

STUDENT SUSTAINABILITY CONFERENCE

2018

SHAPING THE FUTURE



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PROGRAMME

9:10-09:25	Registration	Great Hall - UG.09
09:25 - 09:35	Welcome Address Sir Alan Langlands: Vice Chancellor Louise Ellis: Director of Sustainability	Great Hall - UG.09
09:35 - 10:00	Keynote speaker Sara Parkin OBE: Founder of Forum for the Future	Great Hall - UG.09
10:00 - 10:25	Poster Exhibition and networking	Parkinson Court
10:30 - 13:00	Student presentations	Baines Wing and Great Hall
13:00 - 13:55	Lunch, posters and networking	Parkinson Court
13:20 - 13:50	Workshops sessions	Baines Wing and Great Hall
14:00 - 15:20	Student presentations	Baines Wing and Great Hall
15:30 - 16:00	Awards, Spoken Word Performance and Closing Address	Great Hall - UG.09

Rooms will be signposted on the day. If you need directions to any of the locations please ask a member of the conference team or one of the sustainability volunteers who will be wearing red hoodies.

Please tweet, post, and snap your experiences of the day! [#UoLSSC18](#) [@UoL_Sus](#)



If you see this icon next to any of the sessions outlined on the following pages, it means this is a [Living Lab project](#): a research collaboration between students, academics and operational teams, utilizing the campus as a test bed.



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KEYNOTE SPEAKER



Sara Parkin – OBE

The future: what would good look like?

*Welcome address: 9:10am – 10:00am
(Great Hall, Room UG.09)*

Sara Parkin is Principal Associate of [The Sustainability Literacy Project](#). She is also Co-founder and Trustee of [Forum for the Future](#), Chair of the Richard Sandbrook Trust and Trustee of the St Andrews Prize.

She serves on the boards of the Higher Education Academy, the Carnegie Trust for the Universities of Scotland and is an advisor on sustainable development to several organisations, including the National Union of Students. In the past she has served full terms on the boards of the Natural Environment Research Council and the Leadership Foundation for Higher Education.

In various roles, she has campaigned for the environment and sustainable development for 40 years, including during the 1970s and 1980s when she played leading roles in the UK Green Party and international green politics, including founding what is now known as The European Greens. She no longer has any political affiliation.

Sara is an honorary fellow of the Institution of Civil Engineers and the Institute of Energy, Founding Fellow of the Engineering Council, and Patron of several organisations, including Population Matters. She holds 11 honorary degrees and in 2001 was awarded an OBE for her contribution to education and sustainability. She has written several books, the latest being *The Positive Deviant: leadership for sustainability in a perverse world* (2010), and is currently working on another, provisionally titled: *What Does Good Look Like?*

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UNIVERSITY OF LEEDS

WORKSHOP SESSIONS

13:20 - 13:50 **Your Living Lab - how can co-creation tackle global challenges?**

Chair: Thomas Cooper (Sustainability Programme Officer)

Baines Wing - G.37

The Living Lab is about the University as a testbed for collaborative sustainability research and innovation. It seeks to bring together students, academic and professional staff to co-create projects that tackle global challenges at a local scale—driving sustainable improvements for the University that are scalable and transferrable to other communities and organisations.

In this workshop you'll hear from staff and students that have been collaborating on Living Lab projects, highlighting the changes they are aiming to deliver and discussing the opportunities and challenges of the approach. You will then have the opportunity to discuss how you could develop a Living Lab project, how your research, project or teaching activities could utilise the University as a testbed or teaching space, and how to identify new opportunities, collaborators and co-creators.

Please register your attendance for this workshop sessions [HERE](#)



13:20 - 13:50 **Dissertations and Theses - addressing sustainability challenges**

Chair: Clare Martynski (PhD researcher and Sustainability Architect)

Great Hall - UG.09

Searching for a dissertation topic that relates to sustainability? Already started your research project, but want to explore how you can incorporate aspects of sustainable development? In this short, interactive workshop, we'll use the [Sustainable Development Goals](#) as a framework and brainstorming tool to being exploring different ways in which sustainability is related to your area of study. We'll also point you to a number of resources that can help in your research for topic and opportunities for collaboration.

Please register your attendance for this workshop sessions [HERE](#)

ORAL PRESENTATIONS

	Rooms 1	Rooms 2	Rooms 3
Morning Session 1	Energy Great Hall (UG.09)	Transport Baines Wing 2.08	Communicating Sustainability Baines Wing 2.06
10:30 - 10:50	Hydrogenotrophic-enhanced methane yield from food waste	Sustainable highways and satisfaction: are they mutually exclusive?	Changing attitudes: the power documentaries hold in bringing forth change
10:50 - 11:10	Shaking up the old order? Clean energy ventures' challenges in accelerating decarbonisation in Germany and the UK	Hydrological and environmental processes in railway drainage systems: towards sustainable drainage system (SuDS) approaches	Narrating the UK's adaptation to a changing climate
11:10 - 11:30	Enhancement of biomethane production through addition of biochar in anaerobic digestion	Last mile deliveries on University of Leeds campus	The potential of info graphics in climate change communication: A comparative analysis with an IPCC visualisation.
Room change			
Morning Session 2	Food and Agriculture Great Hall (UG.09)	Governance Baines Wing 2.08	Ecology Baines Wing 2.14
11:40 - 12:00	A berry bad Brexit?	Breaking the chains of capitalism	"A man against a loon": Analysis of birds in American literature to build an ecocentric Connection with the environment
12:00 - 12:20	An assessment of food waste management options for the University of Leeds: A living lab approach	Sustainable business: would the world be better off with more female business leaders? The Impact of FTSE100 board gender composition on firm performance	Macro problem of microplastics: Assessment of microplastic pollution in marine sediments and waters along Kilnsea beach
12:20—12:40	Prophetic poets: analysing early vegetarian rhetoric	Bridging evidence with policy in household adaptation to climate change in Leeds	Nocturnal ecosystems workers: Genetic diversity of bats and their pathogens along latitudinal gradients in the Baja California peninsula, Mexico
12:40- 13:00	Food for thought: how to make meat greener	A critical regulation of agricultural land in England	What is the future for ecosystems in the Arctic?
Afternoon Session	Society and Community Great Hall (UG.09)	Urban Infrastructure Baines Wing 2.08	Education and Behaviour Baines Wing 1.15
14:00 - 14:20	The power of creative sustainability: environmental creative social activism	Plants for Pollution	Climate change or diet change? The impact our diet choices have on our planet and what we can do to change
14:20 - 14:40	Clean cooking and climate change: impact on the health of pregnant women and children	Biofiltration systems for optimized storm water management in urban areas	Learning Champions: inspiring communities – the butterfly effect
14:40 - 15:00	The importance of public engagement in renewable energy development	Changing greenspaces in Bradford to improve biodiversity and health in urban populations	Dresscode: DIY breaking free from the increasingly disposable nature of our wardrobes
15:00 - 15:20		Valuing natural capital: the importance of trees and greenspaces on campus	Is opera racist?

Morning Session 1 - Room 1 (Great Hall UG.09)

Energy

10:30 - 10:50

Cynthia Kusin Okoro-Shekwaga - *School of Civil Engineering*
Hydrogenotrophic-enhanced methane yield from food waste



Anaerobic digestion helps to deal with organic wastes and reduce green house gas emissions from landfills, by a more efficient capture and cleaning of the resulting biogas. It is the most suitable treatment and energy recovery option for food waste. Two groups of methanogens are generally responsible for methane generation; they are the hydrogen-utilising (hydrogenotrophic) methanogens that utilise hydrogen to produce methane and the second group is the acetate-utilising (acetoclastic) methanogens, which use acetate to produce methane.

Taking advantage of the high percentage of carbon dioxide in the biogas from conventional AD systems, hydrogen gas was added to reactors treating food waste; thereby optimising the hydrogenotrophic route for enhanced methane production.

This research would have a positive impact on the society, by first providing a viable option for food waste management, hence reducing the carbon footprint of the associated municipalities. It is expected that adding hydrogen into the system could achieve a better quality biogas with percentage of methane between 80 to 90%.

10:50 - 11:10

Nina Litman-Roventa - *School of Earth and Environment*
Shaking up the old order? Clean energy ventures' challenges in accelerating decarbonisation in Germany and the UK

Sustainable entrepreneurship, also known as "ecopreneurship", is increasingly recognized as an engine of sustainable development and is frequently expected to engender the next industrial revolution.

An extensive body of literature asserts entrepreneurs' force in shaping sustainable futures while advancing tools for promoting the creation of new markets through environmental innovation. It has been argued that it is generally new entrants that stimulate market dynamics of environmental and social progress. On the other hand, the need for collaborations between start-ups and large market incumbents as well as with governments, universities and NGOs to develop necessary solutions for sustainability issues has been also highlighted. While the number of green ventures in the energy sector steadily rises, there are numerous unanswered questions on their behaviour and performance.

My research project aims to explore and compare views of entrepreneurs within clean energy ventures of challenges in thriving in the energy industry in Germany and the UK. These nations were chosen because of their ambitious emission reduction targets which demonstrate their willingness to become leading actors in sustainability.

11:10 - 11:30

Aaron Brown - *School of Chemical and Process Engineering*
Enhancement of Biomethane Production Through Addition of Biochar in Anaerobic Digestion



Biochar is a functional carbonaceous material produced from biomass undergoing a thermal conversion process named pyrolysis. Biochar has known properties as a soil enhancer, composting agent and a combustible fuel. However, biochar has the potential as a catalyst for biomethane production through anaerobic digestion (AD). AD involves the sequential microbial degradation of biomass such as grass clippings to produce biomethane which can be used to generate renewable heat, electricity and even be used as a transport fuel. As well as methane, a nutrient-rich end-product called digestate is produced which can be used as a bio-fertiliser. Biochar can act as a platform to support microbial biofilm production and subsequent thriving of microbial life. Could Biochar addition to Anaerobic Digestion improve the efficiency of the anaerobic digestion of grass and contribute to shaping the UK's future renewable energy plans?

Morning Session 1 - Room 2 (Baines Wing 2.08)

Transport

10:30 - 10:50

Tahera Mayat - *Institute for Transport Studies*

Sustainable highways and satisfaction: are they mutually exclusive?

The car saturation (peak car hypothesis) is topical as traffic growth tends to increase issues such as pollution and congestion; this has implications for sustainability and satisfaction with highways. The originality of this research lies in its proposition of sustainability as a performance criterion for our Local Highway Authorities (LHAs). This is in addition to the multi-dimensional performance criteria of Cost Quality Customer (CQC) developed by the CQC network. This research has found that some top performers for satisfaction with highways, as measured by the National Highways and Transport (NHT) satisfaction survey, also consider sustainability. A common view is 'build the roads and they will come' i.e. new roads increase congestion as opposed to alleviating it. Thus, it cannot be very sustainable from an environmental or economic viewpoint to focus on roads at an expense of cycle lanes, pavements and public or countryside footpaths. There seems to be a cycle of more cars, means more funding, means more roads, means more cars and so on. Therefore, a move by some councils to encourage sustainable travel is welcomed and achieved partly by asking new housing developments to build secure cycle parking and have good public transport links. The question then is how to incentivise this?

10:50 - 11:10

Legaire Pinedo Ortiz de Mendivil - *School of Civil Engineering*

Hydrological and environmental processes in railway drainage systems:
towards sustainable drainage system (SuDS) approaches

Flooding and water pollution are believed to be two of the main environmental problems in the railway industry. The effective control of water is essential to the safe and economic management of railway infrastructure. Neglect of the drainage system can have significant implications such as delay minutes, poor track geometry, line closures and a likelihood of earthwork failures.

This project aims to combine the collection of on-field drain data, the water quality analysis of the discharges, and the simulation of the hydrological response of the railway drainage, in order to obtain an understanding of the current railway drainage performance. This approach will allow to model future climate change scenarios and provide highly valuable data about water pollution due to rail transportation operation. The combination of hydrologic, hydraulic, and environmental understanding of the railway drainage will provide the tools for developing more sustainable solutions to the drainage system, enhancing the use of SuDS in the railway sector.

11:10 - 11:30

Anthony Ezenwa - *Institute for Transport Studies*

Last mile deliveries on University of Leeds campus



The study aims to investigate the flow of vehicular traffic around the campus of University of Leeds. We conducted traffic counts and observations across the major entrances of the University. We found that the University generates a variety of traffic, including vans and small trucks for construction, maintenance, and parcel deliveries. According to this preliminary, we observed that parcel delivery represent a significant, complex, and fragmented, and difficult to optimise. Moreover, the Go-getter bike couriers have improved internal delivery flows, reducing the miles travelled by vans. The outcome of the study improves the understanding of goods and parcels flows on campus, as well as implications for the sustainable delivery services such as the Go-getter. Some respondents mentioned the need to address the issues of deliveries around the University. Moreover, the research contributed to raising the awareness about the vans traffic impact on air quality on campus. The limitation of the study deal with the short period for the field observation and survey activities, though the findings are substantial to guide the further discussion by the stakeholders and future research about the subject.

Morning Session 1 - Room 3 (Baines Wing 2.06)

Communicating Sustainability

10:30 - 10:50

Madeleine Vos - *School of Fine Art, History of Art, and Cultural Studies*

Changing attitudes: the power documentaries hold in bringing forth change

Climate change is real, and it's here to stay, but is simply knowing about climate change enough to make people change? In this project I want to uncover how effective documentaries can be in creating widespread change in our attitudes towards climate change and sustainability. In such a fast-paced world, we often find ourselves overwhelmed by the vast amount of information we receive on a daily basis. I want to ask whether documentaries stand out from this overload of information, and ask whether they can act as a motivating force to ignite change. Can one or two hours of well edited, informative and visually persuasive film cause a widespread shift in attitude big enough to create positive, sustainable and long lasting lifestyle changes?

Through focus groups and market research I aim to identify whether specific documentaries impact people enough to make permanent changes in their life. I also aim to identify which specific approach to documentary filmmaking is most effective in causing this change. If, through documentary, we can educate large audiences about sustainability, then we can create powerful and long-lasting changes in the attitudes we hold towards the planet.

10:50 - 11:10

Rachel Harcourt - *LUBS / School of Earth and Environment*

Narrating the UK's adaptation to a changing climate

Over the coming decades the UK will increasingly experience the impacts, risks and opportunities brought by a changing climate. In preparation, the UK government is encouraging people to engage in 'adaptation', meaning actions taken to limit risk and increase resilience. To be able to do this individuals will need not only information but also to feel engaged and motivated in readying for a changing climate. Previous research has found that the socially shared narratives we construct to address difficult problems can influence how we decide to respond. Therefore, the stories we are currently telling about the UK's climate future and how we might adapt to it will likely influence how we prepare for it.

This talk will present initial findings from an analysis of how climate change adaptation is being storied in the public discourse. A discourse analysis of media and other texts will identify to what extent and in what manner adaptation is being discussed, adding novel insight to current understanding of media coverage of climate change in the UK. This research is intended to aid those tasked with communicating adaptation to a general audience so as to increase active engagement in preparing for a changing climate.

11:10 - 11:30

Viktoria Cologna - *School of Earth and Environment*

The potential of info graphics in climate change communication: A comparative analysis with an IPCC visualisation.

C L I M A T E C H A N G E. What picture comes up in your mind when reading this? What emotions does it spark in you? Exploring mental images and associated emotions evoked by climate visualisations can help to better predict how effective climate visualisations are at changing observers' behaviour and increasing support for climate policies. However, improvements in climate change communication have mostly focused on written communication, while improvements in the visual medium have been neglected. This research draws on psychological insights to test the potential of an info graphic in disclosing information on climate change by assessing it against one of the most widely used climate visualisations of the Intergovernmental Panel on Climate Change (IPCC).

Morning Session 2 - Room 1 (Great Hall UG.09)

Food and Agriculture

11:40 - 12:00

Charlotte Davenport - *School of Earth and Environment*

A Berry Bad Brexit?

The decision to leave the EU has filled the UK with uncertainty. This topic is about soft fruit production in the UK and the EU – how supply chains have enabled UK consumers to eat fruit all year round, and what Brexit might mean for the future of your favourite fruit. Strawberries, raspberries, blackberries, lots of native berries to this country are picked by EU migrant workers whose future in the UK is very uncertain. The horticulture industry has struggled to replace labour for this activity – where robotics and machinery are not able to do as good a job as the pickers. So what next? Let's unpick the nitty gritty of what's left for soft fruits in the UK. Will market gardening resurge? Do Brits want to work outdoors? What kind of environmental impact does importing fruits have? What kind of environmental impact does intensively growing fruits out of season create? What kind of trade deal might we secure with countries across Europe and beyond? How will these trade agreements affect what we eat? What's best for the environment, economy and society?

12:00 - 12:20

Hannah Sherwood - *School of Chemical and Process Engineering*

An Assessment of Food Waste Management Options for the University of Leeds: A Living Lab Approach



Food waste is a complex, interdisciplinary issue which negatively impacts sustainable development on a global scale. On an institutional level, the University of Leeds seeks to address the food waste issue on a campus-scale by implementing a decentralised food waste treatment technology to improve sustainability at the university, whilst allowing for enhanced research and collaboration opportunities as part of a 'Living Lab' concept. This project aimed to assess the feasibility of implementing three specific technologies to treat food waste on campus; anaerobic digestion, composting and desiccation (a pre-treatment approach) and to examine their relative 'sustainability'.

The project found that there is no 'one size fits all' solution for tackling the issue of food waste and in the context of the University all three technologies involved significant trade-offs, whether that be environmental, economic or social. It has however, been found that addressing prevention, as per the UK's Waste Management Hierarchy, can offer significant benefits in terms of reducing greenhouse gas emissions, as well as providing ample opportunities to improve the social and financial sustainability of the University's operations. This project therefore, has been able to offer several recommendations to the University of Leeds, involving an integrated and holistic approach to food waste management on campus which utilises both waste treatment technologies and preventative strategies.

Session continues on the next page...

12:20 - 12:40

Jason Lesser - *School of English*

Prophetic Poets: Analysing Early Vegetarian Rhetoric

My project looks at some radical British advocates of the vegetarian diet from 200 years ago and look at how their prescient arguments for rejecting animal consumption (morality, ecological sustainability, health) still resonate today. Specifically, I will analyse the poetry and prose of Percy Bysshe Shelley, an incredibly influential poet who has been dubbed by some ecocritics as the 'first celebrity vegan' and whose writings on animal welfare allegedly inspired George Bernard Shaw, Ghandi and other significant vegetarians to adopt a meatless life. I will also touch on the views of his contemporaries including his wife Mary Shelley, who when writing Frankenstein envisioned the creature as a moral vegetarian, and Lord Byron.

The purpose of this investigation is not only to highlight the fact that meat-free diets, far from being edgy modern trends, have been prevalent for centuries, but also to emphasise the consistency of vegetarian arguments before and after knowledge of climate change was understood. Research suggests that today the meat industry is responsible for emitting more carbon dioxide, methane, and nitrous oxide than all the vehicles in the world, and the demand for cattle especially has led to catastrophic levels of deforestation and clean water usage. The current consumption of meat, dairy and eggs is evidently unsustainable, and my project suggests that we might learn invaluable lessons on how to approach vegetarian issues by looking back at the prophetic writings of poets and thinkers from the past.

12:40 - 13:00

Alexandra Nunns - *School of Earth and Environment*

Food for Thought: how to make meat greener

For years, the conversation on sustainability in food has been dominated by vehement arguments to completely drop animal products from our diets. And with good reason, too. The latest research proves that industrial animal agriculture is keeping the world on a dangerous trajectory towards irreversible climate change, ecosystem collapse and even a sixth human-caused mass extinction event; which threatens not only nature, but the survival of human society as well. However, we have ignored a critical detail in the debate. Livestock are not the problem...we are.

Factory farming- the intensive system for raising animals in the shortest time, with the least space and for the greatest profit, at all costs- is relentlessly destroying every part of the natural environment, whilst being the single largest cause of animal cruelty in history. And through the unregulated use of antibiotics to prop up deadly living conditions, also sees the emergence of resistant strains of bacteria that pose a serious risk to global health.

But with a holistic approach to farming, a better future is possible... using traditional, lower-intensity techniques that work with nature rather than against it, I will demonstrate how animal agriculture can help to restore degraded environments via "agroecology". Moving animals out of the factory and into the fields is the key to solving our big food problem. But this will mean turning our back on "cheap" meat, and requires conscious, compassionate choices to be made by all of us.

This talk is sure to leave you hungry for change!

Morning Session 2 - Room 2 (Baines Wing 2.08)

Governance

11:40 - 12:00

Rory Hayes - *School of Geography*

Breaking the Chains of Capitalism

Globalization is the phenomenon that has shaped the modern world we live in giving us mobile phones, drones, the internet and all the global connectivity of modern life. While it has allowed us to progress it's also the system that keeps privilege entrenched. As the living standards of the richest improves, conditions for those at the bottom of society worsens, with the 8 richest people now having as much wealth as the bottom 50% of the global population, massively contributing to world hunger and prevalence of preventable disease. Globalization from above takes money from the poor and puts it in the hands of the rich. Organisations such as the IMF and World Bank which are supposed to help have often ensured the poorest are kept in a perpetual state of under development, it is also through this system that the wealthiest are able to suppress the problems of global warming and continue to ignore climate change.

This presentation will explore how alternative forms of globalisation offer an opportunity to break free from the neoliberal systems that keeps privilege entrenched, looking at examples such as the Zapatista's in Mexico and their reaction to the North American Free Trade Agreement (NAFTA), and international movements such as La Via Campesina. Could social movements aided by new technologies be the answer to the worst excesses of Capitalism? Could we genuinely propose an alternative to Globalization from above?

12:00 - 12:20

Nabeel Alhassan - *Leeds University Business School*

Sustainable business: Would the world be better off with more female business leaders? The Impact of FTSE100 Board Gender Composition on Firm Performance

The case for exploring the impact boardroom gender diversity has on firm performance is of vital interest to shareholders, policy makers, and employees in the workplace. More so, for companies in the FTSE100, the largest 100 companies by market capitalisation in the UK, whose decisions have global impacts. The policy implications if a more diverse leadership team is able to facilitate improved business outcomes has the potential to create a more inclusive, positive society.

This project addresses a gap in the literature that evaluates the impact a firm's boardroom gender composition has on its performance in the UK over a significant time period after the 2011 Lord Davies Review, the high-profile government policy initiative to improve it. Based on a sample of 50 FTSE 100 listed firms studied over the period 2006-2016, this paper reports a positive link between boardroom gender diversity and firm performance. The timeliness of this project will add value to the ongoing debate within academia and by practitioners on whether an economic case exists for boardroom diversity. To find out more – visit the poster presentation!

Session continues on the next page...

12:20 - 12:40

Arianna Griffa and Robbie Giles - *School of Earth and Environment*

Bridging evidence with policy in household adaptation to climate change in Leeds

A summary of a MSc research project based around household adaptation to climate change in Leeds. We hoped to better understand what actions are being taken to adapt to climate change on a household scale, but also considering the wider implications of what this may mean in terms of climate policy moving forwards and improvements in community resilience.

12:40 - 13:00

Pippa Johnson - *School of Law*

A critical regulation of agricultural land in England

The main aim of this research is to critically evaluate how agricultural land use is being regulated and to see if there can be a balance between agricultural businesses and environmental protection. The research focuses on the use of the 'polluter pays principle' and the 'provider gets principle' in relation to the regulation of agricultural land.

The thesis considers three case studies. The first focuses on Nitrate Vulnerable Zones and how the polluter pays principle has been implemented. Secondly, there is a case study on Stewardship Programmes and the implementation of the provider gets principle. The final case study centres on cross compliance where it can be argued that both principles are employed.

The main issue to be addressed is that at present it could be argued that there is an over regulation of agricultural land and that land is not regulated in the most effective manner. This piece will aim to put forward a workable solution, which achieves an acceptable balance between there being sufficient regulation to sustain conservation and biodiversity and working with the farming community to care for the land which they are custodians over and use it in a way which enables the creation of a sustainable environment, whilst still enabling the farming community to run successful businesses without perturbing about the regulation of day to day activities.

Morning Session 2 - Room 3 (Baines Wing 2.14)

Ecology

11:40 - 12:00

Anastasia Cardone - *School of English*

“A man against a loon”: Analysis of Birds in American Literature to Build an Ecocentric Connection with the Environment

Human actions have caused the most dangerous environmental crisis, as our detachment from the environment poses not only serious environmental threats but also cultural issues, such as children’s inability to recognise wild animals. However, the concept of wilderness has played a key role in human life and it contributed to define North America, by differentiating it from European ‘tamed’ landscapes. In particular, after the Independence of the United States, birds and ornithology outlined US culture and identity against European prejudices. In the century that followed, while ornithology established as an independent discipline thanks to Alexander Wilson and John James Audubon, Transcendentalism – the American version of Romanticism – underlined the importance of a closer contact with the birds to truly understand nature and human beings’ place in it, echoing the shamanic belief that ‘learning the language of animals, especially of birds, is equivalent to knowing the secrets of nature’, as Mircea Eliade writes.

My project aims at studying the relationship between American ornithology and the Transcendentalist tradition, embodied by the father of American nature writing Henry David Thoreau, who captured the experience of listening to birds in his Journal and in Walden, or Life in the Woods. As Thoreau shows, by listening to birds and communicating with them – by exchanging meaningful signs –, human beings could build a ‘bridge of understanding’ and gain a deeper ecocentric environmental awareness. The research will demonstrate how human communicative connections with other living beings may represent an antidote for the plagues of the ‘Anthropocene’.

12:00 - 12:20

Linda Latuta - *School of Earth and Environment*

Macro Problem of Microplastics: Assessment of microplastic pollution in marine sediments and waters along Kilnsea beach

Every piece of plastic ever made still exists today, but a significant fraction of it in microscopic form. This problem raises concerns not only for the environment, but for marine biota and human population as well, since plastics are transferred throughout the food chain due to the ease of their ingestion. Microplastic is a collective term for microscopic plastic fragments and fibres of the size <5mm that result from fragmentation of bigger plastics or being manufactured for cosmetic use or as a raw material for further plastic production.

The scale of global microplastic contamination is only starting to become clear and this research project explores the presence of microplastics in marine sediments and waters along Kilnsea beach. Kilnsea beach is part of the Spurn National Nature Reserve that is an area of special interest as it provides landfall for many migrant birds and marine mammals. The presence of microscopic plastic particles there would be alerting for two reasons: their ubiquity in a relatively unaffected non-urban environment and their threat to the Nature Reserve biota. With limited research on microplastic pollution worldwide and no prior assessment on the East Yorkshire shoreline, this study expands our understanding of presence, potential sources, abundance and types of microplastics.

What is clear for now- microplastics are a macro problem that is closer to us than we think.

12:20 - 12:40

Laura A. Najera-Cortazar - *School of Biology*

Nocturnal ecosystems workers: Genetic diversity of bats and their pathogens along latitudinal gradients in the Baja California peninsula, Mexico

With more than 1,300 species distributed around the world, bats can be found everywhere, in both urban and wild systems. These mammals are essential for maintaining the ecosystem functions, acting as pollinators, seed dispersers and biological control. These roles also contribute to the human wellbeing and economy, both in medical research and agricultural areas. Bats have been surrounded of myths and fears, not only because their appearance and nocturnal behaviour, but also for the lack of information regarding their nature.

My PhD project focuses on how environmental factors influence the distribution, diversity, genetic population structure and pathogen repertoire of *Myotis* bats along the Baja California Peninsula, Mexico. At 1,300km long, limited by the Pacific Ocean and Sea of Cortez, this transitional zone has very diverse habitats due to its isolation, geological history and location. Bats in this region are reservoirs of unique genetic diversity and environmental adaptations, constituting an interesting study system to test how latitudinal gradients, and other ecological factors restrict dispersal and drive population structure.

The aim of this study is to generate more information on bats distributions and genetic diversity, how this influence pathogen diversity, and how bats cope with environmental change and adaptation. This will contribute to speciation and climate adaptation research, increasing the ability to set conservation priorities as well as how to improve people-bats interactions. It is vital for bats survival to change the way that people think, showing their importance for the ecosystem and as a valuable and sustainable economic resource.

12:40 - 13:00

Liam Taylor - *School of Geography*

What is the future for ecosystems in the Arctic?

The Arctic is one of the fastest warming places on the planet as a result of man-made climate change. As the region becomes warmer, we are beginning to see changes in the way ecosystems are functioning. In this talk, we will explore what the impacts of climate warming is having on one Arctic ecosystem – peatlands in permafrost. These are some of the most efficient carbon sinks on the planet, but nobody knows if these areas are going to continue sequestering carbon in the future. In worst case scenarios, they could become a major source of carbon – the Arctic ‘carbon bomb’. My research looks at the past 2000 years to show how these ecosystems have responded in the past, to infer how they may respond in the future.

We'll explore how single-celled amoebae are able to reconstruct detailed hydrological changes across the Arctic going back thousands of years, and also how the latest satellite missions can help us better understand what's going on in the Arctic. This all comes together to answer the question – What is the future for ecosystems in the Arctic?

Afternoon Session - Room 1 (Great Hall - UG.09)

Society and Community

14:00 - 14:20

Tamara Pein - *School of Earth and Environment*

The power of creative sustainability: environmental creative social activism

Sustainability is creative problem solving. The best way to create the future we want, is to design it. Elemental, a personal project of mine, is an environmentally focused arts and events platform which has been active in Leeds for nearly 3 years, showcasing and exploring various issues of sustainability, many specific to Leeds. Elemental Leeds is creative social activism at its finest. It hopes to bring meaning, simplicity, emotion, humour and fun to some complex and difficult issues people and the planet face today. When David Attenborough gets you, Elemental is a bit more creative persuasion.

In this project, I would like talk about creative social activism in a sustainable context and also discuss what we mean by a Sustainable Event. Using theories of sustainable event management I learnt during my internship with Positive Impact events in Manchester. I will explore various relevant case studies from around the world and focus specifically on what Elemental does in Leeds. I will explain power of creative expression for inspiring and increasing awareness around issues of sustainability. Following this I will showcase existing projects and groups doing similar things in Leeds and how to get involved.

14:20 - 14:40

Amy McIntosh - *School of Medicine*

Clean Cooking and Climate Change: impact on the health of pregnant women and children

41% of the world's population cooks with polluting fuels like wood or coal, which harms both their health and the environment. It accounts for around 4.3 million deaths per year and causes more health problems than unsafe water and sanitation!

Women are disproportionately affected as they spent large amounts of time cooking – but what is the impact on them and their unborn children when they are pregnant? Improved cookstoves which burn fuel more efficiently have the potential to reduce carbon dioxide emission by 1 billion tons in a decade in India, and reduce the amount of disease by 16%. In my project I review what we currently know about the impact of pollution from cooking on pregnant women, and if there is any evidence that using improved cookstoves can prevent the poor outcomes which result, in an attempt to increase the amount of evidence available to promote the widespread uptake of clean-burning cookstoves.

14:40 - 15:00

Jonny Gleadell - *School of Geography*

The Importance of Public Engagement in Renewable Energy Development

This project assesses the role of public engagement, changing public opinion and attendant political barriers in getting renewable energy initiatives off the ground. Particularly, this work looks at the role of energy developers in educating and engaging the public as a part of their social responsibility and in the process of assessing the scope of potential social and environmental impacts of their developments. The work shows how far public engagement exhibitions (for residents likely to be affected by a particular development i.e. fracking or windfarms) have the potential to transform public opinion and increase the likelihood of a project getting off the ground. The public's wider role in constructing the discourse around sustainable and renewable investment is also discussed; can improving methods of public engagement on local-scale renewable energy projects aid feasibility assessments or even influence the direction of national policy decisions?

Afternoon Session - Room 2 (Baines Wing 2.08)

Urban Infrastructure

14:00 - 14:20

Charlotte Page, Lucia Southworth and Ana Gallardo - *SEE*

Plants for Pollution

Air pollution in Leeds is currently making headlines as it breaches the governments limits and is thought to have accounted for 680 premature deaths in 2016. Plants for Pollution aims to provide a solution to this air pollution problem by promoting the introduction of green walls throughout the city to absorb pollutants and create cleaner air for the city. We hope that these green walls would be visual and get people talking about air pollution in the city.

This project came about as part of the Climathon event, an annual climate change hackathon, and we have recently presented our project to the city council at the 'state of the city event'. We hope to be able to work with both the council and the university to take this project further and make green walls a reality across Leeds. Currently we are looking to work with the university Spark team to develop our business case further in order to solidify our proposals.

14:20 - 14:40

Andrea Aiello - *School of Civil Engineering*

Biofiltration systems for optimized storm water management in urban areas

Urbanisation and poor water management has been associated with negative impacts on human and environmental health. A more holistic approach to urban water cycle management has been proposed to restore pre-development condition at source. Sustainable Drainage Systems (SuDS) like biofilters are part of this approach. A biofilter is a landscape feature that take advantage of soil and plants property to enhance water quality and provide other, rare in cities, ecosystem services. The focus of my research is to intercept and treat urban stormwater runoff on-site trough an improved biofilter configuration. Different plant species will be investigated to assess the design impact and the challenging condition on the growth. The project will assess the capacity of a biofilter to adsorb pollutants that are of major concern for water quality because their bioavailability and the difficulty in their treatment. Laboratory based experiments will provide preliminary information on the field test configuration that will treat stormwater runoff from a car park in Leeds.

The retrofit of this system in cities could improve landscape amenity, provide ecological niches for plants and animals, mitigate the heat island effect, and give a shared space for communities.

Session continues on the next page...

14:40 - 15:00

Rebecca J. Robertson - *Faculty of Biological Sciences*

Changing greenspaces in Bradford to improve biodiversity and health in urban populations

My PhD project looks at the best ways to change greenspaces to promote public health and biodiversity. I aim to find win-win solutions to reduced health, biodiversity and ecosystem function in urban areas. I'm working with the NHS (Born in Bradford and Better Start Bradford) to use their health data of 30,000 Bradfordians and a cohort of babies and their mothers to explore the impacts of these greenspace changes on 0–3years olds and their families. I'm also working with local communities to co-develop the changes in their parks. Come and meet me to learn about the benefits of green spaces and the ways in which we can change them to help people and nature!

15:00 - 15:20

Poppy Cooney Hannah Birch - *SCAPE*

Valuing Natural Capital: The Importance of Trees and Greenspaces on Campus



This work is a continuation of the Sustainability Service i-Tree Living Lab project carried out for Leeds4Trees; a collaboration between the Leeds Ecosystem, Atmosphere & Forest (LEAF) Centre, the United Bank of Carbon (UBoC) and Leeds City Council. This project was carried out in two parts to allow several methods of natural capital valuation to build a more complete picture of the value of green spaces and the trees within them.

One part of this project used the i-Tree Eco software suite to evaluate the ecosystem services being provided by the many trees present on campus. i-Tree was then used to determine the loss in effects and value seen when trees are removed before being applied to discover the benefits possible at different life stages of a tree. This allowed us to see the time-lapse between removing a mature tree and seeing the same benefits provided by replacement trees.

The second part of this project was an online survey which aimed to gain insight into campus users understanding of benefits of trees and greenspace in the urban environment. To compliment this, a web based statistical modelling application called ORVal was used; this tool places a monetary value upon the recreational benefit of greenspaces. These two modes of research combined allow the first steps to be taken towards recognising the value of the more intangible benefits of campus trees and greenspace.

Together these methods allowed us to begin to assess the current value of the greenspaces on campus and provide suggestions for future improvements.

Afternoon Session - Room 3 (Baines Wing 1.15)

Education and Behaviour

14:00 - 14:20

Lucy Curtis - *School of Earth and Environment*

Climate Change or Diet Change? The impact our diet choices have on our planet and what we can do to change this

Meat and two veg: that's what my mum grew up on. Cheese burger and chips: classic end-of-the-night grub. Carving the turkey: a Christmas favourite.

This is normal. And why change from normal? To expect people to give up their regular everyday food, their night out food and their holiday food in exchange for more plant-based alternatives, for whatever reason, seems a bit extreme.

But so is the 14.5% of global greenhouse gas emissions that come directly from the meat and dairy industries. They are trapping the Sun's radiation, warming our atmosphere, melting our ice caps, rising our sea levels, causing hundreds of thousands of deaths each year due to extreme weather events, increased malaria and malnutrition and 250 million people to be displaced by 2050.

This project is not intended to point fingers or to criticise, but rather to increase understanding and awareness around the impact our diet choices have on the world. It may open your mind to the possible future of protein, from lab-grown meat through to insect protein, as well as providing suggestions of realistic diet changes to help anyone reduce their own footprint.

There is no doubt that we need a change to protect the planet we want our children's children to grow up in. But change in the world starts with the individual. Hopefully, this project will allow you to reassess your own consumer choices and understand more about the food you put on your plate.

14:20 - 14:40

Michelle Corns - *Lifelong Learning Centre*

Learning Champions: Inspiring communities – the butterfly effect

I intend to do a spoken presentation about Learning Champions and how I was inspired by them myself at the Summer School presentation at Lifelong Learning Centre. This was more than just academic, when I saw the Learning Champions, I felt motivated, by their enthusiasm and confidence. They had such diverse backgrounds and each learning journey was unique – as is my own. I am a disabled student who took voluntary redundancy on health grounds. I had limiting beliefs about higher education. I am now in my first year as a student of Professional Studies. I became a Learning Champion because, my life has changed so much since coming to university and I want to share my story and inspire others.

I intend to interview other mature students to find out how much they were influenced by the Champions and present one or two case studies as well as my own story. I believe that being a Learning Champion is important in sustaining Education within communities because – just like the butterfly effect: one person flaps their wings and inspires someone in a community that they can do better things with their life, that person can go on to inspire others within their family and community.

There is a misconception that only a certain type of people attend university: I intend to demonstrate how Learning Champions and the Lifelong Learning Centre is breaking down barriers and enabling people. I intend to conclude with an inspirational 'mind movie'.

14:40 - 15:00

Madeleine Michell - *School of Design*

Dresscode: DIY Breaking Free from the Increasingly Disposable Nature of our Wardrobes

This study explores an approach to changing the fashion buying habits, specifically of young women, which are having a negative impact on our global environment. The current limited successes of slow-fashion initiatives are evaluated. Furthermore, apparent barriers to the wider adoption of this design ethos are questioned. Education drives the research through analysis of findings, exploring the potential to generate change in the current fashion debate; the possibilities of participatory design are reviewed and considered as a viable enhancement of an alternative to slow fashion strategies.

The foundations of this study will be built on an experimental workshop, taking place in January 2018. Participants will employ a simple garment making process, using part circle-shaped pieces of fabric to construct a garment to fit their body. The engagement of this activity questions how to fulfill consumer needs by encouraging understanding, through participation, of the skills required to make clothing.

Enabling young women to break free from their increasingly disposable wardrobes is at the forefront of the investigation. Questionnaires and observations throughout will enable evaluation of the main questions. Can engaging consumers with the making process result in a positive emotional attachment to their clothing? Does this result in a longer life span of the garment, thus reducing the desire to discard clothing and consume more?

The research will conclude on the opportunities to encourage skill-based education. Therefore, exploring how this could influence the way clothing is designed, made and used by consumers; moving fashion towards a more sustainable future.

15:00 - 15:20

Mohammed Salim Barber - *School of Languages, Cultures and Societies*

Is Opera Racist?

“Opera? Isn’t that just a fat lady singing (or rather, screaming), and at those prices? You must be dreaming!”

Such is the reputation of opera, one of the world’s greatest performance arts. But there exists a dark underbelly to some of the world’s most beloved operas.

A common feature of opera is its tendency depict a so-called ‘Oriental’ world, intended to represent non-Western societies. These are places full of barbaric despotism, fantastical splendour, primitive religion, sex mad women, submissive femininity, effeminate men, interchangeable cultures and backwards people. Put simply, opera is full of racist caricatures.

Indeed, some of the most renowned songs – such as *Nessun Dorma*, *Habanera*, *Flower Duet*, and the vengeful *Queen of the Night* aria - come from orientalist operas, featuring highly stereotyped characters and sometimes demonstrably prejudicial portrayals. For opera composers, glamour, fantasy and intrigue - not accuracy - were the objectives of using an Eastern setting, no matter how far removed from reality it was.

My presentation will unpack the orientalist roots of western opera. I’ll examine how many of these acclaimed works were inspired by the darkness of colonialism, and pose the question - in our 21st century post-colonial world, can opera ever overcome its racist roots, or is it forever condemned by it?

ADDITIONAL POSTER PRESENTATIONS

Jessica Tannock - *School of Earth and Environment*

Sustainable Transport in Bermuda

Through endeavouring to improve society, the environment, and the economy for future generations, many governments have encountered complexities that affect progress toward sustainable development. In the past fifty years on the Island of Bermuda, few changes to transportation modes and infrastructure had occurred. Further, cultural influences from America, a leader in private car usage, proliferate on the Island. In recent years, however, public interest in electric-powered vehicles and active transport modes, such as cycling, has increased. Through diversifying reliance on transport modes, many locals have realised significant cost-saving and health benefits. This project focuses on ways to improve the safety, fuel efficiency, and versatility of Bermuda's transport systems. In assessing existing available data on these three facets of transport, this project draws from current and past research aimed at addressing problems with local transport on the Island of Bermuda. It is intended that the findings of this project's continued research will contribute to the development and implementation of sustainable transport systems in Bermuda.

Wenmeng Wang - *School of Design*

Exploring the sustainable design in Superfluous Things for harmonious living environment

Superfluous Things, written by Ming Dynasty scholar Wen Zhenheng, has long been regarded as the encyclopaedia on Chinese ancient landscape design. It provides a panoramic view over Chinese landscape while representing the social condition when economic development gained momentum with restrictions on commerce lessened. It also has long been deemed as a traditional Chinese garden research monograph, analysing Chinese traditional garden systematically and comprehensively.

My project emphasizes the contemporary values of the sustainable design principles and methods in Superfluous Things. Specifically, the main purposes of Superfluous Things are aimed at creating a liveable environment without destructing the relation between mankind and nature. A delightful garden space can be created through proper combination of plants, rockeries, buildings and so forth

According to Superfluous Things, two key environmental building principles that can be applied into sustainable design have been put forward: (1) artificiality should fit with natural conditions; (2) less but not reduce. Based on these, a coupling point on the practice and research of building a sustainable and friendly environment has been found, which combines natural resources sustainability, human needs, economic benefits and cultural factors.

I have satisfactorily come to the conclusion that harmonious living environment will be achieved by finding a reasonable coupling point during the course of designing, planning as well as building. And the research work will also bring about a discovery of the standards in creating sustainable environment.

A SUSTAINABLE CONFERENCE

Accessibility - all registration, exhibition, and breakout spaces have full wheelchair access. For directions to accessible entrances and lifts at all conference building locations please follow these links: [Great Hall](#) / [Baines Wing](#) / [Parkinson Court](#)

Food - a bespoke low carbon vegan lunch will be served by our University Catering Service, [Great Food at Leeds](#), where over 65% of our suppliers are from within 40 miles of the University. A food map indicating which foods have been sourced from where will be displayed on the day.

Printing - all exhibition posters will be printed on FSC approved paper.

Transport - we encourage the use of public transport for travel to and from the conference. Leeds is well connected via bus and train and University campus is located a short walk from the city centre. For more information please visit the [Sustainability Service transport webpage](#).

Waste - we encourage all delegates to use the dedicated recycling bins provided. These can be found in indoor and outdoor public spaces. Any food waste will be sent to an off site anaerobic digester plant for energy recovery. No disposable food containers, plates or cutlery will be used on the day.

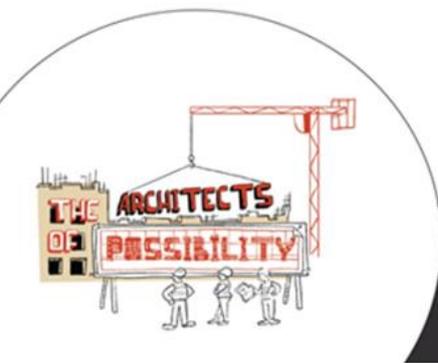
Water fountains - to reduce the use of plastic, there will be no bottled water provided on the day. Why not bring along a reusable water bottle and fill up at any of our water fountains or [cafes](#) on campus?



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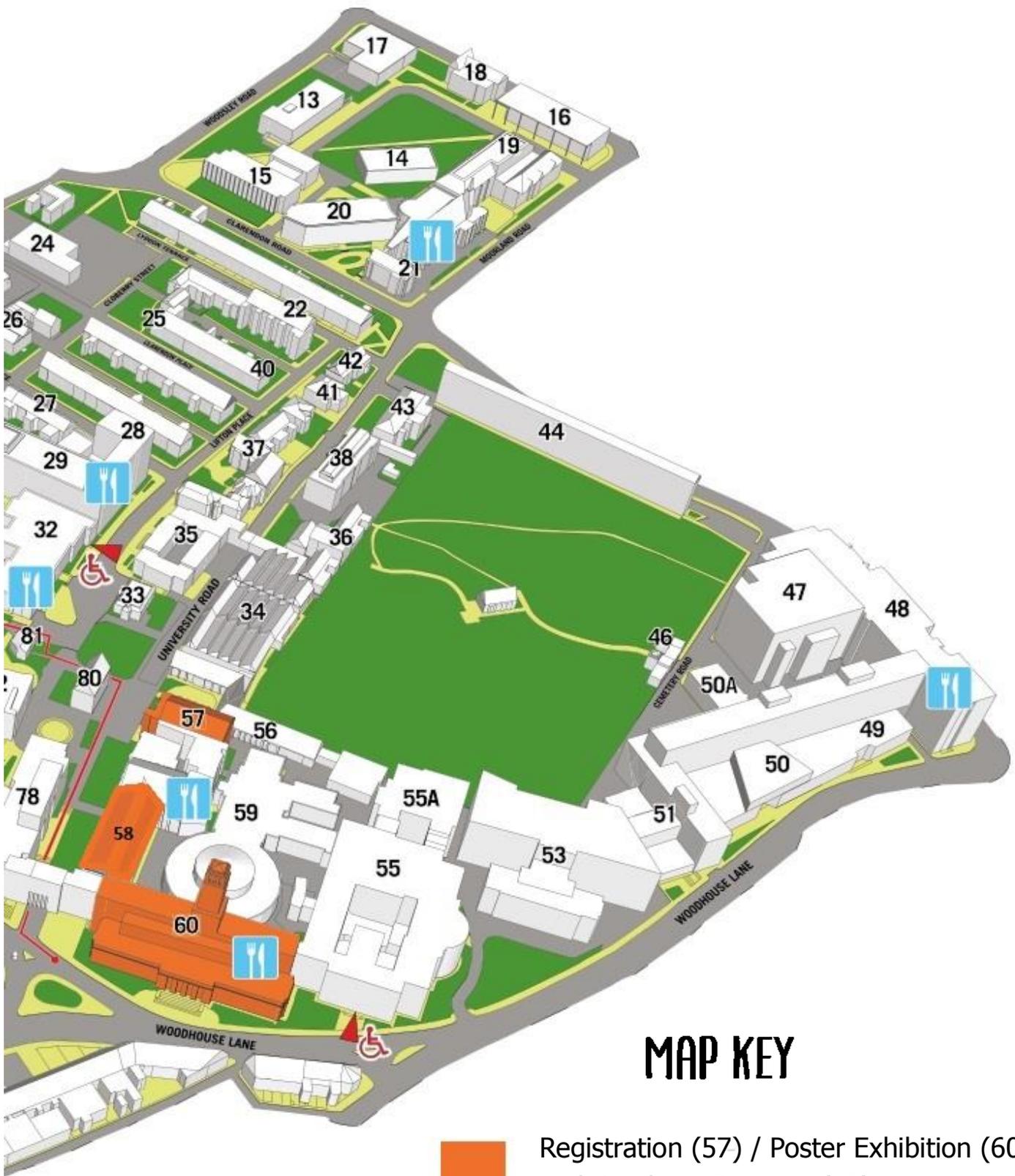
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CAMPUS MAP



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MAP KEY



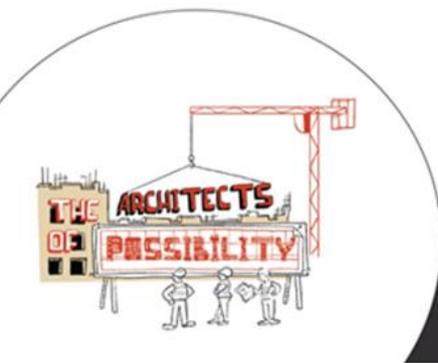
Registration (57) / Poster Exhibition (60)
and Breakout Sessions (58)



Refreshments



North - South campus wheelchair
accessible route



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