An Encyclopedic Approach to the Conservation of 20th-Century Architecture

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ABSTRACT The built heritage of the 20th century concerns society in general: it is the background to everyday life and the stage of 'past experience'. Therefore, recent past buildings should not be considered merely for their aesthetic features; they also have to do with physical well-being, social rituals and representations, as well as with associated concepts such as values and emotions. But conservation of 20th-century heritage is not straightforward. It requires specific strategies as well as critical and operational tools, which are not part of the cultural background of the actors of the transformation of our cities (architects, engineers, heritage officials, etc.) and do not yet feature in current design teaching curricula in most universities. To fill these gaps, in 2008 four Swiss architectural schools (USI, EPFL, ETHZ, SUPSI) launched a research project titled 'Critical Encyclopaedia for reuse and restoration of 20th-century architecture' (2009–2013). The article presents one of the outcomes of this research: the work developed by the section titled 'Historical and Critical Tools for Conservation', which will be published shortly. It provides readers with the cultural, theoretical and critical frame of reference required to understand recent architectural heritage in its widest sense: as a historical, symbolic and aesthetic resource, but also as being endowed with social, economic and ecological value. By examining theories and doctrines which have developed over time and thanks to the exemplary nature and variety of the selected cases, it provides a historical appraisal of how intervention in the field of recent heritage has evolved over the past 60 years. Furthermore the oeuvre presents intervention tools in action: by analysing a vast array of case studies which address the main areas of conservation practice (historical and critical research, analysis of materials and technical features, identification of compatible new uses, regulatory compliance), it provides a methodology to develop concrete and appropriate criteria for any specific case.

Preliminary Considerations

Most of the buildings in which we live, work, spend our free time today, etc. were built in the last century. For the user the spaces of a home (in all their diversity), office, factory, but also those of a town hall, museum, cinema, parliament, public bath, airport or place of worship are the background to everyday life, and the stage of 'past experience', with all this entails. Squares and streets, buildings and interior spaces built in the 20th century affect our physical and psychological well-being, our social representations and rituals, the meanings, values and affectivity that they convey, and hence sociology and the culture of living in the broadest sense. Therefore, the conservation of 20th-century built heritage concerns not only the experts —a restricted circle of architects, conservators and architectural historians—but also a much broader audience: the whole of civil society.

To date, however, in the domain of activities related to the conservation of 20th-century architecture, there is no disciplinary corpus having a unitary, intelligible and shared structure, that is to say, built around a theory, methods, tools and practices in which actors can identify and which are subject to transmission. Indeed, although the debate on the restoration of 20th-century architectural heritage started in the 1980s, and although the work carried out since then has produced a vast amount of knowledge, such knowledge is still fragmented, unorganised, not easily comparable, and challenging to find. This

knowledge has therefore been poorly received by the general public and by professionals—architects, engineers, heritage department officials—and students[1], who are and will be the key actors in transforming of our cities.

This state of affairs is disquieting, especially if we consider the immense task of conserving recent heritage; the breadth of this task is linked to the continuing 'making' of new heritage assets, recognised as a hallmark of our time (Heinich 2009), to the extreme variety of building types produced by modern civilisation, as well as to the progressive extension of the period of reference: we no longer merely include the 'heroic relics'[2] of the 1920s and 1930s, but also buildings from the post-war period, from the so-called 'postmodern' years, as well as today's built heritage in general, rightly considered as a resource from the perspective of sustainable development.

Research Objectives

Given the lack of university programmes in the field of intervention on recent heritage and of the need to train today and tomorrow's professionals to work in this field, a group of Swiss architects and researchers launched a research project in 2008. The 'Critical Encyclopaedia for Reuse and Restoration of 20th-century Architecure' project aims at gathering and presenting the body of knowledge related to recent heritage interventions in a sufficiently systematic and—relatively—all encompassing form.

The research does not offer ready-made solutions, rather it aims to provide architects, engineers and heritage authority officials with the knowledge and critical tools needed to develop an approach which factors in the qualities of recent buildings, whatever they may be (whether protected or not, whether an economic, environmental or social asset, etc.), gradually transforming their mental *habitus*. Hence the oeuvre is not just about informing, but about educating.

Institutional Framework and Research Articulation

The research project was developed by professors Bruno Reichlin (Universita della Svizzera Italiana, Mendrisio), Franz Graf (École Polytechnique Fédérale, Lausanne) and Vittorio Magnago Lampugnani (Eidgenössische Technische Hochschule, Zürich), with the participation of the Scuola Universitaria Professionale della Svizzera Italiana (SUPSI) Lugano under the coordination of Giacinta Jean. It was the response to a research call launched by the Swiss University Conference (CUS) with the aim of promoting collaboration between the leading Swiss schools of architecture[3]. It was coordinated by Franz Graf and Roberta Grignolo and lasted four years, from 2009 to 2013.

Research was structured into four parts corresponding to the four schools, each of which explored a disciplinary field, according to its respective competencies.

The first part, coordinated by Bruno Reichlin and Roberta Grignolo (USI), examined the historical and critical tools and strategies required for the conservation of 20th-century architecture. The second part, led by Franz Graf (EPFL), dealt with the material history of building and explored issues related to the preservation of 20th-century construction techniques. The third part, coordinated by Vittorio Magnago Lampugnani (ETHZ), addressed conservation issues at an urban scale. Lastly, the fourth section, under the guidance of Jacinta Jean (SUPSI), worked on diagnostics and interventions on 20th-century materials.

Early Outcomes and Final Results

Several outcomes have already been obtained by the research project, which was also built up through thematic conferences—and related proceedings—on aspects that, as yet, had been scarcely explored. These include the conservation of modern interiors, the relationship between law and the conservation of recent heritage, the conservation of modern heritage at an urban scale, the conservation of colour and several crucial aspects related to the material history of building, such as: the conservation of glass surfaces, of prefabrication systems, of services and technical devices, which are all acknowledged as valuable evidence of the evolution of 20th-century construction techniques (Figure 1a, Figure 1b)[4].

The article presents one of the final results of the research: the work coordinated by Bruno Reichlin and Roberta Grignolo (USI) for the section titled 'Historical and Critical Tools for Conservation'. It will be published shortly with the title: *Conservation, Restoration and Reuse of 20th-Century Heritage. A Historical-Critical Encyclopaedia* (Reichlin and Grignolo, 2018). The goal of the work is to provide readers with the historical, theoretical and critical frame of reference required to face intervention on recent heritage and to present it in a systematic form that can be used for the transmission of knowledge.

What—Contents

The subject matter of the oeuvre is the conservation, restoration and reuse of 20th-century architectural heritage—a set of closely related activities, which for convenience
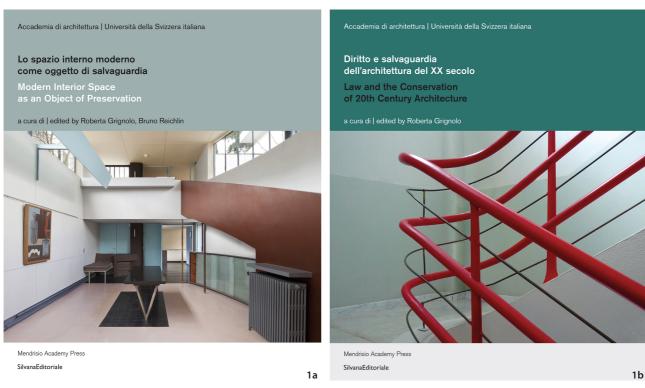
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**Lo spazio interno moderno
come oggetto di salvaguardia**

Modern Interior Space
as an Object of Preservation

a cura di | edited by Roberta Grignolo, Bruno Reichlin

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**Diritto e salvaguardia
dell'architettura del XX secolo**

Law and the Conservation
of 20th Century Architecture

a cura di | edited by Roberta Grignolo

Mendrisio Academy Press
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1b

Figure 1a and 1b Covers of the volumes published to date by the 'Historical and Critical Tools for Conservation' section (USI), as outputs of the 'Critical Encyclopaedia' research project (Source: the author).

are also referred to with the encompassing term 'conservation'—and the body of knowledge to which they relate.

The subject is organised into three sections and divided into four volumes:

- The first section deals with the historical-critical status of the objects to be protected or that are protected, and hence with the 'making' of 20th-century heritage, the value and criteria for 'patrimonialisation', the history of the interventions, and the terms used to describe them (volume I).
- The second section considers the many actors of conservation, i.e. the institutions responsible for the protection of 20th-century heritage (national and international, public or private, etc.), the entities and instruments that regulate it (committees of experts, competitions, expertises), the professional profile of who is tasked with conserving it (architect-restorer); it also deals with tools for conservation such as archives, inventories and other sources, design strategies (e.g. identifying a functional vocation, musealisation, planned conservation, etc.), property strategies (real estate, environmental, tourism), regulations and incentives (Volume II).
- The third section consists of an extensive and critical presentation of case studies, i.e. 20th-century heritage interventions that are considered exemplary, instructive

or problematic and in any case representative of the 'constantly evolving' state of the discipline (volumes III and IV).

How—Form and Structure of the Work

The encyclopedic structure offers a particularly appropriate means of presenting the subject of the work because it provides for the collection of different types of contents. The work can be considered a 'methodical or systematic encyclopedia'[5], based on the systematisation of knowledge related to a given field and its presentation in a discursive, orderly and organic form, which expresses the project of 'global knowledge' that is specific to any episteme.

The programme of the work, which has been conceived organically, is organised according to a thematic structure, which is based on an intellectual construct that is expressed through a series of titles. It is organised into several articles that cover and subdivide the vast field of knowledge related to conservation; they include theoretical articles and case studies. The theoretical articles are mostly gathered in the first two volumes, and they address the crucial and recurring issues related to the theoretical debate and practice of conservation, restoration and reuse. The case studies that are gathered in the last two volumes offer an extensive selection of interventions, which have been chosen because they have dealt with and

found smart solutions to the representative, typical and recurring issues that are relevant to designing with existing heritage.

Editorial texts drafted by the coordinators introduce and link the articles together. Such texts provide and clarify these connections within the overall structure, as also between contiguous and/or related themes. This is particularly useful, for instance, in cases of groups of articles on specific topics (such as heritage, authenticity, terminology), which are analysed by multiple authors, each from the perspective of their field of competence.

The articles are linked by cross-references and multi-input indexes, which re-create the circular dimension of the encyclopedic work: the dimension of *enchainement* as opposed to that of *empilement*[6].

Who—Concept, Cultural Direction of the Project, Authors

The publication was designed to be a multi-author work, for which collaboration was required by the very nature of the project. The basic intellectual construct, i.e. the underlying logical structure, was developed by the editors-coordinators, however the work itself comprises a vast collection of over 150 texts written not only by the editors but also by eminent scholars, renowned architectural practitioners, and contributors who hold crucial institutional positions at national and international level, in the field of 20th-century heritage protection. The work was developed in close cooperation with the international scientific community, in particular with the most active associations, including DOCOMOMO International (whose network of international contacts has been an invaluable resource), UNESCO, ICOMOS, Twentieth Century Society (United Kingdom), Schweizer Heimatschutz (Switzerland), Nationale Informationsstelle für Kulturgüter-Erhaltung (NIKE, Switzerland), Wüstenrot Stiftung (Germany), Getty Conservation Institute (USA).

Articulation of One of the Volumes, by Way of Example

The first volume is presented below as an example. As explained above, it deals with the historical-critical status of recent heritage—of objects to be protected or that already are protected—its 'making', the value and criteria for 'patrimonialisation', the history of theories and practices which concern 20th-century heritage conservation and the terms used to refer to such practices.

History as a Starting Point, but Which History?

Today it is obvious to state that no conservation, restoration or reuse actions should be undertaken without a prior historical investigation into the object to be conserved. It is less self-evident to provide precise objectives for such investigation, and specify what tools are to be used and what results are to be achieved. Therefore, the first section of this volume has the objective of explaining what type of history is needed by anyone interested in conserving 20th-century heritage and what methods should guide the creation of a 'monographic study of the work', which is the label given here to any research that should be performed prior to an intervention. The monographic study of the work is inevitably influenced by the current state of historiography, which has provided an in-depth investigation of some aspects, but has paid little attention to others.

Interior spaces, the use of colour, light, the relationship between art and architecture—straddling both the history of architecture and the history of sensibilities—these are some of the features that have not been analysed in depth, but which are crucial to the enjoyment of architecture through one's five senses. At present, their poor historiographical relevance makes them highly vulnerable when it comes to ensuring their conservation. The volume deals with each of these fields of investigation with one or more texts that provide the reader with an interpretative framework of reference. This framewok draws the reader's attention not only to the materiality of the building under study, but also to symbolic and/or cultural connotations and to the imagery connected with the use of certain materials, types of furniture, colours, technical devices, or with the collaboration with artists. Each contribution is thus designed both to be an aid to understanding the object of intervention and to serve as a caution. If these aspects, which materialise in construction details and in their frequently minimal nuances (the reflection of a pane of glass, the hue of a colour, the connection between floor and ceiling, etc.), are not recognised, they run the risk of being replaced or irretrievably altered.

The 'Making' of Heritage, Its Reception and Construction

The above-described historical research 'establishes' the status of buildings around us and makes the 'socially constructed' character of heritage explicit. For the curators, it is a given, and at the same time a starting point, that heritage is not an 'essence' that can be derived from searching for a transcendental principle, but rather it is a 'socially constructed' object. Hence, sociologist Nathalie

Heinich has been asked to analyse, reconstruct and describe the processes of heritage 'making' or, to put it in her words, the stages of the *chaîne patrimoniale* (patrimonial chain), intending, in this case, the succession of events that lead to the transition from an observer's first view of an object to the object's achieving the legal status of 'monument'.

In the case of modern architecture, the 'making' of heritage is also furthered by recognition from below, in other words, its reception by non-specialists and opinion groups. It was therefore also considered useful to provide a reflection on 'unloved' assets. In some cases, the lack of acceptance of modern architecture by non-specialists is linked to its explicit break with current production in both linguistic and formal terms, as well as to its material fragility and technical obsolescence. This is the case with pioneering architecture, such as that of Le Corbusier, discussed by Gérard Monnier, and later post-war architecture. In other cases, public rejection is linked to the role or political and ideological connotations of certain buildings. A case in point are the buildings which were actually the instruments of totalitarian regimes (Case del Fascio, public and administrative buildings of the Third Reich, the Atlantic Wall fortifications), but also the buildings that are identified with regimes because they were built during the same years (*Plattenbau*, Palast der Republik). Sufficient attention has not yet been given to how the reception of buildings with political connotations endanger their conservation. It is fundamental that we question ourselves, and we asked Dorothea Deschermeier to do so, about what it means to demolish and therefore to eliminate these symbolic buildings: their disappearance leads to the removal of historical evidence and depth. Ultimately, their demolition is equally a form of falsification.

The dynamics of 'heritage making' by experts and by the general public are exemplified through the processes that lead to the inscription of modern heritage on the World Heritage List.

Firstly, a description of the events that led to the listing of modern heritage on an urban-scale. Le Havre, a city built in concrete in the North of France, was reconstructed immediately after the war by a group of architects led by Auguste Perret and, until it was listed, was poorly appreciated for decades, even by its inhabitants.

Secondly, an illustration of the adventures and misadventures of the listing of the work of Le Corbusier, a renowned architect whose buildings span four continents. In this case, instead of proposing the listing of a small group of buildings, a complicated serial and transnational candidacy was attempted and, following several rejections, the definitive inscription came in 2016.

Lastly, the illustration of a particular case, that of a mine in the Ruhr, where the World Heritage making processes proved counterproductive to the preservation of the heritage itself, which is inscribed on the UNESCO List.

These three cases are a clear illustration of the steps — often an obstacle race—that must be followed for any given heritage property to be submitted and then examined by the various bodies in charge of overseeing the inscriptions; they also explain the cultural obstacles, the misunderstandings and compromises behind each inscription.

Heritage and Authenticity

Authenticity contributes to the 'making' of heritage as well. This notion is crucial in the theory and practice of conservation and is the subject of the third section of the book. What is authenticity?

Considering the current state of the discipline one can state that there are different approaches to the question and they are linked respectively to:

- epistemological questions;
- processes and discussions within the discipline, as it has developed in recent years;
- and 20th-century heritage intervention practice (Figure 2a–2d).

The crux of the problem is whether the matter or instead the design idea holds supremacy in conservation, restoration and reuse interventions. In the case of 20th-century architecture discussions are exacerbated both by the material, technical and functional fragility of this heritage, and by the growing importance that historiography attributes to the idea and design phase of the architectural work. The latter is apparent in an increasingly frequent interest for posthumous reconstructions or constructions, borderline cases in which authenticity is reduced to the idea.

This section opens with another text by sociologist Nathalie Heinich, who defines authenticity from an overtly epistemological perspective, mentioning, among other things, the different proofs of authenticity that built heritage must achieve to acquire heritage status. France Vanlaethem, Professor Emeritus at the Université du Québec à Montréal, then addresses the issue from an intra-disciplinary standpoint. As one of the key players in the debate about the conservation of 20th-century architecture since the 1980s, she illustrates the debate that sees authenticity challenged by specific features of the last century's architecture, i.e. material fragility and the preeminence given to the design idea. It is this debate which lead

Figure 2 Le Corbusier, Maison Guiette, Antwerp, 1926.
Figure 2a The house shortly after construction. Le Corbusier had chosen a smooth exterior plaster, but the city regulations didn't admit such cladding, so the local architect Smekens adopted a 'granilis' plaster with grey/blue stones which won Le Corbusier's approval (Source: G. Mansy).
Figure 2b Detail of the 2.5 cm thick 'granilis' plaster, which incorporates grey/blue stones (Source: Bénédicte Gandini).
Figure 2c The house after 1946: a new slate cladding replaced the deteriorated original plaster (Source: Fondation Le Corbusier, Archives du propriétaire actuel).
Figure 2d The Guiette house after the 1983–1985 restoration, which reinstated the smooth exterior plaster allegedly required by Le Corbusier but never actually adopted (Source: Fondation Le Corbusier, Archives du propriétaire actuel).

authenticity – with new declensions – to become one of the requirements for inclusion on the World Heritage List. Ezio Godoli, who is a full professor at the University of Florence and has been involved since the 1980s in developing European institutional policies on 20th-century heritage, proves to what extent the material authenticity of 20th-century architecture is problematic in the practice of conservation, restoration and reuse. In the case of many monuments of the last century it has been discovered *a posteriori* many of their parts had already been rebuilt several times. This raises the issue of knowing what has changed for any given monument. Lastly, Neil Levine, Professor of the History of Art and Architecture at Harvard, analyses the borderline case of zero degree of material authenticity: i.e. reconstructions and posthumous constructions.

Theory, History and Terminology

The last section outlines the current state of the theory, history and terminology of the conservation of 20th-century heritage. In the case of theory, Giovanni Carbonara, a prominent professor of restoration at the Roma-La Sapienza University, emphasises that the conservation of 20th-century architecture belongs to the established tradition of conservation; he reaffirms the need for a theoretical and methodological unity of restoration, according to which all works of art—architecture, sculpture, painting, music, etc.—must be subject to the same disciplinary principles.

The section then turns to the history of conservation of recent heritage, to provide a critical perspective on the above issues. This is achieved by a general history, written by Ezio Godoli and based on an international overview together with several local 'national histories', which were drafted from the perspective of each of the countries involved.

Restoration practices are indeed conditioned by the cultures of different countries, by local traditions, by languages: all these elements contribute to the fragmentation and multiplication of doctrines and practices. It was therefore considered useful to provide a series of local stories: a 'history of the conservation of 20th-century heritage by nation' presented through 'national portraits', one for each of the countries that have contributed decisively to the origins of the debate on 20th-century heritage conservation. This collection of portraits, each drafted by a 'national reference person', delivers a complex picture of successful achievements and missed opportunities that have become 'precedents': situations that have led to good or bad results can serve as an example or as a caution for other similar cases.

Lastly, the section addresses the question of terminology, which is complicated by the emergence of terms which describe new ways of intervening on recent heritage. An essay describes for each of the languages of this encyclopedic work (Italian, French, English and German), the main terms used in the scientific and academic debate, by institutions tasked with protection and in professional practices. The comparison between terms used in the various languages reduces misunderstandings and better still teaches us to appreciate the epistemological productivity of what, at first sight, might appear to be a linguistic Babylon.

Furthermore, the 'history of conservation of 20th-century heritage by nation' and the section on conservation terminology in different languages provide an intercomprehension platform for actors from diverse backgrounds. Such sections indeed allow the various parties involved—architects, architectural historians, heritage department officials, etc.—to critically assess and put into broader perspective their own practices and beliefs. Besides being informative, these histories and terminologies, both comparative and comparable, become potent tools for critical and self-critical assessment.

Case Studies—A Varied, Necessary and Sufficient Sample

The second volume is dedicated to actors, tools and practices and, like the first volume, it will have a theoretical approach. The last two volumes will be different, focusing on case studies and with a greater breadth of illustrations. These volumes are intended to provide a highly representative selection of conservation, restoration and reuse interventions, which are described, illustrated and critically commented, so as to acquaint readers with conservation practices and—when they are not referred to explicitly—with the theories and doctrines that have guided design choices. We believe it is crucial, as well as a priority, to offer readers a wide range of strategies and solutions with as many thought-provoking elements as possible on how to develop a project. This entails reflecting on design strategies, on the critical hypotheses that accompany them and on informed decision-making processes—i.e. referred to the 'relative objectivity' of the existing conservation doxa in a given place and time—delineating the potentially divergent perspectives of concerned actors.

The criteria for the selection of case studies were the following: the variety and relative comprehensiveness of solutions related to the multiple ways in which architectural works exist (e.g. functionality, spatiality, materiality, structure, services, furnishings, etc.); the resourcefulness and/or originality of the design strategy adopted; the exemplarity and applicability, when a proposal provides arguments, ideas or material solutions that can be used in other cases. The editors explain such criteria in short texts that introduce selected case studies or groups of cases.

The cases are organised by genres, by *Gattungen*, i.e. the categories adopted by anyone interested in the world that surrounds us: from the person in the street to the architect. Additionally, this articulation by genres is based on the observation that, over time, buildings belonging to the same genre encounter similar obsolescence issues and therefore it can be useful to compare their reuse, restoration and adaptation problems.

To quote a few examples, the case of the former Toni dairy factory in Zurich, built in 1977 and abandoned in 1999, was selected as one of the industrial buildings. The text describes in detail, how the transformation and mixed reuse of this immense volume was managed, and how the entire process was only possible thanks to an agreement between several, very different actors: politicians, real estate managers, future users and architects (Figure 3).

In the case of cinemas, in today's multiplex era, the challenge is to find new compatible uses and new management models for these 'cornerstones' of the entertainment and leisure culture of the first half of the 20th century. A successful strategy would appear to have been adopted for the Manhattan Cinema in Geneva (1957) designed by Marc-Joseph Saugey: the restoration project combined the cinema hall function with that of a lecture hall, thanks to an agreement with the city's university, and with that of an international convention venue, thanks to new, sophisticated audio-video system.

Another open problem is the reuse of anonymous post-war office buildings in many major European cities, but by exploiting one of their standard features, namely their

Figure 3 This former dairy factory, built in 1977, was reused to host education, culture and living functions, respectively: the Zurich University of the Arts (ZHdK) and the Zürich University of Applied Sciences (ZHAW); the Museum für Gestaltung Zürich; and a residential tower (Source: Photone).

oversized technical provisions, one can often reduce the height of the period false ceilings and increase the actual and perceived size of the interior spaces. This was done in the 1970s for a building in Zurich, where Boesch Architecten radically improved the livability of the interior spaces using a variety of architectural devices, including artificial light, colour, transparency and the integration of artwork.

A critical problem for architecture of the first half of the 20th century, often custom-designed for a given function, is its functional obsolescence. The disappearance of the original function raises the pressing question of finding new compatible uses. In the case of the Brown, Boveri & Cie (BBC) workers' club, built in Baden by Armin Meili (1951–1954), reuse as a vocational school was decided on the basis of a feasibility study that verified the compatibility of the existing spaces with the new use. Like the workers' club, the new school needed a large cafeteria, an independent auditorium that could be used by third parties, and a large number of smaller spaces for a variety of activities: hence the workers' hobby workshops were transformed into classrooms and administrative spaces. Within the limits set by this feasibility study, the architects were able to develop a reuse project based on a 'seamless' transformation of the existing building: on the one hand, the workers' club key features were conserved—the one-way circulation system, the fluid spaces, the weightlessness and polychromy of the glazed envelope, etc. On the other hand, the 'character' of the building was also restored through the use of similar materials that were however clearly recognisable as later additions (Figure 4a–4c).

In each of the cases, the presentation focuses on the aspects that, on a case-to-case basis, are considered most relevant, but above all it describes the restoration and reuse project 'in action', that is in its practical development: from the design of the preliminary strategies, to early proposals, to subsequent variants and corrections, to implementation.

Hence the authors of each case study were asked not only to present the project, but also to reconstruct and explain the debate that took place during the design process between architects in charge of the conservation intervention, architectural historians, owners, managers, and relevant protection and compliance authorities. It is also by explaining the arguments and solutions gradually developed for each conservation project that this publication pursues its objective of providing transparency and continuity in the choices and actions adopted in this domain.

This approach, which exposes and highlights the procedural dimension of conservation, on the one hand, despite the clichés, reveals the degree of 'creativity' or vision each conservation project possesses. On the other hand, it offers readers a wide range of options—in each case explaining both pros and cons—which taken all together help in defining the right solution for the case being considered.

A 'Living Memory' for the Restoration and Reuse of 20th-Century Architecture

Hence the work exposes the state of the art of theoretical and practical skills in the field of conservation, restoration

Figure 4 Armin Meili, Brown, Boveri & Cie Workers' Club, Baden 1951–1954.
Figure 4a The complex shortly after construction (Source: Meili, Armin).
Figure 4b The Workers' Club after its restoration and reuse as a professional school in 2002–2006 (Source: Hans Rudolf Baumann).
Figure 4c Aula magna of the professional school after the restoration and reuse intervention (Source: the author).

and reuse of 20th-century architecture while also becoming a 'living memory' of such expertise. This is also because the recurrent themes and problems specific to the building heritage of each period require that architects who deal with heritage conservation inscribe their professional practice in the dynamics of cumulative and shared knowledge.

The breadth and variety of topics covered, the historical dimension exposed through the evolution of theories and practices, the numerous, renowned contributing authors and the level of detail of their texts, the systematic and coordinated character of the work's contents, the profusion and representativeness of the selected case studies that have been identified as good practices, all the above elements entail that this encyclopedic work can be said to 'produce case law'. In other words, by providing a clear and structured narrative for theories and practices, the work allows readers to place their actions within a framework of shared knowledge and practices. Consequently, in time the work establishes and ensures transparency and continuity to choices and actions taken in the conservation of 20th-century architecture.

Notes

1. Interventions on built heritage are generally not well represented in the curricula of European architecture schools. For example, in Switzerland, strategies for intervention on recent heritage are not yet part of the design pedagogy currently taught by schools of architecture, although it is estimated that over 2/3 of interventions presently being carried out in the country concern existing heritage. See also Roberta Grignolo, 'Preservation, Conservation and Reuse of Architectural Heritage in Swiss University Teaching. Notes for an Educational Framework', in Carolina Di Biase, Alberto Grimoldi (eds.), *European Schools in the Teaching of Restoration/L'insegnamento di restauro nelle Scuole di Architettura europee*, Proceedings of the Conference organised for the 150th anniversary of the foundation of the Scuola di applicazione per gli architetti civili al Politecnico di Milano, Maggioli, Milan 2018 (forthcoming).

2. "Heroic Relics", *Architectural Design*, no. 12, 1967.

3. Swiss Coordination Programme in Architecture (SCPA).

4. The following are the proceedings of the conferences

organised within the scope of the research project, in order of publication: F. Graf, F. Albani, *Il vetro nell'architettura del XX secolo: conservazione e restauro* [Glass in 20th-Century Architecture: Preservation and Restoration], Mendrisio Academy Press, Mendrisio 2011; R. Grignolo, B. Reichlin (eds.), *Lo spazio interno moderno come oggetto di salvaguardia* [Modern Interior Space as an Object of Preservation], Mendrisio Academy Press-Silvana Editoriale, Mendrisio-Cinisello Balsamo 2012; F. Graf, Y. Delemontey (eds.), *Architecture industrialisée et préfabriquée: connaissance et sauvegarde* [Understanding and Conserving Industrialised and Prefabricated Architecture], PPUR, Lausanne 2012; G. Jean (ed.), *La conservazione delle policromie nell'architettura del XX secolo* [Conservation of colour in 20th-Century Architecture], SUPSI-Nardini Editore, Lugano-Firenze 2013; R. Grignolo (ed.), *Diritto e salvaguardia dell'architettura del XX secolo* [Law and the Preservation of 20th-Century Architecture], Mendrisio Academy Press-Silvana Editoriale, Mendrisio-Cinisello Balsamo 2013; F. Graf, G. Marino (eds.), *Les dispositifs du comfort dans l'architecture du XXe siècle: connaissance et stratégies de sauvegarde* [Building Environment and Interior Comfort in 20th-Century Architecture: Understanding Issues and Developing Conservation Strategies], PPUR, Lausanne 2016; V. Magnago Lampugnani, K.S. Domhardt (eds.), *Die Stadt der Moderne Strategien zu Erhaltung und Planung*, Gta Verlag, Zurich 2016.

5. Alain Rey, *Encyclopédies et dictionnaires, Series 'Que sais-je'*, Presses Universitaires de France, Paris 1982, p. 11. According to the author, a methodical or systematic encyclopedia should adopt 'a non-formal discursive order that reflects the project of 'global knowledge', which is specific to each episteme - and criticised by each epistemology.' (*'un ordre discursif non formel, reflétant le projet de 'savoir global' propre à chaque épistémé – et critiqué par chaque épistémologie.'*)

6. *Enciclopedia Universalis*, p. 15.

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