

LSBU Sustainability and Climate Action Event Series

Part One - Climate, Carbon, Energy and Resources Week, 22-26 June 2020

We want our community and beyond to know that LSBU is dedicated to protecting our planet. We promise to become a university of the future - one that is conscious, one that is responsible and one that is sustainable. We're proud of the progress we have made, but we're not even close to done! As part of LSBU's Climate, Carbon, Action and Resources Week, we asked our speakers to provide us with some key messages, myth busters and practical take-aways to help you make more informed and sustainable choices in your studies, careers and daily lives. Together we can make a difference!

Key Messages



- LSBU is working with entrepreneurs to innovate! www.sustainableinnovators.com
 - The UK's buildings generate 40% of all our energy-related carbon dioxide emissions. We must start viewing the urgent task of cutting CO2 emissions as a major infrastructure challenge, with adequate investment.
 - We need to work collaboratively and collectively across discipline, industry and experience taking a multi-dimensional holistic approach to understanding and addressing climate change.
 - Employers and industry want modern engineering education to encompass global issues and creative problem-solving. Engineering programmes at LSBU carefully consider these subjects, so thinking about the bigger picture, universities are helping to shape the future in the form of graduates who leave and enter the real world at the end of their studies.
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- Creativity in any subject makes us future proof in an era of automation and technological progress.
 - Sustainability should be embedded into every university course - especially design and engineering - as our decisions have future consequences.
 - The life on this planet, and our future, is under severe threat.
 - Vacuum Insulation and Zero Energy Buildings are indivisible.

Key Messages

- Engineering management can be used as a lever to tackle the complexities of environmental sustainability.
- Energy storage is required to integrate renewables into the grid.
- In order to create systemic change, we need to collaborate across seemingly different subjects.
- Establishing a Circular Economy is enormously challenging but is achievable.
- The built environment is a problem and also the solution to environmental degradation and attendant climate change effects.
- You are the future. Stand up to what you believe in. Together we can build a more sustainable city, a more sustainable world.
- It's not about individual change vs system change. We need both!
- There has never been a better time to be aware of how our actions are impacting the world we live in. As students, we have the power to make significant changes that will positively influence future generations.
- LSBU is providing fully funded support for low carbon start up businesses (SMEs) including access to technical experts - our academics.
- All the evidence shows investing in decarbonizing and future-proofing our built environment would deliver significant economic benefits. A focus on investment and renewal across the Built Environment should be a vital part of any stimulus package arising from the COVID-19 crisis.
- Sustainable development has never been more important to humanity than it is today.
- Small creative acts every day as an individual help us to change our perspectives and thus perceptions.
- You can make a difference - "Be the change that you want to see in the world" - Mahatma Gandhi during prayer at Mumbai, September 1944.
- I once thought Sustainability was just about recycling - LSBU taught me differently!
- "Human activities are having a catastrophic effect on earth's climate and environment. Through imagined futures, we can start rewilding our imaginations and the present world".
- Liquid Air Energy Storage (LAES) can be used for large scale energy storage.
- The GreenSCIES scheme will result in an 80% reduction in carbon emissions compared to today's baseline with gas boilers, addressing fuel poverty by reducing energy bills.
- By utilising the low stream of waste heat in the city, urban building energy can be generated in place of burning fossil fuels.
- To create a fair, bright future globally for everyone, we need to protect the most fundamental of our needs which are water, air, food, nature, shelter, community. It is only through remembering that we are simply one of the many species here on earth that we can do this.
- Sustainable design and manufacture are no longer 'extras' - they are critical to industry and society as a whole.
- Built environment professionals have pivotal roles in ensuring sustainable development.
- As the world warms, we will all need to adapt to lower our carbon footprints. Adapting where we can now will help us to make bigger changes later.





- We are all facing a global climate emergency and the scale and pace of climate change means we need to change the way that we think about all of our work and the impacts that we are having as individuals and as an organisation.
- Environment Agency are committed to delivering Net Zero Carbon by 2030 and exploring ways to reach Absolute zero Carbon by 2050. Climate change is at the core of our asset management decision making.
- The Digital Revolution is real and facilitates the Circular Economy as well as all 17 of the UN Sustainable Development Goals.
- To reap the benefits of the Digital Revolution, we need to make sure IT hardware provision in our data centres is circular by design.

Myth Busters

MYTH: I don't have the business experience to develop/commercialise my idea...

FACT: *LSBU's low carbon programmes support SMEs not only on technical development of their innovation, but also provide access to workshops including topics such as writing your business plan, financial modelling, and perfecting your pitch to investors.*

MYTH: In an economic crunch, we can't afford an expensive decarbonisation programme for our building stock...

FACT: *Actually, the opposite is true - a decarbonisation programme would deliver enormous economic benefits. Now is the time to invest in futureproofing our buildings for the health of people, planet - and economy.*

MYTH: Engineers are not creative...

FACT: *Creativity in engineers is overlooked. Engineers are creative problem solvers and creativity enables breakthroughs.*

MYTH: The problem is too big to do anything about...

FACT: *It can be overwhelming but look at the way our environment has started to heal itself during lockdown. There's a lot to do but it can be done!*

MYTH: There's no point in doing this, it won't make a difference...

FACT: *Engaging in sustainable development projects actually creates a shift in mindset in many of our students. Future projects that they work on will encompass sustainable development and climate change at their core (even when the marking criteria doesn't explicitly ask for it). This continues through to their final year, and eventually in their industry work.*

MYTH: Not everyone can be creative...

FACT: *Being creative doesn't mean being able to paint or make music etc... We are all creative everyday - even if its just deciding what to wear or what route to take home. The more we do it, the more our brains open to other possibilities.*

Myth Busters

MYTH: On 6 Nov 2012 President elect Trump tweeted: "the concept of global warming was created by and for the Chinese in order to make US manufacturing uncompetitive. Later he described climate change as a "hoax", "a total hoax" and "an expensive hoax"...

FACT: *It is real, it is here now and we all must play our part to resolve it.*

MYTH: Solar Shading Products are just a product to stop glare or darken rooms...

FACT: *They can also improve energy efficiency and occupant health and this will increase in importance as hot weather events become more frequent.*

MYTH: There is no consensus that human activity is causing global warming...

FACT: *Surveys of peer-reviewed scientific literature and the opinions of climate experts consistently show a 97% consensus that humans are causing global warming.*

MYTH: We are powerless to change its too complicated and expensive...

FACT: *We all have choices, its no longer a matter of if, more like when.*

MYTH: Environmental sustainability is an unnecessary cost for industry and society...

FACT: *If we can proactively develop new technologies & new industries, we can drive forward sustainability and build profitable businesses.*

MYTH: Academia has no understanding of business...

FACT: *The academics involved in CEREB, and at LSBU generally, have all worked in industry or run a successful business.*

MYTH: Sustainability is all about the environment...

FACT: *It's about so much more than just this. It's about people, technology, business, etc...*

MYTH: Electricity is cheaper at night for everyone...

FACT: *This is true for some but not for everyone. It depends on what tarriff you have – it may be cheaper to run at certain times.*

MYTH: The whole climate change thing is just too huge to tackle. One person can't make a difference...

FACT: *I know this to be untrue because I took a material intended for another purpose and created a piece of sculpture which can help bees find the flowers they need. It could only have happened because I collaborated with so many and it may not solve the pollution problem alone, but it shows that with a different perspective, something intended for one purpose can have amazing results somewhere else.*

MYTH: Sending emails and using the internet does have an environmental impact...

FACT: *Emails leave a huge carbon footprint. A study by Ovo found that Brits typically sent 64 million unnecessary emails a day. That's a big footprint!*



Myth Busters



MYTH: Sustainable building is more expensive...

FACT: *This is not necessarily the case if you take the present and future costs relating to maintenance, energy, and health into consideration.*

MYTH: Sustainability strategy is very costly to achieve and/or implement...

FACT: *As the sustainability strategy is streamlined and there is more drive and appetite from end users, the cost to achieve and implement sustainability shouldn't be more expensive than normal implementation.*

MYTH: Extinction Rebellion is just a group of lefty, middle-class white people...

FACT: *Extinction Rebellion is a diverse organisation, founded by a group of over 15 people including a farmer, the daughter of a coal miner, and a number of scientists and academics. It includes children and families as well as grandparents, Muslims and a myriad of other groups.*

MYTH: My business doesn't have the resource to focus on innovation...

FACT: *Low Carbon London offers 40% subsidy on new R&D hires to support your business deliver a new low carbon product, process or service.*

MYTH: Retrofitting for energy efficiency is too expensive to stack up...

FACT: *No! When we take the focus off individual energy bills and look at the broader social, economic and environmental gains, a nationwide retrofit programme definitely stacks up.*

MYTH: Climate change is a problem for the future...

FACT: *It's very much an issue now. We cannot wait any longer to take action!*

MYTH: Eating bread with butter is more environmentally friendly than eating toast...

FACT: *We challenge students to verify everything. It's the sensible thing to do. Delving a little deeper into any assumption produces surprising results. Such as: Eating plain toast is actually more environmentally friendly than eating bread with butter (dairy produce from cows, sheep etc. have a much higher environmental impact than one may initially think!).*

MYTH: That it is only through STEM, solution oriented subjects that we can change things...

FACT: *Simply looking - really looking - which is what art and culture & nature provide, allows our brains to meander so that our own self awareness builds as well as our awareness of other things. In this way we make the connections between seemingly unrelated things that provide real innovation...*

MYTH: The UK does not have overheating issues...

FACT: *20% of existing homes in the UK suffer from overheating issues and 90% of hospitals are susceptible to overheating in the future. If this is the problem now what will it be like in 2050?*

MYTH: Animals and plants will adapt to climate change...

FACT: *Given the speed of climate change, it's becoming impossible for many species to adapt quickly enough to keep up with their changing environment - based on mid-range climate-warming scenarios for 2050, 15-37% of species will be 'committed to extinction'.*

Myth Busters

MYTH: It doesn't affect me. Someone else will solve the energy and carbon challenges...

FACT: *Climate change will wait for no one!*

MYTH: You can't travel very far in an electric vehicle before it runs out of battery...

FACT: *Generally, electric vehicles can travel between 150-300 miles before they need charging.*

MYTH: Hard drives and data storage products don't have to be shredded at end of life to ensure that data is properly and safely deleted...

FACT: *Shredding is the most secure way to destroy a hard drive.*

MYTH: A few sustainable features here or there makes a building sustainable...

FACT: *Buildings must be designed to the three pillars of sustainability - environmental, economic, and social sustainability.*

MYTH: You need radical change to be successful in implementing sustainability...

FACT: *Yes and no. Every little helps. The importance is to have a top to bottom and bottom up approach at the same time, so that you can meet in the middle to come up with the right sustainable solution which meets the triple bottom line of sustainability in terms of environment, social and economic aspects.*

MYTH: New technology is always the answer...

FACT: *There is always a place for tried and tested technology. New technology is based on old technology.*

MYTH: Carbon reduction is too expensive...

FACT: *It can actually lead to a reduction in costs and expenses.*

MYTH: Carbon is just another thing to report on...

FACT: *It needs to be a priority!*



Practical Takeaways

Practical Takeaways



- Apply to one of LSBUs low carbon ERDF projects today to make your idea a reality! www.sustainableinnovators.com
- Consume energy wisely!
- The Carbon Trust website is very useful source of information that includes downloadable posters, reports and stickers.
- When we are struggling to find a solution to something we need to allow time for day dreaming and thinking with hands; we need to put down our screens and step away from our technology; whether its playing with your kids, planting something, picking up that practical project or painting a picture or simply going for a walk. Its not 'wasted time' but the precious time when your brain does the really clever stuff and finds the solutions for you...
- Share a film/photograph of an encounter with urban wildlife, such as squirrels chasing each other in the park, a goldfinch singing, lichen growing on a traffic sign, a maple tree you pass every day or flora bursting from a crevice in a brick wall.

- Reflect on where our abundant energy resources currently come from, challenge your local authorities. The technology is there for deployment, we simply cannot afford further delay.
- Together with research and development, we can build a future of zero-energy homes and transform our city to a solar city.
- Carbon capture and storage (CCS) offers significant opportunity to reduce carbon dioxide emissions and more investment is required on the underpinning technologies to support this process. – Energy storage will be essential in the future.
- Smart local energy systems offer a net zero carbon pathway for urban environments.
- Designers should allow for opportunities to import or export waste heat in their design, for example, when designing offices, look around the site where the office cooling heat can be exported.
- Think about the materials you use. Can some be replaced with some that are more sustainably sourced? Instead of throwing away a bit of kit can it be adapted or fixed or donated to a makers community?
- Find out what happens to your IT equipment at end of life - can it be refurbished and reused to reduce waste and environmental impact? Discover more about safe and ethical asset disposal via ADISA.
- We all have a duty to leave the natural environment in a better condition than when we met it.
- Start small but think big!
- Take action. This is the moment to take a stand for climate justice and the environment. Now is the time to make changes in any way you can, because our political 'leaders' are simply not stepping up to the task. The future is in our hands...

Practical Takeaways

- Buy local. From clothes to food, the closer to home these products are made and bought, the less carbon is created with their transportation. Not only that, but you'll be supporting the local economy which means that in time you'll likely have even more local items to choose from.
- Join LSBU BEA in our call to Government to include a robust buildings decarbonising programme as core element of any post-COVID 19 stimulus package - <https://form.jotform.com/201542125567350>.
- Collaboration is the key to creative solutions.
- Try to change your eating habits - eat less/no dairy, look zero waste food, buy locally produced food.
- Small change is better than no change; don't preach, but do inspire.
- Experts' can become more closed in their thinking than anyone. In order to change that, we need to start to remember the awe and wonder provided by everything from the natural world to art. It is something children excel at and why they are inherently so creative. Picasso once said 'it took me four years to paint like Raphael, but a lifetime to paint like a child'. We need to go back to first principles sometimes to reframe things. We need to 'play' in order to get serious.
- You can make a difference - learn about the Sustainable Development Goals - www.un.org/sustainabledevelopment/sustainable-development-goals.
- Expertise in sustainability related topics are in great demand. It's a continually developing field of work with the opportunity for new innovative solutions.
- Join Extinction Rebellion: <https://rebellion.earth/join-us>
- The opportunity to engage and influence these decisions is there, if we look at the telecommunications, our energy sector needs to be a rapid change sector too, it is possible.
- Electric vehicles have an important place in environmental sustainability but there are still technology and economic issues to be addressed.
- CEREB is an ideal location to discuss the challenge of decarbonising a city with its roof platform and amazing views across London - www.lsbu.ac.uk/about-us/sustainability-at-lsbu/what-are-we-doing-now/cereb
- Many methods to store energy are available and the both short and long term storage is likely to be required in the future.
- Decarbonisation requires a green electricity revolution. The future is electric with heat pumps and electric vehicles.



- What are the relationships you have with your objects at home? Do they have a story or a memory that means its better to take the time to fix them than replace them? For example, fashion is so unsustainable and environmentally damaging and yet we wear a tiny fraction of our wardrobes on a regular basis. Can we learn to do more on a micro scale such as mending or planting so that we start to appreciate where things come from? When we become invested in things we tend not to part with them easily. Its why artists find it hard to part with work they have made...
- The Circular Economy is essentially a big system that requires whole system thinking! So don't work in a silo - learn from and share knowledge with colleagues in other sub sectors and industries to help your business to contribute to the development of and benefit from a Circular Economy.
- The environment matters!

Practical Takeaways

- It is crucial that to meet sustainability implementation that drives come from both top to bottom and bottom up approach.
- Reduce your carbon footprint at home and work. Write to your MP demanding climate action. Join your local environmental groups, add your voice and get involved.
- Learn about recycling and how it works.
- Don't drive if you can make the journey by foot, bike or public transport. It reduces your carbon footprint and it more environmentally friendly.
- Read blogs on how to be more sustainable. I recommend 'Shit You Don't Need' written by Dillie Keane, one-third of Fascinating Aida - <https://shityoudontneed.blog>
- Low carbon can lead to reduced cost, when carbon reduction is at the core of project decision making, use the carbon reduction hierarchy as an aid!
- Carbon reduction is a facilitator, and can create other benefits, think big and plan early.
- Think about the way you use data - small behaviour changes make a big difference in energy and materials use.
- Machines are collections of component parts - be brave and think about component upgrades before replacing what you may not need to.



Thank you for supporting our event and we hope to see you soon!
To find out more about what LSBU is doing to tackle sustainability and climate issues, please visit: <https://www.lsbu.ac.uk/about-us/sustainability-at-lsbu>

Photos submitted as part of The Great Pause- A Virtual Exhibition – an exhibition curated to represent our audience's feelings and experiences of lockdown and to show the positive impact the pandemic has had on the environment'.



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