



*Centro Conservazione e Restauro*  
**La Venaria Reale**

**Restoration and Conservation Center  
“La Venaria Reale”**

Via XX Settembre 18, 10078 Venaria Reale (Torino)  
Tel +39 011 4993011 - Fax +39 011 4993033  
[info@centrorestaurovenaria.it](mailto:info@centrorestaurovenaria.it)  
[www.centrorestaurovenaria.it](http://www.centrorestaurovenaria.it)





<b>THE FOUNDATION</b>	<b>5</b>
>> Founders and mission	5
>> Aim and objectives	5
>> The staff	6
<b>AN INTEGRATED AND MULTIDISCIPLINARY METHOD: THE UNITS</b>	<b>7</b>
>> Education. The graduate program and advanced training	7
>> Restoration laboratories	8
>> Scientific laboratories	8
>> Imaging laboratory	9
>> The Documentation Center	9
>> The Library	10
<b>THE COMPLEX OF “LA VENARIA REALE” A SETTING FOR SAVOY MAGNIFICENCE</b>	<b>11</b>
>> The renewal project: historical spaces meet advanced technologies	12
<b>APPARATUS</b>	
>> Technical sheets	



# The Foundation

## FOUNDERS AND MISSION

The Foundation Centro per la Conservazione e il Restauro dei Beni Culturali “La Venaria Reale” (CCR) was founded in 2005 by the Ministry of Culture, Regione Piemonte, University of Turin, the Foundation 1563 for Arts and Culture and the Foundation CRT as an institute for advanced training and research in the field of conservation and restoration of cultural heritage. Politecnico of Turin, the city of Turin and the city of Venaria Reale have joined the first five founding members.

The CCR works to promote cultural heritage and its mission is to actively promote education and research in the field of conservation. According to the most advanced guidelines the CCR Center operates through a multidisciplinary and integrated approach.

## AIM AND OBJECTIVES

According to its bylaws, the CCR is responsible for:

- ▶ organization and management, in cooperation with the University of Turin, of a Graduate Program in Conservation and Restoration of Cultural Heritage. The Program is organized in agreement with research and higher education institutions of the Ministry of Culture;
- ▶ organization of restoration laboratories for the conservation of cultural heritage aiming at providing consistent and coordinated activities for the monitoring, prevention, maintenance and restoration of cultural heritage;
- ▶ organization of laboratories for the examination, research and diagnosis of cultural heritage;
- ▶ collection, organization and dissemination of the results of its activities;
- ▶ organization of professional and refresher courses for professionals other than restorers who are involved in additional restoration or other conservation activities;
- ▶ promotion and implementation of studies and researches and collection of documents concerning the history of conservation and restoration;
- ▶ promotion of the development of enterprises, especially handicraft firms, working in the field of cultural heritage, to which transfer the results of research and technological innovations;
- ▶ participation to international research on conservation of cultural heritage, also on behalf of the Founders, the Italian government, institutions of the European Union and international organizations;
- ▶ development and dissemination of tools for a better and more extensive knowledge of cultural heritage.

## THE STAFF

<b>SCHOOL</b>	
Lecturers (University of Turin) Humanities and Sciences - Theoretical classes	36
Lecturers Theoretical classes	12
Professors Humanities and Sciences - Theoretical classes	3
Professors Applied classes	10
Students	80
Internal administrative staff	1
External administrative staff (University of Turin)	1
External scientific staff (University of Turin)	4
<b>ADMINISTRATION</b>	
Employees	7
Consultants	3
<b>SCIENTIFIC LABORATORIES</b>	
Employees	2
Consultants	-
<b>RESTORATION LABORATORIES</b>	
Employees	11
Consultants	1
<b>IMAGING LABORATORY</b>	
Employees	2
Consultants	2
<b>DOCUMENTATION CENTER</b>	
Employees	3
Consultants	4
<b>LIBRARY</b>	
Employees	1
Consultants	-
<b>DIRECTOR'S OFFICE</b>	
A nomina quadriennale	President Chief of Operations Scientific Director 3 Head of units
Employees	1 Secretary

# An integrated and multidisciplinary method: the units

The CCR is based on a methodology that integrates the skills of conservators, art historians and scientists. Their presence within a single structure is a substantial element in the center, the restoration process is always the result of a multidisciplinary approach, which is discussed between the different units.



## **EDUCATION**

### **The Graduate Program**

The CCR and the University of Turin, in convention, have activated a multidisciplinary five-year degree course in Conservation and Restoration of Cultural Heritage based in Venaria.

This is the first program in Italy to obtain a degree as Restorer and it aims to train highly qualified professionals according to a strictly scientific and updated method, combining technical skills with historical and scientific knowledge.

The program has been qualified by a joint committee of the Ministry of Education and the Ministry of Culture that operates on a national scale to ensure the highest standards of quality (according to Italian Law D.M. May 26, 2009, n. 87).

Each year 20 students are selected, based on 5 different classes: stone materials, lithological and derivatives; paintings on canvas and wood, painted wood sculpture, assembled and /or painted manufactured synthetic materials,, wooden objects, natural textiles artifacts, artificial textiles and leather, feathers, ceramics, glass, metal and alloys.

### **Advanced Training**

The advanced training program organizes postgraduate courses and professional training, as it has received national accreditation for courses of higher technical education, higher education, postgra-

duate courses and for professional training and updating.

From October 31, 2006 on the activities of the SAF (Scuola di Alta Formazione/School of Advanced Training) obtained the ISO 9001:2008 Certification of the Quality Management System.

The SAF is qualified for the following areas of training:

- >> Higher education and training;
- >> Technical training;
- >> Postgraduate education;
- >> Continuing education.



## RESTORATION LABORATORIES

The laboratories work on highly complex conservation and restoration projects, which are suitable both for research plans and for testing new methodologies. The laboratories provide a valuable support to the teaching activities of the School and are organized according to different types of product, as indicated in the guidelines of the Graduate program:

- >> wood furniture
- >> textiles
- >> contemporary art and synthetic materials
- >> paintings on canvas and wood
- >> wall paintings (frescoes and distemper), stucco and architectural surfaces
- >> architettoniche
- >> metals, stone, ceramics and glass

## SCIENTIFIC LABORATORIES

Thanks to advanced instruments, the scientific laboratories plan and carry out specific diagnostic plans, both invasive and non-invasive, on the artworks that are treated in the CCR:

- >> recognition of the chemical elements;
- >> electronic microscopy at variable pressure, for the morphological documentation and the identification of the chemical elements in the micro-samples and in small objects;
- >> infrared spectrophotometry. The Centre has a Fourier transform infrared bench FT-IR Bruker Vertex 70 coupled with a Hyperion 3000 microscope equipped with a MCT single point detector and with a photovoltaic MCT Focal Plane Array detector. This technique allows the identification of both organic and inorganic materials.



- >> reflectance spectrophotometry is a noninvasive technique of analysis for detecting pigments and for evaluating the effectiveness of conservation intervention;
- >> optical microscopy allows a preliminary analysis of the sample;
- >> videomicroscopy to document the surface of the works;
- >> X-ray data acquisition.

The scientific laboratories work on diagnostic activities and on environmental monitoring in museums and exhibition spaces too. The laboratories developed a system of sensors for the detection of the thermo-hygrometric parameters, both in air and on the surfaces of artworks, air velocity and chemical pollutants (suspended particulate and VOC).

## IMAGING LABORATORY

The Imaging laboratory make inspections and photographic surveys before, during and after the restoration, non-invasive diagnostic tests to examine the state of conservation and technical execution of the works of art. Furthermore the Imaging laboratory produces the graphic representation of the information obtained regarding the technical realization of the treated artwork and its degradation. Shortly, the procedures performed in support of restoration workshops are:

- >> Production and processing of photographic documentation before, during and after the restoration (techniques: front and back scattered light, side light on details and macro);
- >> Multispectral Analysis to document the condition and the techniques (techniques: infrared, false-color, UV fluorescence, post-production of radiographic data);
- >> A specific area of the laboratory also develops techniques for 3D reconstruction and multimedia platforms for integration of diagnostic data, including through the testing of exclusive technologies..



## THE DOCUMENTATION CENTER

It is key point of the CC for the study, archival research, collection and organization of documentary, bibliographic and iconographic materials regarding the artwork and archeological sites the CCR works on. The documentation center works to ensure adequate standards of certification of all activities and operations conducted by the different operating units of the CCR. In partnership with universities and research institutes the documentation center develops studies on the history of restoration and contributes to increase the database of Italian restorers (Res.I.). The multidisciplinary approach pursued by the documentation center supports restorers and diagnostic with the results of historical researches on the artworks, particularly referring to the conservation history of the artifacts.

The documentation center coordinates the editorial production of the CCR, especially through the two series of publications: the "Archivio" (archive) and "Cronache" (Chronicles).

## **THE LIBRARY**

The library, focused on history, art restoration and art history, has been newly created soon after the opening of the CCR as a support to the students' training and to provide a source of updating for conservators, historians and scientists. The library acquires and arranges private collections focused on art and restoration, disseminating their knowledge and enabling the public to enjoy these archive. The library is a public resource that grants daily access for users outside the CCR.

# The complex of “la venaria reale”

## A setting for Savoy magnificence

The CCR is based in the magnificent complex of “Reggia di Venaria Reale”, which is the result of different levers of interventions that started with the project of Amedeo Castellamonte (1660-1671), continued with Michelangelo Garove (1699) and achieved amazing results with Filippo Juvarra (1716), to whom we owe the construction of the Great Gallery (Galleria “Diana”), the Chapel of St. Hubert, the Orangery and the Great Stables.

The CCR is hosted in the former kennels and stables that were designed in the last architectural adaptation by Benedetto Alfieri, in 1750. The recovery of these areas is included in the massive work of requalification that affected the whole “Reggia di Venaria Reale” between 1999 and 2004, so preserving a valuable piece of history from complete degradation.



The stables designed by Alfieri, together with the entire complex, were converted into a military outpost at the arrival of French revolutionary forces between 1796 and 1798. With the defeat of Napoleon, the Savoy house regained possession of the complex, but the castle and the attached spaces were still used as barracks. The complex remained a military base until the Second World War, then the complex lost its function and was completely abandoned.

After the Restoration, a census shows that the newly-set up barracks consisted of 658 rooms, occupied by 36 officers, 21 non-commissioned officer, 419 soldiers and 179 horses in the stables.

Therefore, the massive presence of military force was at the same time a burden and an important economic factor for the community, which almost became a self-sufficient pole so that in 1860 the castle and the extensive surrounding areas directly passed under military administration. Some historical documents show that in the area around the stables was created a center for the care and breeding of horses and mules. At his highest there were around 655 specimens in the center, which could diminish up to 80% in case of epidemic diseases.

After the Second World War, the complex of “Venaria Reale” was put out of service and abandoned and neglected. After forty years and after misguided and futile interventions of renovation, in the 90s it was indeed possible to stop the destruction and restore the historical and artistic dignity of the complex.

## **THE RENEWAL PROJECT HISTORICAL SPACES MEET ADVANCED TECHNOLOGIES**

The renovation project of CCR’s spaces was designed by architects Pietro Derossi and Giorgio Fea, the former for the restoration of the building and the latter for the interior design.

The two architects’ project that allows an interesting dialogue between Benedetto Alfieri’s eighteenth-century and modern, fully independent and reversible architecture. Remarkable examples are the Great Hall, located in the east wing of the building, and the scientific laboratories, in the west wing.

The renovation respects the traces of history in every possible way, from the renewal of mortar between brick and brick, to the washing of the external surfaces that save the writings militaries did in some points. For example in the west stable, thanks to the cleaning of the internal walls, two temperas made by the soldiers came to life again.



To restore the stables and riding Regione Piemonte invested 13 million euros, part of it came from the European Community. 400,000 euros were obtained from the Ministry of Economy (CIPE funds) and spent for the purchase of equipment and furnishings. In conclusion, Regione Piemonte has bought with his own resources the former “Galoppatoio La Marmorata”, located in Via XX Settembre, where it will set up an extension of the restoration laboratories.

A large, solid orange arrow pointing to the left, centered on a white background. The arrow has a simple, clean design with a pointed tip on the left and a flat tail on the right.

**Technical sheets**







## IMAGING For the promotion and enjoyment

The Imaging Lab, in addition to photographic documentation, three dimensional relief and non-invasive diagnostics, develops technological research in the context of the media experience. Through the use of 3D Computer Graphics, the Imaging Lab works on the production of educational and popular materials meant to create historical reconstructions, virtual restoration and virtual reality simulation.

### FIRENZE, Palazzo Vecchio

>> Bronzino, *Chapel of Eleonora*, Three-dimensional model and multimedia application (Figg. 1 and 2, detail)

Starting from the specific case of the Chapel of Eleonora in Florence's Palazzo Vecchio an innovative procedure called the "Eleonora Procedure" was patented which enabled us to obtain geometric reliefs to scale, metric orthophotos and high-resolution panoramic photographic reproductions, contextually providing a complete campaign of multi-spectral analysis. The documentation collection is organised and made accessible for technical, educational or informative purposes within multimedia applications and for virtual restoration simulations. In the specific Florentine case the results of this study were translated into an interactive multimedia application available to the public through a totem pole located at the entrance of the environment and officially presented on the occasion of the Bronzino Exhibition held at Palazzo Strozzi at the beginning of 2011.



### VARALLO SESIA (NO), Sacro Monte

>> Chapel of the *Massacre of the Innocents*, Three dimensional Relief (Fig. 3, detail)

The documentation of the current condition of the chapel was particularly complex due to the presence and overlapping of different types of artefacts (wall paintings, ceramic statues, pottery, wooden and textile artefacts). A complex relief campaign carried out according to the methods defined in the "Eleonora Procedure" enabled us to detect the spatial location of the statues, some of which are not fixed to the ground, and integrally map the intactness of the surfaces.



## TURIN, MAO - Museum of Oriental Art

>> *Kongo Rikishi*, multimedia application to obtain diagnostic, historical and photographic data on the wooden statue (Fig. 4 and 5, detail)

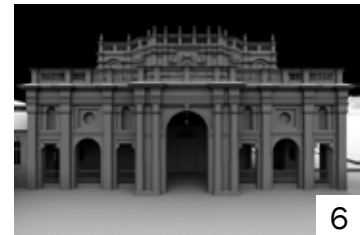
The experimentation conducted on the wooden statue enabled us to extrapolate three-dimensional models of staples, nails, coins and other non-wooden components, from tomographic slices, and then reference them with the three-dimensional model acquired by means of a laser scanner instrument from the Imaging Laboratory. This has made the defining of a procedure for integrating laser scanner data and CT data possible thanks to which the surface morphology, in translucency, lets us see internal elements of particular structural interest.



## VENARIA (TO), Reggia

>> Historical and virtual reconstruction of the architectural complex (Fig. 6 and 7, detail)

The constructive evolution of the complex of the Royal Palace of Venaria Reale and its context - historic village and gardens - in the various building configurations attributed to Amedeo di Castellamonte, Michelangelo Garove, Filippo Juvarra and Benedetto Alfieri, was shown in a full HD video made from a virtual path through the buildings, reconstructed using "pure modelling". The models were developed on the basis of complete historical and bibliographic documentation critically analysed and studied during meetings with the technical scientific staff of the Royal Palace. This video was produced for the opening of the new guided tour of the Royal Palace in order to guide visitors in the historical-town planning reading of the museum complex.



## MILAN, ADI Foundation

>> Compasso d'oro historical collection

On the occasion of the preservation and restoration project of the objects in the Golden Compass Historical Collection, the reconstruction was made in Computer Graphics of some historical works awarded the famous prize and today not represented in the collection. A particularly significant example is represented by the photo realistic animation in Computer Graphics of the work *Occultamento* by Ugo Lapietra.







*Centro Conservazione e Restauro*  
**La Venaria Reale**



REGIONE  
PIEMONTE



PROVINCIA  
DI TORINO



CITTA' DI TORINO



CITTA' DI VENARIA REALE  
PROVINCIA DI TORINO



UNIVERSITÀ DEGLI STUDI DI TORINO



POLITECNICO  
DI TORINO



Fondazione  
**1563** FONDAZIONE CRT