



**London
South Bank
University**

EST 1892

**Research,
Enterprise &
Innovation**

A photograph of three students in a classroom or meeting room. In the foreground, a woman with dark curly hair is smiling and looking towards the right. Behind her, a woman with brown hair is also smiling and looking in the same direction. In the background, a man in an orange shirt is smiling. They are sitting at a table with papers and a whiteboard is visible in the background.

Our Research Environment

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Welcome



At LSBU, our research is highly applied and focuses on real-world challenges that are vitally important to people and environments across the globe.

Central to our impactful, world-class research is the work of LSBU's research community. Our researchers work closely with industry, business, government and local community stakeholders to influence policy, build relationships, create new commercial opportunities and change the way that industry and businesses work.

In support of our research community's continued achievement and evolution, in 2017 we have launched 14 Research Centres and 33 Research Groups. These new Research Centres and Groups allow us to strategically expand our excellent work in addressing the major, global challenges faced by society.

The new Research Centres and Groups allow us to strategically expand our excellent work in addressing the major, global challenges faced by society.

Our Centres serve as externally facing beacons of leading edge, timely research with an international reputation for achievement and innovation. A key role is to catalyse and support collaborations, especially in response to funding opportunities, and work with the Research Groups to enable academics to learn from their peers and support the development of early career researchers.

Our Groups help us to provide a dynamic and inclusive research environment, enabling researchers to cohere around emerging research themes to catalyse new internal research collaborations.

We're investing in our Research Centres and Research Groups so that we can continue to support our academics, Post-Docs and postgraduate research students in their chosen areas of research, with support from the Research, Enterprise and Innovation team (REI).

This step-change in our Research Environment was catalysed by the roll-out, in 2016, of LSBU's Annual University Research Audit (AURA).

AURA is an online system that enables us to: identify our research-active staff; count the number and quality of publications our researchers have both produced and are planning; and gauge our academics' engagement with the wider economy.

The results of AURA have helped us to shape the University's new Research Centres and Research Groups and build a world-class Research Environment that allows to realise our potential as a global force in applied, high Impact, cross-sectorial research, located in the heart of the world's most dynamic and diverse city.

Gurpreet Jagpal

Director Research, Enterprise and Innovation

A photograph of a man in a white lab coat and glasses, smiling as he works on a piece of equipment. He is in a laboratory setting, and other people are visible in the background. The image is overlaid with a blue tint.

Research Centres

**Centre for
Applied Research in
Improvement and
Innovation
(CApRII) in Health and
Social Care**

**London Centre
for Business and
Entrepreneurship
Research**

**Centre for Biomedical
Engineering and
Communications
(BiMEC)**

**Centre for Air
Conditioning and
Refrigeration
Research**

**Centre for Construction
Management,
Economics and
Integrated Delivery
(CMEID)**

**Centre for Advanced
Materials**

**Centre for the
Study of the
Networked
Image**

**Centre for
Energy and
Environment
Research**

**Centre for Civil and
Building Services
Engineering (CCiBSE)**

**Centre for Social
Justice and Global
Responsibility**

**Sport and Exercise
Science Research
Centre**

**Centre for
Research in Digital
Storymaking**

**Centre for
Addictive
Behaviours
Research**

**Centre for
Robotics**

Research Groups

Risk, resilience
and expert
decision making

Health Promotion

Women's Health

Gender and
Sexualities

Crime and Justice

Critical Autism /
Disability Studies

Sustainability –
Policy, Practice and
Pedagogy

Tourism and
Social Justice

Space and Place

Education and
Social Justice

Allied and
Integrated Health

Education and
Professional
Development in
Practice

Digital
Performance

Games

Space, Place,
Art, Culture and
Environment

Practice-As-
Research in Arts

Journalism
Futures

Sonic
Research
Group

Developmental
Cognition

Food, Nutrition
and Health

Lived Experiences
of Distress

Psychology and
Pedagogy

Digital Economy

Entrepreneurial Skills
Development and
Experiential Learning

Business Ethics and
Corporate Social
Responsibility

Intercultural
Management

Economic
and Financial
Modelling

Big Data and
Informatics

Design,
Manufacturing
and Transport
Dynamics

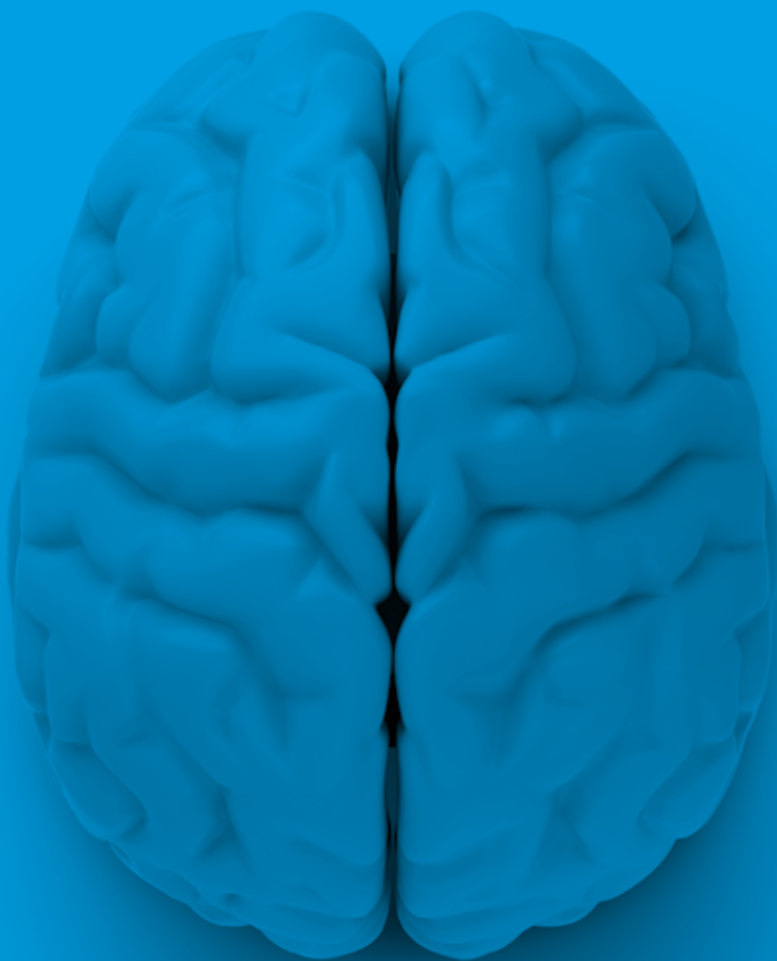
Mental Health
and Intellectual
Disability

End of Life Care

Children, Young
People and Families
Health and Wellbeing

Long-Term
Conditions and
Ageing

School of Applied Sciences



Sport and Exercise Science Research Centre

Our mission is to improve knowledge and drive innovation for human performance in sport, physical activity and health. Central to this mission is the provision of inclusive research-led education and professional development.

Our research is consolidated into two multidisciplinary themes that address major scientific priorities and societal challenges:

Mind and Motion focuses on the reciprocal interactions between perception, action and cognition and their implications in sport and exercise settings. In collaboration with national and international partners, our experts in sport psychology, direct perception and human movement science utilise behavioural and multidisciplinary methods to investigate the role of the environment in the development and maintenance of expert behaviour.

Body and Movement focuses on understanding the human interaction with environmental factors, mechanical interventions and nutritional strategies underpinning elite sport, physical activity and health. Our experts in human physiology, biomechanics and nutrition team up with engineers, clinicians and industrial partners to generate impact for sports, rehabilitation, communities and healthy ageing.

The affiliated **Human Performance Centre** is our commercial arm and delivers innovative science services under three branded themes.

- **InnovateWell** for IP generation, product testing, evaluation and development;
- **PerformWell** for development and testing of tailor-made programmes for professional and recreational athletes, coaches and those wishing to initiate an active lifestyle;
- **LiveWell** for tailored life-style assessments, interventions and guidance.



- Our mission is to undertake world-class research that improves understanding of human function and wellbeing to promote elite performance, healthy lifestyles and innovation.
- We are committed to generate impact from our research by delivering solutions to global societal issues (e.g. healthy and active ageing, obesity, female uptake in sport).
- We rank in the top 10 teams in the UK for research and teaching excellence in Sport and Exercise Science according to the combined results from REF2014 and TEF2017.
- We collaborate with national and local governing bodies, third-sector and industrial organisations, and healthcare trusts (e.g. Sport England and British Swimming, Lambeth and Southwark Councils, Silverfit Charity and The Altitude Centre, PROTENDON GmbH & Co, Guy's & St. Thomas' NHS Foundation Trust, British Orthopaedic Foot and Ankle Society).

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Centre for Addictive Behaviours Research

Addictive behaviours affect large numbers of the UK's population, with significant numbers either abusing substances or behaving in such a way as to be harmful to the individual and those around them.

Moreover, every year the UK spends billions of pounds on healthcare, welfare and policing services associated with managing addictive behaviours. With this in mind, our Centre plays a vital role in increasing understanding and knowledge of how addictive behaviours operate so they can be changed and managed for the benefit of affected individuals and those who treat and manage these behaviours.

We serve as a hub for internationally esteemed research into the causes, effects and treatment of addictive behaviours. We also provide expert consultancy to organisations on the analysis of current and developing treatment and policy practice.

Key research areas include: social identity approaches (how peoples' self-image affects their behaviour); metacognitive approaches (how peoples' mental control strategies perpetuate addictive behaviours and how these can be modified); public policy approaches (how we can use messages and legislation to reduce harm); automatic and reflective 'dual process' models (how addictive behaviours are influenced by conscious and non-conscious thought); and psychopharmacological approaches (the impact of chemicals on brain and body). Past and current collaborative work has covered numerous addictive behaviours (including alcohol use, smoking, e-cigarette use, sexual compulsivity, cannabis use, methadone use, internet use, performance enhancing drugs, novel psychoactive substances and social media use).



- We bring together a unique blend of world-class research, scholarship, training and enterprise activity to understand the psychosocial causes, effects and treatments of addictive behaviours.
- We are actively involved in user engagement and impact (e.g. development of training guidelines for the Federation of Drug and Alcohol Professionals, the National Centre for Smoking Cessation and Training on e-cigarette briefing for stop-smoking services and evaluation of the Allen Carr Easyway stop smoking programme).
- Our core membership is responsible for the delivery and maintenance of the highly successful MSc in Addiction Psychology and Counselling (Federation of Drug and Alcohol Professionals [FDAP] accredited), attracting training bursaries from Alcohol Research UK and the Society for the Study of Addiction).

Contact: Professor Ian Albery
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School of Applied Sciences Research Groups

Developmental Cognition

We investigate the development of neurotypical and non-neurotypical cognition from infancy into adulthood. Our members have expertise and research interests in autism, developmental dyslexia, developmental coordination disorder, specific language impairment and William's Syndrome. Together, we work to explore the impact of these conditions on executive functions, numerical cognition and a range of memory systems.

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Lived Experiences of Distress



We research lived experiences of mental distress, centring on how individuals interpret, embody, manage and live with mental health challenges. An integral part of our investigations is the examination of the professional relationships and identities of staff and service users, in the context of delivering interventions, as well as the use of innovative methodologies, including action research and visual methods.

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Food, Nutrition and Health



We have been formed to innovate in food product and nutraceutical development and the use of nutritional strategies to enhance human well-being, as well as the evaluation of their effects. Our members' expertise spans nutrition, health and food science (food composition, innovation, product development, functional foods and food safety).

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Psychology and Pedagogy

We bring together staff with expertise in various fields of psychology to research the numerous challenges higher education students face in terms of engagement, satisfaction, progression and retention. We aim to produce enhancements to the teaching and learning provision for students across multiple disciplines, based on rigorous, empirical research.

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School of Arts and Creative Industries



Centre for the Study of the Networked Image

The Internet and digital technologies have transformed the environment of information as well as everyday life. Much of the information circulated is based on visual media and visual representation. However, research into the uses and impact of computer visualisation systems is in its infancy.

We provide a focus for cultural development, analysis and critical evaluation of online platforms, software and applications that codify and transmit information visually. At present we see the trend towards the automation of culture, which raises new questions of how humans relate to and understand machine vision. We seek to define new solutions to pressing problems of visual communication in our time.

Our four related research topics – photography, performance, curation and archives – relate to the fields of media, museums and contemporary art and are reflected in our projects. Research specialisms include art theory, art practice, art history, curation, performance, photography, sociology of culture and cultural and media studies.

We are currently involved in a collaborative partnership with The Photographers' Gallery, which involves collaboration on PhD supervision, participation in the Unthinking Photography platform and projects for the Media Wall. We are also involved in a further collaborative PhD partnership with Rhizome, NY, examining how best to create user interfaces to access born digital artworks.

Exciting future plans include a collaboration with the Royal College of Art and Amsterdam University on the *Curating, Computation and Cultural Value* project, featuring three case studies involving the Google Art Project, Rhizome and The Royal College of Art Contemporary Curating programme.



- We are developing new understandings of how online network and computational culture is changing visual culture and the reception of art and photography.
- Our research has been showcased in conferences and forums held in an array of countries, including Brazil, Sweden, USA and Germany, and it has yielded a number of invited blogs.
- Our collaboration with The Photographers' Gallery has resulted in Unthinking Photography, a new online resource for exploring, mapping and responding to photography's digital, networked life.

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The Centre for Research in Digital Storymaking

Producers across the creative industries increasingly use narratives alongside branding to reach diverse audiences across various platforms.

Today, however, the industry doesn't just narrate stories: it makes participative, open-ended, distributed stories, and consumers become their protagonists. This shift has given rise to the concept of Digital Storymaking: an algorithmically driven process, which requires new sets of tools, skills, methods, expertise and critical understanding to:

- support the growth of the creative and digital industries in the UK and internationally
- attract increasingly sophisticated and demanding audiences.

Our researchers undertake both applied and pure research and are driven by the ethos that research in the arts and digital media augments the cultural wealth of our society. Their research contributes directly to improving human experience through developing an understanding of how digital media change the way we tell stories.

Our core enquires are:

- the impact of Digital Storymaking in real-world contexts (in journalism, documentary, curation, public policy communications such as health)
- contextual distribution of story events (transmedia, social media)
- new forms in imaginative narrative media (games, interactive fiction, immersive theatre).

Our Centre will be a valuable resource for a range of major arts institutions in the UK, many of them our London neighbours. We will continue to expand the range of our collaborations, bringing together scholars, practitioners and policymakers who have interests and expertise in the intersection of digital economy and the creative arts. We strive to contribute to innovation in research, enterprise and governance, through the making and studying of digital stories.



- We research storymaking across different digital media and new forms in imaginative narrative media (games, interactive fiction, immersive theatre), within real-world contexts (journalism, documentary, curation and public policy communications such as health).
- In January 2018, we will host the annual Media, Communication and Cultural Studies Association conference (the UK's biggest national subject association for media, communications and cultural studies).
- Our members, Professor Janet Jones and Dr Siobhan Thomas, are currently collaborating with Save the Children, using digital storytelling in producing innovative training materials for the charity's field managers.

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School of Arts and Creative Industries Research Groups

Performance

Theatre is undergoing a deep and sustained transformation on all fronts. We respond to the current transformation of theatre and performance through the use of digital and networking technologies: from performance in virtual environments (VR), to game-performance hybrids, the live streaming of theatre productions, productions featuring robotic and artificial intelligence actors and transmedia practices that develop across different media platforms.

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Space, Place, Art, Culture, and Environment (SPACE)



Our research group explores the myriad arts and cultural practices bound up with the experience of space, place and the environment. The interdisciplinary theme encompasses a range of research and practice undertaken by members, including: The City in the Modernist Literary Imagination; Health, Place, Literature and Culture; Dance and the City; Theatre, Pubs and Sociality; The Spatial Articulation of Sound and Image and Post-diaspora City Spaces.

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Sonic Research Group

Over the last 15 years a sonic turn has taken place in music, media and cultural studies. Our group brings together researchers from across the University who are engaged in the concepts, cultures, creative practices and technologies of sound, in order to nurture research excellence in this rapidly evolving field.

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Practice-As-Research in Arts (PARAG)

We aim to advance key issues of practice as research, practice-based research and practice-led research in all areas of film, photography, new media, theatre and visual arts. Our members use a broad range of approaches, from documentary making and social publishing networks through participatory theatre and media activism. They are dedicated to developing links with national and international networks and associations, and with the creative industries.

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Games



We seek to foster excellence in games research. Research areas include: Virtual and Augmented Reality; Sensory Design; Body-oriented design; Biomechanics; Biometrics; War Games; Video game industry studies (policy and management); Games and health; Accessibility; Gender and games; Game curriculum development design and teaching and Esports.

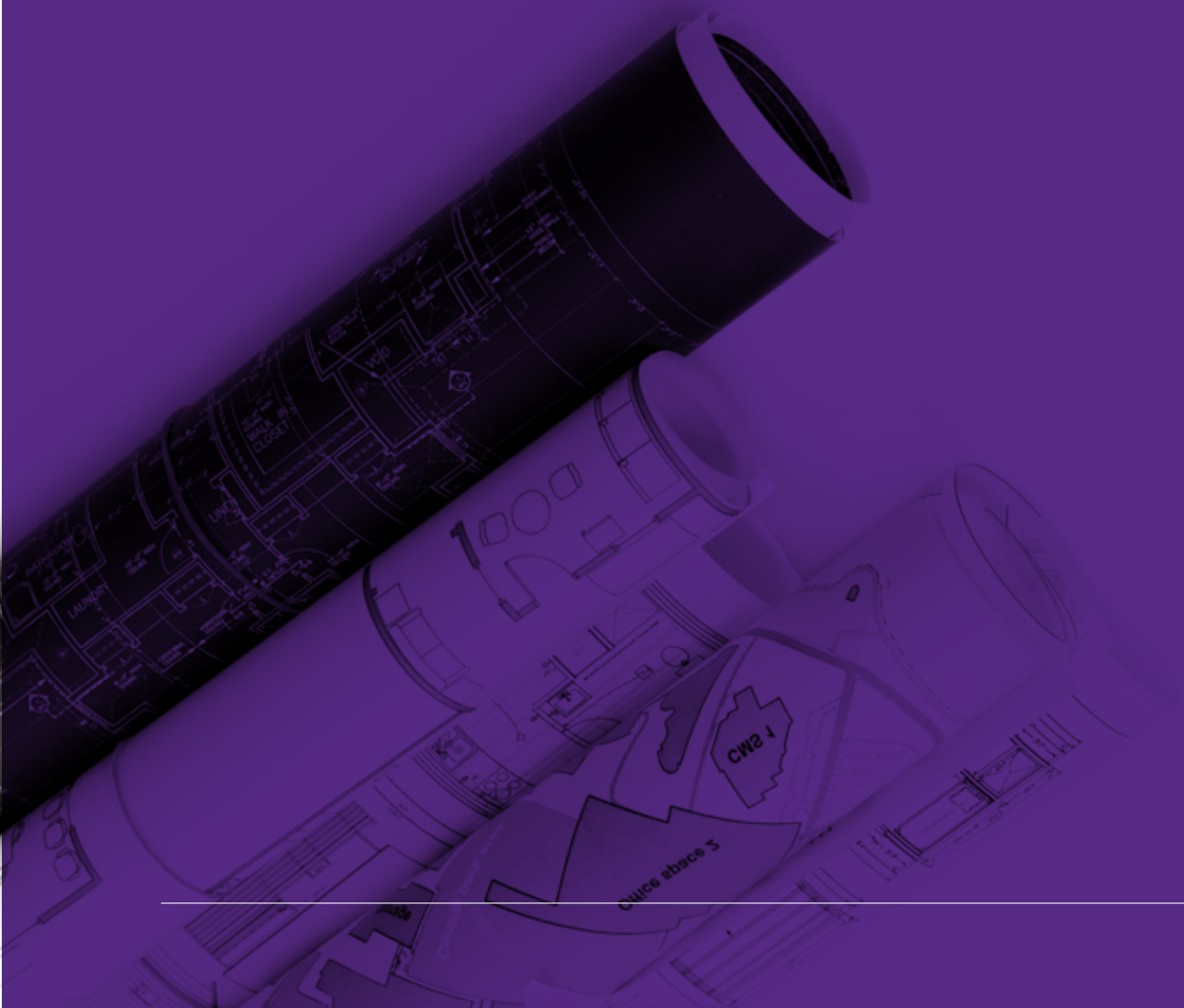
Contact: Dr Siobhán Thomas
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Journalism Futures

We address solutions to the contemporary crisis of journalism in a digital and converged age, exploring and encouraging new developments in the technologies, forms, content, audiences, policies and business models shaping the future of journalism in the digital age. Our members' expertise provides a focus for collaborations on cross-cutting themes within games, big data and web science areas.

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School of Built Environment and Architecture



Centre for Civil and Building Services Engineering (CCiBSE)

The Built Environment is set to change on a scale not seen for generations. The UK government's industrial strategy will affect the workforce across nearly every sector of the building industry. The urgency of climate change is simultaneously driving significant and far-reaching innovation. Challenges facing the built environment are by nature interdisciplinary but built on engineering.

Our Centre builds on LSBU's solid long-standing professional reputation in the construction and property industry as well as applied engineering research. We also form a unique nexus of innovation-driven expertise and our members' existing industrial connections, which coalesces to translate leading edge research into real-world impact.

Our Centre's research focuses on minimising the environmental impact and carbon emissions associated with the built environment through development of improved technologies and practice, as well as developing the industry's skills and providing pathways between fundamental research, applied research, knowledge transfer and enterprise.

We aim to integrate all key thematic areas within the built environment to yield an interdisciplinary research network based on the following strengths: Urban Design and Engineering; Building Physics; Heat Networks; Heat Transfer, Waste, Heat Recovery and Thermal Storage; Cooling; Low Carbon Technologies and Heat Pumps; Lighting and Acoustics; Energy and Power Systems; Thermal Comfort; Energy Conversion and Energy management; Building Performance; Highways and Transportation Infrastructure Engineering; Geotechnics; Ground Physics and Unsaturated Soils; Ground Improvement; Data Management; Advanced Materials; Water and Environmental Engineering; Hydrodynamics and Construction.



- Our Centre provides a focal point for innovative, interdisciplinary and industry driven research, that seeks to minimise the environmental impact and maximise the benefits associated with the built environment.
- The flagship projects of our members include the £4 million, InnovateUK backed, Balanced Energy Network (BEN) project.
- We are founded on strong collaborations with industry – our leader is a past president of the Chartered Institution of Building Services Engineers.

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Centre for Construction Management, Economics and Integrated Delivery (CMEID)

Our Centre harnesses the research capability of staff (who include three Professors of international repute, two Associate Professors and several senior lecturers) in the University's Division of Construction, Property and Surveying: one of the largest such Divisions in the UK.

Our research focuses on three key areas:

Construction Management, encompassing: (a) Project management issues such as delivery of mega construction and infrastructure projects, procurement, knowledge management and innovation in the built environment, planning and risk management in major projects); (b) Managing equality, diversity and welfare in construction, women in construction, modern slavery in construction; (c) Learning in the built environment such as lifelong and blended, new apprenticeships and conversion courses; (d) Leadership in the built environment, stakeholder engagement in sustainability.

Economics, encompassing: (a) Project financing models such as private finance initiatives, public private partnerships and carbon finance to mitigate climate change and achieve sustainability; (b) Market structure, growth strategies, mergers and acquisition of construction firms, joint ventures, internationalisation of British firms and their contribution to wealth creation, Chinese contractors in the international construction market; (c) Life cycle costing, value engineering, carbon cost planning, construction waste management; (d) Real estate financing, international property investment, strategic asset management and performance indicators for real estate markets.

Integrated Delivery, encompassing: (a) Integrated procurement models such as design and build, joint venture, public private partnerships; (b) Tools for integrated delivery such as the application of Building information modelling (BIM) for enabling multi-

disciplinary, collaborative working environments, the management and integration of data for the built environment.



- Our Centre conducts cutting-edge research on the management, economics and delivery of construction projects in the UK and internationally.
- Our research builds on the School's flagship courses in construction project management, quantity surveying (construction economics), building surveying and real estate.
- Our focus maps strongly onto the UK Government's commitment to innovation and improvements in construction (for example in the greater use of Building Information Modelling (BIM)).

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School of Business



London Centre for Business and Entrepreneurship Research

Our research focuses on five research areas that are vital for contemporary business, management and entrepreneurship: 1) the need to succeed in a globalised and intercultural environment; the influence of digital technologies on work processes, management and markets; the need for forecasting business and market developments; the need for ethical, sustainable and social entrepreneurs; and the ability to develop the right management skills for those challenges.

Our centre members have long-standing expertise in finance, economics, human resources, organisational behaviour, marketing, entrepreneurship, governance and enterprise education. This enables us to conduct high-level, interdisciplinary research in areas such as:

- **Inter-cultural management**, addressing the needs of businesses in a global context with a diverse workforce and international collaboration partners
- **Digital Economy**, responding to the challenges and opportunities of the digital age by understanding the role of social media and big data for businesses, for marketing and the development of smart cities as well as the management of virtual teams and remote collaborations
- **Economic and Financial Modelling**, to help forecasting economies and financial markets, and understanding and modelling consumer, employee and stakeholder behaviour
- **Business Ethics and Corporate Social Responsibility**, to lead and manage in an ethical and sustainable way, value equality and diversity, and develop successful social entrepreneurship.

- **Entrepreneurial Skills Development and Experiential Learning**, developing the necessary skills for the next generation of managers and entrepreneurs.

- Our Centre's research focuses on Intercultural Management, Digital Economy, Economic Modelling, Ethics and Entrepreneurial Skills as vital for contemporary business, management and entrepreneurship.
- Our members have strong ties with SMEs and the public sector.
- Our member Dr Charles Graham has worked with Southwark Council to understand what measures can be used to safeguard the long-term economic viability of their high streets and associated shopping precincts.
- Centre lead Professor Karin Moser has worked with approximately 20 companies and government organisations over recent years. As a result of her engagement, international high-tech company Sulzer Ltd are completely changing their organisational structure to reduce barriers to sharing knowledge across disciplines.

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School of Business Research Groups

Digital Economy

Our research provides insight into how to respond to the challenges and opportunities of the digital age by understanding online consumer behaviour and the role of social media in marketing and work relationships; how to manage virtual teams and remote collaborations successfully; how to prevent online fraud and what the value of big data is to businesses.

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Entrepreneurial Skills

Development and

Experiential Learning



We are developing the next generation of managers by researching state-of-the-art experiential learning and teaching methods such as: coaching; decision making skills and cultural competencies development; live case experiential teaching; integration of the latest digital technology for student feedback and the introduction of state-of-the-art business simulations into teaching.

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Business Ethics and

Corporate Social Responsibility

We are investigating how to: lead a business in a responsible, ethical and sustainable way; apply the principles of lean management and integrated reporting; manage and value equality and diversity and develop successful social entrepreneurship.

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Intercultural Management

We provide evidence of how to succeed in a global business across cultural and national boundaries, and how to work with a diverse workforce and international collaboration partners by developing intercultural skills and understanding cultural, regional and national differences in consumer behaviour; employment, work relationships and attitudes; and cultural norms and values.

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Economic and

Financial Modelling

Understanding financial markets and consumer behaviour is central to strategy for any entrepreneur or business. Our research centres on predicting financial markets and modelling consumer behaviour; applying behavioural economics and finance to understand employee and stakeholder behaviour, and modelling financial markets and developing economies.

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School of Engineering



Centre for Energy and Environment Research

We aim to carry out research to support sustainable chemical technologies, renewable sources of energy, green energy, clean technology, modelling for urban pollution management, multiphase fluid flow in fractured reservoirs, enhanced oil recovery, fluid flow assurance, rock characterisation, explosion and fire safety and hydrogen hazards.

Our members are internationally renowned for their research into supporting and shaping explosion and fire safety in industry, and greener and sustainable chemical processes. We have established relationships with a variety of SMEs and large industrial organisations (e.g. Sellafield Ltd, TWI, National Nuclear Laboratory, BOC, Airbus, MEL Chemicals, Purolite International Ltd, PwC, Uptown Oil Ltd, GSK, Johnson Matthey, AstraZeneca etc.).

Since 2014, our members have already published more than 30 peer-reviewed journal papers, along with refereed conference papers, book chapters, edited book and had several patents approved. They have an outstanding track record in impactful research: selected current and recent projects include: 1) an investigation of the causes and prevention of fires in domestic refrigeration systems – an associated PhD student is part of the team looking at the cause of the fridge fire at the centre of the Grenfell Tower tragedy; 2) development of an innovative two-stage esterification-transesterification process for synthesising biodiesel from waste cooking oil – PricewaterhouseCoopers (PwC) is using this biodiesel in a combined cooling, heat and power (CHP) system and this green energy project was shortlisted in two categories (“Energy” and “Resource-poor Technology”) in the 2016 Institution of Chemical Engineers’ (IChemE) Global Awards.



- Our research encompasses a broad range of areas relating to Chemical and Petroleum Engineering, Green Process Engineering and Fire and Explosions.
- We have established relationships with a variety of SMEs and large industrial organisations, including Sellafield Ltd, TWI, National Nuclear Laboratory, BOC, Airbus, MEL Chemicals, Purolite International Ltd, PwC, Uptown Oil Ltd, GSK, Johnson Matthey and AstraZeneca.
- Our members are internationally renowned for their research into supporting and shaping explosion and fire safety in industry, and greener and sustainable chemical processes.

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Centre for Advanced Materials

Advanced Materials has been identified as one of the “Eight Great Technologies” by the Government which will propel the UK to future growth. We carry out research into advanced materials and sustainability, encompassing electronic and functional materials and surface engineering, including the development of new materials, thin films and coating processes. The work has a strong focus on nanomaterials and nanotechnology.

Areas of interest include photovoltaics (PV) for renewable energy generation where we are investigating novel thin film routes, processes and device structures to reduce the cost and improve the performance of solar cells with a focus on crystalline silicon and earth-abundant kesterites. Other areas of our research include: Two-dimensional materials such as graphene for energy related and biomedical applications; functional oxides for solid state cooling and photoelectrochemical cells; condensed matter theory; soft magnetic materials; vacuum insulated glazing for buildings; new types of surface engineered functional surfaces for enhancing engineering performance, energy efficiency and environmental compatibility; advanced composite materials for additive manufacturing processes.

Building on the success of our members in surface coating research, the LSBU/TWI Advanced Resins and Coatings Technologies Innovation Centre (ARCTIC) was recently established in Cambridge. ARCTIC conducts applied research into coatings, nanomaterials and hybrid resins.

Our members have a strong track record of extracting external funding from the European Union, the Engineering and Physical Sciences Research Council, Government bodies such as InnovateUK and industry.



- Advanced Materials has been identified as one of the ‘Eight Great Technologies’ by the Government which will propel the UK to future growth.
- We carry out research in advanced materials and sustainability, encompassing electronic and functional materials and surface engineering, with a strong focus on nanomaterials and nanotechnology.
- Our members have a strong track record of winning external funding from the European Union, the Engineering and Physical Sciences Research Council (EPSRC), InnovateUK and industry bodies.

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Centre for Biomedical Engineering and Communications (BiMEC)

We aim to provide advanced research and training in a wide range of areas such as: energy consumption reduction techniques using radar and wireless sensor networks; biomedical applications with an understanding for smart city considerations; open-based networking and media/content convergence; skin bio-engineering and non-intrusive monitoring using ultra wideband (UWB) technology.

Our current projects and investigated topics are: assistive technology for the elderly and/or disabled using UWB devices; digital signal processing for hearing aid development; adaptive signal processing and prediction for chaotic real data; noise cancellation in telecommunications radio channels; breast and skin cancer detection and therapy using ultra wideband technology; image processing for medical applications; wireless communications using UWB; Wi-Fi, Bluetooth and ZigBee; indoor radar – location sensing and tracking; self-organising networks; micro-loud systems; wireless technologies for vegetation health testing; big data mining and processing and skin biotechnology using optical and capacitive sensors.

We are involved with a variety of impactful research projects, including an innovative approach to diagnosing operational inefficiencies, led by our member Dr Sandra Dudley. By optimising building function, this system improves the human comfort level of buildings via the rapid detection of malfunctioning Heating, Ventilation and Air Conditioning systems. The platform created is currently in use at 60 sites covering 100 buildings, with one – the Financial Times headquarters in London – reporting that comfort complaints have halved since the platform was installed.



- We conduct advanced research on a broad range of biomedical engineering, energy, wireless communications, imaging and information technologies.
- Our members have attracted millions of pounds of recent funding from bodies such as InnovateUK and EPSRC.
- We are involved with a variety of impactful research projects, including an innovative approach to diagnosing operational inefficiencies, with the platform created currently in use at 60 sites covering 100 buildings, with one – the Financial Times headquarters in London – reporting that comfort complaints have halved since the platform was installed.

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Centre for Air Conditioning and Refrigeration Research

The Refrigeration, Air Conditioning and Heat Pump (RACHP) industry underpins much of the modern world: for example, without heat and cold, food supply would still be seasonal and limited to locally produced consumable items; data centres would not work; comfortable living conditions would be difficult to deliver and certain medical advancements would be impossible.

It is estimated that RACHP systems primarily impact on the environment by contributing about 10% of the global total of greenhouse emissions: approximately three times more than is attributed to the aviation industry. Around 25% of this contribution is directly due to the leakage of high global warming potential (GWP) refrigerants greenhouse gas and 75% is generated indirectly through the use of electricity, as a result of carbon emissions produced during its generation.

Our research target is to minimise the environmental impact and carbon emissions associated with RACHP through improved skills, knowledge, technology and applications. Core research areas include: Food Refrigeration/the cold chain; low carbon technologies; energy efficiency; refrigerants; energy storage; data centres; waste heat recovery and advanced cooling systems.

Our Centre has strong relationships with industry and professional institutions and continues to develop its international collaborations. Thus, we provide pathways between fundamental research, applied research, knowledge transfer and enterprise.

- We conduct applied, impactful research to minimise the environmental impact and carbon emissions associated with refrigeration, air conditioning and heat pump technology and the industry sector as a whole.
- Our Centre's lead, Professor Judith Evans, coordinates the multi-million pound, EU funded, Cryo-Hub project, which is innovating the use of Cryogenic Energy Storage, at refrigerated warehouses, as a means of balancing the power grid mismatch between power demand and energy generation from renewables.
- Our pioneering Metropolitan Integrated Cooling and Heating (MICAH) project, led by Centre deputy lead Professor Graeme Maidment, comprises a partnership with London Underground and Islington Council to realise the use of waste heat from the underground tube system in district heating schemes, thus improving London's energy efficiency and cutting carbon emissions.

Contact: Professor Judith Evans
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Centre for Robotics

The UK government has identified Robotics, Autonomous and Intelligent (RAI) systems as a key technology where the UK is positioned to be a World leader. The Centre contributes to this area by developing mobile robots for inspection of safety critical infrastructure, and assistive and wearable robots for an ageing population and for medical rehabilitation.

Reflecting current interests, we build on the world-class track record of our leader, Professor Tariq Sattar, who has been a key innovator in the development of robotics for industrial inspection tasks since the early 1990s. Professor Sattar's research has recently culminated in the establishment of the London South Bank Innovation Centre (LSBIC) for the Automation of Non-Destructive-Testing, based in Cambridge, which collaborates with TWI Ltd and the National Structural Integrity Research Centre (NSIRC). We also research the geometrical aspects of mechanisms and robots (kinematics and dynamics), control theory and adaptive/intelligent computing for autonomous robots.

Our current externally funded research projects: In-service robotic non-destructive testing of off-shore wind turbine blades, oil and gas flexible risers, petrochemical storage tanks, ship welds, mooring chains and large concrete structures; Development of intelligent condition monitoring tools for asset management; diagnosis, prognosis and dynamics of rotating machinery using acoustic emission and vibration technologies; Gas compressor diagnosis and prognosis for SHELL; Helicopter main gearbox monitoring for the European Aviation Safety Agency.

Our members serve on robotics journal editorial committees and are organisers of the international conference on Climbing and Walking Robots (CLAWAR) and active in the International committee for standardisation of service robots.

- Our Centre is developing mobile robots for use in inspection of safety critical infrastructure and assistive and wearable robots for an ageing population and for medical rehabilitation.
- Centre members are leading organisers of the conference on Climbing and Walking Robots (CLAWAR), as well as being key figures in the CLAWAR Association and the International committee for Standardisation of service robots.
- Our Centre members are currently collaborating with industrial companies on various projects – InnotecUK, TWI, CIT, NDT Consultants (UK), Innora, IKH (Greece), WS MARINE (Netherlands), Integrity NDT (Turkey), Technic-Control (Poland) and GAMESA (Spain).
- Our Centre members have been successful in obtaining millions of pounds of funding – current EU, Horizon 2020 Fast Track to Innovation projects include: Winspector; TankRob and RiserSure. Current InnovateUK and EPSRC projects to develop NDT Robots include: AWI, RIMCAW, SIRCAUR and NAUTILUS.
- Our research has won twelve Emerald awards for innovation in industrial robotics and best papers and was selected for exhibition by the Royal Society (2010) and the Royal Academy of Engineering (2011).

Contact: Professor Tariq Sattar
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School of Engineering Research Groups

Big Data and Informatics



Big data is the analysis of extremely large data sets to discover and reveal patterns, trends and associations. The group researches big data informatics technology, drawing on pivotal scientific traditions in Computer Science, Engineering and Business, whilst also working collaboratively with both the research community and industry.

Contact: Professor Ebad Banissi
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Design, Manufacturing and Transport Dynamics

Our principle aims are to design, manufacture and evaluate virtual and physical prototypes, products, services and systems placing user experience at the heart of engineering innovations to improve overall performance, efficiency and sustainability. Our team merges specialists with a wide range of expertise in product design, transport design and engineering.

Contact: Dr Deborah Andrews
deborah.andrews@lsbu.ac.uk

School of Health and Social Care



Centre for Applied Research in Improvement and Innovation in Health and Social Care (CApRII)

Our research is focused on improving the quality and effectiveness of the health and social care service users receive to allow the population to lead happier, healthier lives. Research is focused on three strategic areas:

Lived Experience – this research promotes understanding of experiences of illness, health, disability and disadvantage across the life course through a user-centred, integrated programme of research, service evaluation and needs assessment and consultation.

Service Delivery – this research focuses on the development and evaluation of novel approaches to service delivery, whether in disease prevention, health promotion or in care and clinical excellence. Complementary approaches to healthcare, in particular the study of Chinese medicine and self-help techniques, are part of integrative and person-centred care.

Professional and Practice Development – this research supports innovation in health and social care roles and the ways we deliver education to the health and social care workforce at all levels.

Impactful projects by our members include our Centre lead Professor Jane Wills's research on improving workplace health in the NHS, Dr Andrew Whittaker's investigations into how practitioners assess risk and undertake decision-making and Professor Alison Leary's research on the association between the incidence of patient falls and delegation of key aspects of care to unregistered nurses/healthcare support staff.

- We conduct transformational research that makes a difference to the ways that health and social care is delivered.
- We respond to the dynamic and ever changing policy and care environments through researching changes in practice such as compassionate roles in nursing or new workforce roles e.g. Advanced Nursing Practice, Nursing Associate, Public Health practitioners.
- Our research is made relevant through the many joint appointments members hold with NHS Trusts and strong links with bodies and organisations including: Health Improvement Scotland, Health Education England, Public Health England, the British Polio Fellowship, the International Dementia Culture Collaborative and Kidney Research UK.
- Our research is highly impactful, with successful projects including: investigations of workplace health improvements in the NHS, risk assessment and decision making and the association between the incidence of patient falls and delegation of key aspects of care to unregistered nurses/healthcare support staff.

Contact: Professor Jane Wills
willsj@lsbu.ac.uk

School of Health and Social Care Research Groups

Mental Health and Intellectual Disabilities

We are engaged in research to inform practice innovation and evidence-informed policy 'to improve health and social outcomes for people living with mental health and intellectual disabilities.

Contact: Professor Sally Hardy
sally.hardy@lsbu.ac.uk

Education and Professional Development in Practice

We conduct research relating to the education and development of the health and social care workforce across different roles, settings and circumstances.

Contact: Dr Louise Terry
terrylm@lsbu.ac.uk

Allied and Integrated Health

We conduct research under two main themes: Rehabilitation, Recovery and Wellbeing; Innovation in Allied and Integrative Health. Our core aim is to strengthen the evidence base informing Allied and Integrated practice for life-long health and wellbeing.

Contact: Professor Nicola Robinson
nicky.robinson@lsbu.ac.uk

Children, Young People and Families Health and Wellbeing



We carry out research in hospital and community settings to build an evidence base to influence both policy and practice at national and international levels and so achieve the best possible delivery of care to children, young people and their families.

Contact: Dr Stephen McKeever
stephen.mckeever@lsbu.ac.uk

Long-Term Conditions and Ageing



There are 15.4 million people in England who have a long-term condition such as cardio-vascular disease or diabetes and an increasing number of people have multiple conditions. We aim to work collaboratively with patients and carers to: understand the needs and experiences of people and carers of those with long-term conditions and those who are ageing and to develop and evaluate evidence-based interventions to prevent and address long-term conditions in collaboration with service users.

Contact: Professor Nicola Thomas
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End of Life Care

Our research focuses on holistic and spiritual care, with a strong emphasis on interdisciplinary and therapeutic communication around death and dying, working across diverse environments (e.g. home, hospital, hospice, care home, prisons).

Contact: Dr SH Cedar
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Risk, resilience and

expert decision making

Modern health and social care services are increasingly focused upon assessing risk, ensuring good decision making and promoting resilience, both at an individual and systems level. We aim to increase understanding of how to: comprehend risk; design systems that promote better decision making and support the expertise of experienced practitioners; reduce individual errors in judgment; and develop resilience.

Contact: Dr Andrew Whittaker
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Health Promotion

Our research focuses on: the health needs of individuals, communities and populations and the ways they can be enabled to increase control over, and improve, their health and well-being; the effectiveness of behavioural, community and social interventions and the health promotion role of different professional groups.

Contact: Dr Susie Sykes
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Women's Health

Global concerns regarding the health of women and girls centre on the impact of sociocultural discrimination and disadvantage, together with sexual violence and abuse, on their physical and mental health and their reproductive autonomy. Our research aims to reduce inequalities and lead to improvement in outcomes, care and experience for women.

Contact: Dr Sarah Church
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School of Law and Social Sciences



Centre for Social Justice and Global Responsibility

We are a centre of excellence for the development of internationally recognised and critically engaged research into the separate, but linked, themes of social justice and global responsibility.

Building on the work of the Weeks Centre for Social and Policy Research, and drawing on established links to academics, civil society and governments, we seek to examine critically the sources, nature and impact of social injustice, inequality and exclusion nationally and throughout the world.

In this time of global disruption, we provide a focal point for innovative and critical engagement with social and political responses to the changing landscapes of the twenty-first century.

Our themes are embedded in the research of a diverse group of scholars who are experts in human rights, education, law, criminology, history, international relations, politics, sociology, housing, planning and geography. These themes facilitate collaborative research with established partnerships in academia such as the Bartlett School of Planning (UCL), Goldsmiths College, as well as civic institutions such as The Fawcett Society, Runnymede Trust and the Youth Violence Commission. We support the production and dissemination of interdisciplinary research which promotes cross-cultural understanding.

Our members are engaged in highly impactful research: through his work on Eritrean refugees, Professor Guam Kibreab has given evidence to immigration officials from the EEA member states; as a result of her work on existing prostitution, Helen Easton has been invited by the Home Office to help them develop their understanding of the current extent and nature of prostitution in England and Wales.



- We seek to examine the sources, nature and impact of social injustice, inequality and exclusion, both nationally and globally.
- Our members have established partnerships in academia such as the Bartlett School of Planning (UCL), Goldsmiths College, as well as civic institutions such as The Fawcett Society, Runnymede Trust and the Youth Violence Commission.
- Our members are involved in highly impactful research: key projects include exiting prostitution and the plight of Eritrean refugees.

Contact: Professor Craig Barker
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School of Law and Social Sciences

Research Groups

Crime and Justice



We aim, as an interdisciplinary group, to make a difference to those groups/individuals who are criminalised and/or marginalised, particularly those who are already vulnerable or experiencing inequality. Our initial research focus is on the penal system, which includes those institutions responsible for detaining asylum seekers and other migrants for administrative purposes.

Contact: Dr Christine Magill
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Education and Social Justice

We are concerned with social justice and inclusive education across the age range. Our initial priority research areas are: 1) Social exclusion (especially prison-based education, youth violence and school exclusion); 2) Research informed practice in education; 3) Beliefs and values concentrating on religion and belief in schools and intercultural education; 4) Global perspectives, centred on work in Cambodia and Tanzania.

Contact: Professor Nicola Martin
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Gender and Sexualities

We focus on the different experiences of individuals and groups in society, both nationally and internationally, based on their gender and/or sexual orientation. This research theme encompasses topics including: gender, culture and society; gender, race, sexuality and identity; gender, crime and the Criminal Justice System; gender and victimisation; human rights; equal rights; violence against women; female activism and political agency.

Contact: Helen Easton
eastonhj@lsbu.ac.uk

Critical Autism / Disability Studies

The principle “Nothing about us without us” underpins the concept of participatory disability/autism research. As a group, we aim to develop an understanding of critical autism/disability studies through participatory research which is informed by, and of practical use to, autistic/disabled people and their allies.

Contact: Professor Nicola Martin
martinn4@lsbu.ac.uk

Sustainability – Policy, Practice and Pedagogy

Sustainability is an imperative for the future of our planet. We will draw from the natural sciences and social sciences in order to foster a new type of learning, innovation and development that addresses the complex, real-world, wicked problems of today such as: climate change, global inequality, forced migration, biodiversity loss and social and environmental justice.

Contact: Professor Ros Wade
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Space and Place

It is important to understand the socio-economic, political and environmental relations and processes that underpin the construction of space and place since they are central to peoples' individual and collective wellbeing. We aim to develop critical understandings of space and place, with a focus on the policy mechanisms which underpin their creation, use and effective management.

Contact: Dr Philip Pinch and Dr Manuela Madeddu
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Tourism and Social Justice



Communities can feel overrun by tourism: experiencing a disproportionate cost compared with the benefits accrued by industry stakeholders, with tourists threatening identity, livelihoods and cultures. We look at social justice issues in relation to tourism destination communities and workers' groups.

Contact: Dr Duncan Tyler
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State-of-the-art facilities

All of our 14 Research Centres and 33 Research Groups have access to unique and industry-standard facilities that enhance our research environment at LSBU, including:

Centre for Efficient and Renewable Energy in Buildings (CEREB)



A £2.8 million centre hosting a number of renewable and intelligent energy solutions.

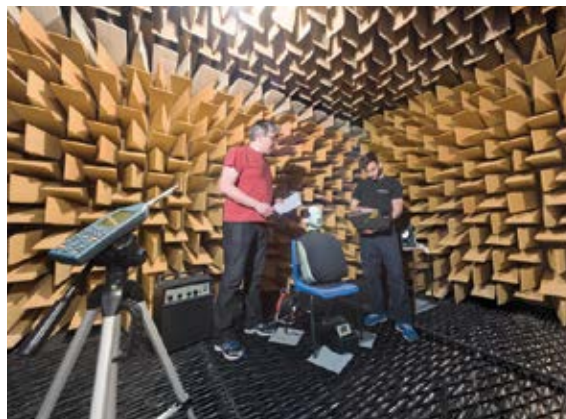
Digital Architecture and Robotics Lab (DARLab)

A digital manufacturing robotics lab fitted with sophisticated industrial technology to perform architectural fabrication – one of only a few in the world using robotic automation to perform both subtractive and additive manufacturing processes.

Elephant Studios

A multi-million pound studio complex fitted with Arri cameras, Dolby Atmos Surround Sound studios and cinemas, grading suites, a games design centre and photographic studios.

Anechoic Chamber



This specialist facility is the only anechoic chamber in London of a size that complies with British Standards. Within the chamber, external sound is not allowed to break in and sound reflections off internal room boundaries cannot occur.

As a University we are committed to innovation that serves our researchers and our wider community. Over the next five years our Southwark campus will undergo significant development to create new innovative buildings, including a Performing Arts Centre and studio theatres.

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