

Postdoctoral Research Associate

AHRC funded project: Preserving Egypt's Cultural Heritage from Earthquake Damage through Vibrating Barriers (ViBa)

Department of Civil Engineering

School of Mathematics, Computer Science & Engineering

www.city.ac.uk/

September 2020



Role Profile	
Post:	Postdoctoral Research Associate
Department:	Department of Civil Engineering
School:	Mathematics, Computer Science and Engineering
Grade:	Grade 5B or Grade 6
Tenure:	Full-time, Permanent with fixed term funding for up to 10 months
Responsible to:	Prof. Ashraf Ayoub

Context

The project is funded by the Arts and Humanities Research Council, and will be based at City, University of London, in the Research Centre for Civil Engineering Structures (RCCES). It aims to develop a multi-scale numerical model to simulate the dynamic response of heritage structures in Egypt to earthquake excitations, with the goal of evaluating the effect of Vibrating Barriers (ViBa) in mitigating the seismic response.

Job Purpose

The objectives of the work carried out by the post holder include: (1) to develop numerical models for ancient structures in Egypt including soil-structure-interaction using a combination of finite element/boundary element techniques; (2) to conduct nonlinear dynamic analysis of the modelled structures under earthquake excitations using commercial software; (3) to investigate the use of Vibrating Barriers (ViBa) in mitigating the effect of earthquakes on these structures, and optimize the parameters of ViBa devices; and (4) to develop general design guidelines and analysis practices for the use of ViBa to protect cultural heritage structures from the damaging effect of earthquakes; and (4) to liaise with project partners exchanging data and information.

This is part of a collaboration with the University of Brighton, and Cairo University, Egypt. The post holder will need to proactively interface with these teams and assist in disseminating the outcome of the research.

Main Responsibilities

The key tasks of the appointee to this position are to:

- Undertake research in the field specified to meet the aims, objectives and project specifications given in the proposal
- Collaborate with researchers in other universities
- Participate in the different tasks assigned by the supervisor(s)
- Participate in and prepare for the research meetings
- Prepare and make presentations in research meetings or to visitors
- Write up the work, in consultation with the supervisor(s) for journal publication and for reports or other presentations
- Work as a member of the research groups, playing a full part in the research life of the School of Mathematics, Computer Science and Engineering, at the City, University of London
- Take up other duties and tasks as may reasonably be assigned by the supervisor(s).

Additional information

- The post holder must at all times carry out their responsibilities with due regard to City, University of London's Equal Opportunities Statement.
- The post holder must accept responsibility for ensuring that the policies and procedures relating to Health and Safety in the workplace are adhered to at all times.
- The post holder must respect the confidentiality of data stored electronically and by other means in line with General Data Protection Regulation 2018 (GDPR) the Data Protection Act 2018.
- The post holder must carry out their responsibilities with due regard to the non-smoking environment of City, University of London.
- **Sustainable Development**
City, University of London is committed to a policy of best practice to assist in building a sustainable way of life by taking a positive, solutions-orientated approach. All post holders are encouraged to contribute through their roles to improving the environment for City and the wider community.

Details of policy, information and staff development supporting the policy on the environment and sustainability can be found at www.city.ac.uk/green-policies.

The above list is not exclusive or exhaustive and the post holder will be required to undertake such duties as may reasonably be expected within the scope and grading of the post. All members of staff are required to be professional, co-operative and flexible in line with the needs of the post, Department, School and City, University of London.

Job descriptions should be regularly reviewed and at least prior to the annual appraisal, if applicable or on a regular basis to ensure they are an accurate representation of the post.

Equality, Diversity and Inclusion Statement (EDI)

City, University of London is committed to promoting equality, diversity and inclusion in all its activities, processes and culture, under its Public Sector Equality Duties and the Equality Act 2010. This includes promoting equality and diversity for all, irrespective of any protected characteristic, working pattern, family circumstance, socio-economic background, political belief or other irrelevant distinction. Where relevant to the policy, decision-making panels will ensure a reasonable gender balance and will actively consider representation of other protected groups.

Candidate Specification

Post:	Postdoctoral Research Associate
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Criteria	Essential (E) / Desirable (D)	Method of Assessment (Application (A) / Interview (I) Exercise (E))
Qualifications and Knowledge		
A PhD awarded or PhD thesis submitted, in Structural Dynamics and Earthquake Engineering. (For the candidates who have submitted their thesis or are awaiting the decision on their PhD degree, a reference letter from their supervisor or their organisation confirming the expected date to receive the PhD degree is required to be provided when requested).	E	A
Experience		
A record of original research in high standard relevant to the main objectives of the research project, including publications in world-leading journals	D	A
Experience in nonlinear numerical modelling of structural systems under earthquake excitations	E	A
Experience in developing numerical models for structures including soil-structure-interaction, and constitutive models of materials	E	A
Experience with both finite element models and boundary element models	D	A
Experience in programming using computer language (Matlab & Fortran and/or C++)	D	A
Experience in a wide range of computational structural dynamics is preferable	D	A
Experience in making presentations for a large number of audiences, such as in prestigious international conferences	D	I
Skills and Abilities		
Ability to work with commercial finite element structural software (e.g. ABAQUS)	E	I
Ability to work effectively within a team of researchers	D	I
Demonstrate the desire and ability to be successful in achieving the aims and objectives of the proposal	D	I
Show good verbal and written communication skills	D	I
Demonstrate good interpersonal skills and the ability to liaise with project partners and other external contacts	D	I

Salary and conditions of service

The salient features of conditions of service for Research and Analogous staff are as follows:

- Salary will be within the range of £34,804 to £36,914 per annum on Grade 5B or within the range of £38,017 to £44,045 per annum on Grade 6 (for candidates with a PhD) of the salary scales for Research and Analogous staff.
- Annual Leave is 30 days, plus 8 statutory and 4 additional days during the Christmas holiday period.
- Automatic entry into the Universities Superannuation Scheme (USS) with the option to opt out.
- ***This post is permanent with fixed term funding for up to 10 months.***
- ***This post is full time (1.0 FTE).***
- All offers of appointment are subject to City receiving satisfactory references and medical clearance.
- All posts at City are subject to reasonable adjustment under the Equalities Act (2010).
- All appointments at City are subject to a probationary period.
- The appointment is terminable by three months' notice on either side.

Applications

When preparing your application, you should address carefully the post details enclosed and in particular the qualities outlined in the Person Specification. Please include examples where appropriate.

All applications must be received by the advertised deadline.

Further Information

City operates a no smoking policy.

City offers an excellent pension scheme, generous leave allowance, season ticket loan, a good working environment and access to fitness and social facilities.

City confirms its commitment to equal opportunities in all its activities. It is intended that no job applicant or employee will receive less favourable treatment on the grounds of political belief, sex, sexual orientation, disability, marital status, race, nationality, ethnic origin, religion or social class. Selection and promotion criteria are kept under review to ensure that individuals are treated on the basis of the job requirements and on their relevant personal merits; and are not disadvantaged by conditions or requirements which cannot be shown to be justifiable.

If you have a disability and are interested in this post, City welcomes your application. For an informal discussion you may wish to contact the Recruitment Team on:

Telephone: 020 7040 3085
E-mail: recruit@city.ac.uk