

Curriculum Vitae

Dr. Ing. Alessandra Luna Navarro

Sottosettori ERC primari: PE8_3, PE8_4, SH3_10

PERSONAL DETAILS

Family name, First name: Luna Navarro, Alessandra

Birthdate: 16/03/1989

ORCID: [0000-0003-0183-0199](https://orcid.org/0000-0003-0183-0199)

URL: <https://www.linkedin.com/in/alessandra-luna-navarro-7a594768>

Institutional e-mail: a.lunanavarro@tudelft.nl, <https://research.tudelft.nl/en/persons/a-luna-navarro/>

Education and key qualifications

10/2016-09/2021 **PhD in Engineering, *University of Cambridge, UK***

Thesis: "Novel methods to capture occupant satisfaction and interaction with facades"

Supervisors: Prof. Gary Hunt, Prof. Mauro Overend

10/2015-09/2016 **MPhil in Energy Technologies, *University of Cambridge, UK***

Thesis: "Energy performance of GFRP-Glass Facades"

11/2007-01/2013 **MSc in Building Engineering and Architecture (110/110 cum laude), *La Sapienza University of Rome, Italy***

Awarded Fondazione Sapienza prize for best graduate of the year (€11k)

2019 Chartered Engineer (CEng), MCIBSE, *Chartered Institution of Building Services Engineers, UK*

2013 Chartered Civil Engineer, *Professional Order of Engineering, Rome, Italy*

Current positions

2021– Assistant Professor in Building Design and Engineering,
Dept. of Architectural Engineering & Technology, TU Delft Faculty of Architecture and
the Built Environment, The Netherlands; Research lead of MATELab and SMARTLab ·
Supervisor of six PhD candidates

2024– Board member, Delft Young Academy, *TU Delft, The Netherlands*

Previous positions

2024–2025 Visiting Scholar, *Politecnico di Milano (NEST Fellowship, €71.5k), Italy*

2024 Visiting Scholar, *Centre for Built Environment, UC Berkeley, US*
(Blanceflor Fellowship, €7.5k)

2021–2022 Policy Advisor, *Lazio Innova – Regione Lazio (Regional Energy Plan), Italy*

2020–2021 Postdoctoral Researcher, *Structural Design & Mechanics, TU Delft, The Netherlands*

2018–2021 Research Manager, MATELab, *University of Cambridge, UK*

2014–2016 Façade and Building Services Design Engineer, *A.T. Advanced Technologies s.r.l., Rome, Italy*

RESEARCH ACHIEVEMENTS AND PEER RECOGNITION

Bibliometric indicators (Scopus, May 2026): h-index 13 · >600 citations · 25+ peer-reviewed journal papers

My research addresses human–building interaction: how facades and smart building technologies affect occupant well-being, energy use, and climate resilience. I work at the intersection of building physics, environmental psychology, and information engineering, spanning three interconnected themes:

1. Human-Building Interaction and Smart Systems

- Luna-Navarro A. et al. (2021). Building Impulse Toolkit (BIT): A novel IoT system for capturing occupant-façade interaction. *Building and Environment*, 193, 107656. [Cited 80+ times; data adopted in CIBSE TM68 industry standard; used by major facade design consultancies for office designs in UK and US]
- Luna-Navarro A. et al. (2022). Dynamic façades – a campaign to assess occupant multi-domain environmental satisfaction and façade interaction. *Building and Environment*, 211, 108703. [basis for Taylor & Francis book contract]
- Luna-Navarro A. et al. (2023). Towards multi-domain user archetypes for user-centred façade design. *Journal of Physics: Conf. Series*, 2600. [First output from own research group; finding that individual environmental priorities can predict user requirements via AI; basis for €700k Horizon Europe grant Smarteestory]
- de la Barra P., Luna-Navarro A. et al. (2026). Interface design for lighting and shading controls: device type, position, and system cues influencing user preference. *Building and Environment*, 295, 114439.
- Martinez-Alcaraz P., Luna-Navarro A. et al. (2026). Current trends and future directions for addressing multi-domain occupant demands in building automation and control systems. *Building and Environment*, 297, 114588.
- Luna-Navarro A. et al. (2023). Semi-automated vs manually controlled dynamic facades: field study on multi-domain occupant satisfaction. *Energy and Buildings*, 286, 112912.
- Khovalyg D., ..., Luna-Navarro A. et al. (2025). Personalized Environmental Control Systems (PECS): Systematic Review. *Building and Environment*, 286, 113541. [Collaboration from Annex 87 IEA EBC].

2. Heat Resilience and Climate Adaptation

- Kim K., Bianchi S., Konstantinou T., Overend M., Ciurlanti J., Luna-Navarro A. (2024). Thermal resilience to extreme heat: preliminary study on thermal fragility curves. IBPC 2024. [Best Paper Award, IBPC 2024]
- Kim, K., Luna-Navarro, A., Ciurlanti, J., & Bianchi, S. (2024). A multi-criteria decision support framework for designing seismic and thermal resilient facades. *Architecture, Structures and Construction*.
- Exss K., Luna-Navarro A. (2024). Usability of personalized thermal control systems by people with intellectual disabilities in energy poverty. *Building and Environment*, 265, 112018.
- Bianchi S., ..., Luna-Navarro A. et al. (2025). Resilience Readiness Levels for buildings: multi-hazard resilience metrics. *International Journal of Disaster Risk Reduction*, 128, 105746.

3. Novel Building Components and Resource-Efficient Facades

- Pajonk A., Luna-Navarro A. et al. (2024). Additive manufacturing with varying material properties of thermosetting reactive polymers. *Architectural Science Review*. [New fabrication methods for adaptive facade components]
- Luna-Navarro A. et al. (2024). Luminance-based methodology for assessment of low level haze in glazing. *Glass Structures and Engineering*. [Novel method for characterising optical defects in circular/reused glazing]

- Hassen M., de la Barra P., ..., Luna-Navarro A. (2024). Glass serviceability limits: new evidence from human-centred studies. *Glass Structures and Engineering*. [Student Mohammed Ibrahim received Vitruvian Award 2025]
- Luna-Navarro A. & Overend M. (2021). Design, construction and validation of MATELab: a novel outdoor chamber for investigating occupant-facade interaction. *Building and Environment*, 203, 108092. [Leveraged €130k from industry; reference for new labs in NL and IEA Annex 79]

Books

- Luna-Navarro A., Overend M., Knaack U., Montali J., Henriksen T. *Façade Design and Engineering: A Performance Based Approach*. Taylor & Francis – in submission Fall 2026.
- Luna-Navarro A. Human comfort in the workplace: How much does the environment influence our behaviour? In: *Behavioral Insights for Public Policy: Concepts and Cases*, Routledge, 2018.
- Brembilla E., ..., Luna-Navarro A. et al. *TM68: Monitoring Indoor Environmental Quality*. CIBSE, London, 2022 [Industry standard technical manual].

Peer recognition – Awards and Fellowships

2025	Best Paper Award, <i>ColloquiATe 2025, ArTec – Società Scientifica di Architettura Tecnica, Trento</i>
2024	Best Young Researcher Award, <i>9th International Building Physics Conference (IBPC)</i>
2024	Best Paper Award, <i>9th International Building Physics Conference (IBPC)</i>
2024	NEST Visiting Scholar Fellowship (€71.5k), <i>Politecnico di Milano</i>
2023	Visiting Scholar Fellowship (€7.5k), <i>Blanceflor Foundation – UC Berkeley</i>
2022	Best Paper Award, <i>co-author, Building and Environment (Elsevier)</i>
2017	Future Cities Fellowship Award, <i>University of Cambridge</i>
2016	Honorary Cambridge Trust European Scholarship, <i>Cambridge Trust</i>
2016	PhD DTP Studentship ("Façade Impulse"), <i>EPSRC, UK (~€185k cash + in-kind)</i>
2013	Fondazione Sapienza Prize for best graduate of the year (€11k), <i>La Sapienza University of Rome</i>

Peer recognition – Selected invited keynotes and seminars

2025	Keynote speaker at Future Façade , <i>Utrecht, The Netherlands</i>
2025	Keynote, Renovation Days Conference , <i>Politecnico di Milano</i>
2025	Keynote, The science behind your future home , <i>Utrecht, The Netherlands</i>
2024	Keynote, CBE Symposium Industry Event, <i>UC Berkeley, California, US</i>
2024	Invited seminar, <i>Stanford – School of Civil and Environmental Engineering, US</i>
2024	Invited seminar, <i>USC Viterbi School of Engineering, Los Angeles, US</i>
2024	Invited talk, <i>Lawrence Berkeley National Laboratory, US</i>
2024	Keynote, Performance-based Façade Design Symposium , <i>Venice, Italy</i>
2022	Keynote, Future Envelope Conference, <i>EURAC, Bolzano, Italy</i>
2022	Invited speaker, Glasstec 2022, <i>Düsseldorf, Germany</i>

ADDITIONAL INFORMATION

Research management and international network

I have secured over €2.5M as Principal Investigator or Work Package/Stream Leader in competitive grants:

- Horizon Europe – Smarteestory (€670k to TU Delft, €5.2M total) – Co-coordinator, WP Leader
- Horizon Europe – Multicare (€350k to TU Delft, €7.5M total) – Work Stream Leader, Executive Board
- Erasmus+ – OpenFace (€400k) – Principal Investigator; open digital MicroMaster programme
- NWO – ReACT (€205k, 2025) – Principal Investigator
- TKI Bouwtechniek – Heat Face (€130k, 2025) – Principal Investigator
- ClickNL – MATELab (€135k, 2023) – Principal Investigator
- TU Delft Extension School – MicroMaster in Façade Design Engineering (€120k, 2023) – Co-Investigator
- NWO – Nature4Home (€350k, 2026) – Work Package Leader

Active international research collaborations include: UC Berkeley (Prof. Schiavon, Prof. Brager), Politecnico di Milano (Profs. Poli, Mainini, Mazzucchelli), Politecnico di Torino (Profs. Favoino, Perino), UCL (Dr. Khanie), EPFL (Prof. Hartwell, Prof. Khovalyg), University of Maastricht (Dr. Pallubinsky), University of Perugia (Prof. Pisello), University of Groningen, Stanford, Lawrence Berkeley National Lab, TU Wien, KU Leuven.

Scientific leadership roles: IEA EBC Annex 87 – task leader on Visual Comfort (2022–); IEA EBC Annex 79 – ST1 member (2020–); CIE TC2-86 – invited member; CIBSE TM68 technical committee (2020–2022); EU COST Action TU1403 Adaptive Façade Network (2016–2018). Editor, Journal of Façade Design and Engineering (TU Delft); Editorial Board, Journal of Glass Structures and Engineering (Springer Nature, 2026–), Member of the European Façade Network, Member of Scientific committee for the conferences: ACM BuildSys 2026, Healthy Buildings 2023, CIBSE Technical Symposium, CLIMA conference.

Third mission, valorisation and outreach

I have developed a structured and plural valorisation practice that bridges research, industry, policy, and society:

- Policy advice: Technical consultant to Lazio Innova (Regione Lazio) for the regional energy plan aligned with the EU Green Deal (2021–2022); speaker at Rotterdam Municipality workshop on micro-climatisation for policy-makers (2025); I supported during my visit to UC Berkeley, the CBE report for policy recommendations on safe maximum indoor temperatures for California (2024).
- Industry transfer: Co-founder of Building Impulse (engineering consultancy, Cambridge/NL); invited mentor for Deloitte upskilling seminars (EU PNRR, Biodiversity theme); Industry contract for research with Apple inc. and Saint Gobain.
- Open education: Coordinator of OpenFace (openface.world) – open MicroMaster programme in façade engineering developed with TU Darmstadt and EURAC (Erasmus+, €400k + €120k TU Delft); >5,000 LinkedIn impressions on first release.
- General audience: Founder and coordinator of the ABE/BK Faculty General Audience Outreach Committee, TU Delft; organiser of the BK Science Day (2025, 2026) opening the faculty to schools, families and the public; "Science on Tour" initiative with TU Delft Science Centre for schools in the Netherlands; interactive Face-2-Face installation at Glasstec 2022 (30,000 visitors) and Delft Highlight Festival 2024 (3,000 visitors); ACUBE citizen science project, Milan district Acquabella.
- Media: Interview on RAI 1 (Italian national television) on sustainable transition for young people (2021); articles in Il Sussidiario (2025–2026) on university reform and COP30; podcast Sostenibilità Italiana; co-speaker at "Europa città del futuro" with EP President David Sassoli (2018).

Supervision and teaching

I co-supervise 6 PhD candidates at TU Delft (2 defending in 2026) and have completed one PhD trajectory (Dr. Lia Tramontini, 2024). I have supervised 42 master students; students under my

mentorship have received the TVVL Student Award (2023, 2026), the Vitruvian Award (2025), and the BIFF Technical Design Prize (2023). I coordinate the MEGA Design Studio (1st year Master of Building Technology/Architecture) and teach in Façade Design Engineering, Human-Building Interaction, Building Physics, and Research Methods.

Career breaks, diverse career paths and major life events

My academic career was shaped by deliberate interdisciplinarity. After a degree in Building Engineering and Architecture in Rome and early industry experience as a façade and building services engineer in Rome (2013–2016), I transitioned to academic research with a competitive scholarship to Cambridge. Between completion of my PhD (September 2021) and my first full-time TU Delft appointment (January 2022), I held a part-time assistant professorship (0.6 FTE) alongside consulting and policy advisory roles.

Document updated: May 2026