functional suitability grade 3 (%) (BNRFSG3)
Non-residential functional suitability grade 4 (%) (BNRFSG4)

6.2 Condition
Non-residential building condition assessment condition A (BNRADCA)
Non-residential building condition assessment condition B (BNRADCB)
Non-residential building condition assessment condition C (BNRADCC)

Non-residential building condition assessment condition D (BNRADCD)

6.3 Age

Non-residential construction date since 2000 (BNRD2000)
Non-residential construction date 1980-1999 (BNRD1980)
Non-residential construction date 1960-1979 (BNRD1960)
Non-residential construction date 1940-1959 (BNRD1940)
Non-residential construction date 1915-1939 (BNRD1915)
Non-residential construction date 1840-1914 (BNRD1840)
Non-residential construction date before 1840 (BNRB1840)

6.4 Cost to upgrade as a % of income

= (Non-residential building condition assessment cost to upgrade condition C to B (£) (BNRAUCB) + Non-residential building condition assessment cost to upgrade condition D to B (£) (BRAUDB)) / (Teaching income (FITEI) + Research Income (FIREI))

7 RESIDENTIAL ESTATE

7.1 Cost/income per bedspace

Residences and catering income (£) (FIRI)
Residential energy costs total (£) (FRECTOT)
Residential repairs and maintenance costs total (£) (FRRMCT)
Residential cleaning costs total (£) (FRCCT)
Other costs = Residential expenditure (£) (FREXP) – all costs above (i.e. energy, repairs and maintenance, and cleaning).
All divided by Residential number of bed spaces (SMRNBS)

7.2 Provision of student bedspaces and number of students

Residential number of bed spaces (SMRNBS)
Residential number of third party bed spaces (SMRNTPBS)
Teaching student headcount (STSHTESH)

7.3 Residential capital expenditure

Residential capital expenditure buildings (FRCEX)

7.4 Type of term time accommodation

HESA student accommodation data. Term time accommodation.

7.5 Functional suitability

Residential functional suitability grade 1 (%) (BRFSG1)
Residential functional suitability grade 2 (%) (BRFSG2)
Residential functional suitability grade 3 (%) (BRFSG3)
Residential functional suitability grade 4 (%) (BRFSG4)

7.6 Condition

Residential building condition assessment condition A (BRADCA)
Residential building condition assessment condition B (BRADCB)
Residential building condition assessment condition C (BRADCC)
Residential building condition assessment condition D (BRADCD)

7.7 Age

Residential construction date since 2000 (BRD2000)
Residential construction date 1980-1999 (BRD1980)
Residential construction date 1960-1979 (BRD1960)
Residential construction date 1940-1959 (BRD1940)
Residential construction date 1915-1939 (BRD1915)
Residential construction date 1840-1914 (BRD1840)
Residential construction date before 1840 (BRB1840)

7.8 Cost to upgrade as a % of income

= (Residential building condition assessment cost to upgrade condition C to B (£) (BRAUCB) + Residential building condition assessment cost to upgrade condition D to B (£) (BRAUDB)) / Residences and catering income (FIRI)

7.9 Energy consumption and emissions

Residential scope 1 and 2 carbon emissions total (kg CO2e) (E12CERT)
Residential energy consumption total (ERECTOT)
Both divided by Residential number of bed spaces (SMRNBS)

8. SCOTLAND, WALES AND NORTHERN IRELAND

All charts produced using the same data fields as above, with the region indicator set to exclude England, and include Scotland, Wales and Northern Ireland.

CREDITS

PHOTOGRAPHY

FRONT PAGE Nottingham Trent University
FOREWORD Sir Ian Diamond
P7 University of Westminster
P8 Manchester School of Art
P20 Oxford University
P29 University of Hertfordshire
P37 Lancaster University
P43 Francis Crick Institute
P48 University of Hertfordshire
P58 University of South Wales
P69 Oxford Brookes University
P71 Oxford University, Rob Judges
ABOVE University of Oxford Libraries Book Store, Swindon

AUDE WOULD LIKE TO THANK —

SIR IAN DIAMOND University of Aberdeen
GEORGE GRIFFITH CBRE
SUE HOLMES Oxford Brookes University
ANDREW MAY University of Hertfordshire
SUZANNE IRWIN Executive Officer, AUDE
CLARE RICHARDSON and **LISA WRIGHT** Kindred Agency
AUDE EXECUTIVE COMMITTEE
ALL FUNDING COUNCILS
HIGHER EDUCATION STATISTICS AGENCY
BRITISH UNIVERSITIES FINANCE DIRECTORS GROUP