

POLITECNICO DI TORINO
SECOND SCHOOL OF ARCHITECTURE
Master of Science in Architecture
Honors theses

Between science and wonder; perforated vaults and spatial frames in Guarini

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The study within this thesis took place because of the necessity of further investigating two drawings by the "theatine" architect Guarino Guarini (Modena 1624-Milano 1683). The need for a thorough study of these specific documents has been expressed many times during the research campaigns dedicated to the Modenese Architect. The Guarinian documents are kept in the Turin State Archive. These two drawings are the only trace left of important projects for the princely residence of Racconigi Castle and for Palazzo Madama in Turin. Guarini had been working in Turin since 1665, after he was "intercepted" by the Prince of Savoia-Carignano and by the regent of the Sabaudo duchy following the failure of his Paris experience, where he was Professor and Director in charge of the construction of the Sainte-Anne-la-Royale church.

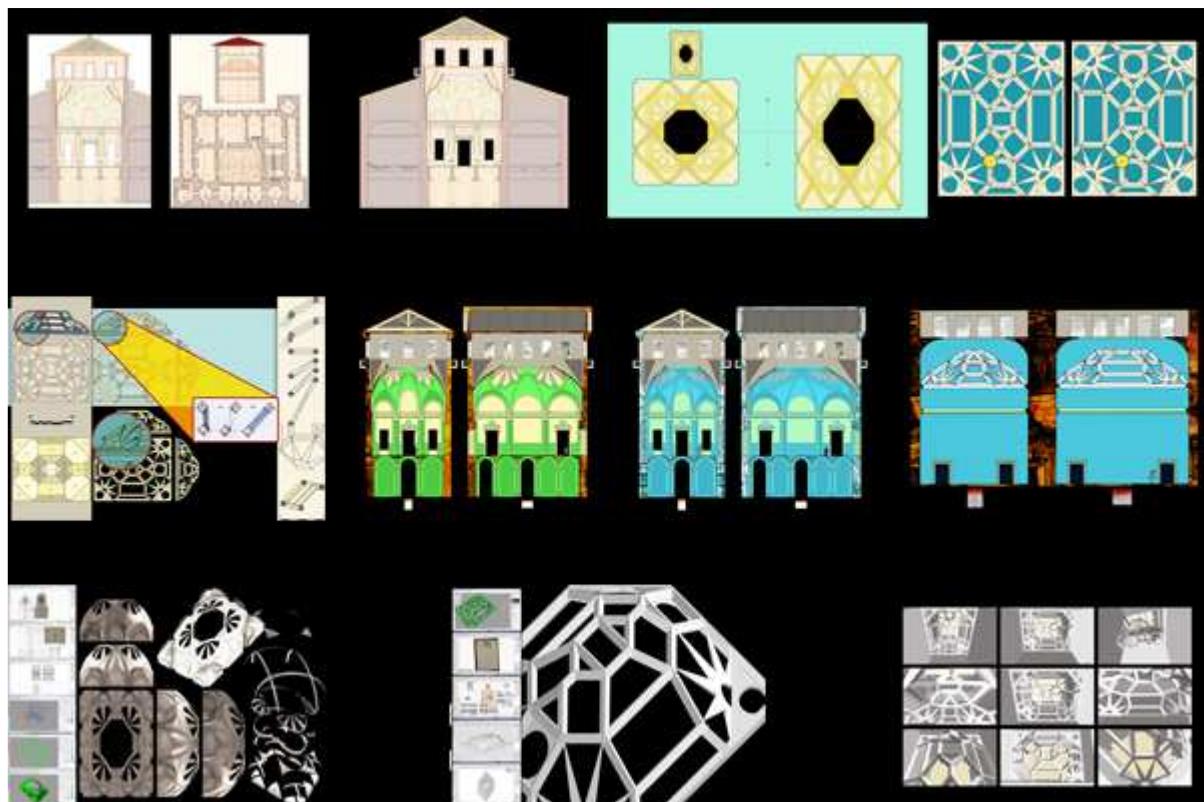
Up to now, no substantiated study has been done over the two documents. Besides what strictly concerned the historical side, which this kind of study implied, it is important to affirm that the entire campaign led to a re-design of a new project based on new drawings.

The study itself employed all the representation techniques available. Some necessary missing technical drawings have been rebuilt, since the existing ones provide only a partial representation of the two projects: while both designs are shown in longitudinal sections, the plan is provided for only one of them (Palazzo Madama); even if preliminary sketches are available for the Racconigi Castle, their relationship with the drawing of the vault is uncertain. Thus, the work expressed itself as an investigation, starting from clues, following graphic paths (repentance and erasures included), with the aim of retracing (in backward motion) the projects' evolution; in the end, my task was that of producing detailed designs which Guarini himself has never drawn. In fact, he died before their completion.

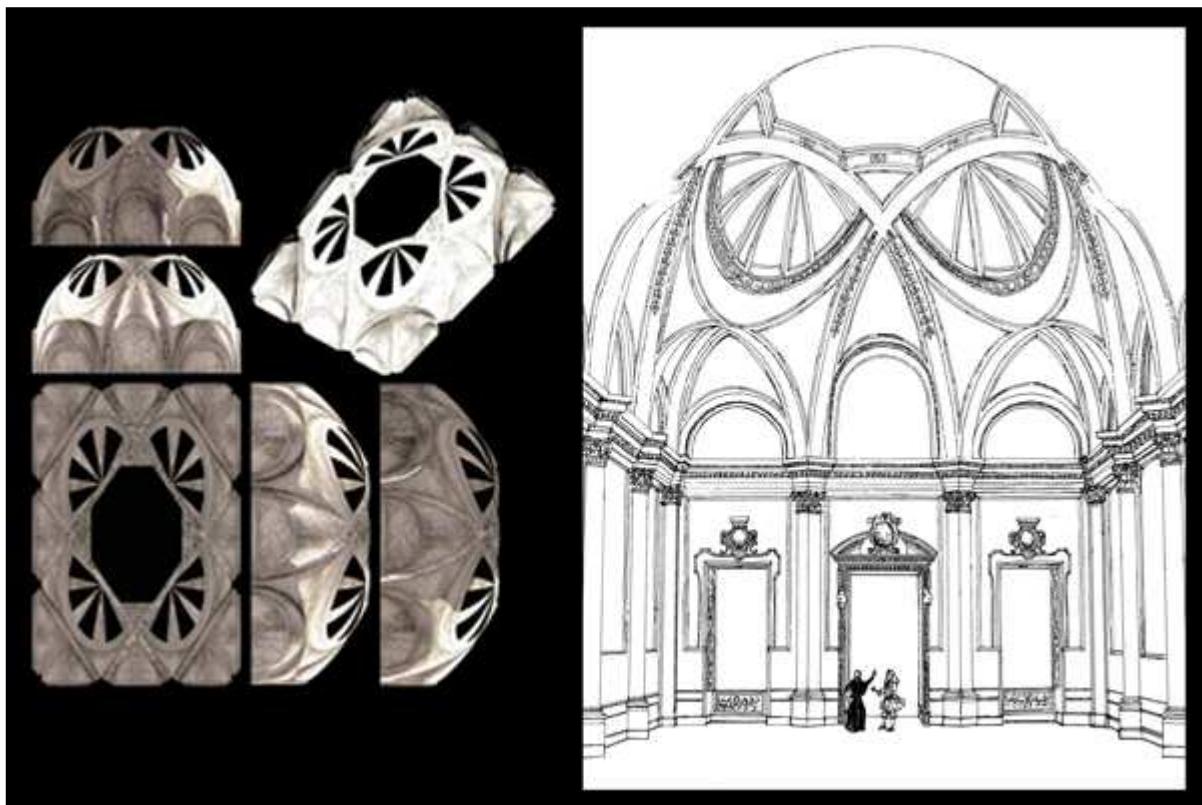
The study has been conducted with two parallel activities; in the first place, the analysis of the historical period in order to understand Guarini's intentions and the circumstances that may have had an influence over the construction; and secondly, the reconstruction of the technical material missing from the project. The study led to a 3D modeling of the environments, and of the complex and truly "new" vaults that Guarini designed to characterize the two main "saloni" of the residences.

The 3D models of the "volta a fasce" in Racconigi and the "volta a fasce piane" in Palazzo Madama pointed out the existence of "geometrical aberrations" and approximations within the original work, which were solved in the actual developed model, so that now their realization would be theoretically possible.

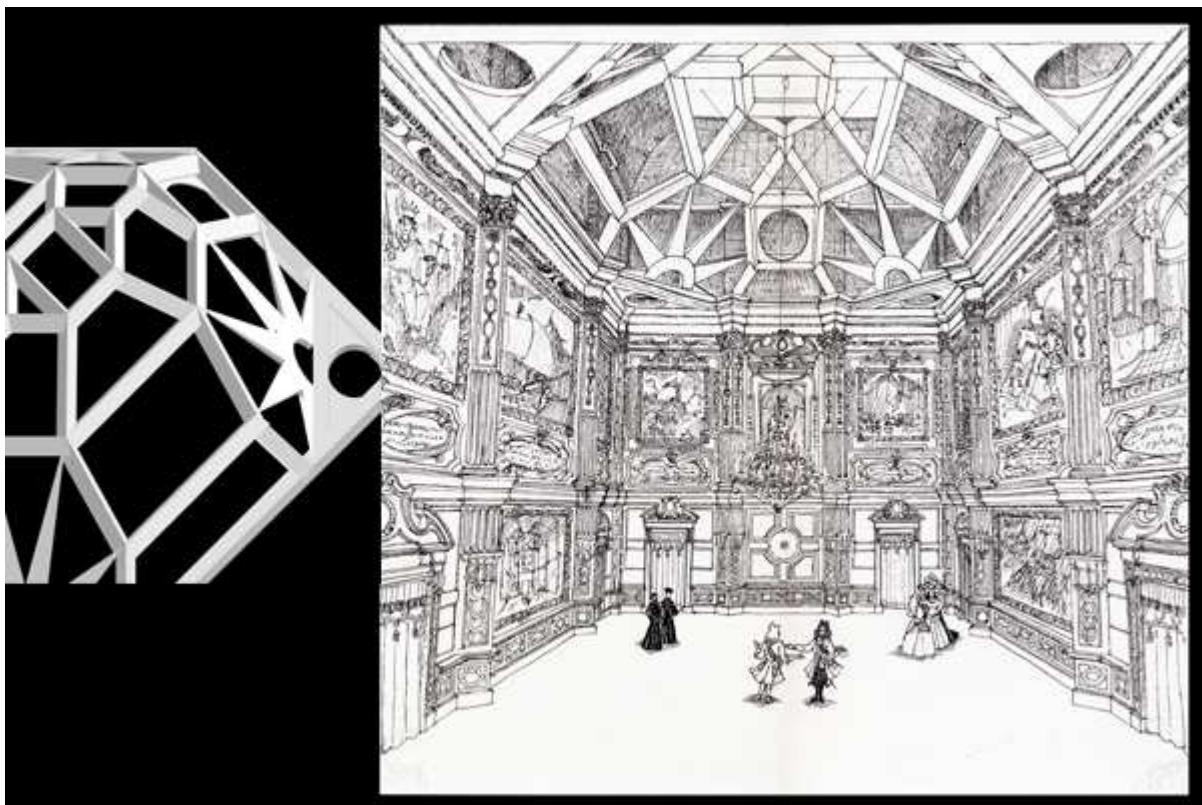
Despite the large employment of calculator aided technical drawing, the entire work used, as far as it was possible, the same geometrical constructions employed by the author. Furthermore, the "traditional" drawing techniques, from sketching to ink drawing, used all throughout the thesis project, have been used not only as final "medium" of the representation, but as a constant dialogue with Guarini's "modus operandi".



Sinthesis



Racconigi: 3D and vault sketch



Palazzo Madama: 3D and vault sketch

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