

<b>Institution: University of Westminster</b>		
<b>Unit of Assessment: 13 Architecture, Built Environment and Planning</b>		
<b>1. Unit context and structure, research and impact strategy</b>		
<p>Unit of Assessment 13 at the University of Westminster comprises staff within the School of Architecture and Cities, and, prior to September 2018, the former Faculty of Architecture and the Built Environment. Strategic aims for the Unit were set in 2015, following REF2014, and revised and updated in 2018, with the shift from Faculty to School.</p> <p>The unique composition of the School of Architecture and Cities combines those disciplines needed for the design of environmentally and socially sustainable places and mobilities in urban contexts. Staff work at the forefront of urban issues related to strategic design, place-making and mobilities. We encourage innovation and cross-fertilisation of ideas drawn from architecture, transport studies, urban planning, tourism and events. All these disciplines have a well-established history at the University of Westminster.</p> <p>The School has a very strong international reputation for research and hosts several high-profile <u>research centres and groups</u> (Table 1). These groups represent clear disciplinary areas within the School, combined with an increasingly strong interdisciplinary agenda. The groups have significantly strengthened their production of research outputs within each subject area and hugely extended international partnerships and collaborative arrangements over the current REF period. The School of Architecture and Cities has also provided leadership for the university-wide 'Sustainable Cities and Urban Environments' cross-disciplinary research community since 2019 (<b>Woltjer</b>).</p> <p>For the current REF period, the research groups in Architecture include Architectural History and Theory (led by <b>Jordan</b>), Environment, Technology and Human Comfort (<b>Lau, McLean</b>), Expanded Territories (<b>Bremner</b>), and Experimental Practice (<b>Rattenbury</b>). The research groups in Transport Studies include Air Transport and Air Traffic Management Group (led by <b>Cook</b>), the Freight and Logistics Group (<b>Pieczyk</b>), and Sustainable Mobility/Active Travel Academy (<b>Aldred</b>). The research groups in urban planning are Sustainable Urbanism and Urban Studies (<b>Neuman, Verdini</b>) and the Max Lock Centre (<b>Lloyd-Jones</b>), while tourism research is in the Tourism and Events Group (<b>Graham, Smith</b>). The Centre for the Study of the Production of the Built Environment (<b>Wall</b>) and the Centre for Urban Infrastructures (<b>Woltjer</b>) have an interdisciplinary agenda across the groups and Unit as a whole.</p>		
<b>Research group</b>	<b>Focus</b>	<b>Approach</b>
Air Transport and Air Traffic Management Group	Airline and airport research at the level of route planning, operation and competitive analysis Operational practices and strategic planning and management of air traffic control	Applied research projects Industrial research, addressing economic and environmental performance
Architectural History and Theory	Theoretical, historiographical and archive-based approaches to architecture and material culture The way social practice and political structures intersect with the built environment	Decolonising of architectural history and heritage Engagement with innovative contemporary practices
Centre for Urban Infrastructure	Theoretical, policy, governance, and applied aspects of urban infrastructures	Benefits of sustainable infrastructures (transport, green, water) Well-being and resilience in cities

<b>Research group</b>	<b>Focus</b>	<b>Approach</b>
Centre for the Study of the Production of the Built Environment	Interdisciplinary and international activity relating to the social processes that produce the built environment	History of labour in architecture and construction
Environment, Technology and Human Comfort Group	Environmental and ecological design Practice-driven research into the technological development of architecture	Innovative construction technologies Building performance and the passive heating, cooling and lighting of buildings
Expanded Territories	Architecture in an expanded, interdisciplinary field (environmental humanities, politics, science and technology studies and contemporary materialist philosophy)	Work framed by the discovery of the anthropocene Questions of architecture's material entanglement in planetary ecocide
Experimental Practice EXP	Research in the creative methodologies, practices, teaching and the experimental projects which act as the 'laboratory' of the profession	Professional and academic 'Supercrits' Practice-based and design-based research
Freight and Logistics Group	Urban distribution and the sustainability of freight transport and logistics operations both in the UK and internationally	Freight, Transport and Logistics Research with partners from distribution and logistics firms and industry
Max Lock Centre	International sustainable development in all parts of the world Public policy and professional practice in urban and regional planning	Poverty reduction, management and governance Community empowerment and building resilience Sustainable livelihoods at neighbourhood, city and regional levels
Active Travel / Sustainable Mobility	Planning for sustainable accessibility and transitions Low carbon mobility (walking, cycling, wheeling, e/micromobilities, reducing car use, and active travel)	Interdisciplinary and high-impact approach, rooted in social science Research and policy funders on topics from injury and near miss risk to active travel uptake
Sustainable Urbanism and Urban Studies	Issues of planning, engineering, design, finance, heritage, and governance for sustainable towns, cities, and regions	Integration of infrastructure and urban development through new research and practice Integration of planning, design and policy to yield sustainability and community resilience
Tourism and Events Group	Role of tourism and events in contemporary cities City tourism, mega-events, festivals, strategic experience design, community-led tourism	Examination of tourism and events from the perspective of places and spaces and as experiences

*Table 1. Research groups and centres - UoA13 University of Westminster*

Engagement with practice is a vital and critical component of the School's research culture. Alongside a passionate group of 77 research-productive staff (FTE: 63.6), the School hosts staff in high-impact professorial positions and influential visiting fellows from practice. Research activities, while often London- and UK-based, span Europe and the globe, with staff collaborating with a wide variety of influential partners worldwide. High-profile symposia and workshops are hosted on a regular basis.

## 1.1 Research Strategy

The research strategy of the Unit is based on the solid foundation of achievements in REF2014. A substantive agenda was adopted around research that represents, suggests, scrutinises, and helps establish designs for environmentally and socially sustainable places. Designs are defined broadly as constructs, representations, models, or schemes, specifically related to intended action in urban contexts. This was further developed and detailed in 2018 to specify a focus on global issues of strategic design, production, sustainable place-making and mobilities. The research strategy has been set up specifically to reflect wider University priorities of being responsive to sustainability challenges, working collaboratively and drawing on the opportunities provided by our location in central London. The overall strategy for research within the Unit is focused on supporting all staff with significant responsibility for research to produce high-quality, internationally excellent research, as well as fostering internal and external research collaborations at both national and international levels.

These goals have been delivered through a range of key policies for research. Such policies include a set of coordinated actions and arrangements at both University and School level, including:

- establishment of appropriate institutional arrangements for University and School research management, including oversight by research committee and research groups (see below),
- focused financial support and time allocation for independent research, funding application preparation and impact activities (below),
- the establishment of an open and interdisciplinary research environment (below),
- staff-oriented policies related to staff recruitment, staff development, and actions to facilitate equality, diversity and inclusion (see section 2),
- enhanced support for research students (section 2),
- facilitating staff successes around attracting research income (see section 3),
- sustaining suitable research infrastructures and facilities (section 3), and
- facilitating activities for major research collaborations and contributions to wider society (see section 4).

The general institutional arrangements for research can be summarized as follows: The University provides academic leadership for research through a Pro-Vice Chancellor for Research and University and College Research Committees, supported by the central University Research and Knowledge Exchange Office (see REF5a). Schools are managed by a Head of School (**Charrington**) along with Assistant Heads for line management responsibilities and workload allocation. The School of Architecture and Cities has a School Research Lead (**Woltjer**) and a research committee, including members at various career stages and representation from all disciplines in the Unit (**Charrington, Jordan, Aldred, Smith, Rattenbury, Woltjer**). The committee manages School support activities for research and provides coordination between staff research activities, PhD research, and ongoing projects at the School level, including QR-related projects and funding schemes like the 'Developing Researcher' Scheme (see section 2). In 2020, the School Research Committee put specific efforts in place to support staff and their research projects to respond to COVID-19, focused particularly on ensuring staff and doctoral student resources and well-being, and the continued progress of funded projects. The Research Lead also organised specific meetings to discuss options for online data-collection, analysis, and dissemination with regard to the restrictions imposed by the pandemic.

The Unit has benefitted considerably from strengthened University and School support for funding application preparation and management since the last REF. In particular, the Unit's strategy has been advanced by University investment since 2018 in dedicated staff based within the Research and Knowledge Exchange Office (RKEO) to identify external funding opportunities and facilitate and manage applications both pre- and post-award. This has been accompanied by the introduction of a streamlined research applications process, which combines surveillance of funding opportunities, support in effective bid writing and rigorous oversight of drafts to ensure

high-quality applications. This process has been particularly successful in supporting members of staff to build their experience and profile by accessing funds from a range of different funders (see section 3).

All researchers in the Unit are also able to draw upon the support and expertise of a full-time Research Development Partner, based within the RKEO, who identifies external funding opportunities and assists in the development and submission of applications. The work of the RDP is supplemented by a specialised Post-Award Project Manager to ensure support for bids both pre- and post-award. The RKEO also hosts a dedicated Impact Officer, with responsibility for facilitating and monitoring impact activities, as well as assisting in the preparation of impact case studies for the unit (see REF5a).

A code of good research practice sets out a clear framework to ensure research is conducted to the highest standards of integrity (see REF5a). All researchers in the Unit are required to comply with the University Ethics Code and must obtain approval from University Ethics Committee before commencement of their work and where appropriate throughout the duration of the research.

Financial support and time allocation: QR resources have been used to enable staff to devote substantial dedicated time to research and, as demonstrated in section 3 below, to support them in submitting successful research bids. As a result, the Unit has hosted several major projects funded by research councils, the European Commission and other funders during the REF census period. The Unit now boasts an outstanding portfolio of externally-funded research. Internal QR funding has also been used to fund staff conference participation and organisation, and, through competitively awarded seed funding, the development of new research projects and ideas. An essential part of the strategy has been to encourage, through these seed-projects, interdisciplinary research and research contributing to the global understanding of designs and their enactment for environmentally and socially sustainable places and mobilities in urban contexts.

The award process for seed-projects was initially organised during the current REF period at a university level with project calls, anonymous internal review, and panel-review decisions administered centrally. Up to 2018 the University facilitated this process through the University Strategic Research Fund. Since 2019, with a new focus on interdisciplinary research, the University 'Research Communities' have run an improved process, emphasising cross-disciplinary research on key themes for the University: 'Diversity and Inclusion', 'Health Innovation and Wellbeing', 'Arts, Communication and Culture', and 'Sustainable Cities and the Urban Environment'. Particular priority is given to those activities that involve public engagement and collaborations with external partners to support interdisciplinary exchange. Staff members in the Unit are involved with projects in all the communities. The Unit has overall leadership specifically for the 'Sustainable Cities and the Urban Environment' (SCUE) community (led by **Woltjer**). An example of a seed project from the Strategic Research Fund is 'Housing and Labour: a pilot oral history of post-war council house building in England and Scotland' (**Wall**). More recent examples of seed-project investments from SCUE include 'Urban Mobility and the Margins' (**Kalra**), 'De-colonising urban and architectural curricula to enable effective climate actions' (**Verdini**), 'Reuse of urban transport infrastructures as green space for people's wellbeing' (**Kamvasinou**), 'Digital Innovation for Sustainable Urban Mobility' (**Papa**), 'Grassroots approaches for incremental upgrading of informal settlements in African cities' (**Cascone**), 'Programming public space: festivity / diversity / inclusivity' (**Smith**), and 'Ageing Air Passengers: Supporting Inclusion within the Air Transport Door-to-Door Journey' (**Graham**). A team of Research Community Leads, support officers in the RKEO, and the principal investigators for the projects work together to develop the seed projects further in terms of impact activities and grant proposal writing aimed at external funding.

The School provides dedicated funds of up to around £18k in total annually for staff members to present papers at international conferences and/or to support research field trips. Further resources are available, for example for staff to organise events for both academic and

practitioner audiences. There is also School funding to support the completion of research outputs and to organise events. The Unit has been able to contribute to research on issues of social sustainability, design and urban contexts in the global south through resources from the Global Challenges Research Fund allocated to the University of Westminster. Research activities have focused, for example, on micromobile megacities in Mexico (**Aldred**), African 'Off-Grid Housing' (**Cascone**), improvised architectural responses in Bangladesh (**Fellows**), and inequalities around urban water in Indonesia (**Woltjer**). The University of Westminster's Quintin Hogg Trust – a charity founded in 1903 to support education at the University – has also funded projects in the Unit specifically for research linked to teaching, including, for example, research by **Schiano-Phan** entitled 'Realising Sustainability: Building Environmental Awareness into an Enhanced Student Experience'. In 2019 the Quintin Hogg Trust awarded a further £582k over three years to the Unit for the Active Travel Academy (**Aldred**), generously covering posts and studentships alongside projects and events supporting the research and pedagogical environment on sustainable mobility.

As the above makes clear, research activity across the Unit is underpinned by a clear commitment to interdisciplinarity, with many projects spanning various subject boundaries to forge innovative new directions for research. Specific interdisciplinary and cross-university opportunities for the Unit have been with cities-, urban-, mobilities-, technology-, and place-oriented themes. This extends core disciplinary areas in the Unit (i.e., architecture, planning, transport, tourism) through intersections with disciplines like sociology, international studies, engineering, health, media studies, arts, management, and design. Such linkages are clearly visible in the examples listed above. Additional funding and support from the central QR budget for the University has been available to colleagues to support collaborations across disciplinary boundaries.

Both the School and wider University are committed to the pursuit of an open research environment. The Unit complies with UKRI, European Commission and REF open access requirements and staff are encouraged to make their work as accessible as possible. The University supports a mixed green and gold model of open access for academic publications. Staff are further supported to pursue a range of open access research outputs through the University Article Processing Charges Fund. The University has also invested in its own peer-reviewed open access publishing platform (the University of Westminster Press), to which the Unit has, for example, contributed a successful edited volume: *Destination London* (2019). For further details, see REF5a.

An institutional repository, 'WestminsterResearch', operates via the University Virtual Research Environment (VRE), administered by a dedicated Open Access team, and is sector-leading in its capacity to capture and enable open access to practice-based research, including architectural designs, exhibitions, multimedia works and artefacts, as well as text-based outputs (see REF5a). Practice-based researchers in the Unit have worked closely with the University VRE steering group and Research Data Management Group to further develop practice-based portfolios' functionality for the Repository. These technical developments will allow us to openly publish our research portfolios, facilitating our aim to lead on key debates around transparency in research and practice. We will publish key examples of our portfolio submissions to REF2021 through the VRE in 2021. This strategy, developed with staff in the University's Library and Scholarly Communications team, aims to further embed and enhance understanding across the sector of practice research methods and complex outputs (where metadata is added to the VRE) in relation to the long-term capture, display, discovery and preservation of practice-based research.

## 1.2 Impact Strategy

The body of research included in the Unit is characterised by its applied nature and thus relevance to practitioners and policy makers. The applied and practice-oriented nature of our research is the basis of our ability to create substantial impact, particularly on practices and policies in fields such as urban sustainability, transport planning, urban planning, housing and tourism. The Unit is very strong in terms of knowledge exchange activities, particularly where



policies or policy guidance or the societal status of buildings and places have been changed following research and dissemination. Research in the Unit has produced a variety of designs, piloting and modelling schemes and strategies that have informed stakeholders like NGOs, corporations, and governments globally in areas such as cycling policy, historic regeneration, sustainable freight transport, energy efficient buildings, public space usage for major events, and delay cost management in European aviation. The Unit is responsible for environmental improvements, but particularly also improvements to the social sustainability of communities and groups, thereby strengthening quality of life, diversity and inclusion in places across the world.

Support to foster and develop research impact has been provided at the level of the School and University through the provision of dedicated funds to enable impact-related activities such as public engagement and the translation of research into action (see also below). Support has also been provided at the level of the School through internal impact workshops, mentoring and support for events that bring researchers together with practitioners. The central Researcher Development Programme at the University has organised a variety of sessions, on impact and engagement, in addition to sessions on research funding, knowledge exchange, publishing, research ethics, and careers. The School of Architecture and Cities has also provided further support for impact events. The Workload Allocation Model has further enabled the Head and Assistant Heads of School to designate specific hours for impact activities as a part of overall workload, ensuring that impact activities are recognised as a core academic responsibility. The Unit has been responsible for creating a wide range of major national and international impacts during the current REF period. A useful sample of the main impact areas in the Unit is reflected in the impacts narrated in our five submitted case studies as follows:

Effects on commerce and the economy: Research impacts created by the Air Transport and Air Traffic Management Group (**Cook** et al) include optimising industry practice regarding airport delays, cost-savings, shaping airport allocation practice, and providing a much-used model for calculating delay costs in European aviation. Another example of impacts emerges from projects and research on sustainable freight transport in the Freight and Logistics Group (**Pieczyk** et al). The types of impact include policy/guidance, industry adoption (e.g., parcel delivery companies), and environmental impact of reducing deliveries. The activities are based on knowledge exchange with industry, think-tanks and government on infrastructure and climate change. Direct engagement between the researchers and stakeholders have helped enable these impacts, particularly through the funded projects the Unit has accommodated and that these research groups have carried out.

Impacts on public policy, laws and services: Research by **Aldred**, on cycling behaviour and policy, has led to improved policies (such as those for Transport for London), changing institutional attitudes, changing cultural attitudes, and increasing adoption of cycling in the UK and overseas (and thus reducing pollution from car mobility). Her research also has produced significant improvements in road safety, thereby aiding efficient town planning, and professional engagement. **Smith's** research on the social dimensions of major events and urban change has created impacts such as informing regeneration strategies of major events, creating public awareness of public space usage for major events, and facilitating the work of community organisations. These impacts include policy guidance and strategies based on research, for instance, by the London Olympics committee. The Unit also has a range of other examples of policy impact, including research that has helped local government institutions to obtain funding for regeneration work or to devise policy guidelines, and contributions to quality of life. The impact strategy for the Unit has helped facilitate dissemination activities, media engagement, establish specific events, and project funding related to all the policy-related impacts mentioned here.

Impacts on creativity, culture and society: A prominent example of these kinds of impacts includes **Saleem's** research on establishing the heritage profile of British mosques. The types of influence include gaining Historic England heritage status for mosques, increasing diversity and inclusion in heritage practice, thereby obtaining government protection for mosques. There are also broader impacts in terms of raising the international profile of Historic England and

developing a diverse architectural archive as well as social benefits of community integration and recognition.

Other types of impact achieved at the Unit include research used for implementing sustainable design and construction methods, creating social benefits of increased communality, and improving quality of life. The impact strategy for the Unit has helped to provide seed-funding, and to support dissemination, engagement activities and events related to the specific research listed here, and thus enhance impact across the subject area.

### 1.3 Future Research Strategy

The Unit's future research strategy is informed by the ambition to enhance its capabilities in order to deliver further innovative knowledge contributions to society. To enable this, the unit will be seeking over the next five years to:

- Expand its leadership for, and investment in, interdisciplinary research about sustainable cities, mobilities, and transformative urban and built environments in the UK, Europe and the Asia-Pacific, for example through its leading role for the 'Sustainable Cities and the Urban Environment' Research Community (led from 2021 by **Smith**) at the university;
- Refocus and consolidate its research groups so to encourage imagination, creative capacity and innovation on emerging themes. Relevant groupings will be established across the disciplines that define the School (architecture, planning, transport, tourism) to include research on strategic design, place and experience, mobilities, and territorial transitions.
- Strengthen mentoring arrangements within the groups, by appointing conveners for each group, and by expanding existing arrangements for mentoring circles including all staff. The Unit will commit to further developing its strategies around seed-funding and early-career support.
- Engage actively in opportunities for post-Brexit research funding, particularly with regard to UK participation in EU funding programmes including Horizon Europe, for example for research on air transport and sustainable mobility.
- Monitor and address any underrepresentation of staff regarding all protected characteristics, in all institutional arrangements for research in the Unit.

## 2. People

### 2.1 Staff

The Unit currently has 12 Professors (**Charrington, Aldred, Bremner, Cook, Graham, Griffiths, Neuman, Piecyk, Rattenbury, Richens, Wall, Woltjer**), 8 Readers (**Barber, Deriu, Lau, Lloyd-Jones, Papa, Pappalepore, Smith, Verdini**) and over 50 other staff members with significant responsibility for research. The group of Professors and Readers play a leading role in the facilitation of research in the Unit, for example as mentors, as Principal Investigators for projects, and by broader research leadership across the University.

One of the Unit's central aims post-REF2014 was to increase the number of research-active staff to a level exceeding 50% of all staff within the subject area. This has been achieved and the Unit now has 77 (63.60 FTE) staff with a significant responsibility for research in the Unit, representing 68% of all Category A eligible staff within the School. This represents a dramatic increase in the research intensity of the Unit, more than doubling the number of staff submitted in REF2014 (when the Unit submitted 35 staff / 25.37 FTE).

The increase in research-active staff has been achieved through staff development and support, as well as a strategic policy towards staff recruitment. Appointments are made from those with a strong research record and a commitment towards contributing to knowledge beyond teaching alone. All recent appointments have been on permanent contracts, although some part-time visiting lecturers are also appointed to fill gaps in teaching provision or to provide specialist

inputs to particular modules. In addition to lecturers and senior lecturers, research associates and research fellows are recruited for funded project work so to fulfil the requirements of externally-funded research contracts.

New and early-career staff (including part-time and fixed-term staff) are encouraged to join one of the research groups in order to receive mentoring and guidance. The Unit has been able to provide funding support for early-career researchers, for example through the 'Researcher Development Scheme'. Staff members such as **Cao** ('Sustainable Travel and Well-being in Asian Cities'), **Ayuso** ('Body Agents'), and **Dolezal** ('Tourism, SDGs and Development in the Global South') have all been able to benefit from these funds.

The School operates a number of policies to ensure that quality and integrity are maintained in all research-related activities. The University has a series of ethics advisors, a Research Ethics Committee to deal with ethics applications, and to provide guidance to staff on all ethics issues (see REF5a).

The School provides continuous support to its researchers at all levels through a system of mentoring so that more experienced researchers and authors provide guidance, support and feedback to less experienced colleagues on research applications and drafts for publication. In addition, the University runs a series of training programmes on different aspects of bidding for funding, writing high-quality research proposals, getting published, and dissemination, with the support of the Research Development Officer.

Our staff development strategy has focused on supporting staff (full-time, fractional and fixed-term) at all levels through mentoring, advice and financial assistance in, for example, attending conferences and initiating new research projects. QR income has been allocated for conference and project support, as well as to create staff time for research and opportunities for staff to bid for external funding. Formalised mentoring arrangements are in place, with staff completing development plans on a yearly basis, and a specific research mentoring system for all engaged in preparing bids and in academic publishing. In addition, a staff appraisal process enables individual research objectives to be identified and personal development plans to support the achievement of those objectives to be agreed with managers. Staff development funds are used where possible to provide training, delivered internally or externally, or to acquire specific skills. Research groups run regular seminar programmes and several events each year focus on wider issues such as getting published and preparing successful bids. Staff are also encouraged to attend training events organised through the Researcher Development Programme (see below).

The Unit recognises that it is crucial that our staff have sufficient time to carry out their research. The allocation of hours specifically to undertake independent research (additional to any funded research time) occurs on the basis of research plans as part of annual appraisal. This process involves coordination between the Head of School, Assistant Heads of School, and research staff, and seeks to identify options for research time allocation resulting in research income, outputs and impact. Hour allocation is based on transparent norms following the University 'Work Allocation Model', which are evaluated and decided annually for each staff member (through the appraisal cycle). Professors and Readers are standardly allocated research time amounting to a minimum of 425 hours pro rata from a total workload of 1504 hours. Other staff are allocated research time of 350, 250 or 100 hours pro rata, depending on their level of research responsibility. Additional hours may be allocated to colleagues developing funding applications (30 to 120 hours) and all staff receive a further 174 hours for scholarship activities.

The Unit has seen several promotions of existing staff over the period, including to Professor or Reader status. This is strong evidence of the success of our staff development strategy, with the Unit supporting staff and encouraging them to apply to the University system of application and promotion to Reader and Professor. This system is based on external review and coordinated by the university 'Professors and Readers Awarding Committee'. Within the Unit, five out of the current group of twelve professors have been appointed through this process during the current



REF period. Similarly, five out of the group of eight Readers have been promoted to Reader from positions as Senior Lecturers, between 2014 and 2020.

## 2.2 Research Students

The University of Westminster has a university-wide Graduate School, established in 2012, which promotes a distinctive multi-disciplinary experience for doctoral researchers. An emphasis is on engagement with relevant external stakeholders including research organisations, employers, policy-makers, non-governmental organisations, the media, and the wider public. The Graduate School, as well as overseeing student progression and career development, offers a range of developmental and training activities, including seminars and networking events to facilitate sharing of best practice for doctoral students, which are supplemented, in turn, by more discipline-specific training at School level. The Unit has a dedicated PhD Coordinator (**Smith**), who serves as a guide, coordinates PhD-research activities, and deals with admissions enquiries, progress reviews and vivas.

Research student training is managed through the Graduate School's Doctoral Researcher Development Programme (DRDP), which is based on the Vitae Researcher Development Framework. It provides workshops, specialist skills sessions, briefings on the Annual Progress Review process, and personal development planning activities in each year of study. Students are also able to attend teaching and learning workshops and to do work leading to the Postgraduate Certificate of Special Study in Supporting Learning. The DRDP covers topics and issues identified by practising researchers, offering also from discipline-specific modules on science and technology and cities and the built environment. For further details, see REF5a.

PhD students take a research methods module which runs twice yearly. Students are also able to select from various modules on environmental science and the built environment disciplines and/or other modules relevant to their interests. Schools run a series of practice-based workshops throughout the year. There are twice-yearly symposia at which doctoral researchers present their work. All PhD students are encouraged to play a leading role in the design and organisation of events, supported by administrative and academic staff. The Graduate School offers two sessions per academic year for new or aspiring supervisors and two sessions per year for experienced supervisors. Staff also take the Supervising Student Research module, delivered by the Researcher Development Programme.

A key objective since 2014 has been to increase the capacity in the Unit for PhD supervision. In achieving this, staff have utilised staff training opportunities for supervision, and new staff have been appointed on the basis of having a PhD and thus potential future supervision capacity themselves. The Unit has been able to support PhD students locally through bursaries and fee waivers and funding (at both School and University level) to cover travel, conferences and essential production costs. A recent example of such studentships include two full PhD studentships funded by the Quintin Hogg Trust starting in 2020. In the selection of successful applications, the University emphasises that any research proposals should have strong interdisciplinary potential. Monitoring and progress activities are well established and are supported by an online 'Virtual Research Environment' (VRE).

The Unit currently hosts 44 individuals actively working on their MPhil and PhD research. The size of the MPhil/PhD community has increased by around 25% since 2014, with most growth occurring over the last two years. On average 5 candidates complete their PhD successfully each year, with an expectation that these numbers will increase following recent growth in admissions. Between 2014 and 2020, 28 candidates have completed their PhD. Our doctoral programme focuses on academic research and, for this reason, completions do not include any research-based professional doctorates.

Like the research staff in the Unit, the MPhil and PhD students are a diverse group. The gender balance (women-men) has been around 60:40 among doctoral students over the REF-period. Around half of the PhD graduates continue in academic posts elsewhere, as lecturer,

postdoctoral research fellow, or research associate in the UK and abroad, in all disciplines relevant for the Unit (architecture, urban planning, transport, tourism). Students have also been shortlisted for prizes such as the RIBA President's Award for Outstanding PhD Thesis (Nunez Ferrera, 2015).

### 2.3 Equality and Diversity

The Unit has a strong commitment to equality, diversity and inclusion and to fostering a supportive research and working environment.

The gender balance at professor level currently is 50:50, thanks to a range of recent appointments. The overall gender-balance for research-active staff in the Unit as a whole is around 40:60 (women:men), mainly because of an underrepresentation of women in the categories 'Reader', 'Principal Lecturer', and 'Senior Research Associate'. The balance is 50:50 for staff in the position of 'Lecturer', 'Research Associate', and 'Senior Lecturer'. Staff data for the Unit suggest that it has a similar ethnicity profile (including BME) compared to total university numbers of staff with significant responsibility for research.

A key issue following REF2014 was the age composition of the Unit. Age composition was a concern for the Unit given an overrepresentation of staff over the age of 55, while younger staff were underrepresented. This prompted the Unit to initiate a succession strategy that encouraged and supported early career researchers and worked to ensure that effective mentoring policies were in place to draw on the experience of those with greater research experience. The focus has been on support for and recruitment of early career researchers. This policy has been successful as age composition is now more balanced, with around 28% in the 35-44 age-bracket, 41% at 45-54, and 20% at 55-64. These numbers are similar to averages for the university, although the Unit now has higher numbers in the mid-age range (45-54).

The Unit has relatively high levels of part-time staff. While the University contains around 23% of staff eligible for REF on part-time contracts, the Unit is at 45%. This Unit, therefore, has considerable staff in fractional posts, with many of these working in professional architectural practices or carrying out other forms of consultancy. Staff in these positions contribute valuable knowledge, skills and viewpoints from practice. Others provide advice and assistance to third sector organisations, resulting in a substantial interchange between practice, research and academia.

Members of the Unit have committed to supporting and actively addressing diversity and equal opportunity issues in any institutional arrangements relevant for research. Fundamental physical and institutional conditions to support diversity and inclusion have improved over the REF period, for example with regard to disabled access on Marylebone Campus, investments in assistive technology, and attention to staff development on diversity. More recent actions have focused on establishing a much broader awareness of equality and inclusion. All Unit members have completed renewed training in unconscious bias, diversity and equal opportunities processes. Issues of equality and diversity in research are on the agendas and in renewed Terms of Reference for all research committees. The Unit has committed to inclusive practices in all its research events and activities and in the actions of research partners.

A crucial action at university-level has been to commit to a series of Black Lives Matter commitments. Staff in the Unit play an active role in the Equality, Diversity and Inclusion Committee, and in staff networks such as the LGBTQ+ Staff Network, the BME Staff Network, and Women of Westminster Staff Network (see REF5a). A practical implication, for example for job applications in the Unit, is that advertisements for new jobs in the Unit make clear that applications from Black and Minority Ethnic staff are especially welcomed. The Unit has established specific activities around decolonising and diversifying its programmes, projects, and disciplines, for example through the 'Decolonising Architecture History' seminars series, and a 2020 Unit-funded research project focusing on globally-informed and transformative knowledge to enable decolonisation and inclusive city climate actions.

Considerations around equality and diversity were taken into account also in REF2021 preparations for staff submission to REF and in the selection of outputs. The UoA lead and staff involved in the assessment of outputs for this submission received training in all relevant aspects of equality and diversity for REF2021 as set out in the University's Code of Practice. The quality of outputs was determined through processes of peer review with both internal reviewers (a group of 14 Readers and Professors within the Unit, of mixed gender and other protected characteristics, and representing all disciplines in the school) and four external reviewers who had experience with REF processes in their respective universities and who had a similarly diverse background. Following University policy, submitted outputs were selected by taking one piece per member of staff and then selecting the remaining outputs by quality from the remaining pool. These have been graded by at least two internal reviewers with a large sample reviewed by the four external reviewers. Where evaluation resulted in the same grade, representation of staff with protected characteristics and of different research areas within the School were taken into consideration in the final selection of outputs. The selection of outputs has been reviewed by the University REF Equality and Diversity committee to ensure due regard to these issues. Transparency in decision making and implementation was further ensured through the use of the University online data platform for research (Virtual Research Environment), shared information processing during regular meetings of all UoA Leads within the University, and through scrutiny by the University REF Director.

### 3. Income, infrastructure and facilities

#### 3.1 Research Income

This Unit has a long and successful record of securing research income from UK research councils, the European Commission, central government, government agencies, industry and charitable sources. Continuing an upward trend from REF2014, the Unit has maintained a steadily growing level of income from a variety of industry, government and charitable sources and has the high-quality infrastructure in place to sustain this.

A key aim for the Unit has been to increase the number and overall value of externally funded research proposals. This aim has clearly been achieved as the amount of proposals submitted has grown from around 6 yearly between 2014 and 2017 to around 10 proposals yearly in 2018 and 2019. The annual value of project income has increased from £0.723M for 2013, to an average annual amount of around £1.5M in awarded projects in each of the last four years. To help reach this goal, the Unit has used research coordinators within the school who encourage staff to develop new research initiatives and prepare bids. All researchers also benefit from a full-time Research Development Partner attached to the School and based within the University Research and Knowledge Exchange Office (RKEO), who identifies new external funding opportunities and supports applications. Bid writing is further supported through RKEO support for the Unit, and pre- and post-bid support offered by dedicated staff, who have further assisted in developing the research culture of the Unit through training and bid-writing workshops. A crucial improvement has been the embedding more strongly of processes of peer review for research grant applications before submission.

The School operates a robust and supportive system to ensure the high quality of research proposals. The Unit's Research Lead is the first port of call for colleagues intending to develop a proposal. Once the Lead is clear that the idea is intellectually strong, significant and fulfils the targeted funder's criteria, the colleague is directed to the Research Development Partner to develop the proposal. A draft of the proposal is reviewed by experienced research colleagues. Colleagues must obtain authorisation from the Head of School and College Research Director in order to submit an application. This process has enabled the Unit to promote the highest quality for those applications that are ultimately submitted.

The combination of individual research support through seed-funding, support for activities and the more systematic research funding support regime has increased noticeably the number of

colleagues applying for and receiving funding and the amount of funding received in this REF period (Figure 1). The figure shows considerable growth in securing external funding. It should be noted here that projects in most cases have a multiyear scope, with the level of funded projects implemented at the Unit typically distributed over the years following a peak in income, such as in 2016.

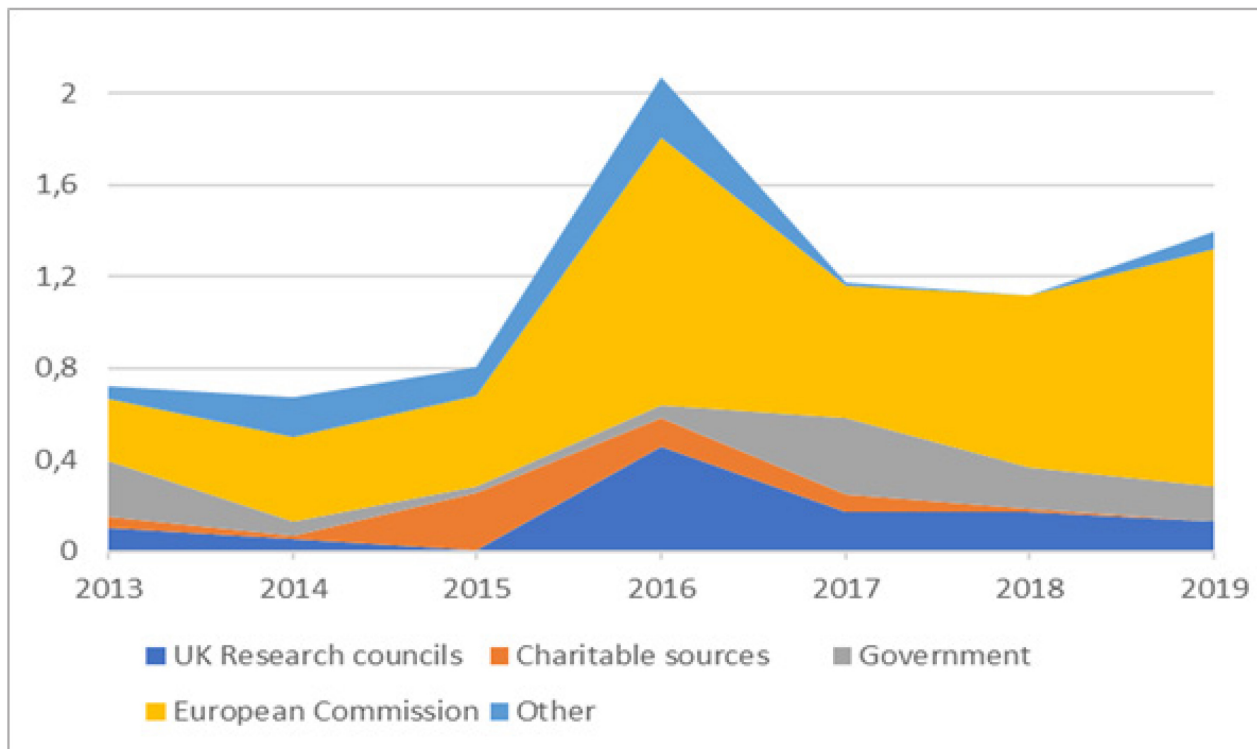


Figure 1. External research funding income by source (Millions GBP) - UoA13 University of Westminster

Externally funded projects in the Unit range from funding by research councils (AHRC, ESRC, EPSRC, NERC, and ERC), charities (including British Academy, Leverhulme Trust, Wellcome Trust, British Council, Royal Society, OECD, Volvo Foundation, European Climate Foundation, United Nations), government agencies (e.g., TfL, London Assembly, DfID, DEFRA, and London boroughs), and the European Commission. Income from externally funded projects, therefore, is prominent, particularly in research activities around planning and transport, and sustainable mobilities. The most prominent source of external research funding for the Unit is the European Commission, with a total of £4.874M in research income from this source. Funding from Research Councils and Government is also significant, with respective values of £1.131M and £1.069M over the REF period.

The Unit has a particularly rich portfolio of large research projects funded through the European Commission. Two research groups have been particularly successful: *Air Transport and Air Traffic Management* (led by **Cook**, representing 14 projects with an income value for the Unit of around £5.5M over the whole period), and *Freight and Logistics* (led by **Piecyk**, for a total project income value of around £800K). The projects on air traffic management projects feature a wide range of industry partners and a Europe-wide knowledge transfer network. The European projects for Freight and Logistics focus on sustainable logistics practices in urban centres.

Principal Investigators for research-council funding include **Aldred** (*Sustainable Mobility/Active Travel Academy*), **Alan & Piecyk** (*Freight and Logistics*), **Smith** (*Tourism and Events*), and **Bremner** (*Expanded Territories*). Relevant examples are **Aldred**'s 'Near Miss' project (AHRC), **Piecyk**'s 'Centre for Sustainable Road Freight' project (EPSRC), **Papa**'s project entitled 'Experimenting with city streets to Transform urban mobility' (ESRC), and **Bremner**'s project for the European Research Council (ERC) entitled 'Monsoon Assemblages'. This project involves a



design-driven inquiry into the impacts of changing monsoon climates in three of South Asia's rapidly growing cities.

Funding from public corporations or government agencies include a range of projects led by **Aldred** (*Sustainable Mobility/Active Travel Academy*), **Lloyd-Jones** (*Max Lock Centre*), and **Allen** (*Freight and Logistics*). Major funders include Transport for London, the Department for International Development, the London Assembly, Department for Environment, Food & Rural Affairs, Department of Business, Energy and Industrial Strategy (with UCL, BSRIA and SP Technical Sweden, led at Westminster by the late Colin Gleeson), and London boroughs.

Projects funded by UK and overseas charities have been led by **Lloyd-Jones** (*Max Lock Centre*), **Aldred** (*Sustainable Mobility/Active Travel Academy*), **Deriu** (*Architectural History and Theory*), **Kamvasinou** (*Urban Infrastructures*), and **Woltjer** (*Urban Infrastructures*). Examples include **Lloyd-Jones'** work on urban planning in India (DFID), **Deriu's** 'Architecture and Vertigo' (British Academy), **Smith's** project on festivals, events and inclusive urban public spaces in Europe (HERA), **Woltjer's** work on sustainable urban infrastructure and social inclusion (British Council), and **Aldred's** research project on reducing cycling injuries (Road Safety Trust). **Kamvasinou** ran a project for the Leverhulme Trust entitled 'Interim space and creative use'.

### 3.2 Infrastructure and facilities

Research staff and research students in the Unit have a rich set of infrastructures and facilities available, all concentrated on our Marylebone Campus in central London. An overview of infrastructure and facilities pertaining to research and research impact is provided below. The overview includes details on spaces and the estate, computing, the library, technical resources available to staff, and facilities enabled by the central London location of the Unit.

All research staff have individual office spaces. Research groups that are based on projects with considerable funding have specific project rooms to facilitate team-working, typically between principal investigators, research associates and research fellows. Principal investigators for these groups are **Bremner** (*Monsoon Assemblages*), **Aldred** (*Sustainable Mobility/Active Travel Academy*), **Lloyd-Jones** (*Max Lock Centre*), **Cook** (*Air Traffic Management Group*), and **Piecyk** (*Freight and Logistics Group*).

PhD researchers and guest researchers are provided with a desk and computer in the large research room that the Unit has available on the 6<sup>th</sup> floor of the main building at Marylebone Campus. This room offers opportunities for PhD researchers to work on campus in the vicinity of key facilities provided at Marylebone Campus.

The Fabrication Laboratory Westminster (Fab Lab, coordinated by **Scott**) is a facility established in 2015 at an initial cost of £1,468,732 with the aim to provide a strengthened learning and research environment around digital fabrication. Compared to REF2014 the Fab Lab represents a major extension in the capacity of architecture and design workshops. It includes two purpose-built spaces, offering advanced digital making facilities. It is equipped with flexible computer-controlled tools, covering a wide range of scales, materials and processes including ABS and plaster 3D printing, CNC knife cutting, large-scale CNC routing, CNC metal milling and robot fabrication. The Fab Lab supports several PhD students and staff in their research (e.g., **Mamou Mani, Watson, Cascone, Ayuso, Griffiths**).

A vast area of design studios is situated at Marylebone Campus, creating a vibrant academic and creative studio culture with research staff, research students, and the broader student community interacting around dedicated themes. Since 2015 the studios have undergone a £5.2m refurbishment programme, providing facilities for collaborative learning. The studios are fitted with computers throughout, all equipped with graphics and CAD software.

Ambika P3 is a space for contemporary art and architecture, developed from the vast former concrete construction hall at the University of Westminster. Located in the heart of central

London, Ambika P3 runs a public programme of exhibitions, projects, talks and events dedicated to innovation, experimentation and learning. Ambika P3 operates as a laboratory and meeting place for practitioners, industry and academia. Examples of research-oriented exhibitions, talks and events led by staff in the Unit include 'Potential Architecture' (2015, **Heron, Griffiths**), 'Fab Fest' (2016, 2018, **Scott**), 'ADAPT-r' (2016, **Heron**), 'Super Crit' (annually, **Rattenbury**), 'Falling Away' (2020, **Deriu**).

The Marylebone Library is based at our Marylebone Campus and was the subject of a major refurbishment between 2014 and 2017 at a total cost of £2,947,414. This includes a wide range of rich resources (books journals, databases, archives, collections) on subjects and disciplines relevant for the Unit (Architecture, Planning, Transport, Tourism). Such resources are accessible online for all staff and students through the Library website. The Library also has specialised Academic Liaison Librarians, who provide tailored advice and support.

A crucial facility for researchers in the Unit is in its computers with dedicated software. Password-protected, dedicated computers are located on Marylebone Campus, in the library computer lab, in studios and project rooms, and accessible online. Currently the Unit has digital-research activity in a range of areas. Mapping and GIS applications (ArcGIS, QGIS, Google World Maps and OS Maps) are used in the fields of planning and transport. Staff members in planning, tourism and transport use software for statistical analysis (R, R Project and SPSS). Survey software including Qualtrics is used around the Unit for a variety of projects, including for example the London Green Space Survey. A further set of software applications is employed for transport modelling and simulation (TRICS, Vissim, Visual Transport Modeller, and a range of software tools for Air Traffic Management). Digital tools around content- and text analysis are mainly used in planning, tourism, and architectural history (Nvivo, MaxQDA, Atlas.ti). Design-related software is used throughout the school typically in the architectural disciplines and urban design. Key software includes Google Sketchup Pro, Adobe CC and Rhinoceros (with a range of Plugins, such as Grasshopper). Relevant construction- and design software includes the various applications by Autodesk (including AutoCAD), ArchiCAD, Arduino, Bentley Suite, IES-VE. Occasionally, researchers apply environmental-science tools including EDSL Tas, Envi-Met, Meteororm.

Marylebone Campus houses outstanding facilities for research meetings, seminars, workshops and conferences. The Unit has their own state-of-the-art seminar room, the Robin Evans Room, providing flexible space for collaborative research and events. Our central London location also means that researchers have access to some of the best research resources in the world within walking distance, including the library and spaces at the Royal Institute of British Architects (RIBA), the British Library, the Wellcome Trust Building and Library, and the London Metropolitan Archives. Relevant stakeholders for research (including policy agencies like Transport for London, NGOs, and various funders and government departments) typically are located in central London as well.

#### **4. Collaboration and contribution to the research base, economy and society**

The Unit has considerably expanded its range of national and international collaborations through key projects and newly established partnerships since 2014. A high priority has been to continue and expand engagement with both industry and academic partners. The period has thus seen increased collaboration around specific projects, new funding opportunities and dissemination, while also taking advantage of new funding opportunities arising from research councils, EU funding, industry and the charitable sector.

A key aim has been to expand the network of international partners for the Unit. The focus has been on collaborative research through project partnerships and collaborative research (including co-authored work). International collaborations have a strong focus on Europe and the Asia-Pacific (South-, Southeast- and East-Asia).



Figure 2. Map of collaboration partners 2014-2020 -UoA13 University of Westminster

The international position of research in the Unit is evident from collaboration partners in 82 externally funded projects in the Unit between 2014 and 2020. The emphasis in project collaboration is on the UK, Europe, and the Asia-Pacific (South-, East- and Southeast Asia, and Australia, see Figure 2). Co-authorship with international partners, external PhD examinations, visiting scholar- and professorships, and internationally hosted workshops and conferences reveal a similar geographical pattern.

Project-partners in the UK include Cranfield University, Heriot-Watt University, Imperial College London, King's College London, University College London, University of Cambridge, University of Manchester, and University of the West of England. Elsewhere in Europe, project cooperation features universities in countries like Belgium (KU Leuven), Denmark (Danmarks Tekniske Universitet), France (Ecole Nationale de l'Aviation Civile), Germany (Technical University of Munich, Technische Universität Berlin), Greece (University of Athens), Ireland (Dublin Institute of Technology), Italy (Universities in Pisa, Palermo, Roma, Trieste, Iuav di Venezia, Bologna, Milano), Lithuania (Kaunas University of Technology), Netherlands (Delft University of Technology), Poland (Cracow University of Technology), Portugal (Instituto de Ciencias Sociais, New University of Lisbon), Serbia (University of Belgrade), Spain (Universitat Autònoma de Barcelona, Universitat Politècnica de Catalunya), Sweden (Gothenburg University, Stockholm University), and Turkey (Istanbul Technical University). Collaboration in the Asia-Pacific includes with institutions in Bangladesh (Research Initiatives Bangladesh, Bengal Institute for Architecture, Landscapes and Settlements), China (Beijing Jiaotong University, Peking University, Tongji University, Tsinghua University, Hong Kong Polytechnic University), India (Anna University, IIT Madras), Indonesia (Institut Teknologi Bandung), Malaysia (University Teknologi Mara), Thailand (Mahidol University), and Australia (Griffith University, Royal Melbourne Institute of Technology).

A further indication of the extent of our collaborative activities involves extensive co-authorship, external PhD examinations, visiting scholar- and professorships, and the organisation of workshops or conferences. Co-authors on research outputs in the Unit cover a range of over 50 different institutional affiliations. Staff have been invited for external PhD examination at over 20 universities mainly throughout the UK and Europe. Visiting scholar- and professorships have been held by **Deriu** (IUAV University of Venice), **Griffiths** (Yale University), **Leonardi** (École

d'Ingénieurs La Rochelle), **Neuman** (University Federico II, University of Aalborg, University of Malaya), **Novy** (Brandenburg University of Technology, Politecnico di Milano), **Pandya** (School of Architecture & Urban Design Vidhyanagar), and **Verdini** (Polytechnic Mohammed VI University of Ben Guerir, Xi'an Jiaotong-Liverpool University). **Woltjer** has been awarded two honorary professorships (Institute of Technology Bandung, University of Groningen).

Staff members are involved as members and reviewers for a variety of peer review bodies. These memberships include **Bailey** (Research Grant Council of Hong Kong), **Leonardi** (European Commission, Intergovernmental Panel on Climate Change), **Verdini** (European Commission), **Wall** (RIBA Research Awards), and **Woltjer** (UKRI-ESRC Peer Review College, Open Research Area Panel, Swedish Research Council for Environment, Netherlands Organisation for Scientific Research).

The Unit includes memberships of over 25 research networks and fellowships of learned institutes. These memberships cover all research groups and disciplines. For the transport disciplines, for example, Unit members play an active role in organisations like the Air Transport Research Society (ATRS), the Association of European Transport (AET), the Chartered Institute of Logistics and Transport (CILT), the Chartered Institute of Highways and Transportation (CIHT), the Institute for Aviation Research (IAR), the International Federation of Operational Research Societies (IFORS), the Royal Statistical Society (RSS), and the World Society for Transport and Land Use Research (WSTLUR).

Memberships for architecture include the Architectural Humanities Research Association, the Association for Computer Aided Design in Architecture (ACADIA), the Construction History Society (CHS), the European Architectural History Network (EAHN), the International Building Performance Simulation Association (IBPSA), the International Committee of Architectural Critics (CICA), the Oral History Society (OHS), and the Royal Institute of British Architects (RIBA). Prominent memberships for planning involve the Academy of Urbanism (AoU), the Association of European Schools of Planning (AESOP), the Global Planning Education Association Network (GPEAN), the Intergovernmental Panel on Climate Change (IPCC WGIII), the Royal Geographical Society, the Town and Country Planning Association (RCPA), the Regional Science Association (RSA), and the Royal Town Planning Institute (RTPI). Tourism research in the Unit has membership representation through the Tourism Society, the Association of Tourism in Higher Education (ATHE), and the Tourism Management Institute (TMI).

The Unit has received a range of honours and awards. **Aldred** received the prestigious ESRC Prize for Outstanding Impact in Public Policy in 2016, for her research on changing the policy mindset on cycling. **Cook** received the 'Outstanding Project' award by the EU 'Single European Sky' initiative in 2014. **Delgado** was the recipient of the AENA Foundation Luis Azcárraga Award in 2014. **Deriu** received a British Academy Mid-Career Fellowship Award in 2019 to pursue his project, 'Architecture and Vertigo: States of Suspension in the Contemporary City'. **Graham** was the recipient of a prominent Fellowship Award from the Transport Research Society for her distinguished achievement in international air transport research. Best-paper and best-article prizes were won by **Neuman** (paper 'Measuring Sustainability' *Town Planning Review*, 2015), **Woltjer** (paper 'Gentrifying the Peri-Urban', *Global Planning Education Association Network*, 2015), and **Cao** (paper *Royal Geographical Society, Transport Geography Research*, 2017).

The Unit has received a number of research awards from the Royal Institute of British Architects (RIBA). **Sharif** and **Golzari** were shortlisted in 2016 for their work on Palestine regeneration. The RIBA Rising Star award 2017 went to **Fellows** for her research on improvised architectural responses to climate change. **Saleem** received the RIBA President's Award for Research and the Historic England Angel Award for Excellence in Architectural Research in 2018 for his study on the history of the mosque in Britain. **Rattenbury** was shortlisted in 2019 for her book *The Wessex Project: Thomas Hardy Architect*.



## Unit-level environment template (REF5b)

During the REF period, several staff members in the Unit have assumed roles as editors for globally influential journals, several of which have very high international esteem. Editorship positions include **Graham** (*Journal of Air Transport Management*, Q2), **Pandya** (*National Identities*, Q2), **Wall** (*Construction History: International Journal of the Construction History Society*, Q3), **Woltjer** (*Cities – The International Journal of Urban Policy and Planning*, Q1), **Woodburn** (*International Journal of Logistics Research and Applications*, Q1). Staff have also taken on responsibilities as guest and special issue editors for such journals as *Architectural Histories* (DOAJ), *Architecture and Culture* (Q4), *Emotion, Space and Society* (Q1), *Journal of Architecture* (Q2), *Journal of Transport Geography* (Q1), *Landscape Research* (Q2), *Oral History Journal* (WoS), *Research in Transportation Economics* (Q2), and the *Journal of Air Transport Management* (Q2). The Unit is represented on editorial boards for nearly 30 further international journals. Examples include *Architectural Design* (Q2), *European Planning Studies* (Q1), *Journal of Architectural and Planning Research* (Q2), *Journal of Urban Design* (Q1), *Sustainability* (Q2), *Tourism Economics* (Q2), *Town Planning Review* (Q2), *Transport Reviews* (Q1), *Transportation* (Q1), and *Urban Design International* (Q2).

The Unit is particularly active in organising and hosting conferences, seminar and workshops. A large variety of events have been organised, both at the Marylebone Campus (where Unit staff are located) and overseas. The Unit thus sustains and supports a dynamic and vibrant research culture with well over 100 larger events (exceeding 30 participants) since 2014. Staff members with a particularly rich portfolio of collaboration through these events in the period between 2014 and 2020 include **Aldred** ('Cycling Research Conference'), **Ayuso** ('Parallel Cities' Workshops), **Blyth** ('Creative Learning'), **Bremner** ('Monsoon' Symposia, 'Global Mobilities Seminar Series'), **Deriu** ('Architecture Research Forum', 'Vertigo in the City', 'Global Mobilities Seminar Series'), **Guibert** and **Lau** ('London Festival of Architecture at the University of Westminster'), **Kamvasinou** and **Stringer** ('Re-Imagining Rurality'), **McLean** ('Human Comfort Symposium', 'Technical Studies Lectures'), **Neuman** ('Sustainable Urban Design' charrette, 'East West Arc: Re-thinking Growth in the London Region Symposium'), **Papa** ('Transportation Planning and Policy'), **Smith** and **Pappalepore** ('Tourism and the Night' symposium), **Rattenbury** ('Supercrit' series of professional and academic research events), **Schiano-Phan** ('International Symposium on Sustainability and Energy Efficiency', 'Latitudes' Global Studio Workshops), **Verdini** (Workshops 'Re-imagine urban curricula' and 'Universities and Knowledge for Sustainable Urban Futures'), **Wall** ('Constructing Post-war Britain', 'Direct Labour past and present' workshop, Symposium 'Architecture and Building Labour', 'Women in Construction' workshop), and **Woltjer** ('Sustainable Urban Infrastructure and Social Inclusion', 'Developing Urban Space for Wellbeing and Sustainability').

Members of the Unit are widely called upon to contribute to a variety of public media and public events. Staff members in the Unit with a prominent public-media profile include **Aldred** (*Sustainable Mobility/Active Travel Academy*), **Morgan** (*Tourism and Events Group*), **Pandya** (*Architectural History and Theory*), **Papa** (*Sustainable Mobility/Active Travel Academy*), **Saleem** (*Architectural History and Theory*), **Smith** (*Tourism and Events Group*), **Verdini** (*Sustainable Urbanism and Urban Studies*), and **Woltjer** (*Urban Infrastructures*).

A list of Conferences, Seminars and Workshops organised and/or hosted by the Unit is provided below:

Year	Hosted at University of Westminster	Hosted externally
2014	<ul style="list-style-type: none"> <li>• 'Global Mobilities Seminar Series'</li> <li>• Supercrit Series of Professional and Academic Research</li> <li>• Latitudes TEDx event</li> <li>• Latitudes Climate Change Seminar</li> </ul>	<ul style="list-style-type: none"> <li>• 'Transport in the Media', Lancaster</li> <li>• 'Industries of Architecture: Relations, Process, Production', Newcastle</li> <li>• 'Single European Sky ATM Research (SESAR) Innovation Days' (annual research conference)</li> <li>• 'Transport Geography Research Group' conference session, Leeds</li> </ul>

Year	Hosted at University of Westminster	Hosted externally
2014		<ul style="list-style-type: none"> <li>• ATHE annual conference (UK Association of Tourism in Higher Education)</li> <li>• COST-action workshop 'Engendering Cities', Rome</li> <li>• International Workshop 'The role of second tier cities in China', Shanghai</li> <li>• 'Planning in Stressful Places', Track at AESOP Annual Congress, Utrecht</li> </ul>
2015	<ul style="list-style-type: none"> <li>• 'Reimagining Rurality Conference'</li> <li>• 'Vertigo in the City: Conversations between the Sciences, Arts and Humanities' interdisciplinary symposium</li> <li>• Supercrit Series of Professional and Academic Research</li> <li>• 'Women in Construction: No more softly, softly: it's time for real change'</li> <li>• 'Potential Architecture' exhibition and event</li> </ul>	<ul style="list-style-type: none"> <li>• Single European Sky ATM Research (SESAR) Innovation Days (annual research conference)</li> <li>• Annual COST-action workshop 'Air Transport and Regional Development'</li> <li>• ATHE annual conference (UK Association of Tourism in Higher Education)</li> <li>• COST-action workshop GenderSTE Training School and International Conference, Istanbul</li> <li>• Track 'Social Aspects of Urban Design', Association of European Planning Schools Conference, Prague</li> <li>• Smart Cities Forum, Suzhou</li> <li>• China Workshop on 'Sustainable Cities', Suzhou</li> <li>• 'Contemporary Governance in Indonesia', Groningen</li> </ul>
2016	<ul style="list-style-type: none"> <li>• 'Parallel Cities Workshops'</li> <li>• 'ADAPT-r' exhibition and symposium</li> <li>• 'A Photographer's Sense of Space: Looking at the Work of Gabriele Basilico' interdisciplinary seminar</li> <li>• 'Tensegrity Structures' Workshop</li> <li>• Supercrit Series of Professional and Academic Research</li> <li>• 'Architecture and Building Labour: Afterword or Prologue?'</li> <li>• 'Sustainable urban infrastructure and social inclusion –improving choice and wellbeing in UK and Chinese cities'</li> <li>• 'Fab Fest' festival</li> </ul>	<ul style="list-style-type: none"> <li>• 'Radical Histories/Histories of Radicalism', London</li> <li>• Single European Sky ATM Research (SESAR) Innovation Days (annual research conference)</li> <li>• Annual COST-action workshop 'Air Transport and Regional Development'</li> <li>• Mobility Track, 'Transportation planning and Policy', Annual Congress of the Association of European Schools of Planning (AESOP)</li> <li>• ATHE annual conference (UK Association of Tourism in Higher Education)</li> <li>• COST-action 5th Engendering International Conference, Engendering Habitat III, Madrid</li> <li>• 'Jaunti Village Workshop' with Delhi Urban Arts Commission, Delhi</li> <li>• International Seminar 'Small Settlements and the Cultural Dimension of Urbanisation', Paris</li> </ul>
2017	<ul style="list-style-type: none"> <li>• 'Monsoon [+ other] Airs Symposium'</li> <li>• 'Architecture Research Forum' Seminar Series</li> <li>• 'CITYLAB London' MAMCA Workshop</li> <li>• 'Human Comfort: symposium on design and health'</li> <li>• 'Tourism and the Night' symposium</li> <li>• Supercrit Series of Professional and Academic Research</li> <li>• 'Latitudes Global Studio Workshop London'</li> <li>• 'National Energy Programme-II' Symposium</li> </ul>	<ul style="list-style-type: none"> <li>• Single European Sky ATM Research (SESAR) Innovation Days (annual research conference)</li> <li>• Annual COST-action workshop 'Air Transport and Regional Development'</li> <li>• 'Collaborative and Interdisciplinary International Design: Charrette on Sustainable Urban design practices', Florence</li> <li>• 'Planning for Just Cities', Cardiff</li> <li>• Mobility Track, 'Transportation planning and Policy', Annual Congress of the Association of European Schools of Planning (AESOP)</li> <li>• ATHE annual conference (UK Association of Tourism in Higher Education)</li> <li>• Latitudes Global Studio Workshop, Sao Paulo</li> </ul>

Year	Hosted at University of Westminster	Hosted externally
2017	<ul style="list-style-type: none"> <li>• COST Action Workshop 'Universities and knowledge for sustainable urban futures'</li> <li>• 'Direct Labour past and present'</li> <li>• 'Developing Urban Space for Wellbeing and Sustainability'</li> </ul>	
2018	<ul style="list-style-type: none"> <li>• 'Human Comfort Symposium'</li> <li>• 'Creative Space for Creative Learning'</li> <li>• 'Monsoon [+ other] Waters Symposium'</li> <li>• 'Architecture Research Forum' Seminar Series</li> <li>• 'Human Comfort II: symposium on design and health'</li> <li>• 'East West Arc: Re-thinking Growth in the London Region' Symposium</li> <li>• 'Green and Just Transition' Symposium</li> <li>• Supercrit Series of Professional and Academic Research</li> <li>• 'Fab Fest' festival</li> </ul>	<ul style="list-style-type: none"> <li>• 'The County of London Plan', London</li> <li>• 'Design Agency within Earth Systems', London</li> <li>• 'China's Urban Transformation', Peking</li> <li>• 'The Miner's House, Architecture of Migration Conference', Milan</li> <li>• Single European Sky ATM Research (SESAR) Innovation Days (annual research conference)</li> <li>• Annual COST-action workshop 'Air Transport and Regional Development'</li> <li>• ATHE annual conference (UK Association of Tourism in Higher Education)</li> <li>• Mobility Track, 'Transportation planning and Policy', Annual Congress of the Association of European Schools of Planning (AESOP)</li> <li>• ATHE annual conference (UK Association of Tourism in Higher Education)</li> <li>• Latitudes Global Design Studio Summit, Ahmedabad</li> <li>• COST Action Workshop, 'Re-imagine urban curricula', Ljubljana</li> <li>• 'Constructing Post-war Britain', London</li> <li>• 'Sustainable Regional and Urban Development', Bandung</li> </ul>
2019	<ul style="list-style-type: none"> <li>• 'Monsoon [+ other] Airs Symposium'</li> <li>• 'City Plus' Annual Conference</li> <li>• 'Architecture Research Forum' Seminar Series</li> <li>• 'Blurring the boundaries between inhabiting, designing, and making', London Festival of Architecture</li> <li>• Supercrit Series of Professional and Academic Research</li> <li>• 'Learning Through Practice', Association of Architectural Educators (AAE)</li> <li>• Annual Robin Evans lecture</li> </ul>	<ul style="list-style-type: none"> <li>• 'Visual methods in Cycling research', México</li> <li>• 'Financialisation of Rental Housing in China', Shanghai</li> <li>• 'The Impacts of Social Equity and Transport Accessibility on a Just City', Shanghai</li> <li>• 'African Fabbers House, digital manufacturing for sustainable living', Barcelona</li> <li>• 'African Fabbers Cities: self-organisation and self-production in the African urban context', London</li> <li>• 'Single European Sky ATM Research' (SESAR) Innovation Days (annual research conference)</li> <li>• Annual COST-action workshop 'Air Transport and Regional Development'</li> <li>• 'The Photo-book and the City', session at 9th AISU Congress, Bologna</li> <li>• ATHE annual conference (UK Association of Tourism in Higher Education)</li> <li>• International Symposium on Sustainability and Energy Efficiency, Seville</li> <li>• Villages workshop, as part of 'Adapting Villages' conference, Hong Kong</li> <li>• 9th International Symposium on Travel Demand Management, Edinburgh</li> </ul>

## Unit-level environment template (REF5b)

Year	Hosted at University of Westminster	Hosted externally
2020	<ul style="list-style-type: none"> <li>• 'Architecture Research Forum' Seminar Series</li> <li>• Supercrit Series of Professional and Academic Research</li> <li>• Annual Robin Evans lecture</li> <li>• Technical Studies Lecture Series</li> <li>• 'Falling Away' exhibition and symposium</li> </ul>	<ul style="list-style-type: none"> <li>• 'Modern Animism,' Garden Museum, London</li> <li>• Mobility Track, 'Transportation planning and Policy',</li> <li>Annual Congress of the Association of European Schools of Planning (AESOP)</li> <li>• Seminar 'Travelling Companions; an exhibition of the work of artists Judy Goldhill and Fay Ballard', Cambridge</li> <li>• Workshop 'Nonanthropogenic Rafts for Beginners', Antwerp</li> </ul>

*Table 2. Conference/Seminar/Workshops (Co-)organising and Hosting - UoA13 University of Westminster*