

Eng. Magda Posani

INCOMING POST-DOCTORAL RESEARCHER AT ETH ZÜRICH
(Chair for Sustainable Construction)

Date of Birth: 14/03/1992
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A strongly self-motivated Building Engineer aiming to create a more sustainable construction Industry. Specific focus on retrofitting existing constructions for better comfort and reductions of energy demands, via using innovative solutions with low embodied emissions. Personal long-term goal of effectively contributing to the European transition towards climate-neutrality by 2050.

Experienced in hygrothermal characterization of insulation materials and systems: from laboratory testing to numerical modelling. Specialized in dynamic hygrothermal simulations of building materials, components, and whole buildings. Interested in bio-based materials and insulation solutions, reuse of bio-waste, hygroscopic plasters for passive control of indoor relative humidity, strategic retrofitting based on specific climatic zones and climate-change effects on the built environment.

INCOMING

Research assistant at ETH Zürich (From January 2022) - Switzerland

Use of bio-based material for climate-neutral buildings

CURRENT POSITION

Ph.D. Fellow (September 2017-December 2021) - Portugal

Doctoral program in Eco-constructions and rehabilitation - Civil Engineering

Funding:

Winner of a competitive 4-year-long Ph.D. fellowship (FCT - Fundação para a Ciência e a Tecnologia)

Research title:

Thermal insulation solutions for historic buildings: feasibility, efficacy, compatibility.

Developed at:

LNEC (National Laboratory of Civil Engineering, Lisbon, Portugal)

FEUP (Faculty of Engineering of the University of Porto, Porto, Portugal)

Research area:

Building materials, Building Physics

Research:

Selection of thermal insulation solutions suitable for retrofitting historic walls

Experimental hygrothermal characterization of thermal insulation solutions based on thermal mortars

Dynamic hygrothermal simulations at the component level: analysis of moisture-related degradation risks

Dynamic hygrothermal simulations at the building level: analysis of energy savings and thermal comfort

EDUCATION

Integrated Master's degree in Building Engineering and Architecture (2012-2017) - Italy

Faculty of Engineering - University of Bologna, Italy

Maximum score and honours

ACADEMIC EXPERIENCES

Dates	2019 (4 months)
Visiting period (during the Ph.D.)	Eindhoven University of Technology (TU/e) - Eindhoven, Netherlands Supervisor: Prof. Henk Schellen Investigation topic: Dynamic hygrothermal simulation tools for historic buildings Research area: Building Physics
Dates	2020 - Present
Collaborations with Ph.D. colleagues	Collaborations with colleagues from the research group of LNEC, about: - Re-use of bio-waste in thermal insulation boards (Eng. E. Cintura) - Use of earth-based plasters for passive regulation of indoor Relative Humidity (Eng. A. Ranesi) Research area: Building Materials, Building Physics
Dates	2019
Co-supervisor for a Master's Thesis	Fabrizia dalla Penna, Donata Bigazzi, Carlos Duarte, Magda Posani. "Rehabilitation and Energy retrofit of Palacio da Rosa in Lisbon" (Master's Thesis). 2019. University of Bologna – Master's degree in Architectural Engineering.

LANGUAGES

Italian	Mother tongue
English	Proficient user (IELTS-7 in 2015)
Portuguese	Fluent but not rigorous

SCIENTIFIC PRODUCTION

1. **Posani**, Magda, Rosário Veiga, and Vasco Peixoto de Freitas. "THERMAL MORTAR-BASED INSULATION SOLUTIONS FOR HISTORIC WALLS: An extensive hygrothermal characterization of materials and systems." **Construction and Building Materials** (2021).
2. **Posani**, Magda, Rosário Veiga, and Vasco Peixoto de Freitas. "Towards Resilience and Sustainability for Historic Buildings: A Review of Envelope Retrofit Possibilities and a Discussion on Hygric Compatibility of Thermal Insulations.", **International Journal of Architectural Heritage** (2019): 15(5), 807-823. <https://doi.org/10.1080/15583058.2019.1650133>
3. **Posani**, Magda, Rosário Veiga, and Vasco Peixoto de Freitas. "Retrofitting Historic Walls: Feasibility of Thermal Insulation and Suitability of Thermal Mortars." **Heritage** (2021): 4(3), 2009-2022. <https://doi.org/10.3390/heritage4030114>
4. **Posani**, Magda, Rosário Veiga, Vasco Peixoto de Freitas, Henk Schellen, Karin Kompatscher. "Dynamic hygrothermal models for historic buildings with indoor HVAC systems: Complexity shown through a case study ", in 12th Nordic Symposium on Building Physics, Tallinn, Estonia, **2020**. <https://doi.org/10.1051/e3sconf/202017215007>
5. **Posani**, Magda, Rosário Veiga, and Vasco Peixoto de Freitas. "Thermal retrofit for historic massive walls in temperate climates: risks and opportunities ", in ENCORE 2020 – 4º Encontro de Conservação e Reabilitação de Edifícios, Lisboa, Portugal, **2020**. <https://doi.org/10.34638/yzys-hn57>
6. **Posani**, Magda, Rosário Veiga, and Vasco Peixoto de Freitas. "Historic buildings resilience: A view over envelope energy retrofit possibilities.", in 8th ICBR International Conference on Building Resilience, Lisbon, **2018**.
7. Ranesi, Alessandra, Magda **Posani**, Rosário Veiga, Paulina Faria. "A study on hygrothermal conditions in intermittently heated/unheated bedrooms in southern Europe. ", in CEES 2021 - International Conference on Construction, Energy, Environment and Sustainability, October **2021** (*conference paper accepted*).