



100 YEARS BAUHAUS

What interest do we take in Modern Movement today?

Selected Papers from

16th DOCOMOMO Germany

3rd RMB Conference

1st March 2019 | Berlin

Uta Pottgiesser, Franz Jaschke, Michel Melenhorst (EDs.)

100 YEARS BAUHAUS

What interest do we take in Modern Movement today?

Selected Papers from

16th DOCOMOMO Germany

3rd RMB Conference

1st March 2019 | Berlin

Uta Pottgiesser, Franz Jaschke, Michel Melenhorst (EDs.)

Content

Editorial	7		
UTA POTTGIESSER, FRANZ JASCHKE, MICHEL MELENHORST			
Introduction	9		
<i>Bauhaus Worldwide Shift</i>	11		
ANA TOSTOES			
Discussing 20th Century Typologies	21		
<i>Framing Bauhaus. The Reception of the Housing Estate Dessau-Törten</i>	23		
SOPHIE STACKMANN			
<i>Unforeseen Impulses of Modernism. The Case of New Belgrade Blocks</i>	33		
ANICA DRAGUTINOVIC, ANA NIKEZIC			
<i>Case-studies from Brandenburg. The Reconceptualization of Modernist Structures in Post-Socialist Rural Regions in German.</i>	47		
CHRISTOPH MUTH, EMILY BERESKINE			
<i>Contributions for good Practices. Modernization of Dona Leonor Secondary School</i>	59		
FRANCISCO T. BASTOS, ANA FERNANDES			
<i>Constituting an Archive. Documentation as a Tool for the Preservation of the METU Faculty of Architecture</i>	71		
AYŞEN SAVAŞ, IPEK GÜRSEL DINO			
<i>Cathedrals of Modernity. The Legacy of Piero Portaluppi's electric Architecture</i>	81		
SARA DI RESTA, ELENA LEMMA, DAVIDE TASSERA			
		<i>Infrastructure for Modernism. Die Entwicklungsgeschichte der Kantgarage</i>	95
		THOMAS KATZKE	
		<i>Modern Materiality. The Conservation Challenge of Architectural Glass in Modernist Churches</i>	107
		ZSUZSANNA BÖRÖCZ	
		<i>Memoria and Monument. The Graves Laura Perls and Albert Mendel in Berlin-Weissensee</i>	125
		NINA NEDELJKOV, PEDRO MOREIRA	
		Vision for Preservation	137
		<i>The Zeitgeist</i>	139
		JOSE SANTATECLA-FAYOS, ZAIDA GARCIA-REQUEJO, LAURA LIZONDO-SEVILLA	
		Biographies	151
		Imprint	157



Editorial

Uta Pottgiesser, Franz Jaschke, Michel Melenhorst

The 2019 DOCOMOMO Germany Conference in Berlin was co-organised with the Detmold School of Architecture and Interior Architecture at Ostwestfalen-Lippe, University of Applied Sciences (TH OWL) and the Erasmus+-Project 'Reuse of Modernist Buildings (RMB), an initiative to design an educational framework of common definitions on the reuse of Modernist Buildings. The international conference took the 100th anniversary of the Bauhaus as an opportunity to discuss the significance of modernity in the 21st century by asking: 'What interest do we take in the Modern Movement today? The conference highlighted concepts, visions, and impulses emanating from Modern Movement and how they can be related to today's social, economic, cultural and in particular creative issues. With more than 40 speakers and 240 participants the contributions were presented and discussed in three parallel sessions.

This booklet presents eleven papers representing the different English and German speaking sessions:

1.1 Theory and Politics | Michel Melenhorst

1.2 Register | Ana Tostões

1.3 Bildung und Theorie | Alex Dill

2.1 Education | Gonçalo Canto Moniz

2.2 Technology | Uta Pottgiesser

2.3 Bildung und Register | Monika Markgraf

3.1 Education | Aslihan Tavil

3.2 Standardisation and Rationalisation | Els De Vos & Maria Leus

3.3 Discourse and Detail | Luise Schier

4.1 Housing reloaded | Ana Nikezic

4.2 Bildung und Theorie | Thomas Ludwig

The papers selected by the session chairs witness in a particular way the dominating themes and typologies of Modern Movement. They also demonstrate manifold reuse and conservation approaches—conceptually, aesthetically and technically. They are expression of the intensive investigation and documentation efforts of members and supporters of DOCOMOMO together with the academic and professional community.



Introduction

Left: Meisterhaus Dessau, Dessau, Walter Gropius 1926, Germany. © Photo: Jean Molitor, 2014



Cover Figure: Bauhaus Dessau, Dessau, Germany, 2018. © Photo: Jean Molitor

Bauhaus Worldwide Shift

Ana Tostões

University of Lisbon, Lisbon, Portugal

ABSTRACT

The Bauhaus had a pioneering influence on design worldwide which still endures today. Through education, experimentation and materialization, a revolution took place in the use of space, combining clarity, fluidity, functionality and beauty. The Weimar/Dessau school is remembered – from Gropius' Weimar office to the Dessau masters' houses, interiors and furniture – for its avant-garde approach to architecture, urbanism, and design for mass production and commercialization. While the objects it produced are its material legacy, the human body (or Oskar Schlemmer's "Human being") was definitively at the centre of this experimental work. The unity between spirit and body spurred a quest into health, movement, hygiene, comfort, and rationality.

The aim here is to demonstrate how this concept was achieved within a new use of space through innovative interior design. Materials

and forms, as well as reinvigorated bodily awareness contributed to this transformation. The question is, how did Bauhaus' "bodies" and "minds" challenge traditional ideas about daily life shaping the connection between physical and mental harmony.

Using Gideon's writings, namely "Mechanization takes command" and interior design case studies acquired in Japan, the goal of this paper is a threefold analysis: to explore the way the Bauhaus has inspired modern movement architecture up to the present day, to transform firstly space, and secondly, its use. Finally, the concept of the body: how Bauhaus ideas have migrated around the world to simultaneously promote a clear and hygienic aesthetic, connecting function and abstraction; to demonstrate, beyond *das neue sachlichkeit*, how one may realize the truth of Novalis' metaphor: "the more poetic, the more truthful."

THE BAUHAUS' WORLDWIDE SHIFT

The Bauhaus had a pioneering influence on design worldwide. Through education, experimentation and materialization, a revolution took place in the use of space, combining clarity, fluidity, functionality and beauty. The Weimar/Dessau school is remembered – from Gropius' Weimar office to the Dessau masters' houses, interior space and furniture – for its avant-garde approach to architecture, urbanism, and design for mass production and commercialization. While the objects it produced are its material legacy, the human body or O. Schlemmer (1888-1943) “Human being”, was definitively at the centre of this experimental work. The unity between spirit and body spurred a quest into health, movement, hygiene, comfort, and rationality.

1. A POLITICAL REVOLUTION: ART & TECHNIQUE, THE NEW UNITY

In 1918, during the immediate post-war period, Walter Gropius (1883-1969) achieved a fusion between the Kunstgewerbeschule and the Hochschule für Bildende Kunst in Weimar, with the creation of an interdisciplinary school of design and crafts. In April 1919, he was elected director of the school which was by then called the Staatliches Bauhaus. He also published the Bauhaus Manifesto, which will remain as a pioneering moment in history, with irreversible consequences at a global scale. The impact of his ideas on theory and education, aiming for the unity of all arts, would take over the historiography of architecture, design and urbanism and still linger to this day.

After the Haus am Horn (1923) was built in Weimar (Georg Mücke, 1895-1987; Adolf Meyer, 1866-1950) signalling a shift in the history

of housing, the houses of the masters in Dessau formed part of more complete and intense experimentation. It was this Gesamtkunstwerk approach that set the groundwork for the development of the modern movement: from the CIAM (2nd CIAM, 1929 Frankfurt) to the experiments of das Neue Frankfurt, followed by the exhibition Deutscher Werkbund in 1927, the Weissenhof Siedlung, the German Pavilion at the Barcelona Exhibition, and even the Tugendhat house in 1929, as well as the experiments by Le Corbusier with housing and its inner space.

The houses of the masters at the Dessau campus were, in a way, an extension of the Bauhaus school building, in operation since 1926, and were complex and large. As is eloquently illustrated by the movie made available by the Bauhaus archive, these houses were part of a continuous experimentation.

Modernity was ubiquitous, from the conception of spaces to construction details, the interiors were coherent with the whole project. The furniture was exclusively made from modern pieces of tubular steel designed by the masters, colour studies were developed by Kandinsky (1866-1944), and kitchens and bathrooms met the latest requirements for comfort.

For new, more functional objects for everyday life, it was acknowledged that the only way to produce/manufacture large quantities of high-quality products was through reconciling artistic endeavour with industrial mass production. Gropius fought for the acceptance of standardization, since both construction and architecture required social, symbolic and intellectual effort. Gropius believed that a reform of industrial production could promote democracy and social cohesion. Morality in design and a belief in the social importance of crafts could allow the reconciliation of high quality with affordable prices. Thus,

the virtues of simplicity and honesty, of utility and applicability, and the fundamental proposal that design could be used as a democratic tool for social change, were a great influence on the pioneers of the modern movement.

The values of simplicity and utility, of beauty and effectiveness, stem from a position of honesty based on the duality between art and technique.² Gropius then encouraged the plastic and kinetic exploration of abstract forms in the fields of skill and technique, at a time of increasing machine dominance. From a moral point of view, the desire for sincerity led to a notion of truth that was transformed into the idea of functionalism, which is to objectively respond to a desired function. The valorisation of a morality³ which became a social mission, represents one of the defining values in the historiographic establishment of the modern movement. Taking on this task as its manifesto, the architecture of the Modern Movement claimed that architects could build a better world. Happiness, as a myth or as a contemporary invention, became one of the goals of human beings, which modernity converted into a requirement. Against the phenomenon of growing the laicization of modern society, modernity, with its victory over the gods, supported by machinery, could not help but demand the promise of happiness on Earth. And the Bauhaus was key to this process.

2. THE SEARCH FOR A GESAMTKUNSTWERK: BODY, DESIGN & SPACE

The body and the concept of Gesamtkunstwerk address a genealogy of space perception as well as of the immersion of the body in space. The Bauhaus embodied modern architecture and design as a privileged stage in the synthesis of the arts and for the realization of

a Gesamtkunstwerk, seeking to build a new society and a new man. Interior architecture was the theme for the materialization of modern ideology, combining the practice of interior design (as opposed to a decorative approach) with architecture (from which it proceeded as a natural development), and proposing a global environment, cohesive and integrated. Beyond the masters' homes in Dessau, there are several interiors where a unity between architecture, design and decorative arts, furniture, utilitarian objects, accessories and lighting can be seen.

In fact, a similar unity can be recognized in the Baroque period and can also be found in Art Nouveau⁴, particularly in Henry van de Velde's interiors, such as his own house (Uccle, 1895) and the Havana Cigar Store (Berlin, 1899). The aim of a complete work of art led him to draw everything in detail, including the residents' clothing, reproducing in the fabrics and fashion designs, the same decorative motifs and sinuous lines that can be seen in the architecture, furniture and decorative objects. In the cigar store, the same sinuous and floral lines create the tobacco display case, the arches and the wall decoration, creating a unified perception. This same ideal of crossing the decorative arts with the fine arts and industry, combining beauty and utility, creativity and technique, form and function, are also found in the pioneering movements of modern design.

The Deutscher Werkbund, an association founded in Germany, in 1907, by the influence of the German architect, theoretician and diplomat Hermann Muthesius (1861-1927), with the aim of "to distinguish industrial work (professional or handmade) in collaboration with art, industry and crafts, through instruction, propaganda and a firm and rigid positioning, towards the issues related to" the dignifying of industrial work. The Bauhaus represented the idea of a new cathedral

of knowledge, built through teaching that combined architecture with pioneering investigations such as those into theatrical architecture, scenic space and performing arts that underpinned the project for total theatre of Walter Gropius and Erwin Piscator (1893-1966) and the Oskar Schlemmer's Triadic Ballet. The proposal for this new cathedral of knowledge arose in 1919, in the expressionist design of Johannes Itten (1888-1967), with a romantic and medieval nature, manifesting an intention to restore social unity. This idea was implemented through its curricular structure, where the combination of practical and theoretical classes taught by artisans, artists and designers, promoted unity, first between art and spirit, and then between art and technique. In this house of all arts, Gropius promoted the coexistence of architecture with design, the plastic arts, the decorative arts, cinema, photography, theatre, dance, together with more specific fields such as textiles and metals, which were no longer considered as subsidiary techniques. All the subjects taught contributed to the construction of a new man, a new aesthetic and a new society. Within the Bauhaus, Oskar Schlemmer's roles involved running the painting department and working in the sculpture workshop. Later he was also involved in the wood and metal workshop and teaching life drawing. Through the years, from 1923 to 1929, Schlemmer turned his attention to the stage, teaching classes that synergized kinetic motion studies, figurative illustration and philosophy. Art's intimate interrelation with the human body – its relationship to space and its affiliation to design and architecture – were always the jumping-off points for Schlemmer's creative process. He once stated that "the history of theatre is the history of the transformation of the human body". He stated that [his] "themes - the human figure in space, its moving and stationary functions, sitting, lying, walking,

standing – are as simple as they are universally valid."⁵ These concepts were most artfully articulated in the Triadic Ballet, one of the last epic productions to be performed by the school prior to the war. The "dance experiment" which debuted in 1922, focused on geometric shapes addressing configurations which recast the body as geometric sculpture. Schlemmer's ballet became an inspiration, a kind of Bauhaus icon and established his unique place within the seminal German movement.

3. THE IMPACT OF THE BAUHAUS: FROM USA TO JAPAN (1938-1954)

In 1938, a retrospective of Bauhaus design was presented at the Museum of Modern Art in New York, and the school's reputation as the most important institution of 20th-century design, had grown. Furthermore, six years after *The International Style: Architecture since 1922* (1932), the exhibition gave worldwide exposure to the school of the gestalt revolution, which extended beyond the architectural discipline and incorporated every type of form, from a cup of coffee to a city, and prepared the ground for the emigration to the USA of its masters.

It is vital to analyse how the Bauhaus presented itself to the world. In fact, the previous exhibition had been back in Germany, the Bauhaus Ausstellung, that had taken place fifteen years before at the Weimar school between July and September. At the time, vibrant reports reached America of a new kind of school, acknowledging the international success of the great Bauhaus exhibition of 1923.⁶ A book was published in conjunction with the Museum's exhibition by the Museum's Department of Architecture and Industrial Art, entitled *Bauhaus 1919-1928*. It dealt the first 9 years of the institution, the

period during which Gropius was director. As Alfred Barr states, "it is primarily a collection of evidence", assembled with a minimum of retrospective revision as if no time had passed in those 15 years. In the preface, Alfred Barr raised the issue: "...twenty years since Gropius arrived in Weimar, ten years since he left Dessau, five years since the Bauhaus was forced to close its doors" adding "The Bauhaus is not dead; it lives and grows through the men who made it, both teachers and students, through their designs, their books, their methods, their principles, their philosophies of art and education." The Bauhaus emerged as a kind of accomplished avant-garde if one consults the comments on the Parisian Salon des Artistes Décorateurs of 1930, the German presentations of the Deutscher Werkbund and Bauhaus are noted as "consistent in programme, brilliant in installation, it stood like an island of integrity, in a mélange of chaotic modernistic caprice, demonstrating that German industrial design, thanks largely to the Bauhaus, was years ahead of the rest of the world."⁸ The growing prestige of the Bauhaus, as well as the spread of the "Bauhaus idea" throughout the world was strongly reinforced in the free world, and particularly in the USA, after 1933 due to Nazi persecution of modern creators and modern art which it accused of being degenerate. Thanks to this pursuit, the modern movement diaspora grew rapidly. The adoption of the aims of the Bauhaus also became greater and more important, as Alfred Barr recognised "(...) because we live in the 20th century (...) the student architect or designer should be equipped for the modern world in its various aspects: artistic, technical, social, economic, spiritual, so that he may function in society not as a decorator but as a vital participant." 1954 was the *anno mirabilis* when Gropius discovered Japan and Seike designed My house, his own family house in Tokyo. In fact,

Walter Gropius' first and only trip to Japan in 1954 resulted in a much-anticipated encounter. The seventy-one-year-old Gropius fulfilled a long-standing dream by visiting a country whose traditional architectural culture seemed to foretell many of his own ideas. At the same time, the celebrated architect and educator had numerous former students and Bauhausers in Japan, where his work was highly influential. However, during his three-month stay, it became clear that Gropius and his Japanese interlocutors were on somewhat different trajectories. While the latter were consumed with the housing crisis that then engulfed the country, Gropius emphasized the need to maintain traditional standards of craftsmanship in making the transition to industrial production. His photographs of Japan, preserved at Harvard's Graduate School of Design, register a point of convergence between these two trajectories. In the post-war period, traditional Japanese architecture was re-cast within a rigorously modernist aesthetic. By masterfully staging the geometry, austerity, and detail of traditional structures, a new vision of tradition evolved to cement the status of the Ise Shrine, the Katsura Villa, and other buildings as ideal prototypes for the modernist movement. Gropius' photographs, while amateur in comparison, nevertheless offer their own distilled vision of Japanese architecture. And yet their juxtaposition of celebrated monuments with vernacular images of city and country also reveal Gropius's eye for surprising commonalities of pattern and texture, and his abiding preoccupation with the principle of "endless variety within a fundamental unity"— a principle that found its ideal in Japanese design culture. In this regard, his photos look forward as well as backward; they propose essential qualities that could guide Japan's self-reinvention as it recovered from the devastation of war, and headed into an uncertain future.⁹

As Gropius recognised in his book *Architecture in Japan* “You cannot imagine what it meant to me to come suddenly face to face with these houses, with a culture still alive, which in the past had already found the answer to many of our modern requirements of simplicity, of outdoor-indoor relations, of modular coordination, and at the same time, variety of expression, resulting in a common form language uniting all individual efforts.”¹⁰

Designed in the same year of 1954, Kiyoshi Seike's family house is an outstanding existential or minimum house. The design established an intense relationship addressing a total art work with its articulation between interior and exterior space, between the immersive interior design and its natural context. The garden has an impact due the fact that it extends the perspective views, the inner and outer continuum, the outdoor living as a useful projection of space outside the house. Just 50 square metres in area, it is a small-scale dwelling, a one-room house for the architect Kiyoshi Seike's family, and a representative small-scale house of the post-war period. The floor is 15 centimetres above ground, only the structural walls partition the space, and the house opens to the south with glazed openings and takes advantage of a large garden. The roof is supported by light Hubmeyer Trusses. The role of furniture is fundamental for the organisation of the family space and the way it is used. In fact, the furniture and furnishings separate and connect the space. The idea of a one-room house is derived from the traditional Japanese way of living called *Shitsurai*, which means to change the layout of partitions and furniture to meet the changes in life style.

A series of one-room houses in the 1950s made Seike a star architect. In the Dr. Mori Residence (1951) and Adjunct Professor Saito Residence (1952), both built with wood, a one-room space

including the garden was created when all the sliding screens ('shoji' & 'fusuma') were opened. In order to make the one-room function as a house, Seike introduced shoji, fusuma, tatami and an engawa, a veranda, which were building elements from traditional Japanese residences. These elements had been somewhat removed from the new houses at the time, but Seike reintroduced these traditional Japanese elements and integrated them with the aesthetics of modern architecture, which was a unexpected departure for the architects of the time. Walter Gropius praised these residences as “a happy marriage between the tradition of Japanese architecture and modern technology” when he came to Japan in 1954.

My House, built in reinforced concrete with a steel roof beam, revealed an ingenious use of materials like concrete, stone, glass and steel. Although the traditional Japanese constructional language was not been employed due to the structure used, Seike's concept of a residence to “introduce furniture and furnishings into a one-room space, as they fit the living style,” was consistent. The base for Seike's design may have been rooted in his wartime experience designing aircraft hangars, which were, as a matter of course, one-room structures. In the case of My House, the floor had a stone-finish so shoes were worn in the house, which was rare at the time. Seike introduced a new lifestyle in harmony with new design, and in particular incorporated an innovative Sori Yanagi (1915-2011) butterfly stool (1954), the third piece and the key item for the mirabilis year of 1954. Most of Yanagi's designs were very simple and beautiful. His products illustrated his thinking: true beauty is not made, it is born naturally. When he created a new product, he made the first versions over and over by hand, seeking new forms that took shape from both new and old ideas. Yanagi was known for his unique forms, which brought

simplicity and unexpected practicality into everyday homes through his industrial designs for everything from kitchenware and furniture to toys and even bridges. Yanagi never lost sight of his aesthetic and artistic ideals. Yet his work was functional and practical, demonstrated by their usage in everyday households, day-in and day-out. Yanagi helped open doors as an international artist and paved the way for future designers to display their work abroad.

The 2-piece form of Yanagi's stool has been compared to a butterfly's open wings. Alternatively, the shape can be seen as the gateway to a shrine or even an antique samurai helmet. Made in 1954, and in continual production ever since, the stool's simple outline has been likened to the torii gates of a Shinto shrine. Its deceptively simple construction is achieved by attaching the two identical halves with a brass rod underneath and using just two screws. It was created using plywood moulding techniques and was an unusual piece for a Japanese designer, as the country had no tradition of seating, preferring instead the traditional tatami mat. In effect, it is a form that is both modern and timeless, which celebrates Japanese folk crafts as well as the beauty of everyday objects.

4. HOW THE BAUHAUS REDEFINED WHAT DESIGN COULD DO FOR SOCIETY¹¹

100 years later, Bauhaus is regarded as an icon and a symbol of the avant-garde realized or utopian which became reality. Transforming space, as well as its use and finally, the concept of the body; Bauhaus realized the truth of Novalis' metaphor: “the more poetic, the more truthful.” Its political, ideological, global dimension has made it a myth and a radical reference declaring, against all expectation, the possibility that utopia can be achieved: from Ulm, to Montana, to IIT.

In the Bauhaus they knew how to combine utopia with pragmatism, mix agitation and propaganda with public service, poetry with utility, a new objectivity with creation and freedom. Its premises continue to be relevant: to combine art and technology, to design from the coffee cup to the city, in order to build a better world. In its vision of a global world, and the great issues of sustainability and democracy, it addresses the ambition of global design without ignoring daily life.

The Bauhaus as a school, as a method of experimentation, education, and research, embodies the idea of science applied in the service of society. Happiness emerges as a collective achievement because Gropius sought to respond, with pragmatism and functionality, to the chaos of the world. At times he dared to entertain the illusion that the architect could transform it.¹²

ENDNOTES AND QUOTATIONS

[1] The curriculum included a one-year preliminary course where students worked in various workshops that sought to be self-sufficient working for private clients. During the first year of the Bauhaus, Gropius chose three artists: Johannes Itten, (responsible for the preliminary and most charismatic course), Lyonel Feininger and Gerhard Marcks. By the end of 1919, Georg Muche; in 1921, Paul Klee and Oskar Schlemmer; and finally, Wassily Kandinsky in 1922. The classes of Johannes Itten, who believed that materials were to be studied to discover their intrinsic qualities, began with breathing exercises and gymnastics. His students were taught to see the importance of elementary geometric forms: circles, squares and triangles. Itten tried to reintroduce spirituality in art, inspired by De Stijl and Russian Constructivism.

[2] "Art and Technique: A New Unity": theme appointed by Walter Gropius in the exhibition catalogue "Staatliches Bauhaus in Weimar 1919-1923". Walter Gropius, *Staatliches Bauhaus in Weimar 1919-1923*, Weimar, Bauhaus, 1923.

[3] Subject advocated by William Morris. Cf. William Morris, "La casa rossa del riformatore", in Bruno Zevi, *Cronache di Architettura*, vol. V, Bari, Editori Laterza, 1971.

[4] Particularly in the interiors of Victor Horta (1861-1947), Antoni Gaudí (1852-1926) or Charles Rennie Mackintosh (1868-1928).

[5] Aaron Peasley, "The Legacy of Oskar Schlemmer", in *The Present Tense*, January 2019 [accessed in 09/01/2019, at https://www.thefutureperfect.com/present_tense/articles/oskar-schlemmer].

[6] Alfred Barr, "Preface", in Herbert Bayer, Walter Gropius, Ise Gropius (eds.), *Bauhaus 1919-1928*, London, Secker & Warburg, 1975 [fac simile of the original Edition Museum of Modern Art, New York, 1938].

[7] Idem.

[8] Idem.

[9] Yukio Lippit, Harris K. Weston Associate Professor of the Humanities, Department of History of Art and Architecture, GSD Harvard.

[10] Walter Gropius, "Architecture in Japan", *Perspecta* 3, 1955.

Nikil Saval, "How Bauhaus Redefined What Design Could Do for Society", in *The New York Times Style Magazine*, February 2019 [accessed in 04/02/2019, at <https://www.nytimes.com/2019/02/04/t-magazine/bauhaus-school-architecture-history.html>].

[11] Giulio Carlo Argan, *Gropius et le Bauhaus*, Paris, Denöel/Gontier, 1979, [1951].

BIBLIOGRAPHY

ARGAN, Giulio Carlo (1979). *Gropius et le Bauhaus*, Paris, Denöel/Gontier, [1st Edition, 1951].

BARR, Alfred (1975). "Preface", in Herbert Bayer, Walter Gropius, Ise Gropius (eds.), *Bauhaus 1919-1928*, London, Secker & Warburg, [fac simile of 1st Edition Museum of Modern Art, New York, 1938].

GROPIUS, Walter (1955). "Architecture in Japan", in *Perspecta* 3, *The Yale Architectural Journal*, 3.

GROPIUS, Walter (1923). *Staatliches Bauhaus in Weimar 1919-1923*, Weimar, Bauhaus.

MORRIS, William (1971). "La casa rossa del riformatore", in Bruno Zevi, *Cronache di Architettura*, vol. V, Bari, Editori Laterza.

PEASLEY, Aaron (2019). "The Legacy of Oskar Schlemmer", in *The Present Tense*, [accessed in 09/01/2019, at https://www.thefutureperfect.com/present_tense/articles/oskar-schlemmer].

SAVAL, Nikil (2019). "How Bauhaus Redefined What Design Could Do for Society", in *The New York Times Style Magazine* [accessed in 04/02/2019 at <https://www.nytimes.com/2019/02/04/t-magazine/bauhaus-school-architecture-history.html>].

Discussing 20th Century Typologies



Left: Bundesschule ADGB, Bernau, Hannes Meyer (1928-30), Germany © Photo: Jean Molitor, 2015

Framing Bauhaus – The Reception of the Housing Estate Dessau–Törten

Sophie Stackmann

Otto-Friedrich University of Bamberg, Bamberg, Germany

ABSTRACT

The paper retraces the history and reception of the housing estate Dessau-Törten and its medial framing. One major aspect the paper addresses is the role the architect Walter Gropius played in the reception by framing the estate. Another phenomenon which is highlighted are the constant architectural changes the settlement underwent, since they caused various strategies of framing throughout the reception of the housing estate. In addition, the paper explores in what ways the medial framing of the housing estate produces different focal points that may dominate perspectives even today. Finally, it is asked in what way general opinions and expectations of the Bauhaus are possibly impacted by such an intense reception.

Cover Figure: Interior of a house in the housing estate Dessau-Törten, © Photo: Bernd Eichhorn, 2016



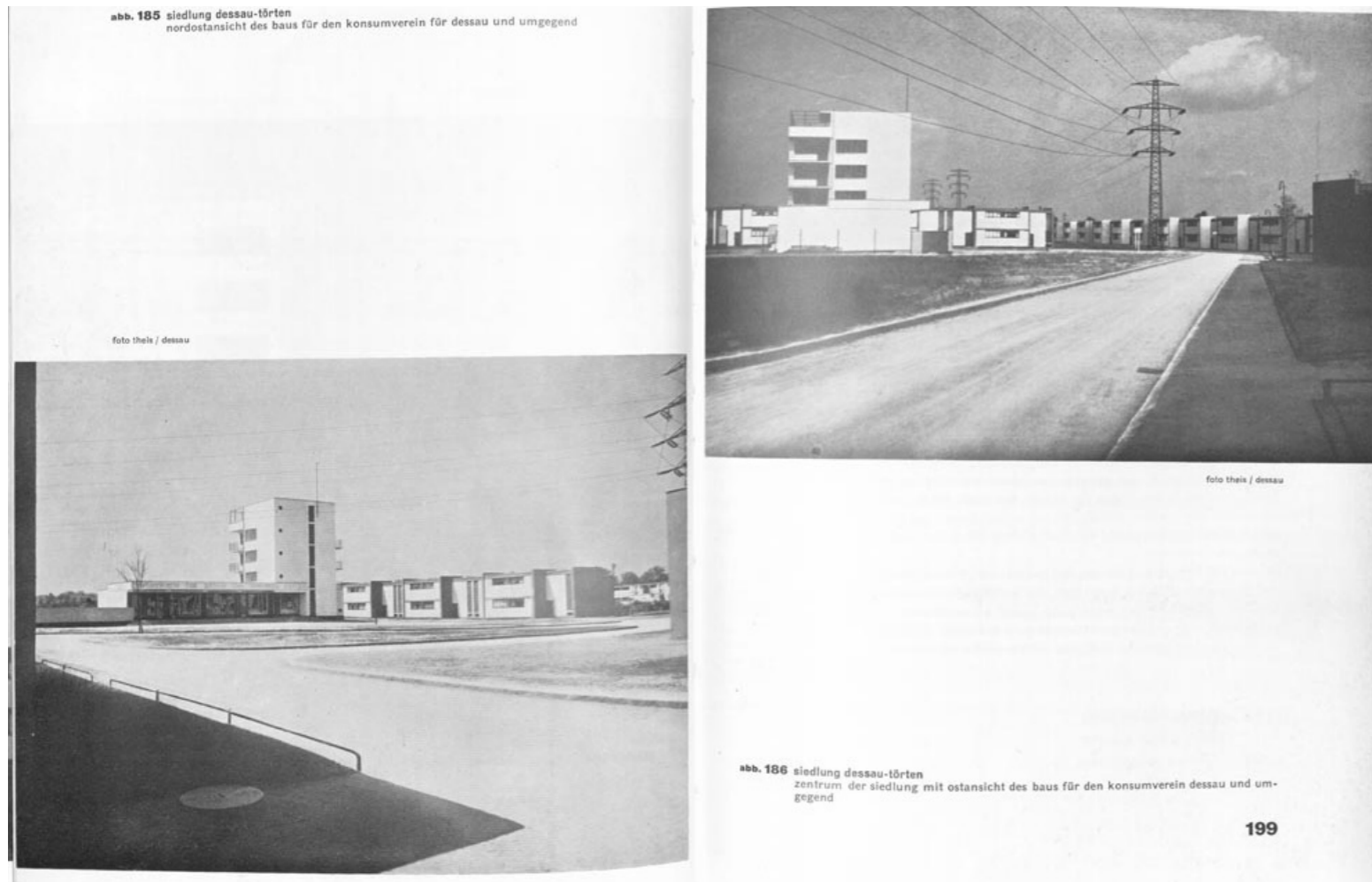


Fig. 1: Page from Walter Gropius' book *Bauhausbauten Dessau* published in 1930. Walter Gropius, *Bauhausbauten in Dessau*. 1930. © Reprint: Mainz/Berlin, Florian Kupferberg Verlag, 1974, S. 198–199.

1. DESSAU-TÖRTEN AND THE LEGACY OF THE BAUHAUS

Today the "Bauhaus and its sites" are part of the UNESCO world heritage network.¹ On UNESCO website it is stated that "between 1919 and 1933 the Bauhaus movement revolutionised architectural and aesthetic thinking and practice in the 20th century."² As the quote implies, the Bauhaus movement is regarded as embodying unique ideas that changed the history of architecture and design. Therefore, each year many tourists travel to the surviving sites of the Bauhaus School in Weimar, Dessau-Roßlau and Berlin.³ Reflecting on the information they learn on site, one could ask: Which meaning does the Bauhaus have for visitors today? And what do the sites of the movement represent to them?

As one tries to answer these questions one is quickly confronted with a vivid reception which inevitably suggests certain images of the Bauhaus as the recipient is influenced by a powerful medial framing of the Bauhaus movement. Hence, following article aims at reflecting on the dense framing of the Bauhaus as well as at revealing different patterns that can be found within its historical reception of its associations. The introduced topic is examined by reframing the history of the housing estate Dessau-Törten which was built by Walter Gropius during his time as Master of the Bauhaus School.

2. FRAMING ARCHITECTURE

According to Jörg Matthes, the term 'framing' can be used to describe in what ways media impact opinions on a topic by conveying information in a certain way.⁴ 'Reception' on the other hand encompasses the communicative appropriation of an object or topic after its emergence.⁵ Therefore, it could be argued that framing and reception are closely linked, as they both address the influence of

different stakeholders or language patterns that evolve throughout the history of a topic or an object. In the following passage, I will outline how the reception of Törten continuously refers to the medial framing of Walter Gropius. His arguments can be found in different contexts of the reception ranging from political propaganda in the 1930s to the current media presentation.

2.1 Walter Gropius' design and description of Dessau-Törten

Walter Gropius and his architectural office were awarded the task of designing a new settlement in Dessau in 1926. The planning began in the same year and a total of 316 houses, called the Törten housing estate, were built until 1928.⁶ In the original plan, the settlement was composed of individual home units, each of which was assigned a garden.⁷ Gropius organised the houses around the spatial and social centre of the project: the so-called Konsum.⁸ The actual rows of houses of the residential area were built along streets surrounding the Konsum. All of the houses had a flat roof and the neighbouring houses were mirror images of each other. The mirroring had the effect that two adjacent façades merged.

The structure of the residential area was characterized by clear axes and geometrical linearity. In addition, the confrontation of opposites was a formative aesthetic feature of the architecture. This involved contrasting bright façade surfaces and dark ribbon windows or empty and developed space. Equally characteristic, the rows of houses seemed to continue serially as the visually similar façades of the home units merged into one another.

Gropius was a proponent of the 'Neues Bauen' which he exemplified in the Törten project using ribbon windows and flat roofs. Both were emblems of this architectural movement. Overall, Gropius was not

only concerned with purely functional considerations, but created a recognisable aesthetic brand.⁹

Gropius himself used the striking appearance of the Törten estate in his favour because he spread the superiority of his architecture in the media by referring to it strategically. He even staged the organisation of the building site. In addition, he stylised the Törten estate as example of an ideal Bauhaus architecture.¹⁰

In 1930, Walter Gropius emphasised the functionality, rationality and economic viability of his methods in the construction of the Törten housing estate in a self-authored book on his architecture.¹¹ As for example, he talks about the economic organisation of the living space and argues in favour of the standardisation of housing.¹² His chief aim is the “rationalisation” of construction.¹³ However, the Törten estate was modified shortly after the construction because Gropius' plans were not always regarded as practical by the residents and the building authority.¹⁴

The photos pictured in the book support the image of a functional and progressive architectural endeavour.¹⁵ The houses are staged in deserted scenes in contrasting black and white photography (**Fig. 1**). By doing so, the minimalist aesthetic of the modernist buildings is emphasised to an extreme. With such overexaggerated photography, Gropius produced an idealised image of Törten.

Finally, Gropius writes that the creation of a certain style was not the goal of the Bauhaus School emphasising the spirituality of the Bauhaus philosophy. He calls all the buildings he designed in Dessau “Bauhaus buildings” although they were built under his direction and not by the Bauhaus School. Gropius justifies the use of the term by citing the public opinion that his architecture is regarded as the “fruit” of the intellectual exchange at the Bauhaus School. Furthermore,

the pupils and workshops of the Bauhaus School contributed to the furnishing of the buildings.¹⁶ In his book, Gropius basically stylises himself as the person who let the Bauhaus idea become reality. Thus, he implicitly equates his own work with the Bauhaus School.

2.2 Economy, Functionality and Normativity

Shortly after the construction of the housing estate, the building-costs and numerous construction defects evoked harsh criticism. The architecture was also attacked in the national press.¹⁷ Later, the National Socialist regime adopted the criticism to dramatise the defects of the architecture and to present its own buildings as superior. As a result, the National Socialists began to systematically alter the houses in the Dessau-Törten settlement by replacing the steel ribbon window with small wooden windows in the 1930s. According to the fascist ideology, only wooden windows belonged to ‘German’ architecture.¹⁸ In the GDR, the residents themselves changed the settlement gradually from the 1970s onwards, as they wanted to raise the standard of housing.¹⁹ Yet the government changed Törten not physically but ideologically: it was claimed that the historical circumstances led to the deficiencies in the settlement and that only the new economic conditions of socialism could realise the perfection of mass construction.²⁰

In the early years after the reunification of Germany the settlement was once again modified. In contrast to the GDR, residents could now buy building materials in large quantities. Consequently, many seized the opportunity to individualise their house units. For example, decorative patterns appeared on façades and hence covered the original design completely.²¹ Finally, in 1994, a so-called design statute was passed by the city which aimed to limit the changes to

the houses and to restore the architecture to its original appearance in the long run. In 1998, the first reconstruction of an original housing unit was completed.²² The reason for this was that the continuous loss of original constructional elements after the building of the settlement had created a need to preserve the remaining architecture. Furthermore, this need also incited a wish to reconstruct what had been lost.

As lack of resources prevailed in the GDR, the time until 1990 is regarded by Andreas Schwarting as a stagnant conservational period for Törten. He argues that after the fall of the Berlin wall the lack of economic resources in the former GDR was replaced by the availability of consumer goods and the abundance of the FRG. Thus, according to him, many residents reacted to this change and invested in building materials converting many houses.²³ Therefore, Schwarting highlights that the turnaround of Germany denoted a literal turning point not only for Germany, but for Törten as well.

In the historical description of the GDR, the centrally controlled planned economy in which lack prevailed is often contrasted by the social market economy of the FRG which generated abundance and consumption. Especially in the period after reunification, a framing developed that dialectically compared the two systems.²⁴ In this way, the thematising of economic efficiency and functionality of the housing estate was blended with general phenomena in the reception of the GDR which addressed the economic situation.

Notably, after reunification, the normativity of the settlement concept is opposed to the rapidly occurring individual changes undertaken by the residents.²⁵ The developments since the reunification make the difference between normativity and individualism particularly evident: the collective planned economy is replaced with the pluralistic market

economy. However, one could ask whether the consumption of prefabricated components does not only suggest individuality:

„Es waren die Bewohner, die mit ihren individuellen, gleichwohl mit industriell gefertigten und normierten Bauteilen erstellten Veränderungen der Häuser nachträglich die Idee des Baukastens im Großen umsetzen, [...]“²⁶

Here Schwarting explains all the modifications as a subsequent fulfillment of Walter Gropius' idea of the Baukasten im Großen. Thus, the intention of the architect becomes the measure for a ‘successful’ history. In recent research on Törten, attempts are made to unite the contradictions of normativity and individualism.²⁷ Often, the construction defects are described in detail and the economic efficiency of the architecture also plays a role. Occasionally, the shortcomings are excused because the housing estate was a pilot project.²⁸ Mainly, the deficits of Törten are juxtaposed with the residents who compensate the mistakes by their own actions.²⁹ In this way, reality and the desire for a successful history are combined. Indirectly, all these arguments refer to the standards that Gropius himself set for his architecture. Ultimately, the starting point of the argumentation is always a question of the functionality of the buildings and the limits of normalised living. Reconciling the comprehensible individualism of the residents with the intentions of the architect is thereby a possible conclusion of the argumentation.

Walter Gropius' statements are also central to the external mediation. The local signage refers to Törten as “Bauhaus architecture”. Quotations by Walter Gropius and Sigfried Gideon which clearly associate the settlement with a strictly rational architecture are depicted on two explanatory panels (**Fig. 2, 3**). Terms such as “rationalisation”, “profitability” or “subsistence level” are highlighted

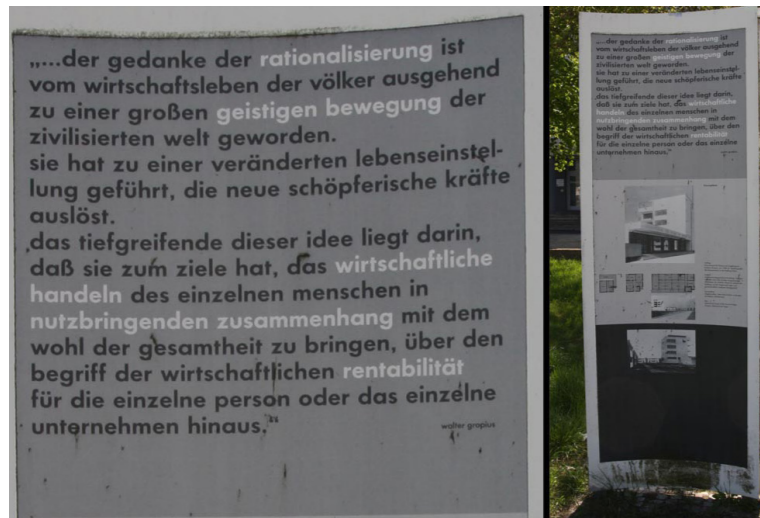


Fig. 2: Dessau-Roßlau, Germany, explanatory panel describing the housing estate Törten © Photo: Sophie Stackmann 2016.

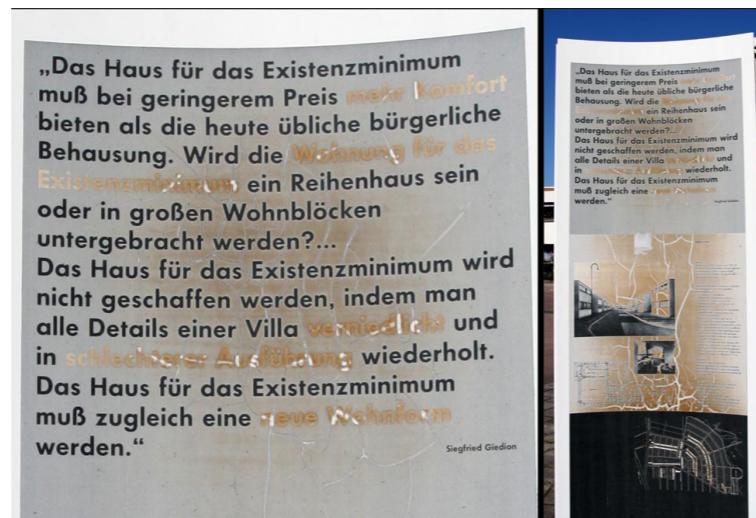


Fig. 3: Dessau-Roßlau, Germany, explanatory panel describing the housing estate Törten © Photo: Sophie Stackmann 2016.

in the text. Brochures advertising Törten depict the settlement as a product of an economical approach to construction. The aesthetics of the architecture are barely mentioned.³⁰ Of course, this is only a small part of the external mediation of Törten. However, the examples clarify that the image of the settlement is often defined by Gropius' own statements and ideas.

Gropius himself had described the housing estate as an extremely functionalistic and efficient architecture. The answer in the media was an in-depth discussion of the functionality and cost-effectiveness of standardised buildings. Likewise, political systems referred to the discussion and used the arguments for their propaganda machine. After the reunification, the normativity of the architecture is contrasted with the individualism of the residents. Simultaneously, the housing estate is framed as heritage. Over time, engagement with architectural deficiencies and issues of functionality have become patterns in the reception.

3. RETRACING EXPECTATIONS OF TÖRTEN AND THE 'BAUHAUS'

The presented reception phenomena concentrated on the continuous references to economy, functionality and normativity in many articles on Törten. In addition, it was highlighted that Walter Gropius' own statements play an enormous role in the perception of the housing estate. His medial framing literally set the frame for the reception. Perhaps one could come to completely new considerations when looking at the housing estate from a different angle. A reflection on its framing could provide an impetus to find such a different perspective on the Törten estate.

Undoubtedly, Walter Gropius is one of the most important figures for

the Bauhaus School as well as its founder. Still, the Bauhaus School was a heterogenous movement formed by many people. In that way the question arises whether to equate Gropius' architecture with the Bauhaus movement. Hence, it would be rewarding to reflect on the term 'Bauhaus' and possible contradictive associations. Another aspect worth exploring further is to which degree economic thinking influences the framing of the Bauhaus in general. While Bauhaus could be regarded as an idea that assumed many different forms, it is quite often associated with a minimalistic and functionalistic design.³¹ Although ubiquitously studied, research on the Bauhaus and its reception has until now failed to reflect on the (self-)styling aspects of its medial framing. It would therefore be very enriching to examine whether the strong reception simply integrated on certain framings that steer the research perspectives in a certain direction. This would pave the way for new and vital scholarly research on the century-defining Bauhaus School.

ENDNOTES AND QUOTATIONS

- [1] "Bauhaus and its Sites in Weimar, Dessau and Bernau," accessed on November 15, 2018, <https://whc.unesco.org/en/list/729>.
- [2] Bauhaus and its sites.
- [3] "Pressemappe: Bauhaus-Archiv / Museum für Gestaltung Berlin," accessed on October 24, 2018, <https://www.bauhaus.de/files/Pressemappe.pdf>.
- [4] Jörg Matthes, *Framing, Baden-Baden, Nomos*, 2014, 9.
- [5] Hans Robert Jauss, "Rezeption, Rezeptionsästhetik," in *Historisches Wörterbuch der Philosophie*, ed. Joachim Ritter, Karlfried Gründer, vol. 8 (Darmstadt: Wissenschaftliche Buchgesellschaft, 1992), 996–1004.
- [6] Andreas Schwarting, "Die Siedlung Dessau-Törten: Rationalität als ästhetisches Programm" (PhD diss., Dresden University of Technology 2008), Dresden, Thelem, 2010, 23; Walter Gropius, *Bauhausbauten in Dessau*. 1930. Reprint, Mainz/Berlin, Florian Kupferberg Verlag, 1974, 153.
- [7] Schwarting, *Die Siedlung Dessau-Törten*, 33–40.
- [8] German translation of *Konsum: consumption*.
- [9] Schwarting argues similarly: Schwarting, *Die Siedlung Dessau-Törten*, 370–371.
- [10] Schwarting, *Die Siedlung Dessau-Törten*, 210–212.
- [11] Gropius, *Bauhausbauten Dessau*, 153–200.
- [12] Gropius, *Bauhausbauten Dessau*, 162–163.
- [13] Gropius, *Bauhausbauten Dessau*, 200.
- [14] Schwarting, *Die Siedlung Dessau-Törten*, 37.
- [15] Kerstin Eckstein, "Inszenierung einer Utopie: Zur Selbstdarstellung des Bauhauses in den zwanziger Jahren", *bauhaus-ideen 1919–1994*, Berlin, 1994, 27.

- [16] Gropius, *Bauhausbauten Dessau*, S. 10–12.
- [17] Schwarting, *Die Siedlung Dessau-Törten*, 199.
- [18] Anke Blümm, "Entartete Kunst"? Zum Umgang mit dem Neuen Bauen 1933–1945, München, Wilhelm Fink Verlag. 2013, 246–250.
- [19] Andreas Schwarting, „Zeitschichten: Die Siedlung als Palimpsest“, *Das Verschwinden der Revolution in der Renovierung*, Berlin, 2011, 59–60.
- [20] Exercise lecture by Christian Helms on "Probleme der Bauhausarbeit – Dessau u. a. am Beispiel der Siedlung Dessau-Törten" an der TU Dresden im Fach Baugeschichte, 1968, SB 173, Stadtarchiv Dessau-Roßlau, Dessau-Roßlau; Adalbert Behr, "Das progressive Architekturerbe des Bauhauses Dessau", *Architektur der DDR 12/1976*, Berlin, 1976, 712–715; Carolyn Graf, „Das existierende Erbe, Das Bauhaus in der DDR als Denkmal und Ideologieträger“, *bauhaus-ideen 1919–1994*, Berlin, 1994, 103.
- [21] This is one of the results of my master thesis on Törten. In addition, it becomes apparent when entering the housing estate.
- [22] Sophie Stackmann, "Living in the cathedral of the future. Retracing the architectural changes of the settlement Dessau-Törten", *The ascription of values and logics in planning within historic city spaces*, Bamberg, 2018, 108.
- [23] Schwarting, *Zeitschichten*, 60.
- [24] Two examples for comparisons between GDR and FGR: Rüdiger Gerlach, *Betriebliche Sozialpolitik im historischen Systemvergleich: Das Volkswagenwerk und der VEB Sachsenring von den 1950er bis in die 1980er Jahre*, Stuttgart, Steiner, 2014; Hamel, Hannelore (ed.), *Soziale Marktwirtschaft – sozialistische Planwirtschaft: Ein Vergleich*, Bundesrepublik Deutschland – DDR, 5th ed., München, Vahlen, 1989.
- [25] Dorothea Fischer-Leonhardt, *Die Gärten des Bauhauses: Gestaltungs-konzepte der Moderne*, 2nd ed., Berlin, Jovis, 2009, 166;

- Liselotte Ungers, *Die Suche nach einer neuen Wohnform: Siedlungen der zwanziger Jahre damals und heute*, Stuttgart, Deutsche Verlags-Anstalt, 1983, 125.
- [26] Andreas Schwarting, "'Eine neue und bessere Welt:' Die Siedlung Törten und die Rationalisierung des Wohnungsbaus", *Modell Bauhaus*, Berlin, 2009, 242.
- [27] Examples: Katja Heinecke, Reinhard Krehl, and Silke Steets, "Leben mit Walter – kleines Glück im großen Plan", *Bauhausstil*, Berlin, 2003, 149; Jakob Strobel y Serra, "Kleine Utopie: Die Häuser der Mustersiedlung Dessau-Törten sind bis heute begehrt", *Dessau: Stadt ohne Zentrum?*, Leipzig, 2014, 97–98.
- [28] Ungers, *Suche nach einer neuen Wohnform*, 125–126; Hans Maria Wingler (ed.), *Das Bauhaus: 1919–1933 Weimar Dessau* Berlin, Bramsche, Gebr. Rasch & Co, 1962, 378.
- [29] Christine Engelmann and Christian Schädlich, *Die Bauhausbauten in Dessau*, 2nd ed., Verlag Bauwesen, Berlin 1998, 61–62; Andreas Schwarting, "Wohnen in einer Versuchssiedlung. Zur Problematik der baulichen Veränderungen in der Siedlung Dessau-Törten", *Wohnformen und Lebenswelten im interkulturellen Vergleich*, Frankfurt am Main, 2003, 266–267; Silke Steets, *Der sinnhafte Aufbau der gebauten Welt: Eine Architektursoziologie*, Berlin, Suhrkamp, 2015, 121–122; Schwarting, *neue und bessere Welt*, 242.
- [30] Examples for brochures: *Stadt Dessau-Roßlau/Stiftung Bauhaus Dessau* (ed.), *Bauhausbauten Dessau*, Leipzig, Pöge-Druck, 2014; *Stiftung Bauhaus Dessau* (ed.): *Bauhaussiedlung Dessau-Törten*.
- [31] The focus becomes quite clear when googling the terms "Bauhaus style" and searching for pictures. Eckstein, *Inszenierung einer Utopie*, 15.

BIBLIOGRAPHY

- GROPIUS, Walter, *Bauhausbauten in Dessau*. 1930. Reprint, Mainz/Berlin, Florian Kupferberg Verlag, 1974.
- SCHWARTING, Andreas, "Die Siedlung Dessau-Törten: Rationalität als ästhetisches Programm" (PhD diss., Dresden University of Technology 2008), Dresden, Thelem. 2010.
- SCHWARTING, Andreas, "Zeitschichten: Die Siedlung als Palimpsest", *Das Verschwinden der Revolution in der Renovierung*, Berlin, 2011, 43–65.
- STACKMANN, Sophie, "Living in the cathedral of the future. Retracing the architectural changes of the settlement Dessau-Törten", *The ascription of values and logics in planning within historic city spaces*, University of Bamberg Press, 2018, 89–124.



Cover Figure: © New Belgrade, Belgrade, Serbia © Photo: Anica Dragutinovic, 2017

Unforeseen Impulses of Modernism: The Case of New Belgrade Blocks

Anica Dragutinovic, Ana Nikezic

University of Antwerp, Antwerp, Belgium and University of Belgrade, Belgrade, Serbia

ABSTRACT

Obsolescence and urban decay are usual attributes of the Modern Movement buildings and areas worldwide, especially of the post-war large-scale housing settlements. Therefore, the question of reuse and improvement guidelines for these settlements is becoming increasingly important. The paper addresses this issue, taking New Belgrade housing blocks as a case study. The current condition of the New Belgrade blocks that, indeed, can be characterised as obsolete and not adequately maintained, even degraded, is nevertheless a perfect platform for reading of the architecture and the space values, and how it was changing during the time. The study aim was reading the unforeseen impulses of modernism: identification and mapping of socio-spatial relations in environment (reactions on and interventions in space that were generated during the time), reading and interpreting them as impulses of the user behaviours and lifestyles, and

further proposing future transformation tactics using the mapped elements and principles. The research framework was a workshop-seminar organized by the authors at the Faculty of Architecture in Belgrade. Using this research tactic, the particular elements and spaces within the blocks were mapped, identified, classified and systematized according to their flexibility to react and accept contemporary impulses of life. The study reveals common spaces of the New Belgrade blocks, or spaces between private and public, as the key elements in managing the urban decay and prompting adaptation, and hence investigates on the potential of their adaptive reuse initiating transformation of the whole area, and further achieving its attractiveness, openness and better accessibility.



Fig.1: The three space levels of New Belgrade: a) planned, b) built and c) lived space. © Illustration Anica Dragutinovic, 2018, image credits: a) Group of Authors, Novi Beograd 1961, *The Direction for the construction of Novi Beograd, Belgrade, 1961*. b) *Journal "Izgradnja"*, 1978. c) Photography Ogino Knauss, www.calvetjournal.com/features/show/6695/suspended-city-roaming-streets-of-novi-beograd.

1. INTRODUCTION

Contemporary methods and strategies for conceptualising change in the frame of Modern Movement heritage are mainly related to preservation of formal aspects of architectural heritage, its repair, increasing usability and efficiency. However, additional important aspects to be considered are social and spatial parameters – rethinking and reusing the values, principles and ideas of a certain period, rethinking the *Zeitgeist* and its potential role in the creating today's societal well-being, which is not only related to needs, but also identity. Modernity denoted establishment of a new, different relationship towards life, and consequently is denoting the way in which it had changed (is changing) society and space as a whole. Understanding modernity as a socially responsible way for testing the continuity and adaptability of space and life patterns, is framing the research approach on conceptualising future change. In an age still struggling with the need to build more sustainably Bauhaus's emphasis on basics (basic needs, but also basic features of the physical framework) as well as on the collaboration between people and place, but also between disciplines, could be one way to tackle these issues. People working together to find better solutions for society would be a good principle to start with when thinking about more sustainable building principles: finding impulses of collaborative, modern and socially responsible was our main (modernist) trace. The research on the unforeseen impulses of modernism and their potential in conceptualising new modernity has been conducted, having New Belgrade blocks as a case study.

2. BACKGROUND AND THE OBJECT OF RESEARCH

New Belgrade, a modern city built on the left bank of Sava River during the post-war period in Yugoslavia, is today Belgrade's biggest municipality, a city within the city, with around 250.000 inhabitants. Its urban development strategies were since beginning strongly related to the socio-political context. The context was constantly changing during the XX century, which caused discontinuity in planning and constructing the modern city, as well as in its further urban development strategies and policies.¹

In the first post-war years New Belgrade was imagined as a city to symbolize a new beginning, a centre of administration, culture and economy of the socialist state. However, as the housing shortage came to the forefront, the city was eventually built in 1960s and 1970s as a city of housing mega-blocks. Besides the conceptual change in formative phase, New Belgrade went through different levels of change after its construction as well – housing policy and ownership change during the post-socialist transformation and nowadays transformation of the urban landscape. Nevertheless, the modernist housing blocks were excluded from the process of formal transformation and left to decay. The maintenance and management of the buildings were directly influenced by housing policy and ownership change. The city built as a socially-owned was privatized in 1990s having each flat within the housing blocks privately owned by (usually) residents. The privatization also meant the transfer of responsibility for the huge structures from the state to the residents. Due to the weak regulations and economical issue, the buildings are in disrepair, and especially the common spaces. The current condition of the blocks, although can be characterized as obsolete and not

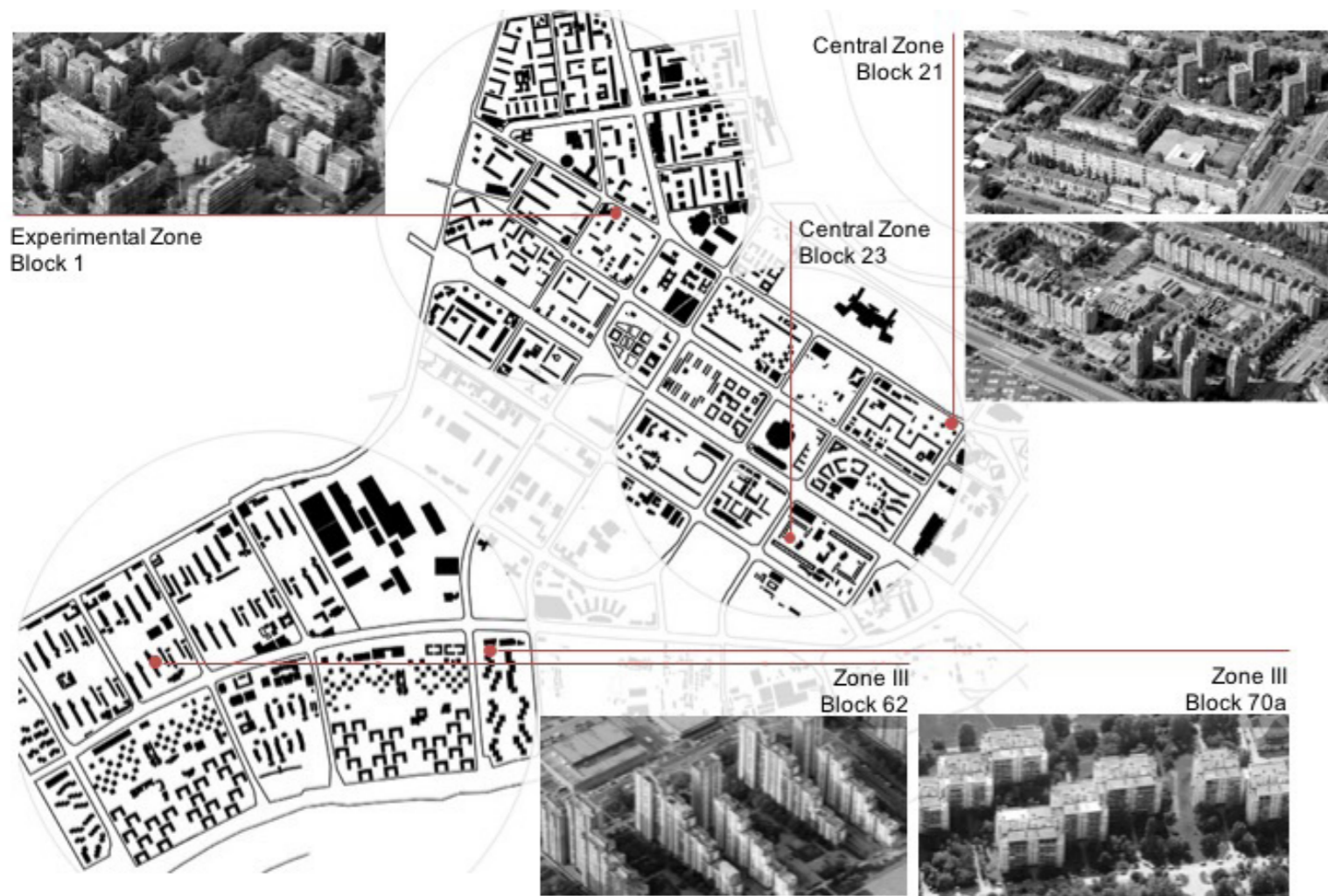


Fig. 2: Map of New Belgrade: 5 blocks from 3 different zones of New Belgrade. © Illustration Anica Dragutinovic, 2018.

adequately maintained, even degraded, is nevertheless a perfect platform for reading of the architecture and space values, and how it was changing during the time. Three levels of metamorphosis of New Belgrade can be perceived as analogue to the three space levels: planned, built and lived space. The study is focusing on the lived space of New Belgrade and its contemporary context (Fig. 1).

3. TOWARDS A NEW MODERNITY OF THE MODERN CITY

To preserve and adapt the idea of a modern city to suit the spirit of contemporary city led to the main research question – how to transform and redesign the blocks in accordance with principles, lifestyles and identity of the modern city in the contemporary (and future) context of New Belgrade blocks. Therefore, the method of explorative mapping of impulses of Modernism in everyday life of study blocks and its reading and interpretation was the path to be followed, leading to proposals for their improvement.

The scale of research was a block – a neighbourhood, and as specific case studies 5 blocks were selected: Block 01, Block 21, Block 23, Block 62 and Block 70a. The selected blocks are probably the best examples of diverse urban and architectural practice taking place there after the WW II. They represent different socio-political concerns of the time and also show a particular genesis of architectural thought, being absolutely pragmatic and rational during 1950s (Block 01), then introducing a social cohesion and diversity (Block 21 and Block 62), then proposing a quite different perspective opening towards a diversify common areas, both closed and opened, included in the architectural and urban plan during 1960s (Block 23), all the way to being behavioural and sensitive to the supposed lifestyle as a proposed identity card during 1970s (Block 70a) (Fig. 2).

Differentiation between the case studies was present, as described. Nevertheless, the residents' needs and their dwelling practices, in all cases influenced the design, and later the usage of space within the blocks, both private and public space.² The dialogue between private and public, that was one of the key elements in initial design of the modern blocks, was suppressed over the time and polarization of the urban landscape into private and public was growing. This is firmly influencing urban decay, and hence re-articulation of the dialogue between public and private, and adaptive reuse of the neglected common spaces and elements of architecture, will emerge as materialized added value for the housing and initiate the further adaptation of New Belgrade blocks. Therefore, the study focuses on the common spaces of the blocks, or spaces between public and private, as spaces of negotiation, and investigates on their potential for adaptive reuse. The focus is on the tension between modern – obsolete, durable – ephemeral, compact – fragmented, public – private, individual – collective, towards the establishment of a new modernity.

4. METHODOLOGY OF RESEARCH

Before conducting the research on transformation potential of the obsolete common spaces, a research method based on the form of a student workshop was developed. The conventional short-term model of a workshop, although develops brainstorming and sharing ideas productively, very often does not allow for a complete systematic process from analysis to design task. Therefore, the research framework was conceived as an extended model of a workshop whose timeline allows rounded cycle of the research and design process. The proposed model is based on three continuous stages or research: 1) identification – a systematic observation of the case

ATRIUM TYPOLOGY

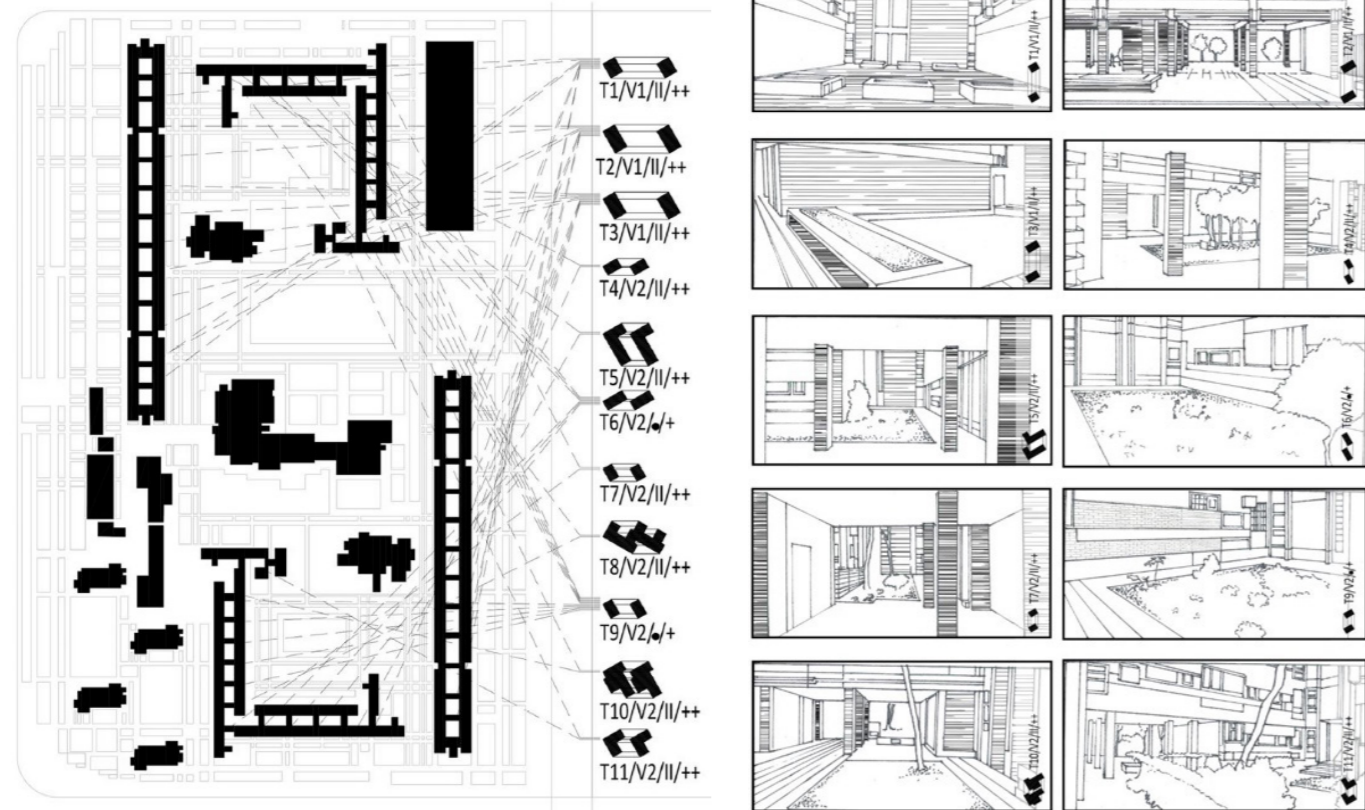


Fig. 3: Identification of the atrium typology in the Block 23 and visual interpretation of the atrium ambiances. © Illustration Research team C3: Teodora Ciric, Marko Ristic, Jovan Ristic, Jelena Korolja, 2018.

studies (the 5 blocks), aiming to understand the dialogue of the public and private spaces within each block, and identify the impulses of modernism that emerged through this dialogue over time; 2) interpretation – the mapped aspects, or elements and spaces, were analysed and interpreted in order to define and classify potentials for transformation; and 3) conceptualisation – the potentials were further investigated, developing transformation concepts and tactics.

The first stage was done through the place-based approach³ focussing on the place itself and not on the plan and design the place was derived from. The space was understood as a lived, a place with a history and matureness, a place of people and for the people with all its floss and obstacles seen as potential impulses. It was a multi-sensory experience overlapping building and their surrounding through everyday living habits of the inhabitants. The second stage was done through typo-morphological mapping⁴, taking into consideration the relation between open and closed, mass and volume, inside and outside on diverse scales of the neighbourhood, block and building. Through mapping and drawing superimposition of the landscape and building, this stage intended to support discovered impulses in various scales and to investigate on the transition of discovered phenomenon into architectural principles, and display of its architectural qualities. Networking impulses with space and program was the main aim of this stage. The third stage was done through creative interpretation taking into consideration the way in which already classified impulses can be transformed as triggers for the adaptation and redevelopment of common spaces. Architectural intervention focused on fostering the qualities of everyday life⁵, regarding architecture as an infrastructure that allows to adapt, transform and develop. This last stage was to promote the environment and not architecture, to push the process

of life ahead of design of the place.

The workshop model was developed by the authors within the framework of an ongoing PhD research by the first author, and the workshop was organized by them at the University of Belgrade – Faculty of Architecture in the Fall Semester 2018/19. In the workshop participated 55 students of Bachelor and Master Studies of Architecture, organized into 15 teams (3 teams per block). The workshop model enabled a dynamic research process, opening up a possibility for an experimental research and developing scenarios for future actions.

5. RESULTS AND DISCUSSION

The results of the previously explained research process are presented within this chapter. The results of the first two stages of research are introduced in the sub-chapter 5.1. Identification and Interpretation, and the results of the third stage of research are introduced in the sub-chapter 5.2. Transformation Concepts and Tactics.

5.1. Identification and Interpretation

Through the sensitive dialogue of the public and private, individual and collective, vertical and horizontal, the unforeseen impulses of modernism emerged over the time. The first part of the investigation was applying a systematic observation and photo-documentation of each block (5 blocks) by research teams (3 RT per block). As a result, each team mapped a specific socio-spatial phenomenon that was further analysed and interpreted in the next phase. For example, research team C3, investigating on the block 23, mapped atriums of the linear buildings within the block 23. After observation and photo-documentation, the group analysed the atriums and classified

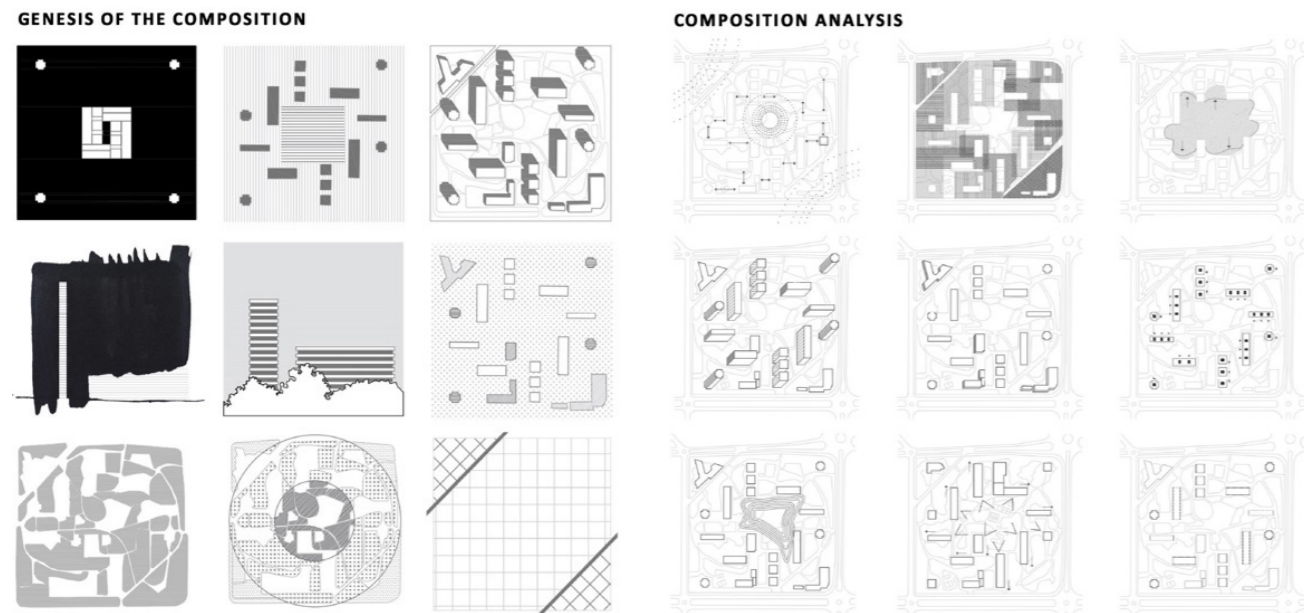


Fig. 4: The composition of the Block 01: interpretation - genesis of the composition; and composition analysis. © Illustration Research teams A1: Milica Surla, Helena Planjanin, Aleksandra Til, Nevena Askovic, Marija Stojkovic and A3: Marija Milovanovic, Nikola Eric, Jovan Matovic, Marija Matijevic, 2018.

different types (Fig. 3).

Furthermore, for the Block 01, all 3 research teams recognized the importance of the block's composition. It's modernist design with orthogonal grid of the built structures that are floating in the surrounding landscape, described by the architects as "horticultural artistic ensemble", is recognized as a value, but at the same time as a phenomenon that was generating certain issues in the block over the time, especially in the relation between built and unbuilt, and public and private. The issue of the central open space of the block, that is left undefined in the initial design – and today underused, was mapped; and, also the corners of the block, initially planned as common spaces – and today having a new commercial program, were identified. The identification and interpretation (analysis) of the mapped phenomenon and it's unforeseen impulses are presented in the Figure 4.

The other mapped phenomenon were obsolete facades of the buildings, underused semi-public spaces, open public spaces dominated by cars due to the parking issue, but also important elements of the modernist design that are blurring the line between public and private and help in the design of the public interior. These elements are usually formally present in the space, however without an appropriate function – therefore the issue, and at the same time a potential, of programming the common spaces and elements of architecture was important for all the case studies.

5.2. Transformation Concepts and Tactics

The transformation concepts were focusing on adaptive reuse of the common spaces and elements of architecture that would prompt the further adaptation of the blocks. The aim of the interventions was

not transformation of the modernist morphology of space, but rather careful identification of important elements and "urban acupuncture" that would increase the functionality of blocks and support the community.

The research teams were focusing on different aspects and impulses that were identified in the previous stages. One example was the landscape between the residential buildings of the Block 23, addressed by the research team C1. The transformation concept was based on implementation of an imaginary orthogonal grid (following the built structure) that would support the landscape programming. The interventions were micro points in the landscape underlining and multiplying the identified ambiances. The concept was mediating among scales of the blocks, reactivating the whole block eventually (Fig. 5a).

The research team C2 was focusing on the facades of linear buildings in the Block 23, aiming to develop an add-on structure that would integrate new functions. The users' interventions on the existing facades were mapped and classified, and thus new needs and potentials were identified. The proposed structure is integrating these needs and potentials, while enabling different openness, materialization and performance of the facade elements (Fig. 5b).

The students' design shows the potential of adapting New Belgrade blocks through transforming the common spaces as a valuable resource. They represent a conscious shift towards a designing process that speaks directly of the values of the place. The versatility of the program and possibilities of discovered impulses testifies that a seizure of heritage is not necessarily wrong, on the contrary, it may contribute to the vitality of the chosen site as well as to the quality of the contemporary everyday life.

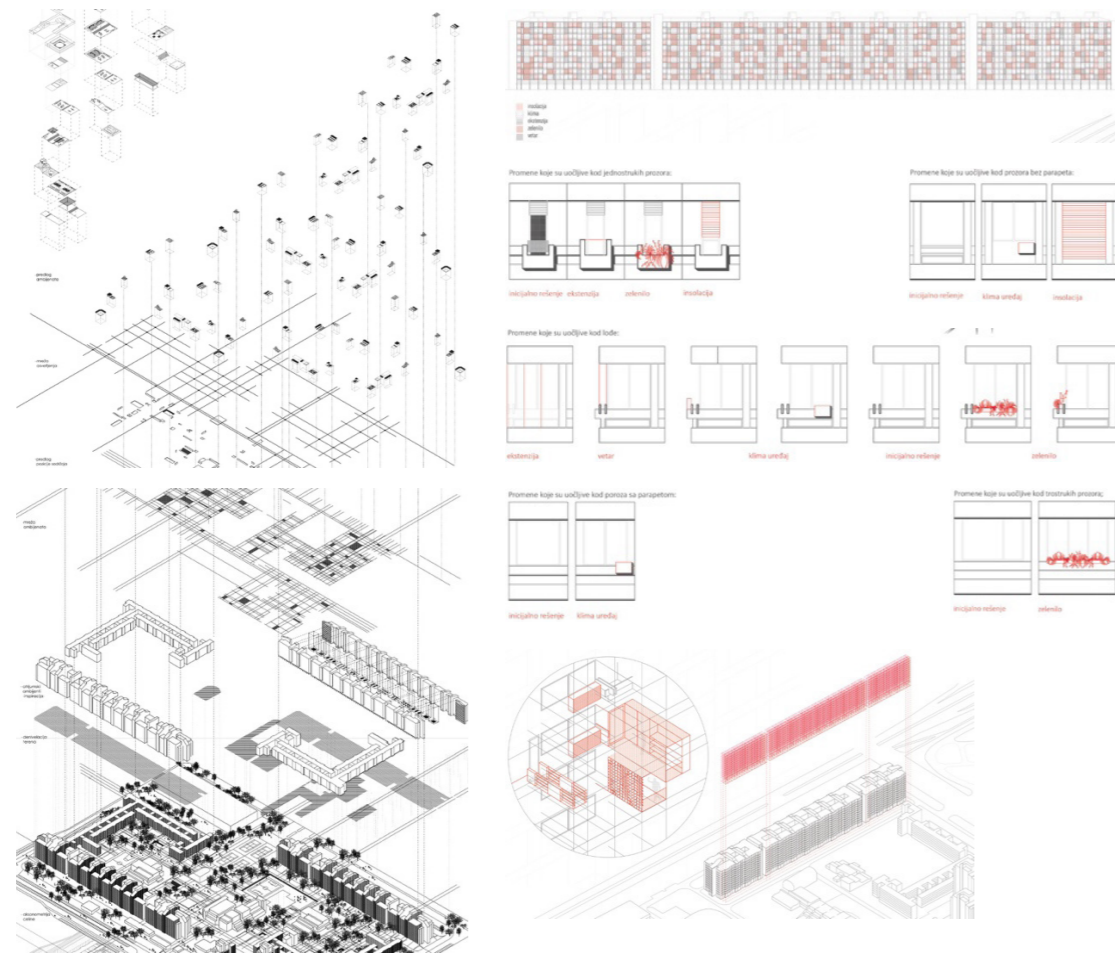


Fig. 5: Transformation concepts for the Block 23 (a) Landscape programming, (b) Facade re-design. © Illustration (a) Research team C1: Aleksandra Maksimovic, Nevena Djuric, Katarina Dimitrijevic, Milica Bozovic, (b) Research team C2: Zlata Stanojevic, Aleksandra Stojanovic, Nikolina Lalic, Olga Miskovic, 2018.

Although the diverse concepts have produced a series of different solutions, they are all affirmative for the revitalization of New Belgrade and at the same time in keeping its spirit and the overall conceptual framework. Solutions vary in their size, disposition, program and scope; however they are united in terms of relation to materiality and sensitivity of the place, keeping the Modern ideas alive and present. Regarding the whole project and through the workshop we have come to the conclusion that three major architectural approaches can be adopted when it comes to New Belgrade blocks: a) common spaces, both open and closed, play a major role in the adaptation process, b) the space between public and private has to become visible and tangible, reachable and user-oriented, and c) emphasising the Modern (material, structural, visual) as natural becomes a resource of re-design.

6. CONCLUSION

This article proposes a new architectural paradigm which establishes the relationship between space and place through the power of learning from the impulses of lived space. Architecture becomes an infrastructure for emphasising everyday life that will foster place sustainability and adaptability without compromising the heritage dimension of the space. Space is shaped through its history rather than through injecting new contents unfamiliar with the existing community. Therefore, the continuity of the place becomes a major goal and major initiator of change. Under the influence of everyday impulses of the place, architecture transforms its nature as to restore the connection between man and its habitat. At the end, the experience of the place, not the program neither the form, becomes a generator for a cultural transformation.

This research helped in adopting a more comprehensive and sustainable approach to the Modern architecture, enabling to the stay consistent towards its principles and goals. The research shows the ability to think about heritage in a holistic way and suggest key issues in the process of redefining the way in which we think, read and approach toward the Modern.

ENDNOTES AND QUOTATIONS

[1] Anica Dragutinovic, Uta Pottgiesser, Els De Vos, "(Un-)Sustainability of the Concrete Mega-Blocks in New Belgrade: Potentials of Prefabricated Modern Structures for Transformation", in A. Tostoes, N. Koselj (ed.) *Metamorphosis. The Continuity of Change*, 2018, p. 187-195.

[2] Anica Dragutinovic, Uta Pottgiesser, Michel Melenhorst, "The Minimum Dwelling: New Belgrade Flat and Reflections on the Minimum Today", in M. Melenhorst, U. Pottgiesser, T. Kellner, F. Jaschke (ed.), *100 YEARS BAUHAUS: What interest do we take in Modern Movement today?*, Hochschule OWL (University of Applied Sciences) *DOCOMOMO Deutschland e.V.*, 2019.

[3] Ana Nikezic, Dragan Markovic, "Place-Based Education in the Architectural Design Studio: Agrarian Landscape as a Resource for Sustainable Urban Lifestyle", *Sustainability*, 7/7, 9711-9733, 2015. <http://www.mdpi.com/2071-1050/7/7/9711>

[4] Ana Nikezic, Natasa Jankovic, Pavle Stamenovic, "Transgressing Scale: Architecture and Nature", *STRAND - Sustainable Urban Society Association, Belgrade, Serbia*, 2017.

[5] Renata Jadresin-Milic, Ana Nikezic, "Enhancing Local Identity through Fostering Research-based Education in Architecture", - 2017 – *Architecture Connects, Oxford, UK*, 2017.

BIBLIOGRAPHY

DRAGUTINOVIC, Anica, POTTGIESSER, Uta, DE VOS, Els, "(Un-)Sustainability of the Concrete Mega-Blocks in New Belgrade: Potentials of Prefabricated Modern Structures for Transformation", in A. Tostoes, N. Koselj (ed.) *Metamorphosis. The Continuity of Change*, 2018.

DRAGUTINOVIC, Anica, POTTGIESSER, Uta, MELENHORST, Michel, "The Minimum Dwelling: New Belgrade Flat and Reflections on the Minimum Today", in M. Melenhorst, U. Pottgiesser, T. Kellner, F. Jaschke (ed.), *100 YEARS BAUHAUS: What interest do we take in Modern Movement today?*, Hochschule OWL (University of Applied Sciences) *DOCOMOMO Deutschland e.V.*, 2019.

NIKEZIC, Ana, MARKOVIC, Dragan, "Place-Based Education in the Architectural Design Studio: Agrarian Landscape as a Resource for Sustainable Urban Lifestyle", *Sustainability*, 7/7, 9711-9733, 2015. <http://www.mdpi.com/2071-1050/7/7/9711>



Cover Figure (Fig. 1): Former LPG cattle stall, Genschmar, 2018. © Photo: Emily Bereskin and Christoph Muth, 2018.

Case-studies from Brandenburg. The Reconceptualization of Modernist Structures in Post-Socialist Rural Regions in Germany

Christoph Muth, Emily Bereskin

Technical University of Berlin, Berlin, Germany

ABSTRACT

Through case-study and survey analysis in Brandenburg, Germany, this paper investigates the shifting conditions of modernist planning and architecture in rural regions of the former German Democratic Republic. The guiding political principles of the GDR gave equal priority to the development and settlement of rural areas as it did to urban and town planning, resulting in intense centralized efforts to construct new, modern rural centers. After 1952, and following the Soviet model, agricultural land and production processes were collectivized into agricultural production collectives—Landwirtschaftliche Produktionsgenossenschaften (LPGs), reconfiguring the customary spatial arrangements of rural life. Rather than the traditional regional settlements which often paired single-family homes, gardens, farm buildings, and fields on one plot, agricultural production and processing were scaled up and consolidated into immense industrial structures. Workers were housed in multi-family apartment buildings,

and rural centers were outfitted with cultural, educational, and recreational facilities formerly only found in towns.

Following German Reunification and the dissolution of the LPGs, the area has undergone major social, structural, and spatial changes. Regional agricultural production has been consolidated under fewer, larger corporations; rural centers are shrinking and are facing new challenges such as long-term unemployment and aging populations. Based on policy and site-analysis as well as interviews with local actors, this paper considers the fate and reuse of the LPG structures within this new structural transformation, analyzing the legal and economic frameworks dictating their re-use as well as the actors and strategies shaping these new spaces. The paper first considers representative examples of reuse from the categories of housing, production centers, and cultural buildings.

INTRODUCTION

The rural areas of the GDR are filled with structures born out of a modernist re-imagining of the rural landscape: large industrial agricultural centers; massive housing blocks for farm workers; civic structures such as schools, kindergartens, and cultural buildings. However, most of the investment in rural areas happened in the early years of the GDR, meaning that by German Reunification in 1990, many structures had already fallen into disrepair. The structural changes following reunification sparked economic stagnation, spatial shrinkage, and a breakdown in rural connectivity, all of which furthered the abandonment, decay, and destruction of these structures.

As examples of a particular architectural heritage, none of these structures are particularly valorized, either by scholars, tourists, or—as our interviews have indicated—by locals. Why is this? Rural architectural history and sociology are often sidelined by scholars in favor of the urban, a fact immediately evidenced by the disproportionate amount of studies in the literature. The legacy of the GDR itself is something often overlooked in German heritage, whether due to the potential problematics by those who would label the regime totalitarian, or by those who simply see it as something gone and forgotten (Our interview partners, for instance, mentioned that most children growing up in rural areas of the former East have never even heard of the GDR). The buildings, with their functionalist, unornamented forms, and technical materials, also do not speak to a typical rural imaginary—one that, in contrast, is usually directed to more traditional brick and/or half-timber (Fachwerk construction) at a smaller, more human scale: One that delights tourists, would-be residents, and scholars of the past. The intervention of these structures into the landscape was indeed so radical, that it defies any easy attempt to

fold them back into the rural fabric as we imagine it today.

In rural Germany, the re-use of rural buildings is strongly focused on these “traditional” structures. Policies, laws and programs help owners renovate and re-program old houses, barns, manor homes, and stalls. However, significantly less interest is taken in the active re-use of the modernist structures. And yet, innovative moments of re-use can be seen. These are led by both local and non-local actors and have resulted in both subtle as well as radical changes to buildings, both in form and program. Today I will present examples of architectural and spatial reuse from the categories of housing, production centers, and cultural buildings.

The examples I will present here were largely collected through an ongoing survey conducted by Dr. Bereskin and myself within the region of the Southern Oderbruch—a region approximately 80 km east of Berlin bordering the Polish border. One example comes from the Uckermark, a region north of Berlin. In many ways, the social, political, and economic conditions impacting architectural re-use in these areas are typical for rural regions in the rest of the former GDR (economic decline, depopulation, etc). However, due to both its topography and its proximity to Berlin, what we see in Brandenburg cannot be wholly representative of trends occurring in other regions after the fall of the Wall. To that end, we would be grateful to hear of other examples that would help us broaden the survey we are currently undertaking.

A NEW COUNTRYSIDE

The guiding political principles of the Socialist Unity Party (SED) which governed the German Democratic Republic give equal priority

to the settlement and development of rural areas as it did to urban and town planning. Creating an equal quality of life for farmers and workers was an ideological and strategic principle of East German state socialism.

The seeds of this ideology were planted immediately following the end of WWII as both the Soviet Military Administration (SMAD) and local German communist allies undertook intense and radical efforts to construct new, modern rural settlements. Effectively giving themselves a tabula rasa for the construction of a new rural society, land reform was enacted that expropriated farmland from private landlords and gave them to farmers and expellees from Eastern Europe. Already in 1945, a department for rural construction and development (Lehrstuhl für Landwirtschaftliches Bauen) was established at the newly reopened Institute for Architecture and Fine Arts (Hochschule für Baukunst und bildende Kunst) in Weimar. Professor Anton Miller drafted the first proposals for the development of modern settlements in rural areas, a project that would continue to occupy planners, academics, party members, and architects throughout the GDR.¹

Following the Soviet model, farms were collectivized after 1952 into agricultural production cooperatives—Landwirtschaftliche Produktionsgenossenschaften (LPGs), a step that further reconfigured the customary spatial arrangements of rural life.² This transformation was also encouraged by the increased industrialization and modernization of agricultural production. Rather than the traditional regional settlements which often paired single-family homes, gardens, farm buildings, and fields on one plot, agricultural production and processing were scaled up and consolidated into immense industrial structures. Workers were housed in multi-family apartment buildings, and rural centers were outfitted with cultural, educational, and recre-

ational facilities formerly only found in towns.³ The result is a total transformation of traditional rural settlements in East Germany.

AGRICULTURAL BUILDINGS

Above all, the rural countryside in the GDR was to serve as the site of agricultural production. Highly-technical, modern and industrial forms of agricultural production were to be achieved through the collectivization of agriculture—in terms of land, means of production, etc. High yields were to be attained through the use of modern technology and perfecting economies of scale. Mass industrialized farming gave rise to new typologies and the creation of larger animal stalls, heating stations, and greenhouses, many of which were based on American and Soviet standards and typologies. These buildings were often located in the village core or just at its edge, integrating themselves with the village structure.

Following German reunification in 1990 and the dissolution of the LPGs, these buildings were called into question as the former cooperatives transitioned to private companies.⁴ Shifting agricultural policies and the consolidation of LPGs into larger private landholdings lead to the abandonment or destruction of many of these structures. Throughout Brandenburg, companies are choosing to focus on crops such as rapeseed, corn, and wheat, which require the least amount of human labor, with vegetable cultivation and animal husbandry almost completely disappearing from the landscape. This means that many of the GDR-era greenhouses and animal stalls are no longer useful and are instead being refitted with panels and integrated into solar farms⁵ (Fig. 1).

A limited number of smaller enterprises survived the consolidation processes of the early 1990s. Some of which were able to modernize



Fig. 2: Oderbruchhalle after renovation, 2018. Photo: © Emily Bereskin and Christoph Muth, 2018.

and upgrade the deteriorated structures of the GDR through the use of government grants and private loans.

CULTURAL BUILDINGS

A principal element of rural planning in the GDR was the erection and development of cultural facilities. No matter how remote, all residents were to have access to cultural activities, a complement to the new “urban” lifestyles they would lead as farmers, complete with vacations, days off, and recreational activities. Originally, the cultural house (Kulturhaus)⁶ was housed in the same structure as the Machine and Tractor lending station that had been installed in every village. Immediately after the end of the war, architects set about developing typologies for the Cultural House, some of which were based on a more socialist realist style, while others took on more reductionist modernist forms. These buildings, which regularly hosted concerts, festivals, dances, theater productions, and so on, were often central to daily and recreational life in the villages.

The cultural houses were built and supported largely by the state; however, these activities were often supported by the LPGs. One of our case-studies, the Kulturhaus in Golzow, was constructed in the early 1970s at the behest of the LPG. Golzow already had a cultural house located at the site of its former MTS, built in the 1950s, but by the early 1970s, the town had outgrown the small structure. The head of the LPG demanded a larger structure be built and saw to it that the building teams (Baubrigade) began construction using an industrial typology general-purpose hall.⁷ Adding on to this premade typology, they constructed office space for the LPG administration as well as a bar, restaurant, and bowling alley.

The building would subsequently be used regularly for dances,

festivals, concerts and other communal events. That it was built by the LPG and the towns own Baubrigade made it a source of regional pride.

Following reunification, the cultural house was transferred to Landwirtschaft Golzow GmbH, a private company that took over all of the LPGs holdings. As an enterprise, they were not required or interested in taking over the responsibility for cultural production in the village. They rented the former restaurant to a private resident and continued to use the office space for their new enterprise. The hall fell into disuse. Such closures were seen all over the former GDR in the years after reunification.

Ten years later, the condemnation of the local school's gymnasium forced the municipality to look for new solutions for their students; not finding any other structures of suitable size in the area, they began to consider the former cultural house as an option. The municipality saw a simultaneous opportunity to restore and reopen the cultural house and took steps to find a solution that would allow for the reconstruction of the building with a double program, a goal arguably helped by the building's original typology as a multi-functional hall already disposed to flexible adaptation.⁸

Few major changes were made to the layout of the hall during the renovations. Smaller storage rooms and offices were turned into changing rooms. For safety reasons, the large vertical windows were covered and replaced with smaller horizontal fenestration. The interior was remodeled with walls and floors suited for indoor sports. Already set back into a separating wall, the stage remained unchanged and is covered with a canvas partition during sporting events. During cultural events, the basketball hoops are covered, and carpeted floors and chairs are brought in to transform the space (Fig. 2).

The doubling of the building's program seems a natural solution for rural areas short on capital to invest in infrastructure, although it is not wholly unproblematic. According to interviews, although it was acknowledged during the renovation that the building's primary use would be for sports, the municipality stipulated in the final negotiations that cultural events would take precedence in scheduling, with sporting events canceled when larger events are scheduled. Nevertheless, according to the building manager, the expenditure of time and effort needed to transform the space into its cultural counterpart is so high that they often encourage potential event organizers to hold events elsewhere.⁹ Moreover, the architects failed to plan for adequate storage room for the facilities, so the chairs, tables, and flooring needed to outfit the cultural center simply sit in the foyer. The legal situation of the cultural house is also problematic: The municipality had to rent the space from the Landwirtschaft GmbH, but also finance the renovations themselves, a less than ideal cooperation.

That said, as our interview partners frequently repeated, it is one of the few cultural houses in the area that has continued to function at all, and they see the project as a success.

HOUSING

From 1945 until 1990, various new forms of housing solutions were tested and implemented to meet the demands of those living and working in rural areas. In the early years, architects such as Werner Cords-Parchim worked to design solutions that would house the vast number of arriving expellees (Neubauern).¹⁰ These single-family homes were designed to incorporate modern standards of living while maintaining a stylistic resonance with “rural” architectural forms and the new “national style.”

Later, as the process of industrialized agricultural production strengthened, standardized housing types were constructed in rural areas, sometimes by the state and sometimes by the LPGs themselves. Typologies were developed for single-family homes, the most famous of which was the Walter Stallknecht's EW58, which could be constructed by homeowners themselves – although they were left to their own devices on how to acquire the building material.¹¹

As collectivization progressed, larger apartment complexes were also built in rural areas, both as blockhouses and as part of the P2 Plattenbau system. The collectivization of agriculture effectively and radically eradicated the previous morphology of farmhouse and plot and meant that both farmers and other rural residents could live in denser apartment buildings. Just like their urban counterparts, these apartment buildings were outfitted with “modern amenities” such as indoor plumbing and heating. Citizens in the GDR were keen to obtain an apartment and many people specifically moved to rural areas in order to obtain such modern housing.

Today, shifting housing demands due to population loss have altered the availability and quality of housing stock. In a fashion similar to that seen within former East German cities, the demand for housing in the larger housing blocks and Plattenbau structures has declined significantly. After reunification, many residents left the area to find work elsewhere, while others sought out better housing stock, particularly in single-family homes. Many buildings are largely vacant and lie in various states of disrepair. Those who do remain in these housing estates often face long-term unemployment and lack opportunities for upward mobility. Stigmatization of these spaces also perpetuates their decline.

One such estate in our study area lies in the town of Manschnow. This series of blockhouses was constructed in the 1980s, and the homes were highly sought after at the time of their construction. The buildings are owned by the municipality and are now managed by the Seelower Wohnungsbaugesellschaft, a private company formed out of a state-owned enterprise (Volkseigener Betrieb, VEB) after reunification. The company purchased and partially renovated the flats in 2000 but has only been able to rent out two-thirds of the apartments. One of the problems has to do with the limited financial capacity of the municipal township to keep up with maintenance and repairs. Due to limited resources, they only repair an apartment after they have received interest from a prospective renter, a self-perpetuating problem that only increases vacancy.¹²

Although many urban and regional planners have tackled the issue of restructuring the large Plattenbau settlements at the outer edges of German cities,¹³ fewer have considered the problem specifically in the case of rural areas. This lack of expertise-driven interest means that rural townships lack not only financing, but know-how as well. Market demand once again plays a role. Parallel to the waves of outmigration, we also see new residents moving into Brandenburg, many of them young artists and digital nomads from Berlin. These new residents, looking for a life in the countryside as an antithesis to life in a large city, show a strong preference for detached homes with large plots of land, preferably in prewar structures. In the Uckermark, for instance, home prices have risen exorbitantly in the past decade, leading some to speak, albeit misguidedly, of a new “rural gentrification.”

As a greater number of traditional homes and plots are purchased or become unaffordable, prospective residents are seeking alternatives

in the modernist structures of the GDR. In Ortwig, for instance, two interview partners, both artists from Berlin, relayed to us how when looking for a place in the region, they were dismayed to find that the larger plots of the traditional 18th and 19th century settlements (Loosegehöfte) were no longer available, having already been purchased by artists and academics in the 1990s. After enlisting help from the township and researching all currently available buildings, they eventually purchased and moved into a former GDR primary school. Cleaving the nearly symmetrical building in half, they used the northern end and remade it into a private apartment and used the southern half as a series of workshops and gallery spaces.¹⁴

Another notable example found during our survey work is the transformation of a former LPG housing complex into a new collective housing and production space called Libken e.V. The complex, located near the village of Gerswalde, was slated for demolition in 2014, when a group of young artists and digital workers sought out the legal and financial means to acquire the space. Originally negotiating a temporary lease with the township, the group officially purchased the entire building and surrounding land in 2015. With the support of the Federal Foundation for Culture as well as other donors, the center now hosts a variety of different programs as well as housing six full-time residents.

Various interventions have had to be made in order to make the building useful, a work still in process. These works have been largely conducted by the members of the organization themselves, often enlisting help through week-long building seminars. To date, many of the renovations are minimal, but what is particularly significant is how they have succeeded in breaking up the structure of the individual apartments in order to reorder and re-hierarchize the space of the



Fig. 3: Communal kitchen at Libken e.V., 2018. © Photo: Emily Bereskin and Christoph Muth, 2018.

building as a more cohesive unit. For example, on the ground floor, two units have been joined and converted into a communal kitchen and dining room (Fig. 3). One wing remains private apartments. One has been turned into guest rooms for conferences and retreats. Three apartments in one wing have been joined into one gallery space.

Other structures on the land have likewise been renovated and changed, through interventions of various scales. The old shed was cut into smaller sections with openings on the backside to create a series of small spaces that could largely be used for recreational and evening activities, for example, a small bar and a dance floor. And with the help of volunteers, the group remodeled the former pump station into a conference room.

The space now hosts six full-time residents, offers space to rent for conferences and workshops, holds summer academies, and weekly events for residents and town locals, such as large meals and yoga classes. This “hipsterization” of Brandenburg is a not uncommon phenomenon, one that has brought with it new hope for shrinking areas, but also social conflicts between new residents and old.

CONCLUSION

To conclude, I would re-emphasize the point made at the beginning of my talk, that these modernist structures are often incongruous with our mental image of an Arcadian landscape. And indeed, we often see media representation of these GDR structures as dismal, sad spaces, representations that stigmatize those living in these regions. However, we are seeing increasingly more interest being taken with this heritage largely by newcomers to this area—newcomers who see this modernist reinvention as something to be valorized in its own right and who, through their re-use of the structures, through symposia they

are holding, and through artistic reinterpretation, are embedding this history and architectural legacy more strongly in our rural imaginary. In 2014, the artist and urban planner Ton Matton, undertook a project to rebuild a EW58 in the Netherlands, a celebration of what he saw as a unique building type that allowed residents to build their own homes making unique changes as they went along, a unique architectural heritage that he sees as the antithesis to construction practices today where people “buy things out of a catalogue and then spent thirty years paying off a credit.”¹⁵ Making the EW-58 a monument to a unique architectural practice and monument of GDR-era rurality.

ENDNOTES AND QUOTATIONS

[1] Miller, Toni. 1948. *Grundlagen des ländlichen Siedlungswesens Erläutert an e. prakt. Beispiel*. Weimar: Hochschule f. Baukunst u. Bildende Künste.

[2] See for instance: Bauerkämper, A., 2002. *Ländliche Gesellschaft in der kommunistischen Diktatur: Zwangsmodernisierung und Tradition in Brandenburg 1945-1963*. Böhlau Verlag Köln Weimar.

[3] SCHÖNE, J. 2014. "Ideology and Asymmetrical Entanglements", in A. Bauerkämpfer; C. Iordachi *The Collectivization of Agriculture in Communist Eastern Europe: Comparisons and Cross-Border Entanglements*, Budapest—New York, Central European University Press.

[4] The legal transition of the agricultural sector was regulated by the *Landwirtschaftsanpassungsgesetz (Law for Agricultural Adaptation)*, 1990.

[5] Ludwig Gainer has documented the changes that these policies have made in the construction of new "energy landscapes."

[6] Ulrich Hartung. *Arbeiter- und Bauertempel. DDR-Kulturhäuser der fünfziger Jahre. Ein architekturhistorisches Kompendium*. Dissertation der Humboldt-Universität Berlin, 1996; *Die Kultur auf's Land bringen. Dörfliches Bauen in der frühen DDR und der Typus des Land-Kulturhauses*; in: Ulrich Kluge/Winfrid Halder/ Katja Schlenker (Hg.): *Zwischen Bodenreform und Kollektivierung. Vor- und Frühgeschichte der "Sozialistischen Landwirtschaft" in der SBZ/DDR vom Kriegsende bis in die fünfziger Jahre (Beiträge zur Wirtschafts- und Sozialgeschichte, Nr. 92; Dokumentation einer Tagung am Institut für Wirtschafts- und Sozialgeschichte der Technischen Universität Dresden)*, Stuttgart 2001; Thomas Ruben, Bernd Wagner, eds.: *Kulturhäuser in Brandenburg. Eine Bestandsaufnahme. Endbericht des Forschungsprojektes „Die Kulturhäuser in Brandenburg, Bestandsauf-*

nahme und Konzeptentwicklung“ der Kulturpolitischen Gesellschaft e. V. Brandenburger Texte zu Kunst und Kultur, Band 1. Verlag für Berlin-Brandenburg, Potsdam 1994.

[7] *Angebotsprojekte 1/67 and 2/67 Mehrzweckhalle/Stahlleichtbau.*

[8] Interview, Herr L. Lehmann, February 10, 2019, Golzow.

[9] Interview, Simone Grieger, February 10, 2019, Golzow.

[10] Cords-Parchim, W., 1953. *Das Handbuch des Landbaumeisters*. Neumann.

[11] *Between 1958 and 1989, roughly half a million of these houses were built in the GDR, with tens of thousands to be found within Brandenburg.*

[12] Steinkraus, Doris, 2015. "Ein Viertel der Wohnungen steht leer", *Märkisch Oderzeitung*. Accessed 12.12.2018. (<https://www.moz.de/landkreise/maerkisch-oderland/seelow/artikel7/dg/0/1/1366155/>)

[13] See, for instance: Haller, C., 2002. *Leerstand im Plattenbau: Ausmaß - Ursachen - Gegenstrategien*. Leue; Oswald, P., 2005. *Schrumpfende Städte: Handlungskonzepte*. Hatje Cantz.

[13] Interview, Detlef Mallwitz, October 18, 2018, Ortwig.

[15] „Viele finden es hässlich“ Ton Matton interviewed by Stefan Hocke, *Die Zeit*, April 3, 2014. Accessed 12.12.2018. <https://www.zeit.de/2014/19/einfamilienhaus-ddr-niederlande>

Contributes for Good Practices. Modernization of Dona Leonor Secondary School

*Francisco Teixeira Bastos, Ana Fernandes
CiTUA-IST, Instituto Superior Técnico, University of Lisbon,
Portugal, Lisbon, Portugal*



Cover Figure: Exterior view of the new entrance. © FG+SG, 2011.

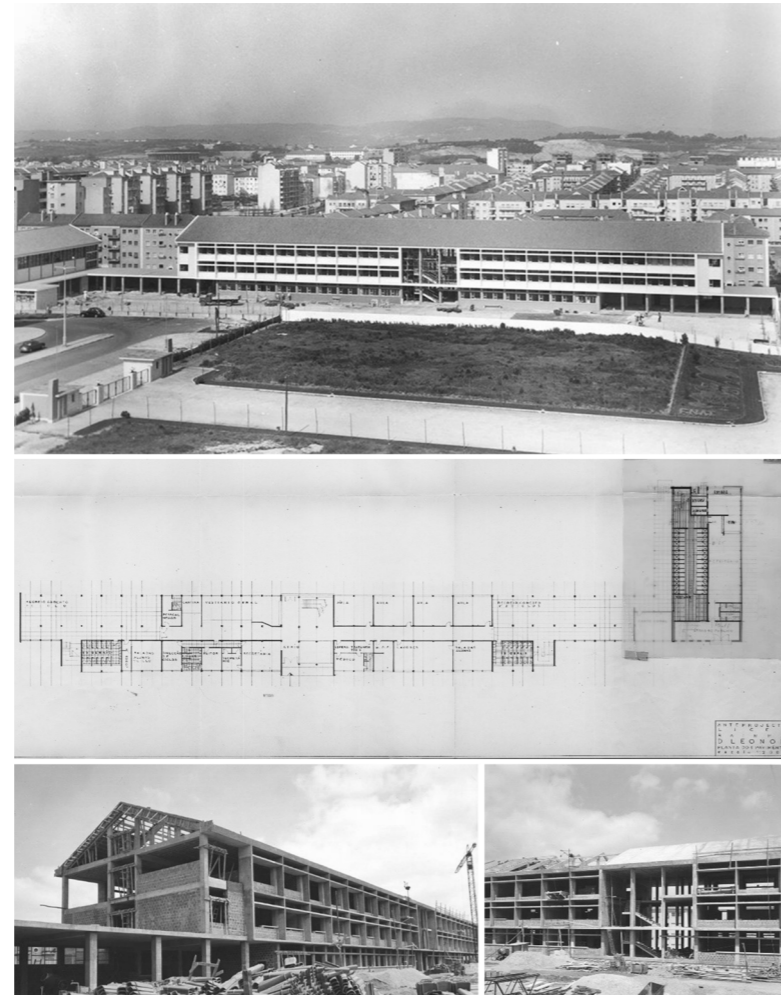
ABSTRACT

This paper seeks to discuss the methodological approach used in the refurbishment of Modern Heritage buildings. By understanding and analyzing the existing conditions of modern buildings – urban, social, cultural, physical, functional and technical – towards their reuse, the design project should be developed to attain an informed and coherent building, adapted to new contemporary demands of use and social meaning.

In 2007, the Portuguese state approved the Secondary School Modernization Program with the objective of renovate and modernize elementary and secondary school buildings throughout the country. On presenting the experience and result of the refurbishment of Rainha Dona Leonor Secondary School, recognized by the city council of Lisbon and OECD as an example of a good practice intervention in an educational building, it is shown the role of the architect

in coordinating all of the project implications.

The first section of this paper presents a description of the existing school conditions and the Portuguese State program for modernization. The second section discusses the proposed methodology of the intervention, the technical and technologic choices taken for the preservation and reinterpretation of the existing, and the dialogue created between old and new. The third section is centered on the critical evaluation and conclusions, ending with insights on how critical thinking resulting from this action of design and building could be integrated and improve new interventions, thus achieving professional and societal awareness regarding the reuse of modernist buildings.



1. INTRODUCTION

All over the world, Modern Buildings are becoming functionally and physically obsolete. Particularly public buildings, due to their intensive use over time, the evolution of their programmatic requirements, and the demand for interventions to preserve and adequate them to new legal and functional standards.

Public school buildings refurbishment opens the discussion on how to preserve the heritage and, at the same time, meet new functional requirements and community demands in a different legal framework from the one in which they were originally built. Also to the ability of these modern buildings to adapt to the imposed changes, not only in functional terms but also in integrating new construction systems, technologies and infrastructures.

Rainha Dona Leonor Secondary School (RDLSS)¹, originally designed by Augusto Brandão (1930-2018), followed the late modern period of the 1950s. Its refurbishment process, considered as a good practice intervention is presented and discussed in terms of its methodology. A critical review of the government program for the school's modernization and for the specific process of this case study is made, relating conceptual and methodological strategies, functional and technical adjustment, and response to the community and its daily use.

The methodological approach is one of the main issues to take in consideration when planning a successful refurbishment. Is important to studying the existing built artifact, understanding its modern values and deal with the existing constraints in order to intervene and propose new additions that became integrated as a whole.

2. THE EXISTING SCHOOL CONDITIONS AND THE SECONDARY SCHOOL MODERNIZATION PROGRAM (SSMP)

After a demanding period of construction of technical, industrial and commercial schools, as a consequence of the increase of the school population, the state launched a plan, in 1958, for the construction of 16 new Lyceums throughout the Portuguese territory.

Augusto Pereira Brandão, one of the architects that reinforced the JCETS 's² project team, had an active role in the development process of the normalization studies for school buildings in the 1960s, that would be applied as models in school buildings with similar programs, cost reduction and construction efficiency.

The RDLSS precedes these studies as a case study where the established program for schools of 800 and 1200 students was tested in its conceptual guidelines. In accordance with the new programmatic requirements of the general standards imposed by the JCETS-MOP, the distribution of the program would be in two functional and autonomous bodies, the main teaching block and gymnasiums-canteen block. A reticulated reinforced concrete structure (beam-pillar) was adopted, creating a metric based on the classroom dimensions which determined the rhythm of the whole. Along with the structure, all the elements applied to the construction were modeled by this metric. According to the author of the project, "the architectural party seeks to translate its operation and obtain, in the general aesthetic aspect, a sober and modern taste that accompanies the most discreet and logical of the new national achievements".³

Fig. 1: RDLSS, Lisbon, Portugal. Original school building, 1961. Ground floor plan, 1956. During construction, 1960-1961. © Archive of Secretaria-Geral Ministério da Educação.

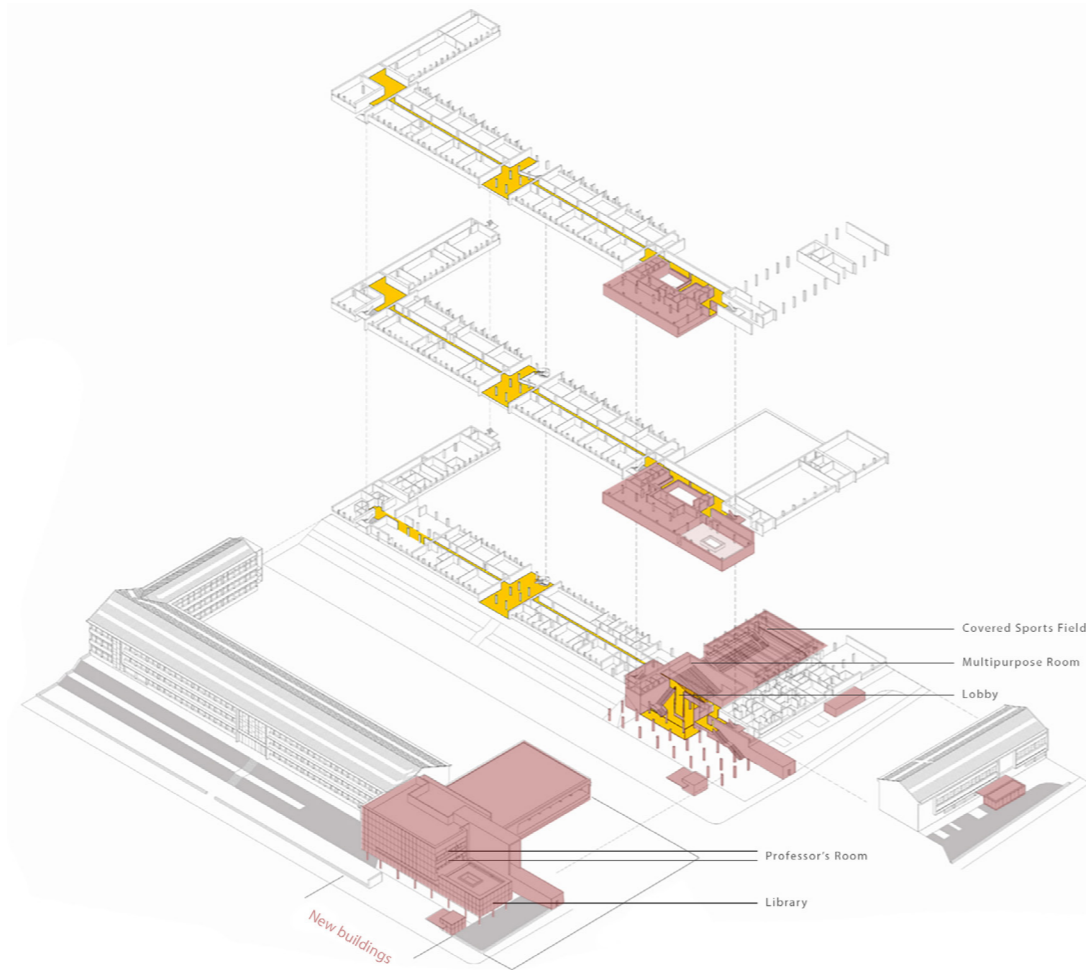


Fig. 2: RDLSS, Lisboa, Portugal, 2011. Axonometry of existing school and new buildings, it is a rigorous drawing produced by the office that made the project. © Atelier dos Remédios, 2015

The school, built in 1961 as a female high school had its program distributed in two perpendicular blocks physically connected by a covered playground, both elevated 4m above the street level in an artificial plateau. The main body of three floors of classrooms, settled along the street Maria Amália Vaz de Carvalho to the north and recessed from it, was divided by a central core of access with a staircase and passageway that separates the classes from different levels of education. The second block to the west housed the gymnasiums on the upper floor and the cantina on the ground floor. In structural terms, the classroom dimensions determined the module of the classroom block. It was considered the measure of half classroom (4,15m) to create the reticulated reinforced beam-pillar concrete structure and again, half of that measure to normalize the window frames that ensured a standardization to the whole building⁴ (Fig. 1).

In 1967, the school expanded with the addition of a three-floor block for classrooms, perpendicular to the main body, leaning against the east end of the lot that consolidates the set of three blocks, perpendicular to each other, interconnected around a wide playground facing south. This option gave a definitive position of centrality to the main body of the classroom block and consequently to the lobby at the entrance, as a distribution core. From the lobby a central corridor, repeated on all floors, organized the classrooms and work areas in a linear succession of spaces, facing the north and south facades. On the 1st and 2nd floors, the circulation extended on an identical distribution axis in the perpendicular direction, that ran the entire east block, along with N.E facade. Five staircases completed vertically the functional distributive system, of which the most important is located in the lobby with an ample scenic position.

The shift to a co-education school and the increasing number of students, in the period post-April 25th⁵, encouraged a series of minor changes that have been systematically removing clarity to the original structures. This was followed by many other small transformations to answer communitarian or legal requirements, with no master plan to regulate it.

This resulted in a school filled with provisional structures and equipment that occupied the common and leisure areas, compounded by the damage resulting from intensive use, not accompanied by regular maintenance of the building.

In 2007, the Portuguese State launched the SSMP, conducted by Parque Escolar (PE), aiming at the renovation and modernization of the secondary school buildings through customized solutions adapted to the context and “educational project pursued by each school (...) ensuring the school buildings’ durability, sustainability and adaptability”.⁶ To accomplish those purposes, the modernization of the schools involved the challenge of building new facilities to house new programs (library, multipurpose hall and covered sports field) that could be used by the community while proposing the renovation of the existing buildings to create a coherent modernized whole.

Within the state of school use and the framework intervention proposed by PE, the Atelier dos Remédios, coordinated by Francisco Teixeira Bastos (1963-) in collaboration with Madalena Cardoso de Menezes (1969-). The designers developed a strategy and methodology for a renovation that intended to respect and reveal the values of the original buildings and interpret the modern heritage, adding new meanings into the present reality.

3. METHODOLOGY FOR INTERVENTION

The intervention at RDLSS sought the requalification of the entire school. The refurbishment purpose was to review the functional organization of the school spaces, in alignment with the directions of the SSMP, the adequacy and reinforcement of the physical structure of the buildings, and update of the infrastructure to meet new legal requirements. The introduction of new functional programmes, such as the covered sports field and the multipurpose hall, was also a key issue in the modernization programme, promoting a more engaging relationship with the community while opening up these spaces along with the Library to the neighborhood during and after school hours. After dialogue with the school board, and PE's project leader⁷, the strategy adopted was to find a place to build a new volume in the circulation system and create space to install new programs. Taking advantage of the 4 meters' elevation of the school from the street, this new building embodies a new main entrance to the ensemble, directly connected with the main neighborhood's street. The presence of this "intruder" with four levels makes possible to accommodate all the three programs with community access and establish the connections with the existing buildings at all three upper levels. By spreading through the school, on an excavating level, it creates new space for multipurpose room, sports facility and links the lobby to the playground level.

The methodology of intervention, supported by historical research and also through project design, pointed out in three directions: the renovation of existing built structures integrating new infrastructures, the introduction of new buildings, housing new programs and the articulation of existing structures with new ones in contribution to a

formal and symbolic system working as a whole.

4. DIALOGUE PROPOSED BETWEEN OLD AND NEW INTEGRATION OF BOTH AS A WHOLE

The new building aimed to accommodate the programmes proposed in a confrontational dialogue with the existing ones, highlighting the legibility of the original buildings. Placed in the gap between the main classroom block and the gymnasium block, in a detached position the building houses in the upper levels both library and teachers' room (Fig. 2). Its opaque facades to the street and the inner courtyard, open horizontally in the library window, contrast with the rhythmic of the original facades. The technology of prefabricated concrete panels was used in the construction of its facades, emphasizing the contrast between old and new.

The old lobby of the gymnasium was converted into the main entrance, and the necessary void was generated to create a large space to be occupied by the new building. This new volume contains the three spaces of preferable public access - library, multipurpose hall and covered sports field (Fig. 3) - and allows re-evaluating the access and distribution logic of the new school.

The building rests in pilotis defining a large covered square at the entrance connecting exterior and interior through the new lobby interior (Fig. 3). The space that celebrates the new school is generated by a quadruple height ceiling that is intercepted by aerial circulation galleries connecting the two existing buildings and all new public programs⁸ (Fig. 3).

The layered system of circulation in linoleum pavement covers the whole school as a yellow path that connects all the interior or covered



Fig. 3: RDLSS, Lisboa, Portugal, 2011. New lobby. Student's area in the original entrance lobby. New covered sports field. © FG+SG, 2011.



Fig. 4: RDLSS, Lisboa, Portugal, 2011. Rhythm of the structure visible in the existing building's façade after renovation. © FG+SG, 2010.

spaces, assuring continuity and total accessibility to the hierarchized space distribution that filtered the public from the street to the inside of the school.

The concept of Learning Street, implemented by PE, was integrated into the design of the circulations, in its extension and meaningfulness. The corridors of the main classroom block were extended throughout the void of the new building entrance, linking all the buildings at all levels in a promenade.

With the refurbishment, the original entrance lobby was embedded in the teaching area, working as a social area for informal learning space (Fig. 3).

The spaces were arranged and connected by a network of circulations, which link all the building blocks promoting the experience of a *promenade architecturale* with a vibrant atmosphere and diversified fruition of the building, including its relation with both the leisure and working spaces. The spatially complex and lively configuration of the circulation paths result in a volumetric play of great cohesion with the existing buildings.

Finally, the proposal, on the pre-existing buildings – where the original: classrooms, laboratories, gymnasium, administrative and Principal's areas stayed after renewal – respected the original architectural language even after being subject to strong structural and constructive interventions that aimed to comply with the required standards.⁹

5. TECHNICAL AND TECHNOLOGIC CHOICES FOR PRESERVATION AND REINTERPRETATION OF THE EXISTING

The renovation of the existing buildings was done under the initial premise of demolishing all additions that did not represent any improvement for the school, made over the last sixty years and set

the building back in its canonical state. Then, the effort was made to understand and reveal the original architectural values, taken by the structural rhythm of the beams and pillars metric reticula in reinforced concrete and to respect the consequences that this option had on the composition of the facades (Fig. 4).

Considering these two first premises, the basic concepts for the most intrusive interventions – the seismic structural strengthening, the HVAC, and the electrical and communication infrastructure – were developed closely with each engineering team to ensure the constructive control and spatial integrity of the buildings.

The seismic strengthening resulted in a succession of cross-reinforcements in the interior of the existing walls in the central corridor of the main classroom block, thus safeguarding any change in the metric and design of the facades. In the gymnasium-canteen block, metal crosses were installed connecting the existing structure along the facades keeping all the windows functioning, thus ensuring the needed wide space.

In terms of HVAC, electrical and communications infrastructure, the design took advantage of the existing attic of the buildings to install horizontal distribution paths and of the roof terrace of the new building to install the air conditioning machinery, hidden from the street view by the facades, elevated 2,2m above the terrace. The vertical paths were located in the corners of the teaching spaces, which implied a project of compatible plan design between the classrooms and laboratory spaces to ensure vertical alignment for passage infrastructures.

The required levels of thermal and acoustic comfort were possible to achieve by introducing lowered insulating ceilings in the existing buildings and counting with the insulation factor of the wooden frames. The introduction of this new layer of ceilings allowed to hide

the beams that crossed the spaces, the lighting features, and other infrastructures, thus adding clarity to space. To not interfere with the facade, a margin was kept between the windows and the new ceiling. An inflection of the ceiling plane, about 1,5 m from the window was created, joins the existing ceiling in a wedge about 20 cm from the window frames, allowing the placement of black-out rollers for light control.

Research has proven to be possible and desirable to maintain existing wooden frames of the main classroom block with the introduction of a metallic sash enabling the installation of double glazed windows, although some exceptions had to be made considering the preservation of the existing.

The glass curtain walls of all the staircases were in concrete, thus impossible to maintain. New windows in aluminum enabled similar frame dimensions and improved thermal comfort. Those were placed in the old and the new buildings bringing uniformity to the set.

These changes not only aimed to improve thermal comfort but, along with the replacement of hydraulic floor tile for linoleum, also to create better acoustic conditions in the school.

6. CRITICAL EVALUATION AND CONCLUSIONS

A process of critical thinking both during the design and construction phases improved the refurbishment intervention and were structured in four main steps. The first was the definition of what should be maintained or not, promoting a clear vision of the original-structure – compositional and constructive – to support a strategy for demolishing.

The second was to have a critical vision about the proposed program – what is a school today – and how the existing buildings could

contribute to that change.

The third, was to find a way to ground new building(s) that cloud housed new program(s) in dialogue with the existing structures, finding a new entrance, more meaningful than the original and more adapted to its urban context.

The fourth was to create unity in diversity, by proposing a distribution system for the school that could create a recognizable informal learning street, and link all the buildings with a contemporary architectural language, adding symbolic and cultural value to the reuse of modernist buildings.

The refurbishment of RDLSS focused on: (1) the connection of all spaces in the school through a single gesture linked to a new entrance closer to the main street gives a new centrality to the; (2) the new meeting spaces, lobby, covered sports field, library and cafeteria, designed to serve the school's needs; (3) and the safeguarding of the pre-existing value of the school carefully responding to legal regulations and interventions increasing awareness on the modern heritage.

The reuse of modernist buildings always depends on the critical thinking based on historical research and the evaluation of the he existing and it's "specificities that require ad hoc interventions"¹⁰ through project design. The designer must compromise to create a new architectural recognizable entity, in dialogue with the old and new, and valuing its heritage.

ENDNOTES AND QUOTATIONS

[1] *After the unification of the educational system, these school shifted the designation of 'Lyceum' to 'Secondary School'. For the purpose of this paper the school is referred as Rainha Dona Leonor Secondary School (RDLSS).*

[2] *JCETS is the Portuguese office for the design and supervision of secondary school buildings, tutelage by the Ministry of Public Works (MOP).*

[3] *Augusto Brandão, Preliminary Project for Liceu Rainha Dona Leonor, JCETS-MOP, Lisboa, Portugal, 1957.*

[4] *Alexandra Alegre, Arquitectura Escolar: O edifício Liceu em Portugal.1 ed. Fundação Calouste Gulbenkian, Fundação Ciência e Tecnologia, Lisboa, Portugal, 2012, 311.*

[5] *On the 25th of April of 1974 the Portuguese dictatorial regime of the Estado Novo (1933-1974) ended with a military peaceful revolution.*

[6] *Teresa Heitor, Parque Escolar 2007-2011: Interventions in 106 Schools, Edição Parque Escolar E.P.E., Lisboa, 2011, 14.*

[7] *"Escola Secundária Rainha Dona Leonor, Lisbon, Portugal", accessed on November 18, 2018, <http://edfacilitiesinvestment-db.org/facilities/230>.*

[8] *The gallery system is resembled to Lina Bo Bardy's Fábrica de Pompeia, promoting diversity in the perception of space.*

[9] *Francisco Bastos, Madalena Menezes, Atelier dos Remédios, Coleção 1+1, Uzina Books, 2012, 5.*

[10] *Ana Tostões, "Le Defi de la réutilisation de l'architecture du Mouvement Moderne face aux contraintes normatives", Lawand Conservation of 20th Century Architecture, Mendrisio Academy Press, Silvara Editorial, 2014, 57.*

BIBLIOGRAPHY

ALEGRE, Alexandra, *Arquitectura Escolar: O edifício Liceu em Portugal*, 1 ed. Fundação Calouste Gulbenkian, Fundação Ciência e Tecnologia, Lisboa, Portugal, 2012,

BASTOS, Francisco; Menezes, Madalena. *Atelier dos Remédios, Coleção1+1*, Uzina Books, 2012.

BestPracticesinEducationalFacilitiesInvestments, "Escola Secundária Rainha Dona Leonor, Lisbon, Portugal", accessed on November 18, 2018, <http://edfacilitiesinvestment-db.org/facilities/230>.

HEITOR, Teresa (coord.), *Escola Secundária de Rainha D. Leonor, in Seismic Strengthening of School Building, Edição Parque Escolar E.P.E., Lisboa, 2011, 138-145.*

HEITOR, Teresa(coord.), *Liceus, Escolas Técnicas e Secundárias, Lisboa, Edição Parque Escolar E.P.E., 2010.*

HEITOR, Teresa (coord.), *Parque Escolar 2007-2011: Interventions in 106 Schools, Lisboa, Edição Parque Escolar E.P.E., 2011.*

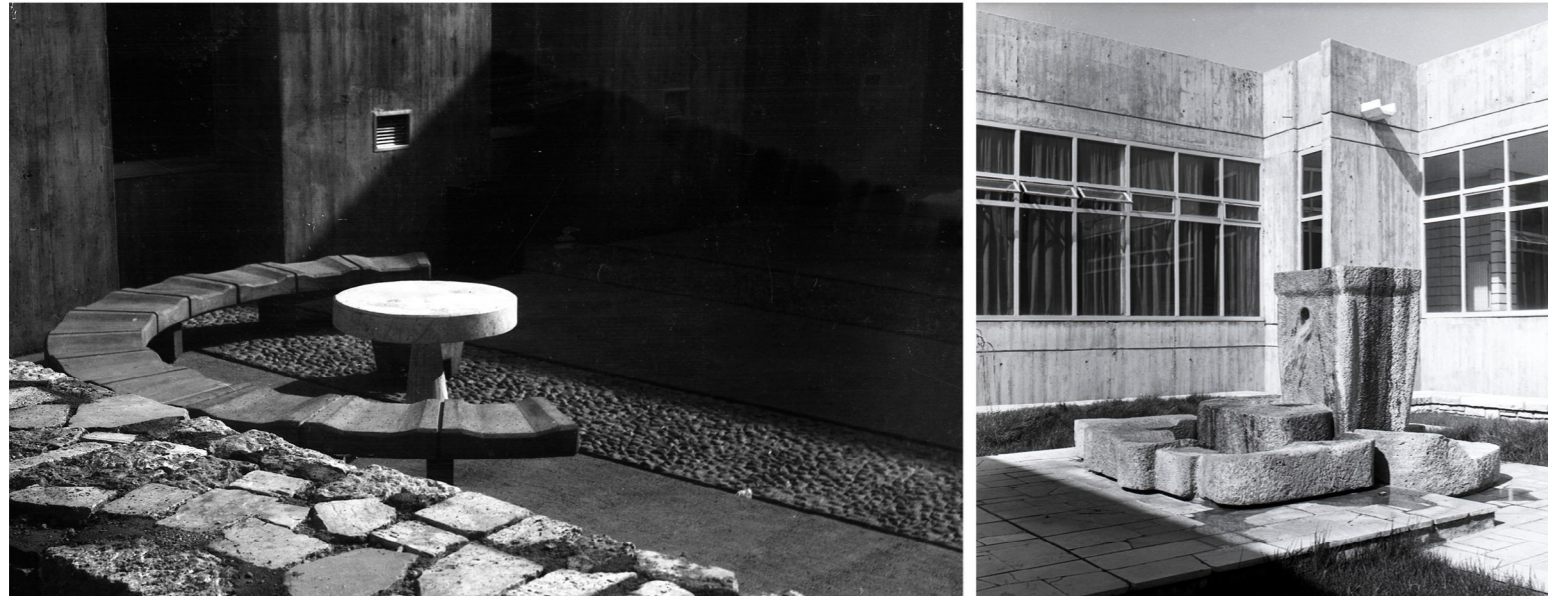
Parque Escolar, accessed on November 16,2018, <https://www.parque-escolar.pt/en/default.aspx>

TOSTÕES, Ana, "Le Défi de la réutilisation de l'architecture du Mouvement Moderne face aux contraintes normatives", *Lawand Conservation of 20th Century Architecture, Mendrisio Academy Press, Silvara Editorial, Mendrisio, 2014,56-73.*

Constituting an Archive. Documentation as a Tool for the Preservation of the METU Faculty of Architecture

Ayşen Savaş, Ipek Gürsel Dino

Middle East Technical University, Ankara, Turkey



Cover Figure (Fig. 1): Altuğ-Behruz Çinici, METU Faculty of Architecture, Ankara, Turkey, 1961, Built-in furnitures placed in courtyards. © Salt Research, Altuğ-Behruz Çinici Archive, 1963.

ABSTRACT

It is not an overstatement to say that METU Campus located in Ankara is the best product of Modern Architecture in Turkey. Not only with its architectural elements, built-in furniture and artworks but also with its mission, vision and social structure, it is the material and symbolic manifestation of a holistic Modernist approach. Embodying the branded aphorism “university as a society” and designed by the architect couple Behruz-Altuğ Çinici, the campus was erected on the bare mounds of Anatolian prairie in the late 1950s. For the last ten years, the campus has been exposed to a series of physical interventions and started to lose its original qualities. The 20th-century architecture is not of interest particularly in Turkish governance, where the definition of historical heritage is quite narrowly defined within a time limit of the late 19th century. Appreciating the minimalist interiors, white plaster surfaces, glass brick separators, exposed

concrete walls have also been rather difficult for the users coming from different backgrounds and social classes. The maintenance of the buildings becomes an obvious necessity in regard to central Anatolia's severe geographic characteristics. Recently a comprehensive research and management plan is implemented with the support of international organizations and this paper focuses on the new methodology developed to address the existing challenges and prepare long-term conservation policies for the campus. Documentation here is understood as the leading action of preservation.

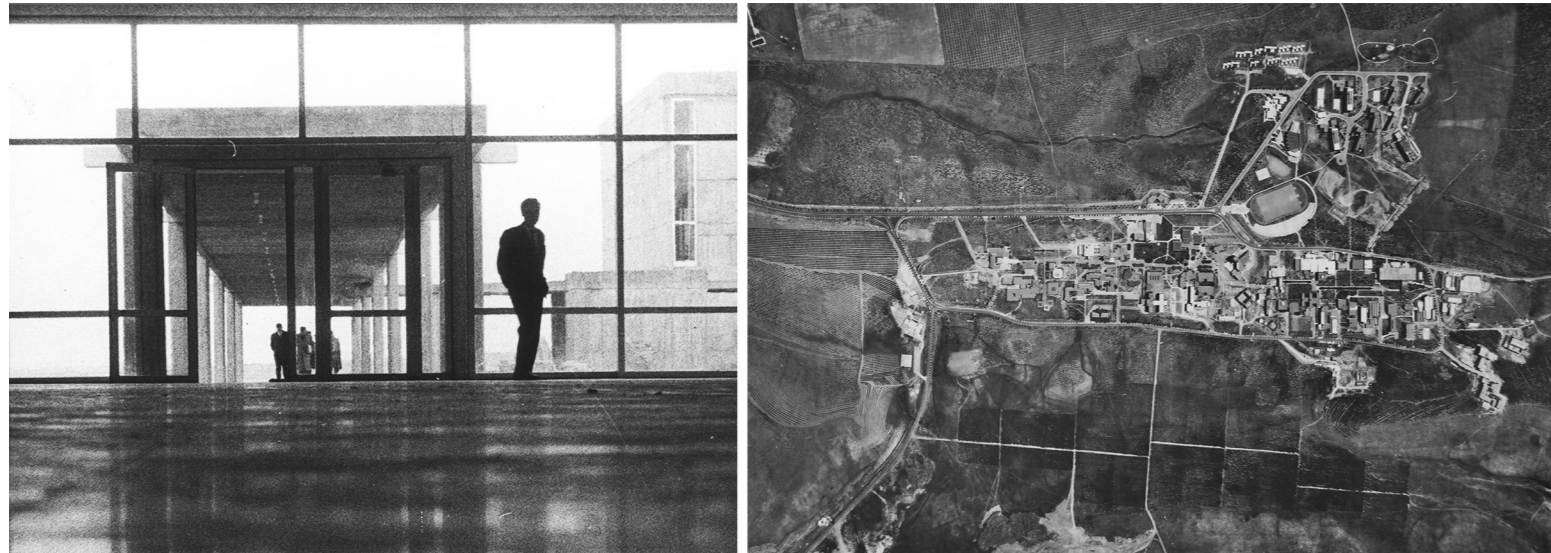


Fig. 2: Altuğ-Behruz Çinici, METU Faculty of Architecture, Ankara, Turkey, 1961, The interior view from the building and the aerial view of the campus.

© Salt Research, Altuğ-Behruz Çinici Archive, 1961 and 1973.

1. METU FACULTY OF ARCHITECTURE

It is not an overstatement to say that METU Campus located in Ankara is the best product of Modern Architecture in Turkey. Not only with its architectural elements, built-in furniture and artworks but also with its mission, vision and social structure, it is the material and symbolic manifestation of a holistic Modernist approach (Fig. 1).

Embodying the branded aphorism “university as a society” and designed by the architect couple Behruz-Altuğ Çinici, the campus was erected on the bare mounds of Anatolian prairie in the late 1950s. For the last ten years, the campus has been exposed to a series of physical interventions and started to lose its original qualities (Fig. 2). The 20th-century architecture is not of interest particularly in Turkish governance, where the definition of historical heritage is quite narrowly defined within a time limit of the late 19th century. Appreciating the minimalist interiors, white plaster surfaces, glass brick separators, exposed concrete walls have also been rather difficult for the users coming from different backgrounds and social classes. The maintenance of the buildings becomes an obvious necessity in regard to central Anatolia’s severe geographic characteristics. Recently a comprehensive research and management plan is implemented with the support of international organizations and this paper focuses on the new methodology developed to address the existing challenges and prepare long-term conservation policies for the campus. Documentation here is understood as the leading action of preservation (Fig. 3).

2. BIM FOR MODERN HERITAGE BUILDINGS

According to the Recording, Documentation, and Information Management (RecordIM) guiding principles² of the Getty Conservation Institute, heritage documentation includes metric, quantitative, and qualitative information about the building assets, their values and significance, their management and the threats and risks to their safekeeping).³ While computer-aided architectural design (CAAD) tools are widely used for geometric modelling, they cannot extensively support the information-rich workflows of heritage planning processes. Building Information Modelling (BIM) stands as a recent technology that can effectively support conservation planning as well as other architecture, engineering and construction and facilities management activities. The main premise of BIM is one single model that is encoded in a standard, interoperable file format that maintains the whole building data. The value of BIM is realized as it provides direct access to building information and it allows the near-seamless integration of innovative technologies. In METU HBIM research, following the increased need for information management, the scope of BIM has been expanded to support heritage information. HBIM aims to leverage the existing capabilities of BIM and further harness it by the domain-specific heritage information gathered through a diverse set of abovementioned sources. The object-oriented structure of BIM allows a diverse set of heritage building objects with properties that both exist as part of the model and that can be added as needed. A wide range of technologies (including information capturing and structuring, performance analysis, visualization) need to converge on HBIM. Central to such technologies is the capture of building geometry, which is primarily handled with 3D data acquisition methods such as photogramme



Fig. 3: Altuğ-Behruz Çiniçi, METU Faculty of Architecture, Ankara, Turkey, 1961, The interior view from the building.

© METU Faculty of Architecture Archive, Fatma Serra İnan, 2017.



Fig. 4: Altuğ-Behruz Çiniçi, METU Faculty of Architecture, Ankara, Turkey, 2018, Renderings from HBIM model. © produced by Şahin Akın, 2018.

try and 3D laser scanning. The latter is being increasingly used to document heritage buildings due to its increased accuracy, dataset quality and data visualization capabilities, albeit with significantly higher costs. The resulting 3D model is significant especially for the documentation of buildings under the threat of being demolished, for the remote/virtual access of heritage buildings that are otherwise inaccessible, and for buildings that require the application of visual analytical methods on buildings in three dimensions.⁴ Semantic data is a critical complement to geometric data in HBIM. It accounts for the non-geometric information about the building, its site, components and processes, is gathered through surveying or existing building documentation. This includes not only technical data but also information regarding the cultural, social and historical significance values of a heritage building. Despite the increase in the amount and various types of data in HBIM, the uniqueness of each heritage building and its architectural and heritage values challenge the standardization of the model (Fig. 4).

3. DOCUMENTATION OF THE METU FACULTY OF ARCHITECTURE BUILDING COMPLEX

With respect to the abovementioned needs for information documentation, a Heritage Building Information Model was developed particularly for the METU Faculty of Architecture Building complex. The HBIM development process was carried out in parallel with the other planning activities, including the elicitation of cultural and spatial values, structural assessment, material and environmental performance assessment. The data that was generated during these diverse set of activities were first identified, categorized and integrated into the model by the development team. The purpose

of the model is the documentation of the building, including the three-dimensional geometry, architectural significance, and the results of the assessment activities; data sharing between the work packages during the project; and data interoperability with the third party analysis tools, such as structural analysis tools and energy performance simulation tools. The HBIM also has the potential to be used as a long-term digital medium that supports future activities regarding operations and maintenance, major renovation or analysis. The geometry of the building was captured using different sources, including; a. The existing drawings: a number of existing drawings of the Faculty building that were drawn at different times for different purposes were identified. Due to the variety in the survey methods, the level of precision of these drawings was not sufficient to be able to draw a detailed and accurate model and they did not acquire any information regarding the infrastructure of the building complex. Nevertheless, these drawings acted as the primary resources as a three-dimensional model before the Faculty building's HBIM model was fully developed. b. The faculty building was documented using a hand-held 3D laser scanner-ZEB-REVO.⁵ It is advantageous to steady cameras due to its ease of use, flexibility and speed of scan. The scanner has 100Hz of line speed that gives a very good homogeneous data collection while in operation. The result of the laser scanning process is a point cloud with x, y, and z coordinates of all the physical objects in the physical environment. This includes all the architectural elements, but also the furniture, people and other objects. CC detects the reference points automatically and aligns each point cloud according to the reference point cloud data consisted of 140.000.000 points. c. For the second phase of laser scanning, a stationary, high-precision, high-speed laser scanning device, (Faro Focus Laser Scanner

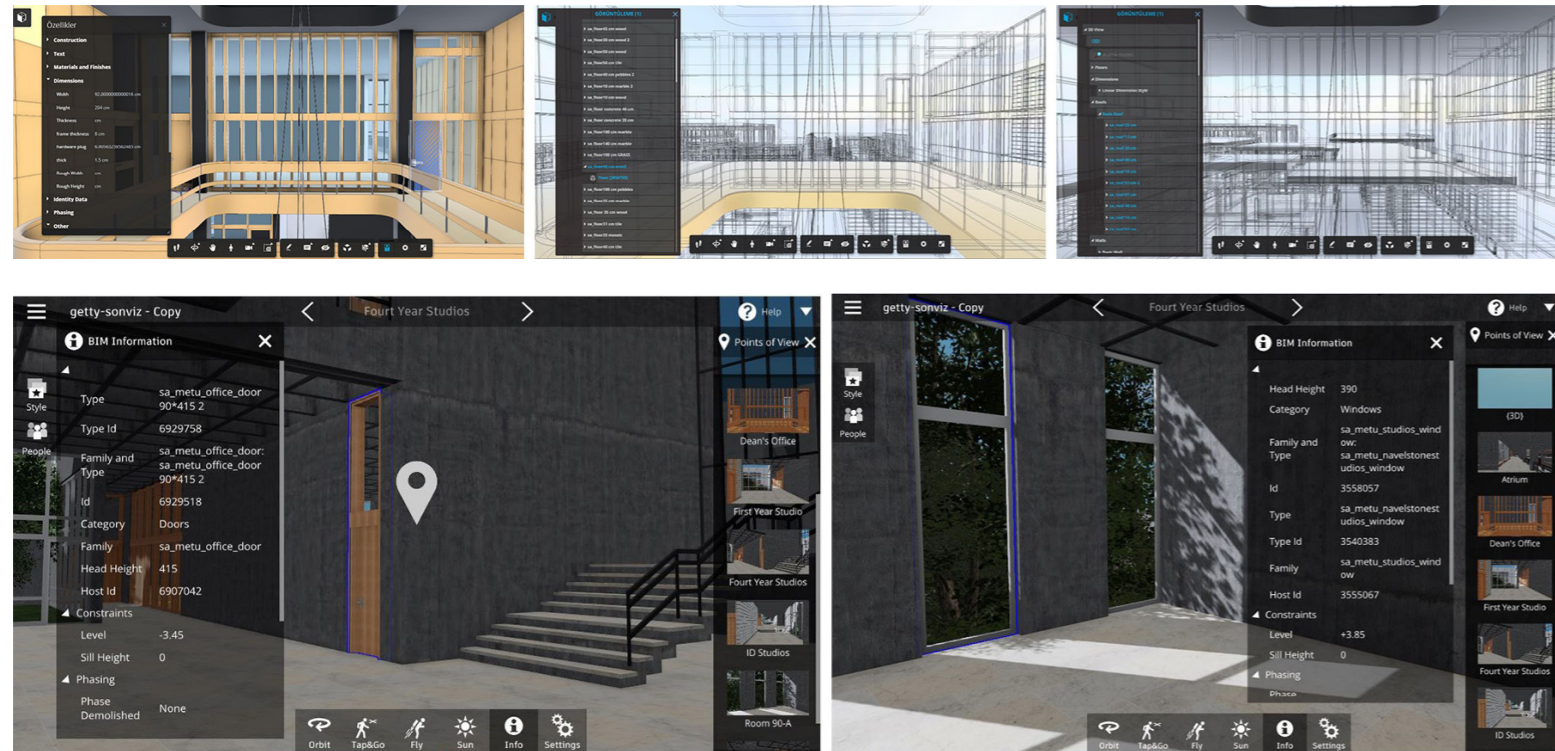


Fig. 5: Altuğ-Behruz Çinici; METU Faculty of Architecture, Ankara, Turkey, 2018, Interactive visualization of HBIM model and its associated BIM data on web-based browser.
© produced by Şahin Akın, 2018.

120)⁶, was used for detailed measurements of complex environments and geometries. Scanning was carried out both internally and externally resulting in a dense point cloud. The library of parametric objects (Revit families) that was developed previously were both validated and articulated during this phase using the 3D point cloud. Finally, the Revit⁷ model was built using these parametric objects. In case of discrepancies between the survey results and the point cloud, the model has adjusted accordingly. As a result, a precise, as-is geometry model was built in Revit. In the final step, the building details that were not previously documented or not captured by the laser scanner were documented by means of on-site surveys. This task was carried out in parallel with the data collection and condition assessment activities and registered the gathered information in the model as required. While the information that was already contained in the Revit model was instantiated directly, a lot of new information types was identified and captured during the project, which were added to the HBIM by extending the Revit API as classes or class properties.

4. HBIM AND THE VISUALIZATION OF DATA

The existing building data in the standard BIM schema, as well as the extended schema that contains the new data types, provides critical support to the heritage professionals during assessment processes. Therefore, the expressive visualization of these data types is one of the primary concerns of HBIM development. For the Faculty building, these new data types and the existing ones are made complementary to the 3D visualizations of the building. As such, distinctive visual markers are inserted into the 3D view of the building where the data was collected or associated with. This could be a room, an architect-

tural element or any part of an element. These markers contain the newly added sets of HBIM data, which, upon clicking, display the information to the users. For instance, during a structural assessment, the data regarding an existing crack, such as the images of the crack, its depth and hazard condition, can be viewed by the users. Clicking on a staff office door, helps the retrieval of historical data related to the previous users of that particular space, restorations that the door had been subject to, material properties, manufacturing techniques of that door and the industrial resources of its doorknobs, hinges, and locks. One of the major advantages of this medium is its sustainability. This interactive medium allows further additions, corrections, and subtractions. It has the potential to be used as a long-term digital medium that supports future activities regarding long-term management activities, including operations and maintenance, major renovation or analysis. The simultaneous visualization of the geometry and the semantic data is useful both for assessment activities and also for sharing the architectural heritage values with a wider audience (Fig. 5). The Faculty of Architecture Building complex is an outcome of the creative intellect of post-war architectural engineering and became the laboratory of new materials, mechanical equipment and construction techniques in Turkey. Starting from the use of a waffle slab system to the production of fan coil units, it marked a number of “firsts” in the country. Making the scientific data visually available is one aspect and providing its integrity with the social and cultural documentation is another. Personal histories, historical narrations, memoirs, legal documents, photographs, films, building codes, the gradual growth and integration of the landscape elements, users' demands, architect's dreams, and many similar and seemingly unrelated data needs to be overlapped with the more

quantitative information. METU HBIM was developed to convey this information effectively and provide insights into a rather sparse and complex data set. Proper visualization provided a different approach to show potential connections, relationships, which are not as obvious in non-visualized qualitative and quantitative data. This comprehensive 3D environment provided interactive and comparative data visualization that has the capacity to provide relevant knowledge in the most efficient manner possible. The HBIM model can be considered as a virtual replica of the building that evolves in time. Besides being an operational and management tool for heritage buildings it also has the potential to become a new representation tool for architectural education.

ENDNOTES AND QUOTATIONS

[1] *The initiation of a less systematical documentation of the archival material started during the preparation processes of an exhibition prepared in 1999. Displaying mostly the black and white photographs of the university in its inauguration years, this exhibition gathered a large amount of visual documents found in the Rectorate's archives, the Faculty of Architecture Dean's office, and the personal archives of the staff and the alumni. A more systematic collection was gathered during the establishment years of the METU Science and Technology Museum between the years 2000 and 2006. For more information please see: Ayşen Savaş, METU Documented, Ankara, The METU Press, 1999 and Ayşen Savaş, Angen van der Meij, Diamonds in Sahara, METU Lodgings Documented, Ankara, The METU Press, 2018.*

[2] Robin Letellier, Werner Schmid and François LeBlanc, "Recording, Documentation, and Information Management for the Conservation of Heritage Places: Guiding Principles", Los Angeles, The Getty Conservation Institute, 2007.

[3] Ibid.

[4] Yusuf Arayici, John Counsell, Lamine Mahdjoubi, Gehan Ahmed Nagy, Soheir Hawas and Khaled Dweidar, "Heritage Building Information Modelling", Abingdon, 2017.

[5] "GeoSLAM ZEB-REVO | Handheld Mapping and Real-time Data Processing," accessed on October 15, 2018, <https://geoslam.com/zeb-revo-rt/>.

[6] "User Manual for the Focus3D 20/120 and S 20/120," accessed on October 20, 2018, https://knowledge.faro.com/Hardware/3D_Scanners/Focus/User_Manual_for_the_Focus3D_20-120_and_S_20-120.

[7] "Built for Building Information Modeling," accessed on October 10, 2018, <https://www.autodesk.com/products/revit/overview>.

BIBLIOGRAPHY

ARAYICI, Yusuf, COUNSELL, John, MAHDJOUBI, Lamine, NAGY, Gehan A., HAWAS, Soheir, and DWEIDAR Khaled, "Heritage Building Information Modelling", Abingdon, 2017.

Autodesk, "Built for Building Information Modeling," accessed on October 10, 2018, <https://www.autodesk.com/products/revit/overview>.

Faro, "User Manual for the Focus3D 20/120 and S 20/120," accessed on October 20, 2018, https://knowledge.faro.com/Hardware/3D_Scanners/Focus/User_Manual_for_the_Focus3D_20-120_and_S_20-120.

Geoslam, "GeoSLAM ZEB-REVO | Handheld Mapping and Real-time Data Processing," accessed on October 15, 2018, <https://geoslam.com/zeb-revo-rt/>.

LETELLIER, Robin, SCHMID, Werner and LEBLANC, François, "Recording, Documentation, and Information Management for the Conservation of Heritage Places: Guiding Principles", Los Angeles, The Getty Conservation Institute, 2007.

SAVAŞ, Ayşen, METU Documented, Ankara, METU Press, 1999.

SAVAŞ, Ayşen and VAN DER MEIJ, Agnes Diamond in Sahara, METU Lodgings Documented, Ankara, METU Press, 2018.

SAVAŞ, Ayşen and SARGIN, Güven A., "University as A Society: An Environmental History of METU Campus", London, The Journal of Architecture, 2016, 79-106



Cover Figure (Fig. 1): Piero Portaluppi, Valdo hydroelectric power station, Valdo (VB), Italy, 1920-23, view, south-east. © Photo: Piero Portaluppi Foundation, 1923.

Cathedrals of Modernity. The Legacy of Piero Portaluppi's electric Architecture - Valdo Power Station (1919-1923) Case Study

*Sara Di Resta, Elena Lemma, Davide Tassera
Iuav University of Venice, Venice, Italy*

ABSTRACT

Starting from 1912, the architect Piero Portaluppi (1888-1967) was entrusted to design six hydroelectric plants in Val d'Ossola, a valley in North-West Italy. The power stations, a clear representation of modern monumentality, became one of the most important systems of water reservoir exploitation in Europe. Built in the Twenties and abandoned in 1941, the hydroelectric plant of Valdo played an important social role for the valley, becoming the vehicle for the development of the area. Portaluppi's hydroelectric architectures were illustrated as modern cathedrals or castles; the modernity of the plant (even though mainly built with traditional materials) resides in the idea of society, development and progress that building still documents. The spaces, the relationship established between the power station and its natural environment are part of the legacy of the Modern Movement.

From a cultural point of view, dealing with the preservation of these buildings testifies an extension of the traditional concept of 'heritage'. From an educational point of view, the challenge of their protection doesn't represent only a technical issue, but a path that requires to involve these buildings in today's social and economic demand. The paper describes the cultural and creative approaches of an academic path aimed at returning the modern building both to the locals and the community. The proposal is the outcome of multi-layer research that converts the former hydroelectric plant of Valdo, actually used as a warehouse, into a multi-functional building that meets the needs of the inhabitants, becoming a new district hub.

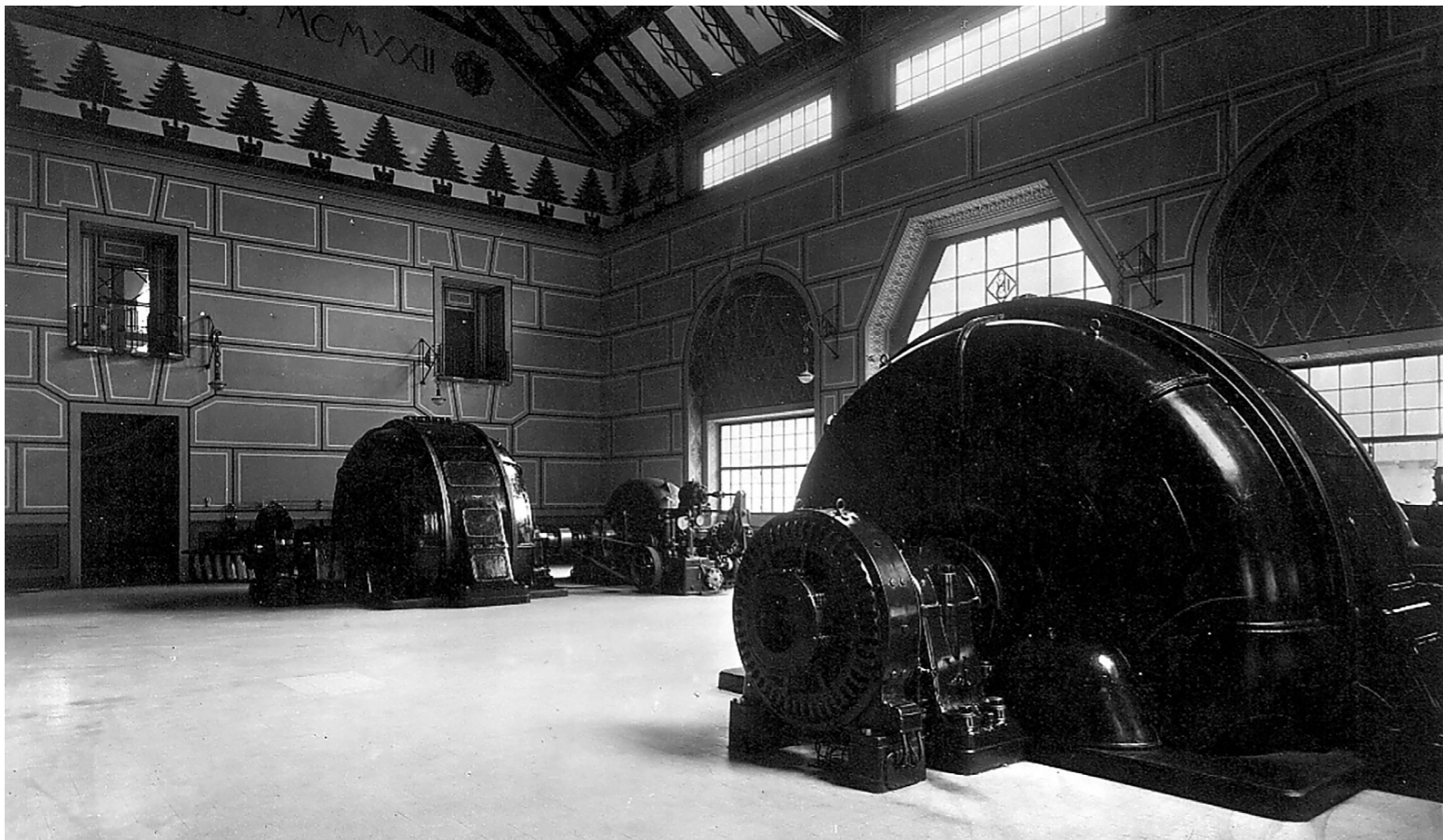


Fig. 2: Piero Portaluppi, Valdo hydroelectric power station, Valdo (VB), Italy, 1920-23, machine room. © Photo: Piero Portaluppi Foundation, 1923.

1. NEW FORMS OF ENERGY FOR THE ARCHITECT'S EDUCATIONAL PATH

Such developments as the construction of the hydroelectric power stations in Val d'Ossola and the Bauhaus school intertwine at various points. These were the years in which Piero Portaluppi¹ constructed the Valdo power station² and in which the Bauhaus cultural project emerged through the Weimar school.³

As a didactic resource, the power station, by its very nature, is exemplary as an instance of a system of edifices forming a network, with technical, constructive and figurative interconnections. This hydraulic engineering work is intrinsically linked to other buildings directly following on from it and which were necessary for its functioning. However, for a full account of the relationship with the valley, alongside the interplay with the landscape and the pertaining equilibria, one must also consider the social role played by constructions appearing at that time in these locations.

Despite the strict limitations posed by its very use, the power station bears witness, as a record, to the time of introduction of complex machinery into a natural setting (**Fig. 1**). Indeed, the project contributed to a transformation of this setting while also focussing on the culture of applied arts. As in the cases of the Crego and Verampio power stations, the role of decor or adornments in the architectural works of Piero Portaluppi emerges repeatedly as expression of the ability of the artisan or artist to give form – even while accommodating the modes of the figurative tradition – to a new idea of society and of development inhering in the very function of the building: a 'machine' with a Deco soul, in which the designer's love of ornamentation interfaces with ironic references to imposing architectural works of the past (cathedrals, fortresses, palaces).

If the Bauhaus sought to subsume all forms of artistic creation within a unity, then the unitary work of art could only be, as this school saw it, a large-scale architectural work. Nowadays, preservation of Portaluppi's industrial buildings can only mean handing on to future generations works of art that are indeed unitary. Starting from its spatial features, the power plant almost represents a concrete reference to the xylography "Cathedral"⁴ by Lyonel Feinger published in the Bauhaus manifesto of 1919: a building that embodies the merging of art, technology and craftsmanship applied to the architecture. The cultural matrix that investigates the reunification of all artistic expressions in a single creative will, also led to explore the relation between machine and art: while the Bauhaus tested out solutions aimed at producing architectural objects for the industrial society, the power plant itself produced energy to feed the needs of the new society.

The decision to propose a retrospective vision of this didactic itinerary – that led to the production of a master degree thesis dedicated to the future of this 20th-century 'machine' – came out of the belief that the University is duty-bound to educate for, and to form, new critical perceptions in respect of the issues of preservation.

Over the last few years, we have come to note a – necessary – extension of the traditional concept of 'heritage'⁵, to now include also works that constitute vital tipping points along the path toward the formation of the identifying traits of the 20th-century. In other words, buildings that give expression to the end of one era while also pointing to the emergence of a new era. The students may, therefore, take into account apparently marginal aspects of conservation/preservation, while updating the foundations of this discipline and extending its frontiers.



Fig. 3: Valdo hydroelectric power station, Valdo (VB), Italy, 2018, site plan. © Elena Lemma, Davide Tassera.

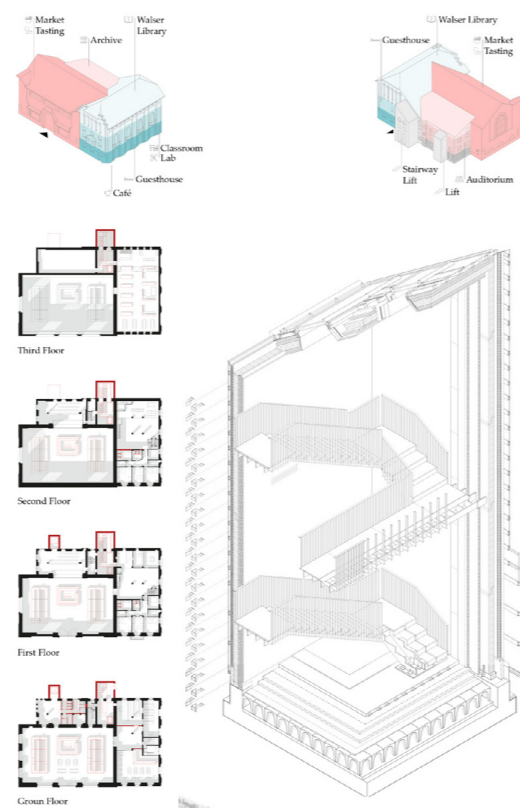


Fig. 4: Valdo hydroelectric power station, Valdo (VB), Italy, 2018, conservation and adaptive-reuse strategies (the new additions are in red). © Elena Lemma, Davide Tassera.

The educational path, therefore, starts out from recognition that the sphere of a legacy to be preserved will include such objects as these: the Valdo power station is clearly an instance of 'auteur' architecture but yet we may note that the building, by its very nature, is far from being 'iconic' as a creation, conceptually speaking. Here, we are not dealing with an architecture that loudly proclaims a social and cultural revolution. This work does not document the "Dionysian myth of the avant garde"⁶. It embodies, instead, a slow-moving revolution, a concept that does not, in itself, run counter to the concept of utopia. Indeed, conservation of these buildings within the context of the combined efforts of education and research also means establishing a continuum between aspects such as society, culture and progress on the one hand, and, on the other, aspects linked to the material reality of the object.

While knowledge of construction features and of the decay – made all the more serious as a result of abandonment – are core concerns of the itinerary embarked upon by the final-year students, this knowledge clearly is not an end in itself with respect to the proposed work. The educational path focuses on more than technical and material conservation problems. Of prime importance, too, are strategies for re-use; which strategies must interface with the characteristics that endow upon the building its identity, also in view of the transformations that have already taken place, as part of a process that remains one of continuity with history. Lastly, we note that the lesson of the Bauhaus school that is perhaps of the greatest relevance to today's teaching activities ties in with 'knowledge contamination' processes. The project dedicated to architecture as a synthesis of art and industry, now free of the circumstances⁷ that generated it, requires mediation of

culture and science, and it perfectly represents this contamination.

2. ELECTRIC ARCHITECTURE

Between 1896 and 1914, the recently established United Kingdom of Italy (1861) increased the industrial production with considerable enthusiasm for the new electrical power industry. Since its foundation in 1883, the Edison Company has been the main promoter of the development of Italian hydroelectric engineering and of the building of several plants.

Architecture impacted the field of engineering invasively, with the vision of industrial buildings as genuine works of art. Outside the Italian borders, we see this in the urban power stations constructed in Paris, Berlin and London, presaging the development of electric architecture over the following decades. Architects such as Paul Frieze or Franz Schwechten, harbingers of the "new realm of electricity", designed monumental works that were so audacious as to confer upon them an aura that we may compare only with that of religious buildings.

The power stations, constructed in the most recondite corners of the Italian territory, on the banks of rivers or in Alpine valleys, exploit the natural setting, which assumes the role of an amphitheater. Electric architecture pays homage to energy not just thanks to the insertion of industrial structures within Alpine landscape settings: the originality of these buildings is based on the translation – into functional and figurative motifs – of the idea of electrical energy derived from a natural source such as water.⁸

In 1912, when the first power station was commissioned to the architect (the Verampio power station), Portaluppi's idea was to develop the project as closely as possible along the lines of an 'electric

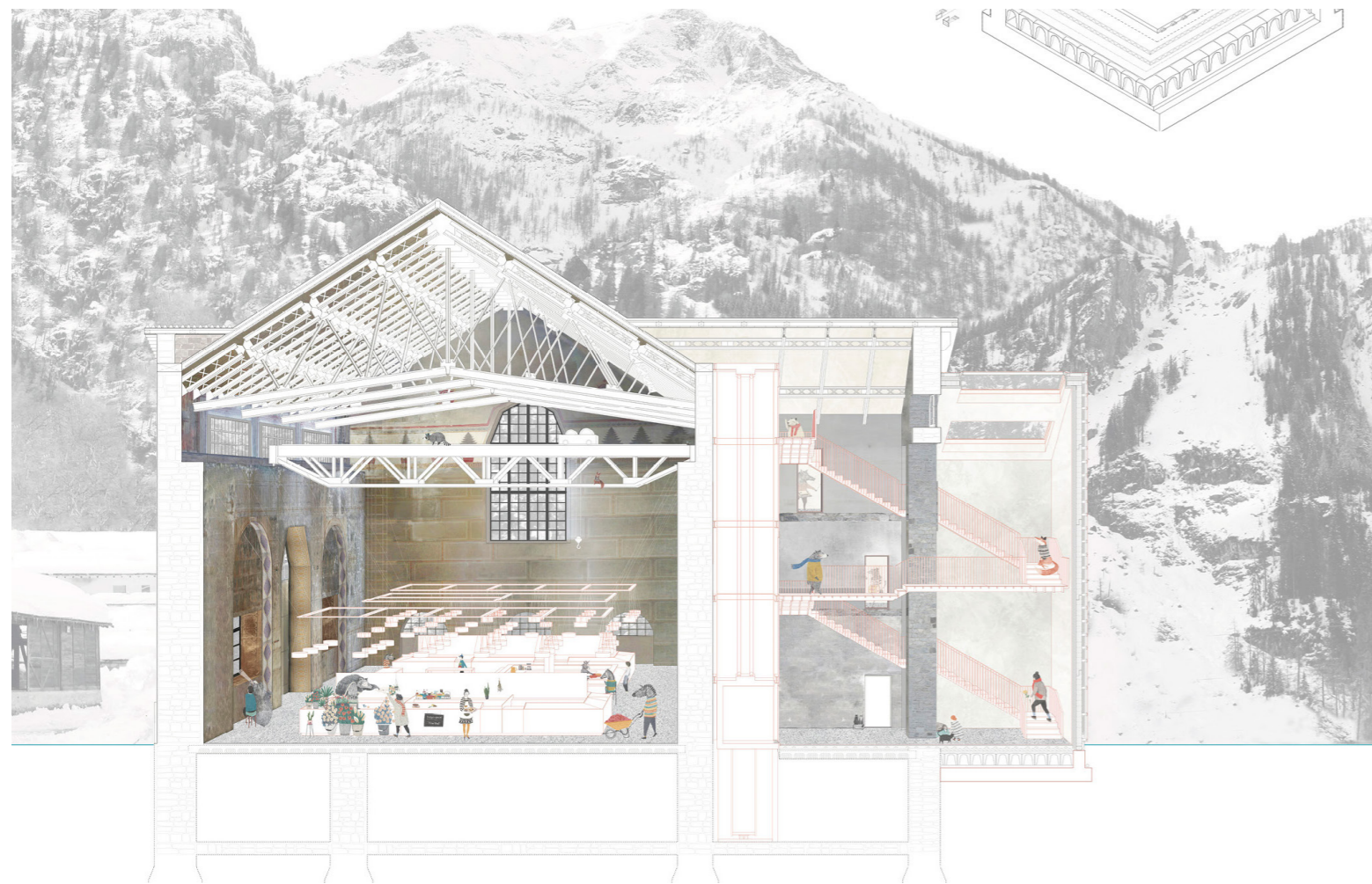


Fig. 5: Valdo hydroelectric power station, Valdo (VB), Italy, 2018, North façade, existing conditions. © Elena Lemma, Davide Tassera.

hamlet', a small township or borough – in which, around the 'castle' (the power station) we find workshops, the manager's residence, offices and the transformers. The turreted 'castle' stands within its setting like a Medieval fortress with its drawbridge, an ogival gateway, windows set in stone and a clock tower. This sturdily constructed building, itself, also attests to the will to create a work that is monumental in nature, connoting the work as an example of early 20th-century electric architecture.

Portaluppi's project for Valdo provides a further exercise in style. The register adopted for this power station relates to the world of fables or legends. However, there is a sense of irony here, too, reflected also in decorative motifs of the frieze inside the turbine hall, which look to the surrounding nature. In this vast space, conceived like the nave of a cathedral, the architect's inclusion of stylized pines in small vases alludes to humankind's manipulation of nature (Fig. 2). Furthermore, the decorative solutions selected refer more broadly to the geographic context (indeed, the Walser dialect word, "Wald", means forest).

By capably deploying the instrument of irony, Portaluppi bridged architecture and electricity, as well as the theme of the network and the relationship between humankind and nature. The special attention paid to the context within which the buildings have been placed is something of great significance even today. He also created a space in which the ornamental apparatus tells the story of the process of energy production. The outcome represents something totally new in the history of industrial architecture, as a result of which the power stations actually become the "string of gems"⁹ that the commissioner desired, objects that not only enhance the landscape but also contribute to its transformation.

3. VALDO

Following the construction of the first two hydroelectric power stations, the entrepreneur Ettore Conti initiated a new exploitation project for the River Toce valley, which included the construction of a new power station (Fig. 3). The project of the new hydroelectric plant went beyond the edifice itself, as it also required the construction of dams, channels and tunnels, including a new road suitable for vehicles. This road led to the expansion of the nearby village of Valdo while also attracting tourists (who, even today, visit Val Formazza).

When the premises were officially closed down, in 1941, the Valdo power station continued to be used, since the identity of the power station was strongly linked to the lives of workers and of the people of Formazza. Indeed, at this stage, the building was a focal rendezvous point. For example, a grocery was installed within the plant itself, alongside a small canteen for the ENEL energy company's employees from the nearby Alta Val Formazza.¹⁰

The north-facing elevation bears significant modifications occurred in the 1940s: two new volumes were added to this side and an additional floor was added to the control mechanisms hall, entailing the modification of the original 1920s roofing. Such transformations caused the substantial loss of the original unitary nature of the project. In fact, the new additions brutally broke the rhythm of the north-facing side and completely altered the symmetry of the west façade - a core element of Portaluppi's design - through the demolition of one of the two towers. The state of decay that this area displays today is mainly the result of these newer incongruous additions. Furthermore, seepage has rendered these spaces – completed in the late 1940s – unusable. Despite the modifications that occurred over the years, it is still possible to perceive the Valdo plant's original spatial configura-



Fig. 6: Valdo hydroelectric power station, Valdo (VB), Italy, 2018, conservation and adaptive-reuse, simulation of the north-facing front view. © Elena Lemma, Davide Tassera.

tion, as the spaces and the roofing system are in a good state of repair. Paradoxically, at least from the conservation angle, the building actually benefitted from the fact that it was abandoned so soon. Both the structural elements and the ornamental apparatus have survived essentially intact. Indeed, even today, we can admire the “improbable painted angle stones”¹¹ and the “archetypes of an artificially re-created woodland”¹². As opposed to Portaluppi’s other power stations, where the need to modify and upgrade the machinery engendered the alteration of Portaluppi’s ornaments and spaces. The fact that no protective restriction was provided for the architect’s legacy undoubtedly contributed to the loss of a part of this heritage. In order to compensate for such shortcoming, the proposal aims at creating awareness around the value of such buildings and the importance of their reuse and transmission to future generations.

4. “IN-CENTRAL”: A PROJECT FOR THE FORMER VALDO POWER STATION

The thesis path started from the idea that a 20th-century masterpiece as the former Valdo power station should be reused with the aim to keep its close contact with public life. The study is based on the adaptive-reuse process¹³ – an approach closely related to historic conservation – that adapts building for new uses while keeping its features, also preserving its tangible and intangible values.

One of the main themes of the research concerned the criteria guiding decision-making in regard to new uses. On the basis of the study of the social and cultural context, and in view also of the imposing size of the building, it was decided to revive the power station’s fortunes as a new operational multi-functional center for Val Formazza (Fig. 4, 5). This approach favors accessibility to users and interprets the power

station as a territorial catalyst. The growing demand among tourists for new experiences that are linked to the qualities of the area, local culture and traditions, were also seen as factors very much in keeping with the proposal for a multi-functional center as a pole of attraction for the site. In particular, the project offers new market spaces to taste and buy local products, educational spaces and a library for the Walser Association “Walserverein Pomatt”.¹⁴

The intervention planned for the original nucleus of Portaluppi’s project had to be non-invasive. Only then could an itinerary be enabled, with all the due care and attention, which would serve as an introduction to this architectural work. The new elements inserted – required to functionally re-activate this ‘machine’ – were to be set apart as clearly distinct components from the pre-existing elements. They also ensure maximum accessibility on the part of the various types of visitors.

The north-facing façade was considered the part that might be most extensively modified. Indeed, it was decided here to remove the additions built in the 1940s, deemed architecturally unremarkable and of little value as a record of the past (Fig. 6, 7). The design also entails the removal of the inter-floor elements for the inclusion of a new volume hosting stairways and an elevator. This plan solved the problem of accessibility from one floor to the other while enabling a reassessment of the north-facing elevation.

The new X-Lam structures are distinct from – but never dominating – the pre-existing elements. The main element of reference remains the power station itself, as part of a continuum with the history of innovation that the building itself represents. The profile of the new volumes reminds the angles of the pre-existing roofing systems. For the cladding, it was decided to use the same local stone adopted by

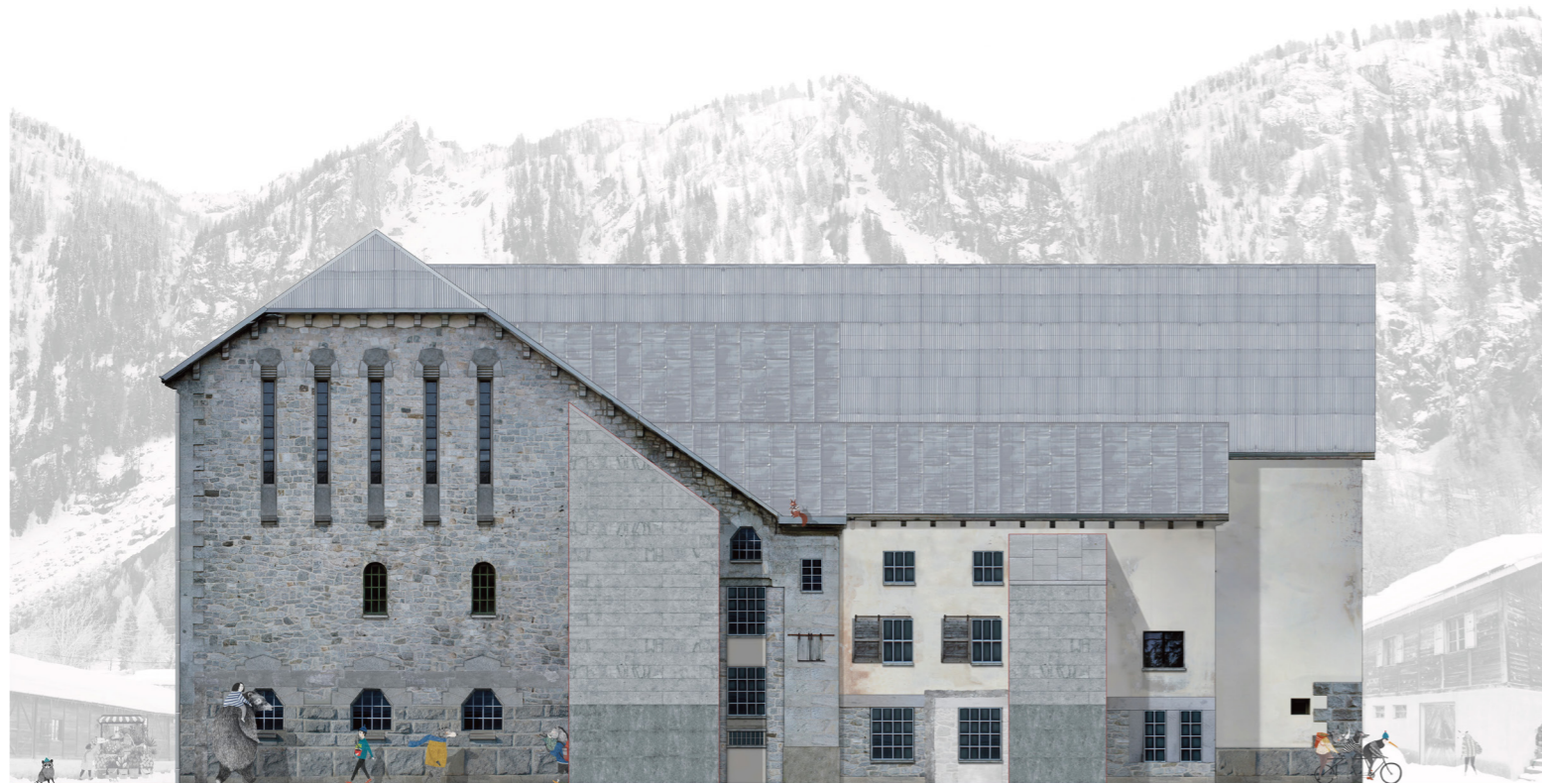


Fig. 7: Valdo hydroelectric power station, conservation and adaptive-reuse, photographic simulation of the north-facing front view. © Elena Lemma, Davide Tassera.

the architect, but to clearly identify it: a distinct manner of surface stone-working was adopted.

Unlike the restoration plans drawn up for many iconic 20th-century buildings, the project for this architectural work did not point to a return to the original state: the removal of the more recently installed volumes was carefully executed so as to leave visible surface traces of the various historical phases and the changes effected over time. Some constituting traits of the modern movement are echoed in fundamental considerations that guided the decision-making process of the thesis project: the aim (reflected both in the new use and in the insertion of new volumes) was to attain the “utmost utility”¹⁵ in returning the plant to the local community, not just from the functional angle, but also as a record of the past.

5. CONCLUSIONS

The research and the graduate education related to the preservation of these cathedrals/machines of Modernity entail the social recognition of the plant as part of the legacy of 20th-century and of its idea of the future.

The main issue emerging from their preservation is the need to stress the intrinsic dualism of the concept of ‘transformation’ that resides as much in changes occurred in the society – which no longer recognizes values/usefulness of these buildings –, as in crucial changes that adaptive-reuse process necessarily implies.

The strategy behind the principle of non-invasive insertion rejects the idea of Modern heritage as an unmodifiable image. In this case, the historical value of the building makes it capable of fostering and accepting the presence of new layers represented by contemporary visible grafts, without concealing all the historical layers that define

the current architecture. They all represent new design occasions – something that encourages a dialog with the heritage – able to improve the research on the relationship between Modern and Time.

ENDNOTES AND QUOTATIONS

[1] Piero Portaluppi (Milan, 1888-1967) graduated in 1910 in Architecture from the Politecnico of Milan. In the 20's Portaluppi became one of the most important Milanese architects, mainly known for the city reconstruction between the two world wars. From 1939 to 1963 he was the Dean of the Faculty of Architecture at the Politecnico of Milan. He also cooperated with several architects such as BBPR and Giò Ponti.

[2] The Valdo hydroelectric power station was designed and built between 1920 and 1923.

[3]The famed *Programm des Staatlichen Bauhauses in Weimar* was presented by Walter Gropius in April 1919. The school was located in Thuringia. It was then closed and transferred to Dessau in 1925.

[4] Feininger's xylography "The Cathedral of Socialism" depicts a cathedral on which three rays are joined. The rays represent the three main arts: painting, sculpture, architecture. The building instead is the symbol of a common work which involves architects, painters, sculptors and craftsmen. The symbolic image of the cathedral was much appreciated in those years, thanks to the rediscovery of the formal problems of the Gothic in Worringer's studies. Cf. Wilhelm Worringer, *Formprobleme der Gotik*, R. Piper & Co., München, 1911; Walter Gropius, *Bauhaus Manifesto and Program*, 1919.

[5] The extension of the concept of heritage actually concerns utilitarian architectures like cooling towers, water reservoirs, service stations, motorways, parabolic silos, etc. On these topics, see Maristella Casciato, "Monumenti moderni e patrimonio monumentale", *Curare il moderno. I modi della tecnologia*, Venice, Marsilio, 2002, 451-457; Ugo Carughi, *Maledetti vincoli. La tutela dell'architettura contemporanea*, Allemandi, Torino, 2012, 21-52.

[6] Francesco Dal Co, "Preface to Italian edition", *Il Bauhaus. Weimar Dessau Berlino 1919-1933*, Milan, Feltrinelli, 1987, XIII.

[7] Louis I. Kahn, *Silence and Light*, Zurich, Park Books, 1969, 131.

[8] Michael Jakob, "Una estetica della sorpresa: le centrali di Portaluppi e le forme dell'energia", Piero Portaluppi. *Linea errante nell'architettura del Novecento*, Milan, Skira, 2003, 193-209.

[9] Cf. Ettore Conti, *Dal taccuino di un Borghese*, Milan, Garzanti, 1971, 58.

[10] This information was collected during the interview conducted by the final-year students with Ettore Valsesia, who headed Enel building sites after 1947.

[11] Ornella Selvafolta, "Fulgura multiplicavit. Le centrali idroelettriche di Ettore Conti, Umberto Girola e Piero Portaluppi", *Accoppiamenti giudiziari. Storia di progettisti e costruttori*, Milan, Skira, 1995, 40.

[12] Cf. Michael Jakob, *ibid.*

[13] Cf. Donatella Fiorani, Loughlin Kealy, Stefano F. Musso (ed.), *Conservation/Adaptation. Keeping alive the spirit of the place. Adaptive-reuse of heritage with symbolic value*, Hasselt, EAAE, 2017.

[14] The Walserverein Pomatt was founded in 1983. The association aims to preserve the culture related to the walsar community (a Germanic population established in the Alps, who was able to adapt its lifestyle and economy to the mountain environment).

[15] Bruno Taut, *Modern Architecture*, London, The Studio, 1929. Reference is made here to the first of the five points set forth by Taut in summing up the characteristics of the Modern Movement.

BIBLIOGRAPHY

BAYER, Herbert, GROPIUS, Walter, GROPIUS, Ise (edited by), *Bauhaus 1919-1928*, New York, The Museum of Modern Art, 1938
CARUGHI Ugo, *Maledetti vincoli. La tutela dell'architettura contemporanea*, Turin, Allemandi, 2012, 21-52

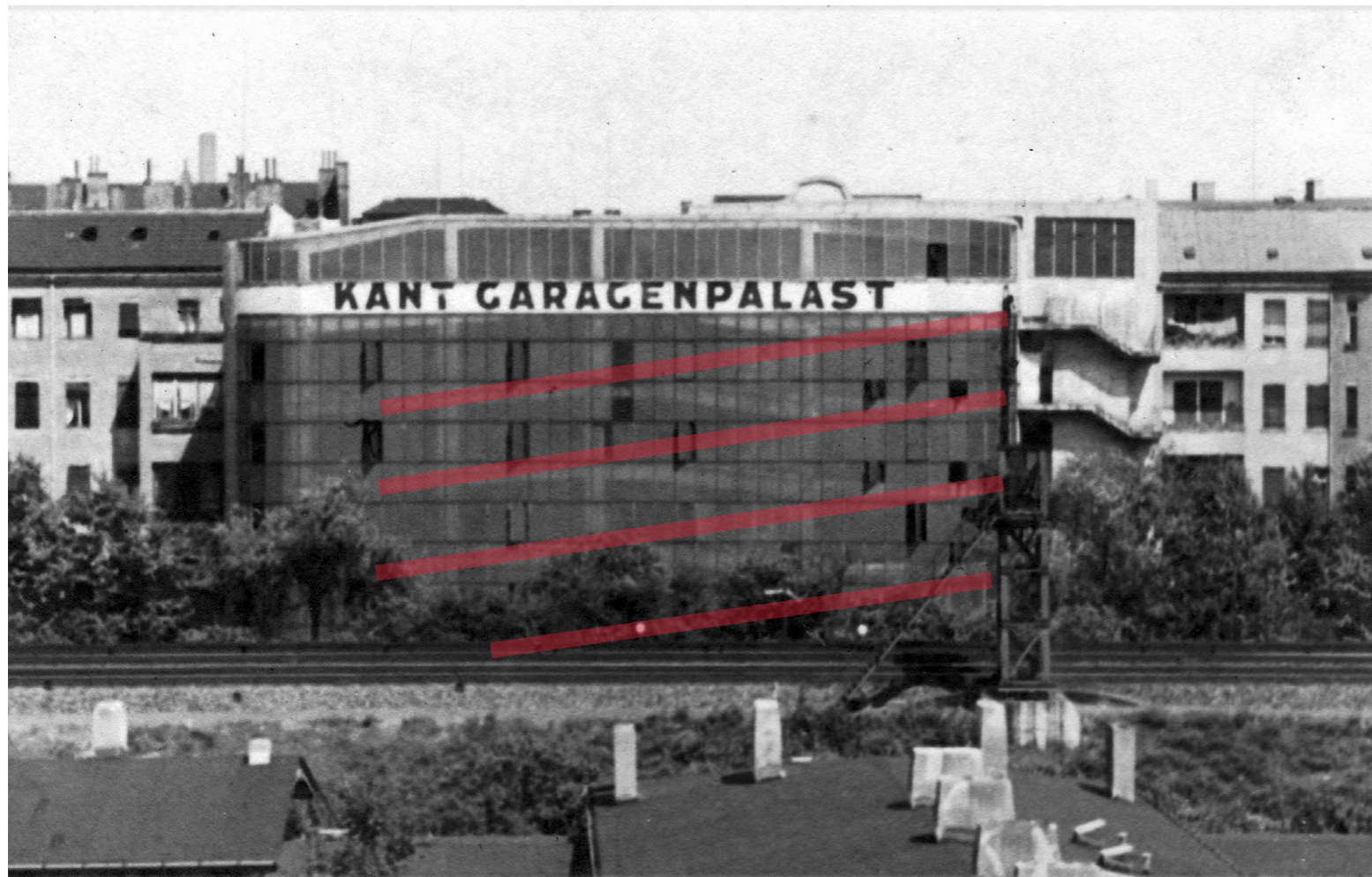
CASCIATO, Maristella, "Monumenti moderni e patrimonio monumentale", BARDELLI, Pier Giovanni, FILIPPI, Elena, GARDA, Emilia (edited by), *Curare il moderno. I modi della tecnologia*, Venice, Marsilio, 2002, 451-457

FIORANI, Donatella, KEALY, Loughlin, MUSSO, Stefano Francesco (ed.), *Conservation/Adaptation. Keeping alive the spirit of the place. Adaptive-reuse of heritage with symbolic value*, Hasselt, EAAE, 2017
WINGLER, Hans Maria, *Il Bauhaus. Weimar Dessau Berlino 1919-1933*, Milan, Feltrinelli, 1987

MOLINARI, Luca (edited by), Piero Portaluppi. *Linea errante nell'architettura del Novecento*, Milan, Skira, 2003

SELVAFOLTA, Ornella, "Fulgura multiplicavit. Le centrali idroelettriche di Ettore Conti, Umberto Girola e Piero Portaluppi", GIORGI, Anna, POLETTI, Raffaella (edited by), *Accoppiamenti giudiziari. Storia di progettisti e costruttori*, Milan, Skira, 1995, 23-63

SELVAFOLTA, Ornella, "La centrale, il committente, l'architetto in Elettività. Stati Uniti e URSS, Francia e Italia", *Rassegna*, 63, 1995, 36-45



Titelbild (Abb. 1): Vom Verfasser in Rot dargestellter, ursprünglich von Zweigenthal vorgesehener Rampenverlauf, © Quelle: Zeitgenössische Postkarte, Urheberangabe auf der Rückseite: „Reinhold“, um 1938.

Infrastructure for Modernism. Bauhaus in Berlin? Die Entwicklungsgeschichte der Kantgarage 1928-2018

Thomas Katzke
TFH Beuth Hochschule für Technik, Berlin, Germany

ABSTRACT

Bis Anfang 2017 deutete ein Leuchttransparent an einem in die Jahre gekommenen Gebäude in Berlin-Charlottenburg auf dessen Funktion hin – „Kantgaragen“. Zu seiner Eröffnung im Jahr 1930 war es das erste Garagenhochhaus in Berlin und ein Fanal moderner Sachlichkeit in der Phalanx der wilhelminischen Fassadenarchitektur der Kantstraße. Verantwortlich für die Entwicklung des Gebäudes waren neben dem Bauherrn Louis Serlin das Architekturbüro Lohmüller, Korschelt, Renker und zwei junge, gerade diplomierte Architekten – Herrmann Zweigenthal und Richard Paulick.

Die Gestaltung des zeitlos modernen Fassadenentwurfes und der Rampenanlage oblag federführend Hermann Zweigenthal. Dieser realisierte bereits als 19-jähriger Bühnenbildner in Berlin, mit 23 Jahren wurde er Architekt und sechs Jahre später infolge der nationalsozialistischen Machtergreifung seines beruflichen Erfolges in

Deutschland beraubt. Zweigenthal emigrierte über die Schweiz und England in die USA und nannte sich von 1940 an Hermann Herrey. In den USA entwickelte er sich zu einem angesehenen Raum- und Stadtplaner, ohne seine Architektur- oder Theaterambitionen zu vergessen. In den 1950er Jahren kehrte er für einige längere Aufenthalte nach Berlin zurück und erhielt als Theaterregisseur den Kritikerpreis für die Saison 1957/58.

Dennoch ist der Architekt, Designer, Bühnenbildner, Regisseur, Raum- und Verkehrsplaner, Dozent und Autor Hermann (Herrey-) Zweigenthal heute selbst den Kennern der Berliner Baugeschichte unbekannt. Und wer doch die Kantgarage mit seinem Namen in Verbindung bringt, kann kaum weitere seiner Arbeiten nennen.



Abb. 2: Straßenansicht der Kantgarage und Nachbarbebauung, Blick Richtung Leibnizstraße © Quelle: Zeitgenössische Postkarte, Urheberangabe auf der Rückseite: „Aufnahme Schwarz“, um 1936.

EXKURS

Mit seiner Präsentation im Jahr 1886 entwickelte sich das Automobil zum Inbegriff individueller Mobilität – mit der Folge einer weltweit einsetzenden, bis heute anhaltenden Motorisierungswelle. Trotz der mit dem Ersten Weltkrieg einhergehenden desolaten Wirtschaftslage stieg die Zahl der Automobile in Deutschland von 1913 bis zum Ende der 1920er Jahre um jährlich ca. 25-30% an.¹ Nach zeitgenössischer Meinung hatte sich diesem Progress der ‚althergebrachte Städtebau anzupassen‘.² Folgen waren neben der Lärm- und Abgasbelastung die ansteigenden Verkehrsunfallzahlen und die Behinderungen durch den ruhenden Individualverkehr. Letzteres ein Widernis, aus dem sich eine neue Bauaufgabe entwickelte – die Großgarage.

In Berlin war der Garagenbedarf verstärkt in den Innenstadtbezirken zu verzeichnen. Diese machten zwar nur ca. 8% der Fläche des Stadtgebiets aus, waren aber Wohnstätte für annähernd 41% der Berliner Bevölkerung. Neben Berlin-Mitte litten im Besonderen die Bezirke Wilmersdorf und Charlottenburg unter der Stellplatznot.³ Die in den USA ab den 1910er Jahren einsetzende Evolution zur Stockwerksgarage erreichte Europa um 1920, eine der ersten dieser Art in Deutschland war die 1926 in Stuttgart errichtete „Schwabengarage“.⁴ Parallel ergriff die technoide Ästhetik der zunehmend im Alltag präsenten Maschinen die zeitgenössische Kunst. So definierte Filippo Marinetti 1909 in seinem Manifest des Futurismus ein Rennautomobil in seiner Schönheit strahlender als die Nike von Samothrake.⁵ Le Corbusier stellte 1923 das Automobil als ‚Erzeugnis der zu einem Standard gesteigerten Auslese‘⁶ auf eine Entwicklungsstufe mit dem Parthenon-Tempel und Walter Gropius propagierte am Weimarer Bauhaus die Losung ‚Kunst und Technik – eine neue Einheit‘⁷

PROLOG

Mit Abbildungen der Straßen- und der Rückfassade des Kantgaragegebäudes nahm die 1995 vom Bauhaus Archiv herausgegebene Publikation „Bauhaus in Berlin, Bauten und Projekte“⁸ die Kantgarage in dessen Werkkanon auf und reihte Hermann Zweigenthal (1904-1968) und Richard Paulick (1903-1979) in den Reigen der Bauhaus Architekten ein – so auch geschehen durch Hans Engels und Ulf Meyer in ihrem Bildband „Bauhaus Architektur 1919-1933“.⁹ Richard Paulick, der zusammen mit Georg Muche 1926-27 das „Stahlhaus“ in Dessau entwickelt hatte und von 1928-30 Angestellter in Gropius Dessauer und Berliner Privatbüros war, könnte oberflächlich betrachtet als Indiz der Einflussnahme der Bauhauslehre auf das Garagenprojekt genügen. Der 1903 in Roßlau/Elbe geborene Paulick war aber weder Studierender noch Meister am Bauhaus, sein Architekturstudium hatte er 1923 an der TH Dresden begonnen und das Diplom 1927 an der TH Berlin bei Hans Poelzig erlangt – der, weder Für noch Wider das Bauhaus, mit bewusster „Stillosigkeit“ ein prägender Lehrer Moderner Architektur war.

Hermann Zweigenthal, 1904 in Wien geboren, hatte - nach kurzem Intermezzo an der Wiener Kunstgewerbeschule – sein Architekturstudium 1923 an der TH Berlin begonnen und dieses zeitgleich mit Paulick 1927 bei Poelzig absolviert. Ihrem Kommilitonen Julius Posener galt er als dessen bester Adept,¹⁰ selbst negierte Zweigenthal für sich aber jegliche Stilaffinität, Gropius und der Bauhauslehre stand er kritisch gegenüber.¹¹ Infolge der Machtübernahme der Nationalsozialisten und der damit einhergehenden Gefahr für ihr Leben flohen Paulick und Zweigenthal bereits 1933 aus Deutschland, letzterer nahm 1940 mit der amerikanischen Staatsbürgerschaft den Nachnamen Herrey an. Zweigenthal und Paulick sind aber nur zwei

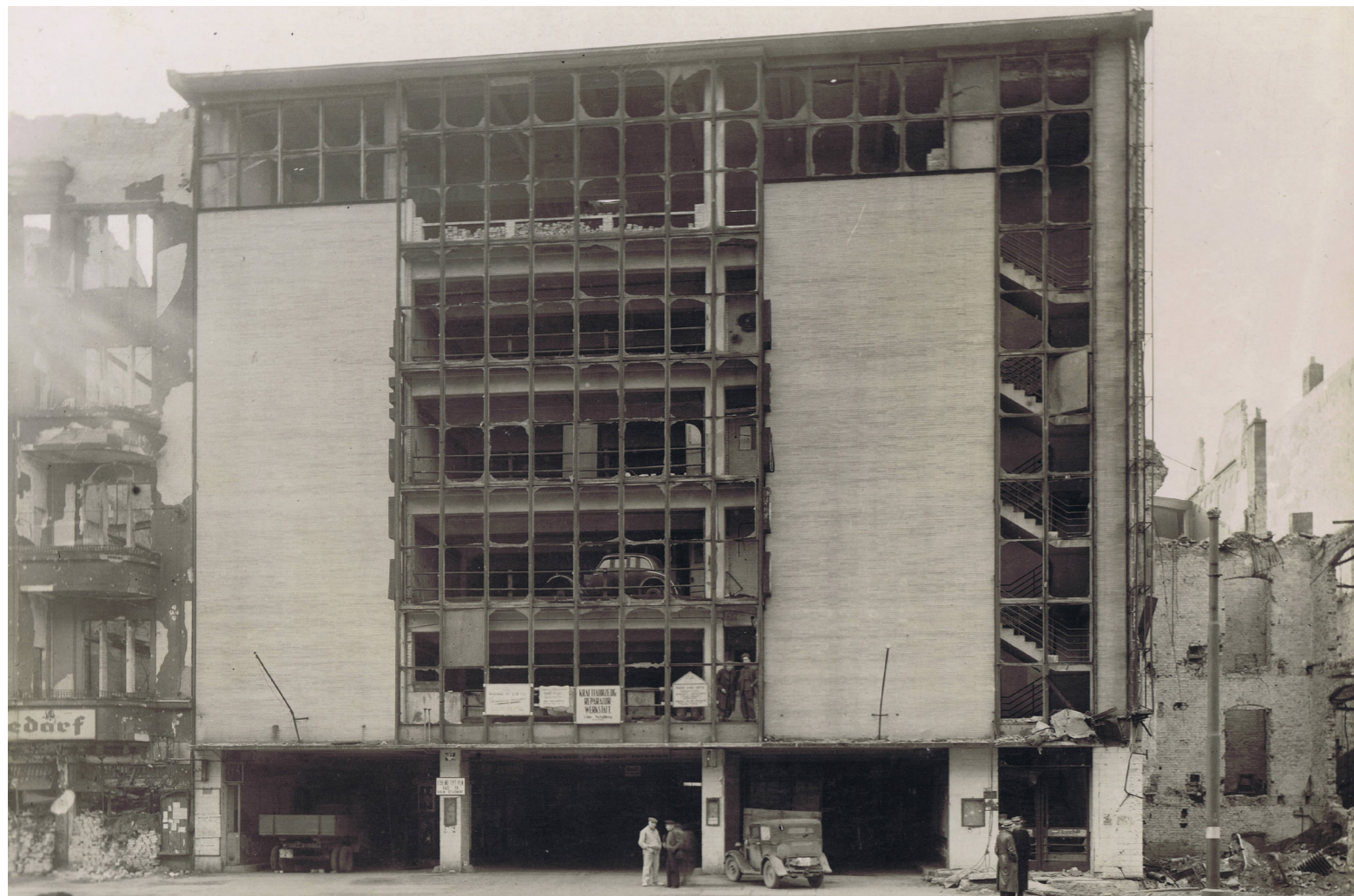


Abb. 3: Straßenansicht der Kantgarage © Quelle: Archiv Verfasser, Urheberanga-be auf der Rückseite: Photo Pflugfelder, um 1945.

von sechs Protagonisten, deren Namen im Zusammenhang mit dem Planungs- und Bauprozess zu nennen sind.

Für die Idee, Entwicklung und letztendlich Realisierung des Garagenprojektes ist Louis Serlin (1886-1967) deutlich in den Vordergrund zu stellen. Der in Pieski im russischen Teil Kareliens geborene Serlin konnte dank eines Stipendiums seiner jüdischen Gemeinde ein Maschinenbaustudium in Mannheim absolvieren. Von 1907 an war er für einem amerikanischen Landmaschinenhersteller wechselweise in Südamerika sowie Osteuropa tätig. Um 1914 wurde er in Posen sesshaft und führte einen Handel mit Schmierstoffen. Die 1920 erfolgte Abtretung der Provinz Posen an Polen war ihm Anlass, 1922 mit seiner Familie nach Berlin überzusiedeln. Neben dem Schmierstoffhandel führte er einen Autoreparaturbetrieb in der Charlottenburger Leibnizstraße. Serlin hatte während seiner USA-Aufenthalte die dortige Hochgaragenentwicklung verfolgt und erkannte in der in Charlottenburg herrschenden Stellplatznot erfolgversprechendes Potential für ein mehrgeschossiges Hochgaragenprojekt.¹²

Um diese Idee zu realisieren erwarb er im Dezember 1928 einen der letzten freien Bauplätze im dicht besiedelten Berliner Westen, das nur teilweise mit einer kleinen Villa und einigen Pferderemisen bebaute Grundstück in der Kantstraße 126/127. Mit der Vorgabe einer in moderner, sachlicher Formensprache zu gestaltenden Gebäudehülle, die eine Tankstellenanlage und die Bestandsvilla zu integrieren hatte, bat Serlin mehrere Architekten um Entwurfsvorschläge für sein Großgaragenprojekt.

Den Zuschlag erhielt die Architekten-sozietät Lohmüller, Korschelt, Renker – die drei weiteren, für den Planungs- und Bauprozess der Kantgarage als wesentlich zu nennenden Namen. Die Architekten hatten zuvor bereits mehrere Garagenprojekte in Berlin realisiert,

wie z. B. die 1929 fertiggestellte „Großgarage des Westens“ in der Charlottenburger Sophie-Charlotte-Straße. 1925 hatte die Zeitschrift „Neue Baukunst“ in Bezug auf deren Schaffen festgestellt, „dass aus der sachlichen und klaren Strenge ihrer Bauten ein gefestigter künstlerischer Charakter spricht“.¹³

DIE ENTWICKLUNGSPHASE DER KANTGARAGE 1929–30

Nach nur zweimonatiger Planung erging im Februar 1929 der Bauantrag für einen viergeschossigen Garagenbau in Stahlbeton-Skelettbauweise mit 157 Stellplätzen.¹⁴ In den statischen Berechnungen der mit der Bauausführung beauftragten Kell & Löser AG fanden die von Anbeginn bestehenden Expansionsabsichten Serlins mit vier weiteren Obergeschossen Berücksichtigung.

Der Charlottenburger Bauausschuss lehnte den Garagenbau im März 1929 ab, dennoch begann Serlin im Juli 1929 mit den Ausschachtungsarbeiten und konnte letztendlich erlangen, dass die Baupolizei im August 1929 dem Bauantrag mit den Auflagen stattgab, einen Abstand von 10 m zur unmittelbar anschließenden Stadtbahn einzuhalten und an der Rückfront eine gesonderte Treppenanlage vorzusehen. Untersagt wurde jegliche Nutzung der Dachfläche zur Aufstellung oder Pflege von Fahrzeugen.

Zur Erfüllung der Behördenauflagen versuchten Lohmüller, Korschelt, Renker mit unterschiedlichen Ansätzen gewinnversprechende Lösungen für die Fahrzeugaufstellung und für das System der Höhengewinnung zu erarbeiten – jedoch ohne ein akzeptables Ergebnis. Der Erhalt der Bestandsvilla, erforderlich durch Serlins Eigenbedarf, der sein bisheriges Wohnhaus zur Finanzierung des Projektes verkauft hatte, erwies sich hinsichtlich der Rentabilität des Garagenprojektes für die Architekten als unlösbares Problem.



Abb. 4: Ansicht der Straßenfassade © Quelle: Archiv des Verfassers, Urheber un-bekannt, um 1964.

Mangels Erfolgsaussicht empfahlen Sie letzten Endes, das Projekt aufzugeben.

Serlin, der in Berliner Gesellschaftskreisen aufgrund seiner früheren Tätigkeiten und seines Engagements in der jüdischen Gemeinde gut vernetzt war, konnte Mitte 1929 den Deutschen Auto Club (D.A.C.) als Pächter der gesamten Garagenanlage gewinnen und hierdurch gegenüber den finanzierenden Banken die Sinnhaftigkeit seines Unternehmens behaupten. Der D.A.C. war 1927 aus Protest gegen den Automobilclub „ADAC“ gegründet worden, da dessen Mitgliedsplaketten auch neun Jahre nach Ende der Monarchie noch immer die kaiserlichen Farben trugen. Die überwiegend aus dem finanzkräftigen Bürgertum stammenden Mitglieder des D.A.C. hingegen bekannten sich bewusst mit den Vereinsfarben schwarz-rot-gold und in ihren Publikationen zum republikanischen Deutschland.¹⁵ Der Club hatte sich u. a. zur Aufgabe gesetzt, den innerstädtischen Mobilitätsproblemen entgegenzuwirken und Lösungen für den ruhenden Individualverkehr zu entwickeln. Diese Aufgabe war Hermann Zweigenthal im Juli 1929 durch den Club-Vorstand übertragen worden, als Forschungsgrundlage dienten Zweigenthal u. a. die Grundrisspläne der Schwabengarage.¹⁶

Der D.A.C. hatte an seine Mietzusage Bedingungen geknüpft, so z. B. die Betreiberschaft der Garage, das ergänzende Attribut „Palast“ im Garagennamen, um zu signalisieren, dass die Innenräume selbst den höchsten Anforderungen genügen¹⁷ und die Einbeziehung ihres Architekten Hermann Zweigenthal in den weiteren Planungsprozess der Garage. Obwohl erst seit zwei Jahren diplomiert und trotz eines jungen Alters von 25 Jahren, war Zweigenthal neben seiner Tätigkeit als Architekt ein gut beschäftigter Bühnenbildner, Szenograph und Innenraumgestalter. Aufgrund anderer beruflicher Verpflichtungen

konnte er das Garagenprojekt nur eingeschränkt begleiten und bat seinen ehemaligen Kommilitonen Richard Paulick um dessen Mitarbeit.¹⁸

In Arbeitsgemeinschaft mit Lohmüller, Korschelt, Renker überarbeiteten die beiden jungen Architekten ab September 1929 das Höhengewinnungskonzept und die Fassadengestaltung der Garage.

Mit dem von Zweigenthal Ende September 1929 entwickelten Vorschlag, die Rampenanlage in Form einer Doppelwendelrampe an die Rückseite des Hauses zu legen und dadurch den Abstand zur Stadtbahn – da nur noch Verkehrswege an den Bahndamm grenzten – auf genehmigungsfähige 5 m zu reduzieren, konnte eine wirtschaftliche Stellplatzanzahl erzielt werden.

Eine Prinzipskizze und ein Schaubild einer Garage mit doppelgängiger Wendelrampe hatte Georg Müller bereits in seiner 1925 erschienenen Publikation „Großstadt-Garagen“ abgebildet,¹⁹ in der Kantgarage wurde das System erstmalig in Deutschland projektiert. Die von Zweigenthal ursprünglich über die ganze Breite der Rückfassade vorgesehene Rampe wurde jedoch auf Anordnung Serlins verkürzt und stärker geneigt in einem seitlich-rückwärtigem Annex ausgeführt, womit pro Geschoss weitere sechs Stellplätze gewonnen wurden. Allerdings korrespondierte die nun steiler ansteigende Rampe nicht mehr mit den bereits fertiggestellten Rohbauanschlüssen des Garagenbaus, so dass eine bogenförmig abwärts gerichtete Rampe zum Anschluss an die Fahrstraßen des Garagentraktes notwendig wurde (**Abb. 1, 2**).

Im Januar 1930 beantragte Serlin eine Erweiterung der genehmigten, viergeschossigen Garagenplanung um zwei Obergeschosse,²⁰ dem Ersuch wurde von der Baubehörde zunächst nicht stattgegeben. Da die Folgen der im Oktober 1929 in den USA ausgelösten Weltwirt-

schaftskrise bereits auch in Deutschland deutlich spürbar waren, konnte Serlin die Zustimmung der Baubehörde im März 1930 mit dem Argument erlangen, das die Fortsetzung des Projektes die Beschäftigung von ca. 150 andernfalls erwerbsloser Arbeiter²¹ ermöglicht. Paradoxe Weise haben somit erst die ansonsten das Baugeschehen hindernden Folgen des „Schwarzen Freitages“ dazu beigetragen, dass die Kantgarage weitergebaut werden konnte.

Im April 1930 stellte das Stadterweiterungsamt die Forderung, die Straßenfassade derart zu gestalten, dass das Höhenniveau des Gesimsabschlusses dem des Nachbargebäudes Kantstraße 128 entspricht. Zweigenthals ursprüngliche Entwurfspläne sahen für den Ausgleich der Höhendifferenz von ca. 4,55 m ein auf Stützen gelagertes Flugdach als oberen Abschluss der Straßenfront vor. Ausgeführt wurde jedoch die noch heute vorhandene, verglaste Frontblende, die als Querriegel oberhalb des vierten Geschosses die transparenten Felder der Vorderfassade fortsetzte. Die Blende wurde ohne Genehmigung der Baubehörde montiert und wiederholt von dieser bemängelt.²² Die Behörde wollte nur gegen Abriss und Ersatz der Villa durch einen Neubau, oder einer Sicherheitsleistung von 40.000,- RM, den Dispens zur Frontblende erteilen. Um den Dispensbedingungen der Baubehörde zu entsprechen, stellten Zweigenthal und Paulick, ohne Beteiligung von Lohmüller, Korschelt, Renker, im Juni 1930 einen Bauantrag für ein anstelle der Villa vorgesehenes Wohngeschäftshaus.²³ Der Entwurf sah im Erdgeschoss ein Restaurant und ein Ladengeschäft, im 1. und 2. Obergeschoss Wohnungen, im 3. bis 5. Obergeschoss die Nutzung als Hotel vor. Die Fassade sollte gleich der Garage mit sandgrauen Verblendern verkleidet werden. Dieser Entwurf wurde im August 1930 vom Bauausschuss genehmigt, realisiert wurde er aber nicht,

da das Wohnungsamt für jeden zerstörten Wohnraum 4.000,- RM als Entschädigung verlangte und Louis Serlin sich außer Stande sah, dieser Forderung nachzukommen.

Zwischenzeitlich war die ausführende Baufirma im Mai 1930 in Konkurs gefallen, Serlin übernahm daraufhin selbst die Restarbeiten an der mittlerweile im Rohbau fertiggestellten Garage. Im Zuge dessen ließ er, um mehr Nutzfläche zu gewinnen, im Auge der Rampeanlage Zwischendecken einziehen, das vorgesehene Oberlicht entfiel. Die Tagesbelichtung der Rampeanlage erfolgte nun nur noch über deren seitliche Verglasung.

Der Garagenbetrieb wurde am 1. Oktober 1930 von der Garagenpalast-Betriebs-GmbH des D.A.C. aufgenommen. Das Fassungsvermögen betrug insgesamt ca. 300 Fahrzeuge, davon 200 in Einzel- und 100 in Gemeinschaftsboxen. Die Baukosten wurden mit ca. 1.25 Mio. RM angegeben.

Das Garagengebäude wurde unmittelbar nach Eröffnung zu einer Attraktion der Architekturwelt, kaum eine Publikation zum Baugeschehen der Zeit verzichtete auf eine Würdigung. Allerdings fielen nicht alle Kritiken zur Garage positiv aus. So bezeichnete Julius Posener das Gebäude als Beispiel eines Generationskonfliktes, aus dem die jüngeren nicht als Gewinner hervorgegangen seien²⁴ und Georg Müller lobte zwar das Engagement des Bauherrn, diesen Garagenbau trotz widrigster wirtschaftlicher Umstände realisiert zu haben, bemängelte aber die Art der Höhengewinnung mittels Doppelwendelrampe als platzraubenden Modegag.²⁵

DIE ERWEITERUNGSPHASE 1931–36

Tatsächlich war der Kantgaragenpalast aber noch ein „ungeschliffenes Juwel“. Da Serlin von Anbeginn des Projektes die Absicht verfolgte, sieben oberirdische Geschosse zu erstellen, war die Decke über dem 4. Geschöß, die mit Abschluss der 1. Bauphase das Dach ausbildete, nicht einer solchen Anforderung entsprechend abgedichtet und das offene Rampenauge nicht mit einem Schutzdach abgedeckt worden.²⁶ Neben den Niederschlägen, die ungehindert über die Rampeanlage in das Gebäude abflossen, bildete sich an der Decke des vierten Geschosses erhebliches Kondensat, besonders im Winter bestand daher akute Unfallgefahr. Infolge dessen sperrte die Baubehörde die Nutzung der vierten Etage, die mehrfach beantragte Genehmigung zur weiteren Aufstockung wurde aufgrund der Überschreitung der maximal zulässigen Bebauung von ihr abgelehnt. Zwar erkannte die Behörde ein Dach als zwingend erforderlich an, wollte hierfür aber nur eine Bauhöhe von 70 cm über der Geschößdecke zulassen.

Der D.A.C kündigte aufgrund der fehlenden, bzw. nicht vermietbaren Stellflächen im Frühjahr 1931 den Mietvertrag auf. Damit einhergehend fand auch Zweigenthals Verpflichtung ihr Ende, der sein von Serlin bestrittenes Urheberrecht an den Fassaden per Gerichtsentscheid erstritt. Zeitgleich löste Zweigenthal die Bürogemeinschaft mit Richard Paulick aufgrund von Honorar-Streitigkeiten auf.

Paulicks Tätigkeit für Serlin endete vermutlich erst im Frühsommer 1931, nachdem er noch einen Bauantrag für den Ausbau des Dachgeschosses zu einer Tennistrainingshalle bei der Baubehörde eingereicht hatte – dessen Genehmigung aber abgelehnt wurde. Nach einigen weiteren erfolglosen Versuchen ein finanzierbares Konzept zu finden – so. z.B. als Bowlingbahn oder Reparaturwerkstatt – sah Serlin von weiteren Baumaßnahmen ab. Erst 1936 bekam

die Garage nach Planung der Siemens-Bauunion mittels eingeschossiger Aufstockung ein richtiges Dach.²⁷ Konstruktiv wich der Aufbau, der die transparente Frontblende integrierte, mit sechs über die gesamte Gebäudebreite spannenden Betonrahmen von dem Stützenraster der unteren Etagen ab. So konnte eine stützenlose Grundrissfläche von annähernd 220 m² mit einer Raumhöhe von max. 5,70 m realisiert werden.

KONTINUITÄT DER GARAGE BIS 2016

Wider dem Novemberpogrom des Jahres 1938 konnte Serlin aufgrund seiner argentinischen Staatsbürgerschaft die Garage noch bis Mitte 1939 betreiben, dann wurde auch er zu deren Verkauf und Flucht aus Deutschland gezwungen. Das Gebäude überstand die Flächenbombardierung Berlins mit relativ geringen Schäden, die Villa hingegen wurde zerstört und deren Überreste 1951 abgeräumt (**Abb. 3**).

Serlin kehrte nicht mehr nach Deutschland zurück, erlangte aber die Rücküberweisung des Garagengebäudes noch Ende der 1940er Jahre. 1956 errichtete die Deutsche Shell AG auf den Fundamentresten der Villa eine eingeschossige Pflegedienst- und Wagenabstellhalle, 1961 wurde die Kantgaragen GmbH des K.H.Pepper neue Eigentümerin des Gebäudes (**Abb. 4**).

Im August 1991 wurde die Garage in die Liste denkmalgeschützter Gebäude eingetragen. Gegen den Verwaltungsakt legte die Eigentümerin Rechtsmittel ein, das Verfahren wurde aber durch das 1995 in Kraft getretene, Berliner Denkmalschutzgesetz ausgesetzt.

Ende 1993 erging der Antrag für eine Nutzungsänderung zu Büro- und Ausstellungszwecken, die Pflegehalle von 1956 sollte zu einem siebengeschossigen Bürogebäude aufgestockt werden. Nach einem

langen Einigungsprozess wurde 1997 die Baugenehmigung erteilt. Das Projekt wurde aber wegen mangelnder Profitabilität nicht realisiert.

Im Jahr 2013 rückte die Garage durch einen Abrissantrag, den die Eigentümerin mit einer nicht mehr tragfähigen Bausubstanz begründete, in den Fokus der Öffentlichkeit. Folge war eine heftige Kontroverse um den möglichen Erhalt der Garage, in deren Verlauf Gutachten zwar erhebliche Mängel bestätigten, diese jedoch als zumutbar reparabel einstufte. Der Abrissantrag wurde Ende 2016 mit dem Verkauf der Garage an einen neuen Eigentümer, die Gaedeke & Sons GmbH, hinfällig. Dieser beabsichtigt einen denkmalgerechten Umbau der Garage zu einem Büro-, Event- und Galeriegebäude unter größtmöglichem Erhalt der überkommenen Substanz. Eine automobiler Nutzung wird für die Zukunft ausgeschlossen. Anstelle der Pflegehalle von 1956 soll ein Hotelneubau erstellt werden. Bis Ende 2016 wurde das Gebäude komplett entmietet, Anfang 2017 begann der Umnutzungsprozess mit ersten Sondierungsmaßnahmen, seit Mitte 2018 liegt eine Baugenehmigung für das Projekt vor.

EPILOG

Zweifelsohne ist die - gegenüber der Gründung des Bauhauses nur zehn Jahre jüngere - Kantgarage ein herausragendes Beispiel des „Neuen Bauens“, der „Neuen Sachlichkeit“, der „Klassischen Moderne“, des „International Style“. Aber bei allem Respekt vor Hundertjährigen – nicht alle Gebäude der Zwischenkriegszeit aus Beton, Putz und Glas sind „Bauhausarchitektur“. Diese im Verlauf der Jahre manifestierte ‚völlig unspezifische Bauhaus- Definition, bei der „Bauhaus“ und „Moderne Architektur“ gleichgesetzt werden‘ tadeln die Herausgeber der im Prolog zu diesem Beitrag genannten Publikation

des Bauhaus -Archivs bereits auf den ersten Buchseiten, unterliegen aber mit der Zuordnung der Kantgarage leider selbst diesem Irrtum. Dies verdeutlicht umso mehr, dass „Documentation and Conservation of the Modern Movement“ eine erforderlich Notwendigkeit für die Rezeption dieser Bauwerke ist und oberflächliche Schubladeneinordnungen den Erkenntnisgewinn keinesfalls fördern – oder wer hat bei der Betrachtung von Zweigenthals Fassaden erkannt, dass diese die szenografische Umsetzung des Tempo-Tempo-Zeitgeists der Zwischenkriegszeit durch einen Bühnenbildner wiedergeben, der gekonnt den Auftritt und Abgang der Darsteller in den Fokus des Rampenlichts setzte.

ENDNOTES AND QUOTATIONS

[1] Müller, Georg in *Wasmuths Lexikon der Baukunst, Bd. II, Berlin 1930, S. 570 u. 573*

[2] *Gescheit H. /Wittmann K. Hrsg.: Neuzeitlicher Verkehrsbau, Potsdam 1931, S. 13*

[3] Müller, Georg: *Großstadt-Garagen, Berlin 1925, S. 104*

[4] *Der Baumeister, München 1931, S. 170ff*

[5] Nobis, Norbert Hrsg.: *Der Lärm der Straße, Italienischer Futurismus 1909-1908, Hannover 2001, S. 367*

[6] *Le Corbusier, Kommende Baukunst, Berlin und Leipzig 1926, S. XIII*

[7] *Stiftung Bauhaus Dessau, Hrsg.: „Zukunft aus Amerika“, Fordismus in der Zwischenkriegs-zeit, Dessau 1995, S. 125*

[8] *Bauhaus Archiv Hrsg.: Bauhaus in Berlin – Bauten und Projekte, Berlin 1995, S. 70*

[9] *Hans Engels/Ulf Meyer, Bauhaus-Architektur 1919-1933, München 2001*

[10] *Julius Posener 1968 in einem Brief an Egon Eiermann, Südwestdeutsches Archiv für Architektur und Ingenieurbau*

[11] *Zweigenthal 1935 in einem Brief an Fritz Jaenecke, im Besitz Andreas Fig. 2: Zeitgenössische Postkarte, Urheberangabe auf der Rückseite: „Aufnahme Schwarz“)*

Fig. 3: Archiv Verfasser, Urheberangabe auf der Rückseite: Photo Pflugfelder

Fig. 4: Archiv des Verfassers

[12] *Angaben der Tochter Ilse (Serlin) Perlman gegenüber dem Autor am 06.11.2010*

[13] *Neue Baukunst, Berlin 1925, Heft 21*

[14] *Bauaktenarchiv Charlottenburg-Wilmersdorf, Kantstr. 126/127, Bd. 4*

[15] *1936 Umbenennung erzwungen in Jüdischer Autoclub e.V.; November 1938 Verbot; Quelle: Hochstetter, Dorothee, Motorisierung und Volksgemeinschaft, Das Nationalsozialistische Kraftfahrkorps 1931-45, 2005*

[16] *Entwurfspläne der Schwabengarage im Nachlass Herrey, im Besitz Antony Herrey, Cambridge*

[17] *Mitteilungen des Reichsverbandes des Kraftfahrzeughandels und -gewerbes e.V., Berlin 1930, Nr. 48, S. 1672*

[18] *Fritz Jaenecke bezeichnete Paulick 1935 in einem Brief an Zweigenthal als „...ihren alten Freund und Mitarbeiter...“ im Besitz Andreas Jaenecke*

[19] *Müller, Georg, Großstadtgaragen, Berlin 1925, S. 19; 55.*

[20] *Bauaktenarchiv Charlottenburg-Wilmersdorf, Kantstr. 126/127, Bd. 4*

[21] *Bauaktenarchiv Charlottenburg-Wilmersdorf, Kantstr. 126/127, Bd. 4*

[22] *Bauaktenarchiv Charlottenburg-Wilmersdorf, Kantstr. 126/127, Bd. 13*

[23] *Bauaktenarchiv Charlottenburg-Wilmersdorf, Kantstr. 126/127, Bd. 13*

[24] *Posener, Julius: „Garage Kant à Berlin“, Architecture d'Aujourd'hui, Bologne 1933, H. 5 S. 42-44*

[25] *Müller, Georg in Bauwelt, Berlin 1930, S. 1413f und in Beton und Eisen, Heft 1/1931 S. 5;10-12; Stellungnahmen des Bauherrn und der Planer Korschelt, Oskar und Renker, Jakob in Bauwelt, Berlin 1930, S. 1701f*

[26] *Bauaktenarchiv Charlottenburg-Wilmersdorf, Kantstr. 126/127, Bd. 12*

[27] *Bauaktenarchiv Charlottenburg-Wilmersdorf, Kantstr. 126/127, Bd. 14*



Cover Figure: Holy Haert Parish Church Hasselt (B) during a dance performance in 2018, stained-glass by Michel Martens, 1958-61. © Photo: Inge Delée, 2018.

Modern Materiality. The Conservation Challenge of Architectural Glass in Modernist Churches

Zsuzsanna Böröcz

KU Leuven, University of Antwerp, Belgium

ABSTRACT

Traditionally, architectural stained-glass is classified in the applied arts. This attribution belies its complex relation with architecture and culture and does not help the conservation of modernist architectural glass, especially in the context of reuse. During the Modern Movement, influenced by themes such as functionalism, innovation and democratisation, church windows were the subject of vivid debate. Opinions were proposed ranging from 'an outdated visual medium' over 'the ideal pivot between contemporary and Christian art' to 'a true vehicle of artistic quality'. Meanwhile, countless modern stained-glass windows were placed in modern churches and also in historic churches. In dealing with the problem of architectural glass, we argue that it is crucial to consider its fluid identity in relation to architecture, technicity, liturgy and society.

Churches in Europe are among the most endangered cultural icons, in contrast, the field of architectural church glass enjoys relatively little interest. Architects and art historians are called upon to make inventories and assessments, while expertise remains limited. And the questions are many: How did modernist ideas on free expression reflect on these products of interdisciplinary collaboration? How does architectural glass deal with the functionality and rationality demanded by modernism and by liturgy, or by new use? How to assess value within the interdisciplinary context? Our contribution attempts to shed light on the multifaceted position of church glass windows within the architectural, artistic and social context of early Modernism. And through a number of cases, we wish to show how this approach can inform decisions on preservation and (re)use.



Fig. 1: Church of Our Lady, Zonnebeke (B), architect Huib Hoste, 1921. Photography Oswald Pauwels © Photo: Oswald Pauwels Brugge, 2004.



Fig. 2: Church of Our Lady, Zonnebeke (B), architect Huib Hoste, 1921. © Photo: Oswald Pauwels Brugge, 2004.



Fig. 3: Church of Our Lady, Zonnebeke (B), stained-glass windows by Huib Hoste, 1921. © Photo: Emmanuelle Groenen, 1991.

1. INTRODUCTION

In the context of the conservation and reuse of modernist architecture, catholic church buildings pose a pressing problem in Western Europe due to secularisation. Church windows play an interesting role in this. When a church receives a new function, the stained-glass windows are often perceived as an obstacle which prevents the interior space from meeting the new requirements. In terms of preservation, this can give rise to a distinction between the hard architectural shell and the softer infill. However, this is at odds with the design spirit of many modernist churches, in which the architecture, interior furnishing and stained-glass windows are conceived as one formal, creative unity – the Gesamtkunstwerk.

2. STAINED-GLASS AND EARLY MODERNISM

During the Modern Movement, stained-glass church windows were the subject of exceptionally heated debate, while simultaneously being applied abundantly in new and, after WWII, also in historic churches.¹ Opinions varied from “an outdated visual medium” (Theo Van Doesburg)² over “the ideal pivot between contemporary and Christian art” (Georges Mercier)³ to “a true vehicle of artistic quality” (progressive Dominican fathers in France after WWII).⁴

This origin in disunity requires, we would argue, a wide range of knowledge and great carefulness when making decisions regarding conservation and reuse. But this appears to be very difficult. In Belgium for instance, the medium has long lost a place in the training of the architect, the interior designer or even the art historian. Meanwhile, glass has become omnipresent and transparency a buzz-word.

Using examples from the interwar period, I would like to address key aspects of stained-glass windows and their rela-

onship with Modernism, illuminating how they were conceived, and then share some insights on restoration and reuse. The stained-glass window of Josef Albers above the entrance hall of the Sommerfeld House in Berlin-Steglitz⁵ designed by Walter Gropius and Adolf Meyer is considered one of the first examples of truly non-figurative architectural glass and took central stage in the debate about the significance of this age-old craft for modern times.⁶ Expressing the Bauhaus Gesamtkunst-spirit, the etched window excels as an integrated part of the architecture, translating the architectural lines in a free, non-figurative drawing with the lead line.⁷ It raises an important question: is a stained-glass window architecture, ornament or fine art? According to the traditional classification, the stained-glass window belongs to the applied or minor arts. In its simplicity, this statement is misleading, for it avoids choosing one of three categories by naming a fourth, whose relation to the others is multiple and ambiguous. This, I believe, points to an essential problem for the conservation of stained-glass and architecture, in particular in modern architecture, namely: What is the nature and the degree of interdependence between the window, the architecture and the interior?

Beside Albers, another figure of the Modern Movement who dealt with the subject was Theo van Doesburg of De Stijl. For him, the art form of the future was ‘a spatial unity’, which would become art reduced to harmonious proportions, creating atmosphere. For creating an all-encompassing spatial experience of almost mystical nature he considered stained-glass a suitable technique. Painting on glass, in contrast, he condemned on account of the ‘material principle’ of the Modern Movement, as well as employing stained-glass windows as a means of figuration. In his view, their only function was



Fig. 4.: Church of Saint-Suzanna, Schaarbeek (B), view to the West, stained-glass windows by Simon Steger 1950's. © Photo: Oswald Pauwels Brugge, 2007.



Fig. 6: Church of Saint-Suzanna, Schaarbeek (B), Eastern façade. © Photo: Oswald Pauwels Brugge, 2007.



Fig. 5: Church of Saint-Suzanna, Schaarbeek (B), view to the East, stained-glass windows by Simon Steger 1950's. © Photo: Oswald Pauwels Brugge, 2007.

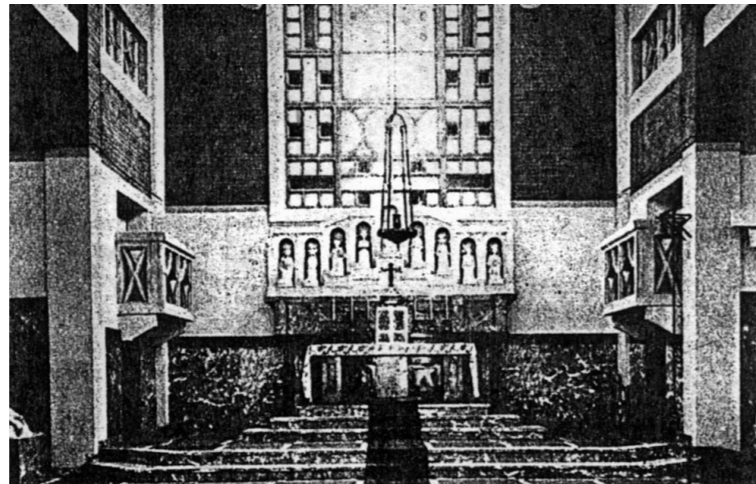


Fig. 7: Church of Saint-Suzanna with view on the altar, original state, Schaarbeek (B). © Bâtir, March, 1936, p. 591

to serve the dematerialization of architectural space. Consequently, the stained-glass artist needed to think from the material itself, preferably clear industrial sheet glass, preserving the functionality of the window. Stained-glass as mere coloured ornament was also rejected, as it denied the possibility to express the spiritual through "figuration without representation". To him, this was the only way it could contribute to the unity between light, colour and space, he deemed necessary in architecture. That Van Doesburg connected stained-glass to the search for a secular form of spirituality attests to the fact that the Modern Movement did not embrace rationality at the exclusion of spirituality – nor did the early Bauhaus.⁸

3. THE LITURGICAL MOVEMENT: MODERNISM IN CHURCH ARCHITECTURE AND STAINED-GLASS

At the beginning of the 20th century, Pope Pius X ordered all office-holding members of the Church to swear an 'oath against Modernism'.⁹ The same pope however also introduced a new conception of liturgical space, stating that "it is the assembly of the believers which is the first and indispensable source for the sacred character of the church building and this by virtue of the active participation in the divine mysteries of the Church".¹⁰ This statement would greatly influence the concept of a church building, as it considered not in the architecture the cradle of a sacred character, but the congregation. This notion, inspired by early Christianity, triggered the so-called Liturgical Movement.¹¹ It saw the return to the source not as an aversion of the contemporary; it considered liturgy a form of art.¹² This notion created an opening to the ideals of sobriety in modern art and architecture. Though the anti-modernism oath remained in effect until 1965, a spark of modernity had entered

the faith which sought to reconcile Modernism and sacred art. In an early application of this new approach, the young Rudolf Schwarz refurbished the knight's hall at the Rothenfels Castle into a multifunctional space: the Christian banquet hall (1924-1928).¹³ The community being the essence of liturgical celebration was evoked by a pure interior space with an altar as the focal point and daylight by stained-glass windows by Anton Wendling. The windows are very sober, using patterns of straight lead lines, filled with pieces of pastel-coloured glass to subtly play the light without communicating content. This architecture 'in full poverty' became the example of an ideal which understood emptiness not as privation but as a positive quality.¹⁴

4. A MODEST SPIRITUALITY BETWEEN TRADITION AND MODERNITY

In the same period in Belgium, the quest for a contemporary catholic architectural and artistic identity shows a vacillation between modernism and traditionalism. An advocate for the new concepts of the Liturgical Movement and a protester against the imposition of a neo-(gothic) style, was the Belgian architect Huib Hoste (1881-1957),¹⁵ who had stayed in the Netherlands during the First World War and was a founding member of CIAM in 1928. Though the reconstruction in Belgium after WWI was done mostly in a historicizing manner with only minor influences of Modernism,¹⁶ Hoste's parish church of Our Lady, built on the site of the destroyed Romanesque Revival abbey church of Zonnebeke in West-Flanders in 1921 (Fig. 1, 2), is a notable example of fusion between a traditionalist and a modernist approach.¹⁷ The church erected in brickwork is a basilica with a transept and a closed-off apse.



Fig. 8: Church of Saint-Suzanna with view on the window above the altar after restoration, 2019. © Photo: A. de Ville de Goyet, urban.brussels, 2018.



Fig. 9: De Kapel, the Chapel of Good Shepherd Muizen (B), after reuse, 2015. © Photo: AIKON Producties, DE KAPEL, 2018.

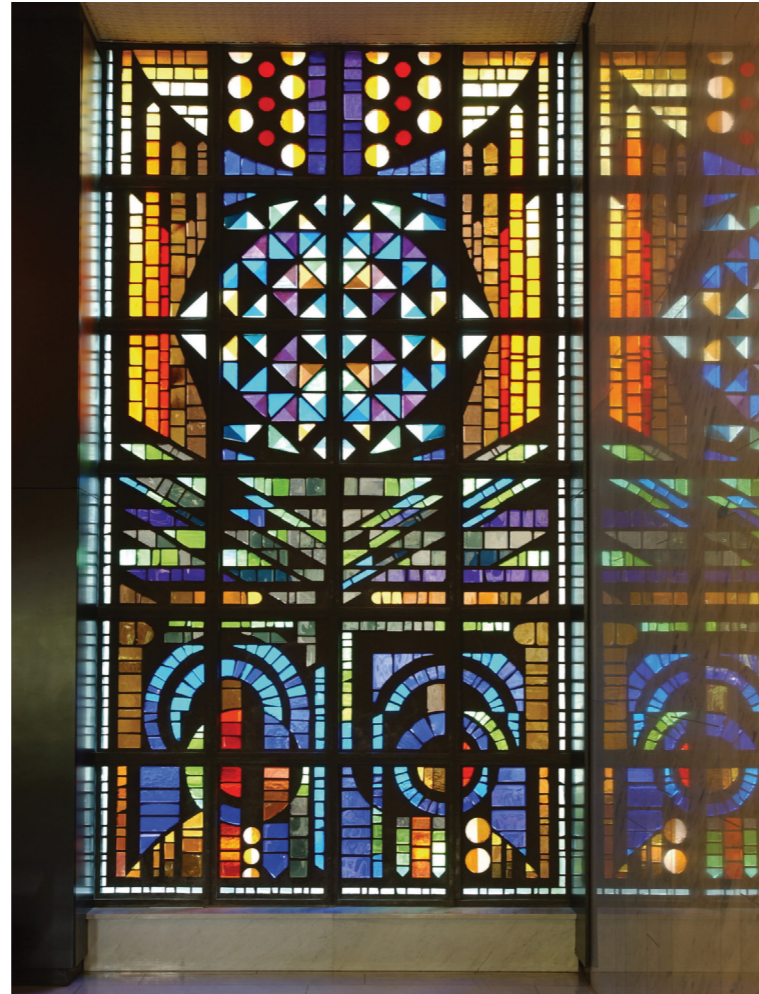


Fig. 10a: Jean-Pierre Tuerlinckx, Tree of Life and Wealth, 1975, glass-in-concrete. © Photo: Jaques Sonck, 2005.

The nave measures 31 by 25 meters and is covered by a visible roof structure in reinforced concrete which offer an unimpeded view on the altar, an early example in church architecture. The width of the middle aisle contrasts with the narrow side aisles, reduced to corridors. Hoste designed the abstract stained-glass windows himself, using blown antique glass, coloured in the mass and without painting to allow in maximum daylight (Fig. 3). The geometric patterns of Hoste echo the work of Van Doesburg and may prompt someone to situate Hoste's windows in the line of neo-plasticism.¹⁸ But the latter's compositions do not possess the dynamism and autonomy of De Stijl. The appearance of this liturgical space is rather static, something underlined by the windows, which take on an ornamental and subservient role. On the other hand, one could say the windows strengthen the impression of modest religiosity that the church interior is striving for, thereby fulfilling the atmospheric function proposed by Van Doesburg. In this respect, Zonnebeke can be considered an early attempt at reviving the ideals of early Christianity by creating an atmosphere conducive to the participation in the liturgy. This interesting piece of subdued early-modern architecture reflects an age in transition and would soon be followed by more daring attempts, such as the Saint-Suzanna church in Schaarbeek in the Brussels Capital Region (Fig. 6).

5. MODERNISM REBUKED: THE SAINT-SUZANNA CHURCH

Soon after completion, the church of Our Lady in Le Raincy (1922-1923) by Gustave and Auguste Perret became a major inspiration for church architects interested in new techniques such as reinforced concrete.¹⁹ The concrete structure and claustra's inspired the first church made of concrete in Belgium, which also boasted an impressive series of stained-glass. The construction of

the Saint-Suzanna church started in 1925, to the plans of architect Jean Combaz, which provided large surfaces of glass-in-concrete – an architecture of light intending to express the 'Triumphant Church'. Here, a concrete post-and-beam structure in a square pattern was used to create a large, unobstructed interior with a clear view on the altar (Fig. 7).²⁰

The facade and flat-roof structure are completed with concrete claustra's in different motives. The rectangular space was inspired by the ideas of Armand Thiéry (1868-1955), a progressive professor of theology at the Catholic University of Leuven, and an architect, artist, lawyer, psychologist, and brother of the client. He also designed the stained-glass for the claustra's.²¹ For the windows of the lateral façades with a larger central opening, as well as for the cross-shaped rooflights, Thiéry made use of intensely coloured, rectangular, decorative stained-glass designs in abstract Art Deco style, with some inscriptions.²² In addition, he designed several more traditional figurative windows. This avant-garde liturgical interior clearly came too soon and was immediately condemned for being too 'profane' and too 'cubist'.²³ But – and this is an important detail – while in Le Raincy the figurative stained-glass windows sit in the north and south facades, influencing the liturgical space, the figurative windows in Schaarbeek are situated on the west side, effectively out of view of the congregation during the Eucharist. Thiéry used figuration only for remembering and thanking donors, not for a liturgical purpose. The windows responsible for daylighting the interior were abstract. Already from 1933 onwards the progressive character of the church was rolled back. The openings behind the altar were bricked up and the stained-glass windows in the ceiling painted black. Later, in the fifties, the abstract windows with their atmospheric play of light were



Fig. 10b: Jean-Pierre Tuerlinckx, *Tree of Life and Wealth*, 1975, glass-in-concrete, detail. © Photo: Jaques Sonck, 2005.



Fig. 11: Hotel Martin's Patershof, former Franciscan Church, Mechelen (B), 2019. © Photo: Martin's Patershof, www.martinshotels.com, 2010.

replaced by figurative compositions designed by the stained-glass artist Simon Steger under the supervision of the Royal Commission of Monuments and Landscapes (Fig. 4, 5). In addition, the walls were painted in a darker colour to match the windows.

In 2003, the interior of the church was listed, including the post-war windows, with only three abstract windows remaining in the tower, out of sight. The recent restoration chose to preserve the post-war situation. The alterations, which started soon after completion, show a total lack of understanding for the modernist concept of architecture and liturgy, and the problem persisted after WWII. Because the new windows are valuable contributions to the post-war modernisation of stained-glass, showing links with the style of Picasso, for the restoration of the church, which started in 2014, one had no choice than to preserve them. The large choir window, which had been shielded off for over 50 years, was reopened, and the central part filled with a new window picturing a cross. The surrounding decorative parts with their twofold style are still original (Fig 8). Close attention was paid to the uniformity of the whole. Especially challenging was this choir window because the new central stained-glass had to fit with both the pre-war pastel-coloured glass (of which some remained) and the stronger colors of the 1950's.²⁴

6. REUSE: A CHALLENGE FOR GESAMTKUNST

Flanders can recently boast several cases of successfully reused church buildings with modern stained-glass windows.

On the edge of the village of Muizen near Mechelen, a brickwork chapel dated 1936, named after the Good Shepherd, was adapted in 2015 into an 'event- and exposition room' (Fig. 9). Mainly used for wedding ceremonies and other festivities, the eye-catcher is a huge

ornamental and colourful glass-in-concrete window by Jean-Pierre Tuerlinckx (°1932) (Fig. 10a,10b).²⁵ The monumental work dated 1975 is an abstract mosaic measuring 4,92 m by 2,65 m, which depicts the profane topic of the Tree of Life and Wealth. It had been conceived for the foyer of the Antwerp Provincial Hall, demolished in 2014²⁶, and was given on loan by the Province of Antwerp.²⁷ This origin prevented the need to adapt a sacred character to a profaned setting. It made this a case of double reuse: combining and valorising a disused work of sacred architecture with an orphaned work of modern stained-glass.

A second case lies in the centre of Mechelen. The Gothic Revival Friar Minors (Franciscan) church nicknamed 'Patershof'²⁸ has been reused as a 4-star hotel, in which the post-WWII stained-glass windows feature as the major attraction (Fig. 11- 14). The reconversion dating from 2006-2009 is the work of architect Daniël Jonckers from the local office Signa²⁹ and received the renovation price in the 2010 Steel Construction Competition.³⁰ The project supervised by the City Monument Care Department can be considered a great success, not the least due to the preserved stained-glass windows which contribute significantly to the charm of the hotel. However, the fact that nobody knows the windows' designer or date of execution and that there are no historic photographs, reminds one of the minor status and absence of (scientific) interest for the medium.

Beside these two recently executed best-practice cases, there are hundreds of Flemish parish churches waiting for reuse, some featuring remarkable works of modern stained-glass. An example of post-war urban development, the Holy Heart parish in Hasselt received in 1960 a daring modern church by the architect G. Daniëls (1906-1978), in which stained-glass windows dominate a huge rectangular space



Fig. 12: Hotel Martin's Patershof, former Franciscan Church, Mechelen (B), stained-glass windows unknown. © Photo: Martin's Patershof, www.martinshotels.com, 2010.

under a low-sloping roof.³¹ One of the most important glass artists of post-war Belgium, Michel Martens (1921-2006), provided no less than 500 sqm of non-figurative compositions, executed using a combination of antique glass and 'Glasal' opaque glass.³² The church, equipped with a listed historic organ, is already used for side functions. While Sunday mass is still read weekly, the church is open to students as a quiet place for study during the summer exams,³³ or in contrast, as a repetition and performance space for a local dance school (Fig. 15).³⁴ While the definitive new function is under consideration, options ranging from a mosque to an organ museum are circulating.³⁵

Responding to the acute problem of empty churches, the Flemish government set up a 'Project Office for Church Reuse' (Projectbureau Herbestemming Kerken).³⁶ At the initiative of the Flemish Minister-President and the Flemish Government Architect, there is since 2016 the possibility to receive support in organizing a feasibility study for partial or complete reuse of parish churches.³⁷ Best-practise cases feature in an inspiration library on the website, and research-by-design reports are free to download. Though the Project Office maintains a high standard, no particular attention is paid to the fate of stained-glass windows.

7. CONCLUSION

The reuse of Modernist churches puts a strain on the integrity of the liturgical interior, which consists of an architectural shell and its furnishings in an indivisible unity. Stained-glass windows hold a special place herein, somewhere between architecture, interior and art. Though there are approximately a thousand examples from the 20th century in Flanders alone, the cases presented demonstrate

how Catholic church architecture started to adopt the art and architecture of Modernism early on, at the instigation of the liturgical renewal. The Liturgical and the Modern Movements shared a conception of architectural space as a Gesamtkunstwerk. The idea that a liturgical space should create a modest, uncluttered, pure atmosphere for the community of believers resonated with the ideals of Modernism. In addition, modern architecture offered a range of new techniques, such as reinforced concrete and glass-in-concrete, spatial concepts and non-figurative compositions that could replace and sometimes outshine historicising solutions.

Cases of (adaptive) reuse often raise questions about the importance, value and necessity of certain 'elements of architecture'.³⁸ These questions not only lead to bigger questions about the core and the limits of architecture, but also about the relation between formal and social ambitions of the Modern Movement. The social and spatial concepts of the examples, shared by liturgy and modernism, were far ahead of their time and only became official guideline after the Second Vatican Council in 1965. Rome upholds them to this day, although society seems to have moved on. In a way, the old question needs repeating, this time in the context of heritage conservation, reuse and sustainability: How to reconcile places of worship with an evolving society?

The ideas behind this relatively young heritage – the Gesamtkunstwerk character, the interdependence of architecture, interior and translucent facade, the role of filtered, coloured, signified daylight in architectural space – are not outdated. Issues such as transparency, the relation between indoor and outdoor, or between ideals, use, space and matter are as relevant as ever. The question is: How to reintroduce or enhance historical awareness, and especially, the

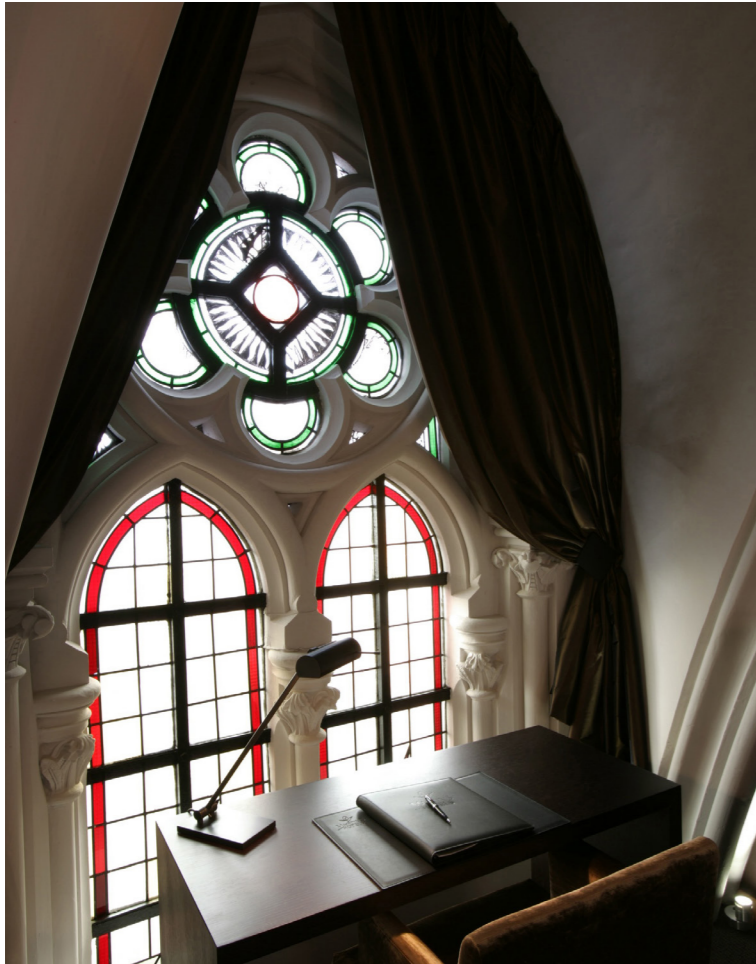


Fig. 13: Hotel Martin's Patershof, former Franciscan Church, Mechelen (B), stained-glass windows unknown. © Photo: Martin's Patershof, www.martinshotels.com, 2010.



Fig. 14: Hotel Martin's Patershof, former Franciscan Church, Mechelen (B), stained-glass windows unknown. Photography Martin's Patershof 2010 © www.martinshotels.com



Fig. 15: Holy Haert Parish Church Hasselt (B) during a dance performance in 2018, stained-glass by Michel Martens, 1958-61. Photography Inge Delée 2018 © Inge Delée.

ability to relate history and heritage to the present? In this perspective, technical issues such as the climatic conditions behind stained-glass windows, however challenging, are less daunting than the question how to preserve the spirituality of a given site and make it relevant today.

ENDNOTES AND QUOTATIONS

[1] In Flanders alone 429 churches were built during the interwar period and 469 after WWII. Together with 71 new built churches, which have not yet been identified and dated, this gives almost 1000 newly built churches, many of which containing stained-glass windows or glass-in-concrete.

See Veronique Boonen, Zsuzsanna Böröcz, Anick Tanssens (eds.), *Thematic Inventory of 20th-century Churches with a focus on the methodology and value criteria. Final Rapport*, commissioned by the Ministry of the Flemish Community, unpublished, 2009, 12-13.

[2] Van Straten, E., "De Stijl", in *Glas in lood in Nederland 1817-1968*, Carine Hoogveld (red.), Assen, 1989, 100-104.

[3] Mercier, Georges, *L'art abstrait dans l'art sacré: la tendance non figurative dans l'art sacré chrétien contemporain*, Paris : E. de Boccard, 1964, 163.

[4] See for example: Régamey, Pie-Raymond, "Tendances actuelles de l'art chrétien", *L'Art Sacré, Cahier 7*, 8-9, 1946, 8.; Couturier, Marie-Alain, "Aux grands hommes, les grandes choses", *L'Art Sacré*, 9-10, 1950, s.p. or Régamey, P. R. *Art sacré au XXe siècle?*, Paris : Editions du Cerf, 1952, 326.

[5] Illustration in Wikiarquitectura, "Sommerfeld House", <https://en.wikiarquitectura.com/building/sommerfeld-house/> (accessed 30 November 2018)

[6] Wingler, H. M., *Das Bauhaus. Weimar. Dessau. Berlin 1919-1933*, 3rd augmented edition of 1962 and 1968, Wiesbaden, 1975, 324-325.; Coulon-Rigoud, M., "A Short History of the Development of Twentieth-Century German Stained Glass", in *Architectural Stained Glass*, ed. Brian Clarke, London, 1979, 28.; Harrison Martin, "Twentieth-Century Stained Glass", in *Architectural Stained Glass*, ed. Brian

Clarke, Londen, 1979, 70, 73.; Beeh, S., "Le vitrail contemporain en Allemagne. Neues Glas in Deutschland", *Le vitrail contemporain en Allemagne. Bildvenster Deutscher Künstler von heute*, S. Beeh (red.), exh. cat., Lyon, la Manufacture – Chartres, Centre International de Vitrail, 15.06 – 30.09.1985, 12.; Schreiter, Johannes, "Verrières en grisaille et verrières =blanches= après 1945. Grisailen und Weiss Fenster nach 1945", *Le vitrail contemporain en Allemagne. Bildvenster Deutscher Künstler von heute*, S. Beeh (red.), exh. cat., Lyon, la Manufacture – Chartres, Centre International de Vitrail, 15.06 – 30.09.1985, 90.; Kaiser-Schuster B., "Bauhaus Reflections in Glass", *Neues Glas. New Glass*, 1, 1995, 28-35.; *Lichtblicke: Glasmalerei des 20. Jahrhunderts Deutschland*, exh. cat., Deutsches Glasmalerei-Museum Linnich, 29. 11. 1997 – 13. 04. 1997, Ostfildern-Ruit, 1997, 46.

[7] Kaiser-Schuster, op. cit., 28-33.

[8] Van Straten, E., op.cit., 100-104.

One of the stained-glass compositions which illustrate Van Doesburgs ideas is *Composition III*, 1917, Museum De Lakenhal inv.nr. B1318. See Wikipedia, https://nl.wikipedia.org/wiki/Bestand:Theo_van_Doesburg_-_Composition_with_window_with_coloured_glass_III.JPG (accessed on 30 November 2018)

[9] Encyclic of Pope Pius X Editae Saepe on St. Charles Borromeo, Rome, 26 May 1910.

[10] Pope Pius X, *Motu Proprio*, 22 November 1903.; Lamberts, J., "Active Participation as the Gateway towards an Ecclesial Liturgy", *Omnes Circumstantes. Contributions towards a History of the Role of the People in the Liturgy. Presented to Herman Wegman, Charles Caspers and Marc Schneiders (eds.)*, Kampen, 1990, 248-249.

[11] Lamberts, op cit., 246.

[12] Severus, V. E., "Die Liturgische Erneuerung. Besinnung und Ausblick", *Liturgische Bewegung nach 50 Jahren*, Th. Bogler (ed.), *Liturgie und Mönchtum. Laacher Hefte*, 24, Maria Laach, 1959, 8.; Kolbe, F. *Die Liturgische Bewegung, Christ in der Welt*, 4, Aschaffenburg, 1964, 36-37.; Lamberts, op cit., 245.

[13] Schnell, H., *Twentieth Century Church Architecture in Germany: documentation, presentation, interpretation*, Paul J. Dine (transl.), München, (1971) 1974, 52.

[14] Schwarz, Rudolf, "Eucharistischer Bau", *Das Münster*, 9-10, 1960, 297.

[15] Heynickx, Rayesh, "Doornen op het pad van de moderne kunst. Huib Hoste (1881-1957), een katholiek modernistisch architect worstelend met de moderniteit", *Bijdragen tot de Eigentijdse Geschiedenis*, 9, 2001, 153-190. See also his oeuvre catalogue: *De Winter, Liesbeth, Marcel Smets, Ann Verdonck, Tom Avermaetse and Bergje Provo, Huib Hoste 1881 – 1957, Focus architectuurarchieven 1*, Antwerpen: Centrum Vlaamse Architectuurarchieven, 2005.

[16] Resurgam: de Belgische wederopbouw na 1914, Marcel Smets (red.), publication on the occasion of the exhibition *Resurgam, Passage 44*, Brussels, 27. 03. – 03. 06. 1985, Brussels, 1985.; Verpoest, Luc, "Monumentenzorg en architectuur uit het interbellum in Vlaanderen: een stand van zaken", in *Monumentenzorg en architectuur uit het interbellum in Oost-Vlaanderen, West-Vlaanderen en Zeeland*, Ghent: Administration of East-, West-Flanders and Zeeland, 2000, 29, 31.

[17] De Houwer, Veerle; Heynickx, Rajesh; Jaspers, Patrik en Vanden Borre, Hugo, 'De ruis tussen een kromme en een rechte lijn. Huib Hoste en de kerk in Zonnebeke', *Monumenten & Landschappen*, 2,

23, 2004, 35-64.

[18] Leonard, Edward, "Moderne godsdienstige kunst: de kerk van Zonnebeke door Bouwmeester Huib Hoste, Vlaamsche Arbeid, 22, 1917, 177-178.; RBK, 's-Gravenhage, Archive Van Doesburg (legacy Van Moorsel): letter by Van Doesburg to Oud, 6.7.1919., in *Glas in lood in Nederland*, op cit., 100.; Groenen, Emmanuelle, *Het niet-figuratief glas-in-lood van de architecten Eduart Van Steenberghe (1889-1952) en Huib Hoste (1881-1957) in het Interbellum*, unpublished MA thesis, KULeuven, 1991, 95-97.

[19] Debié F., and P. Vérot, *Urbanisme et Art Sacré. Une aventure du XXe siècle*, Paris, 1991, 92.

[20] F.[louquet], P.-L., "Eglises en beton. Sainte Suzanna à Schaarbeek", *Bâtir*, March, 1936, 590-591.

[21] More over Armand Thiéry in Smeyers, Maurits, *Armand Thiéry (Gentbrugge 1868 – Leuven 1955. Apologie voor een geniaal zonderling*, in *Arca Louveniensis*, 19-20, Yearbook 1990-1991, Louvain, 1992.

[22] The realisation was done by the workshop of Arthur Charlier (1870-1930) and sons in Louvain.

[23] Maes, Krista, "Sint-Suzannakerk. Gustave Latinuslaan Schaarbeek", *Kadoc Studiedag. Betonkerken in Brussel. Katholieke kunst en moderniteit*, 13 October 2001, p. 6, 9.

[24] Erfgoed Brussels, "Sint-Suzannakerk in Schaarbeek", <http://erfgoed.brussels/news/sint-suzannakerk-in-schaarbeek> (accessed on 29 November 2018)

[25] 'Leuvensesteenweg (Muizen). Beschrijving', <https://inventaris.onroerenderfgoed.be/erfgoedobjecten/100290>, (accessed on 22 January 2019)

See more on J-P. Tuerlinckx in Valcke, Johan, *Gloed van glas*, exh. cat.,

15 May – 13 July 1986, Brussels, p. 231-232.

[26] Registers Ivo Bakelants 'Antwerpen. Provinciehuis Antwerpen' to consult in <http://org.kikirpa.be/bakelants/indexnl.html> (accessed on 22 January 2019)

[27] Collection of the Province of Antwerp, PI 013.

[28] Arch. Paul Stoop, 1870's. See more on the church in Gouverneur, Ed, *De minderbroeders te Mechelen 1231-1981*, Brussels: Licap s.v., 1981, p. 58-65.

[29] Projectbureau Signa N.V., [https://www.zoekenarchitect.be/jonckers-daniel/?&frm\[kantoor\]=PROJEKTBUROU+SIGNA+N.V.](https://www.zoekenarchitect.be/jonckers-daniel/?&frm[kantoor]=PROJEKTBUROU+SIGNA+N.V.) (accessed on 07 March 2020).

[30] Staalbouwwedstrijd: Kerkhotel Patershof (Signa), <http://www.architectura.be/nl/nieuws/1495/staalbouwwedstrijd-kerkhotel-patershof-signa> (accessed on 22 January 2019)

[31] Parochiekerk Heilig Hart bouwkundig element, <https://inventaris.onroerenderfgoed.be/erfgoedobjecten/21934> (accessed on 24 January 2019)

[32] Böröcz, Zsuzsanna, Michel Martens glasramen. Licht is mijn materie, glas mijn medium, Oostkamp: Stichting Kunstboek, 1999, p. 78.

[33] Studenten blokken in koele Heilig Hartkerk, https://www.nieuwsblad.be/cnt/dmf20140615_01141660 (accessed on 22 January 2019)

[34] Dansschool Libert Hasselt danst in Heilig-Hartkerk, <https://focusophasseltext.traatjes.wordpress.com/2018/05/03/dansschool-libert-hasselt-danst-in-heilig-hart-kerk/> (accessed on 25 January 2019)

[35] Moslims lonken naar Heilig Hartkerk, https://www.hbvl.be/cnt/dmf20150606_01717679/moslims-lonken-naar-heilig-hartkerk (accessed on 18 January 2019), <https://www.hln.be/regio/hasselt/n->

va-wil-orgelmuseum-in-heilig-hartkerk~abb25225/ (accessed on 22 January 2019), <https://www.vlaamsbouwmeester.be/nl/kerken> (accessed on 19 January 2019)

[36] There are also smaller initiatives like the Kempenlab2 in the province of Antwerp by Ar-tur. See more in <https://centrum.ar-tur.be/category/kempenlab/kempenlab-2-landschap-van-kerken/> (accessed on 22 January 2019)

[37] <https://www.vlaamsbouwmeester.be/nl/kerken> (accessed on 22 January 2019)

[38] Koolhaas, Rem, Stephan Trüby, James Westcott, *Elements of Architecture*, Taschen, 2018.

BIBLIOGRAHPY

DE HOUWER, Veerle; HEYNICKX, Rajesh; JASPERS, Patrik and VANDEN BORRE, Hugo, 'De ruis tussen een kromme en een rechte lijn. Huib Hoste en de kerk in Zonnebeke', *Monumenten & Landschap*, 2, 23, 2004, 35-64.

DE WINTER, Liesbeth; Marcel SMETS, Ann VERDONCK, Tom AVERMAETE and Bregje PROVO, *Huib Hoste 1881 – 1957, Focus architectuurarchieven 1*, Antwerpen: Centrum Vlaamse Architectuurarchieven, 2005.

F.[LOUQUET], P.-L., "Eglises en beton. Sainte Suzanna à Schaerbeek", *Bâtir*, March, 1936, 590-591.

HEYNICKX, Rayesh, "Doornen op het pad van de moderne kunst. Huib Hoste (1881-1957), een katholiek modernistisch architect worstelend met de moderniteit", *Bijdragen tot de Eigentijdse Geschiedenis*, 9, 2001, p. 153-190.

LAMBERTS, J., "Active Participation as the Gateway towards an Ecclesial Liturgy", *Omnes Circumstantes. Contributions towards a History of the Role of the People in the Liturgy. Presented to Herman Wegman, Charles CASPERS and Marc SCHNEIDERS (eds.)*, Kampen, 1990, p. 234-261.

LEONARD, Edward, "Moderne godsdienstige kunst: de kerk van Zonnebeke door Bouwmeester Huib Hoste", *Vlaamsche Arbeid*, 22, 1917, 174-180.

SCHWARZ, Rudolf, "Eucharistischer Bau", *Das Münster*, 9-10, 1960, 296-299.

Thematic Inventory of 20th-century Churches with a focus on the methodology and value criteria. Final Rapport, BOONEN, Veronique; Zsuzsanna BÖRÖCZ, Anick TANSSENS (eds.), commissioned by the Ministry of the Flemish Community, unpublished, 2009, 71pp. and index.

VAN STRATEN, E., "De Stijl", in *Glas in lood in Nederland 1817-1968*, Carine HOOGVELD (red.), Assen, 1989, 100-107.

Memoria and Monunment. The Graves Laura Perls and AlberMendel in Berlin-Weissensee

Nina Nedelykov, Pedro Moreira

Nedelykov Moreira Architekten, Berlin, Geramny



Cover Figure (Fig. 1): Laura Perls Grave, © Photo: 1920's, photographer and archive unknown. First published by Franz Schulze 1985 with credits to the MoMA, Mies van der Rohe Archives, New York. In 2014 though MoMA/Scala Archives could not inform about the whereabouts of the original image.

ABSTRACT

The Graves of Laura Perls (1919) designed by Ludwig Mies (van der Rohe) and of Albert Mendel (1923) designed by Walter Gropius are located in the Jewish Cemetery Weissensee in Berlin. Both were commissioned by early clients and promoters of the architects: Ludwig Mies had built House Perls in Berlin-Zehlendorf for Laura Pearl's only son Hugo in 1911-12, and Gropius designed interiors and furniture for the apartment of Albert Mendel and his wife Tony in Berlin-Tiergarten in 1913-14 and 1921 remodelled their lakeside mansion in Berlin-Wannsee.

Members of both families left Germany in the early 1930's, the cemetery remained neglected and the graves were almost forgotten. At the beginning of the 1980's they were „rediscovered“, when in 1985 Franz Schulze included the Laura Perls Grave in his monography on Mies van der Rohe, and Hartmut Probst, preparing the work-cata-

logue of Gropius with Christian Schädlich, rediscovered the Albert Mendel Grave and documented it for the first time in 1983.

These two graves stand for an almost forgotten field of activity of architects in the early XXth century, sepulchral architecture. They document the special relationship between the architects and their clients, and they well represent a transitional phase in the oeuvre of both architects, in which seeds for subsequent developments can be recognized. The research and the restoration work also brought us new insights into the lives of the clients and into the working methods and techniques of both architects in that period.



Fig. 2: Laura Perls Grave, Jewish Cemetery Weissensee, Berlin, Ludwig Mies (van der Rohe) 1919. The monument in it's „as found“ condition. © Photo: Pedro Moreira, Archive Nedelykov Moreira Architekten, 2014.

INTRODUCTION

„Building is the shaping of life processes“

If that maxim pronounced by Walter Gropius in 1924 is taken as a reference to almost every aspect of conceptual approaches within the Bauhaus, it is just logical to apply it at length and realize that death is intrinsic to „life processes“ and therefore subject of a worthy form giving. Since immemorial times the design of sepulchral architecture has been a field of activity for architects, engineers, artists and craftsmen and the Early Modern Movement is no exception. In the oeuvre of many architects, one finds astonishing works that did not find their way into the literature and the official storytelling of Modern Architecture. There are certainly many explanations for this phenomena: the scale of these works, religiousness, stigmata and surely their private nature, which explains the missing documentation or publication after their erection. The changes in habit and tradition in western societies, particularly after World War II, must be taken into consideration and led us to a differentiated, perhaps more distanced relationship to the celebration of death. In the period from 1919 to 1932 both, Ludwig Mies van der Rohe and Walter Gropius engaged in a considerable number of designs for private graves, collective graves and monuments to the dead. Ludwig Mies was the son of a stonemason who worked for cemeteries and in his father's workshop, he apparently designed his first grave in Aachen at the age of 17. The Laura Perls Grave though is the very first

work in a sequence of modern designs that evolves to his „Monument to the November Revolution“ in Berlin-Friedrichsfelde 1926, to his probable participation in his brother's design for the grave of their parents in Aachen 1928 and to his several known design variations for the remodeling of Schinkel's „Neue Wache“ in Berlin 1930. In the case of Walter Gropius, the sequence of burial monuments seems to start with his commission for the design and construction of the „Monument to the Fallen of March“ in the Main Cemetery of Weimar 1921-22, followed by the Albert Mendel Grave in the Jewish Cemetery Berlin-Weissensee, the Gravestone Pauline Reis in the Meiningen Jewish Cemetery, both 1923, and the Grave Erwin Bienert in the Inner Plauener Cemetery in Dresden 1930-31. The Graves Laura Perls and Albert Mendel in the Jewish Cemetery Weissensee in Berlin also document the special relationship between the architects and their early clients and promoters: Ludwig Mies had built his second house for Laura Pearl's only son Hugo and his wife in 1911-12, and Gropius designed the interiors and furniture for the apartment of Albert Mendel and his wife Tony in Berlin-Tiergarten in 1913-14 and remodelled their lakeside house in Berlin-Wannsee in 1921. The two works also represent a transitional phase in the oeuvre of the architects and one can recognize in them the seed for subsequent developments. Their research and restoration work brought us new insights into the working-methods and techniques of both architects in that period.



Fig. 3: Laura Perls Grave, Jewish Cemetery Weissensee, Berlin. Dismantling of the main volume with exposure of its core of bricks and earth, penetrated by ivy roots.
© Photo: Pedro Moreira, Archive Nedelykov Moreira Architekten, 2015.



Fig. 4: Laura Perls Grave, Jewish Cemetery Weissensee, Berlin. Condition after reassembling, restoration and reconstitution of vegetation. © Photo: Pedro Moreira, Archive Nedelykov Moreira Architekten, 2018.

THE GRAVE OF LAURA PERLS VON LUDWIG MIES (VAN DER ROHE)

The second building of the young Ludwig Mies as a self-employed architect was a private house in reduced classicistic, Schinkel-inspired manner, which he erected for the „just married“, well off young couple Käte and Hugo Perls in Zehlendorf south of Berlin. Hugo Perls, born in the same year as Mies, was a young lawyer of Jewish descent from Rybnik in Silesia. His father Hugo Perls was a provincial banker and died just before his birth. His mother Laura, whose maiden name was Haase, was the daughter of a family of Jewish leather manufacturers, moved soon to Berlin. In early 1910 Hugo married Käte Kolker from Breslau; her uncle Hugo Kolker was a powerful oil refinery and factory owner, a collector and patron of Modern Art in Silesia. His daughter Elsa, Käte's closest friend, married the well-connected art historian and critic Curt Glaser, a son of Emma Haase, a sister of Laura's. On their honeymoon, Käte and Hugo were joined by their cousins and travelled to Paris, visited galleries and artists and purchased a number of artworks, including a Picasso. This trip marked the beginning of the career of Käte and Hugo Perls and later their sons as successful art dealers. The young couple met Ludwig Mies 1910 when he appeared at a salon evening in their apartment. According to Hugo's memoirs, Mies spoke little but impressed his hosts and as a result, built their house in 1911-12. Young Max Pechstein decorated the dining room walls, and to the artworks in the house came 1913 two oil portraits of the owners and 340 graphic works by Edward Munch. But not long after moving in, the Perls decided to exchange the house for five paintings of Max Liebermann and move to Tiergarten. The new owner was the Marxist publicist, political negotiator of

the Spartacus Group, editor of the „History of Intimate Behaviour“ and art collector Eduard Fuchs. On the recommendation of the Perls, Mies build one of the two intended art-gallery extensions to the house in the 1920's and by 1926 Fuchs became the promotor of Mies for the design of the Monument to the Fallen of the 1918 Revolution in Berlin-Friedrichsfelde. So much to „connections“. As Hugo asked „his“ Architect at the Beginning of 1919 to design the grave for his mother, who died on January 5th at the age of 56, Ludwig Mies had just returned from military service and Germany went through a period of high unemployment and socio-political instability. The Laura Perls Grave intrinsically follows a common typology used in Berliner Jewish cemeteries from 1900 onwards: low granite thresholds define the perimeter of the square shaped plot, a „headstone“ placed in the back side holds the lettering and a symbolic mound in the foreground is covered with ivy. Two aspects are specific to Mies's design. The headstone consists of thirteen blocks of shell limestone organized in four rows slightly stepping back upwards, with a single massive piece on top, on which bronze lettering with the deceased's name, birth and death dates was fixed. A low railing with three cast iron pylons and an iron bar fixed onto the back threshold complement the work „as found“. There are no drawings of the grave and so far only one undated foto from the 1920's informs us about it's original appearance. It reveals that the design consisted of more than just „stones“. The „second half“ of Mies's design was „green walls“ of yew hedges: a back hedge with over two meters high, hiding the graves behind it, and two L-shaped „parapets“, slightly lower than the „headstone“, forming a „court“ with an ivy mound in its middle. By 2010 most of the vegetation had disappeared or grown wildly, some of the remaining yew had reached a height of seven meters.

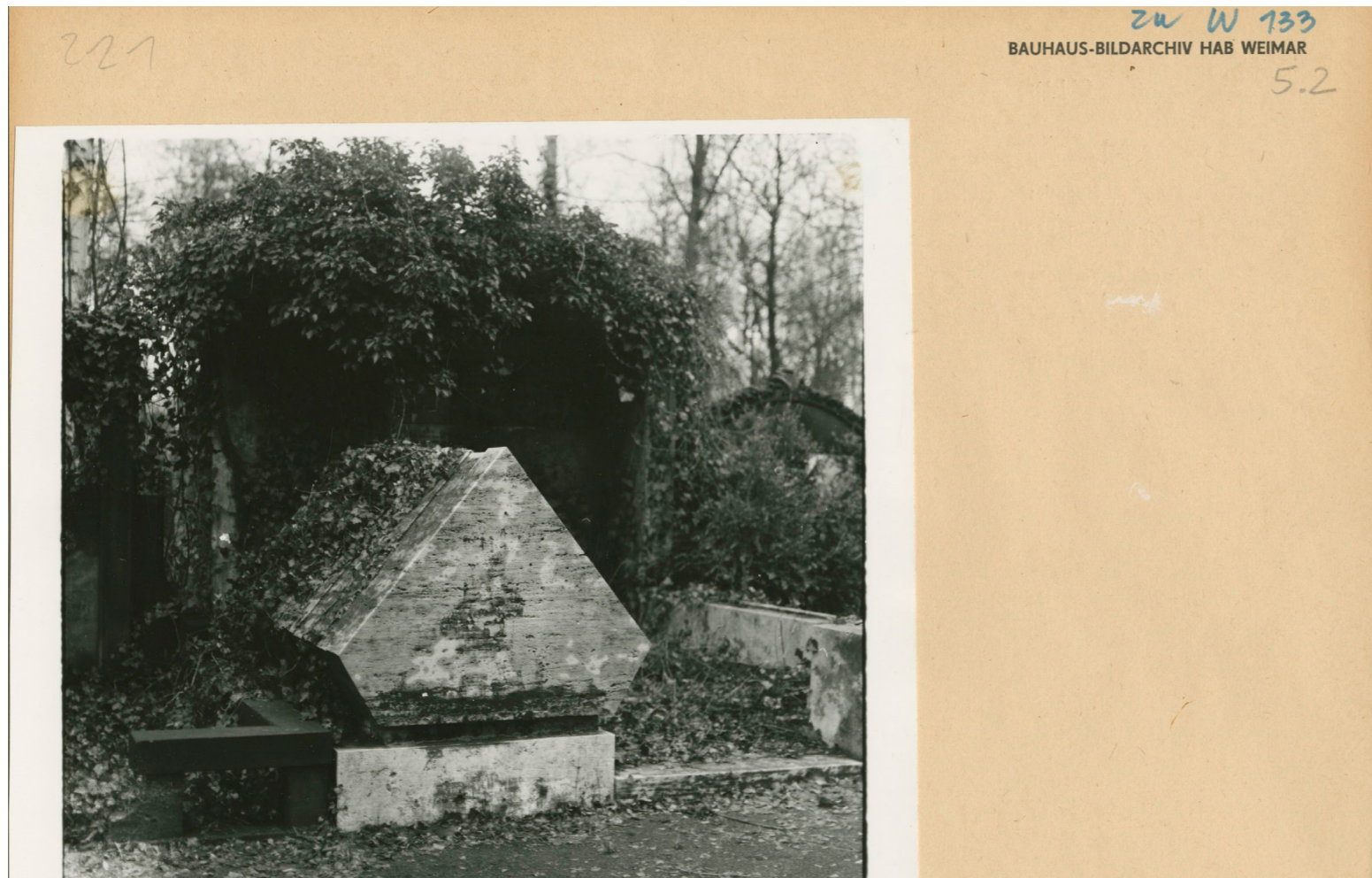


Fig. 5: Albert Mendel Grave, Jewish Cemetery Weissensee, Berlin, from Walter Gropius, 1923. © Photo: Hartmut Probst. Bauhaus Universität Weimar, AdM - Archiv der Moderne, Collection Hartmut Probst, 1983.

The thresholds layed partly underground. All blocks of the headstone still existed but had diverged and ivy was emerging from the gaps. The bronze lettering had disappeared completely and had been substituted by engravings. The mound was gone and the railing was preserved but deteriorated. After the analysis, documentation, prospection and the removal of the excessively grown vegetation, we decided to dismantle and reassemble the parts. The big surprise came as the upper block (weight: two tons) was removed: the inside of the puristic volume consisted of bricks assembled with ... mud! No lime or cement was used as mortar. The first thought was, that this was possibly due to lack of materials immediately after the war. Roots of ivy and yew had penetrated the headstone and were setting the lower stone blocks apart. Actually, these turned out to be only a cladding of the core. For a functional reason of accommodating the coffin in its length, two separate brick foundations reaching one meter depth were built, so the headstone was constructed over it „as a bridge“. The foto from the 1920's appeared 1985 in Franz Schulze's „Mies van der Rohe. A critical Biography“. As a source, he indicated „The Museum of Modern Art, New York“. But the Mies Archives in the MoMa could not find it and when we asked Franz Schulze in 2015, he could not recall the source anymore. So we had to rely on the poor reproduction from the book and on an unknown foto we obtained from a family album, probably taken by Hugo Perls during his first return to Europe in 1955. This image shows the condition of the grave with a new engraving, probably done at his request. We decided on a layered solution involving reconstitution and conservation. The singular bronze lettering, whose type designer is unknown, was reinterpreted on the basis of the photo from the 1920's and reinstalled onto the engraving.

The vegetation was reconstituted in collaborat on with Landscape Architect Reinald Eckert.

In a few years, it will achieve it's originally intended spatial effect.

THE GRAVE ALBERT MENDEL VON WALTER GROPIUS

Walter Gropius met Albert Mendel and his wife Frau Tony around 1912. They had moved to a big apartment house on the southwest side of the elegant Lützowplatz close to the Tiergarten and hired the architect to take care of the furnishing and decoration of the representative rooms. Gropius, in collaboration with Adolf Meyer – had just initiated the second building phase of the Fagus-Werk in Alfeld, designed the Model Factory of the Werkbund Exhibition 1914 in Köln and achieved recognition as furniture designers at the World Fair in Geneva etc. Albert Mendel was a co-founder of Fishbein & Mendel, a very successful, expanding manufacturer of ready-made clothing. The Company's architects Hans Bernoulli and Louis Rinkel had built two imposing stone and glass buildings at Lindenstrasse next to the synagogue (1908-09 and 1911-12) but Bernoulli was appointed „chief architect“ for the Basler Gesellschaft in his home town, and Mendel searched for a new architect and designer. Around 1911 the Mendels bought a large lakeside estate on the east side of the Wannsee with an eclectic mansion from 1892. In 1921 Gropius redesigned its hallways, staircase and some rooms. At the same time, he was working on the Sommerfeld House and the Monument to the Fallen of March a.o.. As Albert Mendel unexpectedly died on October 10th 1922 Tony Mendel requested Gropius to design his grave in the Jewish Cemetery Weissensee. The work was completed by mid-1923. No drawings or photographs from the time are known but a collection of around 50 documents preserved at the Thüringer Hauptstaatsarchiv, Collection



Fig. 6: Albert Mendel Grave, Jewish Cemetery Weissensee, Berlin, from Walter Gropius, 1923. The monument in its „as found“ condition. © Photo: Pedro Moreira, Archive Nedelykov Moreira Architekten, 2014.

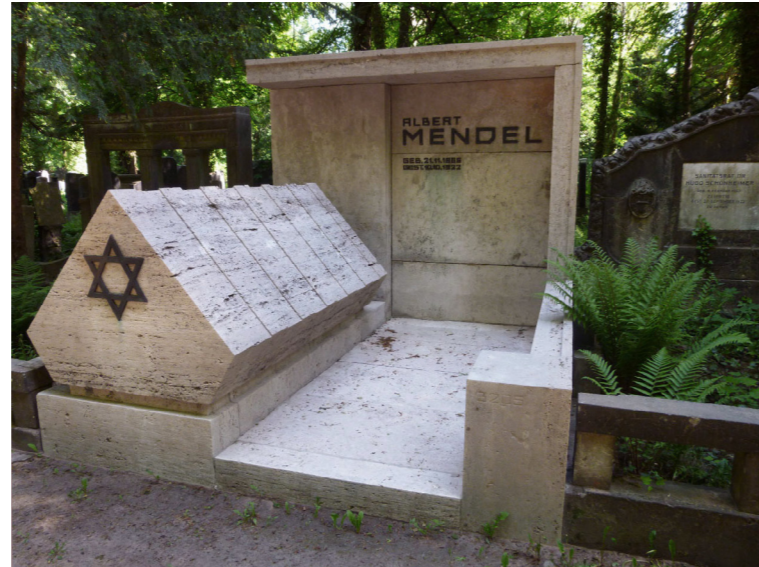


Fig. 7: Albert Mendel Grave, Jewish Cemetery Weissensee, Berlin. Condition after partial reassembly and restoration. © Photo: Pedro Moreira, Archive Nedelykov Moreira Architekten, 2018.

Staatliches Bauhaus Weimar confirm unmistakably that Gropius saw in this work a further opportunity to connect his office's work to the workshop of the Bauhaus. The complexity of those documents cannot be addressed here, but we know that at least Josef Hartwig was involved in the realization. Tony Mendel, who was one of Albert Einstein's closest friends, emigrated 1933 to Holland and later to Canada with the daughter Hertha and her husband and cousin Bruno Mendel. Both played a major role in the support to Jewish immigrants and the rescue of Jewish orphans, particularly from Vienna. The Grave in Berlin remained almost forgotten, except for visits of a former maid of the family 1948 (noted in cemetery book). In 1983 Hartmut Probst was preparing the work-catalogue of Gropius in the GDR with Christian Schädlich and rediscovered the Albert Mendel Grave and documented it for the first time. He measured it and took photographs showing it was vastly covered by ivy and most of the bronze lettering and the prominent David star had disappeared. Along with our search for his original material in 2017, Hartmut Probst's notes could be found in Weimar, complementing the research. The basis, back wall with „canopy“ and side balustrade of the grave are made of shell limestone. The pentagonal prism consists of a single, beautifully worked out block of Travertine and is placed against the backdrop as a precious jewel and has a remarkable history: the Ehringsdorfer Travertin came from Weimar and originates from a rich paleontological site in the Ilm-Valley which was already identified as such by Goethe. Between 1907-25 the significant remains of 40.000 old settlements of the Ehringsdorfer Primordial Man, a Neandertal with elements of Homo Sapiens were discovered

there. The Baubüro Gropius hired the Gustav Haubold company, local stonemasons who had their own quarry (Haubold Wall) and carved the prism in Weimar. The heavy piece was sent to Berlin by train for assembly on site under the supervision of Josef Hartwig. A lot could be said about the design of the Albert Mendel Grave and its position within the work of Gropius and the Bauhaus in the decisive years of 1922-23: its sculptural-architectonic character as a work in transition from expressionism to functionalism, its relations to the antique and to Jewish sepulchral iconography, the correspondence to formal elements of the interventions of Gropius in the Wannsee-House, the possible involvement of co-workers of the Bauatelier Gropius or Bauhaus students, the development of the vortex motif and the echoes of the Neoplasticism discussion in Weimar. The whole restoration work was carried out in the most non-invasive way possible. The upper stone of the canopy had moved a few centimetres due to settling and the penetration of ivy and had to be reset; many of the joints were open and have been redone according to the remaining segments; the surfaces had the running patina of bronze and were darkened from scab formation and moss deposits. Two flower boxes made out of zinc sheet had been fixed to the structure did not to match the geometry and character of the work. They were most certainly installed later and therefore removed. One striking aspect of the Gestaltung is the bronze lettering, which might have been developed for the grave and follows the principles for type design seen in the Bauhaus circle in the Weimar period. After 1933 many of the letters were stolen and reconstituted as some clearing and restoration work was undertaken in this section of the cemetery in 1992. The restorer and the basis for his work are not



Fig. 8: Albert Mendel Grave, Jewish Cemetery Weissensee, Berlin, from Walter Gropius, 1923. Detail of the restored surfaces, joints and lettering. © Photo: Pedro Moreira, Archive Nedelykov Moreira Architekten, 2018.

documented. Once some of the fixing points are offside the letters, the full fidelity to the original remains questionable. Nonetheless, we maintained and restored them „as found“.

CLOSING REMARKS

The beginning of the restoration works of the Laura Pearls Grave (2011-16) was possible due to a donor who prefers to remain anonymous. The funds were complemented by the Berlin Heritage Department and the Friends of the Jewish Cemetery Weissensee. During the preparations, we managed to locate and contact the Pearls descendants in the USA. Some family members came to Berlin at the completion of the works and as a gesture of recognition, they generously donated the complete funds necessary for the research and restoration of the Albert Mendel Grave (2015-2018). The financial management of both restorations were perceived by the Foundation Historical Churchyards and Cemeteries of Berlin-Brandenburg.

BIBLIOGRAPHY

JAEGGI, Annemarie: „Adolf Meyer – Der zweite Mann. Ein Architekt im Schatten von Walter Gropius“ (Berlin: Bauhaus-Archiv, Argon Verlag, 1994, Ausstellungskatalog.
 Jüdischer Friedhof Weissensee, Beisetzungsarchiv
 Landesdenkmalamt Berlin: *Denkmaltopographie-Angaben und Archivalien zum Haus Am Sandwerder 37 (Villa Albert Mendel) und Haus Am Sandwerder 39 (Haus Dr. Bruno Mendel)*.
 PERLS, Hugo: „Warum ist Kamilla schön? Von Kunst, Künstlern und Kunsthandel“. München, 1962
 PROBST, Hartmut and Schädlich, Christian: „Walter Gropius. Band 1, 1985, Band 2, 1986, Band 3, 1987 VEB Verlag für Bauwesen, Berlin.
 SCHULZE, Franz: „Mies van der Rohe. A Critical Biography“, Chicago/London: The University of Chicago Press, 1985.
 Thüringer Hauptstaatsarchiv Weimar, *Sammlung Staatliches Bauhaus Weimar: Gestaltung und Errichtung von Denk- und Grabmäler durch das Bauhaus, bzw. Walter Gropius. Archivaliensignatur: 71, Datierung 1921-1924.*
 Websites: The Internet Archive, „Hugo Perls Collection 1933-1976“, multiple access between January 15, 2014 and December 12, 2017, <https://archive.org/details/hugoperls>

A Vision for Conservation



Left: Havana, Solimar-Gebäude, Manuel Copado 1944, Kuba © Photo: Jean Molitor, 2016



Cover Figure (Fig. 1): Franz Pfeffer, cover of the official catalogue for the Electric Utilities Pavilion. Electricity Supply in Germany, Leipzig: Druck der Spamerschen Buchdruckerei, 1929.

The Zeitgeist. Des yeux qui ne voient pas...

José Santatecla Fayos, Zaida Garcia Requejo, Laura Lizondo
Sevilla
Universitat Politècnica de València and University of A Coruña,
Spain.

ABSTRACT

Architecture has its origins in the function of architecture itself. Humanity, faced with the need to seek shelter and protection, began to build. And so, from the moment the first primitive huts appeared, through different historical periods, the authenticity of the form and the yardstick used to measure it gradually evolved, becoming progressively complex as the canons of beauty evolved. However, this authenticity of form entered into crisis with the arrival of the Modern Movement, as it sought to return to pure forms. Le Corbusier asserted that the objectivity of the engineer, compared to the aesthetics of the architect, was better at capturing or summarising the concerns of that historical moment. The architect had to be governed by the spirit of the time, and not by a formal aesthetic. The same concept was defined at the same time by Mies van der Rohe through his first manifestos.

In a similar way, during the twenty-first century incipient technology has once again had this effect on our current architecture. Nevertheless, the majority of us as architects have been incapable of integrating technological and energy-oriented innovations into our buildings. In the same way as the Modern Movement was capable of interpreting its era, and incorporating structure and engineering into the origins of its architecture, the purpose of this communication is to try and answer the question of why we have not been able to properly interpret our era. Function has been overcome: What characterises the architecture of our period? Where are we heading?



Fig. 2: Cover of the chapter *Des yeux qui ne voient pas... Vers une architecture*, 1923.

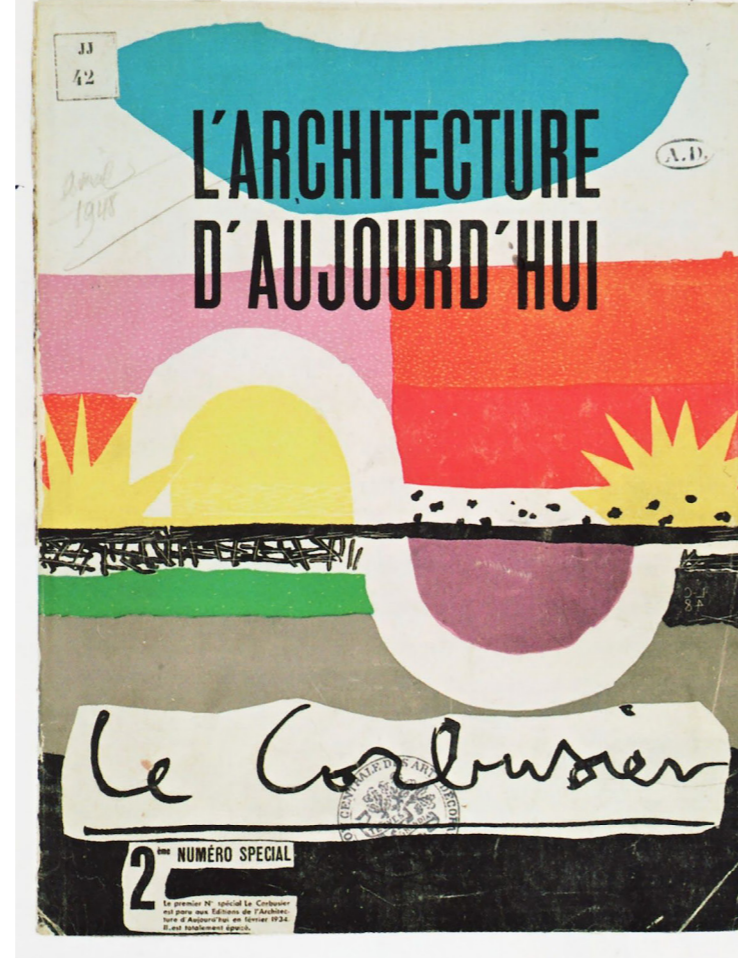


Fig. 3: Le Corbusier, cover of the journal *L'Architecture d'Aujourd'hui*, 1934.

1. YESTERDAY. PAST

Architecture has its origin in the satisfaction of the basic needs of the human being. Man, faced with the need for shelter and refuge, begins to build. In the beginning there was nothing, everything was to be done. There were no codes of beauty, no pre-established aesthetic a priori, only construction, and after the construction a common language based on solving the needs of man with the materials and conditions of the place where it is built: wood, stone, climate, topography, etc.. However, since the first primitive huts appeared, the authenticity of the form has evolved, becoming progressively complicated with the canons of beauty, to the point where the norms are what dictate the guidelines of beauty, not reason or the logic of construction. The norm, embodied in architectural treaties, hides the truth, and buries authentic architecture.

Canons, proportions and treaties act as a blindfold over the eyes that prevent us from clearly perceiving the reality of the time. Des yeux qui ne voient pas...¹ insists Le Corbusier again and again, in a clear message to the architects of all times. However, an architecture full of aesthetic prejudices stagnates in its formal evolution, even today, only pending the norm. We continue to do what Frank Lloyd Wright, Le Corbusier or Mies van der Rohe did 100 years ago, as if they were the new canon of aesthetic correction of our time. We copy forms, we ignore attitudes, we dispense with the power of the creative spirit. Our eyes do not see, they do not want to see, they cannot see... As Le Corbusier said to his architecture students: "To those of you who are subjected to the study of Vignola and the 'three orders of architecture,' I would like to present architecture's true image."²

The Modern Movement erupted from within this panorama at the start of the 20th century, once again seeing architecture with eyes that

were uncontaminated by sterile mannerisms and norms. In his book *Vers une architecture*, Le Corbusier defends the objectivity of the engineer as opposed to the aesthetics of the architect (Fig. 1). The engineer better captures and summarizes the concerns that surround this historical moment. "Our engineers produce architecture, for they employ a mathematical calculation which derives from natural law, and their works give us the feeling of HARMONY."³ Architecture must be a reflection of the zeitgeist, and not the consequence of a formal aesthetic, without prejudices, without apriorisms. The same concept is simultaneously established by Mies van der Rohe from his first manifestos; architecture is neither a theory, nor a speculation, nor an aesthetic doctrine, but instead the spatial expression of the spirit of the time. Mies expressed this bluntly in 1923: "We reject any aesthetic speculation, any doctrine and any formalism. Building art is the spatially apprehended will of the epoch. Alive. Changing. New. Not the yesterday, not the tomorrow, only the today is formable."⁴ Precisely for the masters of the Modern Movement -none of whom were trained in architecture schools- it is necessary and urgent to put aside mannerisms and neos, and for architecture to become a useful, socially useful instrument to solve the problem of the new man, who, tired of empty formal prejudices, needs to give an architectural, logical and rational response to the needs of a changing world, a world that crumbles between wars, destroys homes and devastates cities. For the Modern Movement, engineering, together with the industrial revolution, provides an opportunity for the renewal of architectural approaches. Apriorisms are abandoned, and the gaze is turned towards the forms generated by industry and engineering. Industry eliminates craftsmanship and brings about standardization and mass production. New forms emerge in the world of engineering:

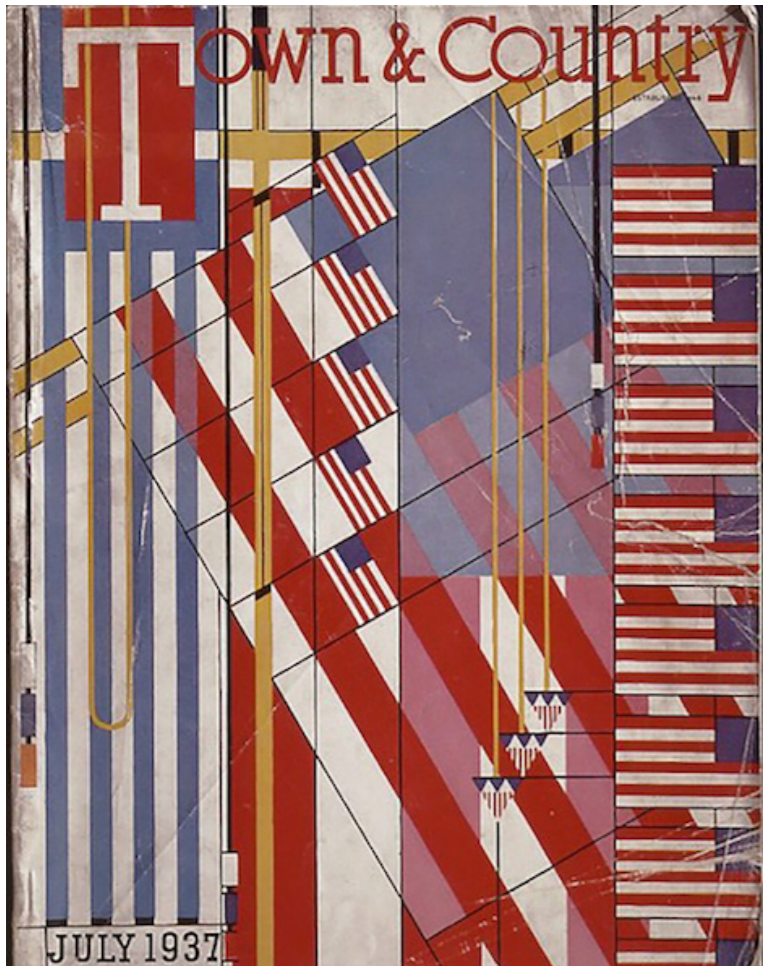


Fig. 4: Frank Lloyd Wright, cover of Liberty Magazine, July 1937.

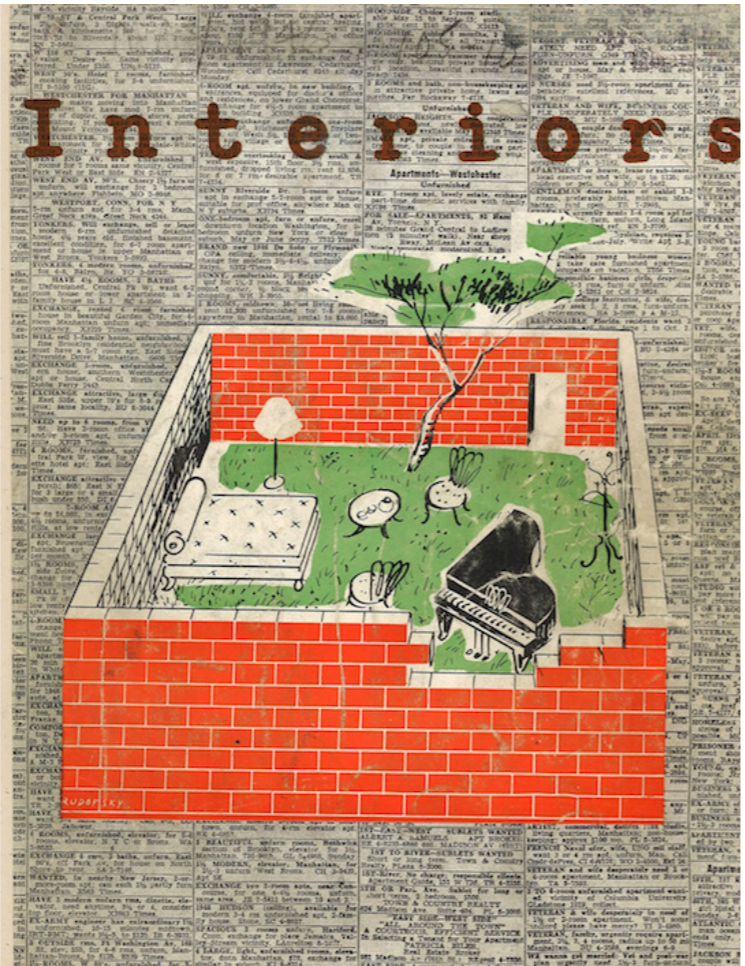


Fig. 5: Bernard Rudofsky, cover of the journal Interiors, May 1946.

silos, vehicles, aircraft and ships are sources of inspiration that cause architecture to break away from the pre-established canons. The canons of beauty of the conventions remain a matter of study of history, and it is necessary to look to the future, to a new world in which architecture has much to say. Therefore, those who knew how to see it turn their gaze towards the new materials, not contaminated by canons of beauty, and whose aesthetics are dictated by the reason of calculation, of mathematics. The porticoed structure, concrete, steel and glass, the sun, ventilation, access to electricity and drinking water, are the new rules of reason that bring new types and forms adapted to the man of the time, enabling architecture and architects to provide real solutions to today's problems (Fig. 2).

Awareness of the historical moment of a society between wars is evident among thinkers, architects and artists during the 20s and 30s of the last century, and so, there are many cultural manifestos, political or social, written and drawn, which have been embodied in the media of that time (Fig. 3, 4). A society that requires quick and effective solutions. The technique provides increasingly powerful weapons of destruction, but also effectiveness in quickly building thousands of houses and solving the new problems that it has caused (Fig. 5). In this way, necessity becomes opportunity. There are many thinkers and philosophers from central Europe who reveal these contradictions. It is not the aim of this article to discuss them all, nor to analyse the influences they had on the development of trends in art and architecture in Europe at the turn of the century, a question developed by authors such as Fritz Neumeyer.⁵ Mention only needs to be made of Oswald Spengler, whose book *The Decline of the West* helped the masters of modern architecture to become aware of the spirit of the times.

Herein lies the great problem set for the 20th Century to solve -to explore carefully the inner structure of the organic units through and in which world-history fulfils itself, to separate the morphologically necessary from the accidental, and, by seizing the purport of events, to ascertain the languages in which they speak.⁶

2. TODAY. PRESENT

But what about today? Today:

*A great epoch has begun.
There exists a new spirit.
There exists a mass of work conceived in the new spirit; it is to be met with particularly in industrial production.
Architecture is stifled by custom.
The "styles" are a lie.
Style is a unity of principle animating all the work of an epoch, the result of a state of mind which has its own special character.
Our own epoch is determining, day by day, its own style.
Our eyes, unhappily, are unable yet to discern it.⁷*

Is it not true that Le Corbusier's reflection of almost a century ago is still fully valid today? Have the Modern Movement and its formal axioms become the new canon of aesthetic correction of the 21st century, which prevents architecture from seeking new paths without any hang-ups? Why does the architecture of this century continue to copy forms from 100 years ago that respond to another era? Are these forms still effective today, or is architecture blind and incapable of responding to this era? *Des yeux qui ne voient pas...* Today, already immersed in the 21st century, in the middle of the



Fig. 6: Cedric Price, cover of the journal Architectural Design, October 1970.

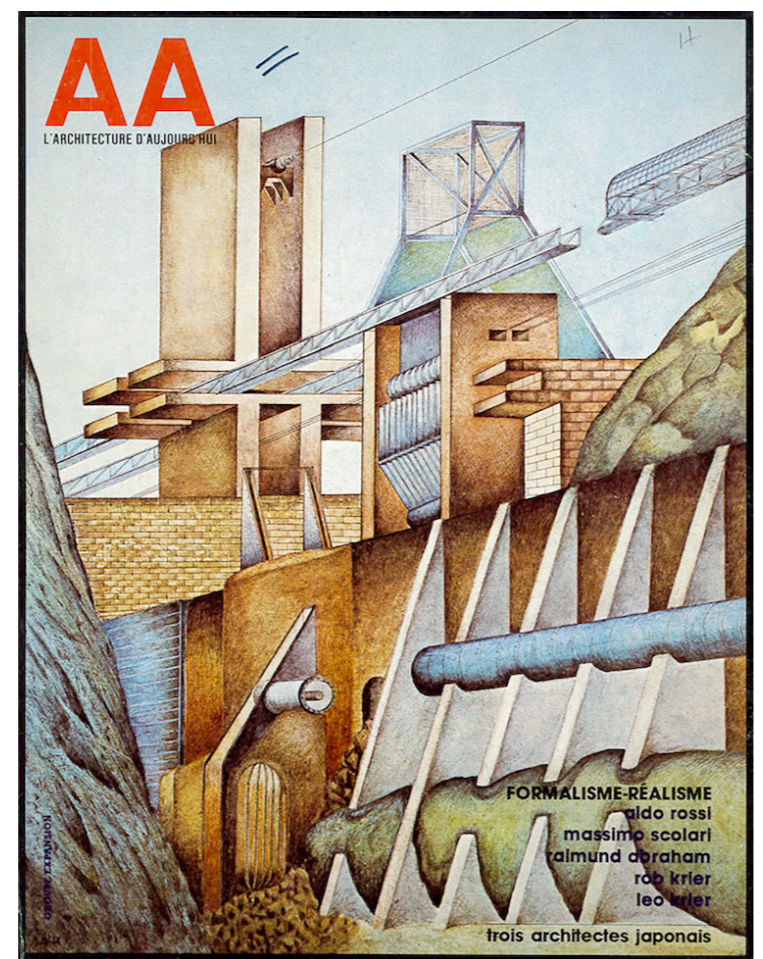


Fig. 7: Bernard Huet, cover of the journal L'Architecture d'Aujourd'hui, 1977.

future imagined by Le Corbusier or Mies van der Rohe... where is architecture heading? There is a need for reflection and clarification on the role of today's architect in a changing society. (Fig. 6). Today, we are in a globalized world, in which the human being becomes aware of the world; sustainability, we call it. Energy with its different modes of production, together with digital technology and instant communication, are characteristics of our time, unmistakable signs of a new era, a new epoch, in which changes occur at great speed. Everything happens in an instant and, moreover, in the same instant everything is known. The serial production lines are improved with the introduction of robots, big data or artificial intelligence, findings that mark the algorithms of this era. New materials appear such as graphite or superconductors whose applications in industry are being explored, offering results unthinkable until very recently. The domestic world around us is constantly changing: television screens that are increasingly flatter, lighter, larger, more flexible, with more content; telephones are being transformed into smartphones and have more power than the computers of a few decades ago, new operating systems are appearing that facilitate the interaction of man and machine, homes incorporate energy-efficient systems and voice assistants control all electrical appliances. A connected world that produces new forms, unthinkable a few years ago. A little more than a decade ago, nobody could have imagined that a simple rectangle five millimetres thick, which fits in a pocket, was a telephone; or that by means of a computer we could connect to satellites through simple apps. Until very recently, this was purely science fiction. The phenomenon is clear: the number of functions increases and improves, while the form becomes more and more abstract. The idea is of no importance, the previous mental picture you had of a phone

50 years ago. Today the technical advances modify these mental images and introduce new concepts in the language. However, the same cannot be said of Architecture. On the contrary, new constructions are hardly different from those of twenty, thirty, or forty years ago... The Architecture of our time, that of the 21st century, of the age of globalisation, of energy, of the digital era, is not in accordance with the needs of its time: it has not evolved (Fig. 7). Des yeux qui ne voient pas...

It is not difficult to draw a parallel between Engineering and Industry, to compare the industrial revolution the past century with the new requirements of today, which respond to a real revolution led by energy and new technologies (Fig. 8). New communication protocols globalize the place; there are no more places, only the world. Scientific advances occur at a faster and faster rate, energy is becoming exponentially more expensive... And how does today's architecture respond? Architecture is required to comply with energy efficiency standards, conditioning factors and reserved spaces in order to ensure the incorporation of a growing number of facilities. And the landscaped roof of Le Corbusier, a symbol of rationality and hygiene, is contaminated by foreign elements from the world of engineering: solar panels, mobile phone antennas, condensers. The smooth skins of facades, an emblem of the structural liberation of the wall, are altered with installations alien to the architecture that still does not know how to interpret this era, or solve the problems of modern humanity. The legacy of the Modern Movement has not been understood as an open entity, and as Lacaton and Vassal explain in their book Plus, we must liberate it from the original characteristics that contextualized it in its

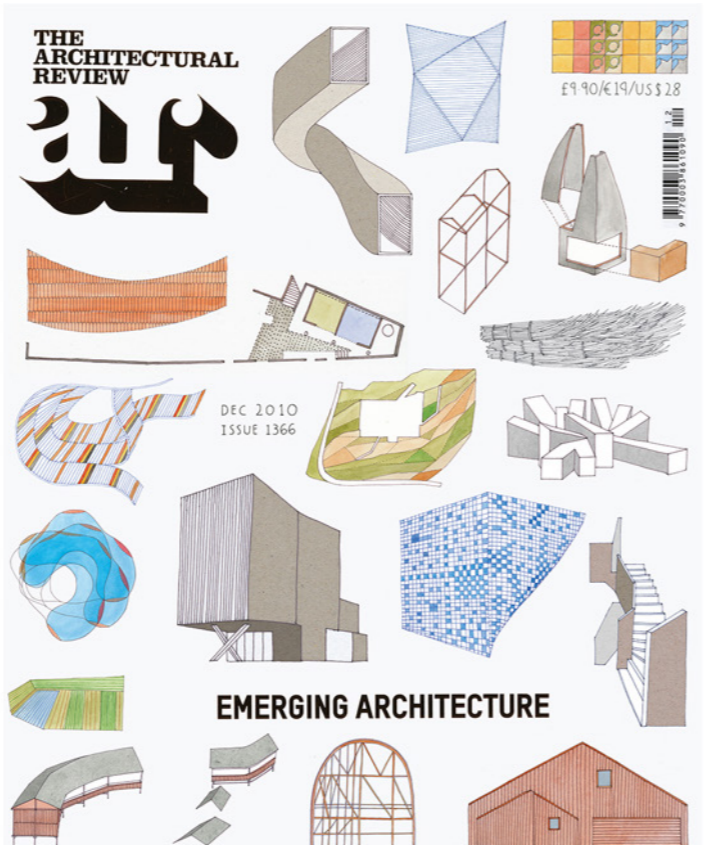


Fig. 8: Covers of the journal The Architectural Review, August and December 2010.

day; we must link it to the concrete needs of a new era. So, where is Architecture headed today?

3. TOMORROW. FUTURE

Today, energy is becoming more and more expensive, and research provides new solutions for the production of energy, solutions that do not find an answer in today's architecture and which are incorporated as foreign bodies in constructions with forms from 100 years ago and which have not evolved. Perhaps the energy bill has not yet reached the critical point of no return; perhaps today's man is not aware of what globalization means. But soon he will have to do so, obligatorily, and Architecture will have to be able to respond to a society that demands new needs. It is not only a question of consuming less, nor of recycling more. Contemporary society must be able to manage itself and even produce energy surpluses and translate this into new architectural forms, new processes, new directions, without conventionalities.

In order to question the consciences of architects, one might ask: Are not Le Corbusier, Wright or Mies the new 'Vignola' of our time? Consider what Le Corbusier said in 1957 to a group of architecture students: "That Vignola! Why Vignola? What infernal pact binds modern society to Vignola? I descended into the academic abyss. Let us not delude ourselves: academicism is a way of not thinking, fit only for men who fear the anguish of creation, although the joy of discovery more than makes up for it."⁸

It is urgent that the architecture of our time ceases to be part of the problem and becomes the solution again. Contemporary architecture cannot continue to ignore this reality. It is therefore urgent to recover the spirit of the masters of the Modern Movement and reinterpret it,

adapting it to current needs. It is not necessary to remain with formal and superficial copies that not even they would propose today, one hundred years later. "(...) the question as to the nature of the building art is of decisive importance. One will have to understand that all building art arises out of its own epoch and can only manifest itself in addressing vital tasks with the means of its own time. It has never been otherwise."⁹

And so, the contemporary architect is faced with changing circumstances in which they must position themselves and transmit an ethical and social responsibility for the architectural project. This commitment lies in a coherent response between the needs that give rise to both the design and the circumstantial means and the material and technological possibilities, which evolve and mark the rhythm of architecture throughout history.¹⁰ The reflection must consequently incorporate sustainability parameters, referring to the necessary compatibility of the process and the result with the environment.

4. EPILOGUE

Le Corbusier, versus Le Corbu... Mies van der Rohe, versus Mies... Frank Lloyd Wright, versus Wright... It is enough to know a little about the history and to have read their texts to understand that today it is urgent to assert their spirit, without formal prejudices, seeing the future as they knew how to see it. Our time deserves it. A great epoch has begun. There exists a new spirit ...

ENDNOTES AND QUOTATIONS

- [1] Le Corbusier, *Vers une architecture*, Paris: Editions Crès et Cie, 1923.
- [2] Le Corbusier, *Le Corbusier Talks with Students: From the Schools of Architecture*, New York: Princeton Architectural Press, 1999, 37.
- [3] Le Corbusier, *Vers une Architecture*, Paris: Editions Crès et Cie, 1923, 15.
- [4] Mies van der Rohe, "Office Building" G, no. 1, July 1923, 3. Extracted from: Fritz Neumeyer, *The Artless Word: Mies van der Rohe on the Building Art*, London / Cambridge: The MIT Press, 1991, 241.
- [5] Oswald Spengler, *The Decline of the West Form and actuality*, New York: Alfred A Knopf, 1927, 105.
- [6] Le Corbusier, *Vers une architecture*, Paris: Editions Crès et Cie, 1923, 87.
- [7] Frederic Druot, Anne Lacaton & Jean-Philippe Vassal, J, *Plus: Large-scale Housing Developments, an Exceptional Case*, Barcelona: Gustavo Gili, 2007.
- [8] Le Corbusier. *Le Corbusier, Talks with Students: From the Schools of Architecture*, New York: Princeton Architectural Press, 1999, 60.
- [9] Mies van der Rohe, "Baukunst unt Zeitwille!" *Der Querschnitt*, no.4, 1924, 31-32. Extracted from: Fritz Neumeyer, *The Artless Word*, 245.
- [10] There are several historiographic lines that emphasize technological advances to explain the evolution of architecture. See: Antoine Picon, *La matérialité de l'architecture*, Marseille: Éditions Parenthèses, 2018.

BIBLIOGRAPHY

- DRUOT, Frederic, LACATON Anne and VASSAL Jean-Philippe. *Plus: Large-scale Housing Developments, an Exceptional Case*. Barcelona: Gustavo Gili, 2007.
- LE CORBUSIER. *Vers une architecture*. Paris: Editions Crès et Cie, 1923.
- LE CORBUSIER. *Le Corbusier Talks with Students: From the Schools of Architecture*. New York: Princeton Architectural Press, 1999.
- NEUMEYER, Fritz. *The Artless Word: Mies van der Rohe on the Building Art*. London/Cambridge: The MIT Press, 1991.
- PICON, Antoine. *La matérialité de l'architecture*. Marseille: Éditions Parenthèses, 2018.
- SPENGLER, Oswald. *The Decline of the West Form and actuality*. New York: Alfred A Knopf, 1927.

Biographies



Left: Kornhaus Dessau, Ausflugsgaststätte, Dessau, Carl Fieger (1929-30), Germany. © Photo: Jean Molitor, 2014

AUTHORS



Francisco Teixeira Bastos Assistant Professor of Architecture at Instituto Superior Técnico, University of Lisbon. Involved in teaching at both the undergraduate and graduate levels as well as in research and other outreach activities. Research activity concentrated on Practice-based research and involves a reflection upon the state of architectural and urban education and practice. Registered Architect in Portugal. Practice experience since 1986. Practicing with Manuel Vicente (1989-98). Creates the Atelier dos Remédios (1997). Private and public works such as housing and schools. Works Published. Professional and Academic Lectures in Europe. Prémio Valmor 2011 prize (City of Lisbon). OCDE SITE for Good Practices for Education.



Emily Bereskin is a senior researcher at the Habitat Unit of the Technische Universität Berlin, currently working as a researcher for the MODSCAPES project. Prior, Dr. Bereskin was a DFG postdoctoral fellow for the international graduate program "The World in the City: Berlin - New York – Toronto" at the Center for Metropolitan Studies, Technische Universität Berlin. She received her Ph.D. in Art History from Bryn Mawr College in 2012.



Zsuzsanna Böröcz is a musicologist and art and architectural historian. She obtained her PhD from the KU Leuven Belgium in 2004. Since then she has been teaching on art, design and architectural theory. She currently holds a position of guest-professor at the Faculty of Architecture KU Leuven, as well as being affiliated as a researcher with the University of Antwerp. She is Vice-President of Docomomo Belgium and co-chair of the Docomomo International Scientific Committee on Interior Design. Her interest fields and publication subjects are interiors and design issues in the context of heritage conservation and craftsmanship in the 19th- and 20th-century.



Sara Di Resta, PhD in Conservation of Architectural Heritage, is Assistant Professor of Architectural Preservation at Iuav University of Venice. Her research activities are focused on the conservation of 20th-century heritage and on the architectural language in conservation design. Her last volume is Forms of conservation. Purposes and practices of contemporary architecture for restoration. She is a member of SIRA,

the Italian Society of Architectural Restoration. Gold Medal at the Domus International Prize for Architectural Conservation (2017), in the same year she obtained the habilitation as Associate Professor according to the Italian National Scientific Qualification procedure.



Anica Dragutinovic, is a PhD Candidate at the University of Antwerp (Belgium). Her PhD research is focusing on the evaluation and transformation of modernist housing blocks in New Belgrade. She is a research assistant and coordinator of Master Program MIAD/MID-Facade Design at OWL UAS (Germany) since 2016; and a member of the Erasmus+ project Re-use of Modernist Buildings. She obtained Master of Architecture in 2016 at the University of Belgrade, Faculty of Architecture (Serbia), and Bachelor of Architecture in 2014 at the same Faculty. During her studies she was a student teaching assistant and had different internships on international level.



Ana Fernandes is an architect and researcher in Architecture. Master in Architecture concluded in 2013, with a thesis entitled "BNU Headquarters Building. Adaptive reuse in the context of Baixa Pombalina: from Bank to Museum". Ana started working as an architect in 2013, collaborating in architectural competitions, editorial projects and other works. In 2016, initiated her research activity, in the multidisciplinary team of the Atlas of School Architecture in Portugal_ Education, Heritage and Challenges. In 2019 began her PhD in the Doctoral Degree Programme in Architecture at IST, with a grant from FCT, entitled "Architecture and Landscape of Tea" focusing on the study of the Industrial Architectural Heritage and Cultural Landscape of the Tea production in São Miguel island, Portugal.



Zaida Garcia Requejo holds a Bachelor's Degree in Architecture and a Master's Degree in Architectural Restoration (2014) from the University of A Coruña. She is currently working on her PhD dissertation on the collaboration between Mies van der Rohe and the structural engineer Frank Kornacker. She has carried out research at the IIT in Chicago and at the MoMA in New York. She is a professor in the Department of Architectural Projects, Urban Planning and Composition of the School of Architecture of the University of A Coruña.



Ipek Gürsel-Dino completed her M.Arch degree at Middle East Technical University, Department of Architecture. She pursued her studies further in computational design at Carnegie Mellon University in USA (M.Arch) and Technische Universiteit Delft in the Netherlands (PhD in Architecture). She has led and participated in research projects in both USA and Europe on the development of computational tools and methods for building performance assessment, sustainable building design, parametric design systems, building information modeling, building energy efficiency, virtual-reality design tools and building retrofit. Dr. Gürsel Dino is currently working as a faculty member at METU Department of Architecture, where she also acts as the coordinator to the Graduate Program in Architecture.



Thomas Katzke Architekturstudium an der TFH Berlin mit Schwerpunkt Bauerhaltung, Diplom bei Prof. Dr. Schäche mit dem Entwurf eines neuen Nutzungskonzeptes für das Kantgaragegebäude in Berlin. Aufbaustudium am Institut für Geschichtswissenschaften der HU Berlin bei Prof. Dr. Damps, Masterarbeit mit dem Thema: Die Großstadtgarage – Einfluss der Automobilisierung auf die Berliner Architektur der 1920er Jahre. Seit 1998 angestellter Architekt mit Schwerpunkt Denkmalpflege (Architekten Petersen GmbH; Winfried Brenne Architekten; FU Berlin, Referat Bauplanung und Baudurchführung). Historiker mit den Hauptaugenmerk Architektur der Zwischenkriegszeit und Berliner Großgaragenprojekte. Einschlägige Publikationen und Rezensionen in diversen Fachzeitschriften.



Elena Lemma, Master degree in Architecture for the New and the Old at Iuav University of Venice in 2018 and Bachelor degree in Science of Architecture at the University of Parma in 2015. Currently working for La Biennale di Venezia Foundation as an 'Active Catalogue' of the 16th International Architecture Exhibition. She worked as a cultural mediator for the Global Art Affairs Foundation at the 57th International Art Exhibition. She attended a workshop for making the models exposed in Anupama Kundoo's installation at the 15th International Architecture Exhibition.



Pedro Moreira was born in São Paulo, studied Architecture and Urbanism at the FAU-USP and the Technical University Berlin. Architect, Historian and Visual Artist. Worked at offices in São Paulo and London (1988-91), and Berlin (1991-94). Publications, Lectures and Debates on Architecture, Material Heritage and History in Germany, Switzerland, Spain, Brazil, UAE and Ethiopia a.o.. Member of the Architects and Urbanists Council of São Paulo. Member of DOCOMOMO Germany. Nedelykov Moreira Architekten, Berlin was founded 1994. Selected projects: Museum Max Liebermann-Villa in Berlin-Wannsee (Europa Nostra Medal 2008), Archaeological Museum Wukro/Ethiopia (2015), Burial Chapel, Dorotheenstädtischer Cemetery Berlin-Mitte, with James Turrell (KiBA-Prize 2018). Working on historical cemeteries since 2006.



Christoph Muth is a doctoral candidate at Habitat Unit – Technische Universität Berlin where he also works for the EU-HERA funded project MODSCAPES. From 2015–2017 Christoph taught Architecture and Urban Design at the German University in Cairo. He received his Diplom in Architecture and Urban Planning from the University of Stuttgart in 2013.



Nina Nedelykov was born in Berlin, studied Architecture at the Technical University Berlin. Numerous publications, lectures and moderations in Germany and internationally, member of the Förderverein Bundesstiftung Baukultur e.V. and ICOMOS Germany. Institutional activities 2000-2014: Vice-President of the Berlin Architects Chamber (AKB), Vice-President of the Architects Chamber of Germany (BAK), Council Member of the International Union of Architectes (UIA) and the Architects Council of Europe (ACE).



Laura Lizondo Sevilla holds a Bachelor's Degree and Ph.D in Architecture (2003) from the Universitat Politècnica de València (UPV) and GSAPP from Columbia University (2012). She has been an Associate Professor at the Department of Architectural Design at the UPV since 2008, and Editor in Chief of En Blanco. Revista de Arquitectura. The results of her dissertation Architecture or Exhibition? The foundations of Mies van der Rohe's Architecture have been published in EGA, ACE, Revista 180, ARQ, PPA and JSAH. She has been a visiting researcher at Central Saint Martins, University of Arts of London (2015).



Ana Nikezic holds a PhD in Architecture (2006) with more than 20 years of teaching experience in the area of Architectural and Urban design and over 14 years of experience in research projects. Since 2010 she is a member and mentor for the elaborations of doctoral thesis. She has had more than 30 papers published in monographies, magazines, journals and conference proceedings of international importance. She was also a member of the organizing and science committee for a number of national and international conferences. She also participated in a great amount of international and national workshops. She is particularly interested in connecting of the theoretical and the practical dimension of designing and architecture in general. Particular academic attention has been brought to the subject of relations between architecture and nature, architecture and urban culture, as well as to the subject of socially responsible architectural education based on an interdisciplinary approach.



José Santatecla Fayos holds a Bachelor's Degree and Ph.D in Architecture (1986) from the Universitat Politècnica de València (UPV). His thesis "De la esencia de la arquitectura a lo esencial del espacio. Forma y concepto en la arquitectura de Mies van der Rohe" (2005) won the Prize of the Social Council of the UPV in the area of architecture (2006). He has been an Associate Professor in the Department of Architectural Design at the UPV since 1988. As an architect he has won numerous architectural competitions, and has published articles in various prestigious international journals.



Ayşen Savaş After being trained as an architect in the METU Department of Architecture and Bartlett School of Architecture, she received her PhD from the History, Theory, and Criticism Program at MIT. For the last 20 years she has been converting historical buildings into museums and curating national and international exhibitions. Currently, she is teaching courses on representation and architectural design at METU. Her publications include exhibition catalogues, books and articles particularly on the transformation of space by means of architectural interventions and the preservation of Modern Architecture. She is the founder of a non-profit organization: Exhibition Design Workshop that established and designed museums such as Sabancı Museum, Erimtan Archeology Museum (EMYA finalist 2017), MKEK Technology Museum and METU Science and Technology Museum. Her achievements include a number of national and international awards and fellowships, including the Getty Keeping It Modern Grant, AIA Architectural Award, AAUW Research Prize, Schlossman Prize in historical research, Sir John Soane Museum, CCA and Bologna University fellowships. The museological theme she had developed for the

Turkish Pavilion at the World EXPO in Shanghai won The Silver Medal in 2010.



Sophie Stackmann, M.A., studied art history and heritage conservation at the Otto-Friedrich Universität Bamberg. From 2017 until 2019, she was funded by a scholarship of the Johannes-Rau-Gesellschaft. Currently, she is research assistant in a project on architects collectives in the GDR at the university of Bamberg. Her master thesis in heritage conservation examined the architectural changes in the housing estate Dessau-Törten.



Davide Tassera, Master degree in Architecture for the New and the Old at Iuav University of Venice in 2018 and Bachelor degree in Architecture at Polytechnic of Turin in 2015. Actually intern at Sergio Pascolo Architects, in Venice. Member of Associazione Canova whose main goal is the recovery and the re-evaluation of rural medieval stone architecture. He attended a workshop for making the models exposed in Anupama Kundoo's installation at the 15th International Architecture Exhibition.



Ana Tostões, PhD is an architect, architecture critic and historian, and is president of Docomomo International and Editor of the Docomomo Journal. She is a Full Professor at Técnico, University of Lisbon, where she teaches Theory of Architecture and Critical History, and coordinates the Architectonic Culture research group. Since 2012, she has been in charge of the Architectural PhD program. She has been invited professor at FAUP, EPFL, ETHZ, UTSOA, RSA, ETSAB, ETSAUN. universities worldwide. Her research field is the Critical History and Theory of Contemporary Architecture, focusing on the relationship between European, Asian, African and American cultures. On this topic, she has published 13 books and 95 essays, curated 9 exhibitions, participated in 47 juries, 40 scientific committees and gave lectures in 72 universities worldwide. She has acted as peer referee for scientific journals. She coordinated the research projects "Exchanging World Visions (1943-1974)" and "Cure and Care the rehabilitation".

PHOTOGRAPHER



Jean Molitor, was born in Berlin, learned the profession of photographer and studied artistic photography at the College of Graphics and Book Art in Leipzig. As a freelance photographer he has been traveling around the world for a wide variety of projects for 30 years now. Since 2009 he has been dedicated to architectural photography and especially the so-called classic modern. In his publications, he is committed to the preservation of cultural heritage worldwide and founded the bau1haus project.

EDITORS



Uta Pottgiesser, Dr.-Ing. (PhD) and licenced architect studied Architecture at TU Berlin and finished her dissertation at TU Dresden in Germany, with the title: Multi-layered Glass Constructions. Energy and Construction. She is Chair of Heritage & Technology at TU Delft in the Netherlands (since 2018) and Professor of Building Construction and Materials at Detmold School of Architecture and Interior Architecture, Germany (since 2004), where she also served as vice-president (2006–2011) and dean (2012–2016). She was appointed Professor of Interior Architecture at Faculty of Design Sciences of the University of Antwerp, Belgium (2016–2019). She is vice-chair of DOCOMOMO Germany and since 2016 chair of the DOCOMOMO International Specialist Committee of Technology (ISC/T).



Franz Jaschke, is a graduated Dipl.-Ing. Architect who studied at the Technische Universität Berlin, Germany. Since 2002 he is a managing partner of BRENNE ARCHITEKTEN Gesellschaft von Architekten mbH in Berlin. He is a member of Association of German Architects (Bund Deutscher Architekten BDA), German Association of Craftsmen (Deutscher Werkbund Berlin DWB), Bauhaus Archive Berlin, Baudenkmal Bundesschule Bernau, Association for the Monument Trade Union School in Bernau (Baudenkmal Bundesschule Bernau), Ernst May Society Frankfurt, German National Committee ICOMOS and a Founding member of DOCOMOMO Germany.



Michel Melenhorst, studied architecture at Delft Technical University and worked for Wiel Arets (1991-1995) and OMA (1995-1999) before starting his own office in 1999. In 2005, he became a partner in DAAD Architects. In 2012, he switched to Detmold Germany to hold the chair for Contextual Design at the Hochschule Ostwestfalen Lippe, where he coordinates the Master's in Architecture. Michel Melenhorst has extensive experience in teaching and lecturing at institutions such as TU Delft, Design Academy Eindhoven, Lasalle University Bogota, HCU Hamburg, Arhus school of Architecture, University of Antwerp and K'Arts Seoul. He is a member of Docomomo international and is active in Docomomo Deutschland Workgroup education. At the HS-OWL he is coordinating the Master in Architecture, he is a member of the Researchgroup Urban Lab and co-organises the Universities annual workshop week and Conference 'Detmolder Räume' Since 2016 he leads 'RMB', an europewide initiative to start a specialized, two years master studies on reuse of modernist buildings.

Imprint

Bibliography of the German National Library: The German National Library lists this publication in the German National Bibliography; detailed bibliographical information can be found at <http://dnb.ddb.de>.

Publisher	DOCOMOMO Deutschland e.V., OWL University of Applied Sciences
Editors	Uta Pottgiesser, Franz Jaschke, Michel Melenhorst
Reviewers	Gonçalo Canto Moniz, Els De Vos, Alex Dill, Thomas Ludwig, Monika Markgraf, Michel Melenhorst, Ana Nikezic, Uta Pottgiesser, Luise Schier, Aslihan Tavit, Ana Tostões
Layout and Editing	Christine Kousa, Detmold
Copy-Editing	Christine Kousa, Detmold
Cover Photo	Bauhaus Archiv / Museum für Gestaltung. © Photo: Jean Molitor, Berlin
Chapter Photos	Jean Molitor, Berlin

The editors worked intensively to collect all copyrights of pictures/graphs. In the unforeseen case of using unauthorized pictures/graphs the editors ask to get in contact with them.

ISBN 978-3-939349-34-1

© 2020 Docomomo Deutschland e.V und TH OWL, Detmolder Schule für Architektur und Innenarchitektur.

This work is licensed under a Creative Commons Attribution-ShareAlike 4.0 International License (CC BY-SA 4.0: <http://creativecommons.org/licenses/by-sa/4.0/legalcode>).

do.co.mo.mo_



In 2019 DOCOMOMO Germany and the Detmold School of Architecture and Interior Architecture at Ostwestfalen-Lippe, University of Applied Sciences (TH OWL) with the Erasmus+-Project 'Reuse of Modernist Buildings' (RMB) organized the 16th DOCOMOMO Germany and 3rd RMB Conference. The international conference in Berlin took place on the occasion of the 100th anniversary of the Bauhaus and as an opportunity to discuss the significance of modernity in the 21st century. The conference focus lies on the concepts, visions, and impulses emanating from Modern Movement and how they can be related to today's social, economic, cultural and in particular creative issues.

This second Docomomo publication includes a selection of eleven papers that were not included in the original online conference proceedings (<http://www.rmb-eu.com/publications/>). The papers witness in a particular way the dominating themes and typologies of Modern Movement. They also demonstrate manifold reuse and conservation approaches—conceptually, aesthetically and technically. They are expression of the intensive investigation and documentation efforts of members and supporters of DOCOMOMO together with the academic and professional community.

DOI: 10.25644/n4qq-q019



do_co,mo,mo_

