Giovanni Pernigotto
University academic curriculum vitae

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[1] **Personal information**

Name:		Giovanni Pernigotto
Address:	Office	Piazza Università 5, 39100 Bolzano, Italy
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[2] **Education since leaving school**

[2.1] 2007 - Bachelor Degree in Management Engineering, University of Padova

BSc Thesis title: "Analisi delle metodologie di calcolo delle prestazioni dei sistemi solari termici ai fini della certificazione energetica degli edifici" (English title: "*Analysis of the calculation methodologies of the performance of the solar thermal systems for buildings energy certification*").
Final mark: 107/110.
Supervisors:
(1) Prof. A. Gasparella (University of Padova, now Free University of Bozen-Bolzano),
(2) Mr. M. Pagani (freelance professional).
SSD: ING-IND/11 – Building Physics and Building Energy Systems.

[2.2] 2009 - Master Degree in Management Engineering - curriculum of Logistics and Production, University of Padova

MSc Thesis title: "Analisi del comportamento dinamico dell'involucro edilizio: metodologie di calcolo e determinazione delle prestazioni estive" (English title: "*Analysis of the building envelope dynamic behaviour: calculation methodologies and summer performance evaluation*").
Final mark: 110/110 cum laude.
Supervisors:
(1) Prof. A. Gasparella (University of Padova, now Free University of Bozen-Bolzano),
(2) Prof. P. Baggio (University of Trento)
(3) Prof. M. Baratieri (Free University of Bozen-Bolzano).
SSD: ING-IND/11 – Building Physics and Building Energy Systems.

[2.3] 2013 - Doctor of Philosophy in Industrial Engineering Awarded with the "Doctor Europaeus" honour label, Doctoral School in Industrial Engineering, University of Padova

PhD Thesis title: "Evaluation of building envelope energy performance through extensive simulation and parametrical analysis".
Supervisors:
(1) Prof. A. Gasparella (Free University of Bozen-Bolzano),
(2) Prof. J.L.M. Hensen (Eindhoven University of Technology, Eindhoven, The Netherlands).
SSD: ING-IND/11 – Building Physics and Building Energy Systems.

[2.4] Habilitations:

- **2009 - Admitted to the industrial engineering profession**.
- **2017 - Italian National Habilitation as Associate Professor in SSD ING-IND/11** (received in April 2017).

[3] Present position

Associate Professor in Building Physics and Building Energy Systems at the Free University of Bozen-Bolzano (UNIBZ), Faculty of Engineering

Period: since 01.07.2023.
Employer: Free University of Bozen-Bolzano, Faculty of Engineering.
SSD: ING-IND/11 – Building Physics and Building Energy Systems.

[4] Academic and Professional experience

[4.1] Assistant Professor in Building Physics and Building Energy Systems (Senior researcher with a fixed-term contract RTD-B) at the Free University of Bozen-Bolzano (UNIBZ), Faculty of Engineering (after March 1st, 2023) & Faculty of Science and Technology (before March 1st, 2023)

Period: from 01.07.2020 to 30.06.2023.
Employer: Free University of Bozen-Bolzano, Faculty of Engineering (after March 1st, 2023) & Faculty of Science and Technology (before March 1st, 2023).
Supervisor: Prof. A. Gasparella.
SSD: ING-IND/11 – Building Physics and Building Energy Systems.

Description of main research topics and activities:

1. **Building envelope components:**
   - Numerical and experimental characterization of steady-state and dynamic thermal behaviour of the opaque components of the building envelope, in particular assessing the impact of different moisture content in timber structures (see for instance papers **[21,27; 68,72]** and projects **[8.1-8.8; 8.24,8.28]**);
   - Experimental characterization of thermal and visual behaviour of simple and complex fenestration systems (see for instance papers **[25,30; 69,73]**);
2. **Building-systems and indoor built environment:**
   - Optimization of energy efficiency measures in the framework of building refurbishment (see for instance project **[8.11]**);
   - Assessment of indoor environmental quality conditions, especially in schools and office buildings, in particular related to thermal-hygrometric comfort, visual comfort and indoor air quality IAQ, as well as to the impact on occupants' performance and productivity (see for instance papers **[23,24,31; 65,74,75]** and projects **[8.22,8.23,8.25-8.28; 8.29,8.30]**);
3. **Urban scale analysis and simulation:**
   - Analysis of the energy performance of the existing building stock, study of historical data of final uses, and identification of reference case-studies (see for instance project **[8.25]**);
   - Building simulation at district / urban scale, energy policies definition (see for instance papers **[22,26,28; 64,71,78]** and projects **[8.31]**);
   - Study of climatic boundary conditions for building energy simulation analyses - modelling of solar irradiance, analysis of multi-year weather data series, climatic classification (see for instance papers **[29; 66,67,68,76,77]** and projects **[8.32]**).

Participation to projects: **[8.1-8.9, 8.11], [8.22-8.28], [8.29-8.32], [8.36]**.
Published and Developed Research: **[21-31; 64-78; 106-118; 127-130]**.

Awards:
• Paper **[107]** awarded as II best paper at the "High Performance Buildings Student Paper Competition" at VI International High Performance Buildings Conference at Purdue (2021).

[4.2] Assistant Professor in Building Physics and Building Energy Systems (Junior researcher with a fixed-term contract RTD-A) at the Free University of Bozen-Bolzano (UNIBZ), Faculty of Science and Technology

Period: from 01.07.2017 to 30.06.2020.
Employer: Free University of Bozen-Bolzano, Faculty of Science and Technology.
Supervisor: Prof. A. Gasparella.
SSD: ING-IND/11 – Building Physics and Building Energy Systems.
Main activities:
As for the position described in **[4.1]**.

Participation to projects: **[8.9-8.19], [8.23-8.28], [8.33-8.35]**.

Published and Developed Research: **[11-20; 52-63; 101-105; 126]**.

[4.3] Assistant Professor in Building Physics and Building Energy Systems (Junior Researcher with a fixed-term contract RTD-A without teaching appointment) at the Free University of Bozen-Bolzano, Faculty of Science and Technology

Period: from 15.02.2016 to 30.06.2017.
Employer: Free University of Bozen-Bolzano, Faculty of Science and Technology.
Supervisor: Prof. A. Gasparella.
SSD: ING-IND/11 – Building Physics and Building Energy Systems.
Main activities:

- Development of the building physics research laboratories at the NOI Technology Park funded by the Autonomous Province of Bozen-Bolzano (section: Klimahouse and Energy Production, main coordinator: prof. A. Gasparella):
  - **"Building Envelope Lab"** (LAB 1) - a laboratory for the thermal physical characterization of building envelope components in transient conditions
  - **"HVAC System Lab"** (LAB 2) - a laboratory for the study of handling and distribution of thermal fluids in air-conditioning systems
  - **"Built Environment Simulator Lab"** (LAB 3) - an external laboratory for the analysis of the response of the building systems under real climatic solicitations.
- Participation to projects: **[8.20-8.21], [8.28], [8.34-8.35]**.

Published and Developed Research: **[8-10; 50,51; 95-100]**.

Awards:

• Paper **[99]** awarded as III best paper at the "High Performance Buildings Student Paper Competition" at IV International High Performance Buildings Conference at Purdue (2016).

[4.4] Research fellow at the University of Padova, Department of Management and Engineering

Period: from 15.02.2014 to 14.02.2016.
Employer: University of Padova, Department of Management and Engineering.
Supervisor: Prof. C. Zilio.
SSD: ING-IND/10 – Thermal engineering and industrial energy systems.
Activities:

- Main project: European Research Project TOICA - "Thermal Overall Integrated Conception of Aircraft" (project **[8.43]**).
- Participation to projects: **[8.42]** and **[8.43]**.

Published and Developed Research: **[6,7; 42-49; 92-94]**.

[4.5] Research fellow at the Free University of Bozen-Bolzano, Faculty of Science and Technology

Period: from 15.01.2013 to 14.01.2014.
Employer: Free University of Bozen-Bolzano, Faculty of Science and Technology.
Supervisor: prof. A. Gasparella.
SSD: ING-IND/11 – Building Physics and Building Energy Systems.
Activities:

- Main project: Air-to-air heat recovery in HVAC systems **[8.37]**.
- Participation to projects: **[8.37]** and **[8.38]**.

Published and Developed Research: **[4,5; 36-41; 90,91]**.

[4.6] PhD Student at the University of Padova, Department of Management and Engineering

Period: 3-year contract as PhD Student, from 01.01.2010 till 31.12.2012.
Employer: University of Padova, PhD School of Industrial Engineering.
Funded by: Fondazione Studi Universitari di Vicenza (FSU).
Supervisors: Prof. A. Gasparella, Prof. J.L.M. Hensen.
SSD: ING-IND/11 – Building Physics and Building Energy Systems.
Activities:

- Main research topic: "Evaluation of building envelope energy performance through extensive simulation and parametrical analysis".
- Participation to projects: **[8.39-8.41]** and **[8.44]**.

Published and Developed Research: **[1-3; 32-35; 79-89; 119-125; 131].**

[4.7] Guest PhD Student at TU/E (Eindhoven University of Technology), Department of the Built Environment, Research Group of Building Physics and Services

Period: from 03.09.2012 till 21.12.2012.
Supervisor: Prof. J.L.M. Hensen.
SSD: ING-IND/11 – Building Physics and Building Energy Systems.
Main topic: "Long term evaluation of building energy performance: comparison of the test reference year and historical data series in the North Italy climates".
Related research: **[4; 36; 131]**.

[5]

Experience in academic teaching

(A) CURRENT TEACHING APPOINTMENTS AT THE FREE UNIVERSITY OF BOZEN-BOLZANO (Academic Year: 2022 – 2023):

- **Special Issues of Building Physics** (Lecture hours: **60 h**; Master Degree in Energy Engineering (LM-30), II yr, I semester; Language: English; SSD: ING-IND/11). Syllabus: https://webservices.scientificnet.org/rest/uisdata/api/v1/coursedescriptions/78649
- **Applicazioni delle norme sull'efficienza energetica in edilizia / Application of technical standards for building energy efficiency** (Lecture hours: **25 h**; Bachelor in Industrial Mechanical Engineering (L-9) and Professional Bachelor in Wood Technology (L-P03), optional course, II semester; Language: Italian; SSD: ING-IND/11). Syllabus: https://webservices.scientificnet.org/rest/uisdata/api/v1/coursedescriptions/78880

(B) LIST OF TEACHING EXPERIENCES IN PREVIOUS ACADEMIC YEARS, STARTING FROM THE MOST RECENT ONES.

Academic Years: 2021 – 2022

[5.1] Special Issues of Building Physics
Lecture hours: **60 h**.
University: Free University of Bozen-Bolzano.
Degree: Master Degree in Energy Engineering (LM-30), II yr, I semester.
Language: English.
SSD: ING-IND/11.

[5.2] Applicazioni delle norme sull'efficienza energetica in edilizia / Application of technical standards for building energy efficiency
Lecture hours: **25 h**.
University: Free University of Bozen-Bolzano.
Degree: Bachelor in Industrial Mechanical Engineering (L-9), optional course, II semester.
Language: Italian.
SSD: ING-IND/11.

[5.3] High-Performance Buildings: Comfort, Energy Efficiency
Lecture hours: **10 h** out of 60 h.
University: Free University of Bozen-Bolzano.
Degree: Professional Bachelor in Wood Technology (L-P03), III yr, I semester.
Language: English.
SSD: ING-IND/11.

Academic Years: 2020 – 2021

[5.4] Special Issues of Building Physics
Lecture hours: **60 h**.
University: Free University of Bozen-Bolzano.
Degree: Master Degree in Energy Engineering (LM-30), II yr, I semester.
Language: English.
SSD: ING-IND/11.

[5.5] Applicazioni delle norme sull'efficienza energetica in edilizia / Application of technical standards for building energy efficiency
Lecture hours: **25 h**.
University: Free University of Bozen-Bolzano.
Degree: Bachelor in Industrial Mechanical Engineering (L-9), optional course, II semester.

Language: Italian.
SSD: ING-IND/11.

Academic Years: 2019 – 2020

[5.6] Special Issues of Building Physics
Lecture hours: **60 h**.
University: Free University of Bozen-Bolzano.
Degree: Master Degree in Energy Engineering (LM-30), II yr, I semester.
Language: English.
SSD: ING-IND/11.

[5.7] High-Performance Buildings: Comfort, Energy Efficiency
Lecture hours: **10 h** out of 60 h.
University: Free University of Bozen-Bolzano.
Degree: Professional Bachelor in Wood Technology (L-P03), III yr, II semester.
Language: English.
SSD: ING-IND/11.

[5.8] Applicazioni delle norme sull'efficienza energetica in edilizia / Application of technical standards for building energy efficiency
Lecture hours: **25 h**.
University: Free University of Bozen-Bolzano.
Degree: Bachelor in Industrial Mechanical Engineering (L-9) and Professional Bachelor in Wood Technology (L-P03), optional course, II semester.
Language: Italian.
SSD: ING-IND/11.

Academic Years: 2018 – 2019

[5.9] Special Issues of Building Physics
Lecture hours: **60 h**.
University: Free University of Bozen-Bolzano.
Degree: Master Degree in Energy Engineering (LM-30), II yr, I semester.
Language: English.
SSD: ING-IND/11.

[5.10] Applicazioni delle norme sull'efficienza energetica in edilizia / Application of technical standards for building energy efficiency
Lecture hours: **25 h**.
University: Free University of Bozen-Bolzano.
Degree: Bachelor in Industrial Mechanical Engineering (L-9), optional course, II semester.
Language: Italian.
SSD: ING-IND/11.

Academic Year: 2017 – 2018

[5.11] Special Issues of Building Physics
Lecture hours: **36 h** out of 60 h.
University: Free University of Bozen-Bolzano.
Degree: Master Degree in Energy Engineering (LM-30), II yr, I semester.
Language: English.
SSD: ING-IND/11.

[5.12] Applicazioni delle norme sull'efficienza energetica in edilizia / Application of technical standards for building energy efficiency
Lecture hours: **25 h**.
University: Free University of Bozen-Bolzano.
Degree: Bachelor in Industrial Mechanical Engineering (L-9), optional course, II semester.
Language: Italian.
SSD: ING-IND/11.

[5.13] Comportamento dell'involucro edilizio (invernale ed estivo) / Winter and summer behavior of the building envelope
Lecture hours: **8 h**.
University: Free University of Bozen-Bolzano.
Degree: II Level Master "BEE - Building, Energy and Environment. CasaClima" (BEE).
Language: Italian.
SSD: ING-IND/11.

[5.14] Metodi di calcolo semplificati per la certificazione energetica della prestazione energetica / Simplified calculation methods for the energy performance certification
Lecture hours: **8 h**.
University: Free University of Bozen-Bolzano.
Degree: II Level Master "BEE - Building, Energy and Environment. CasaClima" (BEE).
Language: Italian.
SSD: ING-IND/11.

[5.15] Simulazione, monitoraggio e diagnosi energetica / Simulation, monitoring and energy auditing
Lecture hours: **20 h**.
University: Free University of Bozen-Bolzano.
Degree: II Level Master "BEE - Building, Energy and Environment. CasaClima" (BEE).
Language: Italian.
SSD: ING-IND/11.

[5.16] Bilancio energetico dell'edificio / Building energy balance
Lecture hours: **12 h**.
University: IUAV of Venezia.
Degree: II level Master "BEAM" ("Master in Processi Costruttivi Sostenibili BEAM - Building Environmental Assessment and Modeling").
Language: Italian.
SSD: ING-IND/11.

[5.17] Simulazione energetica dinamica degli edifici / Dynamic building energy simulation
Lecture hours: **46 h**.
University: IUAV of Venezia.
Degree: II level Master "BEAM" ("Master in Processi Costruttivi Sostenibili BEAM - Building Environmental Assessment and Modeling").
Language: Italian.
SSD: ING-IND/11.

Academic Year: 2016 – 2017

[5.18] Tools for empirical and numerical assessment of energy systems
Lecture hours: **6 h**.
University: Free University of Bozen-Bolzano.
Degree: PhD Course in Sustainable Energy and Technologies.
Language: English.
SSD: ING-IND/11.

Academic Year: 2015 – 2016

[5.19] Bilancio energetico dell'edificio / Building energy balance
Contract Professor ("Professore a contratto").
Lecture hours: **20 h**.
University: IUAV of Venezia.
Degree: II level Master "BEAM" ("Master in Processi Costruttivi Sostenibili BEAM - Building Environmental Assessment and Modeling").
Language: Italian.
SSD: ING-IND/11.

[5.20] Simulazione energetica dinamica degli edifici / Dynamic building energy simulation
Contract Professor ("Professore a contratto").
Lecture hours: **42 h**.
University: IUAV of Venezia.
Degree: II level Master "BEAM" ("Master in Processi Costruttivi Sostenibili BEAM - Building Environmental Assessment and Modeling").
Language: Italian.
SSD: ING-IND/11.

Academic Year: 2014 – 2015

[5.21] Comportamento dell'involucro edilizio (invernale ed estivo) / Winter and summer behavior of the building envelope
Contract Professor ("Professore a contratto").
Lecture hours: **24 h**.
University: Free University of Bozen-Bolzano.
Degree: II level Master "Casaclima" ("Master CasaClima – La prestazione energetica degli edifici. Progettazione, ottimizzazione e utilizzo").
Language: Italian.
SSD: ING-IND/11.

[5.22] Bilancio energetico dell'edificio / Building energy balance
Contract Professor ("Professore a contratto").
Lecture hours: **14 h**.
University: IUAV of Venezia.
Degree: II level Master "BEAM" ("Master in Processi Costruttivi Sostenibili BEAM - Building Environmental Assessment and Modeling").
Language: Italian.
SSD: ING-IND/11.

[5.23] Fisica tecnica / Technical Physics
Teaching assistant.
Teaching assistance hours: **20 h**.
Class exercise hours: **20 h**.
University: University of Trento.
Degree: Bachelor in Civil Engineering ("Laurea Triennale in Ingegneria

Civile") and Bachelor in Engineering for the Environment and the Territory ("Laurea Triennale in Ingegneria per l'Ambiente e il Territorio").
Language: Italian.
SSD: ING-IND/11.

[5.24] Tecnica del controllo ambientale / Environment control techniques
Teaching assistant.
Teaching assistance hours: **15 h**.
Class exercise hours: **15 h**.
University: University of Trento.
Degree: Master Degree in Civil Engineering ("Laurea Magistrale in Ingegneria Civile").
Language: Italian.
SSD: ING-IND/11.

Academic Year: 2011 – 2012

[5.25] Renewable energies
Teaching assistant.
Teaching assistance hours: **16 h**.
Class exercise hours: **20 h**.
University: Free University of Bozen-Bolzano.
Degree: Bachelor in Logistics and Production Engineering and Bachelor in Agricultural Science and Agricultural Technology.
Language: English.
SSD: ING-IND/11.

Academic Year: 2010 – 2011

[5.26] Sistemi energetici / Energy systems
Teaching assistant.
Teaching assistance hours: **50 h**.
Class exercise hours: **30 h**.
University: Free University of Bozen-Bolzano.
Degree: Bachelor in Logistics and Production Engineering.
Language: Italian.
SSD: ING-IND/11.

(C) OTHER TEACHING ASSISTANCE ACTIVITIES PERFORMED WITHOUT OFFICIAL APPOINTMENT

Academic Years: 2014 – 2015, 2015 – 2016, 2016 – 2017
Teaching assistance for the preparation of 2 exercise hours about finite elements numerical methods for heat transfer problems during the course "Scambio termico nelle apparecchiature elettroniche" (Heat transfer in electronic equipment; prof. G.A. Longo (2014-2015) and prof. C. Zilio (2015-2016; 2016-2017), Master Degree in Mechatronic Engineering, University of Padova, SSD: ING-IND/10).

Academic Year: 2012 - 2013
Teaching assistance for the preparation of 6 lecture hours on solar radiation and heat transfer through the ground modelling during the course "Modelling Methods for Applied Physics" (prof. A. Gasparella, PhD Programme in Sustainable Energy and Technologies, Free University of Bozen-Bolzano, SSD: ING-IND/11). Teaching assistance for the preparation of 4 lecture hours on dynamic simulation during the course "Advanced Applications of Building Physics" (prof. A. Gasparella, Master Degree in Energy Engineering, Free University of Bozen-Bolzano, SSD: ING-IND/11).

Academic Year: 2010 - 2011
Teaching assistance for the preparation of 12 lecture hours on dynamic simulation during the II level Master "Casaclima", Free University of Bozen-Bolzano (prof. A. Gasparella, Free University of Bozen-Bolzano, SSD: ING-IND/11).

Academic Year: 2009 - 2010
Teaching assistance for the preparation of 6 exercises hours about finite difference numerical methods for the calculation of heat transfer problems during the course "Progetto e Verifica Termica" ("Thermal Design and Diagnosis"; prof. A. Gasparella, Bachelor in Mechanical Engineering, University of Padova, SSD: ING-IND/10).

(D) TEACHING EXPERIENCE AT INTERNATIONAL LEVEL

2023 (13-17.03.2023) and **2022** (14-18.03.2022): "International week 'Sustainable Cities and Communities'" (https://www.ucll.be/en/programmes/short-programmes/international-weeks/sustainable-cities-and-communities) at UCLL (University of Applied Science), Hasselt, Belgium, organized by the the network Euclides (http://www.euclidesnet.eu/):

- Lecture: "*Application of Energy Efficiency Measures for Building Retrofitting: An Introduction to Building Performance Analysis and Simulation"*
- Project Assignment and Tutorial: "*Building Performance Simulation*" (https://kuleuven.mediaspace.kaltura.com/media/Teaser+Energy+Efficiency/1_ykokxl40)

(E) THESIS AND INTERNSHIP TUTOR

Supervisor and co-supervisor of 63 defended theses

(1) Supervisor of 19 defended theses:

- **Free University of Bozen-Bolzano:**
  - **3** II level Master theses
  - **7** Master Degree theses
  - **7** Bachelor Degree theses
- **University IUAV of Venice:**
  - **2** II level Master theses

(2) Co-supervisor of 44 defended theses:

- **Free University of Bozen-Bolzano:**
  - **4** PhD Theses
    - Federico Battini, thesis title: "*Development of a novel shoeboxing algorithm for urban and building energy modeling*"
    - Maja Danovska, thesis title: "*Heat and moisture transfer in timber building components*"
    - Fahad Haneef, thesis title: "*Multi-objective optimization for retrofitting on a district scale towards the development of near-zero energy districts*"
    - Luca Zaniboni, thesis title: "*Investigation on the indoor environmental comfort perceived by employees and patients of physiotherapy centers through experimental subjective and objective surveys*"
  - **2** II level Master theses
  - **15** Master Degree theses
  - **3** Bachelor Degree thesis
- **University of Padova:**
  - **9** Master Degree theses
  - **6** Bachelor Degree theses

- **University of Trento:**
  - **1** Master Degree thesis
- **University IUAV of Venice:**
  - **1** II level Master thesis
  - **2** Master Degree theses
- **University of Bologna:**
  - **1** Bachelor Degree thesis

(3) Academic tutor of 14 internships (7 Bachelor Students, 4 Master Degree Students, 2 post-degree internships, and 1 PhD Candidate PNRR DM 351/2022 at the Free University of Bozen-Bolzano).

Current supervision of the following PhD Candidate at the PhD Programme in Sustainable Energy and Technologies SET of the Free University of Bozen-Bolzano:

1. Angelica El Hokayem, cycle 38 (PNRR DM 351/2022 scholarship), topic "*Support to the Public Administration for developing new energy and sustainable policies for the built environment*".

Current co-supervision of the following 4 PhD Candidates at the PhD Programme in Sustainable Energy and Technologies SET of the Free University of Bozen-Bolzano:

1. Riccardo Albertin, cycle 35, topic "*Airflow networks in building simulation: applications to model calibration and assessment of IAQ and COVID-19 contagion risk*";
2. Ritesh Wankhade Narendra, cycle 35, topic "*Impact of air-displacement around high-rise and large buildings on natural ventilation potential*";
3. Aleksandr Gevorgian, cycle 37, topic "*Solar radiation models for building performance simulation in mountain areas: development and empirical validation*";
4. Riccardo Gazzin, cycle 38 (PNRR DM 352/2022 scholarship), topic "*Façade commissioning, from early design to end of life for a user centered and zero emission building*".

Awarded supervised theses:

1. Federico Battini, "*Urban modelling application to building districts: opportunities and limitations*", MSc in Energy Engineering at the Free University of Bozen-Bolzano, Thesis Award AIMAG 2020.
2. Claudia Fiabane, "*Numerical Characterization Of The Thermal Performance Of An Innovative HVAC Emission System*", MSc in Energy Engineering at the Free University of Bozen-Bolzano, AICARR Thesis Award 2021.

(F) PHD EXAMINER AND REVIEWER:

- 19.04.2023, University of Trento, Doctoral School in Civil, Environmental and Mechanical Engineering, member of the final examination committee.
- 31.03.2023, Polytechnic University of Turin, Doctoral Program in Energetics, member of the final examination committee.
- 2023, Polytechnic University of Turin, Doctoral Program In Energetics, final thesis reviewer.
- 25.07.2022, Polytechnic University of Milan, Research Doctoral Program in Architecture, Built Environment, and Construction Engineering, member of the final examination committee.
- 2022, Polytechnic University of Milan, Research Doctoral Program in Architecture, Built Environment, and Construction Engineering, final thesis reviewer.
- 2021, Polytechnic University of Marche, PhD in Industrial Engineering, final thesis reviewer.
- 27.03.2020, University of Udine, PhD in Environmental and Energy Engineering Science, member of the final examination committee.

[6] **INSTITUTIONAL ACTIVITY IN UNIBZ:**

Other academic roles and responsibilities

- **Member of the PhD Council of "Sustainable Energy and Technologies" SET** of the Free University of Bozen-Bolzano (since the academic year 2016-2017) (https://www.unibz.it/en/faculties/engineering/phd-sustainable-energy-technologies//).
  Main responsibilities:
  - *Substitute Member of the evaluation commission for the selection of the candidates* applying to the 34th, 35th, 36th, 37th, 38th, and 39th cycles of the PhD Programme SET;
  - *Reference person* for two scholarships funded/co-funded in the framework of DM 351/2022 and DM 352/2022 (PNRR):
    - "Support to the Public Administration for developing new energy and sustainable policies for the built environment",
    - "Facade commissioning, from early design to end of life for a user centered and zero emission building" (co-funded by EURAC Research).
- **Member of the Study Council of the I level Master in "Fire Safety Engineering" (Master FSE)** of the Free University of Bozen-Bolzano (since the academic year 2021-2022) (https://www.unibz.it/en/faculties/engineering/master-fire-safety-engineering//).
- **Member of the Study Council of the Master Degree in Energy Engineering (LM-30)** of the Free University of Bozen-Bolzano and of the University of Trento (since the academic year 2017-2018) (https://www.unibz.it/en/faculties/engineering/master-energy-engineering//).
  Main responsibilities:
  - *Member of the Committee for EUR-ACE accreditation* (2018) *and periodic audit* (2022) of the Master Degree in Energy Engineering (LM-30) (https://www.quacing.it/sistema-eur-ace/);
  - *Auxiliary member for Quality Assurance* for the Master Degree in Energy Engineering (LM-30):
    - Contribution to the preparation of the documentation of the periodic audit with the UNIBZ Evaluation Committee (Nucleo di Valutazione) (2021);
    - Contribution to the preparation of texts for the SUA-CdS, Scheda di Monitoraggio Annuale SMA, and Rapporto di Riesame Ciclico (2018, 2022);
    - Control and improvement of *syllabi* for the courses of the study programme;
    - Assessment of requirements for the enrolment to the study programme for non-EU students and of compatibility of students' individual study plans with the study programme requirements;
  - *"Docente di riferimento" for the academic years 2019/2020, 2020/2021, 2021/2022, 2022/2023;*
  - *Member of the Committee for the Recognition and the Equivalency of Foreign Qualifications*;
  - *Substitute Member of evaluation commission for the selection of new applicant students* for the academic years 2020, 2021, 2022, 2023;
  - *Support for the selection of candidates for the Double Degree programme within Erasmus Mundus Joint Master ME3+*;
  - *Member of the Committee for the revision of the Ordinamento of the study programme* (2022-2023);

- *Supervision of students' projects and activities in the framework of the project «Atelier Riqualificazione della città consolidata» for the renovation of South Tyrol military areas*, in the framework of the course "Special Issues of Building Physics" (https://www.unibz.it/news/128919-riqualificazione-degli-areali-militari-presentati-i-progetti) (2017-2019).

- **Participation to the Study Council of the Bachelor in Industrial Mechanical Engineering (L-9)** of the Free University of Bozen-Bolzano (since the academic year 2017-2018) (https://www.unibz.it/en/faculties/engineering/bachelor-industrial-mechanical-engineering/). Main responsibilities:
  - *Member of the Committee for the definition of criteria for intermediate and final evaluations*;
  - *Responsible for the agreement with the High School ITCAT Delai of Bolzano* to allow 5th year students to attend to the course "Applicazioni delle norme sull'efficienza energetica in edilizia" (activity in the framework of the PCTO initiatives);
  - *Presentation of L-9 and L-P03 study programmes at high schools* (ITCAT Delai, 20.05.2022).

- **Participation to the Study Council of the Professional Bachelor in Wood Technology (L-P03)** of the Free University of Bozen-Bolzano (since the academic year 2018-2019) (https://www.unibz.it/en/faculties/engineering/bachelor-wood-technology/):
  - *"Docente di riferimento" for the academic year 2018/2019.*

- **Member of the several commissions for the selection of candidates for research fellow positions in the SSD ING-IND/11, for lecturer / teaching assistant positions, and collaborators**

- **Support to design and development of the Building Physics Labs at the NOI TechPark, financial management, and periodic reporting to the funding agency** (Capacity Building Programme "Klimahouse and Energy Production", funded by the Autonomous Province of Bozen-Bolzano) (2016 - 2022):
  - **"Building Envelope Lab"** (LAB 1) - a laboratory for the thermal physical characterization of building envelope components in transient conditions
  - **"HVAC System Lab"** (LAB 2) - a laboratory for the study of handling and distribution of thermal fluids in air-conditioning systems
  - **"Built Environment Simulator Lab"** (LAB 3) - an external laboratory for the analysis of the response of the building systems under real climatic solicitations.

- **Participation to the Spoke 1 "Ecosystems for Mountain Innovations" (UNIBZ leader) of the PNRR Interconnected Nord-Est Innovation Ecosystem "iNEST"** (since 2022, see project **[8.22]** for more details). Reference person for the topics related to Building Physics and Building Energy Systems at the Free University of Bozen-Bolzano in the framework of the project. Participation to the following research topics:
  - **RT1A** ("**Mountain social life**", sectors "*Psycho social aspects in the implementation and multidimensional evaluation of innovative solutions to support well-being and quality of life in the mountain environment*" and "*Digital and training strategies to support smart villages in mountain environments*"),
  - **RT1B** ("**Mountain habitat**", sector "*Implementing actions for*

monitoring and assessing the effects of external drivers on people's wellbeing, ergonomics, and learning and productive performances in built environments of mountain areas"),
    - **RT3A** ("**Energy strategies**", sector "*Energy performance and renovation of existing building stock in mountain areas*").

- **Member of the working group for the feasibility analysis of a new Master Degree in Safety Engineering LM-26** (since November 2022).
- **Member of the III Mission Board of the Faculty of Engineering** (since 2023).
- **Assistance activity for the evaluation of space needs of the Faculty of Science and Technology** (2017 – 2019).

EXTERNAL APPOINTMENT AS PHD EXAMINER:

- 19.04.2023, University of Trento, Doctoral School in Civil, Environmental and Mechanical Engineering, member of the final examination committee.
- 31.03.2023, Polytechnic University of Turin, Doctoral Program in Energetics, member of the final examination committee.
- 25.07.2022, Polytechnic University of Milan, Research Doctoral Program in Architecture, Built Environment, and Construction Engineering, member of the final examination committee.
- 27.03.2020, University of Udine, PhD in Environmental and Energy Engineering Science, member of the final examination committee.

ACTIVITIES RELATED TO THIRD MISSION AT UNIBZ:

- Participation to research and commissioned-research projects **[8.1-8.21]** and related dissemination / communication tasks, in particular:
    - **2022**, February (15.02.2022): Presentation of the results of urban scale energy simulations for districts in the city of Bolzano to the Municipality Council Member for the Environment (Ms Rabini).
    - **2021**, October (04.10.2021): Presentation of the results of the project **[8.11]** (ReBuild-BZ: Development of strategies for the energy retrofitting of the private building stock in the municipality of Bolzano) to the Municipality Council.
    - **2021**, March (17.03.2021): Presentation of the results of former projects by the Municipality of Bozen-Bolzano and the Building Physics Group of the Free University of Bozen-Bolzano to the Municipality Council Member for the Environment (Ms Rabini).
    - **2019-2021**: several meetings with local stakeholders for the project **[8.11]** (ReBuild-BZ: Development of strategies for the energy retrofitting of the private building stock in the municipality of Bolzano).
    - **2018**, October: Presentation of the results of the project **[8.19]** (DH-BZ: Technical and economic analysis of the district heating system in the Municipality of Bozen-Bolzano) to the Municipality Committee for the Environment.
    - **2018**, June: Presentation of the results of the project **[8.19]** (DH-BZ: Technical and economic analysis of the district heating system in the Municipality of Bozen-Bolzano) to the Municipality Council.

- Activities of dissemination related to projects **[8.22-8.35]**, in particular:
    - **2023**, March (17.03.2023): presentation "*Formazione e ricerca su ventilazione e qualità dell'aria negli ambienti confinati*" at the seminar Condominio 4.0, as part of the project **[8.29]** (VIAO-MI: Ventilation and Indoor Air Quality in Offices: Monitoring and Improvement).
    - **2022**, May (21.05.2022): support to the organization of the final event of the project **[8.27]** (E2I@NOI: Definition of a System of Laboratories

for the development, characterization and the technology transfer for Smart Energy Buildings) at the Fiera CasaClima, with the presentation "*E2I@NOI – Edifici Energeticamente Intelligenti: Lo Smart Readiness Indicator*".
    - **2022**, May (19.05.2022): support to the organization of the final event of the project **[8.23]** (GPP4Build: Green Public Procurement for Buildings) at the Fiera CasaClima, with the presentation "*GPP4Build CAM edilizia evoluzione, applicazione, conformità e strumenti forniti*".
    - **2021**, November (11-12.11.2021): support to the organization of the hybrid event "*COME GESTIRE, ELABORARE E REALIZZARE UN PROGETTO CONFORME AI CAM EDILIZIA. Introduzione e presentazione delle Linee Guida*", with the presentations "*Linee guida sugli appalti verdi in edilizia in Italia: il DM 11 ottobre 2017 e le fasi di sviluppo dei CAM*" and "*Confronto tra CAM e protocolli di sostenibilità: punti di contatto e differenze*", as part of the project **[8.23]** (GPP4Build: Green Public Procurement for Buildings).
    - **2021**, October (08.10.2021): presentation of the results of the project **[8.27]** (E2I@NOI: Definition of a System of Laboratories for the development, characterization and the technology transfer for Smart Energy Buildings) to South-Tyrol companies of the building automation sector at the NOI TechPark.
    - **2021**, June (17-18.06.2021): support to the organization of the event online "*GPP4Build Training per gli Acquisti Verdi - una formazione per le PMI, le Pubbliche Amministrazioni e per i progettisti*", with the webinars "*Gli Appalti Verdi oggi e domani: A che punto siamo e dove stiamo andando?*" and "*I Criteri Ambientali Minimi (CAM) per gli edifici e il DM 11 ottobre 2017*", as part of the project **[8.23]** (GPP4Build: Green Public Procurement for Buildings).
    - **2021**, June (03.06.2021): presentation of the results of the project **[8.27]** (E2I@NOI: Definition of a System of Laboratories for the development, characterization and the technology transfer for Smart Energy Buildings) to professionals of the building sector in South Tyrol at the NOI TechPark.
    - **2020**, December (11.12.2020): webinar "*La legislazione nazionale in materia di Criteri Ambientali Minimi*" for professionals in the building sector, arranged in the framework of the seminar "*I Criteri Ambientali Minimi e la loro applicazione ad ambienti inclusivi*" as part of the projects **[8.23, 8.25]** (GPP4Build: Green Public Procurement for Buildings; SENSHOME: The SENSitive home: SEnsors for special ENvironmentS: the HOME As normal as possible and as special as necessary).
    - **2019**, October: Presentation of the results of the project **[8.33]** (IndAIR-Edu: Indoor Air Quality and Ventilation Effectiveness in Educational Buildings) to the Municipality Council.

- Activities for local communities in the framework of the study programmes (e.g., cooperation with high schools and other cooperation activities with public administrations, students' projects on public buildings) and for general dissemination:
    - **2023**, February-May: organization of the series of lectures "*La qualità dell'ambiente confinato e il relativo monitoraggio*" (PCTO) for 5 classes of the high schools A. and P. Delai and G. Galilei of Bolzano.
    - **2023**, March (09.03.2023): presentation to the mayor of Bolzano, Mr. Caramaschi, of the lighting and daylighting projects developed by the MSc Energy Engineering (LM-30) students in the framework of the course Special Issues of Building Physics during the academic years

2021-2022 and 2022-2023.
    - **2023**, March (07.03.2023): organization of a visit to the Building Physics Labs at the NOI TechPark for the students of the high school C. Bazzi of Milan.
    - **2023**, January (19.01.2023): participation to the Open Day organized at the high school A. and P. Delai of Bolzano.
    - **2022**, November (18.11.2022): organization of activities at the Building Physics Labs at the NOI TechPark for high school students during the "*Open Day For Schools*".
    - **2022**, November (15-17.11.2022): participation to the *EUniverCities Meeting Innsbruck: Tackling "Urban Sustainable Development"* and presentation of the collaboration projects between the Free University of Bozen-Bolzano e the Municipality of Bozen-Bolzano (https://eunivercitiesnetwork.com/).
    - **2022**, October (12.10.2022): presentation of PCTO activities on the topic of IEQ to lecturers of the high school G. Galilei of Bolzano.
    - **2022**, May (31.05.2022): organization of activities at the Building Physics Labs at the NOI TechPark for high school students during the "*Open Day For Schools*".
    - **2022,** April (12.04.2022): presentation "*Ventilazione e qualità dell'aria negli edifici scolastici*" in the framework of the event "Qualità dell'aria indoor negli ambienti scolastici" at the high school G. Galilei of Bolzano.
    - **2021-2022**: participation to "Green Talks" for Bolzano:
        - 27.04.2022: "*Flessibilità energetica e controlli intelligenti negli uffici e negli edifici commerciali*"
        - 11.06.2021: "*Sostenibilità ed efficienza energetica: perché è necessario riqualificare gli edifici*"
        - 12.02.2021: "*Sviluppo di strategie di risanamento energetico per il parco edilizio privato del comune di Bolzano*"

- Participation to activities and events for UNIBZ, in particular for the communication of the research activities of the Building Physics Labs at NOI TechPark:
    - **2022**, September (21.09.2022): participation to the round table of the virtual workshop "*Sessione informativa sullo Smart Readiness Indicator*" (https://www.youtube.com/watch?v=-er0Rtt5FvU).
    - **2022**, February (21-25.02.2022): participation to the Students & Company Sprint at the NOI TechPark as advisor and expert in high performance and sustainable buildings.
    - **2022**, February (03.02.2022): seminar part of the training "*Meisterausbildung Maurer*" and visit to the Building Envelope Lab;
    - **2021**, October (13.10.2021): presentation of the research activities of the Building Physics Labs ("*Building Physics Labs - Caratterizzazione delle prestazioni termofisiche ed energetiche dal componente edilizio all'edificio*") in the framework of the event *LAB4Business* at the NOI TechPark – Green Technologies and organization of visits for professionals and companies to the Building Physics Labs;
    - **2021-2022**: support to the organization of several visits to the Building Physics Labs at the NOI TechPark for professionals, companies, schools and institutional delegations, such as:
        - 05.05.2022: visits to the Building Physics Labs at the NOI TechPark as part of the *Final Event Capacity Building 2014-2021*;
        - 22.10.2021: visit of a delegation from the Office "Ricerca Scientifica" of the Province of Bolzano and delegates at the

EU in Brussels;
        - 15.09.2021: visit of a delegation of the Office "Maestro Professionale e Tecnico del Commercio" of the Province of Bolzano;
        - 10.09.2021: visit of a delegation from the Province of Trento;
    - **2018**, October: organization of the miniNOI activities, introducing some topics related to building energy efficiency to groups of children (6-12 years old);
    - **2017**, October: participation to the inauguration of the NOI Techpark, presenting the activities of Building Physics Lab;
    - **2016**, September: participation to the Lange Nacht der Forschung – LUNA.

PARTICIPATION TO SCIENTIFIC COMMITTEES OF CONFERENCES:

- Member of the Students Tutoring Scientific Committee of BSA 2017 (http://bsa.events.unibz.it/bsa-2017/committees/).
- Member of the Students Tutoring Scientific Committee of BSA 2019 (http://bsa.events.unibz.it/bsa-2019/committees/).
- Member of the Students Tutoring Scientific Committee of BSA 2022 (https://bsa.events.unibz.it/bsa-2022/committees/).
- Member of the evaluation committee for the "High Performance Buildings Student Paper Competition" at the VII International High Performance Buildings Conference at Purdue, West Lafayette, IN, U.S.A., 10th-14th July 2022.

PARTICIPATION TO ORGANIZING COMMITTEES OF CONFERENCES:

- Member of the organizing committee of BSA 2015, II IBPSA-Italy Congress (http://pro.unibz.it/microsites-export-2016/www.unibz.it/en/sciencetechnology/events/bsa2015/committees/default.html);
- Member of the organizing committee of microCHP16 (https://uchp.events.unibz.it/committees/);
- Member of the organizing committee of BSA 2017, III IBPSA-Italy Congress (https://bsa.events.unibz.it/bsa-2017/committees/);
- Member of the organizing committee of BSA 2019, IV IBPSA-Italy Congress (https://bsa.events.unibz.it/bsa-2019/committees/);
- Member of the organizing committee of BSA 2022, V IBPSA-Italy Congress (https://bsa.events.unibz.it/bsa-2022/committees/).

SESSION CHAIR AND CO-CHAIR AT INTERNATIONAL SCIENTIFIC CONFERENCES:

- Building Simulation 2019, Rome, Italy – September 4th, 2019, co-chair of session "328: Optimization – 07".
- Building Simulation 2021, Bruges, Belgium – 1st-3rd September, 2021, co-chair of 5 virtual sessions: "W1.8: Buildings paving the way for the energy transition", "W2.7: Ensuring high quality building simulations", "W3.8: The role of occupants", "F3.6: Ensuring high quality building simulations" and "F4.5: Practice and industry related case studies".
- Building Simulation Applications BSA 2022, Bolzano, Italy – July 1st 2022, chair of 2 sessions: "Student Competition" and "Ventilation and IAQ".
- VII International High Performance Buildings Conference at Purdue, West Lafayette, IN, U.S.A., 12th July 2022, chair of the session "B-03: Smart Sensing, Data Analytics & IEQ".

PARTICIPATION TO EDITORIAL BOARDS:

- Member of the Editorial Board of the journal "Energies", section "Energy and Buildings" (since 2021).

- Member of the Editorial Board of the journal “Buildings”, section “Building Energy, Physics, Environment, and Systems” (since 2021).
- Pernigotto G. 2021. Energies special issue “Challenges and Research Trends of Building Energy Performance”. ISSN: 1996-1073. Published papers: 17. Weblink: https://www.mdpi.com/journal/energies/special_issues/CRT_BEP
- Pernigotto G., Caniato M., Gasparella A. 2022-ongoing. Energies special issue “Applications of Building Energy Performance Simulation”. ISSN: 1996-1073. Published papers: 3. Weblink: https://www.mdpi.com/journal/energies/special_issues/A_BEPS
- Pernigotto G., Patuzzi F., Prada A., Corrado V. and Gasparella A. 2018. “Proceedings of Building Simulation Applications BSA 2017”. ISSN: 2531-6702; ISBN: 978-88-6046-136-0. Weblink: https://bupress.unibz.it/en/produkt/building-simulation-applications-bsa-2017-ebook-2/
- Pernigotto G., Patuzzi F., Prada A., Corrado V. and Gasparella A. 2020. “Proceedings of Building Simulation Applications BSA 2019”. ISSN: 2531-6702; ISBN: 978-88-6046-176-6. Weblink: https://bupress.unibz.it/en/produkt/building-simulation-applications-bsa-2019-ebook/
- Pernigotto G., Patuzzi F., Prada A., Corrado V. and Gasparella A. 2023. “Proceedings of Building Simulation Applications BSA 2022”. ISSN: 2531-6702; ISBN: 978-88-6046-191-9. Weblink: https://bupress.unibz.it/en/produkt/building-simulation-applications-bsa-2022-ebook/

PEER-REVIEW ACTIVITY FOR INTERNATIONAL JOURNALS.
MAIN JOURNALS (2021 IF):

- “Building and Environment” (Q1 for Construction & Building Technology; IF: 7.093),
- “Buildings” (Q2 for Construction & Building Technology; IF: 3.324),
- “Energy” (Q1 for Energy & Fuels; IF: 8.857),
- “Energies” (Q3 for Energy & Fuels; IF: 3.252),
- “Energy and Buildings” (Q1 for Construction & Building Technology; IF: 7.201),
- “Journal of Building Engineering” (Q1 for Construction & Building Technology; IF: 7.144),
- “Journal of Building Performance Simulation” (Q2 for Construction & Building Technology; IF: 2.867),
- “Renewable Energy” (Q1 for Energy & Fuels; IF: 8.634),
- “Sustainable Cities and Society” (Q1 for Construction & Building Technology; IF: 10.696),
- “Science and Technology for the Built Environment” (formerly known as “HVAC&R Research”; Q3 for Construction & Building Technology; IF: 2.094).

I have served as a reviewer also for several national and international conferences (e.g., IBPSA and IBPSA-Italy Building Simulation Conferences) in the last years.

REVIEWER FOR INTERNATIONAL PROJECT PROPOSALS

- Project reviewer for the Dutch Research Council (NWO) (since 2019).
- Expert evaluator of proposals submitted under the LIFE-2022-CET (Clean Energy Transition) call (2022).
- Subscribed to the REPRISE database for the revision of research projects (“RICERCA DI BASE)” (since 2022).

[7]

Membership

MEMBERSHIPS:

- Founding member of IBPSA-Italy, the IBPSA Italian affiliate (International Building Performance Simulation Association; http://www.ibpsa-italy.org/it/) (since 2011).
    - Member of the Election Commission of IBPSA-Italy (2018 and 2022).
- Member of the Italian Association of Technical Physics (since 2016).

[8]

Research and scholarship

Summary of scholarships and research projects (see sections **[3,4]** for details about the research activities and below in section **[8]** for details about the projects).

- **Scholarships**

Period	Funding Body	Title
02.2014 to 02.2016	University of Padova	Post-doc position, main project: European Research Project TOICA - "Thermal Overall Integrated Conception of Aircraft" (project **[8.43]**).
01.2013 to 01.2014	Free University of Bozen-Bolzano	Post-doc position, main project: Faculty of Science and Technology project "Air-to-air heat recovery in HVAC systems" (project **[8.37]**).
01.2010 to 12.2012	Fondazione Studi Universitari di Vicenza	PhD student position, research topic: "Evaluation of building envelope energy performance through extensive simulation and parametrical analysis".

- **Projects by external private / public companies since 2016**

	Period	Funding Body	Title	Role
1	01.2023 - ongoing	PROGRESS SpA	BetonPlus: Development of a new sustainable core-insulated concrete wall/ceiling based on a mineral insulating material (project **[8.1]**).	CO-I
2	01.2023 - 03.2023	Holz Pichler AG	HolzWood: Conditioning test and dimensional verification of 12 wooden specimens (project **[8.2]**).	PI
3	07.2022 - 11.2022	Isopan SpA	Iso-bridge: Analysis of the thermal bridge in the connection node between ISOPAN panels for 2 panel configurations (project **[8.3]**).	PI
4	07.2022 - 08.2022	Eurac Research	Lambda-EURAC-3: Tests of apparent thermal conductivity (project **[8.4]**).	PI
5	06.2022 - 07.2022	PROGRESS SpA	Lambda-PRO: Tests of apparent thermal conductivity (project **[8.5]**).	CO-I
6	09.2021 - 03.2022	Santori Pellami SpA	Leather Wool: Support for the characterization of a leather byproduct as potential acoustic and thermal insulation material (project **[8.6]**).	Member
7	03.2021 - 04.2021	Eurac Research	Lambda-EURAC-2: Tests of apparent thermal conductivity (project **[8.7]**).	PI
8	06.2020 - 07.2020	Holz Pichler AG	Lambda-HolzP: Thermal conductivity test (project **[8.8]**).	CO-I
9	12.2019 - 07.2020	KlimaHaus Agentur	ProCasaClima: Consultancy activity for the validation of the ProCasaClima dynamic simulation module (project **[8.9]**).	CO-I
10	10.2019 - 12.2019	Rotho Blaas Srl	Rotho-bridge: Analysis of thermal bridges for the connection between vertical walls and foundations in timber structures (project **[8.10]**).	CO-I
11	08.2019 - 02.2021	Municipality of Bozen-Bolzano	ReBuild-BZ: Development of strategies for the energy retrofitting of the private building stock in the municipality of Bolzano (project **[8.11]**).	Member
12	08.2019 - 05.2020	Landesagentur für Umwelt (Autonome Provinz Bozen Südtirol)	IndAIR-QAES: Indoor Air Quality in Educational Buildings – QAES (project **[8.12]**).	CO-I
13	08.2019 - 09.2019	Finstral SpA	Lambda-Finstral: Tests of apparent thermal conductivity (project **[8.13]**).	Member
14	03.2019 - 04.2019	Eurac Research	Lambda-EURAC: Tests of apparent thermal conductivity (project **[8.14]**).	CO-I
15	02.2019 - 10.2019	Piron srl	Piron: Experimental and numerical characterization of the thermal behaviour of professional ovens in the framework of the development of a control model (project **[8.15]**).	PI

16	09.2018 - 02.2019	IDM Südtirol - Alto Adige	LignaWalls: Thermal conductance and resistance tests on timber wall specimens (project **[8.16]**).	Member
17	05.2018 - 06.2018	Technology and investment solutions LLC	Lambda: Thermal Conductivity tests (Technology and investment solutions LLC) (project **[8.17]**).	Member
18	02.2018 - 09.2018	University of Padova	Cables-ROV: Numerical simulations of thermal performances of the tethering cables for Saipem ROV - Remotely Operated Vehicles (project **[8.18]**).	PI
19	11.2017 - 10.2018	Municipality of Bozen-Bolzano	DH-BZ: Technical and economic analysis of the district heating system in the Municipality of Bozen-Bolzano (project **[8.19]**).	Member
20	12.2016 - 02.2017	eng. Paolo Zilio (IngenioTec)	MuSa: Building energy simulation of a refurbished historical building: the museum "MuSa" of Salò (project **[8.20]**).	Member
21	06.2016 - 09.2016	Holka Genossenschaft	PlanWerkStadt: Steady and periodic thermal conductance tests on an experimental timber wall (project **[8.21]**).	Member

- **Projects funded by Public Authorities or internal UNIBZ funds since 2016**

	Period	**Funding Body**	**Title**	**Type**
1	09.2022 - ongoing	MUR (PNRR funds)	iNEST: Interconnected Nord-Est Innovation Ecosystem (project **[8.22]**).	PNRR national funds
2	10.2019 – 01.2022	EU (85 %) and national funds (15 %).	GPP4Build: Green Public Procurement for Buildings (ITAT1079) (project **[8.23]**).	Interreg IT-AT
3	10.2019 – 12.2022	EU (75 %) and national funds (25 %).	BIGWOOD: Creating awareness and reduction of prejudices and barriers for high-volume wooden constructions (ITAT1081) (project **[8.24]**).	Interreg IT-AT
4	10.2019 – 12.2022	EU (77.6 %) and national funds (22.4 %).	SENSHOME: The SENSitive home: SEnsors for special ENvironmentS: the HOME As normal as possible and as special as necessary (ITAT1088) (project **[8.25]**).	Interreg IT-AT
5	09.2019 – 05.2022	EU (85 %) and national funds (15 %).	MC4.0: MASS CUSTOMIZATION 4.0 - development and diffusion of Mass Customization and Tailoring (MCT) competences, to provide SMEs with advanced expertise and tools to better adapt products and services to user needs and quicker respond to industry 4.0 changes (ITAT1057) (project **[8.26]**).	Interreg IT-AT
6	07.2018 – 02.2022	EU (50 %), national funds (35 %) and provincial funds (15 %).	E2I@NOI: Definition of a System of Laboratories for the development, characterization and the technology transfer for Smart Energy Buildings (FESR1095) (project **[8.27]**).	FESR
7	11.2013 - 12.2021	Autonomous Province of Bozen-Bolzano (capacity building)	Klimahaus und Energie production (project **[8.28]**).	Local

	Period	**Funding Body**	**Title**	**Type & Role**
1	10.2021 - ongoing	Free University of Bozen-Bolzano	VIAO-MI: Ventilation and Indoor Air Quality in Offices: Monitoring and Improvement (project **[8.29]**).	CRC Call 2021 (role: PI)
2	07.2021 – 08.2022	Free University of Bozen-Bolzano	SCORELINE: Special comfort for educational indoor Environment (project **[8.30]**).	RTD Call 2021 (role: CO-I)
3	10.2019 – 03.2022	Free University of Bozen-Bolzano	TESES-Urb: Techno-economic methodologies to investigate sustainable energy scenarios at urban level (project **[8.31]**).	ID Call 2019 (role: member)
4	01.2019 – 01.2023	Free University of Bozen-Bolzano	SOMNE: Bolzano Solar Irradiance Monitoring Network (project **[8.32]**).	CRC Call 2018 (role: member)
5	07.2018 - 06.2020	Free University of Bozen-Bolzano	IndAIR-Edu: Indoor Air Quality and Ventilation Effectiveness in Educational Buildings (project **[8.33]**).	RTD Call 2018 (role: PI)

6	03.2017 - 02.2020	Free University of Bozen-Bolzano	HUCED: Human-Centred Design of the Built Environment: definition of a methodology for the experimental assessment of the overall Indoor Environmental Quality (project **[8.34]**).	CRC Call 2016 (role: member)
7	01.2016 to 03.2018	Free University of Bozen-Bolzano	IBAS: Intelligent Building Automation System for optimization of energy consumptions and indoor environmental quality (project **[8.35]**).	CRC Call 2015 (role: member)

- **Planned funded projects funded by Public Authorities**

	Period	Funding Body	Title	Type & Role
1	06.2023 – 05.2024	Stiftung Südtiroler Sparkasse	TeSmES: Smart technologies for sustainable buildings (project **[8.36]**).	Fusion Grant (role: PI)

- **Other Projects funded before 2016 in SSD ING-IND/11**

Period	Funding Body	Title
01.2013 – 01.2014	Free University of Bozen-Bolzano	Air-to-air heat recovery in HVAC systems (project **[8.37]**).
04.2013 - 01.2014	Provincia Autonoma di Bozen-Bolzano	TIMBEEST – "Timber building with enhanced energy and structural performance" (project **[8.38]**).
08.2011 - 01.2012	Free University of Bozen-Bolzano	Prestazioni dinamiche delle strutture di involucro edilizio: progettazione di un sistema di controllo (project **[8.39]**).
01.2011 - 08.2011	Network "Chi Quadrato"	Project $\chi 2$ (project **[8.40]**).
2008 - 2012	Provincia di Vicenza, Vi.energia srl	Ecodomus.vi (project **[8.41]**).

- **Other Projects funded before 2016 in SC 09/C2**

Period	Funding Body	Title
05.2015 - 02.2016	De Rigo Refrigeration srl	Angel - "Sviluppo e ottimizzazione del nuovo banco di refrigerazione Angel" (project **[8.42]**).
02.2014 - 06.2016	European Union, FP7-AAT-2013-RTD-1	TOICA – "Thermal Overall Integrated Conception of Aircraft" (project **[8.43]**).
06.2010 - 10.2011	Research program commissioned by Ceccato S.p.A. and admitted to the Regione Veneto financial support (Regional Law 18.05.2007 n.9).	ZEIWS - Zero Environmental Impact Washing System - "Sviluppo di nuova generazione di impianti di lavaggio mezzi a totale compatibilità ambientale" (project **[8.44]**).

Projects at the Free University of Bozen-Bolzano (UNIBZ) since 2016, funded by external private or public companies, listed from the most recent (* indicates a role as PI or CO-I).

[8.1] * BetonPlus: Development of a new sustainable core-insulated concrete wall/ceiling based on a mineral insulating material

Funded by: PROGRESS SpA.

PI: prof. A. Gasparella.
CO-I: dr. G Pernigotto.

Budget: 24'000 EUR + VAT.

Period: 01.2023-12.2023 (status of the project: *ongoing*).

Topic: this commissioned research project includes support activities for the thermal characterization of an innovative building material, the optimization of its performance, the optimization of the production process, and the development of a protocol for verifying and controlling the production quality.

Specific activities of the researcher (up to 06.2023)*:* tests of thermal conductivity with heat flux meter HFM and conditioning in climate chamber of material specimens, analysis of the results, preparation of reports and presentations for the company.

[8.2] HolzWood: Conditioning test and dimensional verification of 12 wooden specimens

*****

Funded by: Holz Pichler AG.

PI: Dr. G Pernigotto.
CO-I: prof. A. Gasparella.

Budget: 1'000 EUR + VAT.

Period: 01.2023-03.2023.

Topic and activities of the researcher: Conditioning test in climatic chamber and verification of dimensional variation in 5 representative sections on 12 wooden specimens (solid wood and chipboard).

[8.3] Iso-bridge: Analysis of the thermal bridge in the connection node between ISOPAN panels for 2 panel configurations

*****

Funded by: Isopan SpA.

PI: Dr. G Pernigotto.
CO-I: prof. A. Gasparella.

Budget: 8'000 EUR + VAT.

Period: 07.2022-12.2022.

Topic and activities of the researcher: Numerical and 1:1 scale experimental assessment of the impact of the thermal bridge between two adjacent Isopan panels for cold warehouses and cold store applications. The study involves two different types of Isopan panels.
The numerical analysis is based on conventional FEM simulations of thermal bridges according to EN ISO 10211. The experimental part is performed in the Building Envelope Lab at NOI TechPark, and is based on a dedicated experimental protocol combining thermography and surface thermal measurements, specifically developed for this project.

[8.4] Lambda-EURAC-3: Tests of apparent thermal conductivity

*****

Funded by: Eurac Research.

PI: Dr. G Pernigotto.
CO-I: prof. A. Gasparella.

Budget: 1200 EUR + VAT.

Period: 07.2022-08.2022.

Topic and activities of the researcher: Measurement of thermal resistance and apparent thermal conductivity of four specimens of insulating concrete and three specimens of insulating plaster, with experimental apparatus based on the heat flux meter HFM and according to the technical standards ISO 8301, EN 1946-3 and ASTM C518.

[8.5] Lambda-PRO: Tests of apparent thermal conductivity

*****

Funded by: PROGRESS SpA.

PI: prof. A. Gasparella.
CO-I: Dr. G Pernigotto.

Budget: 500 EUR + VAT.

Period: 06.2022-07.2022.

Topic: Measurement of thermal resistance and apparent thermal conductivity of an innovative concrete specimen, with experimental apparatus based on the heat flux meter HFM and according to the technical standards ISO 8301, EN 1946-3 and ASTM C518.

Specific activities of the researcher: tests of thermal conductivity with HFM of the specimens, preparation of reports for the company.

[8.6] Leather Wool: Support for the characterization of a leather byproduct as potential acoustic and thermal insulation material

Funded by: Santori Pellami SpA.

PI: prof. A. Gasparella.

Budget: 21'500 EUR + VAT.

Period: 09.2021-03.2022.

Topic: Support for the characterization of a leather by-product as potential acoustic and thermal insulation material. Experimental characterization of two specimens with different densities from the thermal and acoustic perspective, measuring the thermal conductivity at different average temperatures and acoustic absorption at different frequencies.

Specific activities of the researcher: tests of thermal conductivity with experimental apparatus based on the heat flux meter HFM and according to the technical standards ISO 8301, EN 1946-3 and ASTM C518; preparation of presentations and reports for the company.

[8.7] Lambda-EURAC-2: Tests of apparent thermal conductivity

***** *Funded by:* Eurac Research.

PI: Dr. G Pernigotto.
CO-I: prof. A. Gasparella.

Budget: 500 EUR + VAT.

Period: 03.2021-04.2021.

Topic and activities of the researcher: Measurement of thermal resistance and apparent thermal conductivity of three specimens of building materials, with experimental apparatus based on the heat flux meter HFM and according to the technical standards ISO 8301, EN 1946-3 and ASTM C518.

[8.8] Lambda-Holz: Thermal conductivity test

***** *Funded by:* Holz Pichler AG.

PI: prof. A. Gasparella.
CO-I: Dr. G Pernigotto.

Budget: 400 EUR + VAT.

Period: 06.2020-07.2020.

Topic: Measurement of thermal resistance and apparent thermal conductivity of two specimens of timber material, with experimental apparatus based on the heat flux meter HFM and according to the technical standards ISO 8301, EN 1946-3 and ASTM C518.

Specific activities of the researcher: tests of thermal conductivity with HFM of the specimens, preparation of reports for the company.

[8.9] * ProCasaClima: Consultancy activity for the validation of the ProCasaClima dynamic simulation module

Funded by: KlimaHaus Agentur / Agenzia CasaClima (Energy Agency for South Tyrol).

PI: prof. A. Gasparella.
CO-I: Dr. G Pernigotto.

Budget: 20'000 EUR + VAT.

Period: 12.2019-07.2020.

Topic and activities of the researcher: Assessment of the EN ISO 52016-1 hourly method implemented in the software ProCasaClima by KlimaHaus Agentur for the calculation of building energy needs for space heating and cooling, validation according to the ANSI/ASHRAE 140 BESTEST method, and sensitivity analysis on the software inputs.

[8.10] * Rotho-bridge: Analysis of thermal bridges for the connection between vertical walls and foundations in timber structures

Funded by: Rotho Blaas Srl.

PI: prof. A. Gasparella.
CO-I: Dr. G Pernigotto.

Budget: 1'500 EUR + VAT.

Period: 10.2019-12.2019.

Topic and activities of the researcher: Numerical assessment of the linear thermal transmittance according to the technical standard EN ISO 10211 and 2D FEM models for a set of construction details regarding the connection between vertical walls and foundations in timber buildings.

[8.11] ReBuild-BZ: Development of strategies for the energy retrofitting of the private building stock in the municipality of Bolzano

Funded by: Municipality of Bozen-Bolzano.

PI: prof. A. Gasparella.

Budget: 13'000 EUR + VAT.

Period: 08.2019-02.2021.

Topic: Supporting the Municipality of Bolzano for the definition of a subsidization and communication strategy for the energy retrofitting of the private building stock, in particular the residential dwellings in the municipality territory.

Specific activities of the researcher: analysis of the current framework of public subsidizations for building energy refurbishment, interviews with the main local stakeholders, analysis of the findings, contribution to the definition of building renovation strategy for the Municipality of Bolzano, presentation of the results to stakeholders.

[8.12] IndAIR-QAES: Indoor Air Quality in Educational Buildings - QAES

* *Funded by:* Landesagentur für Umwelt (Autonome Provinz Bozen Südtirol).

PI: prof. A. Gasparella.
CO-I: Dr. G Pernigotto.

Budget: 5'980 EUR + VAT.

Period: 08.2019-05.2020.

Topic and activities of the researcher: Supporting the Environmental Agency of the Autonomous Province of Bozen-Bolzano in IAQ monitoring activities in local schools, processing of the collected data and contribution for the preparation of a database about IAQ in schools in the framework of the INTERREG project QAES.

[8.13] Lambda-Finstral: Tests of apparent thermal conductivity

Funded by: Finstral SpA.

PI: prof. A. Gasparella.

Budget: 400 EUR + VAT.

Period: 08.2019-09.2019.

Topic: Measurement of thermal resistance and apparent thermal conductivity of two specimens, with experimental apparatus based on the heat flux meter HFM and according to the technical standards ISO 8301, EN 1946-3 and ASTM C518.

Specific activities of the researcher: tests of thermal conductivity with HFM of the specimens, preparation of reports for the company.

[8.14] Lambda-EURAC: Tests of apparent thermal conductivity

* *Funded by:* Eurac Research.

PI: prof. A. Gasparella.
CO-I: Dr. G Pernigotto.

Budget: 100 EUR + VAT.

Period: 03.2019-04.2019.

Topic: Measurement of thermal resistance and apparent thermal conductivity of two specimens, with experimental apparatus based on the heat flux meter HFM and according to the technical standards ISO 8301, EN 1946-3 and ASTM C518.

Specific activities of the researcher: tests of thermal conductivity with HFM of the specimens, preparation of reports for the client.

[8.15] Piron: Experimental and numerical characterization of the thermal behaviour of professional ovens in the framework of the development of a control model

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Funded by: Piron srl.

PI: Dr. G. Pernigotto.
CO-I: prof. A. Gasparella.

Budget: 15'000 EUR + VAT.

Period: 02.2019-10.2019.

Topic and activities of the researcher: Experimental tests on a set of new professional ovens, development of CFD models and a 0D heat and energy balance model to support the product development and development of for a set of new professional ovens.

[8.16] LignaWalls: Thermal conductance and resistance tests on timber wall specimens

Funded by: IDM Südtirol - Alto Adige.

PI: prof. A. Gasparella.

Budget: 6'000 EUR + VAT.

Period: 09.2018-02.2019.

Topic: Evaluation of thermal conductance and transmittance of opaque components by means of the hotbox methods with heat flux meter according to the technical standards EN 1934, EN 1946-3 and ASTM C518.

Specific activities of the researcher: steady state tests according to EN 1934 of two timber walls with hotbox test rig, analysis of the results and preparation of reports.

[8.17] Lambda: Thermal Conductivity tests (Technology and investment solutions LLC).

Funded by: Technology and investment solutions LLC.

PI: prof. A. Gasparella.

Budget: 500 EUR + VAT.

Period: 05.2018-06.2018.

Topic: Measurement of thermal resistance and apparent thermal conductivity of two specimens, with experimental apparatus based on the heat flux meter HFM, according to the technical standards ISO 8301, EN 1946-3 e ASTM C518.

Specific activities of the researcher: tests of thermal conductivity with HFM of the specimens, preparation of reports for the company.

[8.18] * Cables-ROV: Numerical simulations of thermal performances of the tethering cables for Saipem ROV - Remotely Operated Vehicles.

Funded by: University of Padova.

PI: dr. G. Pernigotto.
CO-I: prof. A. Gasparella.

Budget: 4'000 EUR + VAT.

Period: 02.2018-09.2018.

Topic and activities of the researcher: Development of FEM numerical transient models for the study of the thermal behaviour of a tethering cable adopted to control Saipem underwater ROVs.

[8.19] DH-BZ: Technical and economic analysis of the district heating system in the Municipality of Bozen-Bolzano.

Funded by: Municipality of Bozen-Bolzano.

PI: prof. A. Gasparella.

Budget: 4'000 EUR + VAT.

Period: 11.2017-10.2018.

Topic: Technical and economic analysis of scenario for the district heating system of the Municipality of Bozen-Bolzano supplied by the local incineration system.

Specific activities of the researcher: collection and analysis of energy consumption data for both buildings served by Bolzano district heating system and those with independent heating system, technical and economic analyses with different building refurbishment and subsidization scenarios, presentations to technical and political staff of the Municipality of Bolzano.

[8.20] MuSa: Building energy simulation of a refurbished historical building: the museum "MuSa" of Salò.

Funded by: eng. Paolo Zilio (IngenioTec).

PI: prof. A. Gasparella.

Budget: 3'000 EUR + VAT.

Period: 12.2016-02.2017.

Topic: Development of a building energy model of the recently refurbished historical building of the museum "MuSa" in Salò (Brescia, Italy), analysis of the building energy needs through EnergyPlus dynamic simulations and characterization of the building envelope energy performance.

Specific activities of the researcher: development of the EnergyPlus model, analysis of the results and preparation of reports.

[8.21] PlanWerkStadt: Steady and periodic thermal conductance tests on an experimental timber wall.

Funded by: Holka Genossenschaft.

PI: prof. A. Gasparella.

Budget: 2'500 EUR + VAT

Period: 06.2016-09.2016.

Topic: Evaluation of thermal transmittance of opaque components by means of hotbox methods with heat flux meter according to the technical standards EN 1934, EN 1946-3 and ASTM C518 and evaluation of the periodic thermal transmittance and the timeshift of the opaque components through an experimental test in periodic steady state conditions.

Specific activities of the researcher: experimental laboratory activity, analysis of the results and preparation of the reports for the company.

Projects at the Free University of Bozen-Bolzano (UNIBZ) since 2016, funded by projects funded by Public Authorities or internal UNIBZ funds, listed from the most recent (* indicates a primary role in the management of the project for the UNIBZ unit).

[8.22] iNEST: Green Public Procurement for Buildings: Spoke 1 – Ecosystems for Mountain Innovations

Type of Application and funds: PNRR project.

Partners (Spoke 1): Free University of Bozen-Bolzano (LP), University of Padova, University Cà Foscari of Venice, University of Verona, University of Udine, EURAC Research.

PI (Spoke 1): prof. F. Mazzetto.

Duration: 09.2022-08.2025 (status of the project: *ongoing*).

Topic (Spoke 1) and activities of the researcher: Research and technology transfer activities in the interdisciplinary area of mountain ecosystems, aimed at the development of new products, processes and lifestyles capable of consolidating or supporting local traditions by (a) enhancing the strengths of mountain resources and (b) hampering the major risks particularly relevant in these contexts (e.g., fragmentation and safety of production systems, hard logistics, hydrological hazards, reduced quality of life).

In the context of Spoke 1, the researcher takes part to the activities of the research topics **RT1A** ("**Mountain social life**", sectors "*Psycho social aspects in the implementation and multidimensional evaluation of innovative solutions to support well-being and quality of life in the mountain environment*" and "*Digital and training strategies to support smart villages in mountain environments*"), **RT1B** ("**Mountain habitat**", sector "*Implementing actions for monitoring and assessing the effects of external drivers on people's wellbeing, ergonomics, and learning and productive performances in built environments of mountain areas*") and **RT3A** ("**Energy strategies**", sector "*Energy performance and renovation of existing building stock in mountain areas*").

[8.23] GPP4Build: Green Public Procurement for Buildings (ITAT1079).

***** *Type of Application*: V INTERREG Italy-Austria 2014-2020.

Funded by: Call funded by European Union (85 %) and national funds (15 %).

Partners: Agenzia Casaclima (LP), Free University of Bozen-Bolzano, University of Padova, Fachochschule Salzburg, Innovations- und Technologietransfer Salzburg, APE Friuli-Venezia Giulia.

PI (UNIBZ unit): prof. A. Gasparella.
Project Manager (UNIBZ unit): dr. G. Pernigotto.

Budget UNIBZ: 85'800 EUR (total budget: 749'856.93 EUR).

Duration: 10.2019-01.2022.

Topic and activities of the researcher: The project designed and set up a transnational network of competence centres and competence bearers on green public procurement for buildings and minimum environmental criteria, in order to support small and medium-sized enterprises (SMEs) and facilitate their participation to public tenders. In this framework, particular attention was paid to timber constructions, concrete constructions and window supply chains.
In the context of the project, the researcher served as Project Manager, coordinating the activities for the UNIBZ unit, participating to steering committees and topical meetings with the other partners, preparing presentations and reports, including the support for the periodic financial report to the funding agency, and organizing and participating to communication and dissemination events.

[8.24] BIGWOOD: Creating awareness and reduction of prejudices and barriers for high-volume wooden constructions (ITAT1081).

Type of Application: V INTERREG Italy-Austria 2014-2020.

Funded by: Call funded by European Union (75 %) and national funds (25 %).

Partners: Free University of Bozen-Bolzano (LP), proHolz Tirol, Centro Consorzi, University of Innsbruck.

PI (UNIBZ unit): prof. A. Gasparella.

Budget UNIBZ: 355’144 EUR (total budget: 883'831.28 EUR).

Duration: 10.2019-12.2022.

Topic and activities of the researcher: The project developed an interregional network to enforce large-volume timber constructions and to reduce the existing barriers. In order to achieve such goal, in the framework of the project a network and a platform for stakeholders was developed, new tools for information and education were proposed, and timber mock-ups and prototypes built for research and development purposes.
In the context of the project, the researcher supported the drafting of the project proposal, participated to the main periodic events and meetings of the project, and gave support for the development of its activities, in particular the UNIBZ mock-up.

[8.25] SENSHOME: The SENSitive home: SEnsors for special ENvironmentS: the HOME As normal as possible and as special as necessary (ITAT1088).

Type of Application: V INTERREG Italy-Austria 2014-2020.

Funded by: Call funded by European Union (77.6 %) and national funds (22.4 %).

Partners: Free University of Bozen-Bolzano (LP), Carinthia University of Applied Sciences, University of Trieste, Eureka System.

PI (UNIBZ unit): prof. A. Gasparella.

Budget UNIBZ: 243’801 EUR (total budget: 982'422.96 EUR).

Duration: 10.2019-12.2022.

Topic and activities of the researcher: The project defined new smart home designs and technologies for people with autism spectrum disorder and disabilities. Specifically, the new smart homes are designed according to a user-centred approach and are able to recognize critical events and to perform indoor condition monitoring and controlling, as well as to enhance independent living for their occupants.
In the context of the project, the researcher supported the drafting of the project proposal, participated to the main periodic events and meetings of the project, and gave support for the development of its milestones (in particular, the demo-case of the Senshome Environment built in the Building Envelope Lab at the NOI TechPark).

[8.26] MC4.0: MASS CUSTOMIZATION 4.0 - development and diffusion of Mass Customization and Tailoring (MCT) competences, to provide SMEs with advanced expertise and tools to better adapt products and services to user needs and quicker respond to industry 4.0 changes (ITAT1057).

Type of Application: V INTERREG Italy-Austria 2014-2020.

Funded by: Call funded by European Union (85 %) and national funds (15 %).

Partners: Apindustria Confimi Vicenza (LP), Free University of Bozen-Bolzano, University of Padova, Universität Klagenfurt, Fondazione Centro Produttività Veneto, Energieforum Kärnten, Roen Est SpA,

SelectionArts Intelligent Decision Technologies GmbH.

PI (UNIBZ unit): prof. A. Gasparella.
Budget UNIBZ: 140'072 EUR (total budget: 1'012'860.60 EUR).

Duration: 09.2019-05.2022.

Topic and activities of the researcher: The project launched the cluster of new MC4.0 Develop & Application (DEA) centres, created to assist SMEs in providing Smart Living solutions tailored on customer's specific needs, delivering services using both internal and external resources, networked as in a cluster, and making related competencies accessible to the marked. To achieve these goals, advanced configurators were developed for the DEA centres in agreement with the Industry 4.0 approaches.
In the context of the project, the researcher contributed to the development of the UNIBZ configurator ("Configurator Prototype for Building and HVAC System"), developing a specific demo-version which was used for teaching and testing purposes in the framework of the International Week on 'Sustainable Cities & Communities' organized at UCLL, Belgium by the network Euclides (http://www.euclidesnet.eu/). He was also involved in preparing the reports regarding the UNIBZ configurator.

[8.27] * E2I@NOI: Definition of a System of Laboratories for the development, characterization and the technology transfer for Smart Energy Buildings (FESR1095).

Type of Application: ERDF (EFRE/FESR) Call 2017 - Research and Innovation (3rd call) European Commission (research).

Funded by: Call funded by European Union (50 %), national funds (35 %) and provincial funds (15 %).

Partners: EURAC Research (LP), Free University of Bozen-Bolzano, Agenzia Casaclima.

PI (UNIBZ unit): prof. A. Gasparella.
Project Manager (UNIBZ unit): dr. G. Pernigotto.

Budget UNIBZ: 342'422.10 EUR (total budget: 934'572.18 EUR).

Duration: 07.2018-02.2022.

Topic and activities of the researcher: The project E2I@NOI dealt with the development of new laboratories and competences to analyse the interaction between indoor environmental quality IEQ, occupants' behaviour and energy efficiency in the framework of smart energy buildings.
In the framework of the project, the researcher performed a review of the literature about building energy flexibility and smart readiness indicators, designed and organized experimental campaigns in the UNIBZ Living Labs for the study of occupants' behaviour and integrated global IEQ, contributed to the definition of new tests in the UNIBZ Labs at the NOI TechPark, and supported the design and construction of the new UNIBZ Acoustic Lab at the NOI TechPark. The researcher served also as Project Manager, coordinating the activities for the UNIBZ unit, participating to periodic meetings with the other partners, preparing presentations and reports, including the support for the periodic financial report to the funding agency, and organizing and participating to communication and dissemination events.

[8.28] Klimahaus und Energieproduktion

* *Type of Application*: Capacity Building.
Funded by: Autonomous Province of Bozen-Bolzano.
Partners: Free University of Bozen-Bolzano (LP), EURAC Research
PI: prof. A. Gasparella.
Budget UNIBZ: 5'340'300 EUR (total budget: 7'811'660 EUR).
Duration: 11.2013-12.2021.
Topic and activities of the researcher: Support to design and development of the Building Physics Labs (research topics "Klimahaus") at the new NOI TechPark in Bolzano, financial management, and periodic reporting to the funding agency:
- "*Building Envelope Lab*" (LAB 1) - a laboratory for the thermal physical characterization of building envelope components in transient conditions,
- "*HVAC System Lab*" (LAB 2) - a laboratory for the study of handling and distribution of thermal fluids in air-conditioning systems,
- "*Built Environment Simulator Lab*" (LAB 3) - an external laboratory for the analysis of the response of the building systems under real climatic solicitations.

(* indicates a role as PI or CO-I).

[8.29] VIAO-MI: Ventilation and Indoor Air Quality in Offices: Monitoring and Improvement.

* *Type of application:* CRC Call 2021 (UNIBZ internal research funds).
Funded by: Free University of Bozen-Bolzano.
PI: dr. G. Pernigotto.
CO-I: prof. A. Gasparella.
Budget: 61'175.40 EUR.
Duration: 10.2021-03.2024 (status of the project: *ongoing*).
Topic and activities of the researcher: The project contributes to assessment and enhancement of air quality in workplaces of commercial and office buildings. It aims to develop advanced controls for mechanical ventilation systems and assess the efficacy of air filters and purifiers to reduce the health hazard risk of pollutants and pathogens distributions in office buildings. Proposed controls are going to be defined to optimize occupants' health safety, wellbeing and productivity and building energy performance.

[8.30] SCORELINE: Special comfort for educational indoor Environment.

* *Type of application:* RTD Call 2021 (UNIBZ internal research funds).
Funded by: Free University of Bozen-Bolzano, Faculty of Science and Technology.
PI: dr. M. Caniato.
CO-I: dr. G. Pernigotto.
Budget: 12'100 EUR.
Duration: 07.2021-08.2022.

Topic and activities of the researcher: the project contributed to the preliminary development of a methodology to (1) identify which environmental aspects (specifically, thermal, visual, acoustic and indoor air quality stimuli) are more impactful on the wellbeing of people with Autism Spectrum Condition (ASC) in educational environments, and (2) to support the design of dedicated spaces for ASC students, as well as to optimize the control of the HVAC systems. Particular attention was dedicated to the correlation between environmental stimuli and the duration of crises of ASC students. In the framework of the project, some spaces of the school M.L. King in Bolzano were monitored, its personnel interviewed, and the results shared with the technicians of the Municipality of Bozen-Bolzano.

[8.31] TESES-Urb: Techno-economic methodologies to investigate sustainable energy scenarios at urban level

Type of Application: ID Call 2019 (UNIBZ internal research funds).

Funded by: Free University of Bozen-Bolzano.

PI: prof. M. Righetti.

Budget UNIBZ: 182’500 EUR.

Duration: 10.2019-03.2023.

Topic: Development of an approach for the analysis of energy systems at urban level, providing future scenarios encompassing techno-economic developments along with climate and socio-demographic evolutions. Support to local Public Administrations in energy planning processes to optimize long-term investments for reducing greenhouse emission and increasing the share of renewable sources.

Specific activities of the researcher: The researcher participated in the drafting of the project proposal. He collected and supported the processing of required inputs to build an urban energy model, and contributed to the development of a 100 % renewable and smart urban scenario for the Municipality of Bozen-Bolzano.

[8.32] SOMNE: Bolzano Solar Irradiance Monitoring Network.

Type of application: CRC Call 2018 (UNIBZ internal research funds).

Funded by: Free University of Bozen-Bolzano.

PI: prof. A. Gasparella.

Budget: 70’000 EUR.

Duration: 01.2019–01.2023.

Topic: The project aimed to collect solar irradiance measurements integrating the current local network of meteorological stations with new ones, set up in different points of Bolzano. These data were used to assess the capabilities of current solar irradiance models in the mountain environment and to develop new models for this territory.

Specific activities of the researcher: Design and construction of a new weather station for the NOI TechPark in Bolzano, development of the weather station on top of the E Building of the main UNIBZ campus in Bolzano, assessment of the capabilities of different models in the literature for the processing of solar irradiance inputs.

[8.33] IndAIR-Edu: Indoor Air Quality and Ventilation Effectiveness in Educational Buildings.

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Type of application: RTD Call 2018 (UNIBZ internal research funds).

Funded by: Free University of Bozen-Bolzano, Faculty of Science and Technology.

PI: dr. G. Pernigotto.

Budget: 10'500 EUR.

Duration: 07.2018-06.2020.

Topic and activities of the researcher: In the framework of this project, several monitoring campaigns were performed in UNIBZ teaching environments and in different local schools in order to assess the IAQ as well as the adequacy and the effectiveness of ventilation. Results were presented and discussed with the Municipality of Bozen-Bolzano and guidelines proposed to improve ventilation in educational buildings.

[8.34] HUCED: Human-Centred Design of the Built Environment: definition of a methodology for the experimental assessment of the overall Indoor Environmental Quality.

Type of application: CRC Call 2016 (UNIBZ internal research funds).

Funded by: Free University of Bozen-Bolzano.

PI: prof. A. Gasparella.

Budget: 70'000 EUR.

Duration: 03.2017-02.2020.

Topic: The project aimed at filling some gaps in the current state-of-the-art regarding the global assessment of the Indoor Environmental Quality. Specifically, while each environmental stimulus is commonly measured and evaluated independently of the other ones, occupants are actually solicitated by several stressors at the same time. In this framework, the project provided an in-depth experimental investigation regarding correlations and interactions between the different environmental stimuli.

Specific activities of the researcher: Review of the experimental studies in controlled environment about the interaction between the different environmental stimuli on comfort perception and impact on occupants' performance. Experimental monitoring and survey about thermal and visual comfort and indoor air quality in the UNIBZ Living Labs.

[8.35] IBAS: Intelligent Building Automation System for optimization of energy consumptions and indoor environmental quality.

Type of application: CRC Call 2015 (UNIBZ internal research funds).

Funded by: Free University of Bozen-Bolzano.

PI: prof. A. Gasparella.

Budget: 50'000 EUR.

Duration: 01.2016 – 03.2018.

Topic: Development of an Intelligent Building Automation System (IBAS) integrated with the building monitoring system, able to give continuous feedback on the indoor conditions and, thanks to weather forecast, to define advanced control strategies (e.g., model predictive control MPC).

Specific activities of the researcher: short- and long-term experimental campaigns about thermal and visual comfort conditions in the Living Labs UNIBZ, data analysis, development and calibration of EnergyPlus and Radiance models. Experimental study of a complex fenestration system and of the performance of shading devices in collaboration with EURAC Research and the University of Innsbruck.

Planned funded projects funded by Public Authorities

[8.36] TeSmES: Smart technologies for sustainable buildings.

Type of application: Fusion Grant.

Funded by: Stiftung Südtiroler Sparkasse.

PI: dr. G. Pernigotto.

CO-I: prof. A. Gasparella.

Partners: Ekon GmbH.

Budget UNIBZ: 35'000 EUR.

Duration: 06.2023 – 05.2024.

Topic: The research explores the potential of building automation solutions in the transformation of existing buildings into smart buildings, exploiting the systems already present in the building itself. In particular, the results that can be obtained through advanced control solutions based on Model Predictive Control will be assessed. A case-study building will be identified, and a simplified model will be developed, calibrated and validated that, thanks to the acquisition and simulation of context information (e.g., occupancy profile and predicted weather data), can be used to dynamically optimise the control of the building-plant system with the aim of maximising occupant comfort and minimising the building's energy consumption, increasing consumption from renewable sources. The control model developed will be based on a cloud interface and will allow remote access to the user, making them aware of the most efficient solutions.

Previous projects on building physics topics, listed from the most recent.

[8.37] Air-to-air heat recovery in HVAC systems

Funded by: Free University of Bozen-Bolzano (Faculty of Science and Technology, TN5044 PIS UNIBZ).

PI: prof. A. Gasparella.

Participation Period: 12.2011-11.2014, including 1 year as research fellow at Free University of Bozen-Bolzano (01.2013-01.2014).

Topic: Designing and building a laboratory test facility to measure the recovery efficiency of heat exchangers. The focus was on membrane-based air-to-air cross-flow heat exchangers. The facility was designed not only to be able to operate in the conditions prescribed by the current technical standards for the assessment of the efficiency but also to work under different conditions (e.g., dynamic conditions), more representative of the actual operative ones.

Specific activities of the researcher: literature and technical standard review; CFD simulations, both for the evaluation of the air-to-air heat recovery system and for the design of the testing facility; selection and purchase of part of the testing facility components.

[8.38] TIMBEEST – "Timber building with enhanced energy and structural performance"

Funded by: Provincia Autonoma di Bozen-Bolzano L.P. 13.12.2006 N. 14 (TN2201 PIS UNIBZ).

Partners: Fraunhofer IEC (LP), Free University of Bozen-Bolzano (main investigators: prof. A. Gasparella, prof. M. Baratieri), Trees and Timber Institute CNR-IVALSA.

Participation Period: 04.2013-01.2014.

Topic: Improvement of the summer behaviour of timber buildings without worsening their structural and seismic qualities and identification of technologies optimizing the trade-off between economic results, indoor comfort, energy performance and seismic behaviour in different Italian climates.

Specific activities of the researcher: analysis of raw weather data and development of reference years according to EN ISO 15927-4:2005; development of a new procedure for the calculation of extreme years; definition of the set of simplified buildings, modelling and simulation.

[8.39] Prestazioni dinamiche delle strutture di involucro edilizio: progettazione di un sistema di controllo

Funded by: Free University of Bozen-Bolzano (Faculty of Science and Technology, TN5023 PIS UNIBZ).

PI: prof. A. Gasparella, prof. M. Baratieri.

Participation Period: 08.2011-01.2012.

Topic: Numerical analyses on the dynamic response of the building opaque elements to periodic solicitations, in order to extend the applicability and the meaning of EN ISO 13786:2007 dynamic parameters to non-sinusoidal forcing signals.

Specific activities of the researcher: Analysis and development of periodic sol-air temperatures representative of some Italian climates; simulation of the dynamic response of 15 opaque components with different insulation with CTF methods (TRNSYS and EnergyPlus); comparison with harmonic numerical methods and calculation of correction factors for EN ISO 13786:2007 dynamic parameters.

[8.40] Project χ2

Funded by: Network "Chi Quadrato" (Condino, Trento) (TN5210 PIS UNIBZ).

PI: prof. A. Gasparella, prof. M. Baratieri.

Participation Period: 01.2011-08.2011.

Topic: Design of a new school building in Condino, Trento, with high energy performance and indoor environment quality, certifiable with the LEED for Schools Protocol.

Specific activities of the researcher: The first part of the activity was aimed at the selection of the building simulation tool to use: the software proposed by project partners, Ecotect, was assessed with ANSI/ASHRAE 140 procedure and failed many tests. This led to the selection and the use of EnergyPlus (with the user-interface DesignBuilder) as alternative for the dynamic modelling of the whole building-system configuration.

[8.41] Ecodomus.vi

Funded by: Provincia di Vicenza, Vi.energia srl.

Main Partners: Prof. A. Gasparella (University of Padova, now Free University of Bozen-Bolzano), prof. P. Romagnoni (IUAV of Venezia), prof. F. Cappelletti (IUAV of Venezia), prof. P. Baggio (University of Trento), Vi.energia srl, Provincia di Vicenza

Participation Period: 2008 - 2012.

Topic: Started as one of the first initiatives in Italy within the framework of building energy labelling, the main objective of the project Ecodomus.vi was to the define an energy labelling protocol in agreement with national and European technical standards and a procedure for the estimation and the assessment of building energy performance, the identification of weaknesses of energy designs and the selection of improved measures.

Specific activities of the researcher: Implementation of the calculation methods for solar thermal systems in Ecodomus.vi calculation spreadsheet and further upgrades according to the new technical standards; direct implementation and assistance to professionals for the implementation of the protocol Ecodomus.vi for the evaluation of the energy performance of residential buildings; analysis of the energy performances of existing schools in Schio (Vicenza) and Thiene (Vicenza); teaching activity for designers and building professionals within the 2nd level course of Ecodomus Lectures.

Other projects on applied physics, listed from the most recent.

[8.42] Angel - "Sviluppo e ottimizzazione del nuovo banco di refrigerazione Angel"

Funded by: De Rigo Refrigeration srl.

Partners: De Rigo Refrigeration srl, University of Padova (*PI*: prof. L. Doretti, prof. S. Mancin).

Participation Period: 05.2015-02.2016.

Topic: Development of an optimized refrigerator case through experimental tests and CFD simulations.

Specific activities of the researcher: CFD simulations of the refrigerator case with a 2D approach in order to find inefficiencies in the air distribution and, consequently, the best modifications to optimize air path and velocity.

[8.43] TOICA – "Thermal Overall Integrated Conception of Aircraft"

Funded by: European Union, FP7-AAT-2013-RTD-1.

Main partners: 32 partners coordinated by Airbus, including University of Padova (main investigator: prof. C. Zilio).

Participation Period: 02.2014-06.2016.

Topic: The project focused on the aircraft thermal design and, in particular, its final aim was to develop an advanced multi-level and multi-disciplinary architecture able to conjugate the need of assessing the feasibility of new solutions in the early stages of aircraft conceptual design with the necessity of detailed simulation for accurate thermal analysis. Specifically, University of Padova was involved in the thermal characterization of the behaviour of fuel tank and fuselage during the

cruise.

Specific activities of the researcher: Development of 3D models and CFD simulations, in particular for the fuel tank; analysis of the results and discussion of flammability risk; comparison with simplified 1D models to assess and improve their capabilities.

[8.44] ZEIWS - Zero Environmental Impact Washing System -"Sviluppo di nuova generazione di impianti di lavaggio mezzi a totale compatibilità ambientale"

Research program commissioned by Ceccato S.p.A. and admitted to the Regione Veneto financial support (Regional Law 18.05.2007 n.9).

Main Partners: University of Padova (main investigators: prof. C. Forza, prof. M. Quaresimin, prof. A. Gasparella), Ceccato srl.
Participation Period: 06.2010-10.2011.

Topic: Re-designing the car wash systems developed and produced by the company Ceccato - "Pegasus" line; in particular, the subtask related to the energy issues was focused on the reduction of the operational energy impact, the improvement of the energy efficiency and the evaluation of the feasibility of integration with renewable energy sources.

Specific activities of the researcher: analysis of the energy consumption of the car-washing system; CFD simulation of the air-drying system and calibration with experimental data; identification of the main issues of the "as is" configuration and suggestions for improved redesign; technical evaluation of feasibility of installation of thermal and PV solar collectors on the upper surface of the system.

[9] Publications

Bibliometric indexes (updated in July 2023):

- **Scopus Index**
  - Number of Papers: **75**
  - Citations: **896**
  - H-index: **16**
- **ISI-Web of Science Index**
  - Number of Papers: **48**
  - Citations: **735**
  - H-index: **15**

List of publications

On peer-review international journals

1 Gasparella A., **Pernigotto G.**, Cappelletti F., Romagnoni P., Baggio P., 2011. *Analysis and modeling of window and glazing systems energy performance for a well insulated residential building,* Energy and Buildings 43: 1030-1037.
Scopus citations: 148; WoS citations: 126.
ISSN: 03787788; DOI: 10.1016/j.enbuild.2010.12.032

2 Gasparella A., **Pernigotto G.**, Baratieri M., Baggio P., 2011. *Thermal dynamic transfer properties of the opaque envelope: analytical and numerical tools for the assessment of the response to summer outdoor conditions,* Energy and Buildings 43: 2509-2517.
Scopus citations: 52 / WoS citations: 47.
ISSN: 03787788; DOI: 10.1016/j.enbuild.2011.06.004

3 **Pernigotto G.**, Gasparella A., 2013. *Extensive Comparative Analysis Of Building Energy Simulation Codes: Heating And Cooling Energy Needs and Peak Loads Calculation In TRNSYS And EnergyPlus For Southern Europe Climates,* HVAC&R Research 19(5): 481-492.
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ISSN: 10789669; DOI: 10.1080/10789669.2013.794088

4 **Pernigotto G.**, Prada A., Cóstola D., Gasparella A., Hensen J.L.M., 2014. *Multi-year and reference year weather data for building energy labelling in North Italy climates,* Energy and Buildings 72: 62-72.
Scopus citations: 42 / WoS citations: 32.
ISSN: 03787788; DOI: 10.1016/j.enbuild.2013.12.012

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Scopus citations: 28 / WoS citations: 21.
ISSN: 19401493; DOI: 10.1080/19401493.2013.853840

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Scopus citations: 41 / WoS citations: 35.
ISSN: 13594311; DOI: 10.1016/j.applthermaleng.2014.06.043

7 Arambula Lara R., **Pernigotto G.**, Cappelletti F., Romagnoni P., Gasparella A., 2015. *Energy audit of schools by means of cluster analysis,* Energy and Buildings 95 - Special Issue: "Historic, historical and existing buildings: designing the retrofit. An overview from energy performances to indoor air quality": 160–171.
Scopus citations: 64 / WoS citations: 54.
ISSN: 03787788; DOI: 10.1016/j.enbuild.2015.03.036

8 Pavlin B., **Pernigotto G.**, Cappelletti F., Bison P., Vidoni R., Gasparella A., 2017. *Real-Time Monitoring of Occupants' Thermal Comfort through Infrared Imaging: A Preliminary Study*, Buildings 7(2): 10.
Scopus citations: 41 / WoS citations: 36.
ISSN: 20755309; DOI: 11.3390/buildings7010010
Weblink: http://www.mdpi.com/2075-5309/7/1/10

9 Tafelmeier S., **Pernigotto G.**, Gasparella A., 2017. *Annual Performance of Sensible and Total Heat Recovery in Ventilation Systems: Humidity Control Constraints for European Climates*, Buildings 7(2): 28.
Scopus citations: 8 / WoS citations: 7.
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Weblink: http://www.mdpi.com/2075-5309/7/2/28

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Scopus citations: 21 / WoS citations: 18.
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Scopus citations: 14 / WoS citations: 13.
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Weblink: http://www.mdpi.com/1996-1073/10/11/1925

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Scopus citations: 16 / WoS citations: 17.
ISSN: 1996-8744; DOI: 10.1007/s12273-017-0418-4

13 Torresin S., **Pernigotto G.**, Cappelletti F., Gasparella A., 2018. *Combined effects of environmental factors on human perception and objective performance: a review of experimental laboratory works,* Indoor Air 28(4): 525-538.
Scopus citations: 107 / WoS citations: 95.
ISSN: 1600-0668; DOI: 10.1111/ina.12457

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Scopus citations: 66 / WoS citations: 63.
ISSN: 2210-6707; DOI: 10.1016/j.scs.2018.05.038

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Scopus citations: 16 / WoS citations: 12.
ISSN: 19401493; DOI: 10.1080/19401493.2019.1585477

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Scopus citations: 9 / WoS citations: 9.
ISSN: 0360-1323; DOI: 10.1016/j.buildenv.2020.106808

19 Vigna I., Pernetti R., **Pernigotto G.**, Gasparella A. 2020. *Analysis of the building smart readiness indicator calculation: A comparative case-study with two panels of experts*, Energies 13(11): 2796.
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ISSN: 19961073; DOI: 10.3390/en13112796.
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ISSN: 0360-5442; DOI: 10.1016/j.energy.2020.118198

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Scopus citations: 1 / WoS citations: 1.
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Scopus citations: 1 / WoS citations: 1.
ISSN: 22106707; DOI: 10.1016/j.scs.2022.104305

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ISSN: 23527102; DOI: 10.1016/j.jobe.2023.106150

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121 Gasparella A., **Pernigotto G.**, Baratieri M., Baggio P., 2010. *Numerical tools and parameters for the analysis of thermal dynamic performance of opaque buildings components,* Proceedings of the 65th ATI National Congress, Domus de Maria, Italy, 13th-17th September 2010. ISBN: 9788890411632.

122 Prada A., **Pernigotto G.**, Baggio P., Gasparella A., 2011. *Summer load evaluation in the Italian climate: sensitivity of the energy performance to the weather data,* Proceedings of the 66th ATI National Congress, Rende, Italy, 5th -9th September 2011. ISBN: 9788895267111.

123 Gasparella A., **Pernigotto G.**, 2011. *Comparison of quasi-steady state and dynamic simulation approaches for the calculation of building thermal losses,* Proceedings of the 66th ATI National Congress, Rende, Italy, 5th -9th September 2011. ISBN: 9788895267111.

124 Cappelletti F., **Pernigotto G.**, Gasparella A., Romagnoni P., 2012. *Energy performance of different glazing types in an open-space office with controlled indoor thermal comfort,* Proceedings of the 67th ATI National Congress, Trieste, Italy, 11th-14th September 2012. ISBN: 9788890767609.

125 Penna P., **Pernigotto G.**, Cappelletti F., Gasparella A., 2012. *Cost effective energy optimization in building refurbishment,* Proceedings of the 67th ATI National Congress, Trieste, Italy, 11th-14th September 2012. ISBN: 9788890767609.

126 Romagnoni P., Peron F., Cappelletti F., Temporin T, Duolo E., **Pernigotto G.**, 2019. *Valutazione dell'efficacia di interventi di efficienza energetica negli edifici scolastici*. AICARR Journal 53: 40-45. ISSN: 2038-2723.

127 Danovska M., **Pernigotto G.**, Baggio P., Gasparella A., 2020. *Studio dell'impatto della conducibilità termica variabile sulla performance termica di pareti in legno*. neo-Eubios 74: 5-9.
Weblink: https://issuu.com/neoeubios/docs/neo-eubios_74_dicembre_2020/1

128 **Pernigotto G.**, Menegon D., 2021. *Smart Home: Non c'è efficienza senza intelligenza*. CasaClima DueGradi 2 - Giugno 2021: 34-37.
Weblink: https://issuu.com/klimahauscasaclima/docs/21031_casaclima_2-2021_15-6-21

129 **Pernigotto G.**, Menegon D., 2021. *Lo stato dell'edilizia in Alto Adige misurata attraverso lo "smart readiness indicator"*. CasaClima DueGradi 3 Autunno 2021: 60-53.
Weblink: https://issuu.com/klimahauscasaclima/docs/21059_casaclima_3-2021_web

130 Fiabane C., **Pernigotto G.**, Renzi M., Gasparella A., 2022. Caratterizzazione numerica delle prestazioni termiche di un nuovo prototipo di ventilconvettore. Aicarr Journal 73: 54-60.
Weblink: https://issuu.com/quinebusinesspublisher/docs/aj73_300

PhD Thesis

131 **Pernigotto G.**, 2013. *Evaluation of building envelope energy performance through extensive simulation and parametrical analysis*.

Weblink: http://paduaresearch.cab.unipd.it/5477/

[10] PARTICIPATION TO CONFERENCES IN THE LAST 3 YEARS.

Further information:

Participation to scientific conferences

Invited lectures

2022 **ASHRAE topical conference IAQ 2020: Indoor Environmental Quality Performance Approaches - Transitioning from IAQ to IEQ**, Athens, Greece, 4th-6th May 2022

Number of papers as presenting author: **1**

Title: "*Indoor Conditions in Educational Buildings: the Case of Bolzano Schools"*

Building Simulation Applications 2022, Bolzano, Italy, 30th June - 1st July 2022

Number of papers as presenting author: **1**

Title: "*Impact of solar radiation modelling on the simulated building energy performance in the climate of Bolzano, Italy"*

VII International High Performance Buildings Conference at Purdue, West Lafayette, IN, U.S.A., 10th-14th July 2022

Number of papers as presenting author: **1**

Title: "*Assessment Of The Accuracy Of Solar Irradiance Models In Mountain Locations: The Case Of Bolzano, Italy"*

2021 **Roomvent 2020**, Torino, Italy, 15th-18th February 2021

Number of papers as presenting author: **1**

Title: "*Analysis of the potential of smart ventilation controls: application to a university classroom in Bolzano"*

VI International High Performance Buildings Conference at Purdue, West Lafayette, IN, U.S.A., 24th-28th May 2021

Number of papers as presenting author: **1**

Title: "*Development of Climate Classification through Hierarchical Clustering for Building Energy Simulation"*

Building Simulation 2021, Bruges, Belgium, 1st-3rd September 2021

Number of papers as presenting author: **1**

Title: "*Assessment of a weather-based climate classification with building energy simulation"*

Participation to previous conferences.

2019 **Building Simulation 2019**, Rome, Italy, 2nd-4th September 2019

Number of papers as presenting author: **1**

Title: "*Clustering of European Climates and Representative Climate Identification for Building Energy Simulation Analyses"*

37th UIT Heat Transfer Conference 2019, Padova, Italy, 24th-26th June 2019

Building Simulation Applications 2019, Bolzano, Italy, 19th-21st June 2019

2018 **V International High Performance Buildings Conference at Purdue**, West Lafayette (Indiana), U.S., 9th-12th July 2018

Number of papers as presenting author: **1**

Title: "*Classification of European Climates for Building Energy Simulation Analyses*"

2017 **Building Simulation Applications 2017**, Bolzano, Italy, 8th-10th February 2017

EnviBUILD 2017, Vienna, Austria, 7th-8th September 2017

Number of papers as presenting author: **1**

Title: "*Development of Extreme Reference Years for Building Energy Simulation Scenarios*"

2016 **IV International High Performance Buildings Conference at Purdue**, West Lafayette (Indiana), U.S., 11th-14th July 2016

Number of papers as presenting author: **1**

Title: "*Solar irradiance modelling and uncertainty on building hourly profiles of heating and cooling energy needs*"

2015 **Building Simulation Applications 2015**, Bolzano, Italy, 4th-6th February 2015

Number of papers as presenting author: **1**

Title: "*Experimental characterization of the dynamic thermal properties of opaque elements under dynamic periodic solicitation*"

2014 **III International High Performance Buildings Conference at Purdue**, West Lafayette (Indiana), U.S., 14th-17th July 2014

Number of papers as presenting author: **1**

Title: "*Development of sets of simplified building models for building simulation*"

2013 **Building Simulation Applications 2013**, Bolzano, Italy, 30th January - 1st February 2013

Number of papers as presenting author: **3**

Titles:
"*Long term evaluation of building energy performance: comparison of the test reference year and historical data series in*

the North Italian climates";
"*Quasi-steady state and dynamic simulation approaches for the calculation of building energy needs: part 1 Thermal losses*";
"*Quasi-steady state and dynamic simulation approaches for the calculation of building energy needs: part 2 Thermal gains*"

2012 **II International High Performance Buildings Conference at Purdue**, West Lafayette (Indiana), U.S., 16th-19th July 2012

Number of papers as presenting author: **1**

Title: "*Extensive utilization of dynamic simulation for sensitivity analysis and optimization design of refurbishment measures*"

5th International Building Physics Conference, Kyoto, Japan, 28th-31st May 2012

Number of papers as presenting author: **1**

Title: "*Comparative evaluation methodology of two building energy simulation codes: TRNSYS and EnergyPlus*"

2011 **Building Simulation 2011, 12th Conference of IBPSA**, Sydney, Australia, 14th-16th November 2011

Number of papers as presenting author: **1**

Title: "*Summer load evaluation in the Italian climate: sensitivity of the loss utilization factor to the weather data*"

66th ATI National Congress, Rende, Italy, 5th-9th September 2011

Number of papers as presenting author: **1**

Title: "*Comparison of quasi-steady state and dynamic simulation approaches for the calculation of building thermal losses*"

2010 **65th ATI National Congress**, Domus de Maria, Italy, 13th-17th September 2010

Number of papers as presenting author: **1**

Title: "*Analisi comparativa dei codici di simulazione dinamica degli edifici: un confronto tra TRNSYS ed EnergyPlus*"

Clima 2010, 10th REHVA World Congress, Antalya, Turkey, 9th-12th May 2010

INVITED LECTURES

[10.1] **Application of Energy Efficiency Measures for Building Retrofitting: An Introduction to Building Performance Analysis and Simulation** (see also **section 5, point D**)

Lecturer and author: dr. G. Pernigotto.
Date: 14.03.2023 & 15.03.2022.
Lecture included in the "International week 'Sustainable Cities and Communities'" at UCLL (University of Applied Science), Hasselt, Belgium, organized by the the network Euclides.

[10.2] Use of extreme reference years in building retrofit optimization

Lecturer: prof. A. Gasparella.
Authors: Dr. A. Prada, Dr. G. Pernigotto, Prof. A. Gasparella.
Date: 5–7/12/2018. Keynote at the 49th International Congress and Exhibition on Heating, Refrigeration and Air-Conditioning, Belgrade, Serbia, 5th-7th December 2018 (see also paper **[105]**).

[10.3] Modalità di posa delle finestre: teoria e calcolo del coefficiente lineico / Installation of windows: theory and calculation of the linear thermal transmittance

Lecturer and author: dr. G. Pernigotto.
Date: 12/06/2015.
Seminar included in the II level Master "BEAM" ("Master in Processi Costruttivi Sostenibili BEAM - Building Environmental Assessment and Modeling"), University IUAV of Venezia.

[10.4] Energy performance of the building envelope

Lecturer and author: dr. G. Pernigotto.
Date: 01/07/2014.
Seminar "Energy performance of the building envelope" at the 7th Summer School of Applied Physics - "Zero energy building: building envelope, energy modelling, multi-purpose systems", University of Sannio, Benevento, 30th June – 4th July 2014.

[10.5] Extensive comparative analysis of building energy simulation codes: heating and cooling energy needs and peak loads calculation in TRNSYS and EnergyPlus for southern Europe climates

Lecturer: prof. A. Gasparella.
Authors: prof. A. Gasparella, dr. G. Pernigotto.
Date: 21/01/2014.
Seminar "Optimization Techniques in HVAC" at the ASHRAE 2014 Winter Conference; New York City (New York), U.S.

[11] Research interests:

Statement of research interest

- Characterization of the thermal behaviour of building envelope components through numerical simulations and laboratory experimental tests.
- Evaluation of building energy performances by means of analytical and detailed dynamic simulation approaches.
- Statistical analysis of building energy consumption data, evaluation of energy saving measures and development of optimized scenarios of building energy refurbishment. Analysis of the energy performance of the existing building stock and simulation at urban scale.
- Assessment of the capabilities of calculation methods for building energy performance evaluations and analysis of the sensitivity to the boundary conditions (i.e., weather data and building use).

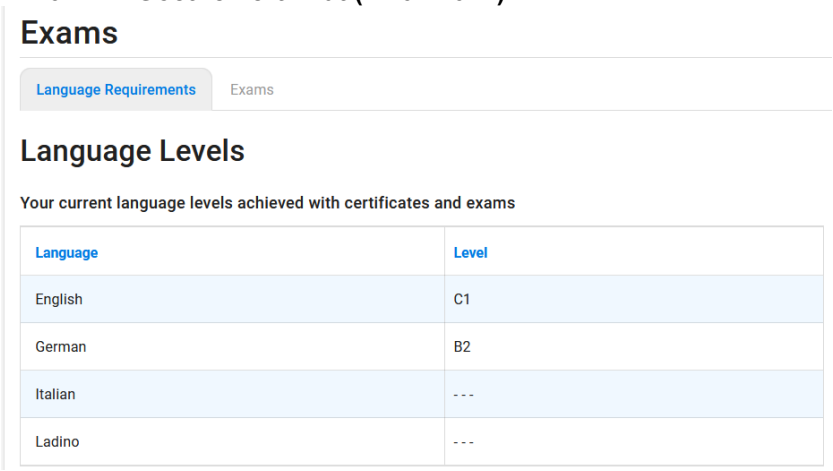
[12] *Mother tongue*: Italian

Language competence *Other languages (*Self-assessment according to Common European Reference Framework for Languages*):*

Comprehension		**Spoken production**		**Written production**
Listening	Reading	Oral interaction	Oral production	
English				
C1 Proficient user	C1 Proficient user	C1 Proficient user	C1 Proficient user	C1 Proficient user
German				
B2 Independent user	B2 Independent user	B2 Independent user	B2 Independent user	B2 Independent user
French				
A2 Basic user	A2 Basic user	A2 Basic user	A2 Basic user	A2 Basic user

Certifications:

- English:
  - **UNIBZ internal certifications organized by the UNIBZ language Center**: **C1 (05.06.2018)**
- German:
  - **B2 Goethe Zertifikat (12.01.2022)**



Bolzano, 01.07.2023

Giovanni Pernigotto