

PERSONAL INFORMATION

Carmela Apreda

Nationality: Italian

E-mail addresses: carmela.apreda@cmcc.it carmela.apreda@unina.it PEC: carmela.apreda@pec.it

WORK EXPERIENCE

10/2018 - present

Junior Scientist

CMCC Foundation (Euro-Mediterranean Center on Climate Change), Institute for Climate Resilience (ICR), REgional Models and geo-Hydrological Impacts (REMHI) Division, viale Thomas Alva Edison snc (CE), Italy

Main activities:

- Simulation of microclimate conditions in the urban environment (URBAN-PRO Strategic Project)
- Parameterization of urban morphology for climate modelling (URBAN-PRO Strategic Project)
- Support in developing the Regional Strategy of Sustainable Development of Molise and Lazio Regions
- Support in developing the Strategic Environmental Assessment of the National Adaptation Plan (PNACC)
- Support in developing a methodology to assess the performance of public real estate under climate change within the technical-scientific collaboration with the Italian State Property Agency;
- Development of a methodology to analyze and compare adaptation policies and measures for ensuring a climate-proof built environment at different scales within the framework of the MULTICLIMACT project (MULTI-faceted CLIMate adaptation ACTions to improve resilience, preparedness and responsiveness of the built environment against multiple hazards at multiple scales), Task leader of T2.1 and T8.1.

EDUCATION AND TRAINING

11/2014 - 10/2017

Ph.D. in Architecture – XXX cycle

EQF level 8

DIARC - Department of Architecture, University of Naples Federico II, Naples (Italy)

Thesis title: "Climate change adaptation in the urban environment. Environmental Design for reducing the vulnerability of urban system to pluvial flood". Final grade: Excellent.

Tutor: prof. Arch. Valeria D'Ambrosio; Co-tutor: prof. Ing. Francesco De Paola

PhD final exam (dissertation): February 28, 2018

09/2006 - 07/2014

Master's Degree in Architecture

EQF level 7

DIARC - Department of Architecture, University of Naples Federico II, Naples (Italy)

Thesis title: "Sustainable strategies for eco-cities: from experiences of northern Europe to the western area of Naples". Final grade: 110/110 cum laude. Tutor: prof. Arch. Mario Losasso, Final exam (dissertation): July 16, 2014

09/2001 - 08/2006

Artistic High School degree

EQF level 4

Art School "A. Sabatini", Salerno (Italy)

Final grade: 100/100

Final exam: August 28, 2006

PERSONAL SKILLS

Mother tongue

Italian

Other language

English

UNDERSTANDING		SPEAKING		WRITING
Listening	Reading	Spoken interaction	Spoken production	
B2	B2	B1	B1	B2

Levels: A1/2: Basic user - B1/2: Independent user - C1/2 Proficient user
Common European Framework of Reference for Languages

Communication skills

Good communication skills gained through the experience as a teaching assistant for several Bachelor and Master courses. Good ability to work in groups. Good skills in communication with colleagues.

Organisational / managerial skills

Good organisational skills gained through the research experience in multidisciplinary teams. Respect for the established work's terms. Team collaboration for work optimization.

Job-related skills

Ability to develop projects at urban and building scale, which integrates natural, physical and human resources, by using the tools and techniques of sustainable design, architectural composition and technology of architecture.

Ability to integrate technological innovations in the design of the built environment in response to the phenomena related to climate change (urban overheating due to the rise in temperatures, pluvial flooding phenomena resulting from the increase in frequency and intensity of extreme weather events).

Ability to draw up an architectural project in all its phases through the techniques of drawing and 3-dimensional modeling (digital technical and freehand drawing, graphic and vector processing, three-dimensional digital processing).

Ability to integrate architecture and urban planning issues in climate research in order to support the analysis of urban microclimate taking into account physical characteristics of the built environment (e.g. land-use, geometry, density) and the implementation of climate-proof solutions.

Digital skills

SELF-ASSESSMENT				
Information processing	Communication	Content creation	Safety	Problem-solving
PROFICIENT USER	PROFICIENT USER	BASIC USER	PROFICIENT USER	INDEPENDENT USER

Digital skills - Self-assessment grid

Good command of OS Windows, internet browsers and e-mail tools gained through job and leisure activities.

Good knowledge of Microsoft Office 2016 tools: Word, Excel, PowerPoint.

Excellent knowledge of Autodesk tools: Autocad 2017 (2D and 3D).

Good knowledge of photo editing, digital image elaboration and post-processing tools - Adobe CS6 tools: Acrobat Pro, Photoshop, Illustrator.

Good knowledge of Geographic Information System tools: ArcMap 10.3, ArcScene 10.3

Good knowledge of tools for microclimatic and building performance simulation: ENVI-met v4.4, Vasari 3 Beta, Ecotect Analysis.

B

Driving licence

ADDITIONAL INFORMATION

Publications

Book chapters

Apreda C., Bassolino E. (2021). **Modelli e strumenti per il progetto urbano climate proof: dal progetto METROPOLIS al progetto PLANNER**. In D'Ambrosio, M. Rigillo, & E. Tersigni (Eds.), *Transizioni. Conoscenza e progetto climate proof* (pp. 287-296). Napoli: Clean Edizioni.

Apreda C., Reder A., Mercogliano P. (2019). **Les infrastructures vertes: des Solutions fondées sur la Nature pour l'adaptation des villes au changement climatique**. In *Des Solutions fondées sur la Nature pour s'adapter au changement climatique*. Rapport au Premier ministre et au Parlement, (pp. 147-152). Observatoire National sur les Effets du Réchauffement Climatique

Apreda C. (2018). **Environmental Design e adattamento al cambiamento climatico alla scala locale. Strategie per la riduzione**

della vulnerabilità del sistema urbano al pluvial flooding in ambito euro-mediterraneo. In M. Marzo, & L. Fabian (Eds.), *La ricerca che cambia: Atti del 2° convegno nazionale dei dottorati italiani dell'architettura, della pianificazione e del design* (pp. 268-282). Siracusa: LetteraVentidue Edizioni.

- Filagrossi Ambrosino C., Apreda C. (2017). **Soluzioni di climate-adaptive design per la riduzione degli impatti sul sistema urbano.** In V. D'Ambrosio, & M. Leone (Eds.), *Progettazione ambientale per l'adattamento al Climate Change. 2. Strumenti e indirizzi per la riduzione dei rischi climatici* (pp. 106-125). Napoli: Clean Edizioni.
- Apreda C. (2017). **Modelli di vulnerabilità ai fenomeni di heat wave e pluvial flooding in ambito urbano.** In V. D'Ambrosio, & M. Leone (Eds.), *Progettazione ambientale per l'adattamento al Climate Change. 2. Strumenti e indirizzi per la riduzione dei rischi climatici* (pp. 58-71). Napoli: Clean Edizioni.
- Apreda C. (2017). **Co-design.** In M. Russo (Eds.), *Abitare insieme. Il progetto contemporaneo dello spazio condiviso* (pp. 208-218). Napoli: Clean Edizioni.

Journal articles

- Scalas, M., Apreda, C., Barbato, G., Pugliese, A., Reder, A., Mercogliano, P., Treccani, P., and Lazzaroni, G. (forthcoming). **Effects of local heat-wave adaptation actions: microclimatic simulation of the interventions in Via Metastasio, Brescia (Italy).** In *Advances in Science, Technology & Innovation*.
- Gavrouzou, M., Apreda, C., Raggi, E., Rivarola, M., Lalaj, N., Vlachogiannis, D., Sfetsos, A. (2024). **Energy and Water Interventions That Contribute to the Climate-Proofing of Buildings on Multiple Scales: A Literature Review.** *Buildings*, 14, 3421. <https://doi.org/10.3390/buildings14113421>
- Apreda C., Reder A., Mercogliano P. (2023). **Survey of land cover datasets for updating the imperviousness field in urban parameterisation scheme TERRA_URB for climate and weather applications.** *Urban Climate*, 49: 101535. <http://dx.doi.org/10.1016/j.uchim.2023.101535>
- Apreda C., Reder A., Mercogliano P. (2020). **Urban morphology parameterization for assessing the effects of housing blocks layouts on air temperature in the Euro-Mediterranean context.** *Energy and Buildings*, 223: 110171. <http://dx.doi.org/10.1016/j.enbuild.2020.110171>
- Apreda C., D'Ambrosio V., Di Martino F. (2019). **A climate vulnerability and impact assessment model for complex urban systems.** *Environmental Science and Policy*, 93(2019): 11–26. <http://dx.doi.org/10.1016/j.envsci.2018.12.016>
- Apreda C. (2017). **Impatti del cambiamento climatico sul sistema urbano. Mappatura della pericolosità da pluvial flooding in ambito napoletano.** *Officina*, 17: 26-31.
- Apreda C. (2016). **Climate change, urban vulnerability and adaptation strategies to pluvial flooding.** *UPLanD-Journal of Urban Planning, Landscape & environmental Design*, 1(1): 233-256. <http://dx.doi.org/10.6092/2531-9906/5040>

Conference proceedings

- Ricciardi, G., Reder, A., Scalas, M., Apreda, C., and Mercogliano, P. (2025). **Climate and non-climate risk assessment framework for built environment assets,** EGU General Assembly 2025, Vienna, Austria, 27 Apr–2 May 2025, EGU25-19198. <https://doi.org/10.5194/egusphere-equ25-19198>
- Scalas, M., Apreda, C., Barbato, G., Pugliese, A., Reder, A., Mercogliano, P., Treccani, L., Lazzaroni, G. (2024). **Effects of local heatwave adaptation actions: microclimatic simulation of the interventions in Via Metastasio, Brescia (Italy).** *Conference proceedings, Geographic Perspectives on Climate Change Mitigation in Urban and Rural Environments (GCUe)*, 1st Edition.
- Urciuoli, L., Prasetia, A.C., Apreda, C., Ricciardi, G., Gavrouzou, M., Vlachogiannis, D., Fernandez Nualart, M. (2024). **A systemic perspective of supply chain and built environment resilience. Unravelling a risky dynamic loop.** *Conference proceedings, 36th NOFOMA Conference.*
- Pelizzaro, P., Capri, G., Giallonardo, D., Domini, S., Scaramella, C., Apreda, C., Barbato, G., Giugliano, G., Marinucci, F., Mercogliano, P., Pugliese, A., Ricciardi, G. (2023). **Enhancing climate resilience in the real estate sector: development of a rating system for assessing the performances of buildings.** *Conference proceedings, 11th SISC Annual Conference, "SISC2023: Mission Adaptation!"*.
- Schulz, J.-P., Mercogliano, P., Adinolfi, M., Apreda, C., Bassani, F., Bucchignani, E., Campanale, A., Cinquegrana, D., De Lucia, C., Dumitache, R., Fedele, G., Garbero, V., Interewicz, W., Iriza-Burca, A., Jaczewski, A., Khain, P., Levi, Y., Maco, B., Mandal, A., and Milelli, M. and the COSMO PP CITTA' team (2022). **A new urban parameterisation for the ICON atmospheric model,** EMS Annual Meeting 2022, Bonn, Germany, 5–9 Sep 2022, EMS2022-501. <https://doi.org/10.5194/ems2022-501>.
- Apreda C., Schulz J.-P., Reder A., Mercogliano P. (2022). **Updating the current field of ISA in the urban canopy scheme TERRA_URB. Survey of existing land cover datasets.** *Conference proceedings, 24th COSMO General Meeting.*
- Apreda C., Schulz J.-P., Reder A., Mercogliano P. (2022). **Updating the current field of ISA in the urban canopy scheme TERRA_URB. Survey of existing land cover datasets.** *Conference proceedings, ICCARUS 2022, ICON/COSMO/CLM/ART USER Seminar 2022.*
- Apreda C., Schulz J.-P., Reder A., Repola F., Mercogliano P. (2021). **Updating the current field of ISA in TERRA_URB scheme within the COSMO-(CLM) model. Survey of the existing land cover datasets.** *Conference proceedings, 9th SISC Annual Conference, "Accelerating Climate Action: A just transition in a post-Covid era"*.
- Apreda C., Reder A., Mercogliano P. (2020). **Assessing the effects of urban morphology on air temperature in the Euro-Mediterranean context.** *Conference proceedings, 8th SISC Annual Conference, "ClimRisk2020: Time for Action! Raising the ambition of climate action in the age of global emergencies"*.
- Apreda C., Voirin S., Reder A., Mercogliano P. (2019). **A multiscale perspective in Green Infrastructures planning to foster climate change adaptation in urban areas.** *Conference proceedings, 7th SISC Annual Conference, "ClimRisk19 | Climate Risk: implications for ecosystem services and society, challenges, solutions"*.
- Apreda C., Reder A., Mercogliano P. (2019). **Effects of urban morphology on outdoor thermal comfort. A microclimate parameterization of housing blocks in the euro-Mediterranean context.** *Conference proceedings, SBE 2019 "Sustainable Built Environment Conference"*.
- Apreda C. (2017). **Gli impatti del pluvial flood in ambito urbano. Valutazione della capacità di smaltimento del sistema fognario.** *Book of abstracts de Le Giornate dell'Idrologia 2017 "Eventi idrologici estremi in un ambiente che cambia"* (available at: <https://goo.gl/WJTh2J>).
- Apreda C. (2015). **Environmental design and green infrastructures per il controllo degli effetti prodotti dai cambiamenti climatici in ambiente urbano.** In F.D. Moccia, M. Sepe (Eds.), *Urbanistica Informazioni Special Issue, IX Giornata Studio INU Infrastrutture blu e verdi, reti virtuali, culturali e sociali - 9° INU Study Day Green and Blue Infrastructures, Virtual, Cultural and Social Networks*, Napoli, 18 dicembre 2015. vol. 263 s. i. (pp. 6-13). Roma: INU Edizioni.
- Apreda C. (2015). **Processi di rigenerazione urbana per l'abitare contemporaneo: tre eco-quartieri nordeuropei a confronto.** In: A. Falotico, N. Flora, F.D. Moccia, M. F. Palestino, S. Pone, F. Rispoli, M. Russo, S. Russo Ermolli, & P. Scala (Eds.), *Abitare Insieme - Living Together, Dimensione condivisa del progetto di futuro* (pp. 1494-1508). Napoli: Clean Edizioni.
- Di Martino F., Losasso M., Moccia F. D., Palestino M. F., Sgobbo A., Visconti F., Apreda C., Arena A., Bassolino E., D'Ambrosio V., Leone M. F., & Visconti C. (2015). **Determinazione delle altezze dell'edificato della Municipalità di Ponticelli (Napoli) e relativo Hillshade in ambiente GIS.** In: B. Cardone, F. Di Martino, & S. Sessa (Eds.), *GIS day 2015. Il GIS per il governo e la gestione del territorio*. Roma: Aracne Editrice.

Conferences & seminars

- CMCC Winter Meeting 2022, Lecce, Italy (December 19-20, 2022)**
- 24th COSMO General Meeting, Athens, Greece (September 13, 2022).**
- ICCARUS 2022, ICON/COSMO/CLM/ART USER Seminar 2022, Online conference (March 7-11, 2022)**
- 9th SISC Annual Conference, "Accelerating Climate Action: A just transition in a post-Covid era", Online conference (September 22-24, 2021)**
- 8th SISC Annual Conference, "ClimRisk2020: Time for Action! Raising the ambition of climate action in the age of global emergencies", Online conference (October 21-23, 2020)**
- 7th SISC Annual Conference, "ClimRisk19 | Climate Risk: implications for ecosystem services and society, challenges, solutions", Trento, Italy (October 23-25, 2019)**
- SBE 2019, "Sustainable Built Environment Conference", Scilla, RC, Italy (May 16-17, 2019)**
- GISday 2017, "Il GIS per la gestione del governo e del territorio", DiARC - Department of Architecture, University of Naples Federico II, Naples, Italy (November 15, 2017)**
- Hydrology Days 2017, "Eventi idrologici estremi in un ambiente che cambia", Favignana, TP, Italy (June 21-24, 2017)**
- 2nd National conference of Italian Doctorates in Architecture, Planning and Design, "La ricerca che cambia", IUAV University of Venice, Italy**

Certifications
Additional Courses

(December 1-2, 2016)
IX INU's Study Day, "Infrastrutture blu e verdi, reti virtuali, culturali e sociali", DiARC - Department of Architecture, University of Naples Federico II, Naples, Italy (December 18, 2015)
3rd edition of International Study Days "Abitare il Futuro", Abitare Insieme/Living Together, DiARC - Department of Architecture, University of Naples Federico II, Naples, Italy (October 1-2, 2015)
ECDL-GIS: Specialised Level, issued by AICA - Italian Association for Informatics and Automatic Calculation (march 2017).
RuralHack Workshop: Open Source Hardware in Agricoltura, Residenza rurale "Incartata", Calvanico, SA, Italy (6-8 luglio 2018)
Advanced Course "Territorial Information Systems to manage urban and complex systems", DiARC - Department of Architecture, University of Naples Federico II, Naples, Italy (November 2017-February 2018)
Training Course "LauritoGIS", Laurito, SA, Italy (February 20 - March 2, 2017)
Summer school, "Applied Course on UASs for Environmental Modeling", University of Basilicata, MT, Italy (July 11-15, 2016)
Training Course "BigMat Vass Technologies School", Cellarengo, AT, Italy (June 23-26, 2015).
Workshop "Vorrei un parco per...", III ed. workshop UPDATE#Processi di rigenerazione urbana, Provaglio d'Iseo, BS, Italy (May 11-18, 2014)
Workshop "Good Wood 2013. Una Social Housing in legno", Salerno, Italy (December 3-5, 2013)
Workshop/Design contest "Riuso dei buchi neri", Salerno, Italy (June 13-16, 2013)

Honour and awards

Degree award BigMat VASS - Scholarship, special prize (February 2015)
Degree award "Marina Baldi" - 1st Prize ex aequo, section B: Environmental Design (February 2015)
Design contest "Napoli, Nuovi spazi verdi per la città" - 2nd Prize "Parco lineare a via Terracina" (May 2011)
Description: urban regeneration of pedestrian zone in via Terracina and connection with the adjacent area of Mostra d'Oltremare.
Team: C. Apreda, A. Becchimanzi, C. Di Marco, R. Teo.

Personal details

In compliance with the GDPR and the Italian Legislative Decree no. 196 dated 30/06/2003, I hereby authorize you to use and process my personal details contained in this document.

March 31, 2025