



THE UNIVERSITY OF  
**NEWCASTLE**  
AUSTRALIA

## **RESEARCH ASSOCIATE**

### **STRUCTURAL SYSTEMS SUBJECT TO EXPLOSIVE BLAST LOADING**

The Centre for Infrastructure Performance and Reliability has recently been awarded an Australian Research Council Discovery Project that is funded for three years. The project involves an investigation into the performance and reliability of structural systems subject to explosive blast loading. The research will contribute towards a better understanding of structural performance and reliability that will be incorporated into a risk-based decision analysis framework to determine optimal protective measures for new and existing buildings.

#### **The Position:**

The Centre for Infrastructure Performance and Reliability an excellent opportunity for someone wishing to work in the research field of structural dynamics. The successful applicant will support the Chief Investigator in the computational analyses of structures subject to dynamic loads, use of blast loading models, structural reliability analysis, and assistance in the preparation of papers and reports. Applicants must have a higher degree in a Civil or Structural engineering discipline, and very high level analytical and computational skills in structural dynamics.

**This full time position is available on a fixed term basis for three years. Minimum salary is \$59,905 plus superannuation, but this is negotiable subject to experience.**

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**Duties:** Without limiting the generality of the foregoing, the Research Associate will:

1. Perform structural analyses of buildings subject to explosive blast loading.
2. Develop structural and material constitutive models.
3. Undertake data collection and statistical analysis duties.
4. Quantify variability of structural response to dynamic loading
5. Assist in the preparation of papers and reports.
6. Undertake literature searches, reviews and produce bibliographies.
7. Be familiar with, and observe the University's policy and procedures on Equity and Diversity and Occupational Health and Safety in the performance of the responsibilities of the position.
8. Undertake any other duties relevant and appropriate to this level.

#### **Qualifications and/or Skills Required**

##### **ESSENTIAL CRITERIA**

- A PhD degree in civil or structural engineering or related discipline or an equivalent combination of relevant experience and/or education/training
- High level analytical and computational skills in structural dynamics.
- Experience in using non-linear finite element analysis software.
- High level of written communication and interpersonal skills
- Ability to work effectively as a member of a multi-disciplinary team, with minimal supervision

##### **DESIRABLE CRITERIA**

- Experience in using blast loading structural analysis software such as LS-DYNA.
- Knowledge of structural reliability or stochastic finite element analysis
- Knowledge of time-dependent structural and reliability analyses.
- Experience in the preparation of scientific articles for publication in peer-reviewed journals.