

# Research Fellow in Urban MorphoMetrics and City Analytics

Department	Architecture ( <a href="http://www.strath.ac.uk/engineering/architecture/">www.strath.ac.uk/engineering/architecture/</a> )		
Faculty	Faculty of Engineering ( <a href="http://www.strath.ac.uk/engineering/">www.strath.ac.uk/engineering/</a> )		
Staff Category	KTP	Reference No	526615
Reports To	Prof Sergio Porta (Knowledge Base Supervisor); Hal Mellen (Business Partner Supervisor)	Grade:	RS79
Salary Range:	Up to £34,000 p.a. plus £4,000 training and development budget	Contract Type:	Fixed Term (24 months)
FTE	I (35 hours/week)	Closing Date	18/05/2023

## Job Advert

The Department of Architecture in partnership with ADAM Architecture Limited (<https://adamarchitecture.com>) are seeking to appoint a Research Fellow in Urban MorphoMetrics and Walkability (KTP Associate) in the area of Urban Morphology Analytics.

ADAM Architecture is the leading practice specialising in classic and traditional architecture, and contextual urban design. The practice has offices in Winchester and London. The company is recognised worldwide for its award-winning projects, which range in scale from master plans including village extensions and major housing developments to private houses and the restoration of historic buildings, and commercial and public buildings.

The successful candidate will have the opportunity to:

- deliver a research project in collaboration with one of the most prestigious firms in the fields of architecture and urban design.
- manage a challenging, real-world project.
- tailor-make your role, as each KTP Associate position is unique.
- gain invaluable experience through working on a KTP project with the support of expert teams.
- support the development of a growing consultancy focused on urban network analysis.

You will be employed by the University of Strathclyde but will spend most of your working time at the company's premises. A key feature of the KTP position is a personal training and development allowance of £4000 that can be used to develop skills related to the project that will enhance your career. You will have the opportunity to register for a higher degree (free of charge) based on the work carried out on the project.

To be considered for the role you should have a PhD (or equivalent experience) in urban sustainability analytics and spatial analysis. Your background should mix qualitative/interpretative abilities typical of urban designers and urban morphologists with quantitative typical of geospatial data scientists. In particular, you should be familiar with the main references in the urban design and urban morphology literature. You should also be familiar with importing and manipulating large geo-datasets, cartography, modelling relationships between morphometrics and different urban phenomena (e.g. socioeconomic), in linear and non-linear fashions. Extensive knowledge of GIS, Python and available geo-datasets for urban analysis in the UK is also required. In terms of Python coding, you should have proven experience in Pandas, Geopandas, Momepy, Osmnx and Scikit-learn. You should have demonstrated capacity of working with different stakeholders, communicating effectively, taking control of projects and exercising leadership and guidance by taking initiative and responsibility. It is preferable that the candidate previously worked in projects involving both academia and private sector and carried out research independently or in a team where he/she figured as the main lead.

The position offers the KTP Associate the following benefits:

- KTPs offer extensive opportunities for graduates and post-grads, as you provide the link between an expert academic team and a dynamic company. This 'bridge' gives you unique and exceptional access to both worlds.
- A fulfilling employment opportunity where you can apply your knowledge to turn a key strategic innovation idea in to reality.
- Manage your own substantial training and a £4,000 personal development budget (you can also use this to attend conferences, cover membership of professional bodies etc.).
- You can choose a variety of training modules during your KTP: project management, marketing and communication, finance, leadership and/or personal development, as well as job-specific technical training.
- Mentoring from industrial and academic supervisors.
- Support and resources from the University.

The project is part of the Knowledge Transfer Partnership (KTP) programme that aims to help businesses to innovate and grow by working with UK universities. Successful Knowledge Transfer Partnership projects are funded by UK Research and Innovation through Innovate UK and are part of the government's Industrial Strategy. To find out how KTP works and the vital role you will play if you successfully secure a KTP Associate position please visit: [www.ktpws.org.uk](http://www.ktpws.org.uk)

## Job Description

### Brief Outline of Job:

ADAM Architecture is the UK's leading practice specialising in Classical and Traditional architecture, and contextual urban design. We are recognised worldwide for our award-winning projects, which range in scale from masterplans including village extensions and major housing developments to private houses and the restoration of historic buildings, and commercial and public buildings. Our urbanism work is regularly cited by the UK Govt as exemplars in publications on planning; placemaking and urbanism and we have won awards both from within the UK and overseas.

ADAM Architecture is passionate about designing sustainable places where communities can live, work and play. We recognise the need to reduce vehicle emissions over the coming years and believes that widespread adoption of walkability analysis within design and decision-making processes will have environmental and societal benefits. Supported by a team at the University of Strathclyde, the KTP Associate will undertake a 2-year programme of research and develop solutions in order to create a Python based tool for walkability analysis that is scientifically sound, scalable and applicable to different geographic contexts. At the end of the two years, it is intended to expand the PLACE LOGIC staff to exploit the commercial opportunities identified during the KTP and build a viable long-term business, providing a potential opportunity for the Associate to remain engaged for the longer term.

The 2-year program is divided in 6 stages:

1. Situational Awareness. Stage 1 is critical to the successful integration of the Associate with both ADAM Architecture and Strathclyde University. The Associate will undertake a mini-project to gain knowledge of the organisational structure and internal skills of ADAM Architects as well as develop an understanding of the company's basic processes and systems.
2. Technology Review. Stage 2 consists in gathering scientific and grey literature on walkability as well as ways to measure it. This includes existing tools and apps which are not published in any journal or conference proceedings but still inform the research community and urban design practice worldwide.
3. Walkability Metrics and Data Sources. Stage 3 focuses on identifying what aspects of the urban environment should be considered for improving state-of-the-art walkability tools. Furthermore, it focuses on "translating" such aspects into quantifiable metrics that are detailed, and yet measurable at large scale.
4. Scalability of the Walkability Tool. Stage 4 focuses on the definition and implementation of techniques for the computation of the walkability index starting from the metrics identified at Stage 3. It will focus on the scalability of both metrics and overall index and explore the use of freely accessible datasets.
5. Validation and Interactive Mapping Tool. Stage 5 focuses on the validation of the outcomes of the walkability tool against a set of performance metrics, such as house prices, perceived well-being, socioeconomics.
6. Training, Knowledge Embedding and Final Reporting. Stage 6 will ensure that all relevant technical knowledge is appropriately recorded, retained and disseminated within the company.

The Associate will also contribute to the knowledge base through training workshops and reports which will be the basis for journal publications and lecture material. Consistent reference to literature and use of academic and industry expertise will ensure best practice and successful delivery.

## Main Activities/Responsibilities:

1.	Lead, project manage, and deliver the KTP project
2.	Collate existing information on the work to date, technical requirements, and business needs
3.	Perform in-depth research on walkability analysis by focusing on scientific and grey literature and existing tools/apps that inform the research community and urban design practice worldwide
4.	Adapt existing and develop new metrics for measuring walkability in a replicable and scalable manner and create an overall walkability index
5.	Validate metrics and index against a set of performance metrics (e.g. well-being, socioeconomic)
6.	Ensure continued success of the project plan through maintaining and improving agreed objectives
7.	Regularly exchange research ideas with supervisors, colleagues and external stakeholders involved in the project
8.	Regularly gather feedback on project advancements from supervisors, colleagues and external stakeholders involved in the project
9.	Embedding knowledge gained from project (e.g. through documentation, training) within ADAM Architecture
10.	Dissemination of KTP outputs with Academic team (e.g. through publication and presentation of work at conferences, tradeshows and in peer reviewed journals)

## Person Specification

### Educational and/or Professional Qualifications

(E=Essential, i.e. a candidate must meet all essential criteria to be considered for selection, D=Desirable)

E1 Doctorate (or equivalent experience) in Urban Analytics or similar areas of studies

E2 At least 3 scientific publications in journals with high impact factor in the last year

### Experience

E3 Relevant experience bridging private sector and academia

E4 Experience in developing quantitative tools for urban analysis

D1 Experience of working as an independent researcher, with an ability to drive their own projects

D2 Experience/expertise in modelling morphometrics and performance indexes

### Job Related Skills and Achievements

E5 Experience in GIS software and Python (especially of the packages Pandas, Geopandas, Momepy, Osmnx and Scikit-learn)

E6 Extensive knowledge of available UK geodatasets

D3 Excellent communication skills (written and verbal), presentation skills, also in conferences

D4 Excellent technical report writing skills

### Personal Attributes

E7 Self-directed and self-motivated

E8 Good written and verbal communication skills and ability to present and defend ideas to groups at all levels in the business and to all project stakeholders

D5 Ability to work collaboratively with a range of stakeholders in a diverse, multidisciplinary project team, or independently on own initiative as and when required

D6 Able keep up to date with competitor information and market trends

D7 Able to identify business opportunities emerging out of research and collaboration

D8 Able to demonstrates financial awareness and control costs in terms of profit, loss and added value

### Other Relevant Factors

E9 Interest in making a direct contribution toward a more walkable and low-carbon world

## Application Procedure

Applicants are required to complete an application form including the name of three referees who will be contacted without further permission, unless you indicate that you would prefer otherwise. Applicants should also submit a Curriculum Vitae and a covering letter detailing the knowledge, skills and experience you think make you the right candidate for the job. Applicants should also complete the Equal Opportunities Monitoring Form.

## Other Information

Further information on the application process and working at Strathclyde can be found on our website (<http://www.strath.ac.uk/hr/workforus>).

Informal enquiries about the post can be directed to Prof Sergio Porta, (0141 5483016 [sergio.porta@strath.ac.uk](mailto:sergio.porta@strath.ac.uk)).

### Conditions of Employment

Conditions of employment relating to the KTP Associate staff category can be found at: [Conditions of Employment](#).

### Rewards and Benefits

Our staff have access to a wide range of outstanding benefits that include financial rewards, family friendly and wellbeing benefits and career development opportunities, details of which can be found [here](#).

### PVG Check

This position involves regulated work, making it a legislative requirement that the successful candidate becomes a member of the Protection of Vulnerable Groups Scheme. If appointed, employment with the University will not be confirmed, until membership of the Scheme has been received. The successful applicant will be precluded from working with protected groups until that time.

### Basic Disclosure

This role requires the satisfactory outcome of a Basic Disclosure Scotland Check. The successful applicant will be asked to carry out a Basic Disclosure Scotland Check. Whether an outcome is satisfactory will be determined by the University.

### Pre-employment health screening

An offer of appointment will be subject to a medical assessment by Occupational Health. An individual who accepts an offer of employment must complete a confidential medical questionnaire and forward it to the Occupational Health Nurse within 5 days of receipt. If further information is required the individual may be contacted by the OHN or a Medical Advisor and a personal appointment with the individual may be arranged. An unconditional contract of employment will not be issued until Human Resources receives confirmation that applicant is fit to undertake the duties of the post.

### Probation

Where applicable, the successful applicant will be required to serve a 6 month probationary period.

### Pension

The successful applicant will be eligible to join the Universities' Superannuation Scheme. Further information regarding this scheme is available from [Payroll and Pensions](#).

### Relocation

Where applicable, the University offers a relocation package to support new employees who meet the eligibility criteria. The relocation package is offered as a contribution towards costs incurred, and is designed to be flexible, allowing staff to use the financial support available in the way that will be most helpful to them. Further details are outlined in the Relocation Policy.

### Interviews

Interviews for this post will be held at ADAM Architecture Limited, Winchester on 14/06/2023.

### Equality and Diversity

The University of Strathclyde is a socially progressive institution that strives to ensure equality of opportunity and celebrates the diversity of its student and staff community. Strathclyde is people-oriented and collaborative, offering a supportive and flexible working culture with a deep commitment to our equality, diversity and inclusion charters, initiatives, groups and networks.

We strongly encourage applications from Black, Asian and minority ethnicity, women, LGBT+, and disabled candidates and candidates from lower socio-economic groups and care-experienced backgrounds.

## University Values

The University's Values capture what we're all about: who we are, what we believe in and what we stand for. [Our Values](#) have been derived from how we act and how we expect to be treated as part of Strathclyde.

