

Carlos Arturo Osorio Sandoval

Curriculum vitae

October 2023

Education

2021	PhD in Civil Engineering Thesis: "BIM-based construction simulation modelling"	<i>University of Nottingham</i>
2015	MEng in Construction Engineering & Management Thesis: "Impact of labour absenteeism on construction activities runtime in housing projects"	<i>Autonomous University of Yucatan</i>
2012	Civil Engineering	<i>Autonomous University of Yucatan</i>

Teaching experience

2022–Present	Assistant Professor <i>Modules:</i> Building Information Modelling Group Design Project (Convenor)	<i>University of Nottingham</i>
2018–2020	Graduate School Teaching Affiliate <i>Modules:</i> Further presentation skills for researchers	<i>Graduate School - University of Nottingham</i>
2016–2020	Demonstrator <i>Modules:</i> Testing of fundamental material properties, Introduction to building information modelling, Further building information modelling, Project planning, BIM Group design project, Construction project management 1	<i>University of Nottingham</i>

Professional associations

2013	Mexican Professional Engineering License Number: 8041013
2020	Fellow of the Higher Education Academy (FHEA) Fellowship reference: PR188502

Other qualifications

February 2019	Preparing to Teach in Higher Education Certificate Awarded by the University of Nottingham.
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Publications

- 2023 Hunt, J. and **C. A. Osorio-Sandoval**. “Assessing embodied carbon in structural models: a building information modelling-based approach”. In: *Buildings* 13.7 (2023), p. 1679
- Osorio-Sandoval, C. A.** et al. “Dataset of characterised construction safety risks and related treatments”. In: *Data in Brief* (2023), p. 109293
- Collinge, W., **C. A. Osorio-Sandoval**, P. Manu, and C. Cheung. “Developing industry 4.0 applications: A social construction of technology approach”. In: *Handbook of Construction Safety, Health and Well-being in the Industry 4.0 Era*. Taylor & Francis, 2023
- 2022 **Osorio-Sandoval, C. A.** et al. “Framework for BIM-Based Simulation of Construction Operations Implemented in a Game Engine”. In: *Buildings* 12.8 (2022), p. 1199
- Collinge, W. H. et al. “BIM-based construction safety risk library”. In: *Automation in Construction* 141 (2022), p. 104391
- 2021 **Osorio-Sandoval, C. A.** et al. “A method to implement prevention through design using 4D BIM”. in: *Proceedings of the Conference CIB W78 2021*. 2021, pp. 158–164
- 2020 **Osorio-Sandoval, C. A.** et al. “Discrete-event simulation and building information modelling based animation of construction activities”. In: *Proceedings of the 18th International Conference on Computing in Civil and Building Engineering. ICCCBE 2020*. 2020, pp. 285–294
- Fadoul, A., W. Tizani, and **C. A. Osorio-Sandoval**. “A knowledge-based model for constructability assessment of buildings using BIM”. in: *Proceedings of the 18th International Conference on Computing in Civil and Building Engineering. ICCCBE 2020*. 2020, pp. 147–159
- 2018 **Osorio-Sandoval, C. A.**, W. Tizani, and C. Koch. “A method for discrete event simulation and building information modelling integration using a game engine”. In: *Advances in Computational Design* 3.4 (2018), pp. 405–418
- Osorio-Sandoval, C. A.**, W. Tizani, C. Koch, and A. Fadoul. “Integration of building information modelling and discrete event simulation within a game engine”. In: *17th International Conference on Computing in Civil and Building Engineering*. 2018
- Fadoul, A., W. Tizani, C. Koch, and **C. A. Osorio-Sandoval**. “A constructability assessment framework for buildings design using building information modelling (BIM)”. in: *17th International Conference on Computing in Civil and Building Engineering*. 2018
- 2017 **Osorio-Sandoval, C. A.**, C. Koch, and W. Tizani. “Computer technology for serious games in education: A literature review”. In: *Proceedings of the 24th EG-ICE International Workshop on Intelligent Computing in Engineering 2017*. EG-ICE. 2017, pp. 239–249
- 2016 **Osorio-Sandoval, C. A.**, J. N. Zaragoza-Grifé, G. A. CoronaSuárez, and J. A. González-Fajardo. “Discrete Event Simulation Analysis of the Effect of Labor Absenteeism on the Duration of Construction Activities in Housing Projects”. In: *International Journal of Engineering Research and Applications* 6.11 (2016), pp. 46–55
- 2014 **Osorio-Sandoval, C. A.** and J. N. Zaragoza-Grifé. “Determinación del impacto del ausentismo de la mano de obra sobre el tiempo de ejecución de las actividades de construcción de vivienda”. In: *Administración y Tecnología para Arquitectura, Diseño e Ingeniería 2014*. Vol. 4. 2014, pp. 153–159

Conferences and seminars

October 2021	CIB W78-LDAC 2021 - <i>Luxembourg</i> Paper title: "A method to implement prevention through design using 4D BIM".
October 2021	Data-driven Insights Webinar: Discover new data solutions from HSE that help you solve your health and safety challenges - <i>Online</i> Presentation title: "Construction Risk Library".
July 2021	XVIII Symposium of Mexican Studies and Students in the UK - <i>Online</i> Presentation title: "BIM-Based construction safety risk knowledge base for prevention through design".
January 2021	CSEI Seminar series - <i>Online</i> Presentation title: "Piloting a new safety BIM tool for industry: data management challenges and opportunities".
August 2020	ICCCBE/CIB W78 Virtual Joint Conference - <i>Online</i> Paper title: "Discrete-event simulation and building information modelling based animation of construction activities".
April 2020	CSEI Seminar series - <i>Nottingham, United Kingdom</i> Presentation title: "A framework to integrate building information modelling and discrete event simulation".
May 2019	Engineering Research Showcase 2019 - <i>Nottingham, United Kingdom</i> Presentation title: "Practice makes perfect: Virtual construction projects".
February 2019	CSEI Seminar series - <i>Nottingham, United Kingdom</i> Presentation title: "Building information modelling and discrete event simulation based serious gaming for construction management education".
June 2018	17 th International Conference on Computing in Civil and Building Engineering - <i>Tampere, Finland</i> Paper title: "Integration of building information modelling and discrete event simulation within a game engine". (Presented by co-author)
May 2018	Engineering Research Showcase 2018 - <i>Nottingham, United Kingdom</i> Poster title: "BIM-based serious gaming for construction management education".
January 2018	CSEI Seminar series - <i>Nottingham, United Kingdom</i> Presentation title: "Building information modelling based serious gaming for construction management education".
July 2017	24 th EG-ICE International Workshop on Intelligent Computing in Engineering - <i>Nottingham, United Kingdom</i> Paper title: "Computer technology for serious games in education: A literature review".
October 2014	8vo. Congreso Internacional en Administración y Tecnología para Arquitectura, Diseño e Ingeniería - <i>Mexico city, Mexico</i> Paper title: "Determinación del impacto del ausentismo de la mano de obra sobre el tiempo de ejecución de las actividades de construcción de vivienda".

Peer reviewer

ASCE	Journal of Construction Engineering and Management
Elsevier	Tunnelling and Underground Space Technology Heliyon
Emerald Group	Construction Innovation
MDPI	Buildings Sustainability Energies International Journal of Environmental Research and Public Health

Funding

2020	Graduate School Travel Prize Awarded by the University of Nottingham to attend the ICCCBE/W78 joint conference. (Changed to virtual format amid COVID-19)
2019	Postgraduate Research Experience Fund Awarded by the University of Nottingham to organise the conference "Academic public engagement on YouTube".
2018–2019	Beca Complemento de Apoyo al Posgrado <i>Scholarship for PhD studies</i> Awarded by the Mexican Ministry of Public Education.
2016–2020	Conacyt al extranjero 2016 <i>Scholarship for PhD studies</i> Awarded by the Council of Science and Technology, Mexico to carry out PhD studies in The University of Nottingham.
2011	PIMES Spring 2011 <i>Scholarship for international mobility</i> Awarded by the Autonomous University of Yucatan to study a semester in the National University of Cordoba, Argentina

Work experience

2022–Present	Assistant Professor in Construction Management <i>Key responsibilities:</i> Identify, conduct and lead original research; supervise postgraduate research students conducting original research; lead and support the development and delivery of content in the Construction Management thematic area; supervise final year undergraduates and taught postgraduates conducting individual projects.	<i>University of Nottingham</i>
2020–2021	Research associate - BIM Risk Library <i>Key responsibilities:</i> Develop, design and deliver tools and techniques for industry in the area of BIM and construction health and safety improvement.	<i>University of Manchester</i>
2018–2020	Resident tutor at Rutland Hall <i>Key responsibilities:</i> To provide all-round practical support to resident students and assist the Warden in the welfare, pastoral care and social needs of the students by promoting discipline and the observation of health and safety and other University regulations.	<i>University of Nottingham</i>
2018–2019	Graduate centre coordinator <i>Key responsibilities:</i> To provide support to the Researcher Training and Development Managers and postgraduate students at one of the Graduate School's Graduate Centres by promoting the Centre, ensuring a regular daily presence at them, dealing with general student queries, supporting local events, activities and Faculty training programmes and ensuring that the facilities are maintained to a high standard.	<i>University of Nottingham</i>
2012–2016	Cost engineer <i>Key responsibilities:</i> Preparing construction programmes and cost estimates, planning and controlling project costs, preparing customer billing processes, resolving issues to ensure the delivery of projects.	<i>Qyder Construcciones, S.A. de C.V</i>
2011–2012	Supervision manager <i>Key responsibilities:</i> Coordinating supervisors for various construction projects within the city, monitoring project progress.	<i>Imadico, S.A. de C.V.</i>
2010–2011	Construction site manager <i>Key responsibilities:</i> Supervising contracted staff, meeting and coordinating subcontractors, preparing site reports, problem solving in various construction projects in the Yucatan State.	<i>APM Constructores</i>
2009–2010	Assistant construction site manager <i>Key responsibilities:</i> Assisting with project management activities in highway overpass projects in the Yucatan State.	<i>Delsa Constructor, S.A. de C.V.</i>

Other activities

2021-Present	Member of commissions W78 and W099 of the International Council for Research and Innovation in Building and Construction (CIB)
2020-Present	Member of the BIM 4 Health & Safety Working group
2019-2020	Member of the organising committee of the XVIII Symposium of Mexican Studies and Students in the UK
2019	Participated in the Ingenuity19 programme, a forum for entrepreneurs and community innovators to come together to explore key challenges facing society
2017–2020	Postgraduate Research Engineering Community (PREC) representative for the Centre for Structural Engineering and Informatics
2017–2018	Treasurer of the Mexican Society of the University of Nottingham