

MISSION

Frontier Research

High Education

Tecnological
Transfer

Since 2009 ABITAlab has been carrying out highly innovative activities in the field of sustainability at national and international level in the academic and technology transfer fields. In particular, the Laboratory's activities, started in 2015 and still ongoing, are conducted within "Frontier Research" paths and involve the entire research team on trajectories related to *"Enabling and Emerging Technologies"* and *"Regenerative Processes for Decarbonisation"*.

It works with all the tools of complex planning and advanced design, with adaptive strategies and digital technologies for the impacts on the built environment due to climate change, in urban, industrial and coastal contexts on settlement structures, and open spaces, capable of configuring autonomous and circular districts; for the design of hybrid buildings, with a positive energy-environmental profile and high performance towards climate neutrality. ABITAlab hosts two laboratory sections: Advanced Design Section and Prototyping



www.abitalab.unirc.it

 ABITAlab Dipartimento
Architettura e Territorio

 abitalab_darte

 abitalab@unirc.it

 abitalab@pec.it

Director and Scientific Responsible _ Prof. Arch. Consuelo NAVA

Design Section Coordinator _ Arch. Fellow Researcher Giuseppe MANGANO

Prototyping Section Coordinator _ Arch. Ph.D. Domenico LUCANTO

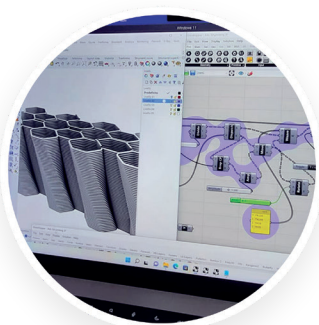
Address _ Via dell'Università 25, 89124, Reggio Calabria, Il stecca, piano terra

Telephone _ 0965/1997242 e 1997244

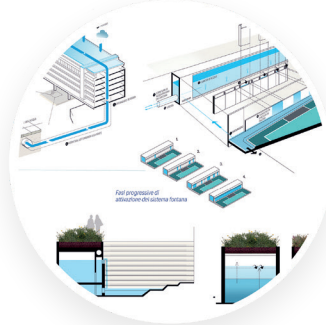


ABITA lab
REGGIO CALABRIA
Centro Interuniversitario
Architettura Bioecologica ed
Innovazione Tecnologica per l'Ambiente

**Regenerative
Digital Design**



**NBS
SUDs**



**SDGs 2030
CAM / WELL / LEED**



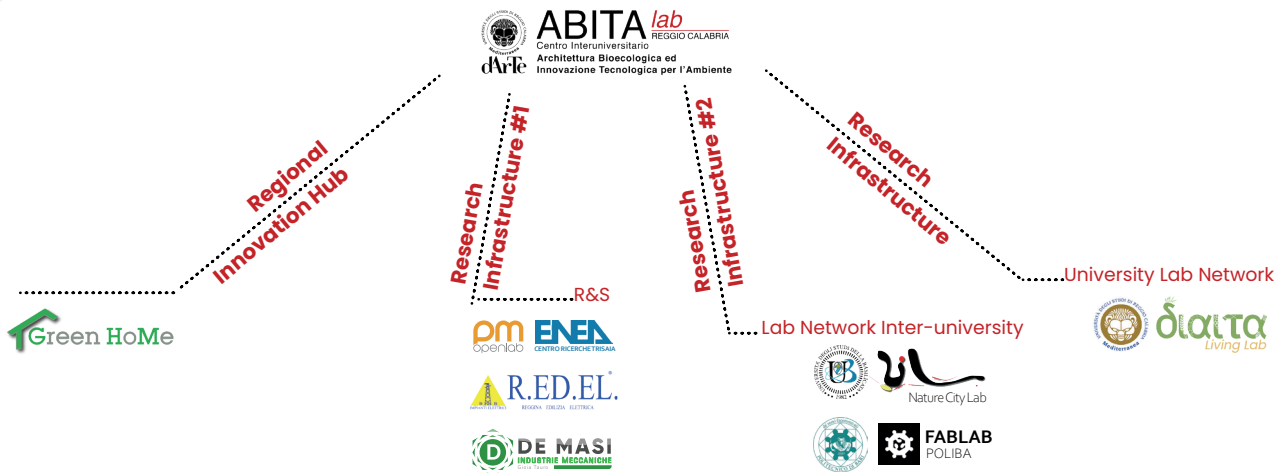
**Prototyping
LCA / Carbon Footprint**



INNOVATION ECOSYSTEM

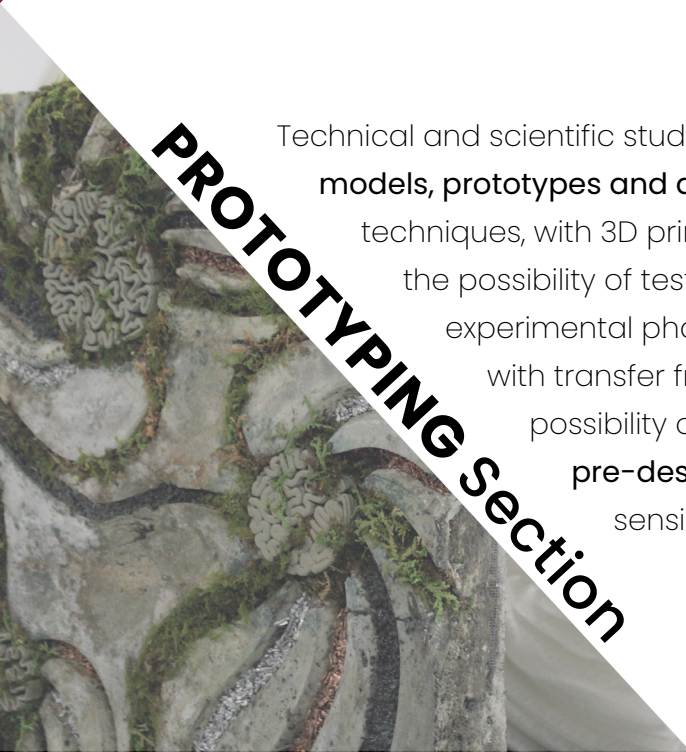


Operationally, ABITAlab acts with **Experimental Development** activities carried out within doctoral research, national and European research on competitive calls; in pre-industrial technology transfer activities with SMEs and professional agencies, in partnership with other public bodies, university laboratories, spin-offs and research centres. Advanced and experimental development research, referring to activities and products, is placed by level of **technological maturity** between TRL5 and TRL7, validated by assessment systems, **prototypes and patents and scientific dissemination**.



DESIGN section

Technical-scientific studies are produced with evaluation and calculation elaborations and graphic elaborations for the pre-design and design phase with the use of **parametric tools for the 'digital regenerative project' and energy-environmental testing**, in CAD, BIM, computational design environment for dataclimate; calculation of carbon footprint with LCA calculation tools and interface simulations on regenerative design; environmental assessment studies with CAM Protocols; LEED, WELL; NbS; SUDS and DNSH Principles; design of Agile Innovation management processes, for complex models and processes of design activities and production chains (RUMP UP of Project management).



PROTOTYPING section

Technical and scientific studies are produced from the evaluations and results of **models, prototypes and demonstrators** made using additive and self-construction techniques, with 3D printing and numerically controlled digital machine tools; with the possibility of testing the feasibility of **components and systems** in the experimental phase on different levels of performance and performance, with transfer from advanced and regenerative design; with the possibility of carrying out studies with advanced **workflows from pre-design to monitoring**, through digital and technological sensing tools (platforms, sensors, etc.).