

Urban image and historical buildings: Renders and paintings conservation, some theoretical and practical implications

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ABSTRACT: The wall coverings of traditional architectonic surfaces, besides their philological importance for the definition of the architectonic image of the object, are sacrificial layers whose progressive deterioration allows the survival of the porous materials that constitute the structural part of the ancient constructions. These types of constructive solutions maintain very close links with the architectonic expression and with the behaviour of those ancient constructions. When new concepts and new materials are brought in, quite often requiring the demolition of the old ones, the behaviour of the object is deeply affected both in its aesthetic performance and in the corresponding constructive concepts. This paper, and oral presentation, will discuss the methodological and theoretical aspects of the thesis expressed, and present some case studies of conservation and renovation of renders and paintings in historic buildings, which have been developed with LNEC expertise.

À memória da João Laginha que num dia de Primavera apareceu no LNEC oferecendo-me I Colori di Roma, de Bente Lange, mudando a minha vida.

1. FIRST KNOW AND THEN PRESERVE

«Il colore di una superficie architettonica no è un abito intercambiabile.»

Laura and Paolo Mora, 1984¹

By accepting Brandi's words that "restoration" «... results of the will to reconstruct the critical text of a work of art»ⁱⁱ, then, the renovation of renders and exterior paintings in historical buildings, from the theoretical point of view, acquires new insights: when old coverings are removed with no proper documentation of the chromatic layers, the complete history contained in the superposed strata is irreversibly erased, and a significant part of the historic materiality of the object is lost for ever.

The solving (through restoration or renovation) of the urban image of the "historic cities" has favoured, for a long period, a theoretical approach with a marked "culturistic" trend about the town colour, about its variation through the years and about the psycho-physiological and anthropological background of colour perception. Furthermore, it has been focused uniquely on the cognitive aspects of vision and forgetting all the technological and material side of the problem. This kind of approach has led to serious inhibitions when practical questions were put: which colours should be applied, which materials should be used, which compositions; which paintings and with which pigments to work? How to promote the compatibility of new and old covering systems? How to clean, consolidate original coverings, restore and reintegrate the *lacunae*? The attempt to find answers to these questions requires research into new ways of interacting between science and history, between research and conservation project, between conservation and construction.

Presently, new techniques for the solution of some major problems of ancient renderings are known, namely as regards loss of adhesion and loss of internal cohesion. These techniques are

more or less well mastered by the “conservation engineering”, but it is necessary to assess the feasibility of their application to more current and less “monumental” interventions, namely in wide interventions of urban conservation.

To a certain extent, we could say that the intervention philosophy has substantially changed. In the field of theoretical reasoning, the systematic renovation has given way to its antagonistic position. A safekeeping intervention will always be a transforming one, thus implying awareness of the historical legacy, as well as the perfect consciousness of the actual time of the very intervention. The highest disciplinary difficulty lies in determining solutions that will be more than: casual actions, the mere adoption of the latest fashion, the temptation to adopt a philological rewriting in a new format, and finally, the re-establishing of a somewhat mimetic or kitsch historicism.

Any conservation procedure is based on knowledge. In fact, it is precisely because we know the actual meaning of the historical, artistic, constructive and other values, which lie within the architecture of an object or in an ancient town, that we decide to preserve them. Therefore, we preserve on the basis of and in accordance with our ability to “see”, and perceive those values. Obviously, this is a quite difficult assignment.

2. IN THE HISTORICAL TOWN, COLOUR WAS NOT EPHEMERAL!

Was the colour indeed a pre-eminently ephemeral element in the historical town?

The resources of the envelope medium, the cultural relations of the town with the outside, the political facts, are coherently articulated, and therefore lead to specific aesthetic preferences. That intimacy provides the urban image with the cultural values specific of that territory and of its inhabitants over the years, becoming thus a significant legacy both in terms of identity and anthropology. Consequently, the conservation or replacement of the town colour is not a minor aspect, from either an architectural or urban point of view. Therefore, a more accurate disciplinary and design framework should be required, as regards the control of the conservation or replacement of colour, so as to ensure that decision-making is sufficiently separated from other volatile and narcissistic interests or from the individualistic terrorism that presently undermines the bonds between architectural unity and urban collectivity.

All over Portugal, “urban rehabilitation” means almost invariably imposing the excessive predominance of the values of use (of the “new”) over the values of the memory. In the case of the town colour, that tendency is integrated in a “*ravalement*” point of view that promotes the “cleaning” of stone with excessive treatment (which damages it). This means that the old coverings (renders and paints) are either systematically stripped so as to achieve a kind of traditional “naked stone” or replaced by cement mortars, the latter being inevitably painted with acrylic or vinyl paint. Usually, this results in dramatic alteration of the “visible identity”, which affects the authenticity of the historical urban image.

As far as the disciplinary field of colour and its relation with architecture is concerned, I think that in Portugal there is not yet a true aesthetic consciousness. In fact, very often we ignore the true meaning and the historical importance of colour and only rarely these factors are fully taken into account by the architectural design.

3. COLOUR AND CONSERVATION THEORY

The main critical problem that is placed today, when we are confronted with research and decision-making about the colour of the historical town – especially when we are in the presence of archaeological vestiges and specific material evidence about the historical colours – as Paul Philippotⁱⁱⁱ stated, is to determine to what extent the former esthetical function, in reconstructing the interpretation of a certain urban image, can still be re-established or not.

The attempt to find some answers to that issue inevitably reminds us, on the one hand, of Cesare Brandi’s “*restauro*” theory, which is based on the potential unity of fragmented works, and, on the other hand reminds us of the problem related with the warranty of authenticity. The latter forces us to limit our interventions to the potential capacity of the remaining elements that have been effectively preserved.

In this field of activity, it is essential to ensure the strict observation of the basic principle of conservation, which is repeatedly affirmed by Brandi, “*restauro ends where hypothesis begins*”, and here, according to Philippot “*every hypothesis must be banned*”.

The actions referring to urban conservation imply, as in other repair work, a careful critical analysis. In fact, through that analysis, the historical town, similarly to any work of art, must be seen and interpreted in all its complexity and as a whole entity. The problem is theoretically complex, but as Paul Philippot and Sanpoelesi^{iv} highlighted, is not significantly different from the critical problem related with any conservation (by restoration) action. The solution of these dilemmas depends on the careful thinking of the values at stake, on the authenticity of the original creative moment and on its relations with the evolution of time, which cannot be disregarded, both at the level of the individual work (the building) and at the level in which it is integrated (the historical town).

Intervening in the historical town is to recover the component of the town that is an intrinsic part of its culture, but which will always be considered from a recent point of view. In fact, the town is a living body, being as such, obviously mutable. The formable episodes of the town reveal a complex system of inter-relations, in which the architectural culture and technology are integrated.

The chromaticism in historical architecture is as closely dependent on philology, for expressing the different languages and their relation with the time (styles), as on the technological means available in each period. The study into both aspects can nowadays be achieved with the help of accurate methods. Furthermore, the conservation, “restoration” and repair actions can also be accomplished using various procedures.

4. THE NEED FOR A NEW DESIGN THEORY

Excessive ambition in past “restoration” projects does not give us the possibility of disregarding nowadays the strategic importance of the principle of “minimum intervention”, no matter how unpopular it may seem to promoters and designers. However, nowadays in Portugal that attitude is fairly rare. Except for a few examples, generally, we tend to adopt over-comprehensive design strategies, and consequently we design too much and execute too rapidly, when we should design less and construct more slowly.

Manfred Koller’s historical researches have proved that, in Austria, the greatest losses of historical substance have been observed in the State monuments that were run and managed by particularly competent technicians (from the Rieglane school and in close contact with the best European thinking schools, as the Italian one), who had a high economic capacity of intervention to promote “restoration” works. The losses have been particularly observed at the level of coverings, renders and limewashes (both outdoors and indoors) with historical significance^v.

5. COLOUR IN ARCHITECTURE NO LONGER REQUIRES “KNOW-HOW”, INSTEAD IT HAS BECOME AN ACT OF CONSUMPTION.

Assigning a specific colour to any object is a purely verbal convention: the bodies have no colour; the luminous residue received by receptors is decoded in a subtle differentiated way by each observer. When we are in the presence of a different light, despite all efforts that can be done to refine colours, these only rarely are equal, most of the times they are only similar. The material of the colour is as important as the very colour. Therefore, we can conclude that the colour in conservation cannot be separated from its practical materialisation.

In this field, the practical application of science has well defined limits: the expression of lime paint can neither be defined in a very comprehensive way, nor reproduced through its chromatic co-ordinates.

The colour in architecture is neither independent from the surface on which it is applied, nor from the material and procedure used for its application. Even in a simplified approach into the basic principles and colour theories, it can be observed that, due to the phenomenon of *conditionally equal colours*, it is almost impossible to reproduce with high accuracy the

chromatics of an original surface (even more when the later has been submitted to the effects of time), no matter how sophisticated the modern paint technologies are.

An effective analysis method and a well-structured diagnosis are not enough to outline the corrective interventions to be developed on the *facies* of the historical town. There are always shadow zones that require another type of complements, and these, as previously observed, have an essentially critical nature.

Most of the Portuguese historical *conservation areas* include nowadays highly heterogeneous buildings, extensive contemporary interventions, a few modern interventions, some purely aesthetic falsifications and only very few interventions based on “historical” material evidence. The availability of organised historical documentation, about the issue related with urban image is very reduced. In these fields, the possibility of developing accurate analyses is very often, and in practical terms, highly limited.

When a great part of the material evidence is lost and when the complementary information (historical and others) is insufficient, the responses to the re-qualification of the urban image require another design capacity. That capacity is intended to correspond best to the requirements of this framework (historical and socio-anthropologic values, values related with the organisation of the space, formal values represented by rhythms, colours and textures, etc.) and to the requirements of the very building (based on philological and historical interpretations).

Ever since almost half a decade of intensive use of cement Portland and modern paints (acrylic, vinylic, etc.), it is increasingly difficult to find old buildings, inside the so-called “historical centres”, which present material evidence that gives the possibility of reproducing accurately their appearance over the years. In most cases, the plain and simple information void is the sad reality.

These lacunae raise the need to develop new intervention technologies, by conjugating them with the capacities of new design technologies, namely those capable of operating within the new disciplinary field, which has been designated as environmental colour design. This way, new and fascinating research paths are emerging, which have been, up to now, almost absent from research in architecture.

6. THE NEED TO RE-ESTABLISH THE “LIMEWASHING TECHNIQUES”

Many materials and modern techniques, which have been used by the existing building construction industry, are unable to express the plastic values of the old solutions and are highly inappropriate from the point of view of performance, especially as regards the contact with old structures. Nowadays, the re-use of traditional lime and earth technologies is therefore justified from various viewpoints: i) constructional, due the high compatibility with old buildings; ii) esthetical, because they are a natural form of ensuring the harmony with the territory and with the traditional envelope (roofs, floor coverings, language of the traditional architecture); iii) historical, because they integrate all the interventions in a single common denominator, in a *continuum* that goes beyond the modern technological reasoning.

Presently, it has been common belief that the available lime (of industrial production) is not satisfactory and therefore cannot be used in the making of exterior coverings because these would not have appropriate quality – this way justifying the use of cement-based coverings in old buildings -. Nevertheless, that belief has no scientific justification and, in addition, it leads to serious processes of adulteration of the patrimony^{vi}.

The specific textures of lime technologies, the differences in porosity, their transparency as vehicle and the reaction of mineral pigments show a unique behaviour in the presence of light, which is converted into a fundamental value in perceptive and aesthetic terms. The parameters of the chromatic behaviour of these solutions are almost impossible to reproduce with techniques and materials that are not physically and chemically similar. This fact places many doubts about the use of most modern solutions, despite the existence of new and promising possibilities (the new inorganic binder-based paint solutions, such as silicates).

7. NOT ONLY LIME MORTARS AND “MINERAL PAINTS”

Until recently, the main purpose of the paint industry has been merely to fulfil the paint or re-paint requirements of the new buildings and, simultaneously, the use of these products has been extended to old buildings. Nowadays, in some European countries, and based on ecological positions, there has been a tendency to invert that attitude. In fact, the use of solutions with an ancestral basis, such as mineral paints, has become popular in the construction of new buildings. Furthermore, the recent products have been developed so as to achieve aesthetic and functional performances that are more adequate to the use in old buildings.

The re-use of limewash has been experimented for more than 20 years all over Europe, and whereas in some cases, that attempt has been well succeeded, in other cases however, has produced not so good results. The particularly worrying facts proved to be the low durability of limewashing, its low resistance to dirt and the extensive conversion of lime into gypsum. These have been mainly due to highly polluted atmospheres and acid environments, as is the case of some “historical centres” in large cities and of heavy traffic^{vii} zones. Those problems point to the need of studying more closely the performance of coverings and limewashes in that type of urban environments, so as to find new ways of increasing their durability and their pollution resistance, namely by developing research into admixtures.

In highly polluted environments, it may be necessary to use alternative technologic solutions, such as the new mineral paints, based on pure potassium silicates. Those paints are able to reproduce some of the characteristics of limewashes, especially when the same type of inorganic pigments of local origin (earth) is used. It is then essential to study these new technologies, particularly as refers to assessing their performance in the ageing process.

Both for limewashing and for mineral paints, it is vital to find some formulations that may be coloured with inorganic pigments of regional origin. Therefore, it is necessary to study again the sources of the pigments that have been traditionally used in Portugal. This country was one of the highest producers of earth in the past, and in fact, it produced, at the time, natural pigments with a quality that had been praised ever since the roman times. Nevertheless, ever since the 50s the main production sources in the country have been closing down.

Formerly, the current practice consisted of finishing and colouring the architectural surfaces by including earth in the very pastes and lime mortars, the smooth coverings being at the time extensively used as covering and/or colouring layers, which presented some advantages in replacing paints. Sometimes, a careful selection of aggregates was carried out (usually with a view to imitate petrous materials), which resulted in colour solutions that were significantly more lasting and required less maintenance.

The type of surface and textures that are likely to be obtained with coverings is very specific and difficult to reproduce by mere smoothing of renders. Therefore, it is necessary to re-establish the use of that type of procedures, especially as refers to conservation and rehabilitation actions.

Reference must again be made to the fact that the colour depends directly on the procedures of transmission of light: textured surfaces reflect light in a diffusive way, whereas smooth textures reflect light in a more direct way. Consequently, there is a direct relation between, light, type of surface and colour, that is why it would be contradictory to specify colours and their materials and fail to specify the type of textures and covering surfaces in conservation actions. Evolving from the culture of renewal to the culture of conservation

If, apart from the aesthetic and formal interest, as Riegl stressed, the patrimonial value is also established in accordance with the value of the age (*Alterswert*) and with the number of surviving testimonies (from rarity as document), I think that we have arrived to a critical point where, either we modify our ways of seeing and operating, by taking more severe measures as regards the safekeeping of architectural coverings, or we may loose, at short-term, a significant part of the patrimonial heritage of our historical towns, i.e., their identity^{viii}! That is why the renewal of the increasingly rare original coverings that can still be found in historical urban nuclei must be considered as an exception and not a rule.

Until the 90s, the methodologies for treating and consolidating coverings of architectural surfaces have been mainly intended for conservation of mural paintings. Therefore, the transfer of these methods to more comprehensive areas, as is the case of façades of architectural units in “historical centres”, is not linear and requires a huge effort towards technological simplification.

That simplification may be represented by the reduction in requirement levels, as regards the forms of application of treatment products and by a higher concern referring to their economic impact. In the specific field of consolidation, it is essential to integrate the accumulated knowledge in the scientific study of porous materials.

All things considered, we must emphasise that, up to now, LNEC has not been able to find an institutional or private agent who is willing to make feasible the application of such type of tests on old coverings^{ix}. Indeed, this is an area of the highest scientific and technical interest that should be developed in future studies. Otherwise, the country will be completely misinformed of the most recent tendencies in the field of conservation, and will increasingly lose its irreplaceable patrimony.

Another area urgently requiring comprehensive research is the study on the pathology of exterior coverings based on mineral binders. These pathologies are frequently associated with certain types of deterioration agents, such as biologic agents and the effects of the presence of soluble salts, which are two of main causes responsible for some of the most common damages that are also the most difficult to solve. These are fields of study that are still under-developed in Portugal, and therefore, require a higher investment, both in terms of diagnosis and in terms of definition of appropriate therapeutic solutions (for instance the selection and application of biocides, application of renders and sacrificial pastes, etc.).

Lastly, as regards treatments, reference must be made to the fact that in terms of conservation and urban restoration the promoted principle of “reversibility” is increasingly less applicable. In the practice, the application of a mere limewash is almost always irreversible! On the other hand, the principle of “repeatability of treatment”, i.e., the ability of repeating, in the future, a certain treatment without producing any significant alteration in the performance of materials and in the optical effects of treated surfaces, has an increasingly higher theoretical and practical importance. Therefore, their application should be doctrinally justified, namely in terms of international conventions and recommendations.

8. ACHIEVING A MORE “RIGHTEOUS CULTURE” OF MEMORY

As Paul Ricoeur^x has theorised, the ethics of the memory establishes the duty of recollection. The latter leads us to collect from the past (from its rewards and traumas) the exemplarity, making that memory relevant for the conformation of new intentions and of projects that will inevitably transform it.

The duty of recollection implies that the history is transmitted, taught and told to the generations to come. As a result, its continuity is pedagogically ensured, obviously with all the necessary scruples. Consequently, in view of the eternal dialectics between the duty of recollection and the duty of forgetfulness, particularly if we consider the frantic celebration of the memory, at the end of this century and millennium, it is essential to ensure the possibility of a good and cyclic “amnesia” (an amnesty, according to Ricoeur’s words).



Figure 1: Building in 5 de Outubro, Évora, before and after “restoration”.

That amnesia is expected, on the one hand, to make it possible to (re)construct or reinvent history, possibly by methods closely surveyed by the “civic memory”, and, on the other hand, it is expected to ensure the possibility of representing both the present and the future of the architecture and of the town.

The main problem is obviously to establish what is the meaning of “good” and “bad memory”, of which they consist and what can be included in them. The duties of recollection and forgetfulness are not symmetric, i.e., one does not necessarily annul the other, because its management would require the implementation of a memory policy, of which the main purpose would be to define a “good culture”, a “righteous culture” of the memory. In this case, the duty of the recollection would occasionally require the instruction of what has been modelled from a point of view of righteousness and the duty of forgetfulness would lead to put an end to the sense of revenge^{xi}.

As I have previously stated, and I do not mind repeating over and over again: in Portugal, we are increasingly creating a conservation culture, which does not correspond to a “design” and “work” capacity of intervention capable of fully integrating in a coherent way, the essential values of that very culture. In Portugal, there are many *PhD* and *MSc graduates* in *Conservation*, but there are no, or at least very few, skilful Conservators and Restorers capable of intervening in the design and in the management of the works intended to preserve our architectural heritage. As a result, the construction of our “righteous culture of the memory”, which has invested little on reasoning and on know-how, will continue to be based on weak foundations.

All things considered, and back to the subject, I would like to end with Adília Lopes words^{xii}: «*Espero que o comum dos mortais repare na beleza dos ovos estrelados. Só vemos o que queremos ver. E só espreitamos quando suspeitamos que há alguma coisa para ver. Foi assim que apareceu o microscópio. Penso que as imagens fazem mais falta ao homem da rua do que cálculos e equações. As cores fazem muita falta.*»

NOTES AND REFERENCES

ⁱ Laura Mora, Paolo Mora, *Le superfici architettoniche, materiale e colore. Note ed esperienze per un approccio al problema del restauro*, em *Bollettino d'Arte, Supl. 6, 1984, p. 118.*

ⁱⁱ «*Il restauro deve mirare al ristabilimento della unità potenziale dell'opera d'arte, purché ciò sai possibili senza commettere un falso artistico o un falso storico, e senza cancellare ogni traccia del passaggio dell'opera d'arte nel tempo.*» Cesare Brandi, *Teoria del Restauro, Piccola Biblioteca Einaudi, Turim, 1963, p.8; also in Michele Cordaro (ed.), Cesare Brandi, Il Restauro, Teoria e Pratica, Roma, Editori Riuniti, 1996.*

ⁱⁱⁱ See Paul Philippot, *La restauration des façades peintes: du problème critique au problème technique*, em *Facciate Dipinte, conservazione e restauro, Atti del convegno di studi, Genova, Sagep Editrice, 1982, pp. 105-107.*

^{iv} Paul Philippot, ob. cit., (1982), and Piero Sanpaolesi, *Discorso sulla metodologia generale del restauro dei monumenti, Florence, Editrice Edam, 1973.*

^v See M. Koller, ob. cit., (1991), p. 38. *The same assumption can be extended to the Portuguese reality. In the study of old “restoration” interventions it can be easily observed that the buildings that have remained unattended (they did not have the support of relevant State bodies, or of technical municipal departments specialised in that area) or that have been kept with scarce means, which implied the use of less expensive maintenance programmes and technologies (such as mere limewashing, for instance), are those that present nowadays a higher historical evidence and have a higher documenting reliability.*

^{vi} *In the interventions making re-use of lime technologies in exterior renders, in which LNEC has directly participated during the last few years (for instance, the National Queluz Palace, the National Maфра Palace, the Tower of the Clock in Santarém, etc.), and which have been submitted to detailed observation (the National Sintra Palace, the Convent of Jesus in Setúbal, the Integrated Plan for the Castelo Parish, in Lisbon, etc.), or which have been visited during this study (many dozens all over the country), the so-called impossibilities have not been observed. On the contrary, we have proven that there are a few objective reasons for recommending the systematic use of lime technologies in urban rehabilitation and especially in the maintenance and renewal of exterior coverings (renders, mortars and paintings).*

^{vii} *This type of pathology is very difficult to solve, even though some restoration solutions have been developed, which are based on the chemical conversion of calcium sulphate. Nevertheless, this type of methods involves high risks, because it implies the handling of highly toxic products and it requires high skills for their execution. Therefore, it*

can only be used for the preservation of items of high historical-artistic value. That is why the need to find new methods that make it possible to consolidate that type of coverings remains unfulfilled.

^{viii} In a few dozen places visited in Portugal, it has been verified that the traditional coverings are only a small minority of the total. In 1996, at the Castelo parish, in Lisbon, less than ¼ of the buildings maintained traces of coverings that could be considered as original. Even more rare are the cases in which the possibility of maintaining, filling up and preserving the existing surfaces has been objectively considered. .

^{ix} These data resulted from the bibliographic information available, as well as from the author's participation in the *in situ* consolidation experience performed on two historical façades of the Kartausen do Maurbach, in the vicinity of Vienna, during the first course on Architectural Surfaces Conservation – ASC 96, 1996 by ICCROM/B DA.

^x Paul Ricoeur, *Vulnérabilité de la mémoire*, em *Patrimoine et Passions Identitaires*, em *Actes des Entretiens du Patrimoine*, 6 to 8 January, Paris, Editions du Patrimoine/Fayard, 1998, pp. 17-31.

^{xi} «En ce sens, devoir de mémoire et devoir d'oubli, l'un et l'autre bien compris – c'est-à-dire l'un affranchi de ses abus, et l'autre purifié de sa confusion avec l'amnésie -, ont en commun une visée lointaine, la paix dans la justice». *Idem*, p.31.

^{xii} Adília Lopes, em *Pública*, 21 de Maio de 2001.