



UCL

GREEN  
ANNUAL  
REPORT  
2011/12  
UCL

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## **1. Highlights**

Over 2011/12, UCL implemented a number of actions and measures which resulted in improvements to the campus and contributed to our long term environmental sustainability programme. Key highlights include:

- 3% reduction in carbon emissions from baseline
- Scope 3 carbon emissions calculated for first time
- Non-residential waste reduced
- Waste recycling rate increased to 72% from 61%
- Reduced potable water use
- EcoCampus Silver Award achieved
- Successful bid to the Green Academy to support development of Education for Sustainable Development (ESD)

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## **Introduction**

In 2012, UCL published a new Environmental Sustainability (ES) Policy, approved by the Senior Management Team and signed by the Provost. This subsequently formed the basis of an Environmental Sustainability Strategy for UCL.

The Strategy outlined UCL's environmental sustainability core aims as:

1. To create a campus which supports UCL's academic, research and enterprise activities in a sustainable way
2. To enable, empower and support all UCL communities to address our environmental sustainability impacts
3. To provide the education, advancement, dissemination and application of sustainable development
4. To maximise the wider impact of UCL's environmental sustainability activities at local, regional, national and international level through collaboration, partnership and communications
5. To become a leader across the HE sector in terms of environmental sustainability

The following report sets out UCL's progress in 2011/12 against the core aims and the specific targets and commitments that it has set itself.

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## **2. Core Aims**

### 2.1 Creating a Sustainable Campus

#### *Key targets and commitments:*

- *Review UCL's 34% absolute target to reduce carbon emissions and propose associated relative carbon targets*
- *Set a target for waste intensity (kg/FTE)*
- *85% recycling of operational wastes by 2015*
- *100% HCFC phase-out in air conditioning systems by 2015*
- *All new build achieves BREEAM (New Construction) Excellent or equivalent*
- *All major refurbishment work achieves BREEAM (2008 Education or Refurbishment) Excellent or equivalent*
- *All minor refurbishment work achieves RICS Ska Gold where appropriate*
- *10% reduction in delivery vehicles on campus by 2014 (based on 2011 baseline)*
- *Review and revise the UCL Green travel plan by mid-2013*
- *Introduce discharge monitoring by 2013 and reduce discharge levels by 5% against the discharge permit levels by 2015*
- *Reduce water consumption by 10% against 2009/10 baseline by 2014*
- *Introduce at least 50m<sup>2</sup> of new, biodiverse urban space by 2014*
- *Achieve Food for Life catering marks Silver standard by 2013*

#### **Carbon – Scope 1&2**

<b>Commitment</b>	Review the 34% target
<b>Current Target</b>	Reduce carbon emissions by 34% by 2020
<b>Baseline</b>	62,919 tCO <sub>2</sub> in 2005/06
<b>2011/12</b>	60,891 tCO <sub>2</sub>

In early 2009, UCL committed to a 34% target reduction in Scope 1&2 carbon emissions by 2020 (from its 2005/06 baseline levels). Over the course of 2012, UCL reviewed its Carbon Management Plan including: the existing carbon baseline data, opportunities for reducing carbon emissions and timescales for meeting the 34% target. This resulted in some major issues for consideration and further review.

The work indicated that the UCL baseline needed to be revised and that the true scale of the UCL challenge was significant especially in the context of the growing campus. The best approximation of carbon emissions in 2005/06 was not 56,687 tonnes of CO<sub>2</sub>e (tCO<sub>2</sub>e), as reported in the Carbon Management Plan, but 62,919 tCO<sub>2</sub>e. This increase was as a result of refining the CHP calculations. The UCL target was therefore to achieve overall carbon emissions of 41,527 tCO<sub>2</sub>e/year by 2020.

In 2011/12, carbon emissions fell to 60,891 tCO<sub>2</sub>e, which represented a 3% reduction against the baseline. This was the result of investments in energy improvements (such as voltage optimisation and draught proofing), an on-going

capital investment programme and strategic maintenance plan as well as other factors such as the demolition of the Windeyer Building in 2011.

### Carbon – Scope 3

<b>Commitment</b>	Undertake full carbon footprint analysis for UCL
<b>Target</b>	To be defined

Scope 3 emissions are indirect emissions caused by activities at UCL, such as the emissions associated with the manufacture and transport of products that are subsequently purchased and used at UCL. Over 2011/12, UCL instigated several programmes and projects to reduce its Scope 3 emissions: a carbon offset scheme to encourage a reduction in business air travel; improvements to teleconferencing facilities as an alternative to flying to overseas conferences; and the introduction of WARPit<sup>1</sup> to redistribute existing products and reduce the amount of goods purchased.

UCL recently calculated its scope 3 emissions for 2011/12 using the HEFCE guidance methodology. The table below sets out the results of this exercise.

	2008-09	2009-10	2010-11	2011-12
<b>Water<sup>2</sup></b>	382.94	522.80	474.02	394.56
<b>Waste</b>	730.24	754.65	804.12	813.31
<b>Procurement<sup>3</sup></b>	NO DATA	NO DATA	120,629.98	128,646.91
<b>Travel<sup>4</sup></b>	NO DATA	NO DATA	NO DATA	5,582.22
<b>Total</b>	NO DATA	NO DATA	121,908.12	135,516.77

**Table 1: UCL scope 3 carbon emissions (tCO<sub>2</sub>e/year)**

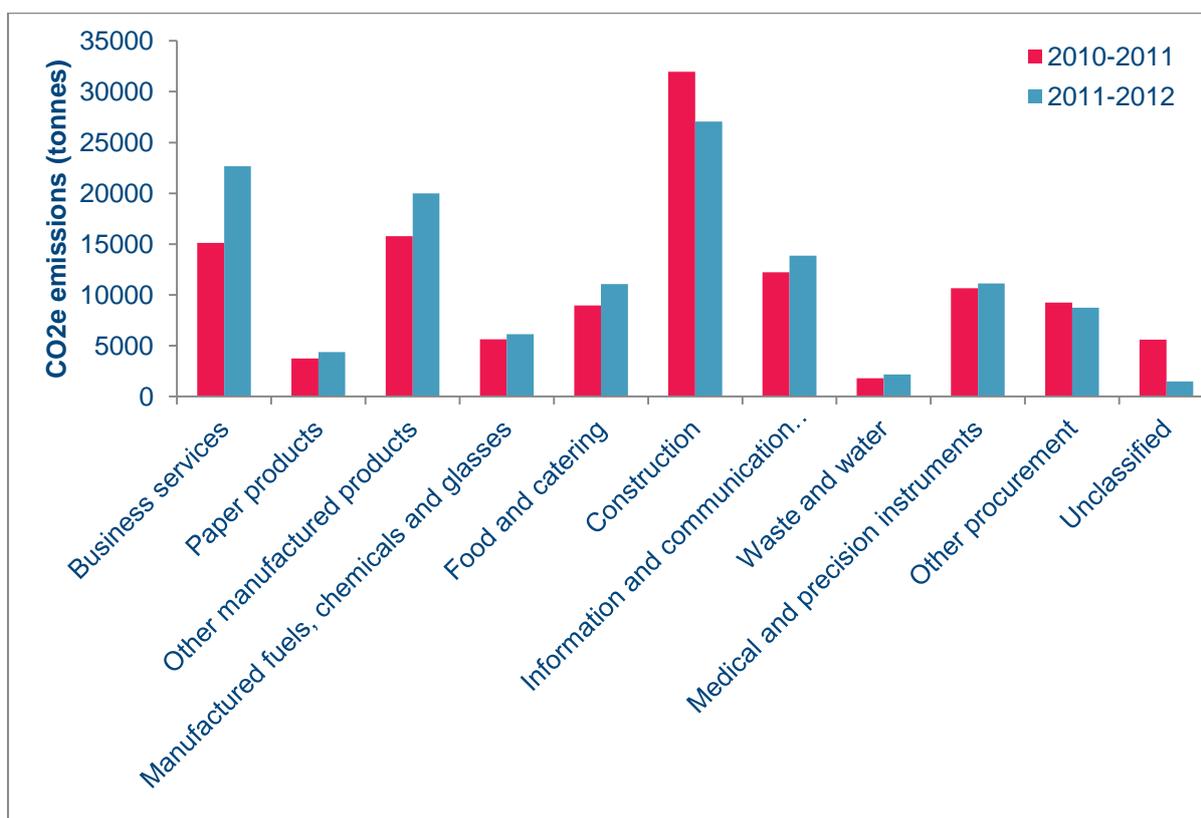
Of the scope 3 emissions reported in 2011/12, procurement was by far the most significant to UCL, representing 128,646.91 tCO<sub>2</sub>e. This was over double the emissions from UCL scope 1&2 sources and represented a significant area for action.

<sup>1</sup>WARPit is a redistribution network which makes it easy for individuals in an organisation to give away or loan unwanted items to others inside the same organisation or beyond

<sup>2</sup> Water data has been taken from billed consumption levels for both water use and waste water.

<sup>3</sup> Emissions values for procurement at UCL are provided directly by Southern Universities Purchasing Consortium (SUPC). These calculated values should ensure consistency with HEFCE reporting.

<sup>4</sup> The Travel data reported above is based on a limited data set only. This only covers travel that has been booked through UCL's corporate travel partner. The data will require a full review in order to determine a true scope 3 emissions baseline for UCL.



**Figure 1: Total procurement CO<sub>2</sub>e emissions (tonnes) by year and category**

Of the scope 3 emissions associated with procurement (Fig. 1), construction was the largest contributor. To address this, UCL has been working with its design and construction teams to identify potential ways to reduce these emissions such as offsite pre-fabrication, identifying and purchasing products with a longer lifecycle and efficient on-site logistics.

### Potable Water Use

<b>Target</b>	Reduce potable water consumption by 10% against 2009/10 baseline
<b>Baseline</b>	500,786 cubic metres
<b>2011/12</b>	444,347 cubic metres

UCL's baseline for potable water use was established as part of the 2011 Carbon Management Plan – based on Thames Water invoices. The baseline potable water consumption for the entire estate for 2009/10 was 500,786 cubic metres (m<sup>3</sup>). In 2010/11, UCL realised a marked improvement with over 45,000m<sup>3</sup> of water savings (2010/11 figures were 453,982m<sup>3</sup>). This was largely the result of efforts in the Department of Chemistry, which introduced a programme of water reduction measures including the use of simple pond pumps to recirculate cooling water in low volume applications (such as rotary evaporators and reflux operations) and the use of flow control meter/valve sets to allow adjustment of cooling water flow rates in higher volume applications.

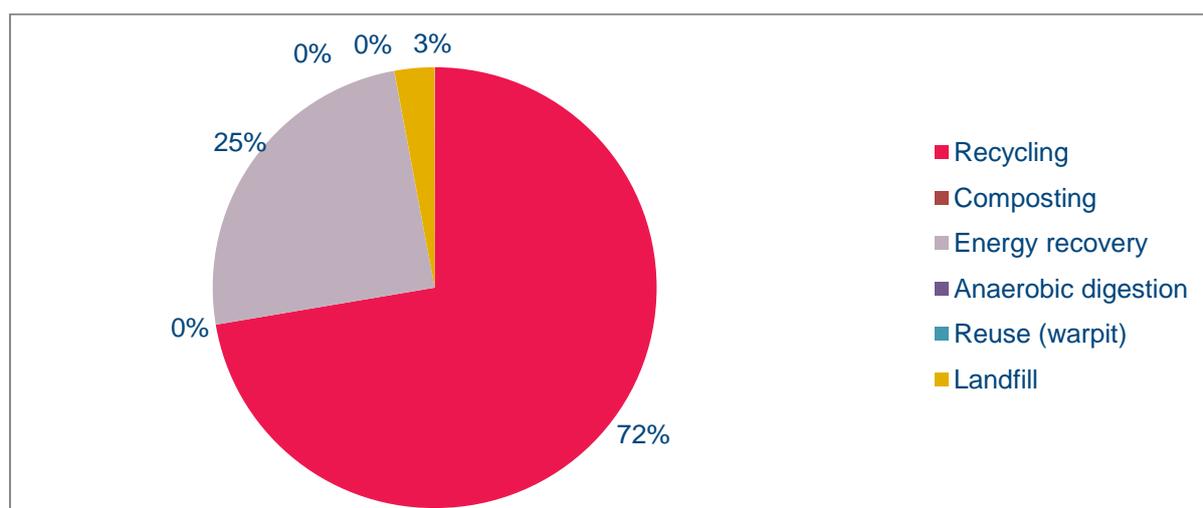
In 2011/12, the total amount of water consumed was 444,347m<sup>3</sup>, which represented a further reduction in water consumption over the year.

### Waste produced

<b>Commitment</b>	Set a target for waste intensity (kg/FTE)
<b>Target</b>	85% recycling of operational waste by 2015
<b>2011/12</b>	4,393 tonnes waste produced; 72% recycled

In 2011/12, UCL generated a total of 4,393 tonnes of waste. This figure included, for the first time, an estimate of waste produced from student accommodation – 653 tonnes. UCL’s non-residential waste arisings fell from 3,905 tonnes in 2010/11 to 3,740 tonnes in 2011/12 - a reduction which resulted from the introduction of awareness programmes, such as Green Impact, indicating that these programmes had had a positive effect.

UCL’s recycling rate in 2011/12 was 72%, which was a significant increase on the rate in 2010/11 (61%), and indicated that UCL was on track to achieve its 85% target (Figure 2).



**Figure 2: how UCL’s waste was managed over 2011/12**

WARPit was introduced by UCL Estates as a reuse portal to facilitate the redistribution of items unwanted by one department, thus saving both disposal and purchase costs. The system went “live” during July 2012 and by the end of February 2013 just over 1000kg of usable materials (1,844 individual items) was diverted from the waste stream with an associated cost saving of approximately £24k.

### Emissions & Discharges

<b>Commitment</b>	Introduce discharge monitoring by 2013 and reduce discharge levels by 5% against discharge permit levels by 2015
<b>Target</b>	100% HCFC phase out in air-conditioning systems by 2015

Emissions and discharge targets and commitments were introduced as part of the UCL ES Strategy. Progress will be reported in future years.

HCFCs in air conditioning were identified as the main fluorinated gases used within UCL. From 2015 (under the Fluorinated Gases Regulations and the Ozone Depleting Substances Regulations), no virgin or recycled sources of Fluorinated Gases, including HCFCs will be available for purchase. To prepare for this, UCL recently approved a £7.7 million programme of replacing all air conditioning systems containing HCFCs with non-fluorinated gas alternatives.

### Construction & Refurbishment

<b>Targets</b>	All new build projects to achieve BREEAM Excellent or equivalent All major refurbishments to achieve BREEAM Excellent or equivalent All minor refurbishments to achieve RICS Ska Gold
<b>2011/12</b>	13 projects over £250k completed in 11/12, 1 project trialed Ska criteria

Over 2011/12, UCL undertook a review of its standards and developed a new Sustainable Building Design Specification. This required all major projects to achieve a BREEAM Excellent or equivalent.

Thirteen ‘minor’ refurbishment projects over £250K were completed during 2011/12. The scope of these works fell outside that of BREEAM so an appropriate alternative assessment methodology was identified to inform their design; UCL identified the RICS Ska methodology to apply to its minor refurbishments. Ska proved to be a very useful tool. It was simple and provided a structured approach to embedding sustainability into projects, allocating ownership and tracking progress.

Within the reporting period, Ska was trialed on one refurbishment project and the design audit was completed, indicating a ‘Silver’ interim award. The project subsequently achieved a ‘Silver’ award at handover stage and UCL captured a number of useful lessons in applying the Ska approach. Since this initial pilot, UCL has applied Ska to nine further refurbishment projects; it has also tailored ‘mini Skas’ for seven other projects and ‘Ska-Labs’ to address lab specific best practice measures (based on S-labs and work undertaken by one of its framework suppliers).

### Transport & travel

<b>Commitment</b>	Revise the UCL Travel Plan by mid-2013
<b>Target</b>	10% reduction in delivery vehicles on site by 2014 (based on a 2011 baseline)
<b>2011/12</b>	On track

UCL has over 30,000 staff and students and over the course of any year, transport is relevant for several aspects of their activities:

- Day to day commuting to and from the University
- End of term travel for the students
- Business and educational travel

A survey of students undertaken in early 2012 indicated that 52% of their journeys to University was either by walking or cycling (with only 2% by private motorised vehicle). A similar survey of UCL staff indicated that 40% of their journeys was either by walking or cycling (and 6% by private motorized vehicle).

Following a review of cycling infrastructure, it was noted that cycle racks were located in 21 sites around the campus with a total of 437 spaces provided. The most recent survey took place in July 2012 when it was noted that 278 of the spaces were taken. This survey also noted that 33 bikes were chained to railings near the racks suggesting that there were either an insufficient number of racks or the wrong type of rack in some locations.

The main mode of transport at the end of term was train (with 35-40% of students travelling by this mode).

For business travel, UCL generated 5,582.22 tonnes of CO<sub>2</sub> from journeys taken for business purposes in 2011/12. This was based on data provided by the UCL corporate travel partner although it did not represent the full picture. UCL will be reviewing data and developing its approach to capturing business travel data in 2013.

In addition to personal and business travel, UCL reviewed the impact resulting from the movement of goods and services for use at the University. In 2011, a short survey of vehicle visits was completed over a two-week period and it was found that approximately 1,000 goods and servicing vehicles visited the campus in ten working days. Over 78% of the vehicle visits were for deliveries to the University with 12% representing collections from the University. On the basis of the survey and the potential for change, it was agreed that UCL should seek to reduce the number of delivery vehicles on site by 10%. To achieve this, two initiatives were considered: a courier drop-off/collection point which allows items which would have been individually transported around the campus to be consolidated into the routine postal delivery; and the consolidation of catering supplies by UCL's catering partner.

## **Biodiversity**

<b>Target</b>	Introduce at least 50m <sup>2</sup> of new, biodiverse urban space by 2014 (from 2011)
<b>2011/12</b>	186.4 m <sup>2</sup> green space

In 2011/12, London Conservation Services (LCS) was commissioned by UCL to

undertake a Habitat Survey of the Bloomsbury Campus predominantly located between Gower Street and Gordon Street. The survey found that there were six main habitats present on site. The most dominant habitat was bare artificial habitat made up of the roads, paths, buildings and street furniture. The green space present was mainly ornamental and composed either amenity grassland or planted shrubberies with mostly non-native shrubs and flowers. Additionally there were several scattered trees on site and a green roof. The green roof and the trees provide the bulk of the native biodiversity interest. The site was found to be very low in species diversity.

In 2011/12, 186.4 m<sup>2</sup> planted green space was introduced as part of a refurbishment to our Gordon House site.

Work is now underway to develop a Biodiversity Strategy for the urban UCL estate in order to identify opportunities to promote biodiversity. This will also be reflected in the UCL Sustainable Building Design Specification.

### Sustainable Food

<b>Target</b>	Achieve Food for Life catering marks Silver standard by 2014
<b>2011/12</b>	Working with Soil Association to achieve Bronze standard

In 2012, UCL produced a Sustainable Food Policy that set a target to achieve the Food for Life catering mark Bronze standard by 2013 and the Silver standard by 2014. The Policy set out the Institution's aspirations with regards to the food on offer across the estate, the sourcing of food and catering supplies and how food waste will be dealt with. Over the course of 2012, UCL's catering partner worked with the Soil Association to achieve the Food for Life Bronze standard and it remains on track to achieve this by March 2013.

## 2.2 Enable, empower and support all UCL communities

### *Key Targets and commitments:*

- *Achieve EcoCampus Platinum standard by mid-2014 & ISO 14001 by end of 2014*
- *All departments to participate in Green Impact by 2015*
- *Achieve Level 5 in the Sustainable Procurement Flexible Framework by 2014*
- *A commitment to UCL-wide annual reporting from 2013*

### Managing Environmental Sustainability

<b>Target</b>	Achieve EcoCampus Platinum standard by mid-2014 & ISO 14001 by 2014
<b>2011/12</b>	EcoCampus Silver standard achieved in mid-2012

UCL signed up to the EcoCampus scheme in 2009, achieving bronze status in 2010.

The result of efforts made in 2011/12 was the achievement of the EcoCampus Silver award in July 2012. The Silver phase focused on setting out UCL's approach to identifying and managing environmental impacts through the publication of an Environmental Sustainability Policy. It also involved putting in place robust objectives and targets to manage these environmental impacts. As part of its work to achieve the Gold award, UCL started rolling-out a mechanism for managing environmental risk across departments, developing operational controls and ensuring that key individuals were skilled to deliver what was needed.

### Communications and Engagement

<b>Commitment</b>	All departments to participate in Green Impact by 2015
<b>2011/12</b>	28 teams signed up, 19 teams achieved Bronze awards and 2 teams achieved Silver awards

Over 2011/12, a communications approach was developed which focused on mechanisms such as social media, emails and poster campaigns to communicate environment-related messages. The UCL ES website was redesigned with a view to providing an easily-navigable and attractively-presented source of information on ES strategies and policies, news, initiatives and the ES team. The new Green UCL website, Facebook and Twitter profiles were launched in September 2012.

The NUS Green Impact programme was introduced in 2011 with the aim of encouraging greater environmental action in Departments and Divisions. 28 teams signed up to participate in the first year. The programme helped teams to focus energy and resources on key environmental issues and to put in place measures, which supported change in the Department or Division. 19 teams were successfully awarded the Green Impact bronze award, with 2 teams achieving the silver award. The NUS Student Switch Off (SSO) programme was also piloted in two halls in 2011/12 and has subsequently been rolled out to a wider number of buildings in 2012/13.

### Procurement & Resources

<b>Target</b>	Achieve Level 5 in the Flexible Framework by 2014
<b>Current performance</b>	Currently working towards Level 3

To ensure that sustainability was taken into account in procurement processes, UCL Procurement Services and the UCL Environmental Sustainability team started work together to implement the Public Procurement Flexible Framework methodology<sup>5</sup>.

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<sup>5</sup> The Public Procurement Flexible Framework is a widely used self assessment mechanism developed by the Sustainable

Over 2011/12, UCL developed its approach to the flexible framework with the intention of achieving a successful audit to Level 5 during 2014.

Some progress to improve the sustainability of goods purchased was made in 2011/12:

- Agreement was reached to procure all office furniture through a standard kit of parts, which was specified for extended life, environmental sustainability, reusability, reparability and the ability to recycle at component level.
- A managed print services was procured with the aim of:
  - Reducing the number of printing devices by combining printers, faxes and photocopiers into multifunction devices
  - Reducing paper waste by defaulting to duplex printing
  - Reducing printing waste by card-release printing
  - Reducing packaging and ink waste through Color Qube wax ink technology

## 2.3 Provide the education, advancement, dissemination and application of sustainable development

### *Key Targets and commitments:*

- *Map the scale of UCL's academic work in the field of environmental sustainability*
- *Trial a UCL Innovation programme by 2013*
- *Develop the 'Living Lab' concept and identify projects which can be undertaken across the campus (2015)*
- *Re-launch the Planet UCL discussion series (2013)*

## **Mapping Environmental Sustainability**

This was a new area of work defined in the UCL Environmental Sustainability Strategy. The proposal was to work with the Vice Provost (Education) to map out UCL's provision of Education for Sustainable Development and to identify potential gaps and opportunities in this provision.

In Autumn 2012, UCL successfully bid to take part in the Higher Education Academy's Green Academy programme, focused on supporting the development of Education for Sustainable Development.

## **UCL Green Innovation Programme**

In 2011/12, UCL Environmental Sustainability team started working with UCL Advances to look at opportunities for identifying innovative solutions to address some of UCL's environmental impacts. In early 2012/13 academic year, a group of

academics were brought together to identify areas for an innovation challenge. This group identified the areas of: data collection; data visualisation; and data display systems. Progress on the challenge will be reported in the 2012/13 annual report.

### **Living Lab**

As part of the UCL Environmental Sustainability Strategy, there was a commitment to explore ways to encourage greater use of the UCL estate and infrastructure for research and study. This was referred to as the 'living lab'.

Over 2011/12, the Environmental Sustainability team worked with several academics and institutions to realise this goal. The new UCL BSc programme presented an opportunity to engage undergraduates in the management of the estate. Two teams of students devised systems for the installation of automatic meter water reading devices in the Chemistry Department as part of the ongoing programme to promote the reduction of water use. The designs were evaluated in the manner of industrial tenders and the winning design was installed by Estates.

In the Department of Civil, Environmental and Geomatic Engineering (CEGE), a team started looking at how Building Information Modelling (BIM) could be used to collate information about the environmental performance of a building. Over the summer of 2012, the team developed a BIM for the UCL Chadwick Building and started testing different environmental scenarios with the model.

### **Relaunch Planet UCL discussion series**

In 2010/11, UCL Laws coordinated a series of seminars under the banner, Planet UCL. In 2011/12, the UCL Environmental Sustainability team started working across all departments and with the UCL Green Champions to re-establish the discussion series. In October 2012, UCL Environmental Sustainability team launched a series of lunch time topic talks and ran these on a monthly basis with participation increasing from 20 initially, to over 80 people who attended in January 2013.

The 2012/13 annual report will provide more details on the outcome of these topic talks.

2.4 Maximise the wider impact of UCL's environmental sustainability activities at a local, regional, national and international level through collaboration, partnership and communication

#### *Key Targets and commitments:*

- *Create a web portal which identifies and promotes UCL's research activities in the environmental sustainability field by 2013*
- *Work with other HEIs to develop a network for sharing best practice*
- *Develop 5 new voluntary programmes which contribute to the local and regional community*

## **The Web portal**

In 2011/12, as part of the development of the UCL ES Strategy, UCL began looking to draw together its work in the field of environmental sustainability including its research and teaching activities; the work of the Estates and Professional Services teams; and the involvement and activities undertaken by the wider UCL community. An environment web portal was suggested as a mechanism for sharing all of these activities and work started in early 2013 to develop this concept.

## **Working with other HEIs**

Through its membership of the London Universities Environment Group (LUEG) and the Environmental Association of Universities and Colleges (EAUC), UCL sought to share the lessons learned from some of its environmental sustainability activities. For example, the work that was undertaken to introduce RICS Ska methodology to UCL's capital projects was shared with a wider network of Higher Education Institutes. This contributed to discussions with the RICS about the development of a Ska tool that focused on the specific requirements of the HE/FE sector.

## **Developing voluntary programmes**

This was a new commitment as part of the UCL Environmental Sustainability Strategy. Progress against this commitment will be reported in the 2012/13 annual report.

## **2.5 Become a leader across the HE sector in terms of environmental sustainability**

UCL achieved 89<sup>th</sup> position in the Green League in 2012 which was lower than its previous year, 83<sup>rd</sup>. This was despite an improvement in the number of points which the organisation achieved.

In 2011/12, there was considerable development in UCL's environmental sustainability activities including development of the UCL ES Strategy, the achievement of EcoCampus Silver and the work undertaken to improve environmental performance.

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