

CURRICULUM VITAE

Pietromaria Davoli

1) SHORT PROFILE

Pietromaria Davoli holds a Full Professorship of Architectural Technology (S.S.D. ICAR/12 / CEAR-08/C) in the Department of Architecture (DA) at the University of Ferrara (Unife), Italy.

Master Degree in Architecture with honours and publication worthy at the Faculty of Architecture, University of Florence, Italy (1990); PhD in Technology of Architecture (1995) at the Department of Methods and Processes of Building Production, Florence University.

Coordinator (since 2022) of Master's Degree in Architecture, DA, Unife.

Coordinator of the Design Team - Unife for the scientific restoration of Tassoni Palace in Ferrara (new expansion of the DA). Funded by Ministry: 6.320.000 euro (1998-2008).

From 2010 he is the delegate of the DA, Unife, for the activity with Green Building Council (GBC) Italia (GBC/LEED protocols).

Member of "Sustainability Council" (2011-2016) and "Research Council" (2012-2016), Unife.
Director (since 2014) of the Research Centre "Architettura>Energia" (A>E) of the DA at the Unife.

He is a member of: (since 2017) of the board (Governing Council) of the Italian Society of Technology of Architecture (SITdA); (since 2017) the national group "General States of the Green Economy", Italy.

He has been member of: "Regional Committee for technical rules of public residential building", Region of Emilia Romagna (1997); National commission "Education and scientific research" of the National Council of Architects.

Coordinator (since 2022) of the national cluster "*Energy Climate Architecture*", Italian Society of Technology of Architecture (SITdA).

He participates, in particular, in the following scientific boards/committees:

- FutureBuild Expo/Meetings/Tour/Conference (since 2014, several Italian cities);
- "Recupero Tour – Refurbishment, Restoration, Retrofit", EdicomEdizioni Eventi, 2014 (several Italian cities);
- SER4SC - Seismic and Energy Renovation for Sustainable Cities - International Conference Catania, Italy, 2018;
- SITdA International Conference "Producing Project/La produzione del progetto", Reggio Calabria, Italy, 2018 (Scientific Coordination) and "Naples 2020_Design in the Digital Age. Technology, Nature and Culture", Napoli, 2021;
- SITdA Conference "La tecnologiadell'architettura in una società che cambia", Firenze, Italy, 2019.

He has been member of the Program Working Group of the International Conference and Expo "Greenbuild Europe & The Mediterranean" (GBC, United States and Italy, Verona, 2015).

He is director of the book series "Progettare per costruire sostenibile", Maggioli Ed. (International scientific Committee; double blind review).

He is co-director of the book series "Architettura sostenibile/ Patrimonio e progetto sostenibile", EdicomEdizioni.

Member of the scientific national and international editorial boards (among which: "Recupero e conservazione", publisher: De Lettera Editore, Milano, Italy; "L'Ufficio Tecnico", publisher: Maggioli Editore, Rimini; "Architettare", publisher: Maggioli Editore, Rimini/ Pacini Editore S.p.A, Pisa Ospedaletto); *TECHNE Journal - SITdA*) and reviewer of several national and international journals.

He teaches (since 1995) several disciplines at the Faculties of Architecture Ferrara and Parma, in particular with the course of Technology of Architecture in the Architecture Construction 1 Studio.

Coordinator (since 2013) of the integrated International Programs for a Double Master Degree between the Unife and the PUCPR University, Brazil.

Visiting Professor (2014) at the PUCPR.

Member of the Academic Board and PhD Candidates Supervisor of: the National PhD Programme in Technology of Architecture", UNIFE and others Universities and the "IDAUP- International PhD Architecture and Urban Planning", DA, UNIFE and others Universities (1999-2016); the International PhD "Environmental Sustainability and Wellbeing", UNIFE and others Universities, since 2019.
Member of several final examination PhD commissions.

He teaches at University Master, post-graduate and professional education courses, University Workshop and seminars, also at international level (with principal subjects: environmental design and sustainable technologies; energy retrofit of the architectural heritage).

Scientific Coordinator, chairman and organiser (in collaboration) of national and international conferences, seminars and university design workshops (in particular: conference "New energy efficiency and environmental quality prospects for existing heritage. Reflections and tools for the NZEB standard achievement in the building up-cycling", 4-5 July 2016, DA, Unife. Promoters: SIT dA, Unife and others; workshop "Quali(ci)ty: redesign and energy efficiency for a sustainable quality of life", with conference and exhibit (in collaboration with the international magazine OfARCH), MADE EXPO 2012, Milan; series of conference in several editions of the "Salone del Restauro" (Ferrara Expo) about energy-environmental retrofit of existing building heritage).

He was speaker at National and International conferences, such as:

- "XXVII International conference Science and Cultural Heritage", Bressanone, 2011;
- "I-SMC International Conference. Sustainable environment in the Mediterranean region", Naples, 2012;
- "L'efficienza energetica nell'edilizia storica" (The energy efficiency of historic buildings) organised by Politecnico di Milano, Dep. ABC, Milano, 2013;
- "XXXVI edition of the International Conference on Intervention in Heritage Buildings. Heritage Building and Energy Efficiency: Conflicts and Solutions", organized by AADIPA and "Collegi d'Arquitectes de Catalunya", 2013, Barcellona, Spain;
- "A requalificação efficiency and ambiental dos edificios Italianos, specialy do Patrimônio histórico. Método, estudos and projetos", Central Auditorium of PUCPR, Curitiba, Brasil, 2014;
- conference "#51 AULA ABERTA", Guimarães, Portugal, June 14th, 2017, Universidade do Minho, Portugal.
- "Innovative Energy-Environmental tools for Sustainable Energy Governance in Built Heritage", GBC Italia, UNESCO, Ferrara (2018).

2) RESEARCH ACTIVITY

He participates in scientific research group at local, national and international level.

He has been member of the inter-university research: "Progettare il costruito: nuovi modelli a qualità integrata per la città compatta" (Designing the built environment: new integrated quality models for the compact city), funded by the call SPINNER 2013, Region E.R.; member of TekneHub Lab of Tecnopolo Unife – High Technology Network Region E.R (2011-2013).

He has been scientific coordinator and co-coordinator of the following research:

- DA research group for the development of "Guidelines for an hostel prototype" (2008), Region Emilia-Romagna;
- "Studies and design researches for the functional and energy recovery of an industrial building" and "Research and design advise for a new school with high energy-environmental performances", Consorzio Ferrara Ricerche (CFR) and A>E. Client: Soelia S.p.a, Argenta (FE) (2010-2013);
- design research for the functional and energy-environmental retrofit of the ex C.A.P. e M.A.P.R.E areas, Reggio E. (A>E, promoted by international magazine OF ARCH);
- "Integrated study about the design strategies for the energy retrofit, the renewable energy plants integration and preliminary geological survey of the historic village Apice Vecchia" (2012), CFR, A>E and Dep. of Earth Science, Unife. Client: APICE (BN);
- design research "Building integration of innovative semitransparent photovoltaic devices: a PV shed for the recharge of electrical bicycles and *hotspot wi-fi*" (A>E and Dep. of Physics, Unife (2014-2015);

- design research “Development of methods and design concepts for new wooden buildings in Beijing, China, and Malta”, promoted by XLAM DOLOMITI. Consorzio Futuro in Ricerca (CFR), A>E, DA, Unife (2016);
- research “Sustainable Unife - Energy screening of the building heritage of the University of Ferrara and preliminary proposals for the retrofit strategies planning phase”, A>E, DA, Unife (2014-2017).
- research project “Heritage's energy LivingLabs. An experimental experience to live. (#HeLivingLabs)”, A>E, DA, Unife and Eurac Research, Bolzano (2016-2019).

Principal investigator of the research project “INNO-ZEB_INNOvative active and passive technologies for nearly Zero Energy Buildings”, 2014-2016, funded by Unife (first classified). International university's partnerships: DA, Unife, Tianjin University (China); University of Auckland (New Zealand), University of Minho (Portugal).

He has participated at “National Working Group (“change leader” of stakeholders core group), “GBC Italy”, for the European Project “BUILD UPON (HORIZON 2020)”, Europe Regional Network of the World GBC (2015-2017).

Since 2016 he is, before, academic advisor/construction manager and, later, member of the steering committee, responsible for the Unife e project architect of DA–A>E, UNIFE team (“Third Party”) for the international university competition “Solar Decathlon Middle East 2018” (SDME2018). “Leader institution” University of Sharjah, UAE, for team “KNOW HOWse”, which has been selected at world level between 21 teams for the final contest, Dubai, 2018). He participated in the final competition, Dubai, in November 2018.

In 2018 he has won, as Supervisor, with the project “HeLLo - Heritage energy Living Lab onsite”, the Marie Skłodowska-curie action (Individual Fellowships Standard), HORIZON 2020. Call: H2020-MSCA-IF-2017, DA, A>E, Unife (2018-2020).

Scientific Responsible of the Local Research Unit (Project Operational Unit) of the University of Ferrara in the national call “PRIN 2017” (funded 2019; Scientific Coordinator: LOSASSO Mario Rosario). Protocol 20177JHMLA_005 , ERC Sector PE8. Project title: “TECH-START - key enabling TEChnologies and Smart environmenT in the Age of gReen economy. convergent innovations in the open space/building system for climaTe mitigation)”.

A great part (over 30 years) of the scientific career of Pietromaria Davoli has been focused on:

- relationships between environment, architecture (from the spontaneous pre-industrial), sustainable technologies, projects and processes, particularly for environmental/energy efficiency control and design in new buildings, as well as in the valorisation and refurbishment of existing buildings, with particular attention to the historic heritage behaviour;
- technological innovation with specific interest in timber building systems.

He has coordinated and has been involved, at national and international level, in several research projects for the analysis of the environmental and energy behaviour of such buildings for the development of specific tools for the intervention planning phase and for the support in the decision-making process (i.e. for public buildings management).

In the last years the multidisciplinary Research Centre “Architettura>Energia” (A>E) of the Department of Architecture (DA) at the University of Ferrara (Unife), Italy, coordinated by P. Davoli, has elaborated, in particular, the following expertise and has developed some specific tools for the intervention planning phase and for the support in the decision-making process: 1) Coordinating of the activities for the development of the new rating system *GBC Historic Building*; 2) UPPER - Urban Parametric Protocol for Energy Retrofit, an experimental method to drive expedite energy audits of the existing building stock of social housing; 3) Developing a parametric energy assessment tool to ease the planning of retrofit actions applied to historical villages; 4) Analysing energy calculation tools and corrective actions, addressed towards historical architecture; 5) A>E group is involved in “Task 59 - Deep retrofit of historic buildings towards lowest possible energy demand and CO2 emissions (NZEB)” of the International Energy Agency SHC (leader: EURAC Research Bolzano); 6) research project “Sustainable Unife”, proposal for preliminary energy retrofit actions of about 50 buildings of the University of Ferrara heritage, 2014-2017.

3) AWARDS AND PRIZES

He has been won several (1st prize) architectural public awards. The most important:

- "IQU Prize – Innovation and Urban Quality", section "completed buildings" in the framework of EURO-PA Exhibition, Rimini 2008 (Project for the restoration of Tassoni Palace in Ferrara - in collaboration);
- national competition (in collaboration): "Eco_luoghi 2013", Houses for Sustainable Living, promoted by Ministry of Environment et al., Rome, 2013.
- With the research project "Sustainable Unife" he has won (in collaboration) the first prize of the Italian Leadership Awards, section Leadership in Green Building for Public sector, GBC Italia Awards (2016).

With the research project "Hello - Heritage energy Living Lab on site" he has won (in collaboration) the first prize of the Italian Leadership Awards, section Leadership in Green Building for Public sector, GBC Italia Awards (2018).

"Best Middle Eastern University Award", SDME2018, Dubai, UAE. Winner: team KNOW HOWse,

4) SCIENTIFIC PUBLICATIONS

He is the author or co-author of about 200 scientific papers, essays, conference proceedings and books, also with international relevance.

Some significant previous publications before 2010:

- Davoli P. (1993), Architettura senza impianti: aspetti bioclimatici dell'architettura preindustriale, Alinea, Firenze, pp. tot. 150 - **Monografia**
- Davoli P. (1996), Intonaci. Requisiti, criteri progettuali, esecuzione, prestazioni, Hoepli, Milano, tot. pp. 136 (124) - **Monografia**
- Davoli P. (2001), Costruire con il legno. Requisiti, criteri progettuali, esecuzione, prestazioni, Hoepli, Milano, tot. pp. 266 (252). ISBN: 8820327457 - **Monografia**
- Davoli P. (2005), Involucri lignei nell'architettura residenziale: innovazione tecnologica ed espressiva, in: AA.VV., Abitare il futuro. Città, Quartieri, case, Cuore Mostra SAIE 2005, BolognaFiere, Be-Ma, Milano, pp.254-261 - **Contributo in volume**
- Davoli P. (2008), Nuovi rapporti simbiotici per l'integrazione "virtuosa" fra costruzione ed impianti, in: AA.VV., L'Italia si trasforma. + Qualità - Energia per costruire sostenibile, BE-MA editrice, Milano, pp. 162-175. ISBN 9788871432915 - **Contributo in volume**