



**The
“Bauhaus Experiment”
1998–2006:
Paint Research and
Conservation Strategies
Critically Revisited**

Nearly fifteen years after the beginning of the first systematic documentation works in the so-called “Masterhouses” in Dessau and actually with a distance of six years time since the inauguration of the restored “Bauhaus” school– building it seems to be useful to draw a critical résumé for further leading discussions. This is especially desirable because the guidelines, the methods and the strategies developed and finally realized during the conservation works were at the time without doubt at an experimental state.

By Thomas Danzl

The Starting Point of the Debate

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 is still problematic as the recent conservation works at the Tugendhat House in Brno (2010–12) may prove. It can be taken for granted that the color investigation of the Bauhaus buildings in Dessau reopened in 1996 paradigmatically the confrontation between ‘conservation’ and ‘restoration’ in the field of conservation of the “Modern” not only regarding the architectural surfaces but also the built structures.

In this place should be attempted to illustrate that effective “project management” based on a shared and transparent theoretical fundament is able to bring about a conciliation of these apparently diametrically opposed opinions and concepts. The conservation and repair of the original, planned and surveyed by the restorer/conservators and other conservation professionals, offers the possibility of a restrained reconstruction within the limits of the potential of the surviving remains.

Especially the concept of “repair”—instead of mere reconstruction “ex novo”—bases in a first place on the respect for the “traces of time”—or better—for alterations due to aging of the materials and the critical evaluation of the value of posterior interventions. Generally, reconstructions 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 to risk an orchestration of a synchrony of the in contemporaneity in the contemporaneity that might influence the originally intended aesthetic and structural appearance.

The parameters of this mentioned critical process have to respect the material, historic and aesthetic premises of

the monument. In this perspective it seems to be generally accepted to decide a positive discrimination of one or two aspects if the decision making process is reproducible.

Strongly connected to this approach is the method of “minimal intervention” to preserve the maximum of authenticity. For sure there must be criteria that allow a critical process during interpretation of the historical data preserved by all the materials added in the monument’s lifetime from its origins up to now. This necessary process of selection influences and—at the same time—it is influenced strongly in a first step by the esthetical perception and in a second step by the theoretical preparation—and depending on this—by the importance given by the actors involved in the conservation process at a certain time.

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

Already in 1996 a conference organized in Leipzig by the German National Committee of ICOMOS posed the question ‘Conservation of Modern Architecture?’ and followed two aims: the first was to overcome the perception of an eternal Modernity which presumes a phenomenological identity and conformity of the materials, and the second was to gain a historic distance and an appropriate practice in conserving artifacts 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 colors significantly still played a secondary role in the debate.

The Professional Role of the Conservator–Restorer

One reason can be found in the simple fact that the attention for these relics of a material culture were still considered to be replaceable being “sacrificial” or “maintenance” layers, the other consists in the restor-

< Materials used on the façade. On the left: reinforced concrete treated as an artificial stone. On the upper right hand: lime based plaster, conserved and repaired and then painted a fresco. The third image: scratched “Terranova”—plaster showing its content of mica and shale particles, 2006. Photo by Thomas Danzl.

ers general professional status at the time and somewhere still today—working in the field of conservation of historical monuments and not only on the buildings of Modernism—were less equal partners than better craftspersons.

It is essential to note, that until today in most of the European countries the profession of the conservator/restorer is not to be found in a juridical definition nor in a legal recognition which means a nearly complete lack of specific regulations to cover anticipate conservation—restoration activities and fail to stipulate the quality of the activities. The absolute need for qualified professionals and for a legal status, for an evaluation of the dynamics in a conservation—restoration project and finally of an analysis of the essential methodological steps of the conservation project require evidence of professional responsibility, competence and qualification.

The situation in Southern and Central Europe seems to differ significantly from the Northern countries. While the latter base their activities on a common professional code of ethics, which has a normative value with nearly no impact on national legislation, Southern Europe produces an abundance of legislative rules, guidelines and close frameworks that cause difficulties in their implementation.

Since the 90s fortunately this fact has been partly improved by the fact that conservation professionals (and not only conservators/restorers but also architects, “building archeologists” and last but not least conservation scientists) became academic (PhD level) and increased in professionalism. Recent conferences as in Copenhagen in 2005 on ‘Architectural Paint Research’ and in Brno in 2006 on ‘Materiality’ had a pioneering international character, not least because the restorer, in accompanying the construction work, was hereby awarded the role of an inter—and trans—disciplinary mediator.¹ The high degree of professionalism reached by the body of restorers over the last 10 years will have played no insignificant role in this.

Building research and the restoration sciences in combination with a new knowledge about almost forgotten materials are today able to reveal sedimented and mostly undiscovered information in the so-called “material culture” that is often enough only found in the materiality.

The Practice

Auxiliary means are therefore the establishment of appropriate building material archives, the safeguard of restoration-related findings, and the experimental material-based reproduction of historical 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 interven-



tion, becomes a lasting resource for the conservation of materials and energy.

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

But as time showed the way from theory to a commonly shared practice can be long and full of stones. Fortunately the general attention of conservation specialists for the importance of respecting the authenticity of materials and especially of color schemes during conservation/res-



Figure 1. South-west façade of the so called *Werkstattgebäude* (workshop wing) with the “curtain wall” (reconstructed in 1976 and conserved during the 2004 restoration) and the southern staircase plastered with a stone-grey “Terranova”, 2006. Photo by Thomas Danzl.

toration has been raised since then.

The decision-making process established contemporarily and more or less respected in conservation-restoration projects can generally be 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
- Control and monitoring of the conservation-restoration intervention
- Documentation
- Maintenance and preventive conservation

Without doubt a desirably increased 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 discussion on the reconstruction of the “Villa Gropius” in Dessau shows that the “concepts of reconstruction” and the alternatives to it are still obscured by obviously persisting elder taboos. The nearly general verdict of reconstruction in Western Germany after World War II



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Figure 2. Flooring conserved and repaired "Xylolith" in the "service area", 2005.

Figure 3. The need of programmed maintenance: salt efflorescence and biological attack to the stairway of the so called "studio building".

Figure 4. Eastern façade detail in light raking of the conserved and repaired plaster and limewash, 2006.

Photos by Thomas Danzl.

and the predominance of the “International Style” blocked an open discussion about this argument for decades.

Only with the generational change and—paradoxically—because of the supposed failure of Post-War Modernism the desire for traditional values and historical continuity could favor the paradigmatic change and facilitate as a consequence the reconstruction of an old and nearly lost identity by (re)constructing—interpreting Viollet-Le-Duc—a building “to a finished state, which may in fact never have actually existed at any given time”.²

It is interesting to notice that with the fall of the Berlin Wall reconstruction could evolve from a taboo to a new option in architectural history. With the decision of the German Parliament to reconstruct the completely lost Berlin Castle also the last taboo of the reconstruction “ex novo” of a monument “how it was and where it was” fell down. The state authorities of monument care ignored this socio-cultural evolution for a long time stating generally that reconstruction doesn’t represent an integral part of conservation—restoration—a pious lie as we easily could tell examining the history of restoration.

Obviously the transition between the different levels described by the act of conservation, restoration, repair, renewal, partly or complete reconstruction is fluent and the general acceptance of reconstructions increases or decreases with the knowledge about the lost monument and the connected expectations of the spectators towards its reconstruction.

The always present conflict between a justifiable demand of use by the future user of a partly or completely in surface or structure reconstructed monument, the requirement of the preservation of the inventory (conservation/restoration) and the entirely understandable wish to revitalize the largely lost surface characteristics (reconstruction) of the Bauhaus Color scheme found finally—in the case of the Bauhaus buildings—a methodical solution in the approach of “conservative reconstruction”.

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

The formulated aim of the reconstruction of the Bauhaus Color 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 handed down historic surfaces, but also allows the option of repeated analyses and evaluations in the face of fresh problems, and in the light of new knowledge.

The color understood 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 20s an autonomous visual medium. By means of the nature of the surfaces or the texture of the backgrounds, the degree of the density and glossiness of the color, and not least by means of the way in which the color is applied, innumerable variations come into being.

These qualities of the color were first sampled by restorers and then subjected, in specific material analyses, to micro chemical analysis. Finally, by means of the experimental recreation of the mixture ratios by hand, the colors were reconstructed with their original virtues. During the 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 Erich Consemüller in the 20s, 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 adapted finally to the special case of the Bauhaus can be summarized as follows:

1. Prioritize the needs of conservation, restoration and/or reconstruction against 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 supports 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 conservation of stratigraphic “in situ” exposures. The proposal of one or more historic color systems for use in the representation project.
4. An in depth examination of the proposed presentation by correlation of the historical data concerning the architectural form and color by an interdisciplinary committee.
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 above mentioned tests have been undertaken to analyze and to interpret black and white photographs of

the foyer in the Bauhaus Building in order to complete the "lacunae" in the color scheme there.

6. Codification of the agreed color scheme with the Natural Color System. Further tests and verification by cross-sections and micro-chemical analysis are carried out to establish original pigments, binding mediums and additives. Reproduction of NCS rated colors on acid-free paper by the restorer for documentation and to help the decorators.
7. A description of the proposed materials and working methods to be drawn up by the restorer which will enable decorators to reply 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, the result can only be approximate and it reflects the relative knowledge, the sensibility and the possibilities of a certain period! But in our case of the Bauhaus buildings in Dessau it is not foreseen to be a final result, but 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 poses finally the urgent question of the organization of the maintenance and preventive conservation of all the Bauhaus Buildings in Dessau. The prerequisite for this is unlimited accessibility to and rapid evaluation of all documentations, which is sadly—despite all the engaged initiatives of Monika Markgraf, *Stiftung Bauhaus Dessau*—still a desire.

In this context the following questions provoked by conservation needs of the authentic and reconstructed surfaces have to be—in my opinion—answered firstly:

- Which degradation phenomena are acceptable under the functional and aesthetical point of view of the user?
- How can we define a concept of "patina" for the original and reconstructed surfaces?
- How can we conserve and treat structurally aged or too much damaged materials that were left unprotected in use (i.e. authentic floor coverings)? When is it necessary to put them in the material archive and to change 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 color scheme be repaired only partially? When is it absolutely necessary to reconstruct it again, possibly under revised scientific parameters? In case of a new reconstruction, do we repaint surface af-

ter surface, following the special need for reconstruction of the specific surface or do we have to repeat the treatment always and exclusively only completely?

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

The theoretical debate over decades about concepts of "best practice" in preservation of 20th century architecture ("Reconstruction Versus Conservation?") seems to have reached recently a new climax in occasion of the re-restored Tugendhat House by Mies van der Rohe in Brno (2008–2012). The author, member of the consultant group of experts (THICOM 2009–2012) will report, together with the other members of the group, a case-study in a special publication. As far as it can be seen, the mentioned debate is still far away from a solution able to conciliate these diametrically opposed positions.

Notes

1. Bregnhøj, Line; Hughes, Helen; Lindbom, Jenni; Olstad, Tone; Verweij, Edwin (editors), *Paint research in building conservation. (Understanding decorative paint with a view to informed conservation, (Conference May 5–11, 2005, National Museum, Copenhagen, Denmark), London 2006.*
Cerná, Iveta; Hammer Ivo, (editors), *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 2008.*
2. Viollet-Le-Duc, Eugène, *The foundations of architecture*, New York, 1990, 195 (translated by Kenneth D. Whitehead from the French original, 1854).
3. "Rekonstruktion versus Konservierung? Zum restauratorischen Umgang mit historischen Putzen und Farbanstrichen an den Bauhausbauten in Dessau" (*Denkmalpflege Sachsen-Anhalt*, 7, 1999, Heft 1, 100–112); "Farbe und Form. Die materialtechnischen Grundlagen der Architekturfärbigkeit an den Bauhausbauten in Dessau und ihre Folgen für die restauratorische Praxis" (*Denkmalpflege Sachsen-Anhalt*, 9, 2001, Doppelheft 1/2, 7–19); "Restaurator und Denkmalpfleger-Zusammenarbeit bei der Sicherung von Architekturoberflächen" (*70. Tag für Denkmalpflege. Vom Nutzen und Nachteil der Denkmalpflege für das Leben. Fachtagung Denkmalbestand und Denkmalbetreuung Jahrestagung der Vereinigung der Landesdenkmalpfleger in der Bundesrepublik Deutschland vom 17–21 Juni 2002 in Wiesbaden, Arbeitshefte des Landesamtes für Denkmalpflege Hessen, Bd 4, Stuttgart 2003, 137–140*). "Zur Konservierung, Restaurierung und Rekonstruktion von Architekturoberflächen am Doppelhaus der Bauhausmeister Georg Muche und Oskar Schlemmer in Dessau" (*Gebeßler, August, Hrsg., Gropius. Meisterhaus Muche / Schlemmer. Die Geschichte einer Instandsetzung. Reihe „Baudenkmale der Moderne“ der Wüstenrot Stiftung, Stuttgart 2003, 152–182*). "Kunstputz (Edelputz)-Kunststein (Betonwerkstein)-Kunststeinputz (Steinputz). Die Bedeutung und Erhaltungsproblematik materialfarbiger Gestaltungen an Putzfassaden des 19. und 20. Jahrhunderts" (*Pursche, Jürgen, Hrsg., Historische Architekturoberflächen. Kalk-Putz-Farbe/ Historical Architectural Surfaces. Lime-Plaster-Color,*



Figure 5. The main entrance hall in the *Werkstattgebäude* (workshop wing). Photo by Thomas Danzl.

Internationale Fachtagung des Deutsche Nationalkomitees von ICOMOS und des Bayerischen Landesamtes für Denkmalpflege, München, 20.-22. November 2002, Hefte des Deutschen Nationalkomitees, XXXIX, Munich 2004, 146-159).

"I materiali costitutivi degli edifici del Bauhaus a Dessau tra tradizione e innovazione. Sviluppo di un metodo di restauro conservativo (1998-2004)" (Biscontin, Guido; Driussi, Guido, Hrsg., Architettura e materiali del novecento. Conservazione, restauro, manutenzione, Atti del convegno di studi, Bressanone 13-16 luglio 2004, Venice 2004, 105-118).

Thomas Danzl

Prof. Dr. phil., Conservator/Restorer, Art Historian, Professor at HfbK University of Fine Arts in Dresden, Head of the Department of Conservation and Restoration, Architecture and Art Conservation at the *Bundesdenkmalamt* (National Heritage Agency) in Vienna. He is the author of several articles and publications³ on conservation and restoration and was member of THICOM.