

Available online at www.sciencedirect.com

SciVerse ScienceDirect

www.elsevier.com/locate/foar

Frontiers of Architectural Research

REVIEW

An Italian contribution to architectural restoration

Giovanni Carbonara*

Facolta' Di Architettura, Sapienza Universita' Di Roma, Via Gramsci, 53, 00197 Roma, Italy

Received 20 September 2011; accepted 24 October 2011

KEYWORDS

Restoration; Interdisciplinarity; Monumental heritage; Italy

Abstract

The essay provides an up-to-date review of the realities of Italian restoration. Restoration work feeds off the doubt that stems directly from historical and balance, and a conceptual rigour and practical approach at the same time. Restoration is carried out always and only on the original, with all the attendant risks of error and damage, and thus with all the prudence that demands. One of the most recent definitions of restoration is put forward: "By restoration, therefore, is meant any intervention that has the aim of conserving and transmitting to the future works of historical, artistic and environmental interest, facilitating the reading of them while not erasing the traces of the passage of time this is based on a respect for ancient material land the authentic documentation that such works constitute and, moreover, is to be seen as a critical act of interpretation that is not verbal but expressed concretely in the work carried out. Or, more precisely, it is a critical hypothesis and a proposition that is always modifiable, without it ever altering irreversibly the original".

The true nature of restoration is a complete fusion of historical and technical-scientific expertise. It is therefore artificial to distinguish between a 'project of consolidation' and a truly described restoration project. This is a distinction based on the assumption (to be demonstrated) that in an ancient building static problems and those related to the materials can be isolated and treated separately from an overall understanding of the architectural ensemble. So the paper stresses research methodology, the project and specific skills. As part of the principle of unity of methods in restoration, interdisciplinarity is viewed as the principal tool for bringing together consistently and fully the different skills necessary for the study and conservation of monuments.

In summary, there are three fundamental components: (1) the history of architecture and theory of restoration; (2) the techniques of survey, analysis, diagnosis and intervention on the materials and the structure; and (3) legislative and regulatory aspects.

E-mail address: giovanni.carbonara@uniroma1.it

2095-2635 © 2012 Higher Education Press Limited Company. Production and hosting by Elsevier B.V. Open access under CC BY-NC-ND license.

Peer review under responsibility of Southeast University. http://dx.doi.org/10.1016/j.foar.2012.02.007



^{*}Tel.: +39 06 36289268.

The author emphasises the link between restoration and access to the monumental heritage. The definition of restoration as 'an act of culture' (fundamentally critical-historical and technical-scientific) leads to the reflection that culture is, by definition, exchange, communication and opening up to people without distinction. So restoration, because of its cultural nature, has need of recommendations, trends and orientations rather than regulations.

Restoration looks to the future, not to the past. It has educational and commemorative functions for future generations, for young people; it ultimately is concerned not with satisfaction with research per se but the preparation of all citizens and their quality of life, viewed in the widest possible spiritual and material sense.

In conclusion, some perspectives for the new millennium are offered. We have to ask ourselves whether society today is still able to guarantee a role for memory, for history and for the value of traditions, or for beauty itself. At first sight, it seems that interest in conservation and restoration has been reinforced in recent times. At the same time, we are aware of dominant pressures wanting to renovate and redesign our environment, giving priority above all to economic factors and revenue. To recall an earlier declaration by Renato Bonelli: contemporary society is not interested in historical and artistic things in themselves, whether they are ancient or modern. It is practical and consumerist, but it is also a society of complexities, and that however opens up some vents.

© 2012 Higher Education Press Limited Company. Production and hosting by Elsevier B.V.

Open access under CC BY-NC-ND license.

Contents

1.	Monuments and restoration	3
2.	For a definition of restoration	4
3.	The technical 'change of mind' of the last twenty years	5
4.	Study and design methods and skills	6
5.	Criticism and technique in restoration	6
6.	Restoration of and 'accessibility' to the monumental heritage	7
	References	8

An education to restoration is first and foremost an education to freedom of thought and investigation; restoration is fuelled by doubt, which is typical of historical research, it takes an open mind and a perfect balance, conceptual clarity, as well as a practical spirit. So, what can be taught is not a series of precepts or rules or techniques, but at most a method or an approach to problems that arise in different and unpredictable ways, every time.

1. Monuments and restoration

Restoration is a comparatively young discipline, rooted as much in modern historical research as in traditional maintenance practices aiming to preserve something of widely recognised value from deterioration, so as to extend its life. However, it differs from merely resuming the efficiency, for use or economic reasons, of any product of human activity and is targeted instead to monuments, in their etymological meaning of 'documents', as unique and unrepeatable expressions of taste, of art, of a sensible 'material culture', as well as of the passing of time.

As everybody knows, there is no actual remedy to the mutilations and damage suffered by a monument as a result of negligence or misuse; it may be repaired or even copied from life, but the uniqueness of what has gone lost will never be recovered. What is needed is a primarily conservative approach based on the greatest attention and respect. After a thorough survey and investigation, the selected techniques will have to be proportional to the

actual needs of the ancient monument and its materials. That is why it would be most appropriate to have one single work team for study and survey, for design, for project management, who, using new tools and options, will continue the same kind of research on site.

Without making too many distinctions between architectural and archaeological restoration and the restoration of the so-called movable works of art, one should talk of a unity of methods and principles, in the plurality of the applied techniques. Despite the undisputable technological specificity involved in working at a building, theoretically it would be most correct and fruitful to refer to a sound, consistent process in the domain of the traditional 'drawing arts'. As opposed to other artistic domains (such as poetry or music), in the traditionally figurative one (from painting to architecture), restoration only and always works on originals, with all the attendant risks of damage or mistake, so with all the prudence that such circumstance requires.

This may bring about some inconsistencies, especially when speaking of the so-called problem of the 'removal of additions' as well as 'filling the gaps', both unavoidable in a concept of restoration that tends to provide an easier "understanding" (art. 4 of the Italian Charter for Restoration, 1972) of a monument, while helping preserve it, giving it substance and physical continuity, which means giving it the ability to defend itself (as in "keeping efficient", see above Charter, art. 4 again). This is part of the double function of restoration, repairing and reinforcing on one side, denoting and connoting on the other side, i.e. perpetuating the identity of a monument; neither will it

4 G. Carbonara

ever be figuratively neutral, with no impact on its image, as if there would be such a thing as an aseptic way of preserving, as opposed to restoring. It is clear, instead, that even 'preserving' and 'retaining' mean transforming, certainly in an extremely controlled way but still transforming, and this is about sensibly directing the unavoidable change, while successfully enhancing its preservative value but without neglecting its unavoidable aesthetic and formal implications. Hence the extraordinary complexity of a restoration project.

The issue of removing the additions and filling the gaps goes back to the dialectics of the two 'goals', as theoretically addressed by Cesare Brandi (1977): the goal 'of historicity', whereby what comes from the past should be fully preserved; as opposed to the 'aesthetic' goal where one should be freer to work to give a piece back its beauty, dulled by time and events. It should be clear that these are not identical and opposite operations, or different from the removal of 'ancient matter' in the former and the addition of new matter in the latter, they are in fact two dramatically different operations; removal is mostly irreversible and is not visual evidence of itself, while the filling of the gaps may be immediately 'recognisable' as well as 'reversible' (or 're-workable' or even 'removable'), should the work have to be corrected or perfected, even much later. Therefore, the former is viewed as an 'exceptional' and potentially risky operation.

However, they are both quintessentially philological in nature, as they aim at unearthing the 'original' content of a work, which is to be translated into a sort of 'critical edition' on a double register (original/interpretation), fit to make ancient fragments usable with or without any revision thereof.

Hence a relentless work, especially in the archaeological area, to develop new working methods, in parallel with the methods of literary philology, to visually transmit, especially in connection with the gap-filling issue, the 'degree of certainty' that is given them and other details: markings and plates with the date and type of work; wall boundaries (with brick fragments, metal plates or a simple track in the plaster): undercuts; staggering of vertical joints in brick walls; peculiar surface finishes on restored bricks or stones, with burrs at the edges or even parallel scoring, similar to painted hatches; 'signs' of physical-chemical identity embedded in restored mortars (through selected changes in the number, quality and grain size of the sands), and so on. In other words, a sort of critical meta-language, which defines a set of 'diacritic' signallers and markers (i.e. able to distinguish the new from the old), to be used in such gap-filling techniques (about this, see De Angelis d'Ossat, 1995: 87-92).

In conclusion, one could say that, in the architectural and archaeological fields, the references and principles designed for traditional artistic restoration projects, in their critic and scientific meaning, are still effective: distinguishableness, 'minimal impact' and its potential reversibility, respect for authenticity and the ancient 'matter', the physical-chemical compatibility of any addition. All this, to preserve the cultural content, the historical layering and the structure of the ancient monument, in the quiet awareness that its unstoppable decay can only be slowed down, that it can certainly not be given an impossible eternity.

2. For a definition of restoration

So, 'restoration' means any operation that aims to preserve and hand down works of historical, artistic and natural interest, while making them easier to understand, without deleting the marks of the passing of time; it is based on respecting the ancient substance and the genuine documents that such works embody, while also being an operation of critical interpretation, not verbal, but expressed by the actual work. Namely, a critical assumption and an ever-changeable option by which the original will never be irreversibly changed.

From this perspective, the restoration of a monument may mean a strictly scientific, philologically based operation aiming to find again, preserve and highlight, while giving a clear and historically understanding of, the works that fall within its province, i.e. the architectural and natural heritage, ranging from a building to a city, including a landscape or a region.

In restoration, a primary role is played by strictly conservative operations that aim at preserving from decay those materials that contribute to the physical structure of a work. In this sense, the restoration of a monument must be regarded as a discipline that is based on historical-critical foundations, underpinned by surveying, analysing, graphic rendering and strictly constructive techniques, as well as by physical and chemical sciences. Such contribution shall never become a dull summation of specialist skills, but will find expressive and conceptual consistency in a solution, aesthetic or otherwise, to the problem, to be pursued in the traditional ways of architectural language.

In 'preserving-revealing' (Venice Charter, 1964) or 'keeping efficient-easing the understanding' of (Italian Charter for Restoration, 1972), one can see the qualifying factor of a restoration work, which cannot be only or 'purely' preservation, but not even a 'revelation' pushed to the extreme of rehabilitation.

There are no conceptual differences between restoration in the broad sense and architectural restoration. The latter is a specific meaning of the former one, from which it differs not in principle but in practice, for the different substance of the items it deals with. One should speak of consistent methodologies and principles, in the plurality of the applied methods. This would ward off the risk of any pseudo-scientist and overtechnical drifts, or even socio-economical drifts ('social' restoration and financial overestimates of the cultural heritage), ideological-political drifts ('repossession of the historical city'), empirical and badly 'recreational' or innovative drifts (due to the natural tendency of architects and engineers, trained in designing and building new things, to step beyond the limits of restoration in the scientific sense and, among these, the fundamental principle of 'minimal impact').

At this point, the meaning of two keywords of our argument need to be explained: 'restoration' meaning, first and foremost, a direct work on a piece and even a change of a piece, always under strict technical-scientific and historical-critical supervision; 'preservation' meaning prevention and protection, which must be implemented just to ward off a later restoration, which would still be a traumatic event for any monument.

The rationale of restoration is having previously acknowledged the special artistic or evidential, aesthetic or historical 'value' of a monument; or, otherwise, having viewed it

as an 'object of science' or, in other words, as an 'object of culture', material evidence having a 'value of civilisation', as the cultural heritage actually is.

To get a better insight of this issue, one should also ask what restoration is not.

The 'rehabilitation', the 'healing' of a construction, the functional 'repair' of a piece, the 'reinvention' or 'remaking' of all or part of a piece (an operation that goes 'beyond restoration') are not restoration. These are operations that affect a monument and transform it, often renewing and fully redesigning it, or reducing it to a simple background, a sort of a simple quotation of antiquity, of a dramatically modern architectural or urban expression. This is no longer restoration, as next to nothing is left of the ancient matter and its 'values' are not respected; it is just reduced to a glimpse of a different, new exercise in design.

The so-called 'reuse', with its ramifications and parallels, such as 'rejuvenation', 'improvement', 'recycling', 'recovery', which are so fashionable now in the architectural profession and even more in the regulatory and urban domains, are not restoration either. Operations that can be placed 'next to restoration', to which they are close because they affect what exists too.

Reuse is actually an effective means to preserve a historical building and use it if possible for social purposes, but it is not its main aim nor can it claim to solve the whole problem of restoration single-handedly. Recovery indifferently deals, also for practical and economic reasons, with any existing property that is poorly kept or unused but it has no interest in preservation or in the scientific reasons of restoration.

'Protection' and 'prevention', as we mentioned before, are not restoration either; they are all important but they still fall within the jurisdiction of 'preservation' proper, so they are 'this side' of actual restoration.

Because of what we said, we see that restoration is 'something more' than mere preservation and it could, in a culturally legitimate way, play a role in a well-thought rehabilitation, completion, reinterpretation of a work, without neglecting the further duty of giving an 'aesthetic form' to such operation ('critical' and 'creative' restoration).

Such critical approach has been recently directed in a "critical-conservative" direction. 'Conservative', because it is prompted by the assumption that a monument demands first and foremost to be perpetuated and handed down to the future in the best possible condition; in addition, because it reflects the fact that the current critical conscience demands that more 'things' should be preserved than in the past. 'Critical', because of its explicit reference to critical theories (first voiced by such Italian critics as Roberto Pane and Renato Bonelli) and partly because it is prompted by the belief that any operation is a single event, not part of a category, not governed by fixed rules but something that must be thoroughly investigated on a caseby-case basis, without taking any dogmatic or pre-established position.

3. The technical 'change of mind' of the last twenty years

The quintessential character of restoration is a tight combination of historical and technical-scientific skills.

Therefore, the distinction between a 'consolidation project' and an actual 'restoration project' would be unnatural; a distinction based on the unproved assumption that, in an ancient building, static problems and problems concerning materials may be separated and addressed without a broader understanding of the architectural organism.

Consolidation should instead adhere to the same rules as restoration (as well as to strictly static rules and construction science), becoming one of the meanings of restoration. Strictly speaking, then, one should not speak of 'consolidation' or 'static restoration' but 'static problems of restoration', as well as it would be correct to speak of 'problems using' ancient buildings, not of the 'recovery' or 'functional restoration' thereof. This would also give prominence to the actual value of a historical building, to which any other requirement must bow to, from reuse, usability and accessibility to the level of structural vulnerability, to be dispensed according to the nature of the architectural or archaeological monument (if in ruins or bound to be inhabited).

Perhaps in the archaeological domain more than elsewhere, a sort of criticism about using modern materials in restoration has come into being and is largely accounted for. However, it has eventually taken ideological tones and biases that have brought it away from the core of the problem; censoring or banning a material, either traditional or modern, actually makes no sense, since the result mostly depends on the professional who has taken responsibility for translating it into a more or less good project and on the scientific supervision of experimental applications.

In the early twentieth century, the fascination with modern techniques drawn from building engineering was already very clear, as they were considered unable to offend monuments with visual additions, to impair their authenticity with re-makings, rehabilitations or 'cut and paste' walls. The option to prop a falling construction (as it has been done in Italy in the Loggia of the Papal Palace of Viterbo, 1899-1902, with a very early use of reinforced concrete, or in the outer wall of Arena di Verona, consolidated by Riccardo Morandi, engineer, in 1958, using the pre-stressing technique), instead of pulling it down and remaking it, as it was sometimes inevitable, looked like a foolproof achievement to be pursued at all costs, even at the scientifically accepted cost of altering the original static layout.

The attitude towards reinforced concrete was cautious and enthusiastic at the same time. Paul Léon (1951) said that it was about adding to deeply elastic buildings rigid elements that could alter their balance. The attempts made on the cathedral of Nantes, where some crumbling, corroded outer arcades were covered in concrete, looked "so disastrous for the general appearance of the monument that it had to be brought back to its original condition". Since then, the use of concrete was strictly limited to "hidden" jobs: consolidation of walls, roofs, vaults, bracings, floors, foundations, buttresses, structural frames", so as to provide "soundness, without changing the character, outer appearance or historical evidence".

While nowadays the limits and risks of adding inconsistent parts have been better defined, yet the reasonable opinion that, having to pay a price for structural consolidation, this should not be to the detriment of the figurativeness of a 6 G. Carbonara

work (as in the restoration of a painting or fresco, it is unthinkable that a painting should be sacrificed to save the wooden tablet or the wall behind it) still persists. So, lots of efforts are made to avoid demolitions and rebuilding, as much as exposed alterations and prostheses, by developing accurate and carefully measured solutions on a case-by-case basis, aware of the uniqueness and identity of every single monument. Similar criteria are behind the conservative treatment of materials and surfaces.

Finally, a recent achievement is the realisation of the need for a system to encode the state of preservation of a monument on completion of a restoration site; so that the endurance of any work may be monitored over time, and maintenance cycles and timelines may be rationally planned.

4. Study and design methods and skills

Every restoration job must be based on an earlier, in-depth knowledge of a monument; before any proposed job, a monument must be fully studied, and the strength of any such study lies in direct surveys and an analysis of its constructions and walls. This also applies to the assessment of the level of decay, the analysis of its cracks, solving some diagnostic ambiguities or uncertainties, the characterisation of its materials and their finishes.

Graphics and a detailed rendering of the damaged frameworks may be a helpful outcome of such surveys, but in the area of conservation its main goal will be to act as a special pre-diagnostic tool, a system to analyse and monitor the working process.

The understanding of the type of decay and its distribution in architectural and archaeological constructions has been extensively explored over the last thirty years and has indirectly contributed, by defining a consistent 'lexicon' (first an Italian one, i.e. Nor.Ma.L, no. 1/1980 and no. 1/1988, and now a European one; about the latter, see Negri and Russo 2008), to developing appropriate improvement jobs.

A cross-disciplinary approach acts, based on the principle of the unity of method in restoration, as the main tool to consistently and exhaustively mix and match the different skills involved in the study and preservation of monuments. So, different aspects of a monument may be investigated, from the spatial, technical and material meaning of ancient remains to static-structural issues, from formal and stratigraphic components to more strictly chemical-physical issues. At any rate, the need for an extensive understanding of the materials of a monuments and the centrality of historical-critical and philological investigative tools should be insisted upon.

As to the restoration of monuments, including archaeological monuments, the restorer-architect must also have specific professional skills, preferably gained in one of the existing postgraduate schools (in Italy: Rome, Naples, Milan, Turin and Genoa); yet, it is sometimes suggested that such skills may be replaced by a summation of specialist skills, those of chemists, physicists, structural engineers, art historians, even archaeologists, experts in the preservation of each material, and so on. On the contrary, a consistent approach is increasingly needed, which however must not

consist of different events but be the outcome of a seamless logical, analytical and creative process.

As to building contractors, they should make efforts to refine their techniques but above all to retrain their builders in appropriate traditional manual skills, which are now largely disappearing. In this respect, in situ contacts and exchanges with skilled restorers of works of art turn out to be extremely fruitful (finish of stone, plastered surfaces, frescoes and decorations, such materials as clay, metals, and so on).

Next to the problem of the retraining of professionals, labour and contractors, is the problem of reforming the administrative procedures (tendering rules, contractor selection, etc.) which are still chaotic and inappropriate. Regulations should be extensively revised to offer quality designs, not least by drawing up 'special standard specifications', and ongoing technical-scientific supervision of the site, as in archaeological excavations.

Unfortunately, the applicable regulations, at least in Italy, tend to equate restoration works to current public works, so they do not reflect the perception of the specific and typical character of the cultural heritage; this results in serious risks for monuments, such as using unfit professionals, shorter schedules, inadequate funding.

5. Criticism and technique in restoration

What we have been saying so far suggests that studies on restoration, especially architectural ones that have been most extensively addressed by this paper, cannot do without the help of other specific lessons, in addition to strictly historical-critical ones: drawing, topography and surveying techniques; architectural technology, artificial and natural building materials and the reasons for their deterioration; building science, building technique and building consolidation; environmental technical physics and plant engineering; fitting out and museography; architectural design and composition; city planning and district planning; archaeology, at least its principles: landscape gardening and gardening art; building, urban and listed-buildings legislation; cataloguing and inventorying; building and urban estimates. This is a group of skills, which already belong, even if in different proportions, to architectural studies in the broadest sense.

To sum up, there are three main thoroughfares: (1) history of architecture and theory of restoration; (2) surveying, analytical, diagnostic techniques, and techniques for working on materials and constructions; (3) legal and regulatory, socioeconomic, cataloguing aspects, etc. Such a wide domain cannot be fully or specifically monitored by one single person, so cross-disciplinary relations need to be set up. Nor can one claim that every single implication of a discipline is worth as much as another, which may be critically more significant: efforts must be made to methodically bring points (2) and (3) back to the first and fundamental one; namely, looking at techniques not as such, but historically, shedding light on the need for unity of criticism and technique in restoration. A unity that applies to all of the cultural heritage (paintings, sculptures, architectures, 'minor' arts, manuscripts, jewels, etc.), which are no different in terms of principles (usually applicable, even if they must be understood and substantiated

on a case-by-case basis) but rather in terms of materials, working technology and attendant working techniques.

In this respect, a restorer-architect can play different roles. Certainly that of preparing and drawing up everything, at all stages in the project (according to European regulations: 'preliminary', 'final', 'executive'), including the historical study, based not only on the usual bibliographical and archival research, but also on a thorough graphic survey and a direct analysis of an ancient monument. Then, the filing and scientific cataloguing of the architectural and natural heritage, including the planning and implementation of scheduled and unscheduled maintenance of a monument. In addition, the operation of the site as a project manager and also as a tester, preferably while the work is being carried out, in order to supervise the job done by public as much as by private hands, in terms of necessity, compliance and quality. Finally, a helpful contribution to the feasibility study for a restoration job, including cost estimates, planned timelines for the study, design and operation of the site, and so on.

In all these roles, from the simplest to the most complex one, the restorer-architect makes a definitely specific effort (compared with his or her current profession, which is focussed on building new architectures) but not an overspecialised one (as it would be, for example, for an expert in a specific material, in atmospheric physics, or in pollution); he or she seems to be engaged instead in a synthesis and coordination of different skills. In this connection, the literature often compares the restorer-architect with a 'good orchestra conductor'.

Yet, next to such coordination role, there still are some specialised jobs that the architect cannot entrust to anyone else and must carry out him/herself. These are obviously the jobs that are innate to his or her professional sphere, in the form it has acquired over time:

- application and translation of theoretical and methodological principles into the reality of the case-study: hence the definition of the guiding idea of the project and its implications and rationale; becoming aware, also in practice, of the 'values' on which one is going to work, to respond for example to problems about filling the gaps, removing additions, preserving the 'patinas', etc.;
- a historical-critical interpretation (not a merely 'literary' one or one made from a distance, but a straightforward, close one as a sort of 'post-mortem') of the monument, without which principles would stay silent, ideological, and basically inapplicable;
- a scientific survey and systematic inspection of the monument for checking and mapping its state of physical preservation, starting from the characterisation of its materials and building technology;
- a figurative outcome of the whole project; in other words, the care for the formal quality of the project, for the visual appearance of its philological and critical contents (hence the choice, as one of the many cues for the project, of the principle of the 'distinguishableness' of the ancient from the new or the 'reversibility' of the new).

It is essential, so as not to impair the quality of or muddle up the work that should be protected, that everything that is involved in a restoration project (from the reality of the monument to the methodological criteria, historical information and attendant restraints, through to the selected techniques) leads to a controlled, high-quality figurative outcome: 'with no residues', as in a perfect chemical reaction. To do this, all historical-critical and technical operations must move at the same pace, interacting with each other in close, fruitful dialectics. Technical and scientific methods cannot actually be treated differently from the historical-critical and theoretical issues of restoration, or be regarded as unknown or opposed to each other. A technological operation, if culturally aware, must be put to the test, as we mentioned before, by a broader critical reflection and by the cultural approaches that currently prevail in restoration. This might suggest that, in so doing, sciences are pushed to the background but the actual intention is just to give awareness and a theoretical form to the technological problem, which must be able, first and foremost, to respond to the 'historical' and 'aesthetic question' that the monument, as part of the cultural heritage, is asking. Instead, even now, such relations unaccountably tend to be overturned, and technique and the mere materiality of the project are made to overrule history. The technicalconservative operation is made so independent that it tends to be identified with the restoration job itself, thus fully replacing the 'how' with the 'why' to preserve the matter and with the 'what' to preserve.

This results in a lack of or in a poor understanding of the conservative operation, the option to exploit it, the wrong belief that the preserved items may be somewhat interchangeable and may be treated with non-critical indifference, which may lead to a strictly consumeristic purpose. Technology, both applied and non-applied, is still deeply rooted in the belief that it is independent, while it is essential to become clearly aware of the complexity of the problems involved in the ever-changing and unpredictable nature of the memories that are to be protected and perpetuated, the structure of the view of each work of art, the typological definition of space in architecture, the historical layers. It is all this, not just technicalities, that dictate what kind of a technical job will be chosen.

6. Restoration of and 'accessibility' to the monumental heritage

Defining restoration as a 'cultural operation' (a historical-critical and scientific-technical foundation) makes us reflect on the fact that culture is, by definition, an exchange, it is communication and openness to man, with no distinctions of race, education, wealth or, may we add, 'ability' or 'disability'.

Emphasis has also been placed (Brandi, 1977; Pane, 1987; Bonelli, 1995; Philippot, 1998; Cordaro, 2000) on the ethical, non-empirical or economist dimension of restoration, in this case architectural restoration (as opposed, for example, to that sort of muddled ersatz solution that is the so-called 'recovery' of a building), and not just in a professional deontological sense but in a more general spiritual sense. It responds to a defining and designing method that lays down stricter restrictions onto itself than the method designed to build new architectures: building restrictions, based on the historical-critical assessment of a monument, technological and working restrictions in terms

8 G. Carbonara

of selecting the most appropriate finishes and materials, restrictions on use and development, including precisely those that concern full accessibility, rightly considered by any careful restorer-architect as no more exacting than the others, maybe just worthier than them.

So, as in restoration, because of its cultural nature, rather than regulations there is a need for recommendations, guidelines, policies, which, in the history of this discipline, are the 'Charters for Restoration' (for a commented review, see: Esposito, 1996; Mancini, 2007; or even Carbonara, 1997) which have never claimed to have the same force as a law, as it should be for the problem of architectural barriers. While nowadays, as public awareness of this kind of problems is still not too widespread, there is an actual need for regulations and laws, however they should not come in the form of rigid precepts or mechanical rules. There must be some leeway, especially when dealing with the cultural heritage, for interpretation and discussion on a case-by-case basis, considering that substantial progress has been made in this area in the last two decades.

Basically, there is no irremediable contrast between the protection of and accessibility to the heritage. They must be regarded as any other part of design, such as safety, structural soundness, thermal and hygrometric comfort, building and planning regulations, financial resources.

As everyone knows, restoration looks to the future, not to the past, and neither is its use exclusive to few chosen lovers of antiquity. It has an educational role, it acts as a memory for the future generations, for young people; after all, it is not about complacency for one's studies but it is about any citizen's education and quality of life, in the broadest spiritual and material sense.

In addition, the 'integrated preservation' principle (as in the European Charter of the Architectural Heritage and Amsterdam Declaration, both dating back to 1975, see Esposito, 1996: 474-482 and Carbonara, 1997: 679-691), in pointing to the inadequacy of the restoration of "stones only", insists on the close connection between restoration and the bestowing of an appropriate role; lacking which, any effort made to preserve a monument would be pointless, as proven by the different fates of monuments that, albeit similar, have had very different stories. So, for example, the Pantheon, as opposed to the calidarium of the Baths of Caracalla in Rome, or, to go on with Italian examples, the Medieval abbey of S. Nilo at Grottaferrata or the Carolingian one of S. Vincenzo al Volturno: the former ones, well preserved as constantly used, the latter one, dilapidated after a long time of neglect.

Anyway, the problem must be laid out in a well-balanced way, with no extremisms on either side; without entrenching oneself in the idea of a preconceived untouchability of the heritage, as well as without wanting to stress the heritage, especially if archaeological, so much as to pervert its nature. However, it should be said that ordinary works for adapting old plants (electric plants for motive power, lighting, alarm systems, heat regulation, sanitation; installation of additional utilities, etc.) are perhaps more dangerous than provisions in support of accessibility. After all, preservation is never just that, neither is it 'pure preservation', it is unfailingly a 'controlled transformation', as Leonardo Benevolo has pointed out for over half a century.

Such job is not about adjusting things one by one, it is about deploying every possible synergism, for instance to reduce the impact of the measures that need to be taken.

A discussion of some recent experiences may shed light on this issue. In Rome, in the ongoing arrangement by the Municipal Fine Arts Service of Rome of the excavation site in front of the propylaeum of Portico di Ottavia, the display and preservation of the archaeological evidence has resulted in a design solution that has been imbued with a very distinctive urban value since the very beginning. So, that was not about arranging an excavation trench but creating a visitor's trail and some stopping places everyone could have access to through easy ramps, which are a major formal feature connecting the ancient with the new and ensuring the life of the site.

Electric cars have been developed to enable elderly and disabled people to visit Villa d'Este, in Tivoli, in the region Lazio, not far from Rome. We should also mention, for example, the development of easy trails in WWF wildlife sanctuaries, designed and fitted out not just for disabled people on wheelchairs, for blind or visually impaired people, for mentally disabled people, but also for elderly people, for pregnant women, injured people, people with health problems, such as heart patients, people with small children, so they are open to just everyone, as it should always be.

All such experiences share a special care in the development of a project and, in most cases, in the executive stage, especially if the designer-architect and the project manager are one and the same person.

As a matter of fact, a project is a creative combination of different requirements, where what is done to remove barriers, just like many other functional requirements, plays the role of an ordinary measure, designed to enable everyone to enjoy the heritage in the best possible way and in perfect freedom.

References

Bonelli, R., 1995. Scritti sul restauro e sulla critica architettonica (Scuola di Specializzazione per lo studio ed il restauro dei monumenti, Università degli Studi di Roma "La Sapienza", Strumenti 14, Bonsignori, Roma).

Brandi, C., 1977. Teoria del restauro. Einaudi, Torino [first edition: 1963. Roma.

Carbonara, G., 1997. Avvicinamento al restauro. Teoria, storia, monumenti. Liguori, Napoli.

Cordaro, M., 2000. Restauro e tutela. Scritti scelti (1969-1999) (Annali dell'Associazione Ranuccio Bianchi Bandinelli. Graffiti Editore, Roma.

De Angelis d'Ossat, G., 1995. Sul restauro dei monumenti architettonici (edited by Spiridione Alessandro Curuni, Scuola di Specializzazione per lo studio ed il restauro dei monumenti, Università degli Studi di Roma "La Sapienza", Strumenti 13, Bonsignori, Roma).

Esposito, D., 1996. Carte, documenti e leggi. In: Carbonara, Giovanni (Ed.), Trattato di restauro architettonico, vol. 4. Utet, Torino, pp. 405-621.

Léon, P., 1951. La vie des monuments français. Destruction, restauration. Picard, Paris.

Mancini, R., 2007. Carte, raccomandazioni e documenti internazionali: un quadro di aggiornamento. In: Carbonara, Giovanni (Ed.),

Trattato di restauro architettonico. Primo Aggiornamento. Grandi temi di restauro. Utet, Torino, pp. 607-638.

Negri, A. e, Russo, J., 2008. Degrado dei materiali lapidei: proposta di simbologia grafica. In: Carbonara, Giovanni (Ed.), Trattato di restauro architettonico. Secondo Aggiornamento. Grandi temi di restauro. Utet, Torino, pp. 533-544.

Pane, R., 1987. In: Civita, Mauro (Ed.), Attualità e dialettica del restauro (Anthology of Texts. Solfanelli, Chieti.

Philippot, P., 1998. Saggi sul restauro e dintorni. Antologia (edited by Paolo Fancelli, Scuola di Specializzazione per lo studio ed il restauro dei monumenti, Università degli Studi di Roma "La Sapienza", Strumenti 17, Bonsignori, Roma).