

PERSONAL INFORMATION

Mattia Manni

POSITION Research Fellow, CIRIAF/CRB Perugia

STUDIES APPLIED FOR Engineer / Architect

PERSONAL STATEMENT

Born in Foligno on 1991. Graduated in Architecture and Construction in 2016 at the University of Perugia. Worked as freelance urban planner on the enhancement of the suburb areas around the Perugia train station. Doctor of philosophy in "Energy and Sustainable Development" since 2020. Author of publications in the fields of green energy, sustainable development, solar analyses, smart materials, responsive building design, and low-carbon technologies. Involved in both European and national projects, and participant to SET Plan activities during European workshops.

WORK EXPERIENCE

November 2019 - Present

Research Fellow

CIRIAF - Interuniversity Research Center on Pollution and Environment "Mauro Felli", Department of Engineering, University of Perugia, Perugia 06121, Italy

- Building materials
- Energy analyses
- Power-to-heat systems
- Life-Cycle Assessment

[Business or sector](#) Research and development

November 2016 - November 2019

PhD candidate

CIRIAF - Interuniversity Research Center on Pollution and Environment "Mauro Felli", Department of Engineering, University of Perugia, Perugia 06121, Italy

- Sustainable architecture
- Solar radiation analyses
- Building materials
- Dynamic olfactometry
- Results dissemination

[Business or sector](#) Research and development

February 2019 - May 2019

Trainee at Norwegian University of Science and Technology

Norwegian University of Science and Technology, 1 Høgskoleringen, Trondheim 7491, Norway

- Solar radiation analyses
- Monte Carlo method
- Matlab coding

[Business or sector](#) Research and development

January 2018 - July 2018

Trainee at Norwegian University of Science and Technology

Norwegian University of Science and Technology, 1 Høgskoleringen, Trondheim 7491, Norway

- Solar radiation analyses
- Retro-reflective materials
- Angular-selective materials

[Business or sector](#) Research and development

July 2016 - August 2016

Urban Planner and Designer

Municipality of Perugia, 19 Pietro Vannucci street, Perugia 06121, Italy

- Participatory processes
- Urban planning
- Problem solving

[Business or sector](#) Local administration

November 2015 - April 2016

Trainee at Norwegian University of Science and Technology

Norwegian University of Science and Technology, 1 Høgskoleringen, Trondheim 7491, Norway

- Energy analyses
 - Design of Zero Emission Building
 - Life-Cycle Assessment
 - Daylighting analyses
 - Solar radiation analyses
- Business or sector** Research and development

EDUCATION AND TRAINING

September 2010 – April 2016

Msc (Hons) – Architecture and Construction

EQF level 7

University of Perugia, Italy

- Parametric design
- Responsive architecture design
- Energy analyses
- Renewable energy technologies
- Structural calculation
- Urban planning
- Communication
- Graphic design

PERSONAL SKILLS

Mother tongue(s) Italian

Other language(s)

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	C1	C1	C1	B2	C1
Language Proficiency Certification - Center for Applied Linguistics Perugia – 2012 Trinity College London Certification – Grade 7 (B2.1) - 2008					

Levels: A1/A2: Basic user - B1/B2: Independent user - C1/C2 Proficient user
[Common European Framework of Reference for Languages](#)

Communication skills

- excellent communication skills gained through the PhD experience and studies at the faculty of Architecture and Construction (University of Perugia) and the trainees at the Norwegian University of Science and Technology
- good contact skills with people improved through my experience as volunteer in many local cultural associations

Organisational / managerial skills

- good team working skills gained during my experience at the faculty of Architecture and Construction (University of Perugia)
- excellent organizational skills due to strong logic and attitudes to the problem solving

Job-related skills

- mentoring skills
- researching and planning skills
- designing skills
- programming skills

Digital competence

SELF-ASSESSMENT				
Information processing	Communication	Content creation	Safety	Problem solving

Proficient user	Proficient user	Proficient user	Independent user	Proficient user
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[Levels: Basic user - Independent user - Proficient user](#)
[Digital competences - Self-assessment grid](#)

ECDL - European Computer Driving Licence - CEPIS

- good command of MS Office suite
- good command of design software (i.e. AutoCAD, McNeel Rhinoceros)
- good command of photo editing and graphic software (i.e. Adobe Photoshop, Adobe Illustrator, Adobe Indesign)
- good command of tools for solar analyses (i.e. Radiance)
- good command of MATLAB tool
- basic knowledge of Python programming language
- excellent in freehand drawing

Other skills

Driving licence

B

ADDITIONAL INFORMATION

Projects

The Special Issue “Life Cycle Thinking for a Sustainable Built Environment” was co-edited as a Guest Editor in *Energies* journal (IF 2.702).

The following project was presented as a doctoral thesis at University of Perugia on 2020:

- The role of high-reflective coatings on urban surface energy balance, Doctoral thesis, Ass. Prof. Andrea Nicolini (Advisor, University of Perugia), Full Prof. Franco Cotana (Supervisor of the doctoral programme, University of Perugia)

The following project was realized after a collaboration with the Municipality of Perugia for the application of the *Announcement for suburbs requalification* by Renzo Piano.

- Requalification of the Fontivegge suburbs, Perugia. Member of a team, which was composed by six young engineers and architects, in charge of define a preliminary plan by designing and planning the pedestrian paths and the main parks of the project (2016)

The following project was presented as a master thesis at University of Perugia on 2016: Parametric design principles applied to nZEB in extreme cold climate conditions, Master thesis, Ass. Prof. Fabio Bianconi (University of Perugia), Ass. Prof. Aoife Houlihan Wiberg (NTNU), Ass. Prof. Umberto Berardi (Ryerson University), Dr. Gabriele Lobaccaro (NTNU), Dr. Marco Filippucci (University of Perugia), PhD Candidate Filippo Frontini (NTNU)

ANNEXES

List of the scientific publications:

Manni, M., Coccia, V., Paoletti, D., Raspadori, F., Ritonummi, T., Cotana, F.
Shaping multi-level energy and climate policy within the SET Plan framework
 (2020) *Sustainability* (Switzerland), 12(22), pp. 1-16, art.n. 9545.

Manni, M., Lobaccaro, G., Lolli, N., Bohne, R. A.
Parametric design to maximize solar irradiation and minimize the embodied GHG emissions for a ZEB in Nordic and Mediterranean climate zones
 (2020) *Energies*, 13, art. no. 4981.

Manni, M., Cardinali, M., Lobaccaro, G., Goia, F., Nicolini, A., Rossi, F.
Effects of retro-reflective and angular-selective retro-reflective materials on solar energy in urban canyons
 (2020) *Solar Energy*, 209, pp. 662-673.

Manni, M., Petrozzi, A., Coccia, V., Nicolini, A., Cotana, F.
Investigating alternative development strategies for sport arenas based on active and passive systems
 (2020) *Journal of Building Engineering*, 30, art. no. 101340.

Manni, M., Bonamente, E., Lobaccaro, G., Goia, F., Nicolini, A., Bozonnet, E., Rossi, F.
Development and validation of a Monte Carlo-based numerical model for solar analyses in urban canyon configurations
 (2020) *Building and Environment*, 170, art. no. 106638.

Manni, M., Petrozzi, A., Nicolini, A., Cotana, F.
District heating thermal plant fed by biomass residues in a rural area of Central Italy
 (2019) *IOP Conference Series: Materials Science and Engineering*, 609 (6), art. no. 062012.

- Manni, M., Lobaccaro, G., Goia, F., Nicolini, A., Rossi, F.
Exploiting selective angular properties of retro-reflective coatings to mitigate solar irradiation within the urban canyon
(2019) *Solar Energy*, 189, pp. 74-85.
- Wiberg, A.H., Wiik, M.K., Auklend, H., Slake, M.L., Tuncer, Z., Manni, M., Ceci, G., Hofmeister, T.
Life cycle assessment for Zero Emission Buildings - A chronology of the development of a visual, dynamic and integrated approach
(2019) *IOP Conference Series: Earth and Environmental Science*, 352 (1), art. no. 012054.
- Manni, M., Lobaccaro, G., Goia, F., Nicolini, A.
An inverse approach to identify selective angular properties of retro-reflective materials for urban heat island mitigation
(2018) *Solar Energy*, 176, pp. 194-210.
- Coccia, V., Manni, M., Petrozzi, A., Nicolini, A.
Evaluation of the odor impact of some environmental gaseous pollutants: calibration of the methodology and preliminary results
(2018) *Environmental Science and Pollution Research*, 25 (29), pp. 29295-29303.
- Manni, M., Coccia, V., Nicolini, A., Marseglia, G., Petrozzi, A.
Towards zero energy stadiums: The case study of the Dacia Arena in Udine, Italy
(2018) *Energies*, 11 (9), art. no. 2396.
- Lobaccaro, G., Wiberg, A.H., Ceci, G., Manni, M., Lolli, N., Berardi, U.
Parametric design to minimize the embodied GHG emissions in a ZEB
(2018) *Energy and Buildings*, 167, pp. 106-123.
- Manni, M., Ragnacci, F., Filippucci, M., Coccia, V., Bianconi, F., Cotana, F., Petrozzi, A.
Refugee camps as an opportunity for promoting alternative development strategies based on carbon credits
(2018) *Energy Procedia*, 148, pp. 281-288.
- Manni, M., Tecce, R., Cavalaglio, G., Coccia, V., Nicolini, A., Petrozzi, A.
Architectural and energy refurbishment of the headquarter of the University of Teramo
(2017) *Energy Procedia*, 126, pp. 565-572.
- Manni, M., Coccia, V., Cavalaglio, G., Nicolini, A., Petrozzi, A.
Best practices for recovering rural abandoned towers through the installation of small-scale biogas plants
(2017) *Energies*, 10 (8), art. no. 1224.