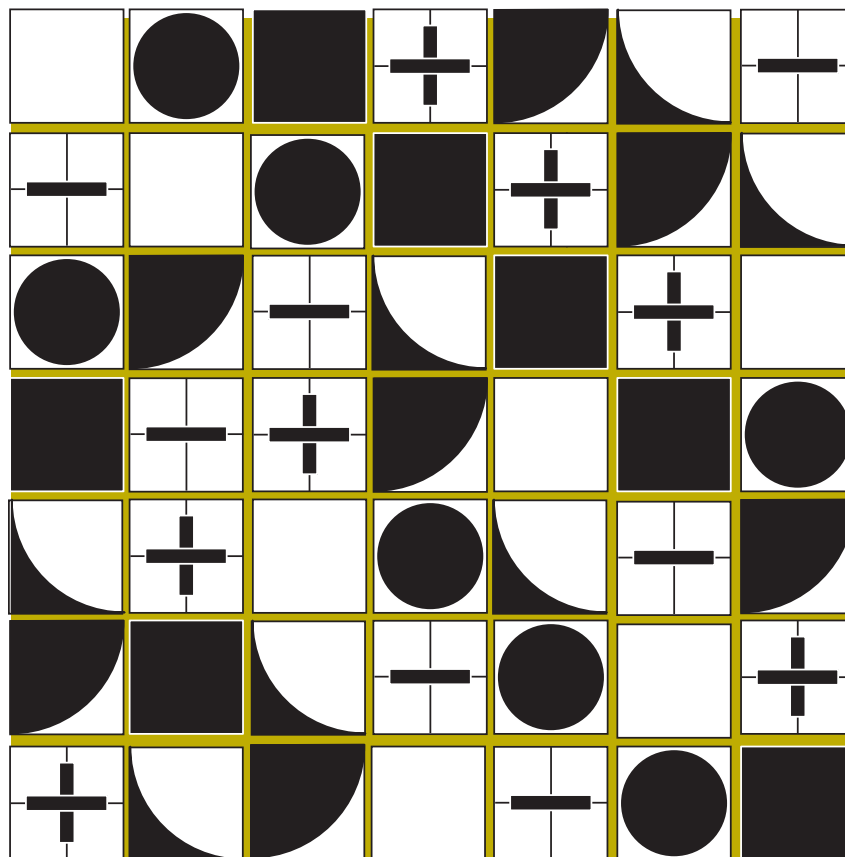


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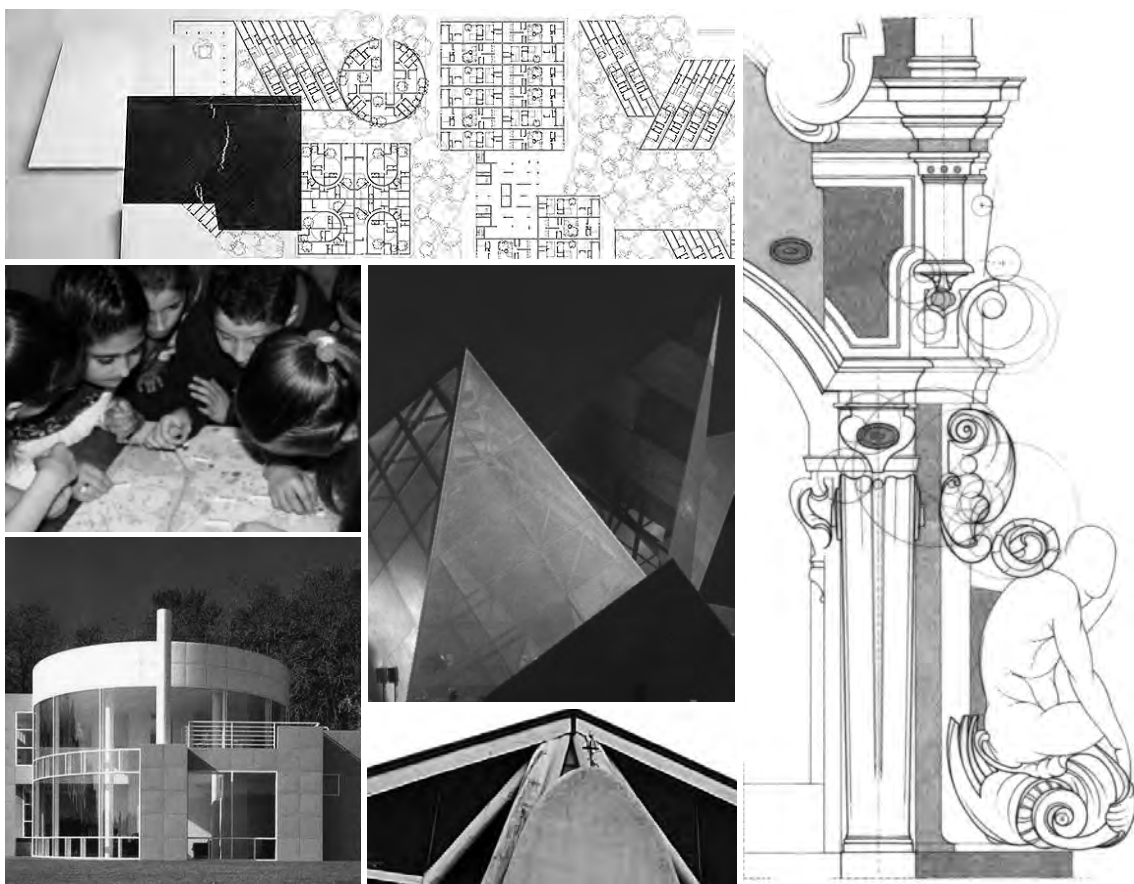
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Piazza Santa Maria degli Angeli, 1
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Telefono e Fax +39 081 7646814

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Conference report 220 abstracts received from:

Algeria, Brazil, Bulgaria, China, Cuba, Denmark, Egypt, Estonia, France, Germany, Greece, Holland, India, Indonesia, Iran, Italy, Japan, Jordan, Kosovo, Malaysia, Malta, Mexico, Netherlands, New Zeland, Poland, Portugal, Puerto Rico, Russia, Saudi Arabia, Spain, Taiwan, Turkey, United Arab Emirates, United Kingdom, USA

More than 350 authors involved.

163 papers published.

Preface

Less, often leads us to reducing considerations and its linguistic application, generally, characterizes a condition of inferiority, decay or deprivation. If we make reference to the scope of our researchers, Architecture, Industrial Design, Landscape and to their deeper meanings, and if we use “less” before them we might involve a critic situation, or homologate a century.

An example is from the historical period we are living in, where Western economies are generically dealing with their budgets by cutting down on expenses rather than investing on their own heritage in order to create richness and workplaces.

On the contrary, our Researchers, Scholars, Businessmen and Civil Services Representatives want to use less to promote a shareable cultural reflection about the reduction of the waste of goods (raw materials, human resources, assets). That's why we are going to arrange the X International Forum “Le Vie dei Mercanti”. In this perspective Less does not mean less investments or cuts, but to identify a hierarchy of relevant sustainable investment funds based on the search for the know-how.

Less in Architecture, Less in Industrial Design, Less in Landscape subsumes more if we are able to supply regenerative models based on integrated system visions.

Consequently, More research in Architecture, More research in Industrial Design, More research in

Landscape if Local Human Resources are set up to create an efficient training education to be involved in the management, protection and regeneration of raw materials and human needs.

All along the past editions of the Forum I have drawn people's attention on our heritage as expression of "actual developing" (modernity).

Modernity, in fact, is an integrating part of history, an inexhaustible mine supplying raw materials to the Factory of Know-how which, as mentioned above, must get the same local physical geometric connotation as the generative humus about the production of fascinating items for Architecture, Industrial production, Landscape.

The projects our Faculty has dealt with, "Pompei Fabbrica della Conoscenza 0079/2013" or "l'Atlante del Cilento", witness as by sizing tangible and intangible heritage we can give rise to a productive factory aiming at art works and competitive Cultivated products and services.

So, scientific contributions aiming at collecting and spreading out the best practices and paradigmatic sustainable projects about system activities and elaborated in an assembly International dimension, are expected. Such contributions must be useful at enhancing an increasing Research process characterized by a constant learning and a great Know-how passion.

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A "laboratory" open air in the urban landscape of Palermo

Francesco DI PAOLA

DARCH Dipartimento di Architettura, Facoltà di Ingegneria, Università degli Studi di Palermo, Palermo, Italia
francesco.dipaola@unipa.it

Abstract

The study intends to make new contributions to knowledge of a interesting "laboratory" in the open air in the urban landscape of Palermo, a cultural and scientific heritage in which architecture, art and decoration coexist in an experiment of collective synergies.

The Botanical Garden Center, with its ten acres of land appears, still, a fervent creative process between artifice and nature, the expression of a specific historical and cultural climate in which expectations converged of a intellectual, scientific and institutional fervor.

The academic institution, founded in 1789 with the intention of cultivating useful plants to the arts, crafts and medicine, contributed to the spread of tropical tree species introduced later, in parks and gardens, public and private, enriching the natural heritage and transforming the landscape of the sicilian coast.

The fifth stage overlooking the garden consists of a unique architectural complex that is articulated in a central amphiprostyle doric building a square plant, the *Gymnasium*, and two lateral buildings, arranged symmetrically, the *Tepidarium* and *Calidarium*, a rectangular plan designed by Dufourny collaboration with local architects such as Pietro Trombetta, Domenico Marabitti and Venazio Marvuglia.

On the basis of a precious monograph of the architect G.B.F. Basile, you will critically revisit all the buildings, full of stylistic features of the greek temples and symbolic codes siceliots of the masonic Enlightenment, the first example of neoclassical architecture in Sicily. In particular, using the latest topographic non-invasive and photogrammetric technologies in acquisition, development and exploration of metric data, we report unedited representations of some devices that characterize the monumental work.

Key words: neoclassical architecture, conservation, 3D modeling

The architectural plant of the Botanical Garden Center of Palermo is well integrated with the adjacent Villa Flora (now commonly called the Villa Giulia). It is established in 1789 in the "Piano di Sant'Erasmo" on part of the lands of "Vigna del Gallo", near the moat of the walled perimeter. The final project designed by french architect Leon Dufourny is realized in collaboration with local architects such as Pietro Trombetta, Domenico Marabitti e Venanzio Marvuglia. Along the Avenue d'Alcala (now Lincoln Street) in front of the Spasimo's bastion the main front consists of a unique architectural complex that is articulated in a central amphiprostyle doric building a square plant, the *Gymnasium*, and two lateral buildings, arranged symmetrically, the *Tepidarium* and *Calidarium*. These last two buildings are equipped for greenhouse crops in temperate and warm temperatures. These three examples can be considered the first project experiences of neoclassical architecture in Sicily, full of stylistic features of the greek temples and symbolic siceliots codes of the masonic Enlightenment, the first example of neoclassical architecture in Sicily.

Inside the garden, in front of the buildings stands the first nucleus of the general layout of the Garden, is also the work of french architect, divided into paths that identify a specific number of beds available for the plants, according to the classification of Linnaeus.

The preliminary study of architectural and typological scheme, the conspicuous photographic documentation of current and the archival documents and historical and iconographic ones directed the steps and criteria of the survey in-depth knowledge.

A precious monograph by architect G.B.F. Basile (published in "New Annals of the Buildings, Arts and Industries" of Sicily, 1872), Dufourny's design drawings and the finding of some previous designs of direct survey, the works of careful experts (Nicolò Puglia, Enrico Naselli, Vincenzo Capitano) was a major point of departure for the revisiting of the buildings, run through the formulation of critical comments and the editing of graphic-geometric analysis [1].

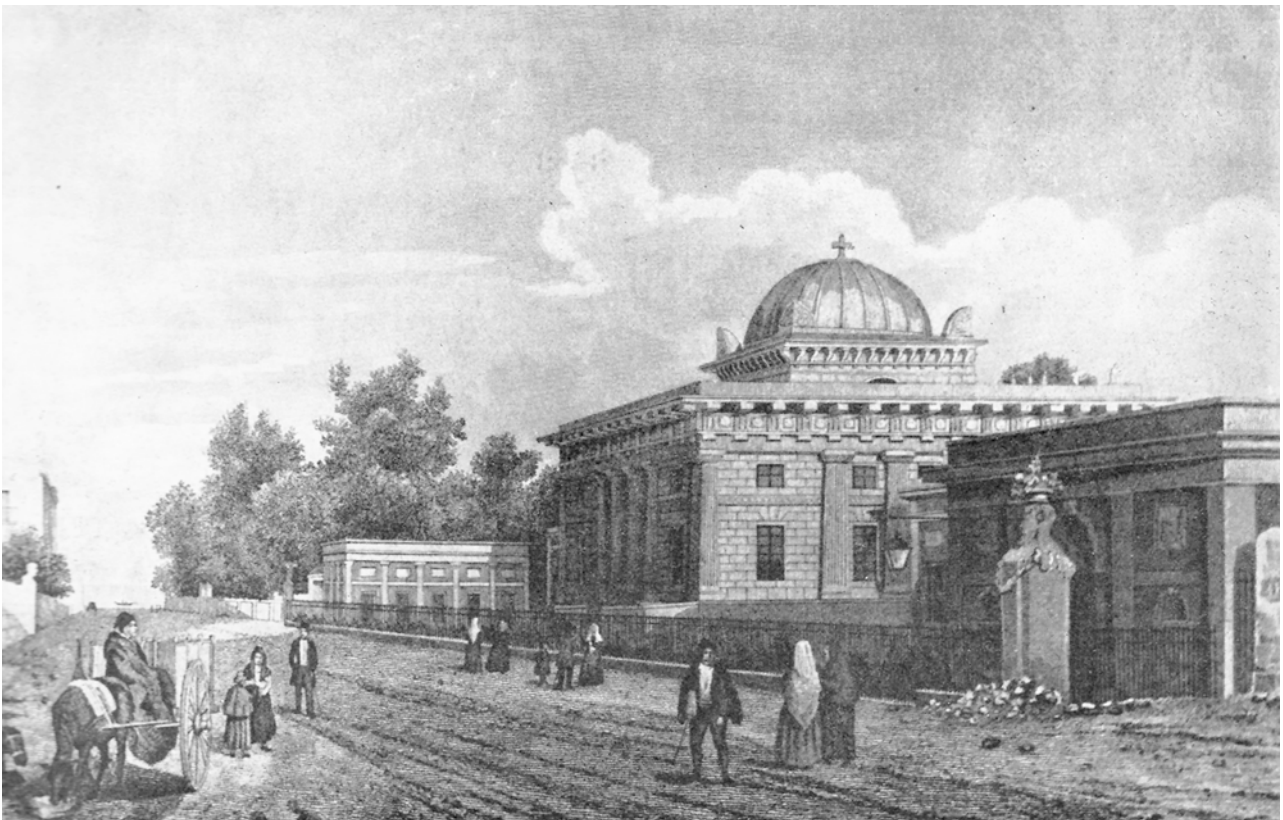


Fig. 1: Entrance to the Botanical Garden (*Dessiné d'après nature par Benoist Lit. Bachelier*), n. 10039, Gab. Stampe Gall. Reg. Sic., Pal. Abatellis, Palermo.

1. The *nec plus ultra* of greek doric and the generating module

The commission directly received by the Vicerè Principe of Caramanico is for the french architect Leon Dufourny a valuable opportunity to test and to summarize his planning theories about the doric order's renewal *des anciens grecs*. He proposes a lexicon greek Revival with functional and formal solutions free from chief concern items handed down from classicality, which he describes in his comment "lexical abuse" and "arbitrary syntactic".

His works in Palermo and in Sicily communicate a new language that follows the European debate (in France: Le Roy, Laugier, Blondel; in England: Stuart, Revett; in Italy: Piranesi; in Germany: Winckelmann, Hittorff, Klenze, Schinke) on the critical study of classical antiquity in Renaissance key, moving away from a neoclassical revival of imitative behavior which shows in its entirety in project drafting the free proportional language of ancient temples[2].

The Dufourny's theory based on scientific method and on geometric and modular rigor has as its model the reference carrier the doric archaic order "without basis" with the fluted stems of the columns.

The cultural knowledge acquired in the training period at the *Académie Royale d'Architecture*, the review of "royalties" described in the treatises and his careful measurements of the direct survey of ancient ruins in his

long exploratory itineraries combine to provide an unprecedented process of designing and unique in its kind, which he defines as the *nec plus ultra*, which is the "perfect Doric". His arguments on the art of building and on the testing of the ancient personal solutions applied are gathered in his manuscript *Ub 236 4°, t. III*, kept in the *Cabinet des Estampes della Bibliothèque National* in Paris. A precious book, published by researchers Liliane Dufour and Giuseppe Pagnano, shows the translation and a large collection of original project drawings[3].

The morphological characteristics, the linguistic apparatus of the masonry score and compositional organization outside of the three buildings of the Botanical Garden Center makes clear the different design criteria adopted. The most imposing central building, the hub of academic activities and the temple of Botany, of a "richer and more refined Doric," is opposed to the two side pavilions of support, of a "simple and rising Doric".



Fig. 2: Palermo – Orto Botanico, central building (*Gymnasium*). In the foreground the portico of Doric tetrastyle overlooking the garden.

2. A comparison of models

Inside and outside the structures the composition of together, the symmetry and the clear hierarchy of parts harmoniously articulated clearly emphasize the unique characteristics that make the original method of Dufourny. The entire project (the three buildings and linnaean garden) is governed and regulated by a modular system that proportionally divides the space in plan and elevation, in multiples and submultiples. The diameter of the column base of the School measures 5 palms exact corresponding to 60 ounces or inches (1.27 m), the french architect divided into 60 equal parts the module obtaining the reference unit which is, indeed, an ounce (0.0213 m).

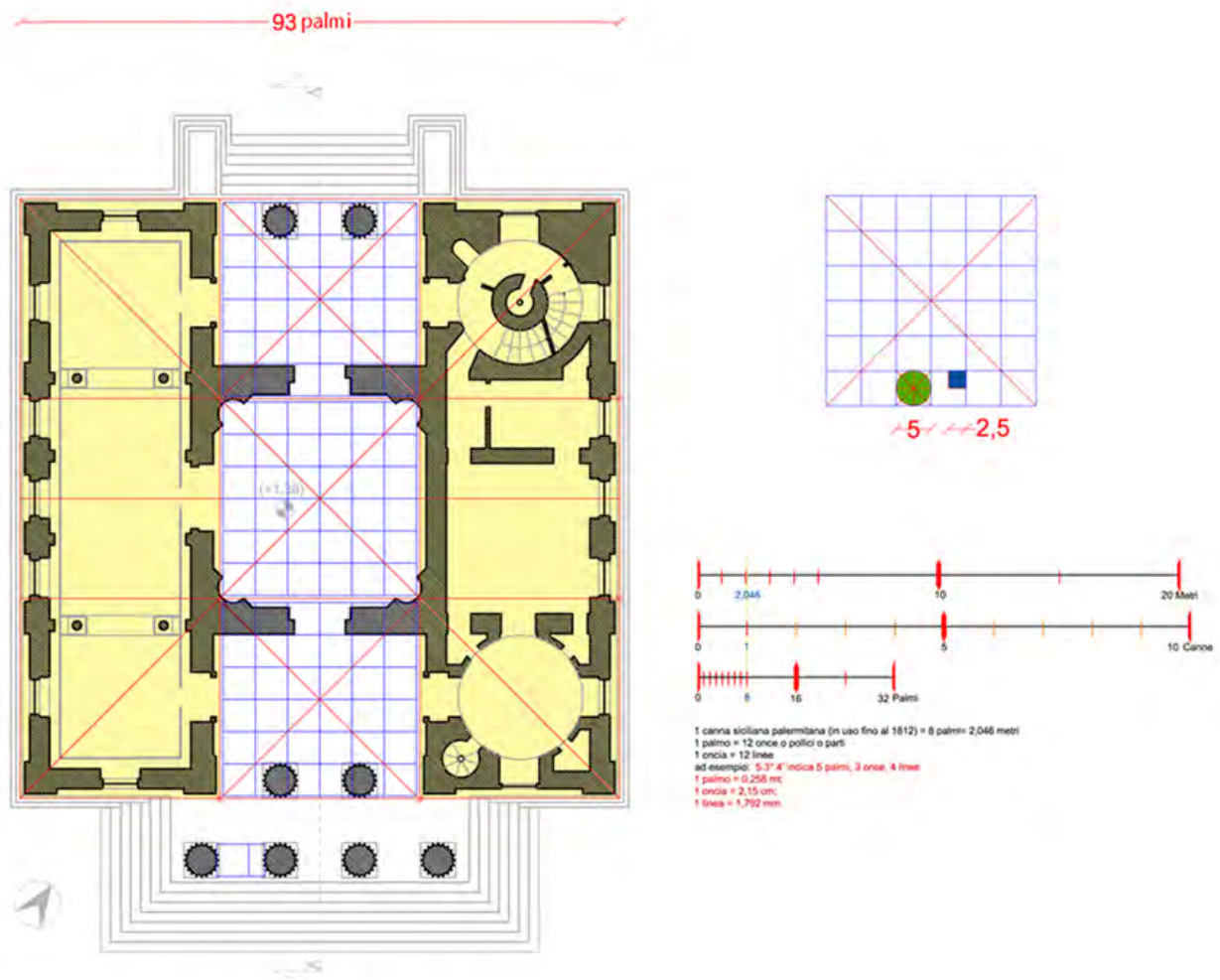


Fig. 3: On the left, the floor plan of representation in the *Gymnasium*. Top right, graphic design of the modular system that regulates the division of space, below, scales, and comparing unit conversion.

The geometric analysis, carried through the creation of modular schemes, have revealed the compositional rigor that governs the articulation of the interior and exterior spaces [4].

From the writings and from some pencil sketch that the architect Dufourny hands down to us, we learn that the original idea of the monument of the first project of the *School* had a compositional structure and location within the Garden radically differ from what appears today. The original choices would give the visitor a completely different view of the whole organism architecture. Initially, he proposes to raise the order of the ground creating a base path vaulted galleries, instead of the current stylobate divided into three tiers that develops without interruption for the entire perimeter of the building. This solution, then abandoned probably for reasons attributable to the excessive cost required for implementation, would create greater visibility of the garden from the the Avenue d'Alcala and, functionally, would be more convenient to isolate the building from humidity of the soil.

The knowledge process undertaken aims to provide useful interpretations for future conservation and for fruition of the site. The creation of digital models of the first idea of the architectural design and of the current state allowed to mature through the overlay layer transparency in plan and in elevation, a greater awareness of the interrelationships between the spatial and volumetric typological systems. The procedure of realization of models has provided key insights into the genesis of the building structure and to highlight the changes that have since characterized the current volume.

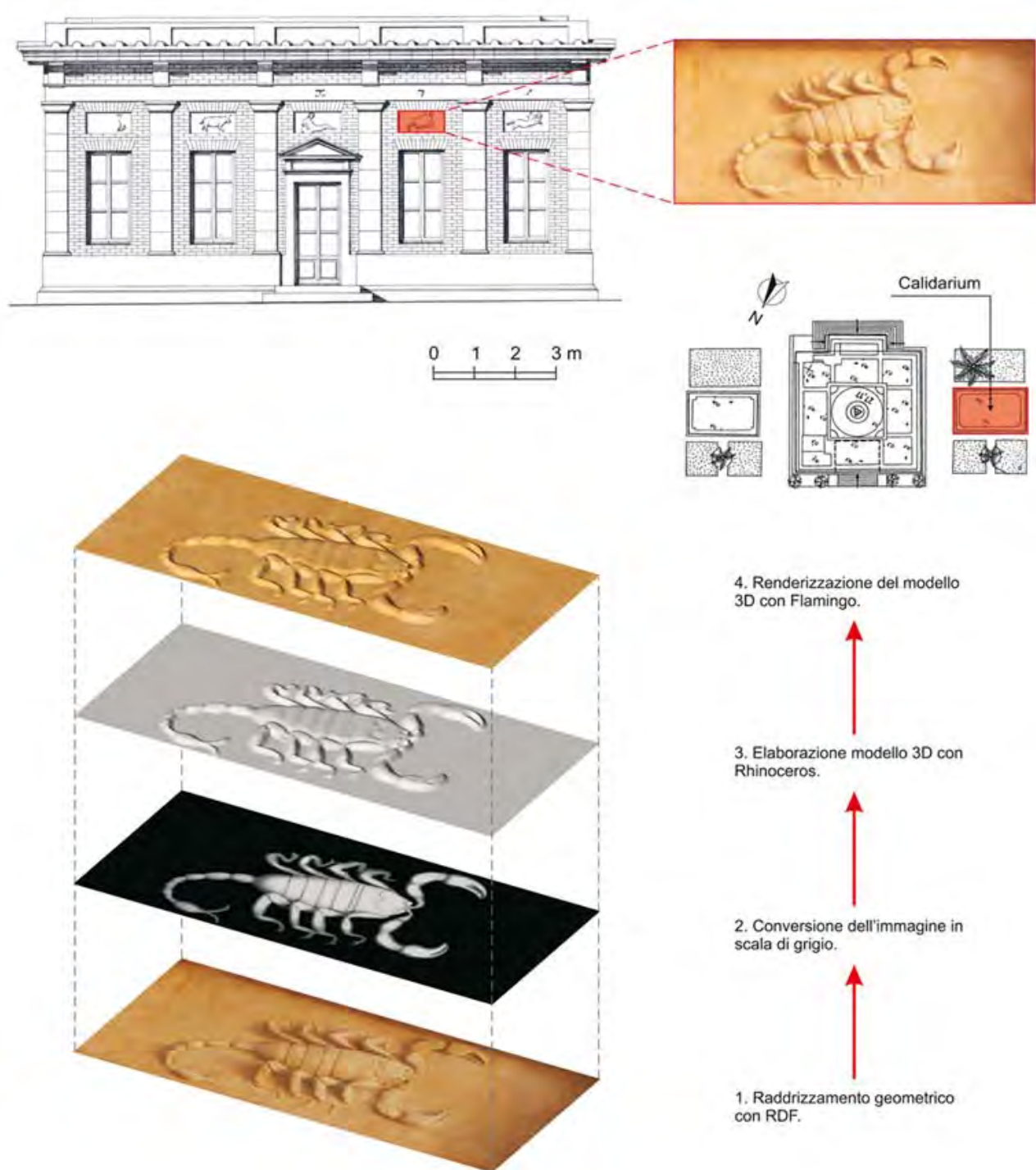


Fig. 4: Phases of one of the twelve zodiacal signs sculptured in relief on the facades of the *Calidarium*.



Fig. 5: Two perspective views of the digital models compared of *Gymnasium*. On the left, the first design hypothesis, that was never built; on the right, the current state.



Fig. 6: Perspective view of the digital model of the *Calidarium*.

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