

## **Anamnesis and aetiology of wooden components of Teatro Sociale of Bergamo (L.Pollack 1809)**

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### **EXTENDED ABSTRACT**

The anamnesis of a manufactured item is a basic moment of thorough study of both the direct sources, made by carefully observing the “patient”, and the indirect ones, made by reading and understanding the related documents. In this way it is possible to obtain useful information concerning the causes that may have led to deterioration and structural instability. Aim of the anamnesis and of the etiology is therefore to obtain some information about the patient, in order to direct the clinical tests (instrumental diagnosis) at best, and then give the most appropriate treatments. From the anamnestic point of view the Teatro Sociale has shown a large series of clues that, crossed with the copious amounts of archival documents (old descriptions and antique pictures) and with many accurate examinations, enabled to reconstruct the evolution of the deterioration and to identify the basic points on which the instrumental diagnosis has been made afterwards.\*

The conception of a theater in the ancient city of Bergamo is due to a group of fifty-four noblemen who decided to self-finance the enterprise in 1803. The project was commissioned to the architect Leopoldo Pollack, a student of the famous theatre architect Piermarini, designer of the Teatro alla Scala in Milan. Pollack died in 1806 and the completion of the work, ended in 1809, was due to the architect Antonio Bottani, who had been already assigned to him as an assistant in the planning stage. The theater did not have a happy destiny: opened in 1809, it underwent repeated and prolonged closures starting ten years later, due to lack of funds for organizing the shows. From mid-nineteenth century on, the theater was subject to an inexorable decline.

From the technological point of view the complex of stages of the Teatro Sociale is formed by a modular and box system framework with a regular quadrangular cross-section, consisting in primary vertical elements, the uprights, and horizontal elements, the transverses, other than by a secondary horizontal and radial structure consisting in joists, which are placed at one end on the ring-shaped spine wall and at the other end on the transverses. This determines the horizontal tiers (right and left), and the vertical rows (from I to XIV for each semi-circle starting from the row near the proscenium arch, except: the row on the first tier, consisting in XIII rows; the row on the second tier at the double royal box; the row at the gallery, that is originally structured to be undivided).

The structure was built up starting from the walls and then building up the tiers of boxes in vertical and horizontal succession, as in a scaffolding erection technique.

Unfortunately no documentation (specifications, contracts, purchase orders, inspections, surveys) was found, concerning the construction and maintenance of the theater. The Pollak design does not provide information on materials or prescriptions on how it was built. However, a reconstruction of these

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\* The following description concerns the situation before the recent (2009) restoration and it is an extract of the situation which is widely described by Francesco Augelli – Leyla Ciagà in *Il mito di Orfeo. La diagnosi delle strutture lignee per la conservazione e il riuso dei palchi del Teatro Sociale di Bergamo*, Specialization Thesis in Restoration of Monuments, Politecnico di Milano, 2001.

requirements, materials and construction methods, which should have also existed for the theater, can be found in contemporary documents. Pollack was probably inspired by pre-revolutionary French examples both concerning the general layout of the theater, and concerning the wood construction techniques adopted. Evidence of this is the Planche II No 2 of the Encyclopédie of Diderot and D'Alembert, published between 1751 and 1767, dedicated to Menuisier en bâtiment, assemblages, which shows a variety of techniques to assemble wooden frameworks “heads” and, between the various ways, also the one called “Jupiter's dart inclined joints”, used for the uprights of the boxes of the Sociale. Of course, these assembly techniques were much older, but in the Encyclopédie they were properly represented from the “technical-executive” point of view and they were popularized beyond borders, without precedents in the history of treatises and manuals.

More information about the maintenance and the upgrading works in the XVIII and XIX century, can be derived from tests and surveys conducted by the supervisors, that, even if related to other theatres of Bergamo (Cerri and Riccardi), show the assiduous monitoring activities before of each theatre season, control activities with which, similarly, should have complied even the Sociale.

An interesting document is the 1787 Capitolato of the building works for the Teatro Riccardi in Bergamo. Despite its brevity, it sets which wood species to use, the quality and size of the frameworks, gives information on metal carpentry, and also on the execution rules of the finishes. A similar document, but even more detailed and precise, is the Capitolato of the Cerri Theatre in Bergamo dated November 9, 1797.

The study done on the direct and indirect sources has proved its value, even and especially for the project of diagnostic. These, indeed, were made especially in those areas which were most directly and for longer exposed to infiltrations from the roof, whose exact location was found out both through the numerous descriptions and through the extensive antique photographic documentation. Through a series of tests it was possible to detect the residual durability of wooden components and their suitability for static, especially in the most critical areas, namely the joints, where water stagnation would have probably procured the most damage. The results were better than expected because the evidence showed that most of the structures withstand quite well the prolonged exposure to decay-favorable conditions. Precisely for this reason, the consolidation project could use data of the anamnesis and of the diagnosis and could take advantage of a structural consolidation/adjustment intervention which was respectful of the existing.

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