

Conservation of 20th Century Architecture: The Contribution of the Conservator/Restorer to an Interdisciplinary Approach Illustrated by the Conservation of the Bauhaus Buildings in Dessau 1998-2006

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Abstract

Primarily, it is essential to note that right up to the present day no juridical definition or legal recognition concerning the profession of the conservator/restorer exists in most European countries. This in turn means an almost complete lack of specific regulations covering any anticipated conservation–restoration activities and the failure to stipulate the quality of these activities. The absolute need for qualified professionals, for a legal status, for an evaluation of the dynamics in a conservation restoration project and finally for an analysis of the essential methodological steps of the conservation project require the presence of professional responsibility, competence and qualification.

It therefore comes as no surprise that at the very beginning of the conservation process of 20th century architecture the professional figure of the architect was not discussed in a manner reflecting such a person's historical relevance. The task of the conservator/restorer at that time was to take part in a planning process that often started with a “reconstruction concept” for regaining the lost “original” design of the architecture. Reconstructing “ideas” seemed more important than following the traces of authentic materials, and documenting and conserving them. This was often justified by citing a supposed “special status” of modern architecture which was deemed too fragile and too ephemeral to be conserved as any other historical monument.

It seems obvious that the colour investigation of the Bauhaus buildings in Dessau in 1998 paradigmatically reopened the confrontation between “conservation” and “restoration” in the

field of conservation of the “Modern”, not only as regards the architectural surfaces but also the built structures themselves. Recent conferences organized by specialists in architectural surface conservation – as in Copenhagen in 2005 on “Architectural Paint Research” and in Brno in 2006 on “Materiality” – had without doubt an international pioneering character that has been echoed to some extent in recent restoration projects all over Europe – as witnessed in (among others) the case of the Haus Tugendhat in Brno. An attempt should be made here to illustrate the fact that effective “project management” based on a shared and transparent theoretical foundation is able to bring about a conciliation of these apparently diametrically opposed opinions and concepts.

Keywords: 20th century architecture, Bauhaus, paint research, conservation and restoration of architectural surfaces, modern building materials

Klíčová slova: architektura 20. století, Bauhaus, výzkum maleb, konzervace a restaurování architektonických povrchů, moderní stavební materiály

Introduction

It is a well-known fact that professional conservation, repair and maintenance work requires above all the research and documentation of the material and esthetic components of the monument to be preserved. Ever since the 19th Century, the classical discipline of monument care is the inventory that defines the cultural significance of the monuments through scientific exploration, description and interpretation in words and pictures and clearly justifies the state's claim for preservation.

Thanks to the introduction of interdisciplinary collaboration, the methods of structural and esthetic analysis of monuments have been refined considerably in the last thirty years. Ideally, the work of the inventories should also profit from the knowledge gained during conservation work. That is one of the reasons why conservation laws generally foresee an obligation for documentation, which is set in type and scope in the form of levies. Therefore the competent work of all the participants in monument care should be based on a perfect osmosis between inventory and daily conservation practice. The modern perception of monument care respects historic buildings as an authentic source. Its substance is understood on one hand to be a material and its edited form and on the other hand to be a certain historicity that, in addition to aging and decomposition, also includes the inevitable total loss of the material itself.

The knowledge of the essential nature of the monument/document requires examination, identification and documentation. Only on this basis should the formulation of a necessary conservation strategy occur, and that under the most indirect or minimal invasive interventions with the participation of contrasting disciplines. Inevitably, during each intervention to a monument, an evaluation occurs and sets the stage for a decision for or against the conservation of its material components and layers of time. This evaluation may follow the “Zeitgeist”, the fashion or seemingly objective criteria and may mostly be weighed up following subjective intuition. This obviously structural vagueness of monument care can be addressed only through consensus and through the accountability, confirmation and transparency of the decision making processes.



Fig. 1 Bauhaus, southern façade, after conservation. Repair and reconstruction of the plasters and paint, 2006. (Photo T. Danzł)

The concept of minimum intervention as possibly the most extensive conservation method of the authenticity of the materiality in a monument is the primary objective that must be followed without dogma. Even the preservation of invisible layers and materials as part of a newly interpreted structure follows the concept of sustainability: Not everything that is discovered, must be revealed. Not everything that is revealed must remain visible. The reconstruction of lost states or design issues in the life of a monument is (so far?) not a priority of monument care.

Building archeology and material science together with conservation sciences offer in this perspective an essential contribution to the practical conservation of the monument, and likewise, to the inventory. It is important to accentuate that conservation; restoration and reconstruction are not purely stages of a linear evolution in the critical evaluation of the monument: rather, they involve a dialogic interaction. Since the early 20th Century, these three methodological areas have defined the poles that describe the tension of the monument, which will be constantly re-evaluated on the individual case of the monument and its balanced needs. The monument is conceived aesthetically as an „image,“ which describes itself or is also conceived as an „image“ that one makes of it and is without doubt time-bound. Only in understanding the „language“ of the material substance can these antipodes be successfully redeemed. The society-founded „departure“ in the new millennium from a „value“ and „substance“ oriented definition of monuments to an „image“ oriented one – seems to be – at least in Germany – a new consensus, with a paradigm shift being the implication. But conservators/restorers, conservation scientists and building archeologists are committed in the first place to the historic substance and the evolving or converted aesthetical appearance linked to it.

Conservation/restoration sciences, in the general context of the practice of monument care, are both applied sciences and without doubt “per se” interdisciplinary. So if the presently highly-qualified scientific principles are to be applied also in the future, a critical review is necessary. This is determined by the aforementioned socio-cultural change, a fact it would be foolish to overlook. Especially those working in the field of architectural conservation have always been at the mercy of so-called investment pressure, calling for a pragmatic weight between their own academic standards and the possibilities of adequate and proper implementation.

The need for interdisciplinary collaboration on the monument however, requires last but not least, co-operation with the craft. At one stage, especially after the 1960s, Europe’s craft traditions were slowly disappearing and an urge for the preservation of the so-called “living heritage” – caring for surviving craft knowledge was deemed necessary as was the revival of long lost regional traditions in terms of the so called “material culture”.

If state monument care institutions want to maintain their technical and legal independence in the future, it is necessary to keep in touch with the ongoing professional development with the latest material and technological issues as well as to pursue much closer collaboration with university research and training institutions. The quality of the work of state monument care on one hand and the quality of the conservation/restoration at a theoretical and at a practical level are interdependent and failure of either will result in failure of the whole. Both qualities are determined by the skill of each participant, regardless of whether he or she is an art historian, architect or conservator/restorer: The partners involved may be not sharing the same profession – architects, art historians, structural engineers, building archeologists, conservators or conservation scientists – but they should agree on a common knowledge of methodology. Furthermore, the goal of all partners should be to reach maximum, constantly-evolving quality in conservation through the continuous evaluation of restoration success with the definition of new standards being always inevitable. The lack of formal protection afforded the profession of conservator/restorer, and likewise the lack of an effective and transparent self-regulation framework by the professionals themselves, in the form of „Conservation/Restoration Criticism“, both serve as a further obstacle to the consequent necessary separation from incompetent competitors. In addition to the above there is the rather underrated social prestige of the profession of the conservator/restorer which corresponds to its low esteem in the eyes of the general public. However, increasing professionalization and academic recognition at highly specialized European Universities and an educational program rooted in public relations promise to provide a remedy in this regard in the near future. As long as highly qualified conservation professionals (particularly Conservator/Restorers and Conservation Scientists with PhD degrees) are denied access to senior positions of the public service, particularly in museum and monument authorities, the expertise of a “technical representative” will always have less persuasive power than that of a “research assistant”. The frequently mentioned restorer’s professional ethos and enthusiasm cannot be dampened by the reality of unequal pay and career prospects. Interdisciplinarity can only work on a one-to-one level and persisting professional hierarchies can only serve to create chasms between specialists!

Concerning the Special Working Field of Architectural Surface Conservation

It is general knowledge that the extensive use of organic film forming binding media, for example Paraloid and its equivalents and derivatives, were systematically introduced into conservation practice during the 1960s. There is no point in lamenting this fact now, as in many

Fig. 2 Bauhaus, western façade, 2006. (Photo T. Danzł).



Fig. 3 Bauhaus, eastern façade, detail, 2006. (Photo T. Danzł)



Fig. 4 Bauhaus, repaired and reconstructed façade materials: - lime wash, scratched "Terranova", "Steinputz" treated as artificial stone, 2006. (Photo Danzł)



cases it was the best choice for the period and for the task. One could say that a sometimes insinuated Eurocentric point of view as well as the mission to do as much as possible and as little as necessary was a leading motivation. Although the empiric knowledge of the conservators/restorers had already been previously held in high regard, collaboration with natural scientists offered a new methodological quality.

In the meanwhile the myths of reversibility, anti-ageing and protective coats were discredited by reality. Environmental pollution and eventually the energy crisis encouraged the conservators to make sustainable use of consolidants, and long-term studies on stone deterioration favoured the rediscovered use of mineral based consolidants such as ethylsilicates and/or sacrificial layers on lime based plasters and paints. As a consequence in the early 1970s, the second pillar of conservation practice – upholding the tradition of mineral treatments in architectural surface conservation – became influential again.

Once again the motto “learning from the past” was foremost, but something had changed fundamentally in this approach: the interdisciplinary scientific profile of the conservator’s/restorer’s profession is without doubt an achievement of the late 1970s. Lime – used in the correct way – offers a more or less harmless repetition of repair cycles and the material integrity of historic monuments. The fact that organic and mineral consolidation methods were often confused and sometimes unchecked, led in the end to a critical and scientific examination of the defects and the possibilities of the material and its use. At the same time, probably as a reflex to the extended and sometimes unreflective use of synthetic resins, an attitude of non-intervention towards high-quality works of art was taken, and persists combined with preventive conservation strategies up to the present day.

Therefore, the preservation of historic plaster must be regarded as a relatively new area of responsibility in building conservation. In the late 1950s and early 1960s, conservators in (what in those days were) the GDR, in Poland, Hungary and Czechoslovakia were the first to demonstrate a scientific awareness to the composition of historic plaster and non-decorated architectural surfaces. Only since the late 1970s has monument care in Southern Germany and especially in Austria and Switzerland established a broad and systematic inventory of historical architectural surfaces under technical aspects, discussing the possible setting of European standards towards the end of the 1980s. On the other hand, the increasingly evident overall loss of traditionally working craftsman encouraged the education of specialists in the field. After the fall of the Berlin wall and the Iron Curtain, the astonishing richness in materials and techniques and especially the authenticity of the preserved architectural surfaces in Eastern Europe stimulated many authorities to develop appropriate interdisciplinary conservation strategies.

The annual conferences in Brixen and the UNESCO meetings in Venice in the 1990s were important milestones for the conservation of stone and architectural surfaces. From 1991, the European project EUROLIME tried to support the development and re-introduction of lime techniques in building conservation (extending the initiatives of the Danes, Austrians, and the Scottish Lime Centre). In 1996 and 1998, the Bundesdenkmalamt organized courses with the support of ICCROM on the conservation of architectural surfaces that lectured on interdisciplinary teamwork between conservator/restorers, conservation scientists, conservators, architects and art historians.

Proving to be essential in all these projects was also the necessity of close collaboration between the industry, the state monument care and educational institutions. In addition to this the definition of the basic tasks of care and maintenance of architectural surfaces was also considered. The cross-linking of skills in the years of the building boom in the former East

Germany from the late 1990s was the essential litmus test of building conservation. Project and quality management, quality assurance, sustainability of preservation, maintenance and care were the magic terms. Only now, with the end of the “golden age” one recognizes the high range and complexity of the restorer’s work in this broad field and one can also observe that we have reached unprecedented levels of multidisciplinary, interdisciplinary, and if need be, trans-disciplinary approaches to conservation. Methodologically it seems that we are able to decode nearly any material information and – at least theoretically – we are able to preserve the material cultural heritage for future generations in a suitable manner. However, the fact remains that the antagonism between conservation and reconstruction will persist as an extremely demanding issue. Conservators/Restorers – from time to time – try to find solutions to reconcile the two opposite poles of “Conservation” and “Reconstruction” – a fact that it is necessary to address here.

Fig. 5 Bauhaus, Mensa after repair and reconstruction works, 2006. (Photo Stiftung Bauhaus Dessau)



The “Bauhaus Experiment” – 1998-2006: Paint research and Conservation Strategies Critically Revisited

It is the fourth of December 2006 and the eightieth anniversary of the opening of the Bauhaus Buildings in Dessau has just been celebrated. The Bauhaus building and the colony of the so-called Masterhouses in Dessau, built in 1926, had been inscribed ten years before on the UNESCO world heritage list together with the Haus am Horn in Weimar in 1996. After ten years of a colossal amount of maintenance, conservation and reconstruction work this icon of the modern movement, thought to be long since lost, could be reopened to the public. Jubilees are always a welcome occasion for a face-lifting or a total reconstruction of buildings which guarantee remarkable prestige. Already the fortieth anniversary in 1966 offered the opportunity of a new evaluation of the modern movement and also offered an opportunity to undertake the first reconstruction work of the ruined original which was finally concluded in 1976. The experiences of the first reconstruction of the Bauhaus in Dessau in 1976 and especially those of Bruno Taut’s settlements in Berlin and the contemporary reconstruction of the Weißenhofsiedlung in Stuttgart in the 1980s showed that the belief in a supposed continuity



Fig. 6 Bauhaus, inventory. Sample of “Triolin” floor covering, 2006. (Photo Stiftung Bauhaus Dessau)

of building materials, rampant since the 1920s risked, taking the common practice of monument care in a false direction – something which seemed to have been overcome around 1900.

For years, the positivist belief in the continuous improvement of building materials seduced many conservators into justifying the replacement of authentic materials – classified as insufficient – by more modern ones. Special attention was paid to the superficial characteristics and not to the structural singularity of the historic building materials. This became possible because the idea and the project of the architect was – as in renaissance times – considered to be superior to the inherent defectiveness of contemporary building materials and craftsmanship. The need to re-restore after only thirty years also accentuated the need to take a critical approach towards the history of restoration. The preliminary studies for the Bauhaus building between 1998 and 2000 proved that the declaration of a master concept was based more on the principle of maintenance than on the declared wish to reconstruct lost parts and repaint the coloured finishes of the walls.

The principle of “minimum intervention” and the high level of the documentation and investigation into the “primary source” – the building and the traces of its history – led to a “project management” which tried to establish and adopt a conciliatory balance between theory, methodology and operative solutions. The evaluation of the often frustrating experiences in the case of the reconstruction of the Kandinsky/Klee Masterhouse demanded a way of planning that lead from analysis to synthesis.

For a long time black and white photos influenced our perception of modern architecture. All of us must surely remember the photos in Leonardo Benevolo’s first edition of the *History of Modern Architecture* published in 1960? The physical destruction of a huge part of the Gropius design, the consequent transformations of the remains, and finally the impossibility to actually visit the Bauhaus for more than thirty years all served to reinforce the impression of a “lost dream”. Last but not least Benevolo himself postulated that the work of Gropius, reduced to rotten walls, does not exist anymore. “It’s not a ruin as the buildings of antiquity, it doesn’t offer any physical fascination,” he stated. His comment that “the modern architecture wouldn’t be able to become older in a good way” is still remembered today in the case when even more radical interventions or the total substitution of original materials have to be justified.¹

1 BENEVOLO, Leonardo. *Storia dell’architettura moderna* (13. ed.). Roma : Bari–Laterza 1977. ISBN 9788842025399.

*Fig. 7 Masterhouse Kandinsky/
Klee, eastern facades after chopping
of the original plaster with
conserved "campioni", 1998.
(Photo Danzł)*



*Fig. 8 Masterhouse Muche/
Schlemmer, facades before
uncovering of the original plaster,
2002. (Photo Danzł).*



The colour-fireworks inside the Bauhaus buildings, as the interiors were referred to by some eye-witnesses, were burnt out and no visible traces have been left due to the alterations that time has brought. This revolutionary architecture was both an experiment and a new life style. As with every experiment this too could not satisfy all expectations: in wintertime the houses were freezing cold, in summertime burning hot and finally the colour orgy itself was difficult to stomach in the long run. After the Bauhaus had been closed by the National Socialists, the first things to be changed were the dimensions of the large windows of the Masters' Houses. Then several chimneys were added. The interior walls were painted a muddy green. World War II destroyed the villa of Walter Gropius and the Moholy-Nagy Masterhouse. Right up to the 1970s the original outer architectural surfaces were still visible with all the traces of the structural changes undertaken to readapt the colony to traditional housing concepts. Pragmatism, in the form of the rough cast applied in the 1970s, banality and pure necessity transformed the houses into shacks. But misery is sometimes the best conservator: Many details, as for instance, the original door-handles and the authentic surface of the polished varnish of the wardrobes, were preserved.

Alfred Arndt drew a coloured sketch in 1926 which shows the ideal colour scheme of the Masterhouse facades. Since the first conservation campaign on the Feininger Masterhouse in

1992, the architect, who planned the reconstruction of the building in its 1926 form tried in vain to find proof for its realization one to one on the facades. Instead, after a traditional paint research inside – based on simple colour stratigraphy patterns and not correlated at the same time with the results of the building archaeology – each room was found to be composed of a sequence of monochrome walls which condition each other in a game of polychrome forces. Only two, apparently contradictive, concepts and working steps were discussed and harmonized:

- 1) The conservation of the authentic materials with appropriate methods, and restoration with authentic materials upon the preserved original using buffers or sacrificial layers.
- 2) If reconstruction of the partly lost components of an architectural surface (rendering, colour, stone and artificial stone, glass, metal) is justified (following the Charta of Venice), it has to be undertaken in a reconstruction process which is close to the authentic material and its working technique (contradicting the Charta of Venice).

Obviously this process demands a close and continuous collaboration with conservators/restorers. In fact the experience shows that their contribution to research works on materials was enormous and lead finally to the emancipation of their professional profile in an interdisciplinary working group.

How can this hypothesis of a – to a certain degree authentic – reconstruction be theoretically justified?

- 1) Because the state of conservation of the buildings and the history of their transformation did not allow a conservation concept based exclusively on the concept of minimal intervention and repair. The method of reconstruction based on the conservation of authentic remains and layers of information including the years of the German Democratic Republic allowed the renaissance of a “heroic phase of modern architecture” that was thought to be lost, without precisely knowing its artistic and historical value and without the possibility of a natural scientific evaluation.
- 2) Because the experimental character of these buildings is only expressive when the authentic language of their materials is recaptured.

On the other hand, the widely demanded reconstruction of the original colour scheme had to follow the results elaborated by building archaeologists, natural scientists and restorers, and were subsequently discussed in the team. The conservation of architectural surfaces followed the same principles. Tests to mechanically uncover the original lime washed facades were undertaken by restorers. Samples were taken to plan the repair work in an adequate way. The cross-section and micro-chemical analysis proved that the first layer applied on a lime rendering was done in a fresco style, followed by another two secco-layers. In this occasion, Walter Gropius’ original description of the facade paint as a Keim silicate colour on a cement mortar was discovered to be a white lie for publicity purposes. After documentation of all the remaining original components, repair work was done by craftsmen under the instruction of wall paintings restorers, and finally the facades were lime washed. The concept of proceeding step by step allowed the discovery of fragments of two originally grey painted facades, which probably would not have been discovered had common concepts of renovation been followed. The sensation was absolute when a niche painted with red lead was found in this way.

For an improved discourse concerning the consequences of the paint research results,

coloured side views were used. As a result, the Muche-Schlemmer Masterhouse is the only one of three which shows a complete and original colour scheme on a repaired, and to a large extent original, foundation layer.

The positive results of this process encouraged a similar procedure inside:

- The graphic, photographic and written documentation of the present state of preservation was combined with a preliminary stratigraphic research on foundation layers and paint layers in order to establish a relative chronological record wall by wall and room by room.
- The interpretation and classification of the paint layers in a synchronic or diachronic way was facilitated using cross-sections and micro-chemical analysis and was followed by proposals of one or more synchronic colour systems in a colour project. A more complex presentation concept was created after correlation of the historical data concerning the architectural form and the colour by an interdisciplinary committee.

In the following years, due to the creation of a framework for these objectives of monument protection, it was possible to realize a methodically transparent and understandable preservation concept for architectural surfaces. This concept, as the recent conferences in Copenhagen in 2005 on “Architectural paint research” and in Brno in 2006 on “Materiality” have shown, has an international pioneering character, not least because the restorer, in accompanying the construction work, was hereby awarded the role of an inter- and transdisciplinary mediator.²

The technical complexity of the wall paints at the Bauhaus demands a highly-qualified preparation of the foundation layers. The overall Japanese paper-facing was followed by different types of buffer or sacrificial layers, defined individually step by step to guarantee the greatest degree of material and aesthetical authenticity of the reconstruction. The reconstruction of different monochrome surfaces which interact in an architectural context is only meaningful if the materiality of the paint is recognized in its entirety. Respect for the structure and the texture of the materials used, together with the application method and the resulting working traces, are essential factors in avoiding a superficial substitute. Clearly defined materials and working techniques have to be transmitted by the restorer to the housepainter and verified by test work. From 2000 onwards all these criteria were followed in an exemplary way at the Bauhaus building.

The different languages of the materials were rediscovered step by step: traditional and industrial mortars as found on the facades; scratched “Terranova” for the basement and traditional lime mortars and paints for the planes. Inside the building the terrazzo floors or the jointless “Steinholzestrich” floor, based on magnesite, pigments and sawdust, contrast with metal, glass and coloured paints. Contrasts in surface treatments abound everywhere: matt, rough, glossy and smoothed. Especially in the studio building Hinnerk Schepers’ concept of colour as a guiding element in architecture is presented as in a manual and as a primary source of his ideas. In the period between 2002 and 2003, another building by Walter Gropius in Dessau, the former “labour exchange” building, was conserved and restored with the same respect for

2 BREGNHOI, Line; HUGHES, Helen; LINDBOM, Jenni; OLSTAD, Tone; VERWEIJ, Edwin (eds.). *Paint research in building conservation. (Understanding decorative paint with a view to informed conservation, Conference 5th–11th.5.2005, National Museum Copenhagen Denmark)*, London : Archetype Books, 2006. ISBN 1904982042.

ČERNÁ, Iveta; HAMMER, Ivo (eds). *Materiality. Proceedings of the International Symposium on the Preservation of Modern Movement Architecture (Erhaltung der Architektur des Neuen Bauens, Brno/Brünn 27/29.4.2006, Schriften des Hornemann Instituts Band 11)*, Brno : Muzeum města Brna 2008. ISBN 978-80-86549-54-5.

the structure and the texture of the used materials as in the aforementioned cases. The combination of artificial stone, metal, glass and colours relates perfectly to the concepts of “light, air and public health” promoted in the 1920s. The proposed conservation work on colour concepts in modern architecture proved, that conservation sciences are capable of providing an important input leading to a satisfactory result in architectural reconstruction. An insufficiently conserved heritage could be verified, documented and analyzed following the scientific standards of wall painting conservation.

The Starting Point of the Debate

Nearly fifteen years after the beginning of the first systematic documentation of work in the so-called “Masterhouses” in Dessau and six years since the inauguration of the restored “Bauhaus” school- building it seems to fitting to draw up a critical résumé for further effective discussions. This is especially desirable as the guidelines, methods and strategies developed and finally implemented during the conservation work were at the time undoubtedly of an experimental nature.

As various, often conflicting theoretical approaches to the conservation and presentation of heritage sites exist, it is not surprising that the treatment of “modern” monuments was, and still is problematic, as the recent conservation work at the Villa Tugendhat in Brno (2010-2012) may prove. It can be taken for granted that the colour investigation of the Bauhaus buildings in Dessau in 1996, reopened the paradigmatic confrontation between “conservation” and “restoration” in the field of conservation of the “Modern”, not only as concerns the architectural surfaces but also the built structures: At this point an attempt should be made to illustrate the fact that effective “project management” based on a shared and transparent theoretical fundament is capable of bringing about a conciliation of these apparently diametrically opposed opinions and concepts. The conservation and repair of the original subject, planned and surveyed by the restorers/conservators and other conservation professionals, can bring about an entirely plausible, restrained reconstruction whilst remaining respectful to the surviving remains.

The concept of “repair” – instead of mere reconstruction “ex novo” – places the emphasis on respect for the “traces of time” – or rather – respect for alterations due to the aging of materials and critical evaluation of the value of later interventions. Generally, reconstruction projects neglect this last aspect, eliminating as a consequence more recent layers and structures. On the other hand a conservation concept that tries to illustrate the history of a building ends up risking an artificially orchestrated synchrony of the contemporary in the non-contemporary that might negatively influence the originally intended aesthetic and structural appearance.

The parameters of the above-mentioned critical process must respect the material, historic and aesthetic premises of the monument. In this perspective it seems to be generally acceptable to adopt the positive discrimination of one or two aspects if the decision making process is to be reproducible.

A firm prerequisite of this concept is the method of “minimal intervention” to preserve the maximum of authenticity. It is certain that there must be certain criteria that allow a critical process during interpretation of the historical data preserved by all the materials added to the monument’s lifetime from its origins up to now. This necessary process of selection influences and – simultaneously – is strongly influenced at the first stage by esthetical perception and at the second stage by theoretical preparation – and depending on this – by the importance awarded it

by the participants involved in the conservation process at a certain time.

In most respects, every conservation project adds a new layer of materials and time linked aesthetic values to the monument, which can be considered to be, to a certain extent, reversible. The crucial moment remains the act of dismantling or demolition of historical strata as an irreversible act of interpretation of the monument's history.

Previously in 1996, a conference organized in Leipzig by the German National Committee of ICOMOS instigated a debate on the topic: "Conservation of Modern Architecture". This followed two aims: the first was to overcome the perception of an eternal modernity which presumes the phenomenological identity and conformity of materials, and the second was to acquire an overview from a historic perspective and to gain appropriate practice in conserving artefacts of the modern movement. Although modern monuments were not awarded a "special status" and it was emphasized that "these are to be treated in the same way as any other monument", the preservation of architectural surfaces, plaster and colours still played a distinctly secondary role in the debate.

The Practice

Auxiliary means are therefore the establishment of appropriate building material archives – a sort of "inventory", the safeguarding of restoration-related findings, and the experimental material-based reproduction of historic working methods and materials. In this perspective, the monument is preserved as a source of information for the so-called "material culture", and by means of the principle of minimal intervention, becomes a lasting resource for the conservation of materials and energy.

This is decisively aided by the special development of layers that could serve to protect the monument from wear and tear, and "buffer" or "sacrificial" layers, which are compatible with the precepts and demands of monument protection and have the capacity to protect the original surfaces and may also be applied to the (materially identical) color reconstruction.

But as time has shown, the route from theory to a commonly shared practice can be long and full of obstacles. Fortunately, the general awareness of conservation specialists concerning respect for the authenticity of materials and especially for colour schemes during conservation/restoration has increased since then.

The contemporarily established decision-making process, more or less respected in conservation restoration projects, can be generally summarized as follows:

- Initiative
- Preliminary examination, diagnosis and decision to intervene
- Project formulation and final approval
- Selection of service providers
- Execution of the conservation- restoration intervention
- Monitoring of the conservation-restoration intervention
- Documentation
- Maintenance and preventive conservation



*Fig. 9 Bauhaus,
main entrance hall
after reconstruction
of polychromy, 2006.
(Photo T. Danzŕ).*

Undoubtedly, an increased desire for transparency in the decision-making process and in the management structures would lead to an equally increased public accountability of the conservation-restoration issues.

Reconstruction Versus Conservation?

The recent debate surrounding the reconstruction of the “Villa Gropius” in Dessau shows that the “concepts of reconstruction” and the alternatives to it are still obscured by clearly persistent, long-standing taboos. The virtually unanimous opinion concerning the issue of reconstruction in Western Germany after World War II and the predominance of the “International Style” blocked any open discussion about this argument for decades.

It was only with the generation-change and – paradoxically – thanks to the supposed failure of Post-War Modernism that the desire for traditional values and historical continuity could find favour in the paradigmatic change and, as a consequence, facilitate the reconstruction of an old and nearly lost identity by (re)constructing a building – in Viollet-le-Duc’s words – “to a finished state, which may in fact never have actually existed at any given time”.³

It is interesting to notice that with the fall of the Berlin Wall, reconstruction could evolve from a taboo subject to a new option in architectural history. The decision of the German Parliament to reconstruct the irretrievably lost Berlin Castle came just as the last taboo concerning the reconstruction “ex novo” of a monument “as it was and where it was” was laid to rest. The state authorities of monument care ignored this socio-cultural evolution for a long time, generally stating that reconstruction does not represent an integral part of conservation-restoration – a white lie as becomes apparent on studying the history of restoration.

Obviously the transition between the different levels described by the act of conservation,

3 VIOLLET-LE-DUC, Eugene. *The foundations of architecture*, New York : George Braziller, 1990, ISBN 9780807612446.

restoration, repair, renewal and part or complete reconstruction is fluent, and the general acceptance of reconstructions increases or decreases with the knowledge concerning the lost monument and the respective expectations of the spectators towards its reconstruction.

Complex conflicts surrounding such monuments are ever-present. They include for example the future tenant's legitimate desire to exploit a building reconstructed at a surface or structural level, the necessity to preserve the inventory (conservation/restoration), and the logical desire to revitalize the largely lost surface characteristics (reconstruction) of the Bauhaus colour scheme. However, a methodical approach to the "conservative reconstruction" of the Bauhaus buildings was found, respecting all the above-mentioned aspects.

This means that analysis, evaluation and interpretation based on building research and natural and restoration sciences is assumed to be the first indispensable step in the development of a conservation concept. This procedure is furthermore interdisciplinary and process-orientated and therefore enables a flexible response to new knowledge and problems.

The formulated aim of the reconstruction of the Bauhaus colour scheme proscribes that the treatment of the surfaces should be reversible to the greatest possible extent. This is not only in the interest of the preservation of the authenticity of the vestiges of the historic surfaces, but also allows the option of repeated analyses and evaluations in the face of potential problems, and in the light of new knowledge.

The colour, acknowledged as a building material, through the varied combination and concentration of its constituents – pigments, binding agents and aggregates – with its own structure, became in the 1920s an autonomous visual medium. Innumerable variations come into being by virtue of the nature of the surfaces or the texture of the backgrounds, the degree of the density and glossiness of the colour, and not least, by means of the way in which the colour is applied.

These qualities colour were first sampled by restorers and then subjected, in specific material analyses, to micro chemical analysis. Finally, thanks to of the experimental recreation of the mixture ratios by hand, the colours were reconstructed with their original features. During work in the entrance area of the Bauhaus in 2004, the limits of such experimental color reconstructions – particularly based on secondary sources – became clear: based on black and white photographs taken by Consemüller in the 1920s, the corresponding color values were extrapolated by means of computer simulation, thus allowing faulty areas to be adequately finished.

The Guidelines

The decision-making process finally adapted to the special case of the Bauhaus can be summarized as follows:

- 1) Prioritise the needs of conservation, restoration and/or reconstruction with regards to the intended use of the building and the needs of future maintenance.
- 2) Prepare documentation (graphic, photographic, written) recording the present state of preservation combined with a preliminary stratigraphic research on foundation and paint layers in order to establish a relative chronology wall by wall and room by room.
- 3) Interpretation and classification of the paint layers using cross-section and micro-chemical analysis. Creation of an archive for all samples, and the conservation of stratigraphic "in

situ” exposures. The proposal of one or more historic colour systems for use in the representation project.

- 4) An in-depth examination of the proposed presentation by an interdisciplinary committee utilizing correlation of the historical data concerning the architectural form and colour.
- 5) Quantitative and qualitative assessment of “lacunae” or knowledge gaps in the proposal. In the case of the Muche-Schlemmer Master house, which was heavily damaged in World War II, some rooms were presented in a “neutral” whitewash on a repaired plaster that still shows traces of time in a subdued way. As previously stated, tests have been undertaken to analyse and to interpret black and white photographs of the foyer in the Bauhaus Building in order to complete the “lacunae” in the colour scheme there.
- 6) Codification of the agreed colour scheme with the Natural Colour System (NCS). Further tests and verification with the help of cross-sections and micro-chemical analysis are carried out to establish original pigments, binding mediums and additives. Reproduction of NCS rated colours on acid-free paper by the restorer for documentation and in order to assist the decorators.
- 7) A description of the proposed materials and working methods to be drawn up by the restorer which will enable decorators to respond to an invitation for tender and understand the scope of the project.
- 8) Decorators to prepare trial samples of decorative finishes. Inspection and approval by an interdisciplinary committee.
- 9) Reconstruction work goes ahead.

As in every reconstruction, we have to keep in mind that the result can only be approximate and it reflects the relative knowledge, considerations to and the possibilities of a certain period! But a reconstruction, as in the case of the Bauhaus buildings in Dessau, is not viewed as conclusive act, but rather as a continuous adaptation to the latest scientific findings during regular maintenance and repair works.

Open Questions

The completion of the conservation-restoration works in 2006 finally poses the urgent question concerning the organization of the maintenance and preventive conservation of all the Bauhaus Buildings in Dessau. The prerequisite for this is the unlimited accessibility to, and rapid evaluation of, all documentation which sadly—despite all the engaged initiatives of Monika Markgraf, Stiftung Bauhaus Dessau—remain an unaddressed issue.

In this context the following questions above all, provoked by the conservation needs of the authentic and reconstructed surfaces, must—in my opinion—be answered:

- Which degradation phenomena are acceptable in the functional and aesthetical point of view of the user?
- How can we define the concept of “patina” for original and reconstructed surfaces?

- How can we conserve and treat structurally aged or irreversibly damaged materials that have been unprotected in use (e.g. authentic floor coverings)? When is it necessary to deposit them in the material archive and replace them with equivalent materials?
- Which type of damage is to be found regularly and where? How can we avoid it?
- How often can the reconstructed colour scheme be repaired only partially? When is it absolutely necessary to reconstruct it again, possibly under revised scientific parameters? In the event of a new reconstruction, do we repaint surface after surface, following the special need for reconstruction of the specific surface or do we always have to repeat the treatment and always in its entirety?

And finally the questions that have to be answered right from the start of a conservation project:

- Who does what, why, where, with what and how?

Epilogue

Recently, after decades of theoretical debate about the concepts of “best practice” in preservation of 20th century architecture (“Reconstruction Versus Conservation?”) a new climax seems to have been reached in the 2008-2012 re-restoration of Ludwig Mies van der Rohe’s Tugendhat House in Brno. The author, member of the consultant group of experts (THICOM 2009-2012), together with other members of the group, will present a case-study in a special publication. As far as can be seen, the aforementioned debate concerning these diametrically opposed positions, is still far from reaching a conciliatory solution.

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Rekonstruktion versus Konservierung? Zum restauratorischen Umgang mit historischen Putzen und Farbanstrichen an den Bauhausbauten in Dessau. In *Denkmalpflege in Sachsen-Anhalt*, 7. Jg. (1999), Heft 1, s. 100–112.

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Resumé

Restaurování architektury 20. století: Příspěvní konzervátora/restaurátora k mezioborovému pojetí na příkladu restaurování budov Bauhausu v Dessau v letech 1998-2006

Je zřejmé, že průzkum barevnosti budov Bauhausu v Dessau v roce 1998 znovu otevřel paradigmatický konflikt mezi „konzervováním“ a „restaurováním“, a to na poli restaurování „moderního“ umění nejen ve vztahu k povrchům architektury, ale i ke stavebním strukturám. Nedávné konference, organizované odborníky na ochranu architektonických povrchů, jako byly „Průzkum architektonických barev“ v Kodani (2005) nebo „Podstata materiálu“ v Brně (2006),

měly bezpochyby průkopnický charakter. Ten měl praktickou odezvu v nedávných projektech po celé Evropě, jako tomu bylo i v případě Vily Tugendhat v Brně.

Zde bychom se měli pokusit názorně ukázat, že efektivní „řízení projektu“, založené na sdílených a transparentních základech, může vést ke směru diametrálně odlišných názorů a konceptů. Podpůrnými prostředky tohoto konceptu jsou zřízení archivu („inventáře“) vhodných stavebních materiálů, zajištění závěrů souvisejících s restaurováním a experimentální materiálová reprodukce historických pracovních postupů a materiálů. Z tohoto pohledu je památka chráněna jako zdroj informací o tzv. „hmotné kultuře“ a na základě principu minimální intervence se stává trvalým zdrojem pro konzervaci materiálů i energie. K tomu zásadním způsobem přispívá specializovaný výzkum a vývoj vrstev, které chrání proti opotřebení, stejně jako „tlumících“ nebo „obětovaných“ vrstev, které odpovídají vnímání a požadavkům památkové péče, mají schopnost chránit původní povrchy a mohou být také aplikovány při (materiálově shodné) barevné rekonstrukci. Jak je ale ze zkušeností zřejmé, od teorie k běžné praxi může vést dlouhá a trnitá cesta. Naštěstí se pozornost odborníků z oblasti restaurování k důležitosti respektování autenticity materiálů, a zvláště pak barevných schémat během konzervování/ restaurování, neustále zvyšuje.

Proces rozhodování se v současné době ustálil a je během konzervátorských/restaurátorských projektů více či méně respektován. Lze jej následovně shrnout:

- Podnět
- Předběžný průzkum, diagnóza a rozhodnutí k zásahu
- Formulace projektu a konečné schválení
- Výběr dodavatelů služeb
- Provedení konzervátorsko-restaurátorského zásahu
- Kontrola a monitorování konzervátorsko-restaurátorského zásahu
- Dokumentace
- Údržba a preventivní konzervace

Není pochyb o tom, že lepší transparentnost rozhodovací fáze i managementu projektu by měla za následek také vyšší míru spoluzodpovědnosti veřejnosti při řešení konzervátorsko-restaurátorských otázek.

Rekonstrukce versus konzervování?

Nedávné diskuse kolem rekonstrukce „Villy Gropius“ v Dessau ukazují, že v oblasti „rekonstrukčních konceptů“ a jejich alternativ nadále přetrvávají mnohá tabu z minulosti. Pouze generační změna a paradoxně i předpokládaný úpadek poválečného Modernismu vedl k tomu, že touha po tradičních hodnotách a po dějinné kontinuitě se mohla přiklonit k paradigmatické změně, čímž umožnila zrekonstruovat starou, již téměř ztracenou podobu budovy její (re)konstrukcí „do konečné podoby, která ve skutečnosti nemohla nikdy existovat“. Přejechod mezi jednotlivými úrovněmi, jež jsou označovány pojmy konzervování, restaurování, oprava, obnova, částečná či celková rekonstrukce, je samozřejmě plynulý a šance pro všeobecný souhlas s rekonstrukcí vzrůstají a klesají spolu s mírou znalostí týkajících se „ztracené“ památky a vlastních očekávání, která mají o rekonstrukci její pozorovatelé. Vždy přítomný konflikt mezi oprávněným požadavkem budoucího obyvatele využívat budovu, zrekonstruovanou ať už povrchově či konstrukčně, potřebou zachování inventáře (konzervování/restaurování) a zcela pocho-

pitelným přáním oživit povrchové vlastnosti barevného schématu Bauhausu, které zaznamenaly velké ztráty (rekonstrukce), nicméně nachází metodické řešení v „konzervativní“ rekonstrukci budov Bauhausu, v němž se podařilo vyhovět všem již zmíněným ohledům.

To znamená, že analýza, hodnocení a interpretace založené na stavebním průzkumu a na přírodních a restaurátorských vědách, se považují za první nezbytný krok v procesu vývoje pojetí ochrany památek. Tento proces je navíc mezioborový a zaměřuje se na důležitost postupu, čímž umožňuje reagovat na nové poznatky a problémy.

Byl formulován záměr rekonstrukce barevného schématu Bauhausu v takové podobě, aby zásahy do povrchů byly reverzibilní v nejvyšší možné míře, a to nejen v zájmu zachování autenticity pozůstatků historických povrchů, ale také aby bylo možné v případě eventuálních problémů či ve světle nových poznatků provést opakovaně analýzy a hodnocení. Ve 20. letech minulého století se chápání barvy jako stavebního materiálu posunulo díky jejím nesčetným možnostem různých kombinací a koncentrací obsažených složek (pigmentů, pojidel a plnidel se svou vlastní strukturou) do roviny autonomního vizuálního media. Na základě vlastností povrchů nebo struktury podkladu vznikají nesčetné obměny hustoty a lesku barvy, a v neposlední řadě i způsobu, kterým je barva nanášena.

Tyto vlastnosti barev byly nejprve odzkoušeny restaurátory a následně podrobeny specifickým materiálovým rozborům v rámci mikrochemických analýz. Nakonec se na základě experimentů podařilo manuálně namíchat poměry směsí barev tak, že byly znovuvyvořeny barvy s jejich původními vlastnostmi. Během prací v roce 2004, které probíhaly ve vstupním prostoru Bauhausu, se projevila omezení těchto experimentálních barevných rekonstrukcí, která spočívala hlavně v použití druhotných zdrojů. K rekonstrukcím byly použity černobílé fotografie, které pořídil ve 20. letech 20. století Consemüller. Odpovídající barevné hodnoty byly vyvozeny prostřednictvím počítačové simulace, čímž bylo možné vhodně dokončit poškozené oblasti.

Doporučení

Proces rozhodování, který byl upraven pro jedinečný případ Bauhausu, lze shrnout následovně:

1. Upřednostnění potřeby konzervování, restaurování či rekonstrukce nad zamýšleným využitím budovy a potřebami údržby v budoucnosti.
2. Příprava dokumentace (grafické, fotografické, písemné), která bude zachycovat současný stav dochování společně s předběžným stratigrafickým průzkumem podkladů i barevných vrstev, aby byla určena vzájemná časová posloupnost u každé stěny a místnosti.
3. Interpretace a klasifikace barevných vrstev za použití příčných řezů a mikrochemických analýz. Vytvoření archivu všech vzorků a konzervace stratigrafických sond vystavených možnosti degradace. Návrh jednoho nebo více historických barevných systémů pro použití v přípravném projektu.
4. Detailní posouzení navrhovaného provedení mezioborovou komisí, která porovná historické údaje, jež se vztahují k architektonické formě a barvě.
5. Kvantitativní a kvalitativní zhodnocení míry poškození, nebo chybějících znalostí v návrhu. V případě Mistrovského domu Muche/Schlemmer (Meisterhaus Muche/Schlemmer), který byl za 2. světové války velmi poničen, byly některé pokoje provedeny v „neutrálním“ bílém nátěru na opravené omítce, která stále nese stopy času, avšak v potlačené podobě.

Jak bylo již řečeno, byly provedeny testy, které analyzovaly a interpretovaly černobílé fotografie foyer budovy Bauhausu, aby mohla být doplněna chybějící místa tamějšího barevného schématu.

6. Sjednocení odsouhlaseného barevné schématu s Přírodní soustavou barev (Natural Color System - NCS). Provedení dalších testů a ověřování pomocí příčných řezů a mikrochemických analýz kvůli stanovení původních pigmentů, pojidel a aditiv. Reprodukce vzorníku barev dosažených podle NCS na nekyselém papíře, který restaurátor vytvoří pro dokumentaci a jako podklad pro dekoratéry (malíře).
7. Popis navržených materiálů a pracovních postupů vytvořený restaurátorem, který umožní dekoratérům (malířům) přihlásit se do tendru a porozumět rozsahu projektu.
8. Dekoratéři si nachystají zkušební vzorky malířských povrchových úprav, které budou kontrolovány a schváleny mezioborovou komisí.
9. Započetí restaurátorských prací.

Musíme si uvědomit, že tak jako při každé rekonstrukci může být výsledek nedokonalý. To odráží relativitu znalostí, citlivosti a možností dané doby. Avšak v našem případě budov Bauhausu v Dessau se nepředpokládá, že se jedná o konečný výsledek, ale o kontinuální adaptaci na základě aktuálních vědeckých zjištění získaných během běžné údržby a obnovy.

Otevřené otázky

Dokončení konzervátorsko-restaurátorských prací v roce 2006 na závěr pokládá naléhavou otázku, týkající se organizace údržby a preventivních konzervačních opatření vedoucích k zachování všech budov Bauhausu v Dessau. V této souvislosti musí být podle mého názoru především zodpovězeny následující otázky, které vyvstávají v souvislosti s potřebou restaurování původních i rekonstruovaných povrchů:

- Které projevy degradace mohou být akceptovány z pohledu funkčnosti a estetiky uživatele?
- Jak můžeme definovat pojem „patina“ pro původní a rekonstruované povrchy?
- Jak můžeme konzervovat a ošetřit strukturálně narušené či příliš poškozené materiály, které byly vystaveny používání, aniž byly jakkoli chráněny (např. původní podlahové krytiny)? Kdy je nutné umístit je do materiálového archivu a nahradit je odpovídajícími materiály?
- Jaký typ poškození se vyskytuje pravidelně a kde? Jak mu lze zabránit?

Jak často může být rekonstruované barevné schéma opraveno jen zčásti? Kdy je zcela nezbytné rekonstruovat jej znovu, pokud možno podle aktualizovaných vědeckých parametrů? Pokud dojde k nové rekonstrukci, přemalováváme povrch po povrchu podle individuálních potřeb rekonstrukce jednotlivých povrchů, nebo musíme vždy opakovat zásah a pouze jako celek?

A nakonec otázky, které musí být zodpovězeny hned na začátku projektu konzervování:

- Kdo co dělá, proč, kde, čím a jak?

