TO TEACH DRAWING IN THE UNIVERSITY DEGREE IN "PRESERVATION AND RESTORATION OF CULTURAL HERITAGE" OF UNIVERSITY OF STUDIES OF TURIN, IN VENARIA REALE (ITALY).

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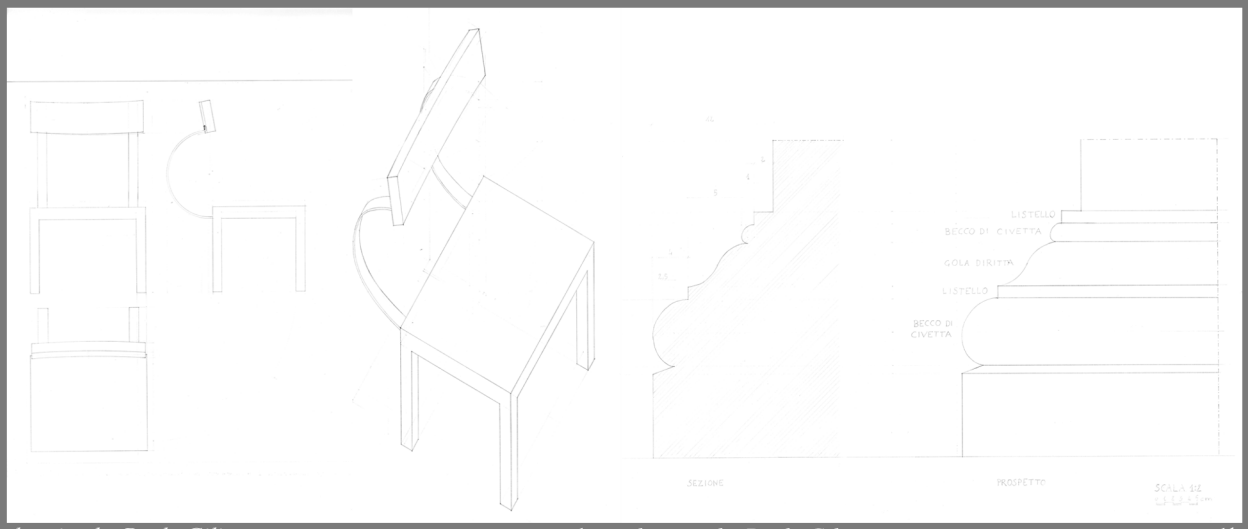
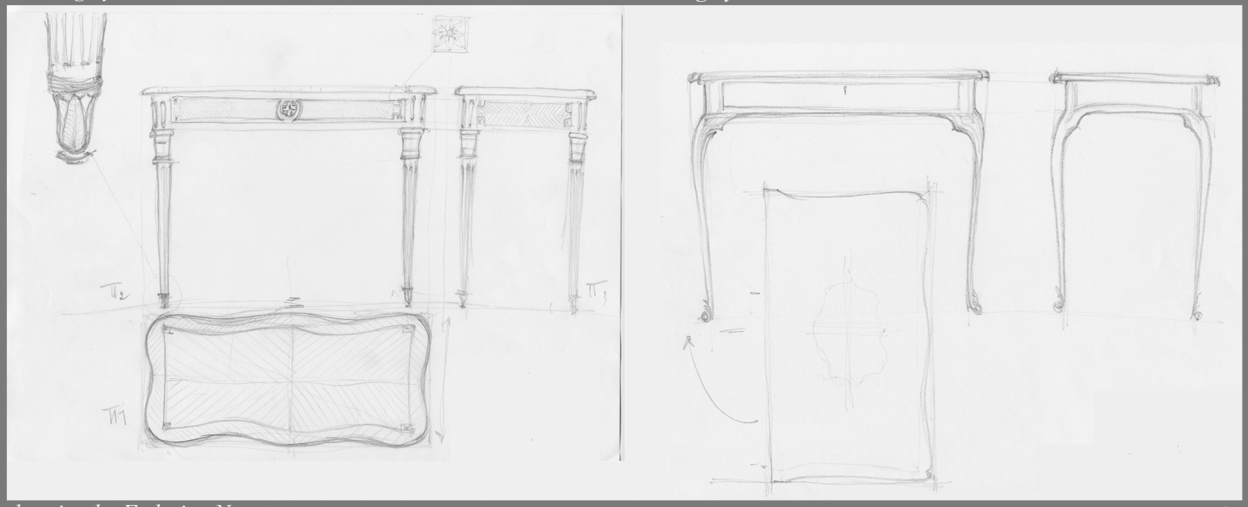
ABSTRACT

In this work I want to present my recent experience of teaching of Drawing and Introduction to descriptive geometry in "5 Magister", the name of a new university degree instituted in the present academic year. This course, activated from University of Studies of Turin with the Centre of Preservation and Restoration "La Venaria Reale", confers the degree in "Preservation and Restoration of Cultural Heritage" (Conservazione e Restauro dei Beni Culturali).
In this university degree, sole in Italy, the specialist studies are: stony material manufactures, painting on wood, painting on canvas, wooden painting sculpture, synthetic material manufactures, wooden material manufactures.
The teaching of Drawing and Introduction to descriptive geometry, fundamental in the Italian university degrees in Architecture, has been adapted to the specificities of the different specialist studies with the aim to constitute a common basis of knowledge for all the students.
In this writing I want to explain educational goals, didactic methodologies and results of the teaching.

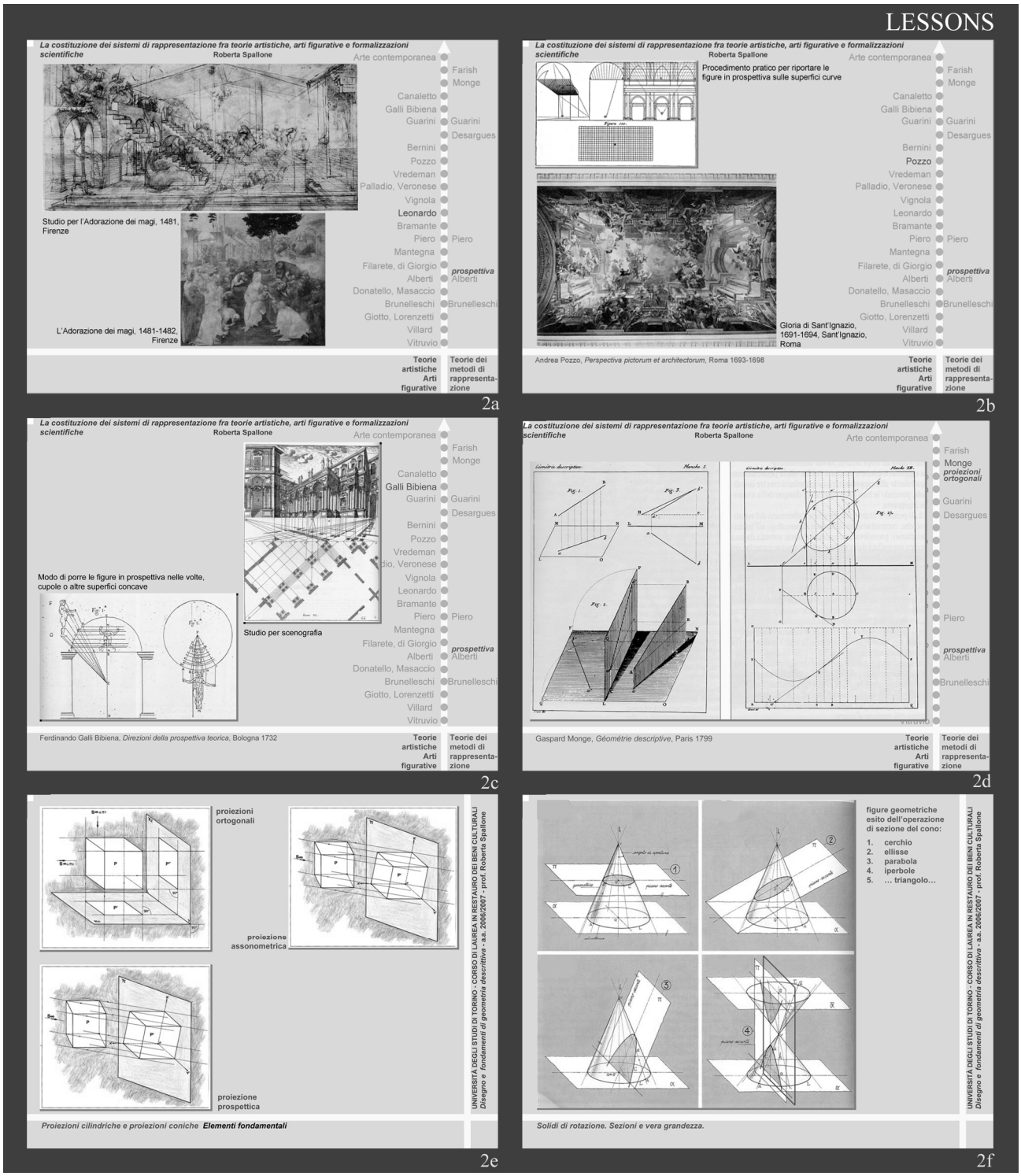
EXERCITATIONS



drawing by Paolo Gili 1a *drawing by Paolo Gili* 1b

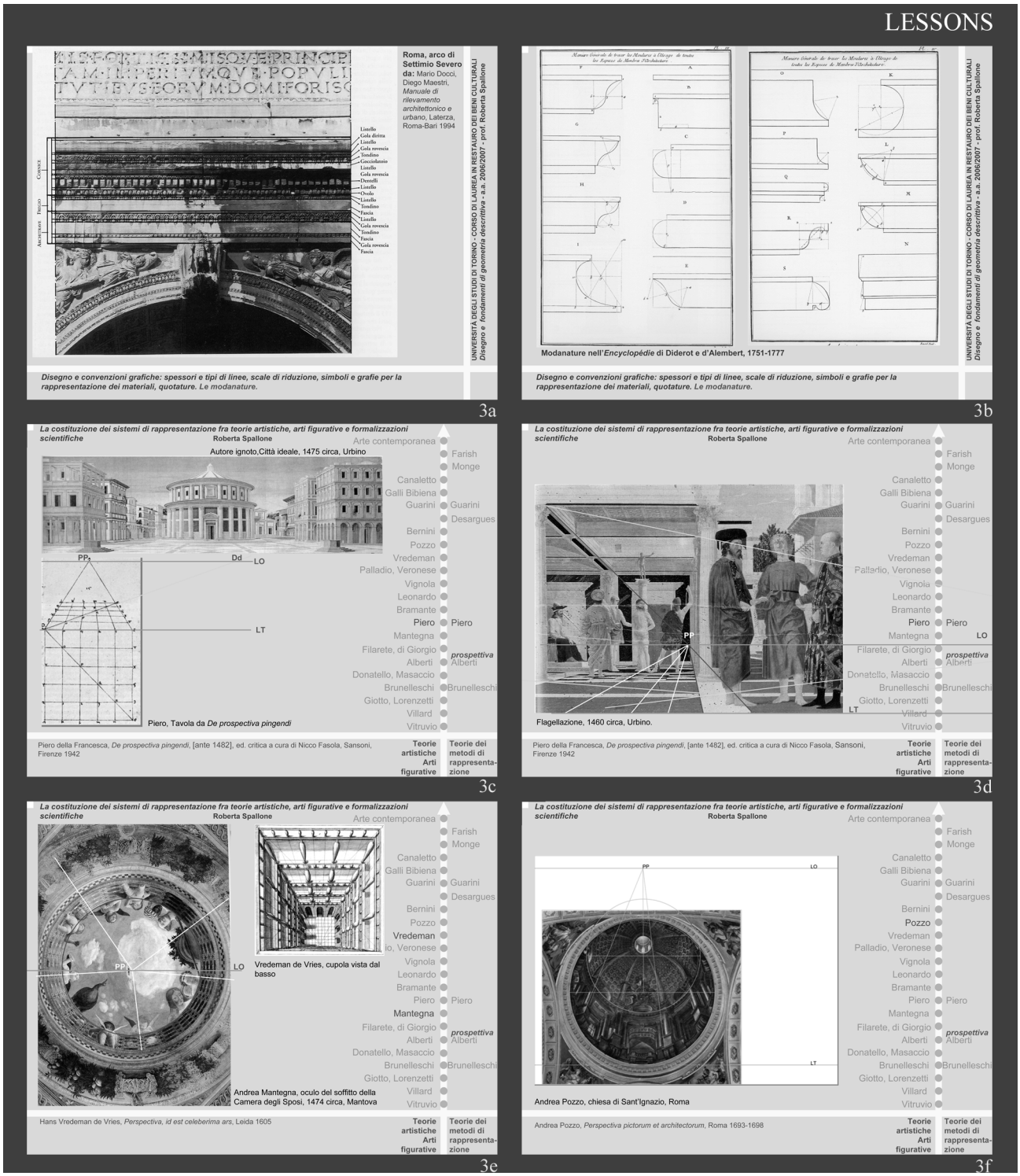


drawing by Federica Nepote 1c



1. A NEW TEACHING FOR AN ANCIENT DISCIPLINE.

It would appear to be universally recognised that fundamental role of drawing is to express and communicate as well as to extend knowledge. Hence particular importance is acquired by the fact that drawing develops from a perceptive process or from an idea, and that this idea – extending beyond the limits of what we could define as natural perception – requires a cultural and experiential support which means that every act of drawing entails an external projection of one's own cultural knowledge.
This meaning of drawing is central in the technical university degrees courses of "Representation".
In these universities the teaching of drawing is based on principles and methods of descriptive geometry, codified by Gaspard Monge at the end of eighteenth century.
The lessons of Monge in the Ecole normale of Paris (the future Ecole polytechnique, of which Monge was one of the founders), were gathered and published in the compendium treatise Géométrie descriptive, in 1798.
The methods of descriptive geometry create a bi-univocal



relationship between the model depicting the entity and the entity represented by the model, so that from the model it is possible to go back to the knowledge of any formal property of the entity, in the same way that the formal knowledge of the entity made it possible to arrive at the constitution of the model.

Actually, this teaching is one of the basilar discipline in the Italian university degrees in Architecture, Building Engineering and Civil Engineering.

Since 2000 I was professor of Fundamentals of descriptive geometry and of Architectural drawing in the I Faculty of Architecture of the Polytechnic of Turin.

The new university inter-faculty degree, named "5 Magister", in "Preservation and Restoration of Cultural Heritage" (Conservazione e Restauro dei Beni Culturali), has been instituted in the present academic year from University of Studies of Turin with the Centre of Preservation and Restoration "La Venaria Reale". I was charged by teaching of Drawing and Introduction to descriptive geometry.

In this university degree, sole in Italy, the specialist studies are: stony material manufactures, painting on wood, painting on canvas, wooden painting sculpture, synthetic material manufactures, wooden material manufactures.

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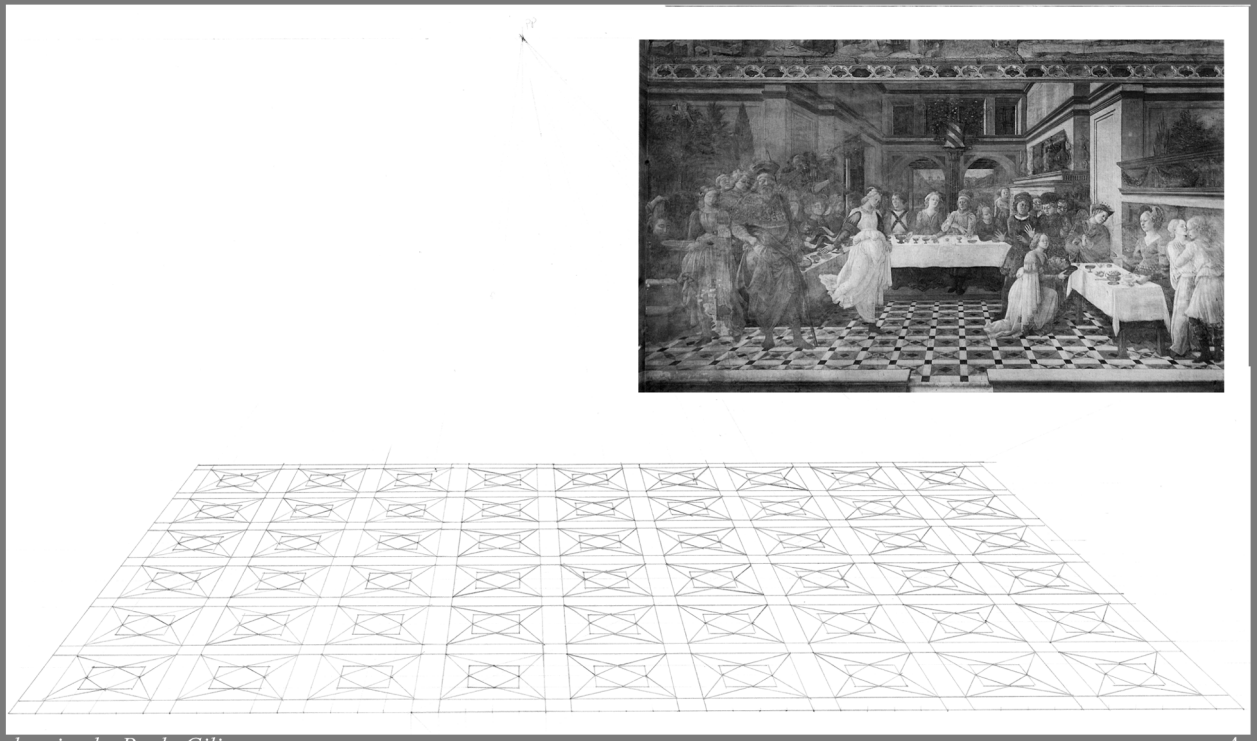
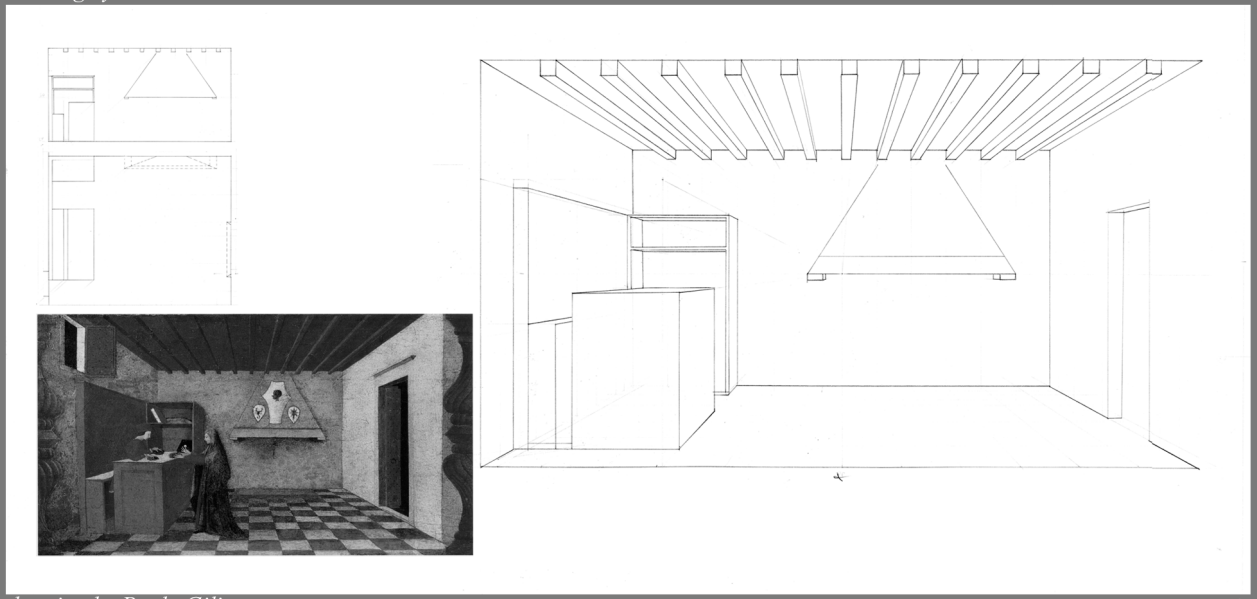


drawing by Paolo Gili 4a



drawing by Paolo Gili 4b

2. EDUCATIONAL GOALS AND DIDACTIC METHODOLOGIES OF TEACHING.

For the reason given above, the educational program had not reference in other national experiences.

The teaching of Drawing and Introduction to descriptive geometry, has been adapted to the specificities of the different specialist studies with the aim to constitute a common basis of knowledge for all the students.

In fact the principles of descriptive geometry, consisting of parallel projections and central projections, have been applied to the analysis, interpretation, reconstruction and representation of the different artistic manufactures.

These applications have been also supported by lessons of drawing and graphic standards.

One of the most important topics of the teaching is the history of representation that focuses the relationship between artistic treatises, visual arts and scientific studies (figures 2a, 2b, 2c, 2d, 3b).

This topic, reminded in all the lessons, is fundamental to recognize the period, the method and the technique of realization of the artistic manufactures.

This knowledge enables the students to surveying, for example, stony and wooden moulding (figure 1b) and antique furniture (figure 1c).

Moreover enables the students to restore the perspective pattern of paintings (figures 4a, 4b).

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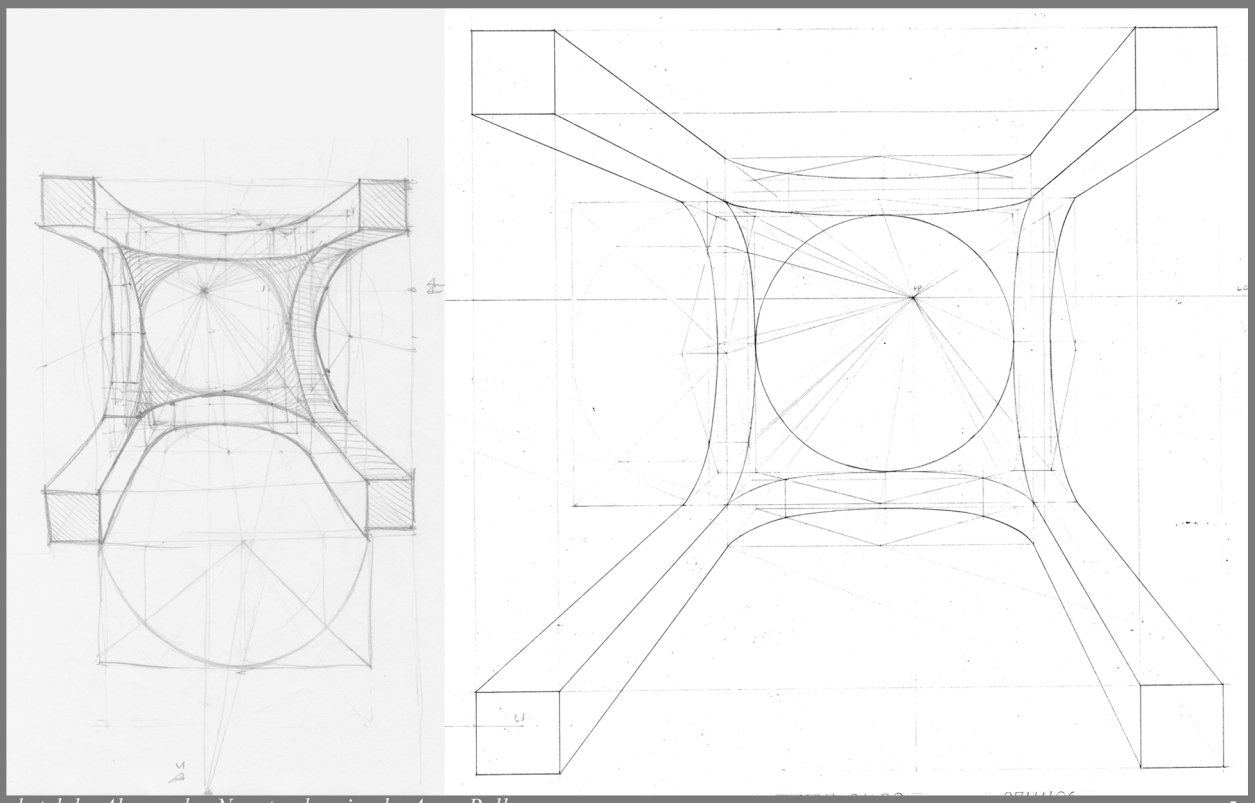
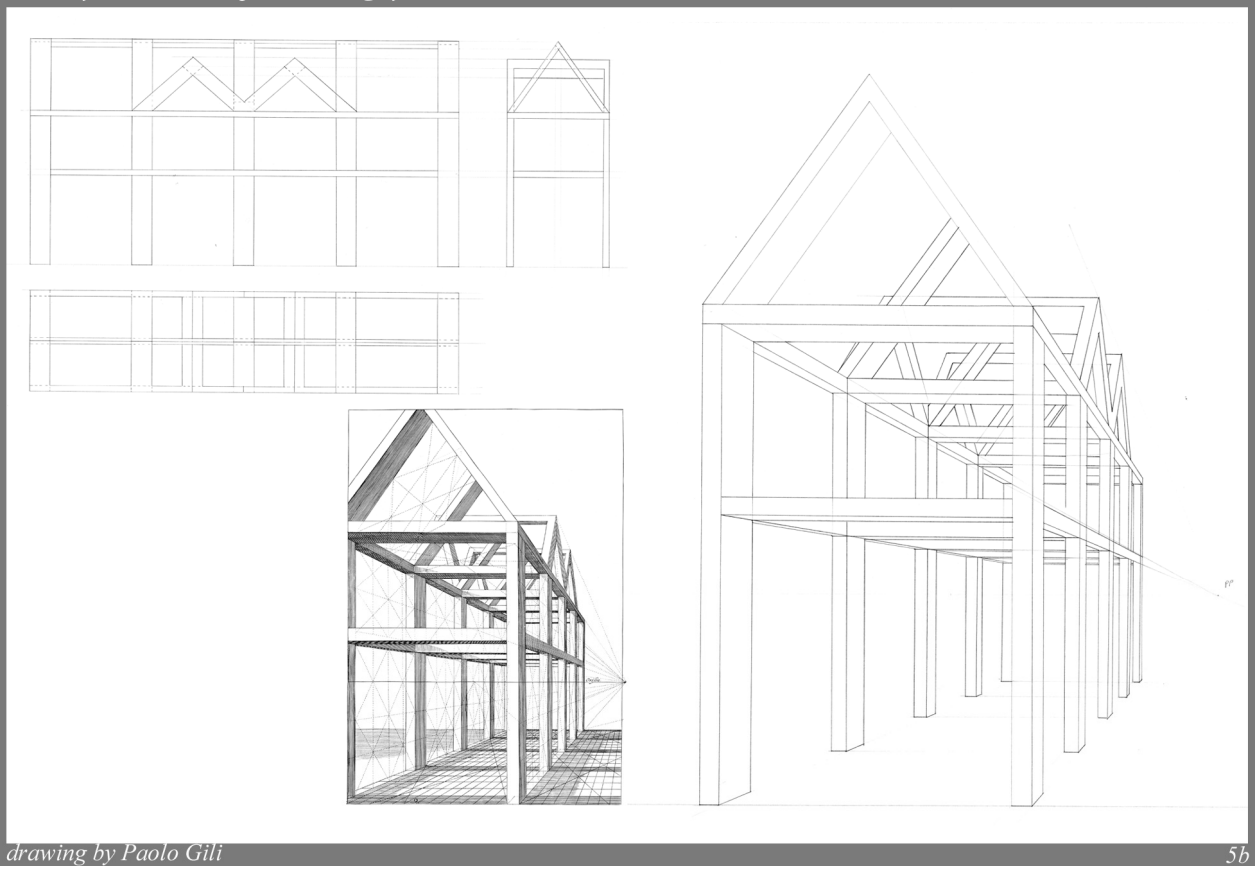


sketch by Alessandra Nepote, drawing by Anna Balbo 5a



drawing by Paolo Gili 5b

The orthogonal and the axonometric projections have been developed on the fundamental geometric entities and shapes.
In particular these topics have been deepened: the intersections of polyhedrons and of surfaces of revolution with planes and the mutual intersections of polyhedrons.
The knowledge of the principles and of the rules of these

projections allows to analyze and to represent three-dimensional manufactures by plans, fronts, sections, and by isometric views (figure 1a).
The perspective projections have been explained with continuous references to the history of representation and of visual arts, in particular to the scientific theories of Filippo Brunelleschi, Leon Battista Alberti and Piero della Francesca and to the compendious practice treatises of Jacopo Barozzi da Vignola, Hans Vredeman de Vries, Andrea Pozzo and Ferdinando Galli Bibiena.
These references permit to face correctly the problem of the perspective restitution of paintings, fundamental topic in the curricula of restoration of painting.
In particular the books of Andrea Pozzo and Ferdinando Galli Bibiena, compared with their drawings and paintings, have been referred to the problem of perspective on horizontal picture of projection (figure 5a).
This topic has been applied to the analysis of paintings and frescos on the vaults (figures 3e, 3f).

3. RESULTS OF THE TEACHING AND POSSIBLE INTERDISCIPLINARY DEVELOPMENTS .

After every lesson I proposed exercises in application of the theory, as is documented in figures 1, 4 and 5.
Orthogonal and axonometric projections have been applied to represent furniture, i.e. the chair "Follia" of Giuseppe Terragni (1934), starting from illustrations in a catalogue (figure 1a).
Surveying methods for moulders and details and graphic standards have been used both for the survey and the technical drawing of a antique stone moulder (figure 1b) and for the sketches of some antique furniture belonging from the Museum of Stupinigi (figure 1c).
Perspective projections have been developed about the problem of perspective restitution. The reconstruction of "perspective box" (figures 3c, 3d) has been simulated on the flooring of a Renaissance fresco of Filippo Lippi, - Il festino di Erode, Prato, 1452-1464 - (figure 4a) and on the perspective pattern of a tempera painting on wood of Paolo Uccello – Il miracolo dell'ostia profanata, Urbino, 1467-1468 (figure 4b).
The teaching of drawing, also in the form of 2D and 3D digital drawing and modelling, could be developed in a interdisciplinary didactic activity of compilation of catalogues of Cultural Heritage, supported by GIS systems.
These catalogues, including drawings with measure and details of the manufactures, 3D digital models, historical, archival and bibliographic references, scientific photographs, could become the bases for the chemical and physical analysis and for the projects of restoring.
Moreover, the information systems, implemented with the results of the analysis, could be useful to communicate with the other centres of restoring of cultural heritage.

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