

Curriculum Vitae

Richard Laing
Professor

Architecture and Built Environment

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Research interests

Collaboration; Participation; Co-design; Sustainable Urbanism; Architectural Visualisation.

Qualifications

Architecture, PhD

31 Jul 1999 → 31 Dec 2099

Award Date: 31 Jul 1999

1 Sept 2022 → ... Fellow, Royal Society for the encouragement of Arts, Manufactures & Commerce (RSA)

Activities

Invited presentation to RICS Scotland conference

Richard Laing (Speaker)

26 Apr 2023

PAV - Almere workshop with Planners

Richard Laing (Organiser) & Daria Belkouri (Organiser)

26 Jan 2023

Urbanome

Richard Laing (Participant)

2020 → 2024

ART-Forum

Richard Laing (Participant), David Gray (Participant) & Ditte Bendix Lanng (Participant)

2019 → 2022

Keynote: Report from CHOBE research concerning global surveying education.

Richard Laing (Speaker)

2019

PAV Stimulating the Up-take of shared and electric autonomous Vehicles by local authorities

Richard Laing (Participant), David Gray (Participant) & Daria Belkouri (Participant)

2019 → 2023

Stronghouse

Richard Laing (Participant), David Gray (Participant) & Amar Bennadji (Participant)

2019 → 2023

The State of Global Surveying Education

Richard Laing (Participant) & Michele Victoria (Participant)

2019

Journal of Digital Innovation in the Built Environments (IJDIBE) (Journal)

Richard Laing (Reviewer)

2018 → ...

The Chartered Institute of Architectural Technologists (CIAT) (External organisation)

Richard Laing (Member)

2018 → ...

Civitas PORTIS

Richard Laing (Participant), David Gray (Participant) & Caroline Hood (Participant)

2016 → 2020

The Chartered Institute of Architectural Technologists (CIAT) (External organisation)

Richard Laing (Member)

2016 → ...

Castle to Cathedral to Cashmere

Richard Laing (Participant), Peter Reid (Participant) & Elizabeth Tait (Participant)

2015 → 2016

Carbon responsible transport strategies for the North Sea Area - CARE-North plus

Richard Laing (Participant) & David Gray (Participant)

2013 → 2015

Concept - COLlaborative CrEative design PlaTform

Richard Laing (Participant) & Julian Malins (Participant)

2013 → 2016

Orpheum Theatre, Vancouver

Richard Laing (Participant)

2011

A study of links between Scottish architecture and historic buildings of Nova Scotia

Richard Laing (Participant)

2010 → ...

A 2020 Vision: The Future of the Built Environment Higher Education in Scotland

Richard Laing (Participant), Gerard Buda (Participant), Deborah Roberts (Participant) & Steven Devaney (Participant)

2009 → 2010

Carbon Responsible Transport Strategies for the North Sea Region

Richard Laing (Participant) & David Gray (Participant)

2009 → 2012

PhD examiner

Richard Laing (Examiner)

2007 → ...

Urban Connections: a study of public responses to urban redevelopment proposals in Aberdeen's urban realm

Richard Laing (Participant), Tony Craig (Participant) & Anna Conniff (Participant)

2005 → 2006

Minimum standards for open space: a literature review

Richard Laing (Consultant)

2004

Understanding future environments: active exploration versus passive observation

Richard Laing (Participant), Anna Conniff (Participant) & Tony Craig (Participant)

2004 → 2006

Keynote: Report from EU FP5 Greenspace research

Richard Laing (Speaker)

1 Jun 2003

Greenspace

Richard Laing (Participant)

2001 → 2004

Streetscapes

Richard Laing (Participant), Seaton Baxter (Participant), Robin Webster (Participant), David Miller (Participant) & Anne-Marie Davies (Participant)

2000 → 2001

Research outputs

Rethinking engagement in urban design: reimagining the value of co-design and participation at every stage of planning for autonomous vehicles

Belkouri, D., Khairy, L., Laing, R. & Lanng, D. B., 2 Aug 2023, (E-pub ahead of print) In: Archnet-IJAR.

Border[s]lines Between Isolation and Connection: The Disused Railway in Aberdeen

Zecca, C. & Laing, R., 7 Mar 2023, *Border Urbanism: Transdisciplinary Perspectives*. Zaman, Q. M. & Hall, G. G. (eds.). 1 ed. Cham, Switzerland: Springer, p. 245-266 22 p. (Urban Book Series).

TOPSIS analysis for sustainable redevelopment potential of abandoned infrastructure in Nigeria

Ogunnusi, M., Salman, H. & Laing, R., 17 Jan 2023, In: Built Environment Project and Asset Management. 13, 1, p. 73-88 16 p.

The impacts of multi-stakeholders collaboration on management and mitigation of oil pipeline disasters in Nigeria

Johnson, F. I., Laing, R., Bjeirmi, B. & Leon, M., 9 Jan 2023, In: AIMS Environmental Science. 10, 1, p. 93-124 32 p.

Developing a framework for stakeholders collaboration in the management and mitigation of oil pipeline disasters in Nigeria

Johnson, F. I., Laing, R., Bjeirmi, B. & Leon, M., 25 Dec 2022, In: AIMS Energy. 10, 6, p. 1230-1260 31 p.

Being there: capturing and conveying noisy slices of walking in the city

Belkouri, D., Lanng, D. B. & Laing, R., 2 Nov 2022, In: Mobilities. 17, 6, p. 914-931 18 p.

Examining the causes and impacts of pipeline disasters in Nigeria

Johnson, F. I., Laing, R., Bjeirmi, B. & Leon, M., 27 Sept 2022, In: AIMS Environmental Science. 9, 5, p. 636-657 22 p.

Predicting Energy Savings of the UK Housing Stock under a Step-by-Step Energy Retrofit Scenario towards Net-Zero

Bennadji, A., Seddiki, M., Alabid, J., Laing, R. & Gray, D., 22 Apr 2022, In: Energies. 15, 9, 18 p., 3082.

A concept design stages protocol to support collaborative processes in architecture, engineering and construction projects

Leon, M. & Laing, R., 12 Apr 2022, In: Journal of Engineering, Design and Technology. 20, 3, p. 777-799 23 p.

New scenarios for safe mobility in urban areas: emerging topics from an international debate

Belkouri, D., Laing, R. & Gray, D., 31 Jan 2022, In: TeMA Journal of Land Use, Mobility and Environment . 2022, p. 167-179 12 p.

Shifting perspectives on autonomous vehicles: using laser scanning technology to engage the public via the analysis of journeys seen 'through the eyes' of autonomous vehicles

Belkouri, D., Laing, R. & Gray, D., 30 Jan 2022, In: *TeMA Journal of Land Use, Mobility and Environment* . 2022, Special Issue 1, p. 167-179 13 p.

Through the eyes of Autonomous Vehicles – using laser scanning technology to engage the public via the analysis of journeys seen from a different perspective

Belkouri, D., Laing, R. & Gray, D., 1 Jan 2022, In: *Transportation Research Procedia*. 60, p. 496-503 8 p.

Review of Existing Energy Retrofit Decision Tools for Homeowners

Seddiki, M., Bennadji, A., Laing, R., Gray, D. & Alabid, J. M., 12 Sept 2021, In: *Sustainability*. 13, 18, 22 p., 10189.

Expanding depth and meaning within urban design processes through the application of complexity and evolutionary theories

Miguel, M., Laing, R., Leon, M. & Baxter, S., 26 Aug 2021, In: *Journal of Architecture and Urbanism*. 45, 2, p. 131-142 12 p.

Infrastructure development and abandonment

Ogunnusi, M., Salman, H. & Laing, R., 31 Jul 2021, In: *Proceedings of International Structural Engineering and Construction*. 8, 1, 6 p., INF-08.

Pedestrian routes and accessibility to urban services: An urban rhythmic analysis on people's behaviour before and during the Covid-19

Laing, R., Zecca, C., Gaglione, F. & Gargiulo, C., 17 Aug 2020, In: *TeMA - Journal of Land Use*.

Built Heritage Modelling and Visualisation: the potential to engage with issues of heritage value and wider participation

Laing, R., Jun 2020, In: *Developments in the Built Environment*. 4, 7 p., 100017.

Reading underused urban spaces: Aberdeen views

Zecca, C. & Laing, R., 1 May 2020, In: *Sustainable Cities and Society*. 56, 102108.

Digital heritage as a route towards social engagement

Laing, R., Leon, M., Herbert, C. & Roberts, C., 1 Jan 2020, *Data, Matter, Design: Strategies in Computational Design*. Taylor & Francis, p. 266-271 6 p.

Inclusive Design for Immersive Spaces

Crabb, M., Clarke, D., Alwaer, H., Heron, M. & Laing, R., 1 Apr 2019, In: *Design Journal*. 22, sup1, p. 2105-2118 14 p.

Digital Participation and Collaboration in Architectural Design

Laing, R., 16 Aug 2018, 1st ed. London: Taylor & Francis. 160 p.

An evaluation of sustainable construction perceptions and practices in Singapore

Yin, B. C. L., Laing, R., Leon, M. & Mabon, L., 1 May 2018, In: *Sustainable Cities and Society*.

The application of major road infrastructure to support and drive sustainable urban mobility

Laing, R., Hood, C., Gray, D., Tait, E., Napier, L. & Simpson, A., Apr 2018, *1st International conference on new horizons in green civil engineering (NHICE 01)*. Victoria: University of Victoria, Vol. 1.

Assessing the Acceptability of Alternative Cladding Materials in Housing: Theoretical and Methodological Challenges

Laing, R., Craig, T., Edge, M. & Abbott, L., 15 Oct 2017, *Housing, Space and Quality of Life*. García Mira, R., Uzzell, D. L., Real, J. E. & Romay, J. (eds.). London: Taylor & Francis, 11 p.

Reflection 2 Shifting Research Paradigms: Urbanism and Culture

Laing, R., 9 Jul 2017

Exploring Visual Asset Management collaboration: Learning from the oil and gas sector

Leon, M., Ahiaga-Dagbui, D., Fleming, C. & Laing, R., 2017, *Association of Researchers in Construction Management, ARCOM - 33rd Annual Conference 2017, Proceeding*.

Delivering lower carbon urban transport choices: European ambition meets the reality of institutional (mis)alignment

Laing, R., Gray, D. & Docherty, I., 29 Aug 2016, In: *Environment and Planning A*.

(Re)presenting heritage: Laser scanning and 3D visualisations for cultural resilience and community engagement

Laing, R., Tait, E., Reid, P. & Burnett, S., 11 Mar 2016, In: *Journal of Information Science*.

Explorations of an urban intervention management system: A reflection on how to deal with urban complex systems and deliver dynamic change

Laing, R., Miguel, M. & Zaman, Q., 2016, *Digital futures and the city of today: new technologies and physical spaces*.

Development of a computational design application for interactive surfaces

Leon, M., Doolan, D. C., Laing, R., Malins, J. & Salman, H., 18 Sept 2015, *Proceedings - Information Visualisation: Computer Graphics, Imaging and Visualisation, IV 2015*. Bouali, F., Counsell, J., Kernbach, S., Bannatyne, M. W. M., Counsell, J., Pun, C. M., Trutschl, M., Banissi, E., Huang, W., Venturini, G., Lin, C-C., Ursyn, A., Burkhard, R., Cvek, U., Lin, F., Wyeld, T. G., Zhang, J. J., Eppler, M. J., Grinstein, G., Sarfraz, M. & Marchese, F. T. (eds.). Institute of Electrical and Electronics Engineers Inc., p. 506-511 6 p. 7272649. (Proceedings of the International Conference on Information Visualisation; vol. 2015-September).

Monuments visualization: From 3D scanned data to a holistic approach, an application to the city of Aberdeen

Laing, R., Leon, M. & Isaacs, J., 18 Sept 2015, *Proceedings - Information Visualisation: Computer Graphics, Imaging and Visualisation, IV 2015*. Bouali, F., Counsell, J., Kernbach, S., Bannatyne, M. W. M., Counsell, J., Pun, C. M., Trutschl, M., Banissi, E., Huang, W., Venturini, G., Lin, C-C., Ursyn, A., Burkhard, R., Cvek, U., Lin, F., Wyeld, T. G., Zhang, J. J., Eppler, M. J., Grinstein, G., Sarfraz, M. & Marchese, F. T. (eds.). Institute of Electrical and Electronics Engineers Inc., p. 512-517 6 p. 7272650. (Proceedings of the International Conference on Information Visualisation; vol. 2015-September).

Making Collaboration Work: Application Of A Conceptual Design Stages Protocol For Pre-BIM Stages

Laing, R., Leon, M., Malins, J. & Salman, H., Sept 2015, *BIM in Design, Construction and Operations*. WIT Press

Scan To BIM: The Development Of A Clear Workflow For The Incorporation Of Point Clouds Within A BIM Environment

Laing, R., Leon, M., Isaacs, J. & Georgiev, D., Sept 2015, *BIM in Design, Construction and Operations*. WIT Press

Urban planning and climate change mitigation: Using virtual reality to support the design of a university master plan extension

Bennadji, A., Laing, R. & Gray, D., 28 Feb 2015, *Emerging Issues, Challenges, and Opportunities in Urban E-Planning*. IGI Global, p. 210-229 20 p.

Application of interactive surfaces to support computer mediated collaborative design environment

Leon, M., Doolan, D. C., Laing, R., Malins, J. & Salman, H., 18 Sept 2014, *Proceedings - 2014 18th International Conference on Information Visualisation: Visualisation, BioMedical Visualization, Visualisation on Built and Rural Environments and Geometric Modelling and Imaging, IV 2014*. Banissi, E., Bannatyne, M. W. M., Marchese, F. T., Sarfraz, M., Ursyn, A., Venturini, G., Wyeld, T. G., Cvek, U., Trutschl, M., Grinstein, G., Geroimenko, V., Kenderdine, S., Kenderdine, S., Kenderdine, S. & Bouali, F. (eds.). Institute of Electrical and Electronics Engineers Inc., p. 281-286 6 p. 6902916. (Proceedings of the International Conference on Information Visualisation).

Community engagement and participation with 3D cultural heritage visualisations

Laing, R. & Tait, E., 2014, April ed.

Development and Testing of a Design Protocol for Computer Mediated Multidisciplinary Collaboration during the Concept Stages with Application to the Built Environment

Leon, M., Laing, R., Malins, J. & Salman, H., 2014, In: *Procedia Environmental Sciences*. 22, p. 108-119 12 p.

Governance and policy challenges of implementing urban low-carbon transport initiatives

Laing, R., Tait, E. & Gray, D., 2014, In: *Local Economy*. 29, 1-2

Integrating rapid 3D data collection techniques to support BIM design decision.

Laing, R., Mahdjoubi, L., Leon, M. & Scott, J., 2014, In: *Procedia Environmental Sciences*.

Supporting the early stages of the product design process: Using an integrated collaborative environment

Malins, J., Liapis, A., Kantorovitch, J., Markopoulos, P., Laing, R., Didaskalou, A., Coninx, K. & Maciver, F., 2014, *Proceedings of the 16th International Conference on Engineering and Product Design Education: Design Education and Human Technology Relations, E and PDE 2014*. Wits, W., Bohemia, E., Eggink, W., Eger, A., Kovacevic, A. & Parkinson, B. (eds.). Institution of Engineering Designers, The Design Society, p. 166-171 6 p. (Proceedings of the 16th International Conference on Engineering and Product Design Education: Design Education and Human Technology Relations, E and PDE 2014).

The impact of computer aided architectural design programs on conceptual design in an educational context

Salman, H., Laing, R. & Conniff, A., 2014, In: *Design Studies*.

Providing real-estate services through the integration of 3D laser scanning and building information modelling

Mahdjoubi, L., Moobela, C. & Laing, R., Dec 2013, In: *Computers in Industry*. 64, 9, p. 1272-1281 10 p.

Virtual Juxtapositioning of Architecture from the Scottish Diaspora: An Application of Building Information, Preservation and Modelling Technology

Laing, R. & Scott, J. R., 1 Jan 2013, In: *The International Journal of the Constructed Environment*. 3, 2, p. 1-12

Built heritage digitization: Opportunities afforded by emerging cloud based applications

Scott, J., Laing, R. & Hogg, G., 2013, In: *Proceedings of the International Conference on Cloud Computing Technology and Science, CloudCom*. 2, p. 88-93 6 p., 6735401.

Cloud and computer mediated collaboration in the early architectural design stages: A study of early design stage collaboration related to bim and the cloud

Leon, M. & Laing, R., 2013, In: *Proceedings of the International Conference on Cloud Computing Technology and Science, CloudCom*. 2, p. 94-99 6 p., 6735402.

Facilitating meaningful collaboration in architectural design through the adoption of BIM (Building Information Modelling)
Harty, J. & Laing, R., 2013, *Proceedings of the 2013 IEEE 17th International Conference on Computer Supported Cooperative Work in Design, CSCWD 2013*. p. 502-508 7 p. 6581013. (Proceedings of the 2013 IEEE 17th International Conference on Computer Supported Cooperative Work in Design, CSCWD 2013).

How to save a theatre: The Orpheum, Vancouver

Laing, R., 2013, In: *Structural Survey*. 31, 5

Identifying Sustainability Requirements in the Refurbishment of Hospitals: The Built Estate, Models of Care, and the Challenge of Adaptation Planning

Wilson, G., Kishk, M. & Laing, R., 2013, In: *Journal of Public Health Frontier*. 2, 2, p. 114-121

Processing of high definition scan data for use within building conservation practice

Laing, R. & Emmajane, M., 2013, In: *Journal of Building Survey, Appraisal and Valuation*. 1, 4, p. 345 13 p.

Regenerating Aberdeen: a vision for a thriving and vibrant city centre

Laing, R., Cockburn, D., Deveci, G., Donaldson, B., Gray, D., Harris, P., McClean, D., Martin, A. & Owen, A., 2013

Sustainable Approach to Regenerating Residential Form and Density: Case in Dhaka

Zaman, Q. M. M-U., Laing, R. & Ducruet, C. (ed.), 2013, In: *Urban Studies Research*. 2013

Towards a computer mediated methodology for collaborative design during the early architectural design stages
Leon, M. & Laing, R., 2013, *Proceedings of the 2013 IEEE 17th International Conference on Computer Supported Cooperative Work in Design, CSCWD 2013*. p. 489-495 7 p. 6581011. (Proceedings of the 2013 IEEE 17th International Conference on Computer Supported Cooperative Work in Design, CSCWD 2013).

Towards More Sustainable Built Environments

Laing, R., 2013, *Green Energy and Technology*. 9783319024776 ed. Springer, p. 11-18 8 p. (Green Energy and Technology; vol. 0, no. 9783319024776).

Traffic control and CO2 reduction: utilisation of virtual modelling within University estates master planning

Laing, R., Bennadji, A. & Gray, D., 2013, In: *International Journal of E-Planning Research*. 2, 1, p. 43-57

Built Environment Higher Education in Scotland: Pressures, Challenges and Change in Uncertain Times

Laing, R., Buda, G., Devaney, S. & Roberts, D., 1 Aug 2011, In: *CEBE Transactions*. 8, 1, p. 41-59

3D high-definition scanning: Data recording and virtual modelling of the built heritage

Laing, R. & Scott, J., 1 Jan 2011, In: *Journal of Building Appraisal*. 6, 3, p. 201-211 11 p.

Remnants of Scottish stone architecture in Nova Scotia.

Laing, R. & Scott, J., 2011, In: *International Journal of Heritage Studies*. 17, 5

The role of plant clinics in sustainability of urban green spaces in Tehran

Hosseini, S. J. F. & Laing, R., 2011, In: *International Journal of Sustainable Development World Ecology*. 18, 2, p. 128-133 6 p.

Trust and risk in collaborative environments

Harty, J. & Laing, R., 2011, *Proceedings - 15th International Conference on Information Visualisation, IV 2011*. p. 558-563 6 p. 6004101. (Proceedings of the International Conference on Information Visualisation).

A comparison of active navigation and passive observation of desktop models of future built environments

Conniff, A., Craig, T., Laing, R. & Galán-Díaz, C., 2010, In: *Design Studies*. 31, 5, p. 419-438 20 p.

Removing barriers to BIM adoption: clients and code checking to drive changes.

Harty, J. & Laing, R., 2010, *Handbook of research on Building Information Modeling and construction informatics: concepts and technologies*. . Underwood, J. & Isikdag, U. (eds.). New York: IGI Global, p. 546-560

The management of sharing, integrating, tracking, and maintaining data-sets, is a new and rather complex task

Harty, J. & Laing, R., 2010, *Proceedings - 2010 14th International Conference Information Visualisation, IV 2010*. p. 610-613 4 p. 5571116. (Proceedings of the International Conference on Information Visualisation).

The doocots of Aberdeenshire: An application of 3D scanning technology in the built heritage

Brown, N., Laing, R. & Scott, J., 1 Mar 2009, In: *Journal of Building Appraisal*. 4, 4, p. 247-254 8 p.

Drivers for change in construction procurement and its impact on management

Harty, J. & Laing, R., 2009, *Proceedings - 2009 2nd International Conference in Visualisation, VIZ 2009*. p. 138-143 6 p. 5230730. (Proceedings - 2009 2nd International Conference in Visualisation, VIZ 2009).

The Application of Visual Environmental Economics in the Study of Public Preference and Urban Greenspace: Environment and Planning B: Planning and Design

Laing, R., Davies, A-M., Miller, D., Conniff, A., Scott, S. & Morrice, J., 2009, In: *Environment and Planning B: Urban Analytics and City Science*. 36, 2, p. 355-375 21 p.

20th Century cinemas: A complex challenge for the visualisation of culture, structure and history
Laing, R., 2008, *Proceedings - International Conference Visualisation, VIS 2008, Visualisation in Built and Rural Environments*. p. 43-48 6 p. 4568671. (Proceedings - International Conference Visualisation, VIS 2008, Visualisation in Built and Rural Environments).

An integrated system to support the selection of hospital finishes
Laing, R. & Kishk, M., 2008, *COBRA 2008 - Construction and Building Research Conference of the Royal Institution of Chartered Surveyors*. (COBRA 2008 - Construction and Building Research Conference of the Royal Institution of Chartered Surveyors).

Proceedings - International Conference Visualisation, VIS 2008, Visualisation in Built and Rural Environments: Preface
Bannatyne, M., Counsell, J., Cowell, A. J., Dastbaz, M., Hou, M., Khosrowshahi, F., Laing, R., Scarano, V., Tian, G. Y., Ursyn, A. & Zhang, J. J., 2008, In: *Proceedings - International Conference Visualisation, VIS 2008, Visualisation in Built and Rural Environments*. p. vii 4568661.

The Changing Role of CAAD in the Architectural Design Studio

Salman, H., Laing, R. & Conniff, A., 2008, In: *The Built & Human Environment Review*. 1, p. 25-39

The impact of coded digital design of architectural process and management
Harty, J. & Laing, R., 2008, *Proceedings - International Conference Visualisation, VIS 2008, Visualisation in Built and Rural Environments*. p. 49-54 6 p. 4568672. (Proceedings - International Conference Visualisation, VIS 2008, Visualisation in Built and Rural Environments).

A generic finishes database for healthcare facilities

Kishk, M., Laing, R., Scott, J. & Edge, M., 2007, *Association of Researchers in Construction Management, ARCOM 2007 - Proceedings of the 23rd Annual Conference*. p. 883-892 10 p. (Association of Researchers in Construction Management, ARCOM 2007 - Proceedings of the 23rd Annual Conference; vol. 2).

Design and use of a virtual heritage model to enable a comparison of active navigation of buildings and spaces with passive observation

Laing, R., Conniff, A., Craig, T., Diaz, C. G. & Scott, S., 2007, In: *Automation in Construction*. 16, 6, p. 830-841 12 p.

Passive solar design of mass housing: Ensuring environmental improvements at the planning stage for suburban housing
Scott, J., Edge, M. & Laing, R., 1 Sept 2006, In: *Journal of Building Appraisal*. 2, 3, p. 207-222 16 p.

Walking participants through a virtual model: How we got there and its implications

Galan-Diaz, C., Conniff, A., Craig, T., Laing, R. & Scott, S., Sept 2006, In: *Cognitive Processing*. 7, SUPPL. 1, p. S33-S36

Researching value – Dr. Richard Laing

Laing, R., Aug 2006, *New aspects of Quantity Surveying Practice*. Cartlidge, D. (ed.). 2 ed. Taylor & Francis, p. 273-292

Urban green space: The incorporation of environmental values in a decision support system

Laing, R., Miller, D., Davies, A. M. & Scott, S., May 2006, In: *Electronic Journal of Information Technology in Construction*. 11, p. 177-196 20 p.

An extended whole-life application for the selection of hospital finishes

Kishk, M., Laing, R. & Edge, M., 2006, *Association of Researchers in Construction Management, ARCOM 2006 - Procs 22nd Annual ARCOM Conference*. p. 719-728 10 p. (Association of Researchers in Construction Management, ARCOM 2006 - Procs 22nd Annual ARCOM Conference; vol. 2).

CAAD Visualization Techniques Mediate the Conceptual Design Process as a Thinking Tool: Reflection on action study
Salman, H., Laing, R. & Conniff, A., 2006, In: *Proceedings of the International Conference on Education and Research in Computer Aided Architectural Design in Europe*. p. 700-708 9 p.

Development of a virtual heritage model to enable a comparison of active navigation with passive observation
Laing, R., Scott, S., Conniff, A., Craig, T. & Diaz, C. G., 2006, *Information Visualization 2006, IV06*. p. 325-330 6 p. 1648280. (Proceedings of the International Conference on Information Visualisation).

Combining visualization with choice experimentation in the built environment

Laing, R., Davies, A-M. & Scott, S., 2005, *Visualization In Landscape And Environmental Planning: Technology And Applications*. Bishop, I. & Lange, E. (eds.). Spon Press, p. 212-219

The Application of 3D Modelling Techniques in Built Environment Evaluation

Laing, R., Davies, A-M., Scott, S. & Hargreaves, A., 2004, In: *Studies in Regional and Urban Planning*. 10, p. 119-127

Maintenance and repair issues for stone cleaned sandstone and granite building façades

Young, M. E., Urquhart, D. C. M. & Laing, R., 1 Sept 2003, In: *Building and Environment*. 38, 9-10, p. 1125-1131

The consequences of past stonecleaning intervention on future policy and resources

Laing, R., Young, M., Ball, J., Cordiner, P. & Hulls, J., 2003, *Historic Scotland*.

Utilisation of computer visualisation in the study of public preference and urban greenspace

Laing, R., Davies, A. M. & Scott, S., 2003, *Proceedings - 7th International Conference on Information Visualization: An International Conference on Computer Visualization and Graphics Applications, IV 2003*. Institute of Electrical and Electronics Engineers Inc., p. 222-227 6 p. 1217983. (Proceedings of the International Conference on Information Visualisation; vol. 2003-January).

Designing Choice Experiments Using Focus Groups: Results from an Aberdeen Case Study

Davies, A-M. & Laing, R., 1 Sept 2002, In: *Forum Qualitative Sozialforschung / Forum: Qualitative Social Research*. 3, 3

TAN 25 - Maintenance and Repair of Cleaned Stone Buildings

Laing, R., Young, M., Urquhart, D. C. M. & Ball, J., 1 Mar 2002, *Edinburgh: Historic Scotland*. 98 p. (Technical Advice Notes; no. 25)

Combining visualisation and choice experiments in built environment research

Davies, A-M., Laing, R. & Scott, S., 2002, *Proceedings - 6th International Conference on Information Visualisation, IV 2002*. Institute of Electrical and Electronics Engineers Inc., p. 785-790 6 p. 1028870. (Proceedings of the International Conference on Information Visualisation; vol. 2002-January).

Stone Cleaning: Comparing Perceptions with Physical and Financial Implications: Journal of Architectural Conservation

Ball, J., Laing, R. & Young, M., 2000, In: *Journal of Architectural Conservation*. 6, 2, p. 47-62 16 p.

Stone cleaning: A life cycle cost model

Laing, RA., Al-Hajj, A., Ball, J., Scott, J. & Young, ME., 1999, *DURABILITY OF BUILDING MATERIALS AND COMPONENTS 8, VOLS 1-4, PROCEEDINGS*. p. 1739-1745

Survey results regarding attitude towards stonecleaning of building sandstones

Young, ME., Ball, J. & Laing, R., 1999, *DURABILITY OF BUILDING MATERIALS AND COMPONENTS 8, VOLS 1-4, PROCEEDINGS*. p. 635-644

Stone cleaning and its effect on property market selling price: Journal of Property Research

Laing, R. A. & Urquhart, D. C. M., 1997, In: *Journal of Property Research*. 14, 4, p. 329-336 8 p.

Impacts

Contribution to Observer article

Richard Laing (Participant)

Invited keynote presentation to RICS Scotland conference 2023

Richard Laing (Participant)

Judging panel for the QS Reimagine Education Awards 2023

Richard Laing (Participant)

Keynote: Emergency summit on Union Street, Aberdeen

Richard Laing (Participant)

Workshop: Autonomous vehicles: putting people at the heart of the machine

Richard Laing (Participant), Daria Belkouri (Participant) & Ditte Bendix Lannig (Participant)