



LSE 2014/15



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Foreword by the Director

LSE was founded in 1895 to create and share knowledge addressing major social challenges, and to shape a better world. Environmental sustainability and climate change are two of the key global challenges we face today, and we address these through our research, teaching, public engagement and our own campus operations.

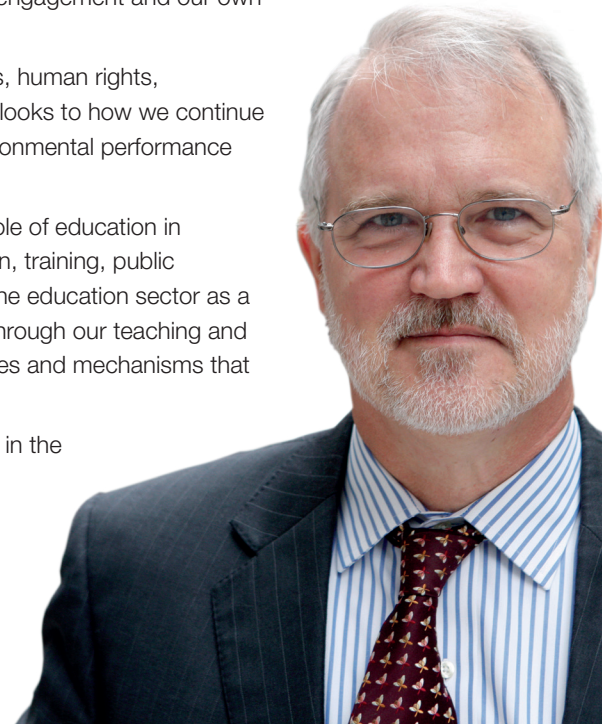
LSE research continues to lead international thought on climate change, cities, human rights, international development and other issues. Meanwhile, LSE's 2020 Strategy looks to how we continue to meet students' needs and provide outstanding campus facilities, with environmental performance a key factor in how we approach the current transformation of our estate.

The recent "COP 21" UN Paris climate agreement recognises the important role of education in addressing climate change, committing to "enhance climate change education, training, public awareness, public participation and public access to information". LSE, and the education sector as a whole, now has the opportunity and responsibility to contribute to this effort through our teaching and public engagement. Meanwhile, our research will continue to inform the policies and mechanisms that can help drive our transition to a low-carbon economy.

I look forward to seeing LSE rise to meet these challenges, both at home and in the wider world, now and for years to come.



Professor Craig Calhoun



Executive Summary

This report highlights sustainability developments and achievements in the 2014/15 academic year. It is aimed at LSE students, staff and alumni, as well as interested members of the public. The report covers four key areas:

- 1** Leadership and governance (our processes for converting top-level support for sustainability into tangible action).
- 2** Campus operations (energy usage of our buildings, recycling, etc).
- 3** Teaching and research (case studies of research and teaching on sustainability).
- 4** Engagement and community (how we collaborate on sustainability initiatives with students and staff, and spark debate in the wider world).

Highlights from 2014/15 are shown on the opposite page.

Highlights from 2014/15



6.2 per cent cut in carbon emissions since 2013/14



Zero waste was sent to landfill



9,398 items were re-used from the Centre Buildings Redevelopment, saving over £90,000 and eight tonnes CO₂e



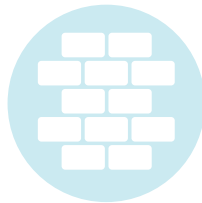
0.2 per cent less water consumed than in 2013/14



665,000 sheets of paper saved by smart printing system



£113m endowment, to be divested from coal and tar sands



62 low-carbon retrofitting projects underway, cutting carbon by eight per cent



48 cities supported by "Celsius Cities" low-carbon urban heating network



6 years running LSE achieved "First" in the People & Planet University League



3,500 students and staff participated in green initiatives and events

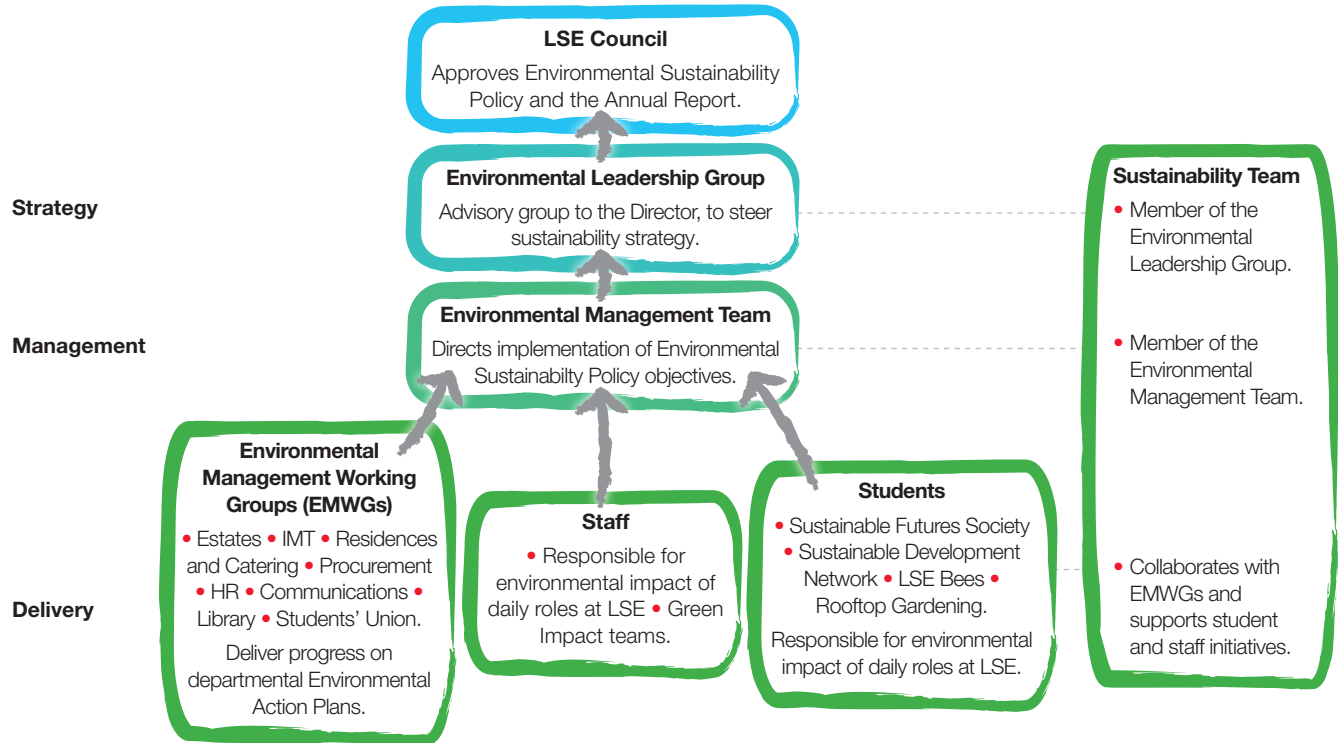
Leadership and Governance

LSE's approach to managing environmental sustainability is led right from the top of the School, and embraced across every area of the institution. Efforts to improve our environmental impacts are coordinated by the Sustainability Team in the Estates Division, but rely on the hard work and collaboration of all 9,900 students and 2,400 staff across the LSE community. This is shown in the diagram of LSE's environmental reporting structure on the opposite page.

LSE's Environmental Sustainability Policy identifies the School's most significant environmental impacts, and sets objectives to continually improve performance. The Policy is put into practice through an Environmental Management System (EMS) which strategically manages, monitors, and improves each of our environmental impacts. The EMS has been certified to the internationally recognised ISO 14001 standard since 2012.

In May 2015, our Energy Management System received ISO 50001 certification, putting enhanced energy management processes in place to maximise energy efficiency, and cut carbon and costs.

How does LSE make decisions about environmental sustainability?



Estates and Operations

LSE has around 9,900 students and 2,400 staff, and we manage around 40 buildings, including our central London campus, halls of residence, and 11-acre sports ground in Surrey. This means our day-to-day operations have a significant environmental impact. We manage these impacts responsibly, and create positive environmental change where possible.

In order to do this, we design and maintain green, low-carbon buildings, proactively manage our resource consumption (energy, water and waste disposal), and buy responsibly-sourced products and services.

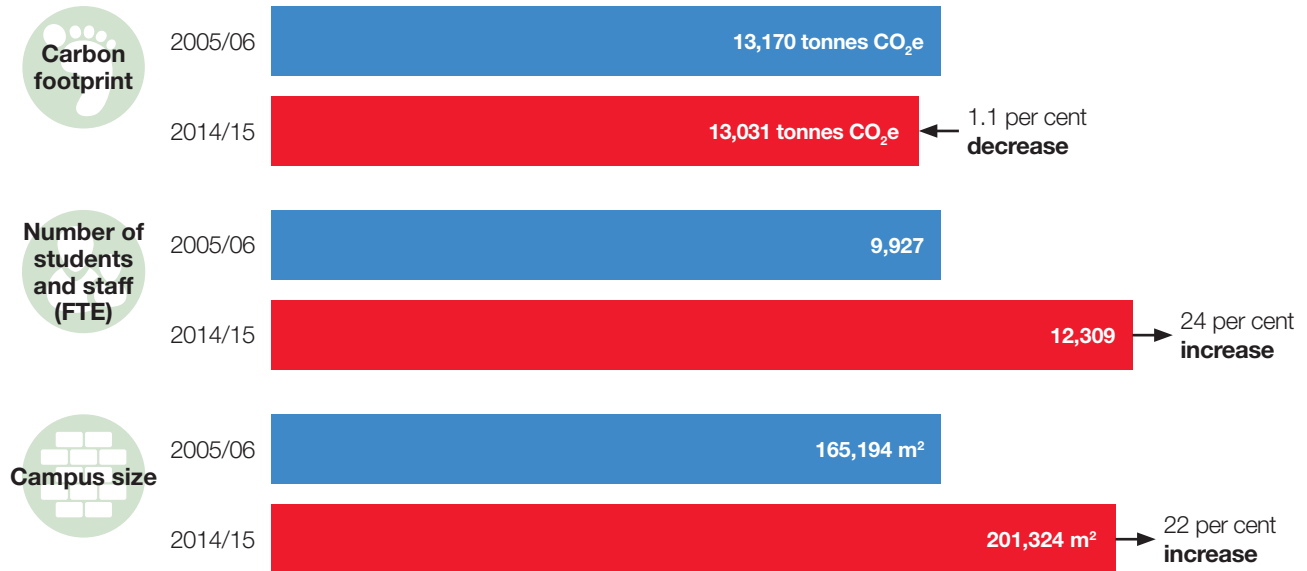
Energy and Carbon

Progress and Initiatives:

- In 2014/15, LSE's buildings emitted 13,031 tonnes of CO₂e and consumed 40,092,000 kWh of energy. This equates to a 6.2 per cent carbon reduction compared with 2013/14, and a 1.1 per cent reduction compared with our 2005/06 baseline. This was caused by low-carbon retrofits, building control upgrades and the decarbonisation of grid electricity.

- Over the same 10-year period, LSE's estate and population grew significantly (shown in the graph opposite). So while our net carbon reductions are relatively modest, our carbon "intensity" – a marker of efficiency – has improved greatly. CO₂e per person dropped 22.4 per cent, and CO₂e per m² campus space is down 18.8 per cent.
- We forecast that over the next five years our carbon footprint will continue to decline, as new low-energy buildings come online, and a biofuel CHP energy centre is installed to supply campus buildings with heating and electricity. Energy-efficiency initiatives such as lower-energy lighting, newer IT equipment and smarter building controls will also contribute.
- Our Energy Management System achieved certification to the ISO 50001 Standard in May 2015. This will help us proactively monitor and manage energy performance, and identify new energy-saving opportunities.
- All waste cooking oil from LSE catering outlets is converted into biofuel to power vehicles. 1,877 litres was collected in 2014/15, saving 4.3 tonnes CO₂e in avoided petrol.
- We mapped LSE's IT equipment, and found it represents 19 per cent of our total carbon footprint. We are now addressing this by rolling out lower-energy PCs and installing software to automatically shut down PCs overnight.

Carbon footprint vs LSE population and campus size: 2005/06 to 2014/15



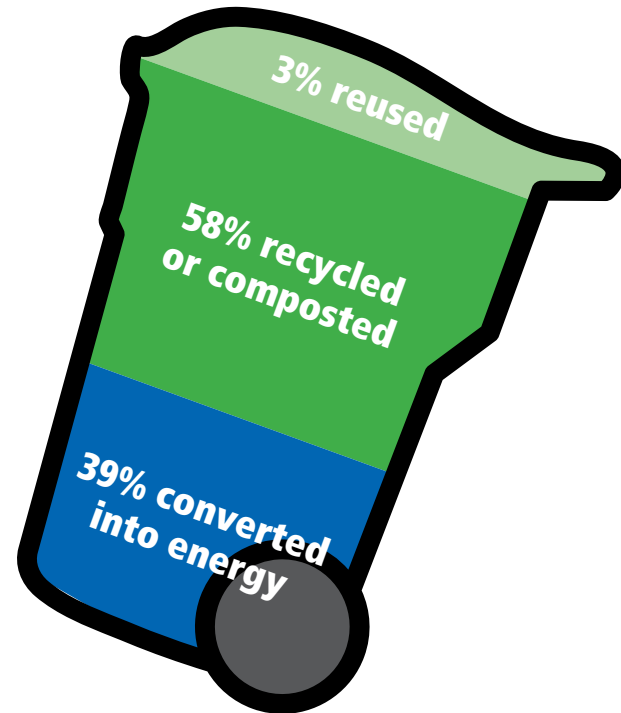
Future goals:

- LSE is currently reviewing its Carbon Management Plan, identifying the key opportunities for carbon reductions from 2016 to 2021 and beyond. This will be completed in May 2016.
- We will use real-time, localised energy consumption data to engage directly with building-users, pinpointing energy-saving opportunities and monitoring the results.

Waste and Resources

Progress and Initiatives:

- LSE disposed of 1,535 tonnes of waste from campus and residences in 2014/15. This is a 14 per cent reduction from 2013/14 – largely due to the new waste contractor weighing each bin they collected, yielding more accurate data.
- We continued to send zero waste to landfill, excluding construction waste. All non-recyclable waste is now sent to a plant that converts it into fuel pellets (as opposed to our previous approach, when it was sent to an energy-from-waste plant).
- Recycling and composting rates were 58 per cent, up from 57 per cent in 2013/14, due to people separating their waste better.
- Construction and demolition works produced 441 tonnes of waste in 2014/15, only 11 per cent of which was sent to landfill.
- 350 reusable “Smart Mugs” and 114 collapsible water bottles were sold on campus in 2014/15, saving waste from the numerous paper cups and plastic bottles that would have been used in their place.



Centre Buildings re-use

When we decanted the Centre Buildings in preparation for their demolition, **9,398** items were salvaged to be reused elsewhere in a major logistical operation that saved them from going to waste. We collected 8,817 fixtures and fittings, 411 items of furniture, 170 crates of books, and a plethora of other goods. Among the more unusual objects we stumbled across were a ceremonial sword, psychometric testing equipment from the 1950s, and a chapel bell. We rescued around 40 tonnes of items, saving £90,000 and avoiding 8 tonnes CO₂e.

Future goals:

- We will improve recycling facilities in halls by installing better signage, and introducing food waste collections in Bankside Hall and Northumberland House – the only two that don't yet have it.
- We will expand our "ReLove" re-use programme, so that instead of just collecting reusable items from students in halls at the end of the year, we will collect all year round, including on campus.
- We will help people to recycle more with more face-to-face engagement, including workshops, stalls, and attending student inductions.



Water

Progress and Initiatives:

- LSE consumed 201,338 m³ water in 2014/15.
- This is a 0.2 per cent decrease from 2013/14 caused by reduced consumption in halls of residence.
- Signage for water fountains across campus has been improved, making it much easier for students and staff to find places to refill their own bottles, rather than buying bottled water.

Future Goals:

- LSE will continue to install water-efficient infrastructure on campus and in halls.
- Rosebery hall of residence will hand out free four-minute shower timers to all residents, and monitor whether this saves water by measuring water consumption before and afterwards.



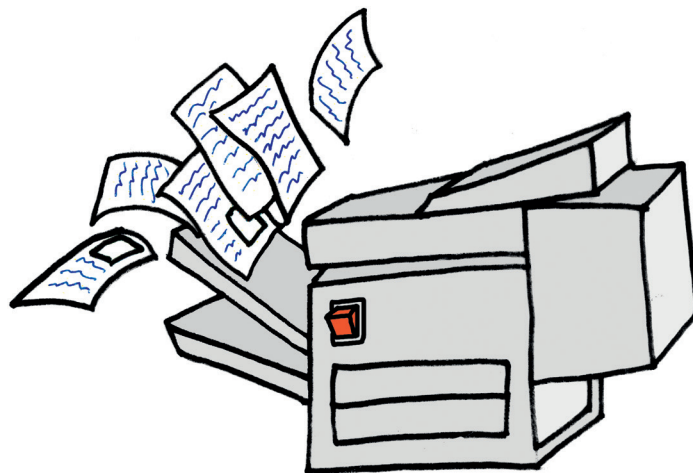
Procurement

Progress and Initiatives:

- Fairtrade products accounted for 19.5 per cent of all sales from LSE catering outlets, largely due to the sale of coffee, tea, chocolate and bananas.
- LSE tendered for a new printing contract, and environmental specifications were a key factor in selecting the supplier. Multi-functional devices will replace desktop printers, saving energy, maintenance costs and toner cartridges.
- We introduced “pull-printing” for shared printers. Users now need to log in at the printer itself to collect their work, whereas previously the printer would simply have printed whenever users clicked “print” at their PC – which always led to a lot of uncollected, wasted print-jobs. The new system saved 665,206 sheets of paper in 2014/15, equivalent to 67 trees, avoiding 8.5 tonnes CO₂e and saving over £4,000 in stationery costs.

Future Goals:

- Over the next three years, LSE will review its list of preferred suppliers. This will mean a greater proportion of LSE's purchases are done through framework agreements, which include sustainability criteria, whilst providing an opportunity to engage directly with suppliers on sustainability.
- Purchasing cards will be introduced to reduce the number of individual small-value invoices. This will make it easier for SMEs to supply LSE, and will also reduce paper waste – especially expensive confidential paper waste.



Buildings

Progress and Initiatives:

- The next few years will see major developments of the LSE estate. We are set to completely reconfigure the campus, with the Centre Buildings Redevelopment, 44 Lincoln's Inn Fields and other new acquisitions, and significant refurbishment works. This transformative programme is about investing in outstanding facilities for the future. It also offers huge opportunities to enhance the sustainability of our built environment.
- LSE began a programme of 62 individual refurbishment projects across ten buildings, which will reduce LSE's total carbon footprint by eight per cent. The £2m scheme is delivered through RE:FIT, a Mayor of London initiative to help retrofit public buildings.
- Parish Hall was fully refurbished, and achieved RICS SKA "Silver" certification for sustainable refurbishment – the first LSE building to attempt this standard.

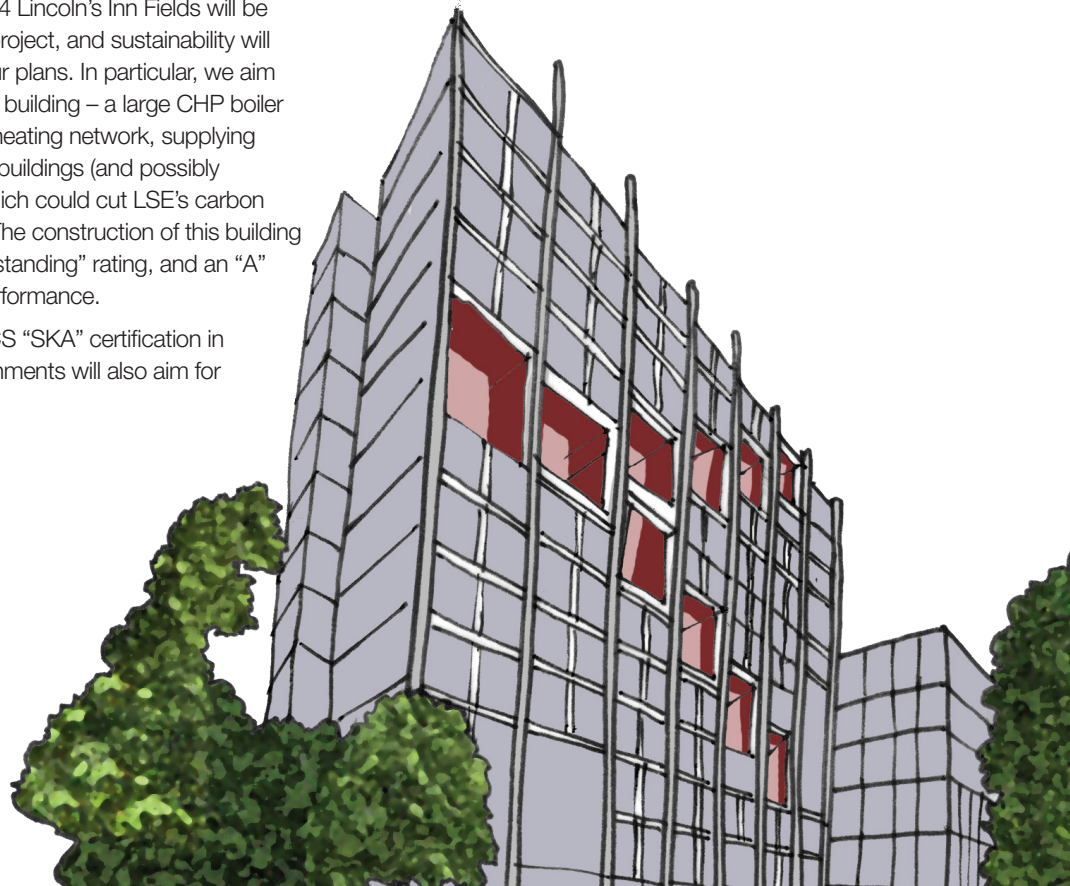
Centre Buildings Redevelopment

Work has started on the Centre Buildings Redevelopment – LSE's most ambitious ever construction project. It will see four buildings demolished to make way for a major 13-storey building at the heart of the campus, and a public square leading from Houghton Street directly to the Library.

The project aims for BREEAM "Excellent" status and an "A" rated Display Energy Certificate (DEC). Its construction will use resources efficiently (eg, re-using paving that was dug up before demolition began), and it will operate as a low energy building throughout its lifetime, featuring biofuel CHP boilers and smart building controls.

Future Goals:

- The £140m redevelopment of 44 Lincoln's Inn Fields will be LSE's next major construction project, and sustainability will once again be at the heart of our plans. In particular, we aim to install an energy centre in the building – a large CHP boiler system connected to a district heating network, supplying heat and power to several LSE buildings (and possibly neighbouring organisations), which could cut LSE's carbon footprint by up to 20 per cent. The construction of this building will also target a BREEAM "Outstanding" rating, and an "A" rated DEC for in-use energy performance.
- After the success of piloting RICS "SKA" certification in Parish Hall, future large refurbishments will also aim for SKA certification.



Transport

Progress and Initiatives:

- Student and staff cyclists were surveyed on their views about cycling provision on the LSE campus and in the surrounding area. 433 respondents commented on a range of issues, from road safety in central London to the availability of bike parking on campus. The full report will be published in Spring 2016, and will help us make informed decisions on our continuing improvements to LSE cycling facilities.
- Two outdoor bike pumps were installed on campus.
- Cycling safety events were held throughout the year, including Dr Bike maintenance stalls, police bike marking, and Cycle Confident training sessions.

Future Goals:

- Rosebery hall of residence will launch a bike-share scheme in Spring 2016, for students to cycle into campus.



Biodiversity

Progress and Initiatives:

- The LSE bees flourished, producing 120 jars of honey, and raising over £720 to be reinvested into the beehives. Money raised from the previous year's honey harvest was used to install a third beehive on the roof of Connaught House on campus.
- Four planters were installed near to the beehives, and populated with nectar-rich flowers to support the bees. A bee-friendly garden was also planted on the roof of St Clements West, courtesy of the Sustainable Projects Fund.

Future Goals:

- We will continue to provide habitats to support pollinating insects. The new Centre Buildings will have roof terraces with gardens, and the 44 Lincoln's Inn Fields design brief states we will "create, enhance, and conserve biodiversity within an urban context".



Ethical Investment

Progress and Initiatives

LSE will not invest in coal, tar sands, tobacco, or indiscriminate arms manufacturers, as a result of reviewing our Socially Responsible Investment (SRI) Policy. We will also seek to collaborate with other universities to develop new socially responsible financial products, making divestment more practicable for other institutions too.

We don't invest in companies directly, but invest our £113m endowment in funds representing a cross-section of the market – usually including fossil fuels. We will now move our investments into funds that track indices matching LSE's ethical objectives. This move supports LSE's role in the transition to the low-carbon economy.

The four-month SRI review saw extensive consultation with students, staff, LSESU, the LSE Divest campaign group, governors and alumni, notably during a lively town hall debate.

Future goals:

The new SRI Policy is only the beginning of a journey, in which we will continue to develop our approach to socially responsible investment. This will include ongoing engagement with all in the LSE community, whilst reviewing the changing landscape of financial risks and opportunities, best practice, and the evolving public debate surrounding this issue.

Teaching and Research

LSE's biggest opportunity to bring about positive change in the world is undoubtedly through its teaching and research. LSE graduates are found in all corners of the world, and are the global citizens and leaders of tomorrow. Meanwhile, LSE research continues to lead national and global debates on the key challenges of our era – including environmental sustainability and climate change.

Teaching

- We launched LSE 400, a module that teaches all Masters students (who make up around half of our student body) critical thinking approaches to some of the key questions facing contemporary society. This includes a section by Professor Lord Nicolas Stern on “Ethics, equity and the economics of climate change”, as well as subjects ranging from the economic crisis, to international security, to the causes of poverty. LSE 400 is a counterpart to the acclaimed LSE 100 module, which has been teaching similar issues to all LSE undergraduates since 2010.



- Online sustainability training was delivered to all 165 Estates Division staff, which was followed by bespoke workshops for each team on how to ensure their daily roles contribute to meeting our environmental targets. The training covered building design and maintenance, waste re-use and disposal, energy management and a range of other issues.
- Professor Leonard Smith and Dr Erica Thompson contributed to BBC 4's “*Climate Change by Numbers*” programme, which answered a number of key questions about climate change by focusing on just three numbers. The programme team won the Gold AAAS Kavli Science Journalism Award 2015.

Research

Evaluating the Economics of Climate Risks and Opportunities in the Insurance Sector: the “Munich Re programme”

Grantham Research Institute on Climate Change and the Environment

It is very challenging for policy and industry decision-makers to manage the risks associated with climate change, due to complexity and uncertainty in a range of underlying issues. In order to better understand how climate risks relate to the insurance sector, LSE conducted a five-year research programme in partnership with insurance and risk management firm Munich Re.

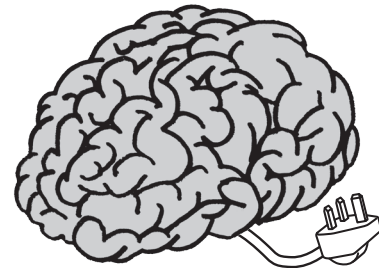
The research produced better-quantified economic risks, evaluated economic impacts of climate change in emerging economies, identified how to reduce disaster risk, and explored how to communicate these issues more effectively – especially among decision-makers. The programme saw the publication of 26 academic papers, industry briefings, workshops, and spawned a wide range of follow-on research.

Climate change and sustainable welfare: the centrality of human needs

Ian Gough

Centre for the Analysis of Social Exclusion (CASE)

Since climate change threatens human well-being across the globe and into the future, we need a concept of human well-being that matches the geographical and historical scope of climate change. Ian Gough proposes a theory of universal “human needs” – including health, autonomy and social participation. These go beyond basic requirements for survival (eg, food), but are not subjective to culture or individual preference. This distinguishes them from alternative definitions of well-being, such as “happiness”, or “satiation of preferences”.



Towards new urban mobility: the case of London and Berlin

Philipp Rode, Christian Hoffmann, Jens Kandt, Duncan Smith, Andreas Graff

LSE Cities, and Innovation Centre for Mobility and Societal Change (Innoz)

Urban transport policy could help people get around more easily and greenly, by paying more attention to how people's travel choices align with their attitudes, embracing multiple transport modes (not just cars), and working with new technology including mobile apps.

Six main "transport attitude" groups emerged from a survey of 1,000 residents in London and Berlin, including "traditional car-oriented", and "pragmatic transit-oriented". These groups were found to cut across social demographics, but aligned closely with people's preferred modes of transport. In response to the different priorities of each group, the report offers a range of policy options to achieve more sustainable and accessible transportation.



CELSIUS City

LSE Cities and the LSE Centre for Analysis of Time Series (CATS)

“CELSIUS Smart Cities” is a pan-European collaboration to develop smarter heating and cooling infrastructure in cities, by creating partnerships between academia, municipalities, and energy companies. CELSIUS will help the 48 participating cities to become more energy-efficient – and in doing so, create cities that are more liveable, less polluted, and with better energy security. LSE research contributed expertise on how the design of cities interacts with society and culture, public policy, energy networks and the environment. CELSIUS won a World Smart City finalist award at the 2015 Smart City Expo World Congress in Barcelona.

Blue-Green Cities

Leonard Smith and others

Centre for the Analysis of Time Series, and other universities from UK, USA, and China

Blue-Green Cities' aims to enhance urban flood resilience whilst making cities more liveable, by bringing water management and green infrastructure together. This involves moving towards more naturally-oriented water cycles (eg, by breaking up the large swathes of impermeable city surfaces), and creating greener spaces. The wide-ranging research programme included studies on flood modelling, river restoration and habitats, urban drainage infrastructure, environmental economics, stakeholder engagement and more, bringing together nine UK universities as well as partners in the USA and China.

Measuring the sustainability of urban water services

Rui Cunha Marques, Nuno, Nuno Ferreira da Cruz, João Pires

LSE Cities

A framework for measuring the sustainability of water service provision was developed, using five key principles: social, environmental, economic, governance and infrastructural sustainability. Within this, 35 specific criteria assess each facet of water management (eg, consumer cost, public accountability, drinking water quality). Water supply in Portugal was used as a case study to test this methodology, by an expert in Portuguese water policy.



Other recent LSE research includes:

- **China’s “new normal”: structural change, better growth, and peak emissions**

Fergus Green, Nicolas Stern (2015)

Grantham Research Institute on Climate Change and the Environment, and Centre for Climate Change Economics and Policy.

- **Can sustainability be luxurious? A mixed-method investigation of implicit and explicit attitudes towards sustainable luxury consumption**

Daisy Beckham, Benjamin Voyer (2014)

Department of Social Psychology.

- **Zones of uncertainty: governing urban environmental hazards**

Austin Zeiderman (2015)

Department of Geography and Environment.

- **Scientific accountability and democracy in global environmental policy**

Tim Forsyth, Silke Beck (2015)

Department of International Development.

Future goals

- The Grantham Research Institute will embark on a three-year research partnership with Statkraft, Europe’s largest renewable energy supplier, to analyse how European policy can deliver the transition to a low-carbon economy, especially in the wake of commitments made at the “COP 21” UN climate agreement in Paris.
- “Resource Urbanisms” will investigate how the local cost and availability of natural resources affects the development of urban infrastructure, and vice versa. The project will examine the cases of Kuwait, Abu Dhabi, Hong Kong and Singapore, and will be conducted by LSE Cities in collaboration with the LSE Kuwait Programme and the LSE Middle East Centre.
- A number of PhD and Masters students will use LSE as a test-bed to research a range of environmental issues, including domestic energy consumption, IT usage, and meat consumption choices.

Engagement and Community

LSE is recognised as a sustainability leader, and so has a responsibility to engage with the LSE community and the wider public on environmental issues. We do this by empowering our students and staff to improve their own environmental footprint, and sparking wider debate on global sustainability issues.

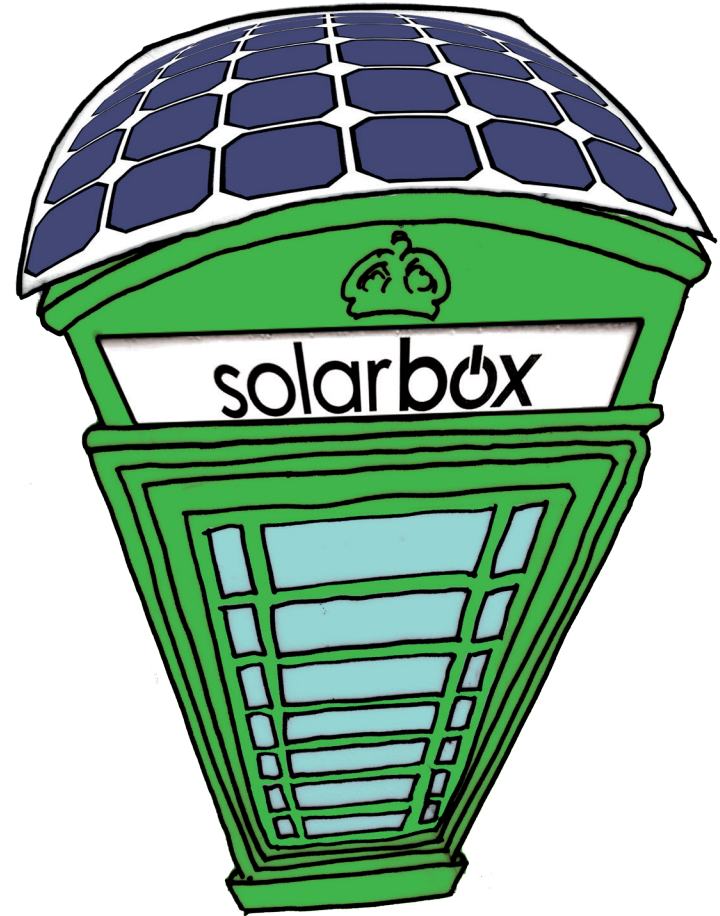
Engagement within LSE

- **Green Impact:** Green Impact is a competition for staff to improve the environmental impacts of their own office. 42 teams took part in 2014/15, with many devising their own innovative projects, including producing a report on LSE cycling infrastructure, clothing swap-shop events and pot-luck lunches. LSE students also audited local fire stations who were participating in Green Impact.
- **Student Switch-Off:** Student Switch-Off is a national energy-saving competition for students living in halls. 360 students participated in 2014/15, with Northumberland House winning the coveted trophy for most energy saved. Overall, Student Switch-Off achieved an 8.4 per cent drop in energy use compared with 2010-12, equivalent to saving 61 tonnes CO₂e, and £9,087 in energy bills.

- **Green Week:** 42 events were held as part of Green Week 2015, in collaboration between LSE and the Students' Union. Highlights included a talk by Green Party leader Natalie Bennett, an ethical fashion show, debates from TEDx and others, gardening sessions and more. There was also a vote on what green action students wanted LSE to prioritise next; "install better signage for water fountains" emerged as the winner, and we duly delivered this over the following months.
- **Sustainable Projects Fund:** LSE helps students and staff lead their own sustainability projects on campus. £5,000 was awarded to four projects in 2014/15:
 - A green finance conference was held by the Oikos Society
 - Nectar-rich shrubs were planted on LSE roofs to feed bees and promote biodiversity
 - LSE cyclists produced a report on how we can improve our cycling facilities
 - LSEats: A healthy and sustainable recipe book, by and for LSE students.

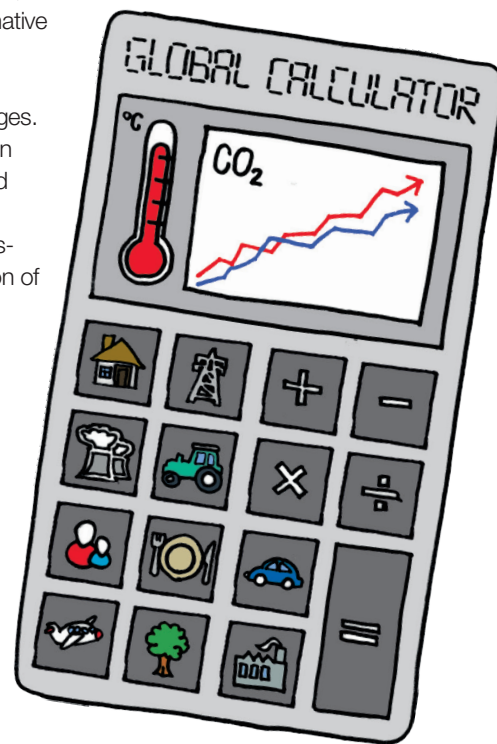
Engagement in the community

- The “Global Apollo Programme” aims to do for climate change what JFK did for the moon landings: create a huge drive to make climate change everyone’s top priority, and gather the world’s greatest minds to tackle it. Launched by LSE’s Professor Lord Nicolas Stern and Professor Lord Richard Layard, as well as luminaries including Lord Gus O’Donnell and Sir David King, it has since received the backing of Barack Obama and Sir David Attenborough.
- “Solarbox” converts abandoned London phone boxes into solar-powered phone chargers. The brainchild of LSE students Kirsty Kenney and Harold Craston, it was launched on Tottenham Court Road in a ceremony hosted by Zac Goldsmith MP, after winning funding from the Mayor of London’s Low Carbon Entrepreneur competition.
- 16 sustainability related public lectures took place at LSE, attended by hundreds of LSE staff, students, and members of the public. These included former LSE Director Professor Lord Anthony Giddens on whether there is hope for the future, and Michael Grubb on the macroeconomics of climate change.



- We collaborated with nearby Northbank Business Improvement District to share knowledge and resources with local businesses, in particular on raising awareness of air pollution in the capital, and sharing our beekeeping expertise with a local hotel.
- The EU Joint Research Council included LSE as a case study in their 2015 publication on best practice for waste management and Environmental Management Systems.
- LSE achieved a “First Class” award in the People and Planet University League, which ranks UK universities on their environmental and ethical performance. We came 26th overall, and have now held onto a spot in the top tier of the League for six years running – something only achieved by six other institutions in the UK.
- We continued to collaborate with colleagues in other institutions to help enhance sustainability in the tertiary education sector, through roles in the Environmental Association of Universities and Colleges, and the London Universities Environment Group. We contributed to developing the People and Planet University League, as well as AUDE's Green Scorecard, which will score university estates departments on their environmental footprint. We also advised our neighbours Gresham College on opportunities to begin their sustainability journey.

- The “Global Calculator” is an online tool to help people and businesses understand the factors driving climate change. Users can adjust parameters such as land-use, manufacturing and energy sources, to explore how alternative policy pathways can impact global temperature changes. Dr Erica Thompson (LSE CATS) helped develop it in an international, cross-sector collaboration of ten organisations.





THE LONDON SCHOOL
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