

AN ATLAS OF POST-MEDIEVAL MASONRY STRUCTURES IN CAMPANIAN AREA METHODOLOGY

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ABSTRACT

In the last thirty years, the development of medieval and post-medieval archaeology and the definition of the scientific status of stratigraphy have stimulated the drafting of numerous studies on the construction techniques of the modern age.

Although there are manuals of constructive solutions adopted in Italy from the late Middle Ages to the early decades of the twentieth century, elements of the constructive civilization of each area are sacrificed in interventions on historical structures, due to the operators' inability to qualify them chronologically and to recognize their cultural interest.

Regional atlases of traditional techniques are therefore prepared due to the irreproducibility of material texts, to be investigated as individual identities, in the complexity of historical phenomena and processes.

For each building the gnoseology approach connected to the recognition of the complexity of the construction phases, supported by methods borrowed from the natural sciences, legitimizes the conservation of the stratifications.

In this perspective, the present research elaborates on the mensiochronological aspects of post-medieval wall techniques in Naples and in the ancient province of Terra di Lavoro, in the area of Neapolitan yellow tuff, stratified yellow tuff and Campania grey tuff.

It comes to the definition of formal and dimensional indicators to determine the age of construction of masonry: in its various forms of walls, cantonal, arches, pillars, buttresses and special pieces, such as cornices and fireplaces.

Dating in absolute the building stratifications through verifiable indicators contributes to the qualification as an expression of a particular civilization of the otherwise historically indistinct building, offering itself as a valid philological and critical contribution to the

historical characterization of each building episode, giving it historical individuality.

In this way, the definition of the age of construction of each construction element contributes, with the recognition of the stratigraphic relationships with the context, to the cultural qualification of the historical buildings.

KEYWORDS: Campanian tuffs, Stratigraphic analysis, Construction techniques, Naples, Terra di Lavoro

INTRODUCTION

In the last post-war period, the annalistic lesson played a central role in the emancipation of the restoration culture from the qualification of the built heritage according to nineteenth century academic normative grammars. Over time Croce's theoretical system was also shelved; although it showed an intrinsic philosophical strength, it was incomprehensible of the complexity of the monuments, as witnesses of cultural processes irreducible to the mere figurative aspects.

The rooting in the contemporary culture of the principle according to which heritage justifies its interest primarily in its testimonial value, that is in its character of a document of civilization, is due to the radiating of the annalistic teaching in the field of architecture history and architectural restoration (Guerriero, 1995). The definition of formal and dimensional chronological indicators, starting with those relating to masonry, is a fundamental tool for the qualification of cultural heritage.

MENSIOCHRONOLOGICAL DATA

A building can be studied in its components with the methods of architectural archaeology, for which it is necessary to elaborate, also for the medieval, modern and contemporary age, chronological indicators such as those of P.M. Lugli, G. Giovannoni and others about classical age walls, observing structures and finishes.

The realization of the mensiochronological atlas of traditional construction elements for the area of Campania region characterized by yellow and grey tuff for the modern and contemporary age, makes it possible to understand the stratification of each structure and also of each element, divisible into stratigraphic units, which highlight remakes and reuses. Each element is part of the historical individuality of the heritage and promotes the conservative practice of restoration, which excludes qualitative judgments on interventions.

In other words, the analysis of the historical heritage made with the architectural archaeology methods, using tools such as the mensiochronological analysis of historicized constructive elements (based on the statistical elaboration of morphological and dimensional data recurrences) records the changes in the technique in medium-long term.

This method makes us understand the procedural character of the History, denying the indistinct genericity of the so-called "traditional"

building category and giving back to each building component a specific historical individuality. In this way, we understand the aspects of the phenomena and the historical processes of the construction production of the examined territory, defining its characteristics and contributing to the critical-philological examination.

The accumulation of data becomes an effective tool of qualitative distinction. In other words, the metrology of the building components is an effective historical-critical practice for the preservation of the cultural heritage, bringing us back to the preservation of the “cultural territory”, introduced by P. Gazzola as a set of material testimonies of civilizations or, in other words, of cultural landscapes (Guerriero, 2004).

For this way, we take a hermetic perspective that brings back the meaning of art history as a discipline that affects all the artefacts (Kubler, 1972). However, the micro historical approach does not deprive the researcher of the possibility of evaluating, but changes its judgement criterion, leading to the aesthetic and not figurative sphere given to it, and substantiates its nature of unstable evaluation, historically individuated.

Recognizing the stratigraphic complexity of buildings and their elements takes on a character of knowledge: legitimate the preservation of stratifications but does not produce the reduction of the building to a mere palimpsest, giving archaeological investigations an independent hermeneutic value.

Research protocols

This study has geographically expanded the investigations carried out with the repertoires of construction techniques and practices (from the XV to the XIX century), outlining their local features and identifying their parameters with non-instrumental investigations in order to date them (extending the application field of the method) correlating them to the geo-lithological and orographic variables of the region, to the changing of legal, political and social conditions, to the transformation of the road networks and to the transporting possibilities of building materials.

This research examined the modifications of the structures (horizontal and vertical) and of the finishes (internal and external) of the buildings of Campania between the beginning of the modern age and the early contemporary age. This survey included the search for

sources regarding the construction materials available in the various locations and their processing, for the formation of a repertory of the analyzed structures.

The sources relating to the materials and construction techniques of the region were examined (literature, local architectural treatises and manuals, specifications and tariffs for the prices of the “genio militare”, “genio civile”, “deputazioni provinciali” and “decurionati municipali”) and many archival sources (statutes of masonry corporations, municipal chapters, notarial deeds concerning religious, noble and civil buildings, procurement of public works).

The sub-regional construction areas were identified. For each of them, repertories of the factory elements have been created, with specific protocols of metrological survey and computerized forms that have uniformed the procedures of assumption and evaluation of the data and have solved lexical problems, creating explanatory glossaries (Guerriero, Cecere, 2008).

The morphological and dimensional characters of many components of traditional building, philologically dated, were classified with photographic, metric and material surveys, verifying the coherence of documentary information with the stratigraphic evidence of the analyzed contexts.

The parameters of the studies conducted over the last thirty years have been used to represent modern wall structures (Calderoni et al, 2007; Calderoni et al, 2010). For each sample of walls (Figures 1-3), the following were indicated: the location; the geo-lithological and metrological characterization of the material and the related processes; the essential components of the mortar; the type (texture and dimensions of the joints); the processes of alteration; any protective and finishing layers; finally, the conclusions of the critical-documentary analysis were indicated (Guerriero, 2016).

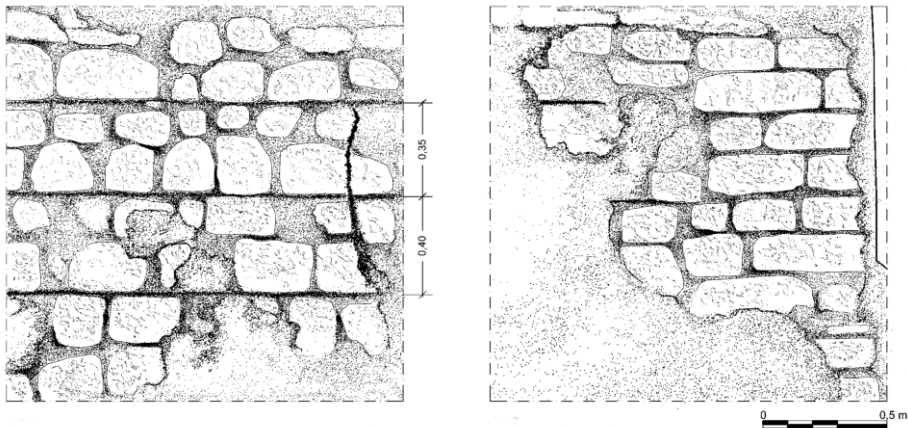


Figure 1: Napoli, church of Santa Caterina a Formiello, north transept wall (1501-1504): “a cantieri” masonry realized with two alignments of yellow tuff stones high 35-40 centimeters.

The identification data ensured the repeatability of the observations and provided useful indicators for estimating the credibility of the archaeometric findings and determining the typicality degree of the examined walls. The parameters of the studies conducted over the last thirty years have been used to represent modern wall structures. For each sample of wall, the following information were indicated: location; geo-lithological and metrological characterization of the material and related processes; essential components of the mortar; type (texture and dimensions of the joints); alteration processes; any protective and finishing layers. Finally, the conclusions of the critical-documentary analysis were indicated (Guerriero et al, 2012).

The identification data ensured the repeatability of the observations and provided useful indicators for estimating the credibility of the archaeometric findings and determining the typicality degree of the examined walls. The stone material (yellow and grey tuff) has been classified through: geo-lithological nature; petrographic evaluation (structure, grain, texture); geometry; size; traces of processing; presence of any distinguishing marks.

Due the particular geo-lithological and historical-cultural conditions of the field of study, distinction was made between: horizontal rows of squared and planed ashlar walls; horizontal or sub-horizontal courses walls (made with rough stone of differentiated sizes); “a cantieri” walls, with split stones laid according to periodic alignments.

The dimensional analysis provided for the above-mentioned structures the dimensional ranges and frequency ranges. The mortar has been analyzed through the characteristics of the binder, the type of inerts, the grain size, the horizontal alignment and the vertical joints. The above-mentioned observations were made on the outer and inner wall, section (through breaches caused by collapses or interruptions of the construction site) and the plant. In this way, it was possible to carry out the contextual examination of the walls and internal boulders. Similar investigations were carried out for cantonals, openings, pillars, arches, vaults and stairs.

For the cantonals, data similar to those of the walls were obtained, observing the similarities between them and the adjacent walls. The flat arches have been analyzed through the parameters identified for the walls, with specific variants (characteristics of the vertical profiles and morphology of the architraves).

The characteristics of the third and fourth sides of the pillars and the geometry of the profiling and the morphology of the stones of the arches were also analyzed.

The analysis of the vaults, finally, has been conducted with the stratigraphic examination and the metrological investigation, to understand their: formal typology; geometry; measures of floor below; height; presence of particular of special elements; size; constructive characteristics of the lower side with the dimensions of the stones; nature and components of the mortar and the dimensions of the joints.

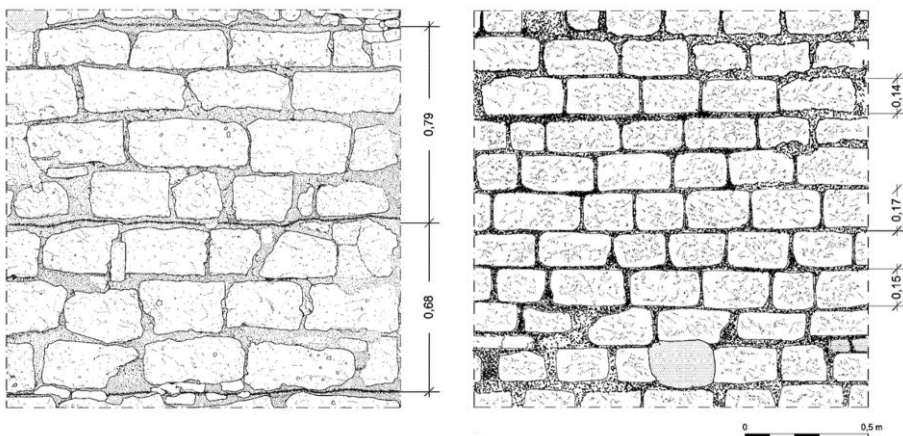


Figure 2: on the left, Napoli, church of S. Maria delle Grazie, north façade, yellow tuff masonry with irregular rows of "bozze", high 68-79 centimeters (early of the XVIII

century); on the right, Portici (NA), Mascambruno palace, east façade, ground floor, yellow tuff masonry with horizontal rows of “bozzette”, high 14-17 centimeters (half of the XVIII century).

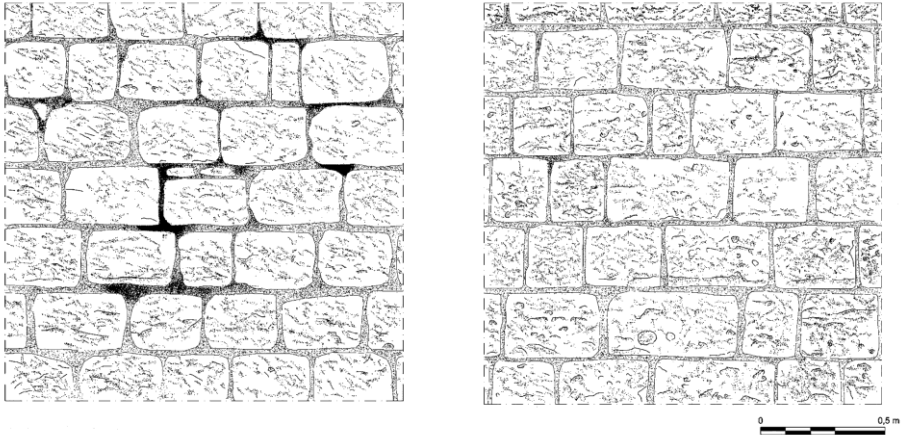


Figure 3: on the left, S. Maria Capua Vetere (CE), building in P. Fratta street, eastern façade, ground floor, grey tuff masonry with rows of blocks 22-24 cm high (first half of the XIX century); on the right, Carinola (CE), Spano farm , south façade, grey tuff masonry with rows of blocks 25-27 cm high (second half of the XIX century).

CONCLUSIONS

The modern concept of monument is based on the acknowledgment of the impossibility to give a historical-artistic value to a factory on the base of a coherence with a presumed grammar of beauty. So an anthropological-cultural attitude (or for other aspects of the *nouvelle histoire*) is therefore assumed as an instrument for the qualification of the heritage, which is identified with the set of historicized anthropic traces; each of them is recognized in its testimony individuality, a memento of the irreducibility of the complexity of historical facts and processes.

According to such indications, the constitution of the building heritage as a whole of tectonic presences (material evidences, to use a more appropriate archaeological terminology), historically founded, as a product of complex factory stratifications, derives from its qualification (Figure 4).

By this way, we get to the subtraction of each architecture from the a-historical category of “traditional” building (improperly considered as “spontaneous”, “vernacular”, “minor”), recognizing its specific

cultural character, in order to renounce to methodologically uncertain and operationally ineffective hierarchical categorizations.



Figure 4: Napoli, building in Vico Lungo Tre Regine, material survey of a stratified façade with masonries of various construction techniques.

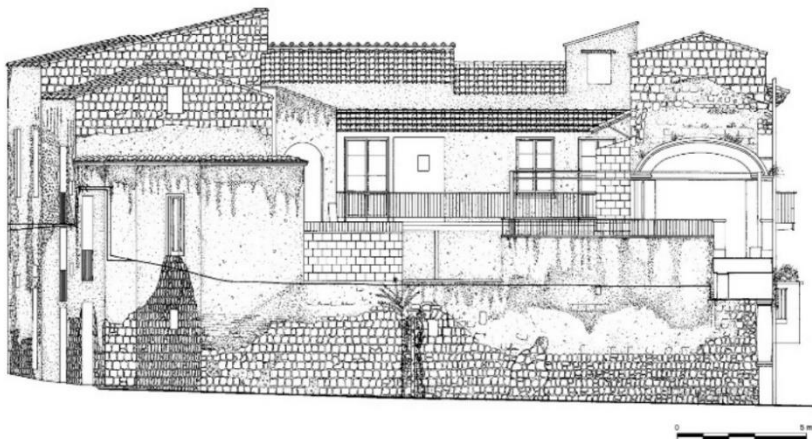


Figure 5: Aversa (CE), Biancolella palace in Principe Amedeo square, north façade (late XIX century), material survey.

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