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# The Noble Patina of Age

W. J. Quist and A. J. van Bommel

**Abstract** This contribution discusses the aesthetic aspects of ageing and focusses on the use of the terms ‘patina’ and ‘damage’ to decide on the cleaning of historical facades and the application of artificial ageing. Conservation campaigns can be characterised by the wish to preserve an object, building or building complex as a coherent piece of cultural heritage. This contribution discusses the professional debate on balancing between preserving values, i.e. represented by patina and the need to intervene from a technical point of view. Cases of cleaning of limestone and sandstone, together with replacement of natural stone and the application of artificial ageing, are used to illustrate the debate. The perception of professionals is compared with the perception of laymen.

**Keywords** Building conservation • Cultural heritage • Patina  
Damage • Aesthetics

## 1 Introduction

In daily practice and in most fields of science, ageing is seen as a negative aspect, because of the gradual decrease of the properties of the base material. In the field of architecture, buildings suffer from all kinds of ageing phenomena of which the weathering of exposed materials and the wear of interior materials are the most visible ones. In preservation of cultural heritage, be it either tangible or intangible, ageing, is often referred to as a positive aspect because it makes history visible and therefore plays an important role in decisions about preservation.

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The wish to strive for preservation of authenticity, visual unity and technical functionality leads to a discussion on the value of patina compared to the trouble of damage, both related to the architectural design and the question of what to preserve.

Decisions about the conservation of historical buildings often depend on technical considerations, but also arguments regarding the artistic value of the object, sometimes including the need for reconstruction of a long-absent structure, and, in practice, non-technical arguments relating to public appreciation, tourist concerns, or even political purposes are taken into account [1, 2]. This paper explores the thin line between ‘patina’ and ‘damage’ and how both concepts are dealt with in a technical and esthetical way.

## 2 Terminology

### 2.1 *Historical Value*

Ageing of building materials implies a contradiction. On the one hand, materials are degrading over time and become less functional and less attractive. On the other hand, the ageing of buildings in general and building materials in particular can lead to an increase of ‘values’ due to an addressed cultural significance and historical importance. Since the mid-nineteenth century, when people became—in a romantic way—interested in the past, we started to preserve historical buildings. Several nineteenth-century scholars, such as John Ruskin (1819–1900), William Morris (1834–1896) and Alois Riegl (1858–1905) tried, all in their own way, to describe what the essence was of historical buildings and why (how) those buildings had to be preserved [3]. Ruskin, for example, writes in his *Lamp of Memory*: “... some mysterious suggestion of what it had been, and of what it had lost; some sweetness in the gentle lines which rain and sun had wrought” [4]. The *Manifesto* by Morris, published in 1877, was a clear pamphlet against the common nineteenth-century behaviour of restoring buildings to the way they might have looked before, without paying attention to the visible traces of time [5]. Riegl, from an art historical point of view, brought ‘Alteswert’, the value of age, into the discussion [6].

Although people and society have changed over the years, the sentiments regarding the value and meaning of old buildings in general, and built cultural heritage, in particular, have not changed much. The age of a building is until now present in many official documents concerning the formal protection of historical buildings, such as the Dutch Law on Monuments [7].

## 2.2 *Nature of Materials*

How does a building become valued in a historical way and when will visible signs of ageing be accepted? When a building has just been finished, damages to materials and constructions are not accepted, and even damages or failures that occur within the first decennium are not accepted. The antagonistic articles by Hendriks in the Dutch periodical *Detail in Architectuur* painfully illustrated damages to modern materials and constructions in recent buildings due to badly designed or executed details [8].

People are willing to accept a certain degree of degradation due to the ageing of materials, when historical buildings are concerned, or even tend to value buildings or building parts more highly when the traces of time are visible. Research by Andrew [9, 10] indicated that blackening of sandstone facades sometimes added to the appreciation of buildings. Research on the perception of small-scale damage and repairs of natural stone [1, 2] confirms this hypothesis.

When do buildings start to be liked for their age value and become ‘monumental,’ how long does it take before people start accepting damages and does it have any relation with the nature of materials? The nature of materials and how people perceive materials probably has great influence on the visible signs of ageing that are accepted. Studies from the 1970s indicated already that concrete is perceived negatively when compared to, i.e. brick or wood [11–14]. The capability of materials to age graciously is probably the most important factor for an old building to become liked [e.g. 15]. Traditional building materials such as natural stone, brick and wood have a certain robustness and are capable of withstanding ‘the tooth of time’ and therefore are liked. Materials that could be called modern from an architectural point of view such as concrete have an image problem regarding ageing. Most people tend to dislike concrete structures because of their greyish image, illustrated by the debate on the appointment of modern buildings on a heritage list. The qualities of concrete structures, from an engineering point of view and from an esthetical point of view, are often not recognised [16].

## 2.3 *Damage*

Assuming that considerations on preservation of historical buildings are often made by persons with various different interpretative frameworks, depending on their education and professional experience, a clear definition of damage would be helpful, as a starting point for any decision on intervention. The definition of damage should be objective and commonly accepted. Several glossaries, combined with damage atlases, have been developed over the years, involving a wide range of specialists in conservation [e.g. 17–21]. Still the definition of damage is rather subjective. Damages to buildings that are technically identical are often handled in

different ways, depending on the building concerned and the people involved in the conservation process. Apparently, not only technical arguments are decisive.

Research in The Netherlands and Belgium on the perception of interventions in historical buildings indicated that situations that do not clearly reveal an intervention are appreciated more highly. Whether such situations were ‘authentic’ or not did not seem to have any influence on the outcome [22]. The harmony or esthetical compatibility of old and new building materials in historical buildings is highly appreciated. Although the parameters are difficult to define and most probable differ according to the cultural and professional background of people, it is clear that ageing phenomena can contribute in a positive way to the valuation of historical buildings. A problem in this discussion however is that, from a scientific point of view, one cannot draw a conclusion by just counting the arguments of individuals. One could say that the majority of people like buildings that look ‘authentic’, but not draw the conclusion that it is therefore the best to strive for such an image. That would be a simplification in reasoning.

## 2.4 *Patina*

The Oxford Dictionaries define patina as ‘a green or brown film on the surface of bronze or similar metals, produced by oxidation over a long period,’ but, in the context of cultural heritage, patina is often referred to as the visible traces of time on the surface of a material or object [e.g. 3, 15]. The term ‘patina’ is used to distinguish between the often highly-valued (and to be preserved) traces of time and the undesirable (and to be repaired) ‘damages’. This use of the term ‘patina’ goes back to the 1950s and 60s when there was an intensive scholarly debate among art historians about the cleaning and restoration of paintings, i.e. published in a series of articles in the Burlington Magazine [23]. The famous Austrian-Hungarian Ernst Gombrich (1909–2001) and the Italian Cesare Brandi (1906–1988) took active part in the discussion. The discussion was about the value of patina, which on the one hand shows the age of the painting but on the other hand, due to darkening in time, hides the bright original colours. Gombrich, who was not in favour of cleaning, also brought into the discussion that some painters already took into account the ageing of the varnish by colouring it when applying and, by doing that, anticipating the ‘patina’. A comparable example, discovered by Pier Terwen (commissioned by the Dutch Government Building Service, Rijksgebouwendienst), is known from the field of preservation of built heritage: the marble of the monument for Maarten Harpertsz Tromp, in the Old Church in Delft, was originally patinated with a grey paint. Later restorers did not recognise this as authentic and removed almost all the grey paint.

The discussion on patina in the field of conservation of built cultural heritage has always been polarised. On the one hand, the romantic scholars and architects who argue in favour of preserving as much authentic substance as possible and on the other hand the ones that plea—either from a theoretical or pragmatic point of

**Fig. 1** Although technically not necessary, visible traces of ageing are often removed, i.e. when cleaning brickwork facades (photo: W.J. Quist)



view—for restoration and reconstruction of the historical architecture. How the (Dutch) layman exactly fits in is not studied, but it is assumed that—looking at many neatly cleaned and restored houses—the majority of the Dutch fit into the second category (see Fig. 1). The boost of facade cleaning in the Netherlands went hand in hand with the renovation of late-nineteenth and early twentieth-century dwellings. Facade cleaning was, first and for all, part of the process in which old dwellings were upgraded to a level that was acceptable by modern standards, and therefore renovated dwellings had to look neat and clean.

### 3 Decisions on Intervention

#### 3.1 *Man-Made Traces Versus Natural Weathering*

Article 11 of the Venice Charter states that “The valid contributions of all periods to the building of a monument must be respected, since unity of style is not the aim of a restoration. When a building includes the superimposed work of different periods, the revealing of the underlying state can only be justified in exceptional circumstances and when what is removed is of little interest and the material which is brought to light is of great historical, archaeological or aesthetic value, and its state of preservation good enough to justify the action. Evaluation of the importance of the elements involved and the decision as to what may be destroyed cannot rest solely on

**Fig. 2** Highly valued man-made traces at St. Bavo Church Aardenburg (photo: W.J. Quist)



the individual in charge of the work” [24]. This article is often referred to in many ways to advocate the preservation of the ‘architectural layers’ in a historical building, but can it be used in favour of preserving a ‘patina’? Figures 2 and 3 show two different ‘traces of time’. Figure 2 shows carvings, used to sharpen a knife or to gather stone powder with addressed healing capacities, can be called ‘mechanical damage’, but, due to their historical meaning, the stone will never be repaired or replaced. Figure 3 shows a black crust on sandy limestone. Is this ‘damage’ as safe as the first one? Although it is a comparable trace of time, the latter will often be cleaned away, based on a hazy mix of technical and aesthetic reasons.

### ***3.2 Complete Cleaning of Facades***

The weathering of (sandy) limestone was studied intensively in the 1980s and 90s (for example, in the case of the Church of Our Lady in Breda [25, 26]). The general conclusion about the damaging mechanism that produced the black gypsum crust was that this process was stable in many places, but it was also concluded that the dense and stiff cement repointing (from an earlier conservation campaign) had a large influence on the hygric behaviour of the façade, leading to loss of material



**Fig. 3** Black crust due to weathering at Old Church Delft (photo: W.J. Quist)



around this pointing [27]. The architect of the conservation campaign in the 1990s—who was in favour of the complete cleaning of the facades—used the problems of the cement pointing as a technical argument for cleaning: complete removal of the gypsum crust would reveal all damages due to the repointing and would enable the replacement of the repointing and repair of the stone. The necessity of complete cleaning was disputed by several experts, but in the end, the hasty mix of technical and aesthetical arguments resulted in the cleaning [28]. On the one hand, this conservation campaign resulted in loss of the ‘traces of time’, but, on the other hand, the church was made ready for a new chapter in its long history.

### **3.3 Artificial Patina**

Although only recently applied on several important historic Dutch buildings, the application of an artificial patina on restored facades has a long history. Among (stone)masons it was common to use dirt from gutters or ink to darken newly constructed masonry or pointing next to old masonry [29], but since a few decades





**Fig. 4** Application of an artificial patina on new sandstone to visually match old sandstone at St. Lawrence Church Rotterdam (photo: W.J. Quist)

the use of artificial products to colour came in use. Together with careful partial cleaning of old blocks of sandstone, the application of an artificial patina on the brightly yellowish-looking new blocks of Bentheim sandstone helped to unify the architecture of the façade of the Royal Palace in Amsterdam [30–34]. Figures 4 and 5 show the tower of the St. Lawrence Church in Rotterdam, which has recently been restored in sandstone. Partially, the new blocks have been aged artificially to aesthetically match the greyish old stones. The new sandstone for the balustrade and the pinnacles on the corners of the towers were seen as an architectural entity on its own and therefore not aged artificially.

The technical possibilities of applying artificial ageing (i.e. with pigments fixated by ethyl silicate) imposes an ethical question. Can it also be used to colour a different type of stone to match its surroundings? Figures 6 and 7 show two examples of types of stone that were coloured to match their surroundings, not by anticipating its change of colour when ageing, but by altering its natural colour. Figure 6 shows a pinnacle in Peperino Duro coloured as it were Weibern tuff stone. A highly durable type of stone has been used and afterwards coloured to match. Is it fake, or is it an example of ‘making use of all possibilities there are’?

Figure 7 shows the effect of ageing of artificial ageing. Due to an almost complete ban on the use of sandstone from 1954 onwards, it was in many cases necessary to choose another type of stone for replacement of degraded sandstone [28, 29]. In the case of the Central Station of Amsterdam, white limestone with an



**Fig. 5** Detail of the artificial patina on new sandstone at St. Lawrence Church Rotterdam (photo: T.G. Nijland)

artificial colouring was chosen to replace brownish sandstone. After 25 years the colour on the limestone has been washed away, and both types of stone can easily be distinguished. This example clearly shows that aesthetics were once a reason to apply colour, but is this treatment repeatable, both technically and financially?

#### **4 The Essence of the Debate**

An object with historical (cultural) value only has such a value because people impose it on the object concerned. The problem in this statement, however, is that not all people agree on those values. One cannot rely on the majority, and we have to recognise the rights of individuals and minorities. An object with cultural value, first and for all, tells stories that are important to people because these stories are the vehicle of the details of who they are and why they are as they are. That can be a story about the material witnessing of the past, but that is only one of the many stories objects of cultural-heritage value 'tell'. Is an 'objective' outcome of such a discussion about the many historical values of an object thinkable? At least in a lot of cases not, because the discussion on authenticity and on value only shows that both concepts are layered. There is not one form of authenticity (as the Nara

**Fig. 6** Colour on Peperino Duro to visually match Weiberner tuff stone at St. Johns' Cathedral, 's-Hertogenbosch (photo: W. J. Quist)



document [35] shows), but there are many forms. As a consequence there also is not one value or not one group of values that can be attributed to an object. The values depend on the point of view of the one who attributes them—subjectivity is unavoidable. If it comes to patina, some will not like it, because patina is disturbing their view of the object. Others however will like the patina; because it shows that the building is old, and therefore the patina is important for the story the building is ‘telling’ them. Science cannot be the judge in such a debate. The only thing science can do is to look at the arguments that are used. The essay written before the conservation of the facades of the Royal Palace Amsterdam [34] tried to find an answer for this complex debate. The simplified outcome was that there were two main points of view that had to be taken into account. One was the building as one of the most important architectural products of the Dutch Golden Age that had to be ‘readable’ in its architecture. Ageing disturbed this ‘readability’. Some facade cleaning therefore was inevitable. On the other hand, it was important to guard the character of the building as an old building. The approach in this case was to find an intermediate that was acceptable from both points of view. This however does not guarantee that similar solutions can be found in other cases.

**Fig. 7** The applied artificial patina on limestone at the Central Station of Amsterdam has been washed away by rain (photo: W.J. Quist)



## 5 Conclusion

The past decades' theory of architectural conservation has brought forward several concepts on how to handle cases of historical buildings. The most important and well known ones are 'reversibility' as a follow up on the Charter of Venice and 'minimal intervention' as advocated by Brandi [28]. Since the 1990s, 'compatibility' became more and more the leading principle for decisions on intervention in the existing fabric. Teutonico et al. defined it as: "A treated material should have mechanical, physical and chemical compatibility with the untreated historic materials under consideration. Simply stated, compatibility means that introduced treatment materials will not have negative consequences" [36]. This definition is workable, but represents a technocratic view of materials and is missing any link to the aesthetical representation of those materials and structures. Any 'aged' situation can be evaluated according to uniform technical standards, but, when it comes to evaluating the 'visible traces of time on the surface of a material or object', it often comes down to the individual perception of the people in charge. Therefore, we

would like to plea for the development of a model for intervention or non-intervention that takes aesthetical aspects into consideration. To make this model and set the criteria, it is necessary to study in-depth how the ageing of materials and structures is perceived by professionals in the field of conservation technology, but also by laymen. Based on the fragmentary research presented in this paper, it is suggested that this could lead to less, but precisely targeted, intervention. This would make the ‘patina’ not only the result of neglect and undesired ageing, but also the result of careful technical, ethical and aesthetical considerations and therefore truly noble.

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