

Curriculum Vitae
November 2021

Personal information

First name / Surname **Vincenzo Costanzo**

Education and qualifications

Dates **19/11/2021 – 19/11/2023**

Title of qualification awarded **LEED Green Associate**

Name and type of organisation providing education and training **U.S. Green Building Council - Green Business Certification Inc., P.O. Box 822964, Philadelphia, PA 19182-2964 (United States)**

Dates **08/11/2020 – 08/11/2029**

Title of qualification awarded **Qualification as Associate Professor in Building Physics and Mechanical Systems**

Name and type of organisation providing education and training **Ministry of University and Research (MUR) – Via Michele Carcani, 61 - 00153 Rome (Italy)**

Dates **20/03/2018 – present**

Title of qualification awarded **Scientific qualification as Lecturer in Engineering and Architecture**

Name and type of organisation providing education and training **Agència per a la Qualitat del Sistema Universitari de Catalunya (AQU) – C. dels Vergós, 36-42, 08017 Barcelona (Spain)**

Dates **01/11/2012 – 26/02/2016**

Title of qualification awarded **PhD in Energetics**

Principal subjects/occupational skills covered **Building physics, building services, low energy and carbon design of buildings, passive cooling technologies, thermal comfort, daylighting**

Final dissertation subject **Cool Roofs for improving thermal performance of existing EU office buildings**

Name and type of organisation providing education and training **Department of Industrial Engineering – University of Catania. Viale A. Doria 6, 95125, Catania (Italy)**

Dates **01/06/2012 – 28/10/2013**

Title of qualification awarded **Specialization course on Construction Company's Engineer**

Principal subjects/occupational skills covered **Public works legislation, management of public procurement and contracts, technical direction of construction site, management of on-site safety**

Name and type of organisation providing education and training **Direxta Alta Formazione s.r.l., via Domenico Chelini 9 – 200197 Rome (Italy)**

Dates **01/10/2006 – 19/07/2012**

Title of qualification awarded **Architecture and Construction Engineering Master Degree – Graduated with honours**

Principal subjects/occupational skills covered **Building physics, building services, building technology, building science, building restoration, city planning, valuation, construction site management**

Final dissertation subject **Cool Roofs for passive cooling – The research addresses the improvement of energy performance in the warm climate of the Mediterranean area**

Name and type of organisation providing education and training **University of Catania – Italy**

Level in national or international classification	Integrated Master's degree
<u>Dates</u>	<u>10/09/2001 – 15/07/2006</u>
Title of qualification awarded	High school diploma – Final mark 100/100
Name and type of organisation providing education and training	Liceo Scientifico Statale G. Verga, Adrano (CT) – Italy
Level in national or international classification	High school diploma
Work experience	
<u>Dates</u>	<u>22/10/2018 – present</u>
Name and address of employer	Struttura Didattica Speciale di Architettura – Università degli Studi di Catania. Piazza Federico di Svevia, 96100 Siracusa (Italy)
Occupation or position held	Senior Researcher/Lecturer
Main activities and responsibilities	<ul style="list-style-type: none"> • Researcher in the fields of passive and active technological systems for building applications, thermal comfort (indoor and outdoor), daylighting, exergy, building energy efficiency, renewable energy production from solar source • Task leader of the H2020 project e-SAFE • Member of the research group of the IEA Task 59 Project • Lecturer for the Building Physics module of the MSc in Architecture • Member of the examination board of the Building Physics and Mechanical Systems module of the MSc in Architecture • Supervisor of master students' final dissertation and of various projects on energy efficiency in buildings
Type of business or sector	Academia
<u>Dates</u>	<u>14/01/2016 – 13/07/2018</u>
Name and address of employer	School of the Built Environment – University of Reading Whiteknights, PO Box 219, Reading, RG6 6AW – United Kingdom
Occupation or position held	Research Fellow/Teaching Assistant
Main activities and responsibilities	<ul style="list-style-type: none"> • Researcher in the fields of solar energy harvesting and energy demands/supply assessment at both the building and urban scales for the <i>Research Cooperation in Renewable Energy Technologies for Electricity Generation</i> (REELCOOP, EU FP7-funded) and the <i>Low carbon climate-responsive Heating and Cooling of Cities</i> (LoHCool, EPSRC/NSFC co-funded) projects • Lecturer and module builder for CEM 107/108 modules of the MSc in Design and Management of Sustainable Built Environments • Supervisor of master students' final dissertation and of various projects on energy efficiency in buildings
Type of business or sector	Academia
<u>Dates</u>	<u>13/01/015 – 03/07/2015</u>
Name and address of employer	Centre for Building Performance Research – School of Architecture, Victoria University of Wellington Vivian Street 139, Wellington, 6011 – New Zealand
Occupation or position held	Visiting PhD student
Main activities and responsibilities	Researcher on the applicability of natural ventilation and daylighting strategies to existing office buildings
Type of business or sector	Academia

Academic outputs/duties

- Monographies
- V. Costanzo, Cool Roofs for improving thermal performance of EU office buildings. An investigation for different climates and building layouts, Lambert Academic Publishing, Saarbrücken, 2016, ISBN 978-3-659-87090-3
- Books
- V. Costanzo, G. Evola, L. Marletta, Urban heat stress and mitigation solutions. An engineering perspective, Routledge, London, 2021, ISBN 9780367493639
- Journal papers
- V. Lo Verso, F. Giuliani, F. Caffaro, F. Basile, F. Peron, T. Dalla Mora, L. Bellia, F. Fragliasso, M. Beccali, M. Bonomolo, F. Nocera, V. Costanzo, Questionnaires and simulations to assess daylighting in Italian university classrooms for IEQ and energy issues, *Energy and Buildings* 252 (2021), 111433
 - G. Evola, V. Costanzo, L. Marletta, Hygrothermal and acoustic performance of two innovative envelope renovation solutions developed in the e-SAFE project, *Energies* 14(13) (2021), 4006
 - M. Detommaso, V. Costanzo, F. Nocera, Application of weather data morphing for calibration of urban Envi-Met microclimate models. Results and critical issues, *Urban Climate* 38 (2021), 100895
 - V. Costanzo, K. Fabbri, E. Schito, M. Pretelli, L. Marletta, Microclimate monitoring and conservation issues of a Baroque church in Italy: a risk assessment analysis, *Building Research & Information* (2021), 1899797
 - V. Lo Verso, F. Giuliani, F. Caffaro, F. Basile, F. Peron, T. Della Mora, L. Bellia, F. Fragliasso, M. Beccali, M. Bonomolo, F. Nocera, V. Costanzo, *Journal of Daylighting* 8(1) (2021)
 - G. Evola, V. Costanzo, M. Infantone, L. Marletta, Typical-year and multi-year building energy simulation approaches: a critical comparison, *Energy* 219 (2021), 119591
 - V. Costanzo, G. Evola, M.F. Infantone, L. Marletta, Updated typical weather years for the energy simulation of buildings in Mediterranean climate. A case study for Sicily, *Energies* 13(15) (2020), 4115
 - H.E. Huerto-Cardenas, F. Leonforte, N. Aste, C. Del Pero, G. Evola, V. Costanzo, E. Lucchi, Validation of dynamic hygrothermal simulation models for historical buildings: state of the art, research challenges and recommendations, *Building and Environment* 180 (2020), 107081
 - G. Evola, V. Costanzo, C. Magri, G. Margani, L. Marletta, E. Naboni, A novel comprehensive workflow for modelling outdoor thermal comfort and energy demand in urban canyons: Results and critical issues, *Energy and Buildings* 216 (2020), 109946
 - G.G. Akkurt, N. Aste, J. Borderon, A. Buda, M. Calzolari, D. Chung, V. Costanzo, C. Del Pero, G. Evola, H.E. Huerto-Cardenas, F. Leonforte, A. Lo Faro, E. Lucchi, L. Marletta, F. Nocera, V. Pracchi, C. Turhan, Dynamic thermal and hygrometric simulation of historical buildings: Critical factors and possible solutions, *Renewable and Sustainable Energy Reviews* 118 (2020), 109509
 - K. Fabbri, V. Costanzo, Drone-assisted infrared thermography for calibration of outdoor microclimate simulation models, *Sustainable Cities and Society* 52 (2020), 101855
 - A. Salehi, S. Asadi, V. Costanzo, R. Fayaz, M. Bozorgi, N. Imani, F. Nocera, Investigation of thermal comfort efficacy of solar chimneys under different climates and operation time periods, *Energy and Buildings* 205 (2019), 109528
 - V. Costanzo, R. Yao, X. Li, M. Liu, B. Li, A multi-layer approach for estimating the energy use intensity on an urban scale, *Cities* 95 (2019), 102467
 - M.-M. Fernandez-Antolin, J.M. Del Rio, V. Costanzo, F. Nocera, R.-A. Gonzalez-Lezcano, Passive design strategies for residential buildings in different Spanish climate zones, *Sustainability* 11(18) (2019), 4816
 - V. Costanzo, R. Yao, T. Xu, J. Xiong, Q. Zhang, B. Li, Natural ventilation potential for residential buildings in a densely built-up and highly polluted environment. A case study, *Renewable Energy* 138 (2019), 340-353
 - G. Evola, V. Costanzo, L. Marletta, Exergy analysis of energy systems in buildings, *Buildings* 8 (2018), 180
 - V. Costanzo, G. Evola, L. Marletta, F. Nocera, The effectiveness of phase change materials in relation to summer thermal comfort in air-conditioned office buildings, *Building Simulation* 11 (6) (2018), 1145-1161
 - F. Nocera, A. Lo Faro, V. Costanzo, C. Raciti, Daylight performance of classrooms in a Mediterranean school heritage building, *Sustainability* 10 (2018), 3705
 - V. Costanzo, G. Evola, L. Marletta, F. Pistone Nascone, Application of climate based daylight modelling to the refurbishment of a school building in Sicily, *Sustainability* 10 (2018), 2653

Conference papers

- V. Costanzo, K. Fabbri, S. Piraccini, Stressing the passive behavior of a Passivhaus: an evidence-based scenario analysis for a Mediterranean case study, *Building and Environment* 142 (2018), 265-277
- X. Li, R. Yao, M. Liu, V. Costanzo, W. Yu, W. Wang, A. Short, B. Li, Developing urban residential reference buildings using clustering analysis of satellite images, *Energy and Buildings* 169 (2018), 417-429
- V. Costanzo, R. Yao, E. Essah, L. Shao, M. Shahrestani, A.C. Oliveira, M. Araz, A. Hepbasli, E. Biyik, A method of strategic evaluation of energy performance of Building Integrated Photovoltaic in the urban context, *Journal of Cleaner Production* 184 (2018), 82-91
- R. Yao, V. Costanzo, X. Li, Q. Zhang, B. Li, The effect of passive measures on thermal comfort and energy conservation. A case study of the Hot Summer and Cold Winter climate in the Yangtze River region, *Journal of Building Engineering* 15 (2018), 298-310
- B. Li, C. Du, R. Yao, W. Yu, V. Costanzo, Indoor thermal environments in Chinese residential buildings responding to the diversity of climates, *Applied Thermal Engineering* 129 (2018), 693-708
- C. Zheng, P. Wu, V. Costanzo, Y. Wang, X. Yang, Establishment and verification of solar radiation calculation model of glass daylighting roof in Hot Summer and Warm Winter zone in China, *Procedia Engineering* 205 (2017), 2903-2909
- V. Costanzo, G. Evola, L. Marletta, A review of daylighting strategies in schools: state of the art and expected future trends, *Buildings* 7(2) (2017), 41
- V. Costanzo, M. Donn, Thermal and visual comfort assessment of natural ventilated office buildings in Europe and North America, *Energy and Buildings* 140 (2017), 210-223
- A. Consoli, V. Costanzo, G. Evola, L. Marletta, Refurbishing an existing apartment block in Mediterranean climate: towards the Passivhaus standard, *Energy Procedia* 111 (2017), 397-406
- V. Costanzo, G. Evola, L. Marletta, Thermal and visual performance of real and theoretical thermochromic glazing solutions for office buildings, *Solar Energy Materials & Solar Cells* 149 (2016), 110-120
- V. Costanzo, G. Evola, L. Marletta, Energy saving in buildings or UHI mitigation? Comparison between green roofs and cool roofs, *Energy and Buildings* 114 (2016), 247-255
- G. Evola, L. Marletta, V. Costanzo, G. Caruso, Different strategies for improving summer thermal comfort in heavyweight traditional buildings, *Energy Procedia* 78 (2015), 3228-3233
- V. Costanzo, G. Evola, L. Marletta, A. Gagliano, Proper evaluation of the external convective heat transfer for the thermal analysis of cool roofs, *Energy and Buildings* 77 (2014), 467-477
- V. Costanzo, G. Evola, L. Marletta, Cool roofs for passive cooling: performance in different climates and for different insulation levels in Italy, *Advances in Building Energy Research* 7(2) (2013), 155-169
- V. Costanzo, G. Evola, A. Gagliano, L. Marletta, F. Nocera, Study on the application of cool paintings for the passive cooling of existing buildings in Mediterranean climates, *Advances in Mechanical Engineering*, Volume 2013, Article ID 413675
- V. Costanzo*, G. Evola, L. Marletta, G. Roccella, Preliminary investigation on the transient hygrothermal analysis of a CLT-based retrofit solution for exterior walls, *Proceedings of the CISBAT 2021 Conference*, Lausanne (Switzerland), September 8-10, 2021
- G. Evola, V. Costanzo*, L. Marletta, F. Nocera, M. Detommaso, A. Urso, An investigation on the radiant heat balance for different urban tissues in Mediterranean climate: a case study, *Proceedings of the CISBAT 2021 Conference*, Lausanne (Switzerland), September 8-10, 2021
- G. Evola, F. Nocera, V. Costanzo, M. Detommaso, S. Bonaccorso, L. Marletta, Greenery systems for the mitigation of the urban heat island: a simulation experience for southern Italy, *Proceedings of the 11th INPUT Conference*, Catania (Italy), September 8-10, 2021
- A. Tejero-Gonzalez, F. Nocera, V. Costanzo, E. Velasco-Gomez, Passive evaporative cooling through water filled bricks: a preliminary investigation, *Proceedings of the 8th IBPC Conference*, Copenhagen (Denmark), August 25-27, 2021
- G. Evola, G. Margani, V. Costanzo, C. Tardo, E. Marino, G. Semprini, R. Tomasi, C. Halmdienst, B. Voortman, The e-SAFE energy and seismic renovation solutions for the European building stock: main features and requirements, *Proceedings of the 8th IBPC Conference*, Copenhagen (Denmark), August 25-27, 2021
- G. Evola, V. Costanzo, M. Infantone, C. Marino, M.F. Panzera, L. Marletta, Upgrading weather datasets for building energy simulation: a preliminary investigation. *Proceedings of the 20th International Conference on Environment and Electrical Engineering (EEEIC2020)*, Madrid (Spain), June 9-12, 2020

	<ul style="list-style-type: none"> • <u>V. Costanzo*</u>, G. Evola, L. Marletta, Exergy analysis of a residential building in Southern Italy: lessons for low-exergy buildings and systems, Proceedings of the BS2019 International Conference, Rome (Italy), September 2-4, 2019 • <u>V. Costanzo*</u>, J.E. Carrillo-Gomez, G. Evola, L. Marletta, Passivhaus design for housing projects in Colombia, Proceedings of SEB19 International Conference, Budapest (Hungary), July 4-5, 2019 • J. Xiong, <u>V. Costanzo</u>, R. Yao, B. Li, Assessing the natural ventilation potential of residential buildings in the Hot Summer and Cold Winter zone of China, Proceedings of the 2018 Roomvent & Ventilation International conference, Espoo (Finland), June 2-5, 2018 • <u>V. Costanzo*</u>, L. Marletta, F.Nocera, C. Raciti, Daylight in a historical building used as a school. Refurbishment options according to its heritage value, Proceedings of the AIDI National Congress, Rome (Italy), May 17-18, 2018 • <u>V. Costanzo*</u>, X. Li, R. Yao, Estimating urban buildings Energy Use Intensities (EUIs) by means of a bottom-up multi-layer engineering approach, Proceedings of the 8th SuDBE International Conference, Chongqing (China), November 4-7, 2017 • C. Zheng, P. Wu, <u>V. Costanzo</u>, Y. Wang, X. Yang, Establishment and verification of solar radiation calculation model of glass daylighting roof in Hot Summer and Warm Winter zone in China, Proceedings of the 10th ISHVAC, Jinan (Cina), 19-22 Ottobre 2017 • <u>V. Costanzo*</u>, R. Yao, M. Shahrestani, E. Essah, L. Shao, A.C. Oliveira, A. Hepbasli, E. Biyic, M. Araz, A framework for assessing the matching between electricity demand and supply of urban buildings equipped with BIPV, Proceedings of the Med Green Forum 4, Firenze (Italia), 31 Luglio – 3 Agosto 2017 • <u>V. Costanzo</u>, G. Evola, L. Marletta, D. Panarelli, Static and dynamic strategies for improving daylight use in side-lit classrooms: a case study, Proceedings of the 2017 BSA International Conference, Bolzano (Italia), 8-10 Febbraio 2017 • <u>V. Costanzo*</u>, G. Evola, L. Marletta, The effectiveness of PCM wallboards for the energy refurbishment of lightweight buildings, Proceedings of the 9th National AIGE Congress, Catania (Italia), 17-18 Settembre 2015 • G. Evola, L. Marletta, <u>V. Costanzo</u>, G. Caruso, Different strategies for improving summer thermal comfort in heavyweight traditional buildings, Proceedings of the 6th International Building Physics Conference, Torino (Italia), 14-17 Giugno 2015 • <u>V. Costanzo*</u>, G. Evola, L. Marletta, Energy savings in buildings or UHI mitigation? Comparison between green roofs and cool roofs, Proceedings of the 3rd International Conference of Countermeasures to Urban Heat Island, Venezia (Italia), 13-15 Ottobre 2014 • <u>V. Costanzo*</u>, G. Evola, A. Gagliano, I. Marletta, Cool roof for passive cooling: simulations of an existing building in southern Italy, Proceedings of the 34th AIVC International Conference, Atene (Grecia), 25-26 Settembre 2013 • L. Marletta, G. Evola, <u>V. Costanzo</u>, Thermodynamic analysis of hybrid solar collectors (PV/T), Proceedings of the 7th National AIGE Congress, Rende (Italia), 10-11 Giugno 2013
Editorial activity	<ul style="list-style-type: none"> • Advisory Board Member of Cambridge Scholars Publishing (UK) and Altralinea Edizioni (Italy) publishing houses • Associate Editor of the Journal of Building Engineering (Elsevier Publisher) • Editorial Board Member of the following journals: Journal of Daylighting (Solarlits Publisher), Sustainability (MDPI Publisher), Energies (MDPI Publisher), Intelligent Buildings International (Taylor & Francis Publisher) • Guest Editor of the Special Issue “Assessing the performance of Passive Houses in Mediterranean climate regions” on Journal of Sustainability (MDPI Publisher) • Guest Editor of the Special Issue “Advances in Historic Buildings Conservation and Energy Efficiency” on Journal of Sustainability (MDPI Publisher)
Reviewer activity	<ul style="list-style-type: none"> • Reviewer for the journals Energy and Buildings, Journal of Building Engineering, Urban Climate, Energy, Journal of Cleaner Production, Applied Energy, Building and Environment, Renewable Energy, Sustainability, Energies, Buildings
Chair/organizer of conferences	<ul style="list-style-type: none"> • Med Green Forum 4, Florence (Italy), July 31 - August 3, 2017

Supervisor (master students)

- I. Nicotra, Progetto di riqualificazione energetica di una ex masseria riconvertita in residenza turistico-alberghiera”, Luglio 2021 (Università degli Studi di Catania)
- F. Piccione, Analisi energetica in regime dinamico per la riqualificazione di una ex masseria all’interno di una RTA denominata “Casal Sikelio”, Maggio 2020 (Università degli Studi di Catania)
- J.E. Carrillo Gomez, Passive design strategies for housing projects in Colombia, Luglio 2017 (University of Reading)

Co-supervisor (master students)

- M. Infantone, Impact of weather data and climate change on building energy analysis in urban contexts, Luglio 2019. Supervisor: Prof. Gianpiero Evola
- C. Raciti, Daylight in historical buildings used as schools, June 2017. Supervisor: Prof. Francesco Nocera. University of Catania (Italy)
- F. Pistone Nascone, Visual comfort and daylight in school buildings: a case study, May 2017. Supervisor: Prof. Luigi Marletta. University of Catania (Italy)
- D. Panarelli, Different strategies for improving daylight levels in school buildings. A case study, March 2016. Supervisor: Prof. Luigi Marletta. University of Catania (Italy)
- A. Consoli, Application of the Passivhaus standard to an existing multi-storey building in the Mediterranean area, January 2016. Supervisor: Prof. Luigi Marletta. University of Catania (Italy)
- G. Ferlazzo, Energy optimization of a hospital building by means of passive systems, October 2014. Supervisor: Prof. Luigi Marletta. University of Catania (Italy)
- V. Tirotta, Solar cooling for commercial buildings. A case study, October 2014. Supervisor: Prof. Luigi Marletta. University of Catania (Italy)
- L. Cascone, Application of solar cooling technologies to residential buildings, October 2014. Supervisor: Prof. Luigi Marletta. University of Catania (Italy)

Teaching activity

- Lecturer for the Building Physics and Mechanical Systems module of the MSc in Architecture at the University of Catania (Italy)
- Lecturer and module builder for the CEM 107 module - *Sustainable Design and Management, principles and practice*, and CEM 108 module - *Engineering Research and Dissertation of the MSc Course in Design and Management of Sustainable Built Environments* at the University of Reading (UK)

Invited lecturer

Invited lecturer on building envelope and materials at Chongqing University (China) from November 1st to November 6th

Memberships

Dates
 Name of organization
 Type of business or sector
 Position

01/01/2014 – present
IBPSA – International Building Performance Simulation Association
 Non-profit international society of building performance simulation researchers
 Member

Personal skills and competences

Mother tongue(s)

Italian

Other language(s)

English

Self-assessment

European level ()*

English

Understanding				Speaking				Writing	
Listening		Reading		Spoken interaction		Spoken production			
C1	Advanced user	C1	Advanced user	C1	Advanced user	C1	Advanced user	C1	Advanced user

Language certifications

June 2014 – TOEFL iBT Test, **Test of English as Foreign Language**, ETS. Marks: 96/120
May 2013 – FCE, **First Certificate of English**, ESOL examinations

Other certifications

March 2019 – Proficiency user of ArcGis (**ECDL GIS Certificate IT 2293123**)

Organisational skills and competences

- Ability to work in groups, developed during the PhD course and the research experience abroad and in Italy
- Ability to lead a small working group and to coordinate the production of reports and the design of projects
- Ability to cope with deadlines and to foresee, assign and monitor tasks, both individually and in groups

Computer and experimental skills and competences

- Ability to perform in situ campaign measurements of: heat flux (heat flux meter), indoor comfort parameters (Babuc microclimate station), illuminance (illuminance meter), luminance (luminance meter), sound pressure levels (phonometer), spectral optical properties of opaque and transparent construction materials (S2000 Ocean Optics spectrometer)
- Very good knowledge of Windows environment, versatility and adaptability to new software and hardware solutions
- Ability to perform extensive research on the Internet through search engines, academic databases and software of various kinds
- Very good knowledge of Microsoft Office Suite
- Ability to perform dynamic hygrothermal and daylighting analyses, both at building and urban scales, with the following software: EnergyPlus, OpenStudio, DesignBuilder, Ecotect, IESVE, Daysim, Groundhog, UMI, DIVA, Delphin
- Ability to perform extensive parametric analysis with JEplus and with modified batch files (EnergyPlus and Daysim)
- Good knowledge of Grasshopper (visual programming language in Rhino environment) and of its environmental tools Ladybug and Honeybee (EnergyPlus and Radiance based)
- Ability to perform CFD simulations with UrbaWind software
- ArcGIS software specialist (ECDL GIS Certificate IT 2293123)
- Basic knowledge of Envi-Met software
- Good knowledge of Autocad (2D and 3D), 3DsMax Design, Google Sketchup, Piranesi, Rhino

Various interests

Music, cinema, painting, swimming, trekking, oenology

Driving licence

Type A (motorbike), Type B (car)

Date:

Signature:

