Abstract

The double spiral staircase of Chambord castle.
Single and double spiral staircases in Italy and in France between 15th and 17th century.

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The grand escalier – or great staircase – of Chambord castle is the study object of the thesis. The research aims to identify the correct identity of the structure: as a model derived from the French architecture or Renaissance style.

Than previous studies (which they have almost exclusively investigated the relationship between Leonardo multiple staircases and the grand escalier, and the lumaca quadruple Palladio, published in the Quattro libri) has proposed a comparison with similar models – both single and double spiral, in France and Italy – to highlight functional, formal and structural similarities and differences. The stairways studied are temporally located between the fifteenth and seventeenth centuries (included).

In France: the double staircase of Bernardini church in Paris (14th century) and the viz grande (1364) of the ex Louvre castle by Raymond du Temple.

In Italy: the lumage (1472) of Sant’Andrea church in Mantua by Leon Battista Alberti, the double spiral staircases of the wells in Orvieto (1528 – 1537) and in Turin (1563/4 – 1566) respectively by Antonio da Sangallo the Younger and by Francesco Paciotto da Urbino, of the Ortona fortress (15th – 16th century), the spiral stairway of ex Santa Chiara convent in Urbino by Martini (1477 – 1501) and the lumaca in Belvedere Vaticano (1512) by Bramante.

Are also considered the drawings of the multiple staircases by Androuet du Cerceau (in the Livre d’architecture), by Fra’ Giocondo (U. f.4124r and v) and by Paul Letarouilly (Bib. Inst. de France, 4460 of Ms. 4376).
For each staircase has developed a short description.

The stereotomy – directly related to the use of cut stone in the grand escalier – is focus in depth with Philibert De l’Orme’s treatise. Through an extract from Le premiere tome de l’architecture, the construction of a flat arch – a T-shaped keystone, while the others are S-shaped – is illustrated from the traict to the panneaux.

Fig. 2 Axonometric section model (drawn by the author).
Stereotomy theme is associated to the architecture oblique (atypical for Renaissance architecture). The oblique order of the grand escalier is a direct result of the spiral geometrical construction (the slope depends on the distance from the middle of About a possible influence of classical architecture is examined the Sanctuary of Primigenia (and its oblique capitals).

The observation regarding the correlation between Leonardo and Chambord consist of the ff. ff. 69r, 68v, 47v e 47r of Ms. B (practically the only one with these studies) and the flat arch of f. 1074r of C.A. (previous to the design of De l’Orme, but with a development exclusively horizontal), compared with the spiral flat arch of the grand escalier.

Unlike previous research, the reference to the grand escalier in the Quattro libri by Palladio is connected to the descriptions of Vignola and Guarini (descriptions of Chambord staircase appears in both treaties, ie Le due regole della prospettiva and in the Architettura civile). In addition, the research examines the differences between the Palladian lumaca and Chambord great staircase.

In the same time of historical research, the survey of the grand escalier has provided additional information through the three-dimensional photogrammetry - suitably accompanied by the manual survey. This metodology has permitted the construction of a three-dimensional model in scale (starting from the points cloud). In addition to the dimensional information, the survey has underlined the spiral geometrical construction of the great staircase.
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