Student project

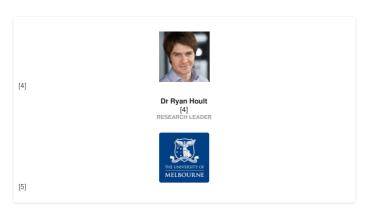
- Key Topics:
 earthquake [1]
- engineering [2]

Seismic assessment of reinforced concrete walls in Australia [3]

This project assessed the performance of reinforced concrete walls in response to rare and very rare earthquakes. This research firstly reassessed the seismic activities for 500 year and 2500 return period earthquakes in Australia. Using the results of earthquake hazard demand, the performance of existing reinforced concrete walls was assessed in response to these events. Cost effective changes or detailing provisions were recommended from the results.

Research team

Student researcher



Full description

This PhD assessed the performance of reinforced concrete walls in response to rare and very rare earthquakes. This research analysed both rectangular and C-shaped concrete walls to develop a secondary cracking model to predict the potential of cracks forming in these types of walls. It was found that the direction of loading and the mode of bending were particularly important for the seismic performance of these sorts of walls.

This project was completed in September 2017.

Related News



27 JUN 2019



A new wave of PhD completions EARTHQUAKE, FIRE

[7]



Engineering a new future EARTHQUAKE, MODELLING

22 OCT 2018

19 NOV 2018



New online - August 2018
CHILD-CENTRED, EMERGENCY MANAGEMENT

21 AUG 2018

[0]



New online - September 2017

[10

Publications

13 SEP 2017

Year	Туре	Citation
2019	Journal Article	Hoult, R. D. [4], Goldsworthy, H. M. [11] & Lumantarna, E. [12] Vulnerability Functions for RC Shear Wall Buildings in Australia [13]. Earthquake Spectra 35, 27 (2019). DOI [14] Google Scholar [15]
2018	Journal Article	Hoult, R. D. [4], Goldsworthy, H. M. [11] & Lumantarna, E. [12] Plastic hinge analysis for lightly reinforced and unconfined concrete structural walls [18]. Bulletin of Earthquake Engineering 16, 48
2018	Journal Article	Hoult, R. D. [4], Goldsworthy, H. M. [11] & Lumantarna, E. [12] Plastic hinge length for lightly reinforced C-shaped concrete walls [23]. Journal of Earthquake Engineering (2018). doi:https://doi.org/
2017	Conference Paper	Hoult, R. D. [4], Goldsworthy, H. M. [11] & Lumantarna, E. [12] Seismic Assessment of the RC building stock of Melbourne from rare and very rare earthquake events [28]. Australian Earthquake
2017	Journal Article	Hoult, R. D. [4], Lumantarna, E. [12] & Goldsworthy, H. M. [11] Soil amplification in low-to-moderate seismic regions [32]. Bulletin of Earthquake Engineering 15, 1945-1963 (2017). DOI [33] Google
2017	Journal Article	Hoult, R. D. [4], Goldsworthy, H. M. [11] & Lumantarna, E. [12] Plastic hinge length for lightly reinforced rectangular concrete walls [37]. Journal of Earthquake Engineering 1-32 (2017). doi:http://di
2017	Thesis	Hoult, R. D. [4] Seismic assessment of reinforced concrete walls in Australia [42]. (2017). at http://hdl.handle.net/11343/192443 [43]> Google Scholar [44] BibTeX [45] EndNote XML [46]
2016	Conference Paper	Hoult, R. D. [4], Goldsworthy, H. M. [11] & Lumantarna, E. [12] Displacement Capacity of Lightly Reinforced Rectangular Concrete Walls [47]. Australian Earthquake Engineering Society 2016 Con
2016	Conference Paper	Hoult, R. D. [4], Goldsworthy, H. M. [11] & Lumantarna, E. [12] Non-ductile seismic performance of reinforced concrete walls in Australia [52]. Australasian Structural Engineering Conference 2016
2015	Conference Paper	Rumsewicz, M. [57] Research proceedings from the 2015 Bushfire and Natural Hazards CRC & AFAC conference [58]. Bushfire and Natural Hazards CRC & AFAC annual conference 2015 (Bushfire
2014	Conference Paper	Leonard, M. [62] et al. Deaggregating the differences between seismic hazard assessments at a single site [63]. Australian Earthquake Engineering Society Conference 2014 (2014). Google Schol
2014	Conference Paper	Hoult, R. D. [4] et al. The 2012 Moe Earthquake and Earthquake Attenuation in South Eastern Australia [67]. Australian Earthquake Engineering Society Conference 2014 (2014). Google Scholar [67]
2014	Conference Paper	Hoult, R. D. [4], Goldsworthy, H. M. [11] & Lumantarna, E. [12] Seismic Performance of Typical C-Shaped Reinforced Concrete Shear Cores in Australia [71]. Australian Earthquake Engineering S
2013	Conference Paper	Hoult, R. D. [4], Lumantarna, E. [12] & Goldsworthy, H. M. [11] Ground Motion Modelling and Response Spectra for Australian Earthquakes [75]. Australian Earthquake Engineering Society Conference of Conference on
4) i

Resources

DATE [79]	TITLE [80]	DOWNLOAD	KEY TOPICS
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23 Mar 2020	Dr Ryan Hoult - early career researcher entry 2020 [89]	0 bytes	[90] (Dativites) ke [1], engineering [2]

Posters

26 JUN 2015

Seismic Assessment and Design Philosophy of Reinforced Concrete Walls in Australia

EARTHQUAKE [1], ENGINEERING [2]

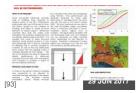
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Seismic Assessment and Design Philosophy of Reinforced Concrete Walls in Australia

EARTHQUAKE [1], ENGINEERING [2]

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Seismic assessment and design philosophy of reinforced concrete walls in Australia

[93] EARTHQUAKE [1], ENGINEERING [2]

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Linked Projects

Cost-effective mitigation strategy for building related earthquake risk [94]

Prof Michael Griffith University of Adelaide [96]



[96]

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