Dr. RICARDO MOYA-BARBERA

Architecture Through Systems

Architectural Educator | Researcher | Architect | Structural Engineer

B. Arch | B. Eng | MArch | MAAPUD | Ph.D.

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ACADEMIC PROFILE

Architect, Structural Engineer, educator, and researcher with international experience across Canada, Spain, and Ecuador. My work is guided by Architecture Through Systems, integrating architectural design, building science, research, and professional practice through a systems-based approach to environmental and societal challenges.

ACADEMIC APPOINTMENTS

University of Calgary
Calgary, Canada

Sessional Instructor | School of Architecture, Planning and Landscape | *2025 - Present*
Teaching undergraduate design studios, structures, history, and experiential learning within the Bachelor of Design in City Innovation (BDCI). Studio Coordinator for DSGN 203, leading a first-year design studio with 200+ students and mentoring nine Teaching Fellows.

UTE University
Quito, Ecuador

Associate Dean - Architecture | Faculty of Architecture and Urbanism (FAU) | *2018 - 2020*
Led curriculum development, accreditation, faculty mentoring, programme assessment, and strategic planning within an accredited professional architecture programme.

Assistant Professor | Faculty of Architecture and Urbanism (FAU) | *2016 - 2020*
Taught design studios, structural design, building technology, and supervised undergraduate and graduate theses.

Central University of Ecuador
Quito, Ecuador

Sessional Instructor | Faculty of Geology, Mines, Petroleum and Environmental Engineering (FIGEMPA) | *2016*
Taught foundational mathematics and physics within an accredited programme.

ACADEMIC AFFILIATIONS

Universitat Politècnica de València
Valencia, Spain

Graduate Research Co-advisor | Master's in Advanced Architecture, Landscape, Urban Planning and Design | *2016 - Present*
Co-advised graduate research in architecture, mentoring students in research design, methodology, critical inquiry, and thesis development in collaboration with faculty.

EDUCATION

Universitat Politècnica de València
Doctoral School

Ph.D. in Architecture, Building, Urban Planning and Landscape

Department and research team of Construction Technology

2025 | Cum Laude | International Mention | Nominated for Doctoral Thesis Excellence Award 2025

Dissertation: *"Strategies to Improve Flood Resilience of Buildings. The Case of Vega Baja County"*

Higher Technical School of Architecture

Master's in Advanced Architecture, Landscape, Urban Planning and Design

Specialization in Advanced Technology in Architecture and Urban Planning

2015 | Graduated with Honors | Thesis Awarded Highest Distinction

Master´s Thesis: *"Methodological Proposal to Estimate Seismic Vulnerability and Damage in Buildings of the Valencian Community" (Translation from the original title in Spanish)*

School of Civil Engineering

Professionally Accredited Bachelor's in Public Works Engineering (Civil Engineering)

Specialization in Civil Construction (Structural Engineering)

2015 | Thesis Awarded Highest Distinction

Bachelor´s Thesis: *"Structural and Constructive Study of a High-Rise Building in New York (USA): General Concept, Structural Design, and High-Rise Construction" (Translation from the original title in Spanish)*

Higher Technical School of Architecture

Professionally Accredited Bachelor's in Architecture

2011 | B. Arch + MAA

Five-year professional degree granting direct access to architectural licensure; subsequently recognized in Spain as equivalent to a four-year undergraduate degree plus Master of Architecture; WES (Canada) equivalency: Undergraduate Program + Master of Architecture.

Bachelor´s Thesis: *"Socio-Cultural Center in El Cabañal, Valencia, Spain" (Translation from the original title in Spanish)*

UNIVERSITY TEACHING EXPERIENCE

Teaching Philosophy

I approach architectural education as an integrative practice in which design, technical knowledge, environmental performance, material intelligence, history, and emerging technologies inform one another. Through studio-based and experiential learning, I connect conceptual exploration with technical rigour while encouraging independent critical judgement, interdisciplinary collaboration, and thoughtful use of digital and emerging technologies as tools that strengthen architectural thinking.

Academic Teaching Profile

Years of University Teaching	6+
Institutions	4
Countries	Canada, Ecuador, Spain
Academic Leadership	Associate Dean · Studio Coordinator
Curriculum Coverage	First Year – Master's
Design Studios	Foundation · Intermediate · Advanced · Graduate
Technical & Scientific Foundations	Structures · Building Science · Building Technology · Mathematics · Physics
Thesis Advising & Examination	Undergraduate Capstone · Professional & Research Master's · 39 Theses
Teaching Recognition	Student's Union Teaching Excellence Award

University of Calgary
School of Architecture, Planning and Landscape (SAPL)
Calgary, Canada

Sessional Instructor | 2025 – Present | Bachelor of Design in City Innovation (BDCI)

Teach across the BDCI undergraduate curriculum in design studios, architectural structures, history and theory, and experiential learning, including studio coordination, innovative-integrated pedagogy, and Teaching Fellow mentorship. Teaching emphasizes transscalar thinking, conceptual design, technical rigour, and environmental performance.

DESIGN STUDIO EDUCATION

Led first-, second-, and third-year design studios connecting conceptual thinking, material exploration, environmental performance, and social engagement across multiple scales. Studio projects incorporated iterative design, collaborative learning, interdisciplinary reviews, and AI-assisted visualization to reinforce critical judgment.

TECHNICAL EDUCATION

Teach architectural structures through structural behaviour, equilibrium, and force paths, connecting analytical reasoning, digital simulation, and physical experimentation to architectural design.

HISTORY, THEORY & COMMUNICATION

Developed and delivered courses connecting historical inquiry with contemporary architectural thinking through discussion-based, multimodal, and creative forms of communication and learning. Integrated AI-assisted activities to support critical analysis, conceptual understanding, and communication.

EDUCATIONAL LEADERSHIP & INNOVATION

Served as Studio Coordinator for DSGN 203, a first-year studio enrolling over 200 students; mentored nine Teaching Fellows and contributed to curriculum coordination, assessment planning, and studio pedagogy. Implemented scaffolded and student-centred learning strategies. Recipient of the University of Calgary Students' Union Teaching Excellence Award.

UTE University
Faculty of Architecture and Urbanism (FAU)
Quito, Ecuador

Assistant Professor & Associate Dean | 2016 – 2020 & 2018 – 2020 | Professionally Accredited Bachelor of Architecture (B.Arch + MAA)

Taught across every stage of the professional architecture curriculum, from foundational technical sciences to graduate research and thesis supervision, while serving as Assistant Professor and Associate Dean.

DESIGN STUDIO EDUCATION

Led studios from intermediate design through advanced comprehensive design, capstone projects, graduate studios, and thesis supervision. Teaching integrated spatial quality, structural logic, environmental performance, material expression, and social responsibility across multiple scales.

TECHNICAL EDUCATION

Developed and delivered technical courses in structural systems and analysis, reinforced concrete and steel design, and building technology, integrating analytical reasoning, structural behaviour, construction systems, and architectural thinking.

RESEARCH MENTORSHIP

Supervised Bachelor of Architecture capstone projects, theses, and graduate research, while serving as thesis examiner and reviewer across undergraduate and master's programmes.

PROFESSIONAL INTEGRATION

Integrated professional practice through design-build initiatives, community engagement, interdisciplinary collaboration, and post-disaster reconstruction projects.

ACADEMIC LEADERSHIP

As Associate Dean, contributed to curriculum development, academic planning, accreditation, faculty mentoring, programme assessment, student advising, and institutional strategic initiatives.

TEACHING PORTFOLIO OVERVIEW

My teaching experience spans the undergraduate and graduate architecture curriculum, from foundational design and technical education to advanced studios, graduate teaching, and thesis supervision across accredited architecture and engineering programmes in Canada and Ecuador.

Teaching Experience	Summary
Different courses developed and taught	20
Total course offerings	45
Undergraduate studios & first seven semesters of professional Bachelor in Architecture	6
Graduate studios & last three semesters of professional Bachelor in Architecture	2
Technical courses	10
Thesis supervised	11
Thesis examined	29

DESIGN STUDIO – URBANISM & PLANNING

Course	Institution	Level	Offerings | Years
Design Thinking and the City Studio (DSGN 203)	UofC – SAPL[1]	Y1	1x | 2026
Transscalar Design Studio I (DSGN 301)	UofC – SAPL[1]	Y2	2x | 2026, 2025
Experiential Learning in Design and City Innovation (DSGN 500)	UofC – SAPL[1]	Y3 & Y4	1x | 2026
Transscalar Design Studio II (DSGN 304)	UofC – SAPL[1]	Y2	1x | 2026
Design Studio IV	UTE – FAU[2]	Y3	4x | 2019, 2017, 2016
Design Studio V	UTE – FAU[2]	Y3	3x | 2018, 2016
Design Studio VII	UTE – FAU[2]	Y4	6x | 2019, 2018, 2017
Design Studio VIII	UTE – FAU[2]	Y5	1x | 2018
Planning and Urbanism II	UTE – FAU[2]	Y4	1x | 2019

BUILDING SCIENCE – STRUCTURES

Course	Institution	Level	Offerings | Years
Introduction to Structures (DSGN 434)	UofC – SAPL[1]	Y3	1x | 2026
Structural Design I	UTE – FAU[2]	Y2	1x | 2017
Structural Design II	UTE – FAU[2]	Y3	4x | 2018, 2017, 2016
Structural Studio I – Concrete Structures	UTE – FAU[2]	Y3	5x | 2017, 2016
Structural Studio II – Steel Structures	UTE – FAU[2]	Y4	2x | 2019, 2016

BUILDING SCIENCE – CONSTRUCTION & SUSTAINABLE DESIGN – SCIENTIFIC FOUNDATIONS

Course	Institution	Level	Offerings | Years
Constructive Technology II	UTE – FAU[2]	Y2	1x | 2016
Constructive Design I	UTE – FAU[2]	Y3	3x | 2017, 2016
Constructive Design II	UTE – FAU[2]	Y3	2x | 2017, 2016
Mathematics I	FIGEMPA[3]	Y1	2x | 2016
Physics II	FIGEMPA[3]	Y2	2x | 2016

HISTORY, THEORY & COMMUNICATION

Course	Institution	Level	Offerings | Years
Histories of Innovation in the Designed Environment (DSGN 221)	UofC – SAPL[1]	Y1	2x | 2026, 2025

UNDERGRADUATE AND GRADUATE SUPERVISION & THESIS

Activity	Institution	Offerings | Years
Research Master's Thesis Co-advisor	UPV[4]	2x | 2016, 2026
Professional Bachelor's (Undergraduate Capstone & Professional Master's thesis) Thesis Supervisor	UTE – FAU[2]	8x | 2016 – 2020
Professional Bachelor's (Undergraduate Capstone & Professional Master's thesis) Thesis Examiner	UTE – FAU[2]	29x | 2016 – 2020

[1]UofC – SAPL: University of Calgary – School of Architecture, Planning and Landscape

[2]UTE – FAU: UTE University – Faculty of Architecture and Urbanism

[3]FIGEMPA: Central University of Ecuador – Faculty of Geology, Mines, Petroleum and Environmental Engineering

[4]UPV – Universitat Politècnica de València

ACADEMIC LEADERSHIP & INSTITUTIONAL DEVELOPMENT

UTE University
Faculty of Architecture and Urbanism (FAU)
Quito, Ecuador

Associate Dean | 2018 – 2020

Served as Associate Dean of the Professional Bachelor of Architecture, overseeing curriculum development, programme planning, faculty mentoring, accreditation, quality assurance, and strategic initiatives.

CURRICULUM DEVELOPMENT & ACADEMIC INNOVATION

Led curriculum revisions strengthening vertical and horizontal integration across the architecture programme and supporting accreditation requirements; contributed to interdisciplinary educational initiatives.

FACULTY LEADERSHIP & QUALITY ENHANCEMENT

Coordinated faculty development through syllabus review, programme assessment, mentoring, and collaborative curriculum planning.

ACADEMIC PLANNING & STUDENT SUCCESS

Directed academic planning, scheduling, advising, and operational processes supporting student progression and academic support.

Curriculum Development – Faculty Master's Degree Committee

Contributed to the development of a proposed Master's programme in Structures and Advanced Construction, including its European Credit Transfer and Accumulation System (ECTS)-based academic framework, curriculum planning, course sequencing, and programme structure.

Community-Based & International Educational Leadership Academic Lead | Community Bond Project: "A Complete Reconstruction Proposal: Architecture in Motion in San José de Chamanga"

Led community-engaged and international educational initiatives connecting students, faculty, professionals, and communities through multidisciplinary design. Coordinated the San José de Chamanga Community Bond Project following the 2016 Ecuador earthquake, guiding multidisciplinary teams of faculty and students in reconstruction proposals spanning landscape, urban design, and architecture. Served as instructor in two editions of WinAReQ International Workshop in Architecture and Landscape (2016, 2019), addressing post-earthquake reconstruction and urban transformation through collaborative design.

University of Calgary
School of Architecture, Planning and Landscape (SAPL)
Calgary, Canada

Studio Coordinator

Coordinated DSGN 203, a first-year design studio enrolling 200+ students and supported by nine Teaching Fellows. Provided pedagogical leadership through curriculum coordination, assessment planning, mentoring, and instructional support while fostering consistency across multiple studio sections and strengthening collaborative teaching practices.

Curriculum Innovation

Reviewed and refined curriculum, syllabus content, and pedagogical approaches for lecture-based courses in the Bachelor of Design in City Innovation (BDCI), strengthening integration between lectures and studio learning and introducing assessment methods emphasizing synthesis, application, and communication.

RESEARCH & SCHOLARLY ACTIVITY

Research Philosophy & Agenda

My research is guided by Architecture Through Systems, a framework that understands the built environment as the interaction of environmental, structural, technological, social, cultural, and spatial systems. I investigate how their integration can generate architectural solutions that are resilient, adaptable, and responsive to the communities and contexts they serve. Through this perspective, I approach architecture not only as the design of buildings, but as the design of systems or conditions that support better ways of living.

Housing provides the principal context for this research. I explore how housing systems can respond to climate change, natural hazards, cultural diversity, affordability, and changing living patterns without sacrificing architectural quality, environmental performance, or human dignity. Rather than pursuing standardized solutions, I investigate adaptable approaches that respond to local materials, construction practices, environmental conditions, and community aspirations.

My scholarship integrates architectural design, building science, systems thinking, and participatory methodologies to develop evidence-based approaches for resilient and regenerative communities. Building upon my doctoral research on flood resilience and vulnerability assessment, I am expanding this work toward adaptable housing systems, environmental performance, community engagement, and multivariable evaluation frameworks. Current collaborations at the University of Calgary through the Building Construction Innovation Group (BCI) and the Indo-Pacific Urban Regenerative Development Scholars and Fellows Program, the Valencian Building Institute, and international research partnerships extend this agenda across building, housing, and urban scales.

Research Themes

My research programme is organized around four interconnected themes addressing resilient, adaptable, and regenerative built environments across building, neighbourhood, and urban scales.

Research Theme I

Architecture, Risk & Environmental Performance

Building upon my doctoral research, this theme examines how architecture can anticipate, respond to, and recover from natural hazards and climate-related challenges through design. I develop methodologies to evaluate vulnerability, resilience, and building performance while integrating environmental, structural, and social variables into architectural decision-making. The research approaches resilience not only as a technical objective, but as an architectural capacity to adapt to uncertainty.

Future directions:

Climate adaptation and environmental resilience | Multi-hazard design | Building performance | Risk-informed design | Evidence-based resilience assessment

Research Theme II

Resilient & Adaptive Housing Systems

This theme investigates how housing can become more resilient, adaptable, and responsive to changing environmental, cultural, and societal conditions. Rather than developing standardized solutions, I explore adaptable systems that respond to local climates, construction practices, material availability, community aspirations, and changing patterns of living. The research integrates design, prefabrication, environmental performance, and participatory methodologies to support affordable, context-sensitive housing and long-term community resilience.

Future directions:

Post-disaster & climate-adaptive housing | Prefabricated & incremental housing systems | Adaptable housing | Affordable & community-centred housing | Context-responsive construction

Research Theme III

Regenerative Communities & Urban Systems

This theme explores how architecture can contribute to the long-term regeneration of neighbourhoods and cities through relationships between housing, infrastructure, public space, and community life. The research investigates participatory and interdisciplinary approaches to environmental sustainability, social cohesion, local capacity building, post-disaster recovery, and urban transformation.

Future directions:

Urban regeneration | Housing and public space | Community resilience | Territorial adaptation | Participatory design | International and cross-cultural research

Research Theme IV

Evidence-Based Design & Evaluation Methodologies

This theme develops methodologies that integrate architectural design, building science, environmental performance, digital technologies, and community knowledge into evidence-based decision-making frameworks. The research combines multivariable evaluation, digital and AI methodologies, and interdisciplinary approaches to support adaptable, context-specific architectural solutions.

Future directions:

Multivariable evaluation frameworks | Performance assessment methodologies | Digital and AI-assisted research methods | Decision-support tools | Evidence-based architectural practice

Research Projects & Collaborations

My research programme develops through interdisciplinary collaborations connecting architectural research, professional practice, and international partnerships. These projects investigate resilient and adaptable housing, environmental performance, community-centred design, and regenerative development across building, housing, and urban scales.

Research Project I
Universitat Politècnica de València
Valencia, Spain
2017-2025

Strategies to Improve Natural Risks Resilience of Buildings: An Architectural Framework for Vulnerability Assessment, Decision-Making, and Resilient Design

Doctor of Philosophy (PhD) in Architecture, Building, Urbanism and Landscape

RESEARCH FOCUS

This doctoral research investigated how architectural design can strengthen the resilience of buildings exposed to natural hazards by integrating vulnerability assessment, building performance, and evidence-based decision-making. Using the Vega Baja del Segura region of Spain as a representative case study, the research moved beyond post-disaster damage assessment to develop methodologies capable of informing prevention, intervention, and long-term resilience planning at building and district scales.

METHODOLOGY

The research combined architectural field surveys, post-disaster observations, spatial analysis, vulnerability modelling, statistical validation, and economic evaluation. Through the detailed assessment of 151 buildings affected by the 2019 DANA floods, the research validated existing resilience models against observed damage, identified methodological limitations, proposed refined vulnerability classifications, and evaluated the economic effectiveness of alternative prevention strategies. These methods were integrated into a transferable framework for supporting architectural decision-making under changing environmental conditions.

ORIGINAL CONTRIBUTION

- Developed an integrated architectural framework linking vulnerability assessment, resilience evaluation, and evidence-based decision-making.
- Empirically validated resilience prediction models through comparison with observed post-disaster performance across 151 buildings affected by the 2019 DANA floods.
- Refined flood-vulnerability assessment methodologies through building typological classification, additional vulnerability categories, and statistical calibration.
- Developed economic evaluation methods to compare preventive strategies according to their effectiveness, feasibility, and potential investment implications.

- Translated empirical evidence into a transferable architectural decision-support framework for risk-informed prevention, intervention, and resilient design.
- Established the methodological foundation for my subsequent research programme on resilient and adaptable housing systems.

RESEARCH IMPACT

The research has contributed to the continued development of resilience assessment methodologies at the Valencian Building Institute (IVE), where its findings inform ongoing methodological refinement and applied research. The work has also provided an evidence base for evaluating preventive measures in relation to their effectiveness and economic implications, creating potential value for architectural practice, municipalities, homeowners, and other stakeholders involved in risk reduction.

RESEARCH LEGACY

- Established a transferable methodology for evidence-based assessment of building resilience to natural hazards.
- Expanded resilience research from vulnerability assessment toward architectural decision-support and prevention.
- Established the methodological foundation for subsequent research on adaptable housing, environmental resilience, and regenerative development.

Research Project II
School of Architecture, Planning and Landscape
University of Calgary
Calgary, Canada
2026-Present

Building Construction Innovation Group (BCI)

Research Collaborator

RESEARCH FOCUS

Led by Professor Mauricio Soto de Rubio, the Building Construction Innovation Group (BCI) investigates innovative approaches to affordable, adaptable, and low-carbon housing through industrialized construction, advanced timber systems, digital fabrication, robotics, and related construction technologies. My collaboration expands this work by connecting housing innovation with resilience, environmental performance, cultural adaptation, community participation, and evidence-based evaluation.

METHODOLOGY

The research develops a multivariable evaluation framework to assess housing prototypes across technical, environmental, social, cultural, and economic dimensions. The methodology combines architectural design and prototyping with empirical evaluation, considering local climate, natural hazards, construction practices, material availability,

affordability, cultural identity, and community aspirations. Fieldwork protocols, data-collection standards, and analytical methods are being developed to support comparative evaluation across different deployment contexts.

ORIGINAL CONTRIBUTION

A central contribution of my work within the collaboration is the development of an adaptable housing evaluation framework connecting prototype development with systematic assessment, adaptation, and validation.

Rather than assuming that a successful housing prototype can be universally replicated, the research investigates how solutions can be adapted to the environmental, cultural, technical, and socioeconomic conditions of their intended context. The framework establishes a feedback process through which housing prototypes can be evaluated and refined before broader deployment.

RESEARCH IMPACT

The collaboration provides a methodological complement to BCI's work in housing prototyping and construction innovation by strengthening the connection between technical development and context-sensitive evaluation. It establishes a foundation for comparative housing research across environmental, cultural, technical, and socioeconomic contexts and supports the development of interdisciplinary research, graduate research, and collaborative funding initiatives.

Research Project III
University of Calgary
Global Affairs Canada
Calgary, Canada
2026-Present

Indo-Pacific Urban Regenerative Development Scholars & Fellows Program

Creator Fellow

RESEARCH FOCUS

The Indo-Pacific Urban Regenerative Development Scholars & Fellows Program brings together researchers, graduate students, and international partners to investigate regenerative urban development through multi- and interdisciplinary collaboration. The programme establishes long-term international partnerships while creating opportunities for research, education, knowledge exchange, and collaborative responses to complex urban challenges across the Indo-Pacific region.

As a creator fellow, I am developing a housing research stream that connects resilient and adaptable housing with broader processes of urban regeneration. The research investigates how housing can respond simultaneously to environmental conditions, cultural contexts, natural hazards, construction realities, and evolving social needs while contributing to resilient communities and urban environments.

METHODOLOGY

The research develops comparative and context-sensitive approaches for investigating housing across diverse international settings. Field-based research, architectural analysis, community engagement, interdisciplinary collaboration, and multivariable evaluation are combined to examine how housing strategies can be adapted to different environmental, cultural, socioeconomic, and construction contexts. Particular emphasis is placed on connecting building-scale interventions with neighbourhood and urban conditions, allowing housing research to inform broader regenerative processes.

ORIGINAL CONTRIBUTION

A central contribution of this research is to position housing as a catalyst for urban regeneration rather than an isolated building type. By examining the relationships between domestic space, community life, infrastructure, environmental conditions, and cultural context, the research expands housing research toward broader questions of urban resilience and regeneration.

The research develops a basis for understanding how adaptable housing can contribute to social, environmental, and urban regeneration while remaining responsive to the specific conditions of each context. Comparative international case studies evaluate, adapt, and refine architectural strategies through cross-cultural knowledge exchange.

RESEARCH IMPACT

The programme provides an international platform for comparative research on adaptable housing, regenerative urban development, and community-centred design. The housing research stream extends building-scale resilience and adaptability toward neighbourhood and urban transformation, while connecting architectural research with international knowledge exchange and interdisciplinary collaboration.

Research Project IV
Universitat Politècnica de València
Valencia, Spain
2025-Present

Valencian Building Institute (IVE) Research Centre

Research Collaborator

RESEARCH FOCUS

Building upon my doctoral research and earlier research stay at the Valencian Building Institute (IVE), this collaboration advances evidence-based methodologies for building resilience, rehabilitation, and risk-informed design. The research focuses on translating empirical evidence from buildings affected by natural hazards into practical assessment methods, design guidance, and decision-support tools for the built environment.

METHODOLOGY

The research combines field-based building evidence, systematic post-disaster data collection, architectural and typological analysis, GIS-based spatial analysis, vulnerability assessment, and empirical validation. Building inspection data are structured and analysed to characterize construction systems, building conditions, observed damage, and vulnerability patterns, while modelled vulnerability and damage estimates are compared with post-disaster observations to identify methodological discrepancies and opportunities for refinement. The methodology also covers the evaluation of preventive measures and their economic implications to guide practical resilience decision-making.

ORIGINAL CONTRIBUTION

A defining contribution of this collaboration is the transformation of post-disaster evidence into proactive architectural knowledge. Rather than limiting assessment to documenting damage after natural hazards, the research investigates how empirical observations can inform methodologies for anticipating vulnerability, evaluating preventive measures, and guiding future interventions.

Building upon the methodological foundations of the IVE approach, my research contributes refinements to vulnerability and damage assessment, including more differentiated vulnerability classification, empirical calibration against observed post-flood damage, and the integration of economic evaluation of preventive strategies. The work also establishes a methodological bridge between building-scale evidence and architectural decision-making across technical, environmental, social, and economic dimensions.

RESEARCH IMPACT

The collaboration translates doctoral research into applied methodological development at IVE. Findings can support professional and institutional decision-making, including technical guidelines, assessment methodologies, software tools, and peer-reviewed publications. IVE's existing knowledge-transfer infrastructure provides a direct pathway for research to reach practitioners and other stakeholders; its current portfolio includes assessment tools, technical guidance, training, and European research projects.

The research has potential applications for architects, municipalities, policymakers, insurers, and homeowners by providing evidence to evaluate preventive measures and rehabilitation strategies, and to assess their relative effectiveness and economic implications.

Research Project V
UTE University
Faculty of Architecture and Urbanism (FAU)
Quito, Ecuador
2016-2020

San José de Chamanga Post-Disaster Reconstruction Research

Research Lead

RESEARCH FOCUS

This research developed an integrated post-earthquake reconstruction approach for San José de Chamanga following the April 2016 earthquake, connecting urban, landscape, and building-scale strategies through an interdisciplinary and transdisciplinary framework. Rather than treating reconstruction as the replacement of damaged buildings, the research approached recovery as a process of rebuilding the parish's physical, social, cultural, and economic systems. Community engagement and locally grounded design were central to the approach, recognizing the parish's cultural identity, natural environment, topography, and fishing-based economy as essential conditions for resilient development.

METHODOLOGY

The research combined field surveys, systematic building-level data collection, typological classification, seismic vulnerability assessment, and GIS-based spatial analysis. Five field surveys documented building location, occupancy, configuration, topography, construction systems, materials, infrastructure, and post-earthquake conditions. The resulting inventory was used to characterize and map existing conditions, identify vulnerability patterns, and integrate building-scale evidence with urban and territorial analysis. These findings were subsequently used to inform alternative reconstruction strategies and housing prototypes developed through interdisciplinary and community-based processes.

ORIGINAL CONTRIBUTION

My contribution established the building-scale research component of the reconstruction project, including the building inventory, typological classification, seismic vulnerability assessment methodology, and GIS-based mapping framework used to inform the reconstruction strategy. I integrated building-scale evidence with community-led urban reconstruction and developed three housing reconstruction pathways: user-designed and user-built, professionally designed and user-built, and professionally designed and contractor-built.

This approach connected technical assessment with different levels of community participation, translating seismic vulnerability research into practical design and construction guidance while linking building-scale resilience with broader urban and territorial reconstruction.

RESEARCH IMPACT

The research generated a comprehensive reconstruction masterplan and housing prototypes that were presented to and developed with the local community. Building inventories, vulnerability assessments, and GIS-based mapping informed the reconstruction proposal, post-earthquake territorial planning, community discussions, and municipal and governmental decision-making. The research also generated scholarly and planning outputs that extended the project's findings into post-disaster reconstruction, urban regeneration, and territorial development.

RESEARCH LEGACY

The project established the foundation for my subsequent research on building-scale resilience and risk-informed architectural design. It demonstrated the importance of addressing the vulnerability of existing buildings, many of which come before current regulatory frameworks or rely on construction systems poorly adapted to local hazards, rather than focusing exclusively on new construction.

These findings directly informed my doctoral research on flood vulnerability and damage assessment and continue to shape my research on resilient and adaptable housing, where environmental risk, existing conditions, construction systems, and community needs are examined as interconnected components.

Research Collaboration
University of Extremadura
Extremadura, Spain
2017

Research Consultancy – Sustainable Construction Materials

Provided research consultancy for doctoral research investigating the physico-mechanical performance of Dendrocalamus asper bamboo laminates as a sustainable construction material for architectural applications. Supported the interpretation and analysis of experimental results from more than 100 bamboo laminate specimens, contributing architectural, structural, and construction expertise to the evaluation of the material's performance and potential applications in sustainable building.

Research Programme Trajectory

My research is evolving from building-scale resilience assessment toward adaptable housing systems and regenerative urban development. The emerging programme connects empirical evidence, architectural design, housing innovation, and multivariable evaluation to develop context-responsive approaches that can be adapted across environmental, cultural, and socioeconomic conditions. Through growing collaborations in Canada, Europe, and the Indo-Pacific, I aim to establish an internationally connected research programme that translates this work into methodological tools, architectural knowledge, and practical strategies for more resilient and adaptable communities.

SCHOLARLY PUBLICATIONS & RESEARCH DISSEMINATION

Peer-Reviewed Journal Articles - Published

Q1 | Moya Barbera, R., Serrano Lanzarote, B., Escrig, T. & Cabrera-Fausto, I. (2024). Characterization of damages in buildings after floods in Vega Baja County (Spain) in 2019. The case study of Almoradí municipality. *Case Studies in Construction Materials, 20, e03004. DOI: https://doi.org/10.1016/j.cscm.2024.e03004*.

Q3 | Porreca, R., Geropanta, V., Moya Barbera, R. & Rocchio, D. (2020). Remote Sensing Drones for Advanced Urban Regeneration Strategies. The Case of San José de Chamanga in Ecuador. *Advances in Intelligent Systems and Computing, 2020, Volume 1072. DOI: 10.1007/978-3-030-33585-4_60. Link*

Q4 | Narvaez, S., Moya Barbera, R. (2019). Una visión académica centrada en el bienestar del estudiante y su directa relación con una escuela de arquitectura. *Eídos, (14), 99-114. Link*

Title translated: A vision centred on student well-being and its direct connection to a School of Architecture

Q4 | Rocchio, D., Moya Barbera, R. (2017). Del objeto al proceso: el paisaje de la reconstrucción post-catástrofe. *Eídos, (10). DOI: https://doi.org/10.29019/ei.v0i10.342*

Title translated: From the object to the process: the landscape of post-catastrophe reconstruction

Peer-Reviewed Journal Articles – In Preparation

Moya Barbera, R., Serrano Lanzarote, B., Soto-De Rubio, M., & Cabrera-Fausto, I. Characterization of damages in buildings after floods in Horta Sud County (Spain) in 2024. The case study of the Paiporta municipality.

Manuscript in preparation

Moya Barbera, R., Serrano Lanzarote, B., Soto-De Rubio, M., & Cabrera-Fausto, I. Evaluating Strategies to Improve Flood Resilience: A Comparative Analysis.

Manuscript in preparation

Peer-Reviewed Conference Proceedings – Published

Piqueras-Blasco, M., Moya-Barbera, R., Fenollosa-Forner, E. & Serrano-Lanzarote, B. (2025). Structural versatility of CLT panels as a resilience factor. *4th VIBRArch: Wellbeing for all. Editorial: Universitat Politècnica de València. Book of Proceedings ISBN 978-84-1396-026-5.*

Peer-Reviewed Conference Proceedings – Accepted / In Press

Camino-Criollo, J., Moya-Barbera, R. & Sinclair, B. R. (2026). Design Innovation Beyond the Object: Toward an Architecture of Conditions. *5th VIBRArch: Indoor & Outdoor. Editorial: Universitat Politècnica de València. Book of Proceedings ISBN pending.*

Books & Technical Publications – Published

García-Prieto Ruiz, A., Ortín Rull, G. A., Pla Alabau, F., Serrano Lanzarote, B., Liébana, E., Moya Barbera, R., Ruiz I. & Faura Mesa, A. (2017). Guía para la prevención de daños por sismo en centros escolares. *Valencia Institute of Building (IVE). ISBN: 978-84-946574-8-1.* *Link*

Title translated: Guide for the Prevention of Earthquake Damage in Schools

Books & Technical Publications – In Preparation

Revised Guide for Strengthening Buildings' Resilience to Flood (forthcoming edition).
Editorial: Valencian Institute of Building (IVE).
Contributing author incorporating new resilience assessment methodologies and findings derived from doctoral research.
Publication in preparation

Planning & Policy Documents – Published

Plan de Desarrollo y Ordenamiento Territorial del Gobierno Autónomo Descentralizado de la Parroquia de San José de Chamanga, Actualización Post-Terremoto 2016–2025.
Link

Title translated: Post-Earthquake Territorial Development and Land-Use Plan for the Parish of San José de Chamanga, 2016–2025

Research Dissemination Posters

Camino Criollo, X. J., Moya Barbera R., Fernández Plazaola I. & Montaña I Aviño A. (2020). Methodological Proposal to Improve Management in Architectural Offices. Poster in the International Itinerant Exhibition "Research in Building Engineering – EXCO 2020". Link.

Invited Research Presentations

Robertson, G., Ha, S., Moya Barbera, R., De Salvatierra, A. & Trujnikova, D. (April 2026). Preparing Students for the Future. *Conference on Postsecondary Learning and Teaching. University of Calgary.*

Moya Barbera, R. (February 2026). Case Studies in Future Skills Implementation. *Panellist in Future Skills Workshop Series. Taylor Institute for Teaching and Learning. University of Calgary.*

Moya Barbera, R. (November 2023). The photograph of the city of the future. Utopia or dystopia?. *Presentation for the Design Studio IX: Thesis Project for the Professional Accredited Bachelor's in Architecture program at UTE University.*

Moya Barbera, R. (May 2021). Rethinking Collective Housing as a Lesson Learned from the Pandemic. *Presentation for the course Critical Thinking: Architecture Without Architects for the Professional Accredited Bachelor's in Architecture at UTE University.*

Moya Barbera, R. (April 2019). The post-post catastrophe. Presentation for the international discussion "Materials and constructive technologies for post-earthquake reconstructions". *Fostered by the Italian Embassy and the Faculty of Architecture and Urbanism of the UTE University, Quito, Ecuador.*

Moya Barbera, R. (April 2018). Structure as a design and spatial resource. *Conference for the cycle of conferences held by ENEA (National Meeting of Students of Architecture of Ecuador), Quito 2018.*

Moya Barbera, R., Porreca, R. & Rocchio, D. (December 2016). Architecture in motion in San José de Chamanga... The process after a natural catastrophe. *Conference for the Master's Degree in Advanced Architecture, Landscape, Urban Planning and Design at the Universitat Politècncica de València, Spain.*

Moya Barbera, R. (2016). Post-catastrophe, the experience of San José de Chamanga. *Conference for the seminar: Ecuador 16. Territory at the Limit held by the Faculty of Architecture and Urbanism of the UTE University, Quito, Ecuador.*

RESEARCH FUNDING, FELLOWSHIPS & GRANT DEVELOPMENT

My research programme is supported by international fellowships, institutional research support, and emerging collaborative grant-development activities focused on housing, resilience, and urban regeneration.

Research Fellowships
Global Affairs Canada & University of Calgary
Calgary, Canada
2026-Present

Faculty Fellow | Indo-Pacific Fellowships and Scholarships for Canadians in Urban Sustainable and Regenerative Development

Selected as a Faculty Fellow in the Global Affairs Canada-funded Indo-Pacific Fellowships and Scholarships for Canadians programme, supporting collaborative research and research creation in urban sustainable and regenerative development. The fellowship provides up to CAD $12,000 per mobility term to support international collaboration, field research, and partnership development across Singapore, Malaysia, and Australia. Activities focus on interdisciplinary research, international partnership building, field research, and research creation across Singapore, Malaysia, and Australia.

Research Funding
Valencia, Spain
2017-2025

Research Dissemination Support | Valencia Institute of Building (IVE)

Received institutional research support from the Valencia Institute of Building (IVE) to facilitate open-access dissemination of peer-reviewed research arising from my doctoral investigations on building resilience.

Grant Development & Collaborative Proposal Preparation
University of Calgary
2026-Present

ERC Synergy Grant (planned) | Building Construction Innovation Group (BCI)

Co-developing an international proposal integrating housing adaptability, resilience assessment, and urban regeneration through the Building Construction Innovation Group (BCI).

SSHRC Insight Grant (planned) | Building Construction Innovation Group (BCI)

Collaborating on proposal development addressing adaptable housing systems, community engagement, and regenerative urban development

GRADUATE SUPERVISION, MENTORSHIP & EXAMINATION

Supervision Philosophy

My supervision supports independent, critical, and reflective designers and researchers through methodological rigour, interdisciplinary thinking, and iterative learning. I guide students in defining research questions, developing appropriate methodologies, analyzing evidence, and translating findings into meaningful architectural propositions while supporting the development of their own intellectual positions.

Graduate Research Co-Advisor (Master's Theses)
Universitat Politècnica de València
Valencia, Spain

Graduate Research Co-Supervision

Co-advised two Master's research theses in collaboration with faculty at the Universitat Politècnica de València, providing guidance throughout the research process, including research design, methodological development, data analysis, interpretation of findings, academic writing, and thesis preparation. Research topics addressed post-disaster reconstruction and the rapid assessment of seismic vulnerability in informal housing, contributing to resilient and evidence-based approaches to the built environment.

Undergraduate Thesis Supervision
UTE University
Quito, Ecuador

Undergraduate Thesis Supervision

Supervised eight undergraduate architecture theses from proposal development through final examination. Mentored students in defining research questions, selecting appropriate methodologies, integrating architectural design with scholarly inquiry, and communicating research findings through written and graphical formats.

Committee Member
UTE University
Quito, Ecuador

Thesis Examination & Evaluation

Served as committee member for the evaluation of 27 undergraduate architecture theses and 2 interior design theses, assessing research quality, methodological rigour, design integration, and scholarly communication.

University of Calgary & UTE University
SAPL & FAU
Canada & Ecuador

Mentorship of University Educators

Mentored more than 30 university educators, including 9 Teaching Fellows, 12 Teaching Assistants, and more than 10 Junior Instructors. Supported pedagogy, curriculum implementation, assessment, and classroom management. Several mentees advanced to higher appointments, demonstrating the sustained impact of this teaching mentorship.

PROFESSIONAL PRACTICE & ACADEMIC KNOWLEDGE EXCHANGE

Professional Practice Philosophy

My professional practice connects architectural design, building science, construction, and multidisciplinary collaboration, creating a reciprocal relationship between professional experience, research, and teaching.

Professional Practice Summary

Years	Position	Organization	Country
2026 – Present	Partner	Dual Arquitectura	Ecuador
2024 – 2026	Senior Project Designer	Monteyne Architecture Works	Canada
2022 – 2024	Project Designer	Amphora Architecture	Canada
2016 – 2020	Partner	Antithesis	Ecuador
2014 – Present	Architect & Structural Engineer	Sole Practitioner	Spain & Ecuador

Selected Professional Contributions

Housing, Multi-Residential Design & Community Living
Canada, Ecuador & Spain

Contributed to the design and delivery of housing projects ranging from custom residences to large-scale multi-residential and mixed-use developments across Canada, Spain, and Ecuador. Experience includes market, affordable, seniors, co-housing, post-disaster, and prototype housing, with projects ranging from individual dwellings to developments exceeding 700 residential units. Responsibilities have included architectural design, project leadership, consultant coordination, BIM implementation, construction documentation, and construction administration. Across these projects, housing has been approached as both a building type and a social and urban framework supporting community life, environmental performance, adaptability, and long-term resilience.

Integrated Building Systems, Building Science & Technical Innovation
Canada & Ecuador

Developed integrated architectural solutions that synthesize structural systems, building envelopes, environmental performance, and construction technologies across all project phases. Professional work has included Passive House developments, mass timber construction, façade detailing, BIM workflows, multidisciplinary coordination, and construction administration on projects valued between approximately CAD $2 million and $31 million. Working as both an architect and a structural engineer has reinforced an

approach in which technical systems serve as generators of architectural quality rather than as constraints. This experience informs my teaching and research in structures, construction, environmental systems, and resilient building design.

Architecture for Community Well-Being & Social Impact
Canada & Ecuador

Designed projects that place human experience, community engagement, and social value at the centre of architectural decision-making. Professional work has included healthcare, cultural, educational, community, and post-disaster reconstruction projects where architecture operates as both infrastructure and a catalyst for well-being, belonging, and resilience. Particular attention has been given to spatial quality, accessibility, sensory experience, and social interaction. These experiences inform my teaching and research on housing, resilience, and regenerative urban development.

Innovation, Prototyping & Resilient Construction
Canada & Ecuador

Participated in the development of innovative architectural solutions integrating prefabrication, modular thinking, structural efficiency, and locally appropriate construction systems across diverse contexts. Professional work has included prototype housing and post-disaster construction strategies that balance technical performance, material availability, construction knowledge, and community participation. These experiences have strengthened my ability to translate emerging construction technologies into context-sensitive architectural solutions.

Professional Leadership, Collaboration & Knowledge Exchange
Canada, Ecuador & Spain

Led multidisciplinary teams through project delivery, coordinating architects, engineers, consultants, clients, contractors, and regulatory agencies from concept through construction. Responsibilities have included project management, consultant coordination, client engagement, quality control, mentoring junior designers, and collaborative BIM implementation. Working across professional practice, research, and higher education has strengthened my ability to transfer knowledge between academia and industry and to connect research, teaching, and professional practice.

PROFESSIONAL REGISTRATION & CERTIFICATIONS

Professional Registration

Winnipeg, Canada

Architectural Intern Member – Manitoba Association of Architects (MAA)

ExAC is completed, and 100 hours remain toward fulfilling licensure experience requirements in Manitoba.

Quito, Ecuador

Registered Architect and Structural Engineer – DMQ Association of Professional Practitioners

Valencia, Spain

Registered Architect – Spanish and Valencian Association of Architects

Full member of the Higher Council of Spain Association of Architects (CSCAE), Valencian Community Association of Architects (COACV), and Valencia Association of Architects (CTAV). In a pause while abroad.

Valencia, Spain

Registered Expert and Forensic Architect

Member of the Expert and Forensic Architects Association (AAPF). In a pause while abroad.

Certifications

Passive House Canada
Canada

Pursuit of Passive House Designer/Consultant Certificate

Red River Polytech
Winnipeg, Manitoba

Professional Photography Certificate

UTE University
Quito, Ecuador

Educational Assessment in Digital Environments Certificate

Innovative Teaching Methodology Based on Cooperative Learning, DD11 Certificate

Valencia Association of Architects (CTAV)
Valencia, Spain

Intensive Course in Architectural Image Editing with Photoshop. From 2D Drawing to 3D Visualization Certificate

Architectural Modelling, Professional Rendering and Editing. Rhinoceros + Fryrender + Photoshop Certificate

Insurance Research Cooperative (ICEA)
Madrid, Spain

Expert and Forensic Architect Certificate. Specialty of Fire and Miscellaneous Risks

HONOURS, AWARDS & DISTINCTIONS

Teaching

University of Calgary
Calgary, Canada

University of Calgary Students' Union Teaching Excellence Award. 2026 Edition

Recognized for excellence in teaching and contributions to student learning campus-wide in the Bachelor of Design in City Innovation (BDCI) at the School of Architecture, Planning and Landscape (SAPL).

Research

Universitat Politècnica de València
Valencia, Spain

Doctoral Thesis with Cum Laude and Nominated for Doctoral Thesis Excellence Award 2025

Doctoral dissertation nominated for a university-level excellence award in recognition of the quality, significance and impact of the research.

Academic

Universitat Politècnica de València
Valencia, Spain

Master's Thesis Awarded with Highest Distinction - 2015

Master's in Advanced Architecture, Landscape, Urban Planning and Design.

Bachelor's Thesis Awarded with Highest Distinction - 2015

Professional Accredited Bachelor's in Public Works Engineering (Civil Engineering).

Bachelor's Thesis Awarded with Highest Distinction - 2010-2015

Recipient of four academic excellence awards during undergraduate studies, including associated monetary awards.

Red River Polytech
Winnipeg, Canada

Academic Excellence Award - 2022

RRC Student's Association Award while enrolled in the Professional Photography program, recognizing outstanding academic performance.

ACADEMIC & PROFESSIONAL SERVICE

Academic Review, Examination & Committees

Universitat Politècnica de València
Valencia, Spain

Journal Peer Reviewer – Anuari d'Arquitectura I Societat
International peer-reviewed journal about architecture, urbanism, and society. Founded in 2021 by the School of Architecture at Universitat Politècnica de València.
2025 – Present

UTE University
Faculty of Architecture and Urbanism (FAU)
Quito, Ecuador

Undergraduate Thesis Advisor & Evaluator
Supervised, advised and evaluated undergraduate architecture and interior design theses, providing methodological, analytical, and design guidance throughout the thesis process.
2018 – 2020

Faculty Master's Degree Committee
Contributed to the development of a proposed Master's programme in Structures and Advanced Constructions based on the European ECTS framework, supporting academic structure, curriculum development, and international credit transfer.
2017 – 2018

Urban Planning Studies of Ecuador Congress
Quito, Ecuador

Committee Member
Participated in the academic committee for the first congress organized by the academic network for city studies and FLACSO Ecuador.
November 2017

International Workshops & Academic Engagement

UTE University
Faculty of Architecture and Urbanism (FAU)
Quito, Ecuador

Guest Facilitator – Undergraduate Thesis Development
Invited to guide and evaluate undergraduate thesis projects during an intensive academic session in the Professional Accredited Bachelor of Architecture programme.
November 2023

Instructor – International Workshop in Architecture & Landscape, WinAReQ
Participated as an instructor in international multidisciplinary workshops addressing architecture, landscape, and urban challenges. The 2016 edition focused on post-earthquake reconstruction in San José de Chamanga, while the 2019 edition explored Quito's interstitial urban spaces between the natural/artificial and the public/private.
2016 & 2019

Academic Outreach & Student Recruitment

University of Calgary
School of Architecture, Planning and Landscape (SAPL)
Calgary, Canada

Represent SAPL in recruitment and outreach initiatives, introducing prospective students to architectural education, teaching approaches, and the learning environment at the University of Calgary.

Junior High Architectural Technologies Visit

Delivered a presentation introducing my academic and professional profile and illustrating how I teach architecture at SAPL, receiving highly positive participant feedback.

November 2025

BDCI Sample Lecture

Delivered a sample lecture introducing prospective students to the programme's teaching approach. The session received excellent participant feedback and demonstrated the integration of architectural thinking, critical inquiry, and applied learning within BDCI.

January 2026

University of Calgary Open House – BDCI Discovery Session

Selected to deliver a 45-minute faculty-specific sample class during the University's major Open House, which attracts more than 10,000 prospective students and families. The session provided Grade 10–12 students with an experiential introduction to BDCI's teaching approach and project-based learning environment.

Upcoming, October 2026

Invited Academic Lectures & Guest Reviews

University of Calgary
School of Architecture, Planning and Landscape (SAPL)
Calgary, Canada

Invited Guest Lecture

Between Logos and Techne: Architectural Space (meaning) & Structural Design (performance). Course: ARCH201: Architecture and the Future of the Cities. *Winter 2026*

Invited Guest Reviewer

DSGN 404 Disciplinary Studio in Architecture. Final Review. Bachelor of Design in City Innovation (BDCI). *Winter 2026*

ARCH 514 Studio II in Architecture. Mid and Final Review. Master of Architecture (MArch). *Winter 2026*

ARCH 702 Senior Research Studio in Architecture. Mid and Final Review. Master of Architecture (MArch). *Winter 2026*

DIGITAL & TECHNICAL COMPETENCIES

COMPUTATIONAL & PARAMETRIC DESIGN

Rhinoceros
SketchUp Pro
Grasshopper w/ Ladybug

BIM & BUILDING DOCUMENTATION

Revit
Vectorworks
Autocad

VISUALIZATION & REPRESENTATION

Twinmotion
Photoshop
InDesign
Illustrator
Lightroom

STRUCTURAL ANALYSIS & ENGINEERING

SAP2000
ETABS
SkyCiv

GEOGRAPHIC INFORMATION SYSTEM (GIS)

QGIS
ArcGIS

PROJECT DELIVERY & COLLABORATION

Procore
Microsoft Office

PRODUCTIVITY

Microsoft 365
Google Workspace
Apple iwork

VIRTUAL VIDEO TEACHING

Microsoft Teams
Zoom
Cisco Webex
Google Meet

VIRTUAL TEACHING MANAGEMENT

Microsoft Teams
Moodle

LANGUAGES

English – Professional working proficiency

Spanish – Native

Catalan/Valencian – Native