# Prototyping Laboratory

**Principal Investigator:**
Prof. Francesco COSTANZO

**Responsible for teaching and research activities in the laboratory (R.a.d.o.r.):**
Prof. Francesco COSTANZO (proposed at the CdD of 13 February 2020)

**Location:**
The Prototyping Laboratory is located in the Abbey of S. Lorenzo ad Septimum, home of the Department of Architecture and Industrial Design, in Aversa.

**Main Laboratory Activities:**
The Prototyping Laboratory stems from the need to define "prototypes" for the compositional evaluation of architecture and their urban impact in the analytical and design processes of architectural artefacts and their systems. It carries out multidisciplinary research aimed at the architectural project through the technical-scientific synergy of the professors and researchers of the Department of Architecture and Industrial Design of the University of Campania "Luigi Vanvitelli". It not only supports scientific research and studies, with research projects and/or agreements with other universities, research centres as well as public and private institutions, but also advanced teaching related to experimental themes.
Through the physical-formal simulation provided by "prototype" models, its activities mainly deal with the evaluation of the constitutive and figurative data of the architecture and its architectural characteristics as well as, on the urban scale, architecture-city relationships. These activities concern the joint action of the Project sector and the disciplines relating to the construction of architecture (Structures, Technology, Plants) and its systematic control (Urban Planning), as experimental activities tend to control the system of relationships between the elements of the project (spatial delimitation, constructive, technological, plant), of which the produced models allow to verify the different contributions in the construction of the architecture itself.
The experimental activities also regard the:

- compositional study of some architectural paradigms, in order to obtain the constitutive procedures useful for the architectural project as well as defining the framework of "admissible variations";
- study of research design elaborations so as to test the physical-spatial responses of the artefacts and the related compositional devices tending to architectural finiteness;
- joint verification, through decomposable models, of the elements (structural, technological, plant) and their formal construction capacity, as well as tectonic-architecture relationships;
- verification of re-composition interventions aimed at demonstrating the implications of integrative and demolitive actions on the existing architecture;
- evaluation of the constructive progressivity of the artefact, along with the physical and spatial implications related to the different construction phases, as well as the evaluation of the corresponding "degree of architectural finiteness";
- evaluation on the urban scale of the architecture/site relationship as well as the overall urban

and territorial relations, also in reference to voids and built areas.

**Main Equipment:**

- 5-axis mechanical milling machine with numerical control;
- Printer Laser Co2 K40 PLUS OMT - 200x300mm - 40w
- Printer 3D - Anycubic Kobra 3
- Plotter HP 110 plus plotter;
- Workstation;
- Specialized furniture for the construction and assembly of models/"prototypes", for the storage of materials and their display/preservation.

**Associated Research Groups:**

- StandardF-AU / StandardF - Architectonic/Urban;
- The form of Architecture and Design in settlements, in the landscape as well as indoor spaces;
- Theories and practices of architectural history, survey and restoration;

**Reference Scientific Subject Areas:**

ICAR/14 (CEAR09/A); ICAR/09 (CEAR07/A); ICAR/12 (CEAR08/C); ICAR 19 (CEAR11/B); ICAR/20 (CEAR12/A); ING-IND/11 (IIND-07/B).

**ISI WEB categories:**

- Architecture;
- Engineering, Civil;
- Regional & Urban Planning;
- Urban Studies.

**ERC categories:**

- SH3_9 Spatial development and architecture, land use, regional planning;
- SH3_10 Urban studies, regional studies;
- SH3_11 Social geography, infrastructure;
- SH5_9 History of art and architecture;
- SH6_6 Modern and contemporary history;
- PE8_3 Civil engineering, maritime/hydraulic engineering, geotechnics, waste treatment;

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| - PE8_16 Architectural engineering.<br>- |
| **Key words:**<br>Non-finite (unfinished) / finite architecture and city; architectural composition and re-composition; urban regeneration, industrial decommissioning. |