ISSN 1974-7950 Arkos

Arkos fifth series n.15-16 july - december 2016

ARKOS

SCIENCE RESTAURATION VALORISATION

Poste Italiane Spa - Spedizione in abbonamento postale - 70% - S1/BA

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Arkos
quarterly
Fifth series - n. 15-16
July-December 2016
ISBN 978-88-8393-129-1

cover: details of the old and new pavement of the Garden of Memory at Vinaroz

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All articles published - except the Flash section - are subjected to review by the senior management and the Scientific Commettee of the magazine.

The editorial guidelines for authors can be downloaded from www.syremont.it

Other texts and materials proposed for review or information may be sent to headquarters in Rome

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www.artigrafichefavia.com
Tel. 080/535 5219 - Fax 080/535 8614
C.F./P.I. 06392350721 - R.E.A. Bari 482861

isbn. 978-88-8393-129-1
Cosenza court authorization n. 848 12/11/2008
advertising does not exceed 45%

Summary

Abandoned architectural heritage.

by Claudio Montagni

The contribution of Fernando Vegas and Camilla Mileto: *Dalla Tavola Rasa al giardino archeologico. Il Giardino della Memoria di Vinaroz,* contained in this issue of Arkos,
provides us with an opportunity to come back and discuss a topic that today is extremely relevant: the reuse of historic buildings that have been abandoned or whose original function is lost, despite having been built with those forms to satisfy a specific usage.
Examples of such archetypes are plenty and belong to almost all the historical periods that make up the history of our architecture: various churches, convents and religious buildings of every era and size, fortified barracks and abandoned structures throughout the Italian territory, industrial buildings belonging to the period of the first industrial Revolution, sometimes with associated housing facilities for the workers, marine and/or mountain camps, sanitariums that sprang up throughout the country, old disused hospitals, residential quarters of the late 19th and/or the early 20th century , abandoned port facilities and silos granaries, lighthouses, residential buildings and villas built in specific areas of difficult access, castles, entire villages in rural areas, etc.
The list goes on and on. It is sufficient to travel around the Italian peninsula to see how many architectural structures nowadays do not fulfil their original role, usually because so-called progress has affected their functions, making them useless and especially costly to maintain, thus leading to their abandonment.
What can the future of these abandoned architectural structures hold?
The answer is not easy for several reasons.
Many of these structures are placed under the Legislative Decree no. 42/2004, others belong to State Property and often are unavailable for their alienation, still belonging to unknown owners or owners who are difficult to find and so on.
The interest of this editorial is to treat a specific category of these abandoned structures: those linked to the Code of Cultural Heritage.
Most of the examples cited are subject to specific and sometimes environmental constraints even concerning the Code of Cultural Heritage.
The historic moment we are experiencing is certainly one of the most favorable for intervention on Cultural Heritage, due to the chronic lack of funds. This aspect is certainly one of the main motives to ensure that the conditions of these monuments do not change.
Yet it is not always the only cause. The owners of these assets, both private and public, would be willing to free themselves from those properties which entail only expenses without bringing any revenue, even those necessary for their maintenance.
The administrative process that a hypothetical buyer of one of these buildings must accomplish is such that even the most determined and resolute buyer would eventually give up, as indeed often happens.
In other nations such operations are considered praiseworthy and therefore are rewarded by those who must issue any authorization papers. In Italy, the reverse is true. Indeed, our hypothetical buyer is exposed to an obstacle course worthy of the most difficult survival course you can imagine, because they usually forget the fundamental axiom: if the asset is not used it is because of changed conditions of contemporary life, so if you must revive it, it needs to be adapted to contemporary demands.

The fortifications of Malta: forms of decay and restoration issues between matter and architecture.

by Marta Acierno

ABSTRACT

Research on architectural surfaces deterioration is generally very advanced, but while the studies focused on diagnostic investigations are very depth, a minor attention is payed to decay analysis and assessment developed in relation to the building context, either figurative or environmental. Such a statement seems meaningful to enhance restoration activities focused on attentive care and protection, rather than urgent and forcedly conclusive actions.

Starting from an investigation carried out on the Maltese walls and aiming at developing researches able to support operative strategy based on prevention and programmed maintenance, the present work intends to highlight connections exiting between decay manifestation and its context[1]. This approach intends to hone the ability to analyze the underlying causes and, above all, to evaluate a range of possible preventive actions sometimes neglected.

Introduction

The complexity of each manifestation of decay, necessarily conditioned by materials, architectural shapes and environmental context, requires, within its diagnosis and even more inside restoration phase, a complex study. This may not be limited to the identification of the decay patterns and the automatic designation of the intervention aimed at removing their effects[2].

A particular deterioration phenomenon may result harmful in a certain context and tolerable in another. The intervention for its removal may be compulsory or even more destructive than the phenomenon itself. The deepening of the conditions of a particular degradation may lead, as a matter of fact, to the identification of actions not always and not only aimed at its inhibition but just at its deceleration.

From a methodological point of view, the quite common practice that establishes a direct correspondence between identification of the phenomena of decay and conservation actions, has often showed its limits. These are mainly referable to the fact that often the diagnosis is achieved aside from the assessment that rises from the critical comprehension of the building.

Moreover, diagnostic reading acquired in a too standardized and simplified form together with specialized researches developed

[1] The aim of spreading a restoration practice mainly oriented towards prevention and programed maintenance is nowadays widely shared. In Italy the experiences introduced during the second half of the last century by Cesare Brandi, based on the idea of the preventive restoration, and later developed from Giovanni Urbani with the "Piano pilota per la conservazione dei beni culturali in Umbria" are today carried on by the Istituto Superiore per la Conservazione ed il Restauro. Many projects are carried on including the 'Carta del Rischio' (Brandi 1956, pp. 87-92; Urbani 1973, pp. 5 e sgg.; Accardo et al. 1978). On the international side the Cracow Charter proposes an important methodology upgrade mainly focussed on the concept of maintenance: "Maintenance and repairs are a fundamental part of the process of heritage conservation. These actions must be organized with systematic research, inspection, control, monitoring and testing. Possible decay has to be foreseen and reported on, and appropriate preventive measures have to be taken…." (Cristinelli 2000).

[2] This argument has been widely discussed by the scientific literature, particularly here we refer to Giorgio Torraca study on the Paestum temples (Torraca 2001).

Relationships between stains and accessory minerals on stone materials.

by Roberto Bugini, Luisa Folli

ABSTRACT

Natural staining of building stones requires the presence of iron-bearing accessory minerals (iron sulphides): the action of weathering produces rust stains irregularly spread or aligned in bands. Some stones, used in Lombard architecture and containing iron sulphides, were studied to appraise both the stain morphology and the damage caused by natural staining according to the different stone setting. The stones investigated are: Montòrfano white granite (lake Maggiore - Piedmont); Candoglia - Ornavasso veined calcitic marble and Crévola whitish dolomitic marble (Òssola valley - Piedmont); Musso - Olgiasca grey calcitic marble (lake Como - Lombardy).

Introduction

Building stones are affected by different decay phenomena: erosion, disaggregation, contour scaling, spalling, cracking, salt efflorescence, calcium sulphate skin etc. Among these phenomena, staining is striking at the first sight because it disturbs the perception of an architectural surface. In fact stain produces a decay without loss of material or significant deposition, but the decay is marked by an unsightly chromatic modification. The staining phenomena on stone surfaces primarily implicate the corrosion of metals: iron minerals easily oxidize to iron hydroxide (rust) in humid climates.

The definition made by ICOMOS-ISCS is: “Staining - Kind of discolouration of limited extent and generally of unattractive appearance. Discolouration is frequently produced by the corrosion of metals (e.g. iron, copper, lead)” [1b].

Iron and building materials

The presence of iron on stone surfaces has two different origins: the first is furtuitous and it is related to metal works always used in a building **(Fig.1)**, the second is substantial and it is related to iron minerals naturally occuring in some stones used for building **(Fig.2)**.

Metal works are widely used in stone architecture: Iron, and its alloys, is used in different ways: as cramp to make a better connection between ashlars or to anchor sculptural elements; as clamp to avoid the detachment of stone slabs of a veneering; as band to avoid the cracking of column shafts **(Fig.3)**. Iron is also used to make the network of gutters and water pipes required to drain off rain waters from a bulding; the pins connecting the gut-

◆ **FIGURE 1**
ACCIDENTAL RUST STAIN ON A WELL-CURB MADE OF WHITE LIMESTONE (“PIETRA D’ISTRIA”, VENICE).

Methodological questions on the analysis of the constructive consistency of old masonries in seismic zone: the Town Hall in Mirandola (Modena, Italy)[1]

by Francesco del Monaco

ABSTRACT

Based on the Italian seismic code, this paper focuses on investigation and representation methods, in order to build a model of behaviour coherent with the real substance of historical buildings. Therefore, the approach of the Index of Quality of Masonry, implemented by A. Borri, has been resumed and a new index, the Index of Quality of Masonry Connections IQCM, has been defined. The parameters of the "rule of art" and their relative evaluations have been inserted in a new model of masonry inspection report form. This procedure has found right application to the case study: the Town Hall in Mirandola (Modena, Italy), struck by the 2012 earthquake. Analysing the different masonry alignments, on the one hand, the masonry panels have been catalogued with the determination of the corresponding IQM, on the other hand the connections between vertical walls have been represented three – dimensionally with the attribution of the relative IQCM.

Introduction

The Italian Guideline on Cultural Heritage (D.P.C.M. 09/02/2011) [1], adopting the recommendations for analysis of masonry structures described in the Italian Code for Structural Design and its instruction document (NTC'08, Circolare n. 617/09) [2], provides a path of knowledge and investigation of existing buildings, in order to be able to reliably estimate the current seismic safety and obtain an effective strategy of intervention, as far as possible respectful of the historical, constructive and material reality of damaged masonry structures.

As a consequence of this rigorous approach of the Italian code, it is necessary to adopt investigation and representation methods, able to give detailed information about both the constructive consistency of existing buildings, taking into account also all the historical stratifications, and the masonry map cracking, succeeding to recognise the possible collapse mechanisms and the causes that have activated the damage.

The present survey moves in this direction, supplying useful tools for the mechanical characterization of both masonry blocks and the types of structural constraints, in order to design a structural behaviour model coherent with the real substance of the historic building.

In order to understand and to evaluate the constructive and stratigraphic complexity of the masonry artefact, and then to reproduce the latter through a three – dimensional calculation model, it has been tried to define an evaluation criterion of mechanical masonry features, able to allow to determine all that parameters that take part of the so-called "rule of art"[2] of masonry structures. Starting

[1] The topic of the present survey has been carried out extensively inside the University Thesis of the author (F. del Monaco, *Questioni di metodo nell'analisi della consistenza costruttiva delle murature storiche: il caso di studio del Palazzo Comunale di Mirandola (MO),* Tesi di Laurea, Università di Bologna, A.A. 2013-2014).

The Sardinian coastal towers in the Mediterranean. Cultural references in the definition of masonry construction techniques.

by Caterina Giannattasio, Silvana Maria Grillo, Stefania Murru

ABSTRACT

The research focuses on the system of coastal towers in Sardinia. It aims to investigate construction and materials features, with particular emphasis on masonry techniques. Given the large number of buildings to analyze, we decided to structure the study in homogeneous districts taking care to safeguard a global perspective that preserved the specificity of the system. From a systematic investigation *in situ*, nine representative cases have been identified. They were have been selected from the towers belonging to a precise chronological period (16th-17th centuries). With the aim to evaluate the many nuances of the topic, we decided to adopt a multidisciplinary and integrated protocol: the towers have been studied from a historical, architectural and typological, technical and mineral-petrographic point of view, opting for a stratigraphical approach tailored to peculiarities of the cases studied. By cataloging, georeferencing and inserting into a geographic information system was possible to establish a dynamic and multi-layer data comparison and thus to reach a critical synthesis of the obtained results. The multidisciplinary approach, supported by the integration of new technological tools, reveals an interesting methodology, which could be also available in other contexts and to a larger scale. Furthermore, the systematic data acquisition and processing of masonry techniques included in a well-defined and documented chronological context could be an important basis for the dating, by comparison, of contemporary buildings.

Introduction

In Sardinia the activity of the coast fortification reaches its peak in the 16th and 17th centuries, under the impulse of the Spanish monarchy. On the sources of the *Archivio di Stato di Cagliari,* the *Archivo General de Simancas* and the *Archivo de la Corona de Aragón* in Barcelona this edification process is very well documented. That allows us to philologically date several towers. From this awareness comes the desire to analyze several aspects of the masonry techniques adopted in the Sardinian coastal towers built between 16th and the first half of 17th century during the Spanish domination. In detail, with reference to these structures already philological dated, the main aim was to define the construction invariants that could represent a benchmark for comparison and dating of contemporary structures such as minor architecture, already difficult to date. The choice of the topic has also been corroborated by the awareness of the lack of studies, referring to Sardinia, on chrono-typology of masonry structures.
Conscious of the influence that Spanish Kingdom had in defining construction culture in the countries under its control within the specific period investigated, the study was open also to the comparison between Sardinia and other Mediterranean contexts. Finally, to appreciate the variants related to the commissioning and then to the economic resources and the quality of the workers, the techniques were also analyzed with respect to this parameter.

From Tabula Rasa to archaeological garden: the Garden of Memory at Vinaroz

by Fernando Vegas, Camilla Mileto

ABSTRACT

In 2001 the church and convent of San Francisco in the Castellón village of Vinaroz were destroyed, leaving only part of the north wall of the church and its interior flooring standing. After this disaster, the former site of the church grounds was asphalted to become a car park, and with the passing of the years the remains of the wall and flooring deteriorated considerably due to both natural causes and vandalism. The authors of this text were commissioned to design and build a garden to evoke the historic memory of the building and of the gardens and orchards surrounding it, restoring dignity to the location while transforming it into a place for meeting, relaxation and amusement, recovering a living space for the community.

Historic background

The original Franciscan convent located in the site of the garden was built in the 17th century and the church and convent were blessed on 19th June 1662 **(Fig.1)**. All the celebrations in the new convent and church were filled with the faithful, and soon the new church came to be used as a burial ground for the people of Vinaroz from all walks of life.

As a result of the confiscations of Mendizábal (1837) the convent became municipal property. In 1841 Vinaroz Town Council requested the building be used as a public prison, a move which was finally approved on 14th February 1843 on the condition that it would be adapted for this use in a maximum of 6 months. This concession was to be annulled if conditions were not fulfilled. After several conflicts in carrying out the necessary building work, it appears that the convent of San Francisco did not return to the hands of the State. In 1867 the convent became the site of a hospital run by the Sisters of Consolation. Some time later the hospital was moved to free the Convent of San Francisco as headquarters for a battalion, although shortly afterwards, in 1885, a cholera outbreak meant it was once again to be used as a hospital[1].

We know of the conditions of the group of buildings from a description written by Romualdo Vizcarro in 1894: "*The space of the former convent of San Francisco is currently occupied by the Municipal Hospital, the Courthouse and the district prisons. Prisoners occupy the four corridors that form the cloister and the central courtyard. This courtyard has a tiled floor that is slightly sloping towards a drain which leads rain and cleaning water outwards. In the centre of the courtyard there is a latrine in a shelter. Biological waste is accumulated in the underground deposit that was once used by the friars as a water deposit. It is said that the friars were the first to install a wheel to draw water from this deposit. I add this as a mere anecdote, and cannot swear to its accuracy.*

The building also incorporates two bedrooms adjoining the walls of the cloister and two cells. All these rooms and the rest of the building are kept extremely clean. Due to their capacity the bedrooms do not always correspond to the number of men they accommodate. The sunlight floods the courtyard and reaches part of the cloisters. In short, the installations can be described as acceptable when compared to the older constructions which fulfil these functions in Spain. However there

[1] Cfr. Baila Pallarés, M. A., (2012). Los conventos de Vinaròs. Fundaciones, conflictos y frustraciones. Ed. Associació Cultural "Amics de Vinaròs". Vinaròs

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