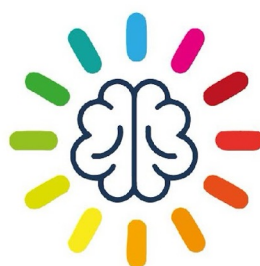


Innovation and Sustainability: Advanced and Green Technologies for the Built Environment



Research Day UNICAM
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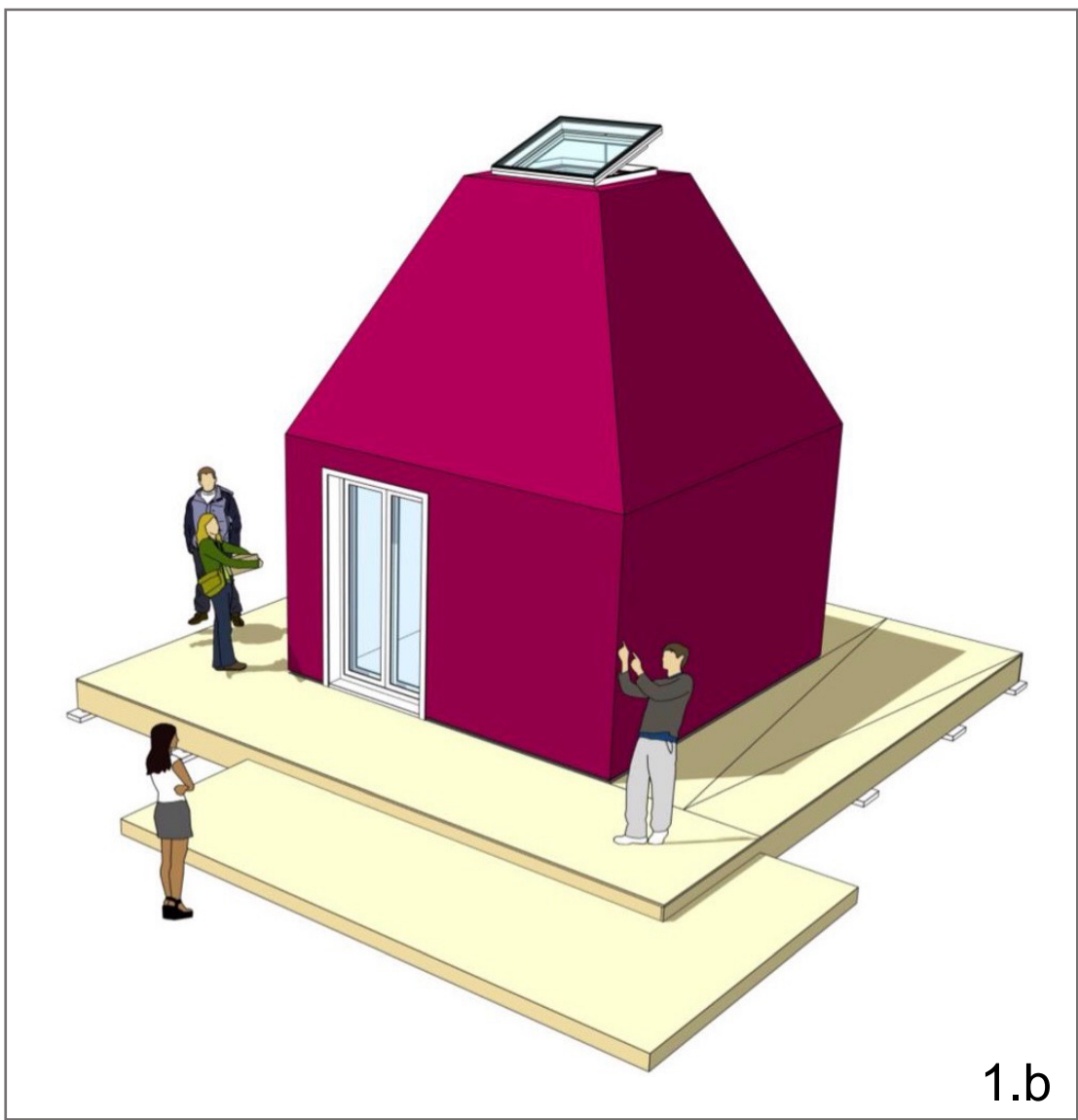
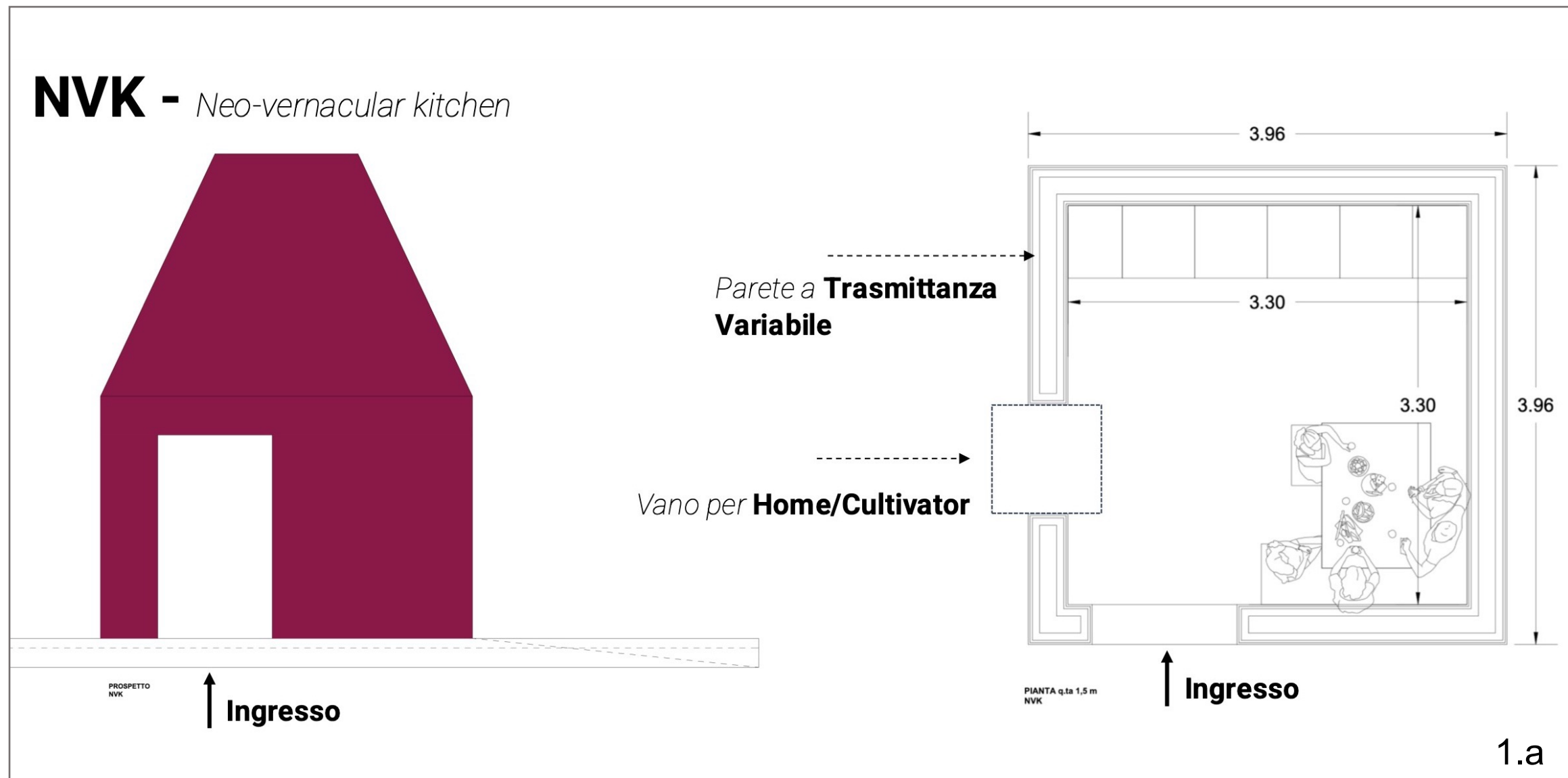
Related research group: School of Science and Technology/Computer Science, D.R. Cacciagrano

Permanent / temporary staff: 42% permanent staff; 58% temporary staff.



Characterizing studies

The research offers a comprehensive and forward-thinking analysis of architecture and design to tackle environmental sustainability challenges. It focuses on integrating advanced technologies, innovative materials, green technologies, and circular processes to redefine the built environment. By transforming it into a resilient, adaptable, and ecologically responsible system, the research highlights the potential for a more sustainable future. Through an interdisciplinary approach, it examines key areas such as sustainable design, urban regeneration, and emerging green technologies, emphasising scalable solutions that reduce environmental impact while improving urban quality of life.



1 – (a.b.) Vitality_Experimental project for a neo-vernacular kitchen featuring systems that promote thermal stability in the interior space and adjacent outdoor areas.

2 – PINQuA Project FORME DELL'ABITARE#inAscoli: urban regeneration for an inclusive and sustainable city, with interventions on public spaces and local services as part of the PNRR.

3 –Development of energy and environmental analysis and mechanical systems with advanced simulations for the project of the new fire station headquarter in Macerata.

4 – T.r.a.p._Production and assembly of recycled concrete blocks, involving robotic 3D printing and mixed reality. The process employs a digital twin for real-time collaboration.

NVK_NeoVernacularKitchen_VITALITY - Spoke 5
Environmental, economic and social sustainability of living and working environments.

National projects: VITALITY – Spoke 6 PNRR 2023-2025 - Ecosystem of Innovation; FAR 2018, PRIN 2022, MATCH-RES

Collaborations with local and regional authorities: Marche Region

Collaborations with other Universities: Politecnica delle Marche, Università di Perugia.

Collaborations with businesses: Meccano, Cosmob, Lu.Ce, Mariotti Costruzioni, Canducci Engineering

T.R.A.P. The Remote-controlled Assembly Process

International projects:TARGET-X, a project from the European Commission co-funded from the HORIZON EUROPE programme.

International Collaborations: Fraunhofer IPT, Ericsson gmbh, RWTH Aachen, Center Construction Robotics, Fundacio Privada I2cat, Internet I Innovacio Digital A Catalunya, Mitsubishi Electric Europe BV.

Collaborations with other Universities: RWTH Aachen, Università di Aquisgrana

Collaborations with local and regional authorities: Ente Scuola Edile - CPT Ascoli Piceno, Fermo.

Collaborations with businesses: Centauroos srl

Energy and environmental design support for the new fire station headquarter in Macerata

National projects: Program for reconstruction, repair, and restoration of public works in the territories of the Abruzzo, Lazio, Marche, and Umbria regions affected.

Collaborations with local and regional authorities: Provincia di Macerata, USR Marche, Comune di Macerata

PINQUA _Programma Innovativo Nazionale della Qualità dell'Abitare, PNRR, Forme dell'Abitare #inAscoli

International projects:LIFE AgreeNet; Erasmus+ KA220-SCH; Erasmus+KA220-HED.

National projects: Vitality – PNRR Ecosystem of Innovation; FAR 2018, PRIN 2022, MATCH-RES

International Collaborations: Royal Danish Academy – Architecture, Design, Conservation; The Cyprus Institute; Universidad Politecnica de Madrid (UPM).

Collaborations with local and regional authorities: Regione Marche, Comune di Ascoli Piceno

Collaborations with NGOs and research centers: Fondazione Carisap; Legambiente; Res Agraria

Collaborations with businesses: Data Company Blimp

