A Future for Our Recent Past

Model Projects of Modern Heritage Conservation in Europe

ICOMOS · HEFTE DES DEUTSCHEN NATIONALKOMITEES LXXIII
ICOMOS · JOURNALS OF THE GERMAN NATIONAL COMMITTEE LXXIII
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CONSEIL INTERNATIONAL DES MONUMENTS ET DES SITES
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МЕЖДУНАРОДНЫЙ СОВЕТ ПО ВОПРОСАМ ПАМЯТНИКОВ И ДОСТОПРИМЕЧАТЕЛЬНЫХ МЕСТ

A Future for Our Recent Past

Model Projects of Modern Heritage Conservation in Europe

International Conference, Leipzig, 7–9 November 2018

Edited by
Sigrid Brandt, Jörg Haspel, Leonid Kondrashev,
Alexander Kudryavtsev, and John Ziesemer

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Generalsekretär: Gregor Hitzfeld
Geschäftsstelle: Deutsches Nationalkomitee von ICOMOS e.V.
Brüderstraße 13 · Nicolaihaus · 10178 Berlin
Tel.: +49 (0) 30.80 493 100 · Fax/Tel.: +49 (0) 30.80 493 120
E-mail: icomos@icomos.de · Internet: www.icomos.de

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Content

Preface

Photo: Elke Jung-Wolff

The cultural heritage of the recent past is part of our shared history and European identity. I am happy to say that ICOMOS addressed the various aspects of this topic at the international conference “A Future for our Recent Past”, discussing measures to preserve, restore and revitalize monuments of the last century. In this context, there was great interest in the dialogue between Eastern and Western Europe on cultural heritage in the shadow of two devastating world wars and the division of the continent by the Iron Curtain until 1990. Monuments and artefacts from the two world wars and the Cold War attest to an era characterized by unrestrained violence and irreconcilable ideologies. Discussions of how best to deal with historically sensitive relics in a Europe that is growing closer together have shown the importance of expert involvement and international cooperation.

This publication about the conference serves to document European cooperation to address the cultural heritage of the last century. It presents model projects of modern heritage conservation, thus promoting the original aims of the European Year of Cultural Heritage. This publication also raises awareness of how Europe belongs together, with its shared history and values. Our rich cultural heritage is a testament to this.

I am therefore delighted to have been able to fund from my cultural budget “A Future for our Recent Past” – one of more than 70 projects of particular importance initiated as part of the European Year of Cultural Heritage 2018.

I would like to thank all of those involved for their expertise and dedication. Their passion brings this multifaceted subject to life and imbues it with European spirit. I hope that this publication will be enjoyed by many interested readers.

Prof. *Monika Grütters*
Member of the German Bundestag
Minister of State for Culture and the Media

Welcoming Address


Credit: Leipziger Messe

Cultural heritage has been handed down from the past, is important in the present and should be preserved for the future. In a rapidly changing world, it can be a source of identification and continuity. Heritage as a concept implies that it will continue to exist for generations. Maintaining our cultural heritage is not only a theoretical concern but also plays an important role in the economy and employment for craftsman and the real estate industry as well as in tourism.

This is exactly where the leading European trade fair denkmal Leipzig comes in. It is the Europe-wide meeting place for experts who deal with the topics of monument preservation, restoration and old building renovation. With its combination of exhibition and extensive conference programme, denkmal is regarded throughout Europe as the industry's most important platform for further education and training and offers the opportunity for interdisciplinary and cross-border exchange. denkmal is an impressive example of the fact that trade fairs do not just perform an economic function. They bring companies and customers from a wide range of different branches together and thus serve as both a political bridge-builder and a catalyst for social cohesion. That is why it was only logical that the trade fair was one of the three highlights in the German contribution to the European Cultural Heritage Year 2018.

The fact that this successful concept also works outside Germany has been demonstrated by the restoration fairs modelled on denkmal Leipzig in Moscow, denkmal Russia-Moscow, and Heritage Preservation International (HPI) in Shanghai, which have been respectively in existence since 2011 and 2015. The rising exhibitor and visitor numbers illustrate the great interest in the topics and prove that exhibitors and partners benefit from experience and networks in these countries. The trio denkmal Leipzig, denkmal Russia-Moscow and HPI have also succeeded in encouraging international discourse on the preservation of cultural heritage and in establishing the specialist topics of monument preservation and restoration at international trade fairs.

Leipziger Messe would like to thank the German National Committee of ICOMOS and ICOMOS Russia, especially Prof Jörg Haspel and Leonid Kondrashev, for their outstanding commitment to the preservation of historical-cultural heritage at national and international level. We would also like to express our appreciation for the numerous joint projects that have resulted from this endeavour and for the many years of cooperation. We look forward to many more collaborations at denkmal 2020 and beyond.

Markus Geisenberger
Leipziger Messe GmbH, Chief Executive Officer

Introduction

Editorial

Leipzig's "denkmal" trade fair considers itself as Europe's leading trade fair for conservation, restoration and old building renovation. Since its foundation in 1994, it has increasingly played a key role for the German National Committee of the International Council on Monuments and Sites (ICOMOS) regarding cross-border exchange in the fields of monument conservation and World Heritage management. Every two years, the diverse profile of exhibitors and providers and the international spectrum of visitors and foreign representatives offer ICOMOS Germany a unique thematic framework and context for holding international seminars and conferences on conservation concerns and current challenges of monument conservation. Starting with the conference documentation *Konservierung der Moderne?/Conservation of Modern Architecture?*, which appeared in 1998 as vol. XXIV, to the latest volume on archaeological monuments *Vom Ende her denken?! Archäologie, Denkmalpflege, Planen und Bauen* (vol. LXI), one gets an idea of the range of topics to which the Leipzig trade fair "denkmal" has provided a platform and also a cross-border echo chamber for contemporary monument debates in Europe over the past decades.

The initiative taken by the European Parliament in 2015 at the suggestion of the Standing Conference of the Ministers of Education and Cultural Affairs in Germany and neighbouring ministries of culture to prepare a Europe-wide theme year on monument protection and conservation resulted in the plan of the European Commission in 2016 and the decision of the European Council in 2017 to implement a European Year of Cultural Heritage (EYCH) in 2018. The ICOMOS National Committees of the Federal Republic of Germany and the Russian Federation took the opportunity of the Leipzig "denkmal" fair, scheduled for the autumn of the EYCH 2018, to launch a bi-national cooperation project and to invite experts from neighbouring European countries. With the support of the Moscow City Government and the Federal Government Commissioner for Cultural Affairs and the Media, it was possible to prepare an international and interdisciplinary conference that was not only meant to cross the political borders of the European Union but also the usual time and genre borders in monument conservation and that was intended to focus in particular on the heritage of the recent past and on the contemporary history of the 20th century.

In accordance with the motto *Sharing Heritage* of the European Cultural Heritage Year 2018, ICOMOS Russia and ICOMOS Germany as well as partner organisations prepared an international conference on model projects of 20th century heritage conservation. The meeting was scheduled as part of the "denkmal – Trade Fair for Conservation, Restoration and Old Building Renovation" and of the "MUTEC – International Trade Fair for Museum and Exhibition Technology" in Leipzig (7–10 November 2018). The joint letter of intent and cooperation signed at the conference by the Presidents of ICOMOS Russia and ICOMOS Germany in the presence of representatives of the ICOMOS International Scientific Committee "Shared Built Heritage" also documents the intention to intensify the cross-border cooperation of both countries in the field of heritage.

Monuments and memorials of the more recent past represent and reflect a vital part of our common history and identity in Europe. On the occasion of the trade fairs denkmal and MUTEC the international conference presented, compared and discussed successful measures of conservation, restoration and revitalisation of monuments and sites from the 20th century. The conference and the proceedings were intended to provide an interim balance of the achievements to preserve threatened young heritage and to promote international cooperation in conserving recent tangible heritage for future generations in Europe. At the hub of the Leipzig Trade Fair, special attention was given to heritage dialogue and conservation partnership between Eastern and Western Europe.

In each thematic block, two co-presentations from Western and Eastern Europe supplemented the German and Russian contributions to the topic. The five main topics of the conference covered a wide range of heritage topics, using successfully implemented model projects as examples. Responsibilities of archaeological monument conservation and contemporary archaeology were the first topics, followed by the heritage of modern civil engineering and garden monument conservation. The conference was concluded with a section on the conservation and retrofitting of the architectural heritage of post-war modernism and one on the restoration of works of art that are part of post-1945 architectural monuments.

Topics ranged from the built and green heritage to memorial sites and places of remembrance, including the legacy of civil engineering and archaeological sites of contemporary history. The conference offered contributions from professionals in the fields of architecture and landscape planning, restoration and structural engineering, as well as art history and archaeology. The choice of selected cultural heritage sites and model projects of conservation and restoration presented in Leipzig was meant to illustrate the guiding idea of the European Year of Cultural Heritage, representing multi-nationally "shared heritage" or "sharing heritage" through transboundary communication and

networking. Papers proposed could provide comparative regional or typological surveys of recently realised works of conservation and restoration in Europe as well as individual in-depth studies (best-practice case studies) of model projects.

As the organisers of the conference and editors of this publication, ICOMOS Germany and ICOMOS Russia would like to thank all speakers and the participating authors and lenders of images for providing text and image material free of charge. We also wish to thank the conference moderators for their committed cooperation. We are grateful to John Ziesemer, who was responsible for the translation and editing of the English contributions, as well as to Dörthe Hellmuth for the dedicated preparation and organisation of the conference and for the meticulous supervision of the conference proceedings. Without the proven careful preparation and execution of the printing by hendrik Bäßler verlag, Berlin, the timely completion of the conference documentation in the present quality would not have been possible. Our thanks go to the Federal Government Commissioner for Culture and the Media and to the Moscow City Administration for their generous support of the conference and the publication as a contribution to the European Year of Cultural Heritage 2018.

Jörg Haspel
President of ICOMOS Germany

Sigrid Brandt
Vice President of ICOMOS Germany

Siegfried RCT Enders/Claus Peter Echter
International Scientific Committee
“Shared Built Heritage”

Leonid Kondrashev
President of ICOMOS Russia

Alexander Kudryavtsev
Past President of ICOMOS Russia

Sergey Gorbatenko
ICOMOS Russia
Chair of St. Petersburg Branch

“Very Old and Unusual”. The Development of the Term “Monument” in German and Russian Legislation

Dimitrij Davydov

Introduction

The recognition that the architectural heritage bears an inestimable witness to the common European past and constitutes an irreplaceable expression of the richness and diversity of Europe’s cultural heritage[1] underlies national cultural policy in Germany and Russia as well as national law. What is meant by “the past”, however, is much less obvious in the German and Russian heritage preservation practice. Are contemporary experts even in a position to judge whether creations from their period deserve to be preserved for posterity? Or is a certain distance in time – for instance of one generation – necessary in order to adequately appreciate the significance of a building? In terms of cultural policy, there may be good reason not to let pass too much time before they are granted legal protection status, at least for masterpieces of architecture: This is the only way in which heritage preservation authorities can prevent or at least control use-related changes – which sometimes occur soon after the completion of a building. In contrast, from a legal point of view, the content of the legal definition of monument is decisive: if a certain time limit is immanent in this definition, this could put a stop to an “anticipatory” heritage preservation practice.

The legal development in the Russian Empire

“Everything that is very old and unusual” – this formula was used in the Russian Empire at the beginning of the 18th century to describe objects that were to be reported and delivered to the local authorities in order to complete state collections.[2] Artifacts from the time before the Polish invasion were considered “very old”, so that an age of about 100 years was sufficient to consider an object worth preserving.

In the 19th century an increasing attention paid by both the state and the public to the architectural relics of the previous epochs[3] was reflected in numerous efforts to preserve “patriotic monuments”, without there being consensus on which edifices should be protected, for what reasons and how. So, it is no wonder that the legal acts of the state institutions and the appeals of the historical societies expressed different ideas about the nature of the historic and cultural heritage and operated with different notions of monuments.

The use of the terms “antiquity” and “ancient monument” in Russian monument conservation practice in the 19th century was associated with the idea of having to protect historic buildings and archaeological sites from destructive projects and looting due to their age and the rarity value associated with this age, but also due to their value as authentic sources for the research of earlier epochs.[4] It was in keeping with this understanding that the first state monument protection authority – the Imperial Archaeological Commission, founded in 1859[5] – was commissioned to search for, research and scientifically evaluate objects that “were primarily related to the history of the fatherland and the lives of the peoples who once inhabited the space now occupied by Russia”. The temporal distance required to classify an object as an “ancient monument” initially varied, depending on political developments: In contrast to the time of Peter the Great, the time boundary shifted further into the past since the expansion of Russian rule to the Crimean peninsula and the northern Black Sea coast – and the sites of Greek and Roman antiquity located there. For example, the decree of the Committee of Ministers “On the preservation of ancient monuments in Crimea” of 4 July 1822 stated that in Taurida it was not so much the Turkish and Tatar monuments “close to our time” that deserved state care as rather the Greek and Genoese monuments. The question of how old an object had to be in order to be preserved for posterity was also answered differently by state and non-governmental monument preservation institutions, some of which operated in parallel in the second half of the 19th century. For example, the Imperial Archaeological Commission looked after objects from before 1725.[6] On the other hand, the monument protection commission of the Moscow Society for Archaeology – an honorary institution, founded in 1870 – regarded the year 1800 as the boundary for the classification of a building as “historic”.[7]

In addition to the “age value”, the central criterion in Russian monument preservation practice of the 19th century was the “historic and memorial value” of an object, i.e. its relationship to historic events and personalities. Public interest therefore focused primarily on places and buildings that were mentioned in the sources as the scenes of key events in Russian history or were particularly closely connected with the rise of the ruling dynasty. The monument preservation movement was thus not only intended to serve the historical science, but also to meet the need for objects that would create a national identity. This was connected with the idea that a building or work of art could remind us of significant historic events and thus be a “historic monument” even if it was not itself a contemporary witness of these events. This view comes to light in the draft monument protection law that was discussed in 1877, according to which contemporary works of monumental art that were supposed to recall certain historic events – for example the monument “Russia’s Millennium” in Novgorod only erected in 1862 – should also be regarded as “historic monuments”. Until today it is

still controversially discussed whether the understanding of the preservation of monuments as part of a comprehensive culture of remembrance was thereby expressed, or whether the recognition of works created on behalf of the ruling elite for the purpose of its own legitimacy as national cultural assets was merely intended to strengthen the positions of power of this elite.[8]

The legal development in the German Reich

The development of the monument legislation in the German Reich was also marked by considerations of a necessary time limit. The Monument Law of the Grand Duchy of Hesse-Darmstadt, adopted on 16 July 1902, which is regarded as the first modern monument protection law in Germany, generally described architectural monuments as objects in whose preservation there was a public interest for historic, in particular art historic reasons. Apart from that, the Hessian law didn't fix any minimum age of monuments, but rather opened up the option of defining a specific age limit by means of a separate regulation. The State Monument Council installed in Hesse-Darmstadt pleaded against the enactment of such a regulation, although it considered a regular time interval of 30 years from the monument's origin to be appropriate.

In Prussia, on the other hand, the Circular of the Minister of Spiritual, Educational and Medical Affairs and of the Minister of Public Works of 6 May 1904 laid down that monuments were to include all "remains of past artistic periods" if they were either "purely historic" or "important for an understanding of the culture and artistic concept of past periods", or "of significance for the picturesque image of a place or a landscape" or "exemplary for the creativity of the present in the field of fine arts, technology and crafts". According to the Circular, state protection was to cover the "works of all completed cultural eras", the last of which was to be completed around 1870.

The change of the definition of monument in Soviet legislation

After the efforts in the Russian Empire for a modern monument protection law based on the Western European model ultimately failed due to the outbreak of the First World War and the Revolution, these approaches were taken up again by the new rulers after 1917. The slogan issued by the revolutionary movement, "Let us renounce the old world", was initially not successful in dealing with cultural heritage. Instead of a clear content-related separation from the earlier understanding of monuments, traditional concepts and categories were used in legislation and above all in administrative practice. As early as 1918, a government decree on the protection of monuments of art and antiquity was issued,[9] followed by a further decree on the protection of natural monuments three years later.[10] In the government decree of 7 January 1924[11] and the subsequent Instruction of the People's Commissariat for Education[12], these two objects of protection were treated together, while architectural monuments, archaeological monuments, museum objects and parks and gardens were defined as subcategories.

In the 1920s, for the stocktaking the state heritage authorities used the epochs of Russian architecture: the historic building stock was initially divided into four categories according to importance, starting with architectural masterpieces and ending with other buildings merely typical of the period. For the classification the building material – wood or stone – and the time of origin were decisive. The highest category (so-called "unique examples") only included architectural masterpieces, the first category stone buildings from before 1612 and wooden buildings from before 1700, the second category stone buildings until 1725 and wooden buildings until 1825 and the third all objects from later periods. Depending on the rank determined, the scope of protection varied from a comprehensive obligation to preserve all components of the uppermost category to the preservation of only individual components of those of the third category.[13]

When at the end of the 1920s – especially after the tenth anniversary of the October Revolution – the ideological penetration of the monument preservation practice increased, this manifested itself in a clear focus of state protection on objects with ideological significance as carriers of a hero cult developed by the state and party leadership, while at the same time neglecting supposedly "ideologically foreign" monuments and sites.[14] New types of protected objects were introduced, such as the "Monuments of the Revolution", the "Monuments of the Civil War", and the "Monuments of the Red Army". It was about protecting buildings or places that were supposed to commemorate events that the Soviet regime regarded as groundbreaking. For example, the development of the object category of "Monuments of the Civil War" was connected with the intention of the Central Committee of the Communist Party to publish a complete work on the history of the Russian civil war and the resulting desire to capture, secure and valorise battlefields of war, e.g. at Petrograd, Caricyn and on the Crimean peninsula.[15] The fact that the battles to be commemorated here were less than two decades old was apparently not perceived as an obstacle.

Historic monuments also retained this exceptional character in later Soviet administrative practice. For example, as early as 1942 – at the height of the German-Soviet war – the Museum Department of the People's Commissariat for Education of RSFSR decided to list the sites of battles, resistance nests and war graves as future historic monuments. The implementation of this idea followed in the post-war period, especially in the Brezhnev era, when the collective commemoration of the Great Patriotic War had advanced to a state task. The "places of remembrance", i.e. war memorials, which were erected mainly in authentic theatres of war and often using original defensive positions,[16] were in practice treated as objects of monumental protection just as buildings and works of art from earlier centuries. Thus, the memorials built around Leningrad at the end of the 1960s to commemorate the siege – the "Green Belt of Glory" – were listed just a few years after their completion.[17]

The USSR's Monument Protection Law of 29 October 1976 also took account of this politically intended interweaving of traditional monument protection with the state commemorative culture. According to Article 1 of the Law,

Figs. 1 and 2: St Petersburg, the Green Belt of Glory, "Sestra Memorial", 1960, listed in 1974 (© Dimitrij Davydov)

the generic term "historic and cultural monuments" included "buildings, places of remembrance and objects connected with historic events in the lives of the peoples of the USSR, the development of the State and society, works of material and intellectual creation that have historic, scientific, artistic or other cultural value". Historic monuments as a subcategory are described in Art. 5 of the Soviet Monument Protection Law as objects that should bear witness to "the revolutionary movement, the Great October Socialist Revolution, the Civil War, the Great Patriotic War, the socialist and communist construction, the strengthening of international solidarity".[18]

The legal development in post-war Germany

The understanding of monuments as testimonies of completed historic and cultural eras inherent in monument law since 1900 was also taken up in the development of legislation after the Second World War. A notable exception was the Baden Monument Protection Law of 12 July 1949, which declared objects of "old and new origin" to be monuments. The legal definition (Art. 2, paragraph 1, sentence 1) described monuments as "works or structures by human hands which deserve to be preserved by the general public in so far as they form sources of knowledge for the beings, becoming, living, creating or fates of a human community or in so far as they are capable of impressing feelings and emotions and of acting in an exemplary or otherwise educational manner, be it through artistic design, masterly execution, individuality or age, be it through the memories associated with them, be it through the communication of a lively illustration of creative acting and change of culture or as a landmark and value of the homeland". In the administrative regulation issued by the Baden Ministry of Culture and Education it was explained that the authors of the law did not want to restrict the public interest in conservation to the historic and scientific significance of an object alone, but also wanted to include objects in the circle of monuments which, for example, had an educational value as sources of aesthetic enjoyment or as exemplary achievements. The controversial question of whether the concept of monument should be extended to contemporary creations was thus to be answered "in a positive sense".

However, later on this concern of the Baden legislator was not taken up again. Other West German monument protection laws were based on the conventional idea that monuments had to be things "from bygone times", e. g. the Schleswig-Holstein Monument Protection Law of 7 July 1958. In the administrative regulation for this law issued in 1960 it was made clear that "creations of the present" should be covered by the law 30 years after their completion at the earliest. The Monument Protection Law of Baden-Württemberg, which replaced the Baden Monument Protection Law in 1971, also operated with a cultural monument definition that, according to official justification, focused on the "traditional cultural heritage".

The assumption that a placement under protection requires a certain distance in time was also reflected in the jurisprudence of the administrative courts dealing with proceedings under monument law. In Bavaria, for example, the Higher Administrative Court links the notion expressed particularly by Wolfgang Eberl[19] that the object must come from a "completed historic epoch" with the formulation "from a bygone era" (Art. 1 para. 1 of the Bavarian Monument Protection Law). In its judgment of 10 June 2008, which dealt with the monument value of a commercial building in Munich erected in 1985 according to a design by Matteo Thun, the Court stated that restraint is required if contemporary buildings not belonging to a "completed period of art or architecture" are to be placed under protection.[20] If the time limit of monument protection were to move "too close to the present", the Court argued, this could lead to a "museumisation of life". The result would be an unreason-

able restriction of the owner's room for manoeuvre, which would be difficult to reconcile with the constitutional property guarantee. And so, in the end, the Higher Administrative Court regarded postmodern architecture as a stage of architectural development that had not yet been completed at the time of the decision.[21]

Even in those federal states whose laws, unlike the Bavarian Monument Protection Law, do not prescribe any kind of time limit, courts have so far predominantly assumed that monuments must, according to the will of the respective legislator, be material testimonies of past epochs. For example, the Higher Administrative Court of North Rhine-Westphalia – based on the legislative material – decided that the legislator was primarily concerned with the protection of "historic substance worthy of preservation from destruction and loss" when passing the Monument Protection Law. That's why, the Court said, monuments should be placed under state protection in their capacity as "visible signs of identity for the dimension of history".[22] From this, the Court derived the conclusion that all characteristics of the legal concept of monument in North Rhine-Westphalia have the category of being historic in common.[23] The understanding of the historic value as an overarching characteristic which radiates to the other monument value categories can also be inferred from the jurisprudence of the administrative courts in Lower Saxony. The Higher Administrative Court of Lower Saxony, for example, in its decision on the memorial site at the Synagogue Square (Synagogenplatz) in Wilhelmshaven, stated that the monument protection focuses on the safeguarding of historic edifices in the broadest sense. It's about using those buildings as documents of historic epochs and developments, the Court argued, in particular in the history of art or architecture, but also general or social events or periods of time. A building that does not document this, but only refers to an earlier state – the formerly existing synagogue – cannot be a monument itself.[24]

Fig. 3: Düsseldorf, Dreischeibenhaus (1957–1960), listed in 1988 (© LVR-Amt für Denkmalpflege im Rheinland, Silvia Margrit Wolf)

The Administrative Court in Düsseldorf held a different position in the 1990s. In the decision concerning the so-called Dreischeibenhaus in Düsseldorf, an office building, erected 1957–1960 according to a design by Hentrich, Petschnigg and Partners, the Court initially left open whether the application of the monument definition in North Rhine-Westphalia necessarily presupposes a temporal distance of one generation, and thus of about 30 years.[25] This question was not decisive in the dispute over the Dreischeibenhaus, since the temporal component was already fulfilled here. In a later decision, however, the court confirmed that even a building that was only erected 22 years ago – the Rank-Xerox-Haus in Düsseldorf-Lörik, also built to a design by Hentrich, Petschnigg und Partner between 1968 and 1970 – can be a monument in North Rhine-Westphalia as a "contemporary document of architectural history". The Court has now expressly opposed the idea that the concept of monument, due to its inherent historic dimension, presupposes that the object worth protecting must come from the past, however far back in time, or even from a completed historic period. Rather, in individual cases younger, "even contemporary" objects could also be monuments, primarily due to being a particularly outstanding or even unique architectural achievement.[26]

The legal situation in the Russian Federation

In the Russian Federation, the Federal Law № 73 of 25 June 2002[27] introduced a new generic term – "object of cultural heritage" – which, however, was combined with the previously used term "historic and cultural monuments" to form a unit.[28] This – and the hierarchical structuring of the monument stock into three classes according to the territorial principle: monuments of federal, regional and local significance – was intended to express a certain continuity between the Soviet and the new Russian system of monument protection, even though the former ideological orientation was completely abandoned. However, the criteria for the recognition of monuments were reformulated. In order to be worth preserving, fixed objects had to be "the result of historic events", "and valuable in terms of history, archaeology, urban planning, art, science, technique, aesthetics, ethnology, anthropology and socio-culture", "a testimony of epochs and civilizations and an authentic source of information for the emergence and development of culture".

Fig. 4: Düsseldorf, Rank-Xerox-House (1968–1970), listed in 1994 (© LVR-Amt für Denkmalpflege im Rheinland, Silvia Margrit Wolf)

The legal requirement that an "object of cultural heritage" must "have arisen as a result of historic events" has a significant practical consequence: according to Article 18 paragraph 12 of the Russian Monument Protection Law of 2002, an object must ordinarily be at least 40 years old in order to be included in the State Cultural Heritage Register. This time limit is extended to 100 years for archaeological objects, while a rigid time limit is waived for so-called "memorial dwellings", i.e. the dwellings of well-known personalities, with the result that such a dwelling can already be designated as an "object of cultural heritage" after the death of the corresponding person.

Even if buildings from the period of "advanced socialism" have exceeded the 40-years mark in the meantime, they will only rarely be found in the official monument lists. In St Petersburg, for example, it is noticeable that outstanding buildings from the 1960s and 1970s which have been included in architectural guides for years due to their design quality or innovative construction, such as the Sport & Concert Complex (1967–1980) and the River Yacht Club (1960–1980)[29] are not listed as "objects of cultural heritage". One cannot help wondering whether this circumstance is merely due to the current progress in monument listing or whether it reflects a disregard for the architectural testimonies of this period.

Final remark

Everything that is "very old and unusual" has as a rule long found its place in the official lists of monuments in Germany and Russia. The fact that this legal status alone does not provide protection against higher-ranking interests or human failure is impressively demonstrated by the monument losses of recent years, such as the destruction of the Dormition Church in Kondopoga or the Paland Manor, a moated castle in Erkelenz. Remarkable buildings of comparatively low age, however, are often not even awarded this official recognition. Consequently, they can disappear at any time from the townscape – without social discussion, without consideration of mutual interests and without previous scientific documentation. It has therefore not yet been established that "new and unusual" objects must automatically be protected as historic monuments. However, it is difficult to deny that it may be the subject of monument protection without one having to fear a "museumisation of life".

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I

Archaeology of Contemporary History – Difficult Inheritance?

Forensic Archaeology in the Russian Federation

Asya Engovatova

The collaborative work between archaeologists and forensic experts seems to be heading in an interesting direction. Unfortunately, however, collaboration with forensic experts in Russia only began in the last ten years.

During the Soviet period in Russia, archaeology usually covered the period up to the 16th or 17th centuries. Layers from the 18th century and later were normally left unexamined by archaeologists. This was due to theoretical ideas according to which the cultural layers after the 17th century were not of interest to archaeologists – since there was almost nothing new left to say, by comparison with written sources. Over the period from the 18th to the early 20th centuries, the number of written records was so substantial and complete that it seemed archaeology had little left to add – and therefore further archaeological research seemed to be less important.

However, from the early 2000s onwards, these concepts began to change. The view was now taken that examining the cultural layers and sites of the 18th to 20th centuries had value. The results of such archaeological work led to new additional information. A number of significant events were connected with this radical change in the viewpoint of the archaeological and scientific community.

The most visible example was the absence of archaeological work (and archaeological research) during the work of criminologists on the graves of the final generation of the Romanov royal family – Emperor Nicholas II and his family (Fig. 1). There are probably many people here today who don't know the terrible details of the shooting of the royal family, which took place in Ekaterinburg in 1918, when the last of the Emperors was killed. Not only the direct family were murdered, but also their domestic staff and their doctor. The bodies of the assassinated were hidden at a secret location. For 70 years the remains of the bodies and their location were unknown. Any idea of searching for them was impossible due to the restrictions imposed by communist ideology. This meant that only after the collapse of the Soviet system, in 1991, one could seriously start searching for the burial location and excavating it.

One of the official coroners began excavations at the probable site, together with criminologists. However, the excavation was conducted very unprofessionally, and a large sec-

Fig. 1: The royal family in Tyumen (West Siberia) in 1917

tion of the burial site was destroyed in the process. Only the major bones and skulls were recovered. From an archaeological viewpoint, this was practically vandalism. Many artefacts were unfortunately destroyed. The remains which were recovered (mainly the skulls) were examined by the coroner and the criminologists, to compare them with photographs of the royal family taken when they were alive. However, the lack of proper contextual material from the burials (which would provide the true archaeological background for the finds) made the results of these unprofessional excavations inconclusive. Unfortunately, the Russian Orthodox Church did not examine or confirm the authenticity of the remains (Fig. 2). To this day, the authentication of these remains is a matter of dispute, and their status still remains in question.

This negative result shows the need for archaeologists to be involved in all studies and excavations, in order to achieve the best results. This is why in 2013, Russian federal law was changed to incorporate significant additions. Today archaeologists work on all sites that are over 100 years old. The choice of this one-hundred-year limitation was made on the basis that it marks the likely end of oral history – when information from great-grandparents to great-grandchildren can no longer be handed down.

Fig. 2: The Russian Orthodox Church did not examine or confirm the authenticity of the remains. Instead, they decided to run their own authentication commission.

Fig. 3: Examining mass graves dating from the Napoleonic Wars in Kaliningrad (former Königsberg)

Fig. 4: Shako military headwear of the Fourth Regiment of Line of the Kingdom of Westphalia, from a mass grave of soldiers and officers of the Great French Army, in present-day Kaliningrad

All archaeological finds dating not only from the 18th and 19th centuries, but also those from the first decades of the 20th century now belong to the mandatory competence of professional archaeologists. We have to study not only locations which featured in the Napoleonic, Caucasian, Crimean and other wars, but also – for example – burials from the First World War and sites connected with the Russian Revolution and the Russian Civil War which immediately followed it, during the early decades of the 20th century (Figs. 3 and 4).

Russian archaeologists are also very experienced in using the techniques of forensic science when investigating

Fig. 5: Reburial of the remains of Soviet soldiers who perished during the Second World War

Fig. 6: The burial vault of General Yermolov, with signs of looting (photogrammetric model)

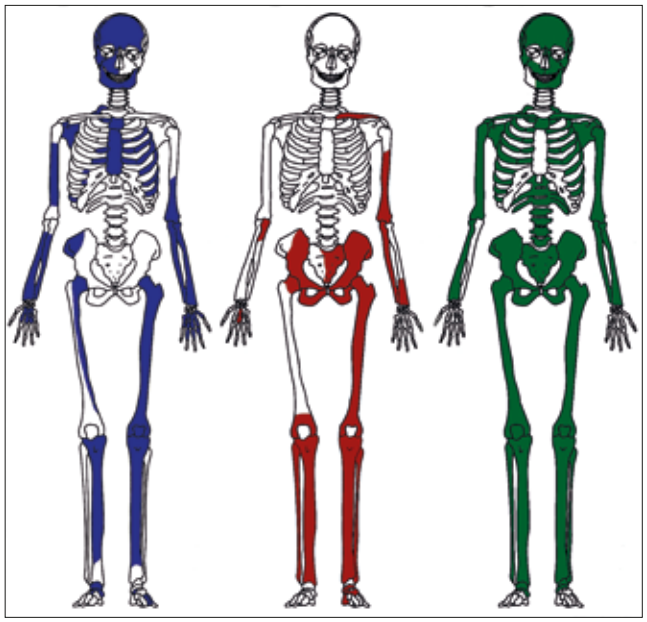


Fig. 7: Preservation of the remains from the family burial vault of General Yermolov

Fig. 8: Remains of a general's epaulette from the burial of General Yermolov

important historic sites of the 19th and early 20th centuries. Information about such sites was frequently lost or distorted during the Soviet period, or the sites themselves were severely damaged.

Despite this, forensic archaeology has not yet become established in Russia as a separate branch of science. Currently, it is only in the initial stages of its development. Russian archaeologists and forensic scientists are separate professional spheres. The involvement of forensic scientists and coroners in archaeological work most frequently happens on the personal initiative of particular experts, and there is no established legal precedent for such collaboration. How-

ever, a number of interesting studies have been made over the recent decades. Their results provide both positive and negative statements on the involvement of forensic scientists in current archaeological expeditions in Russia.

In the early 21st century Russia was able to take an important step in the development of legislation regarding rescue archaeology when the European Convention on the Protection of the Archaeological Heritage ('the Valetta Convention') was ratified. It had been put forward in the city of Valetta in 1992, and remained under discussion until 2011. The academic community acknowledged the importance of ratifying this document, since it covered a great many existing threats to archaeological sites and monuments. Based on European experience, recommendations were made for the preservation of archaeological heritage and for the bases of rescue archaeology.

The ability of archaeologists to make accurate assessments for such sites is of great value for modern archaeology. The results of investigations undertaken at sites from the end of the 19th and the early 20th centuries have already shown how much additional information this can provide and that this could not have been obtained from written evidence alone.

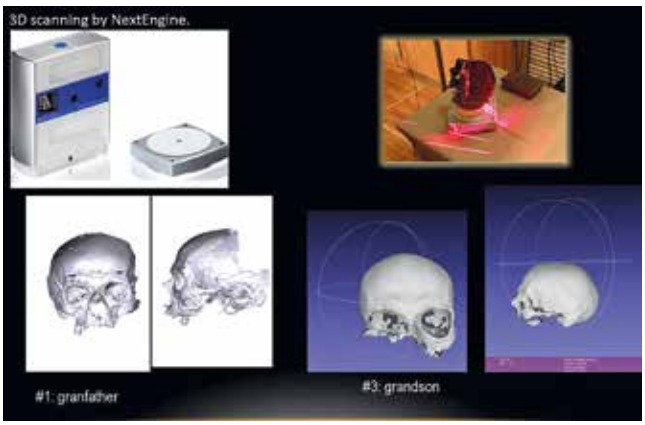
This means that archaeology is in a position to add a completely new viewpoint to historic events. Currently there is an ongoing and hotly-debated discussion in Russia about how far archaeologists should be involved in work connected with sites from the Second World War (1939–1945). At present, the search for military graves and their reburial is carried out exclusively by the Army Commission, with no involvement of archaeologists at all. On paper, the dates of the Second World War are not covered by the existing archaeological legislation. Furthermore, the Army Commission receives dedicated and significant funds for these reburials (Fig. 5). For archaeologists, all context material is of great significance for the purposes of identification and reconstruction. At present, the information uncovered by the so-called 'special search teams' who research Second World War burials is ignored. This increases the risk of serious mistakes being made during such work, if archaeologists are not involved. It should also be added that the methodology used in searching for these burials and identifying them in the European zone of Russia is very archaic.

The results obtained by archaeologists at a number of significant sites give a vivid impression of what could be revealed if archaeologists were always involved in such investigations. One of the most striking examples of collaborative work between archaeologists and criminologists has been the investigation of the family grave of one of Russia's most famous military leaders of the 19th century, General Yermolov. The general was one of the most notable figures during Russia's war with Napoleon – he served at the Battle of Borodino and at the taking of Paris. In the 19th century, a portrait of General Yermolov could be found in every tavern in the Russian Empire. He remained just as active after the Napoleonic wars, during the military campaign in the Caucasus. He founded the famous city of Grozny, as a military garrison of the Russian army. Even today, the name of General Yermolov is hated by Chechen people. This is one reason why the scientific work in connection with his tomb, carried out by forensic scientists and archaeologists, received such prominent political attention. Yermolov's grave was discussed and in political circles.

Fig. 9: Anthropological expertise conducted on the human remains from the Yermolov family burial vault.

Figs. 10 and 11: Anthropological expertise conducted on the human remains from the Yermolov family burial vault

The collaborative work of archaeologists and forensic scientists was considered to be a success. The myth that his grave had been robbed and his skeleton stolen by Chechen activists in the 1990s was disproven – as was another story, namely that Chechens had thrown out all of the grave's contents, and instead had placed the remains of famous



Figs. 12–15: Currently, when anthropological expertise is conducted in Russia, the latest identification methods are used during inspection of the remains (photogrammetry)

Chechens there. During the excavations, archaeologists were able to verify the objective truth. In fact, different people had broken into the family grave at different times since the late 1930s when the church was closed. Archaeologists found ample evidence of repeated break-ins at the crypt, in the form of household items left behind by robbers. A total of four periods of such break-ins were recorded – at the end of the 1930s, during World War Two, in the 1980s, and in the early 1990s, as evidenced by candy wrappers (Fig. 6).

All three burials in the vault – Yermolov himself, his father, and his son – had been turned over. Apparently, the robbers were searching for treasures – the skeleton and some clothes had partly been pulled out of the coffins. However, the remains of the bodies were not stolen. Archaeologists and forensic scientists managed to collect the scattered bones belonging to the three men (Fig. 7). Their state of preservation made it possible to correlate them to the three historic individuals. Fragments of uniforms considerably helped the archaeologists in this process. Items of uniform, such as period-specific buttons and epaulettes, were fully consistent with the members of the Yermolov family (Fig. 8). The anthropological characteristics of the skulls – despite their poor condition – correspond to the proportions we see in their lifetime portraits. There is a family similarity to be seen between the skeletons (Figs. 9–11). DNA testing made on the remains gave a confirmed answer about their family relationship. Thus, it was only the comprehensive work of archaeologists together with forensic scientists and anthropologists which made it possible to understand the confused situation in the family grave of General Yermolov. A scientific basis was established for disproving all the myths about the theft of the coffin from the grave.

Over the four most recent fieldwork seasons, archaeologists have begun to make more frequent explorations of late-period (19th and 20th centuries) burials, although these remain isolated investigations. Of all the excavation permits issued in 2017, a total of over 3000, only five or six were connected with the period of the turn from the 19th to the 20th century.

We have only now begun to work with forensic scientists on the 20th century period. Yet the main task currently is to change the legislation regarding archaeology. This should include enabling archaeologists to receive Open List permissions to work at sites up to and including the period of the Second World War (Figs. 12–17).

Probably the first stage should be directed towards the most complex projects of that period. There are two issues involved, the first being that there are not very many field archaeologists in Russia, probably no more than 4000. But the second issue, which is just as important, is that the Second World War period is not enthusiastically seen by the community as a whole as a research period for archaeologists.

Fig. 16: Forensic scientist S. A. Nikitin creating a portrait on the basis of a skull.

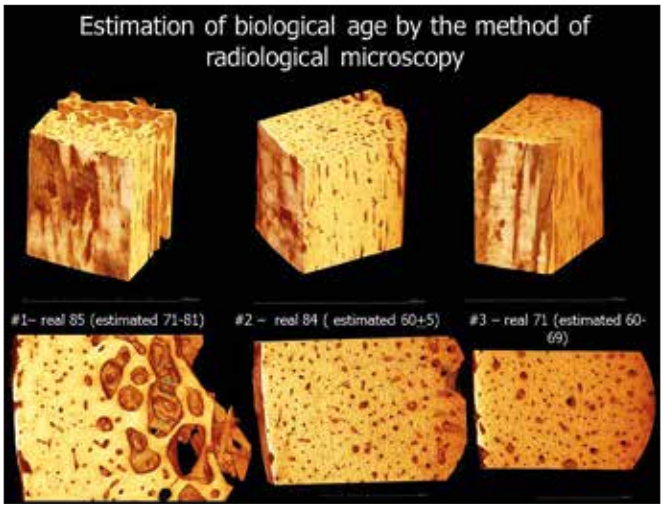


Fig. 17: Estimation of biological age by the method of radiological microscopy

Archaeological Monuments and Finds of the Second World War and the Cold War in Berlin

Karin Wagner

Since the mid-1980s, Berlin's archaeological conservation department has been involved with the archaeological monuments and finds of the Second World War and the Cold War in Berlin that remained in the ground, a procedure that was controversial among experts at the time. The aim of the symbolic excavation begun in 1985 by the Aktives Museum Faschismus und Widerstand in Berlin and the Berliner Geschichtswerkstatt and continued by the Senator for Cultural Affairs on the grounds of the former Prinz-Albrecht-Palais (today's Topography of Terror) was to uncover the underground structural remains of the cells and cellars of the buildings of the Secret State Police and the High Command of the SS in order to make the public aware of them once again. In 1988, the cell floors were listed in a constitutive procedure.

After 1990, areas that had been inaccessible due to the Berlin Wall became part of the planning for the capital and were designated for the construction of parliament and government, such as the area of the former Ministergärten (today the Holocaust Memorial and the buildings of some of the permanent representations of the German federal states in Berlin). After geophysical investigations, as a result of which archaeological building supervision was carried out, various bunkers (the bunkers of Hitler's motor pool and of Joseph Goebbels' official residence) and structural remains of various government buildings from the National Socialist era, including those of the Neue Reichskanzlei, came to light.

The best-known testimony is probably the bunker of Adolf Hitler's motor pool on the grounds of the Ministergärten, at the corner of Ebertstraße/Voßstraße, which was opened and documented in 1992, a bunker whose entrance had been buried by bombs or artillery fire (Fig. 1). Its discovery resembled a "frozen moment of the last days of war and of the downfall," as Alfred Kerndl put it. The remaining interior, cutlery, weapons and uniform parts, but also empty bottles of wine and schnapps, as well as murals give an idea of what the bunker inmates thought and of the apocalyptic demise of Berlin in the spring of 1945. After several unsuccessful efforts, this bunker and the bunker of the official villa

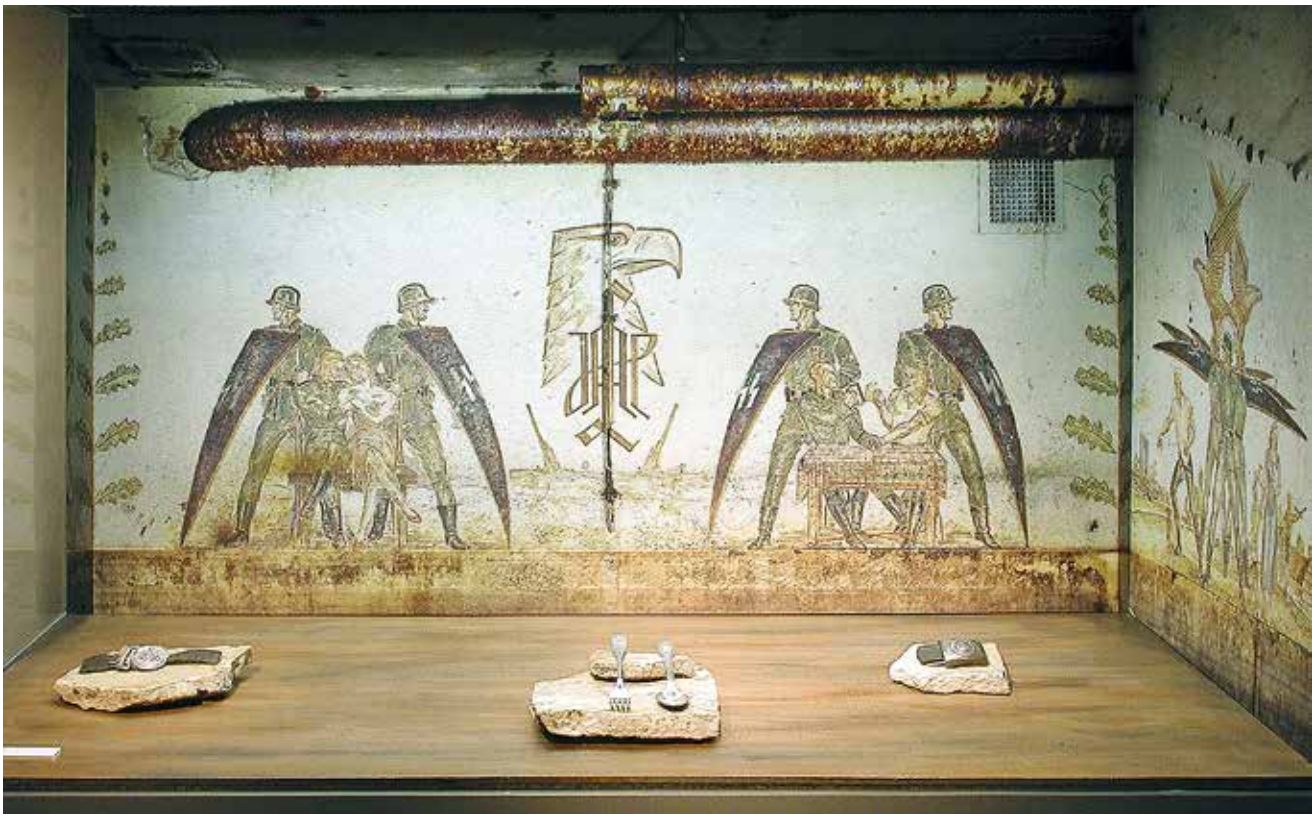


Fig. 1: Finds from the bunker of the motor pool shown in the exhibition "Archaeology of Horror", 2005 (© Claudia Klein)

of Propaganda Minister Joseph Goebbels on Behrenstraße, which had been opened in 1998, were included in the Berlin monument list in 2006.

In the course of an archaeological rescue excavation of a Late Bronze Age settlement, which was carried out because of the federal housing programme, remains of barracks emerged in Lichterfelde-West in 1998 which on the basis of aerial photographs, maps and photographs as well as published eyewitness reports could be assigned to one of the 67 satellite camps of the Sachsenhausen concentration camp. The foundations of three barracks and splinter ditches of the camp built in 1942 came to light. The recovery of waste and ammunition remnants from several deeply filled pits was carried out by the bomb disposal team. The Lichterfelde Satellite Camp Initiative, formed as a result of the rediscovery of the camp, accompanied the subsequent construction work and collected finds from the camp, which were first brought to the Heimatmuseum Steglitz and then to the Museum of Prehistory and Early History of the Berlin State Museums, Berlin's deposit museum, as archaeological finds worth preserving. The restoration workshop of the Staatsbibliothek zu Berlin made a semi-burnt and weather-beaten file of the camp readable again (Fig. 2). It contained the accounts of material movements between 1942 and 1944 at the SS construction sites and evidence of a number of hitherto unknown construction sites and labour battalions of camp inmates.

The archaeological excavation carried out in the area of Berlin-Tempelhof Airport since 2012 has uncovered relics, fragments and traces remaining in the ground. Together with the analysis of aerial photographs, it provides valuable information in particular on forgotten and partially removed buildings and facilities.

After the law on the preservation of the Tempelhofer Feld in was adopted in 2014, the archaeological prospections on the Tempelhofer Feld, which had already begun in 2012, were continued. Among other things, they served the purpose of discovering the forced labourer camps located thereon. Along the edges of the airfield several barracks camps were arranged, in which forced labourers were accommodated, who were used among other things in the armaments production (Fig. 3). The excavations on the Tempelhofer Feld led to a cooperation project with the Institute of Near Eastern Archaeology at Freie Universität Berlin, which is processing the excavations and finds from 2012–14.

The Old Tempelhof Airport was one of the first civil airports. It started in 1923 and remained in operation until 1945, while between 1939 and 1945 the entrance building for the new airport by Ernst Sagebiel was used for armaments production. This work had to be carried out mainly by forced labourers recruited from Eastern Europe, who were housed in the barracks camps adjacent to the entrance building.

The former Columbiahaus military prison was used as a concentration camp in 1933–36 and demolished during the construction of the Sagebiel building. During the excavation, the pit of the house was found, which had been filled again after its demolition so that only a trace of one of the most feared prisons of its time has survived. In these fillings there was the fragment of a cellar wall that could have belonged to the house and therefore probably represents the last fragment of the Columbiahaus. Whether it is a relic of the cellars where tortures were demonstrably carried out cannot be said for sure.

Fig. 2: Camp file in the exhibition "Archaeology of Horror", 2005 (© Claudia Klein)

The forced labour camp in the Columbiadamm area is characterised by well-preserved floors of the camp barracks, a fire extinguishing pond filled with a vast number of finds, and splinter protection ditches only at the entrances (Fig. 4). One of the camp barracks which according to the sources was inhabited by Russians showed remains of various technical installations, indicating water, heating and sewage in the barracks. It was also surrounded by a barbed wire embedded in the ground, which is interpreted as an obstacle to prevent inmates from approaching. In the area of the camps, a small collection of personal items was found, such as a prayer chain, a harmonica, plaques, jewellery (brooches, a ring), toys (marbles, a domino), a black plastic hair comb with an engraved date, and clothing (buttons, textiles, and shoe remains). For the former owners, they are memorabilia believed lost of their years of forced labour in Germany under inhumane conditions. For society they are also memorabilia of the dark sides of Tempelhof Airport and of German history. Some of them, such as the plaques and marbles, were probably even made in the camp. The simplicity and the self-production of the objects under the given circumstances give them a special meaning, as they were certainly an enrichment for the owners in the dreary everyday life of the camp.

The BERLIN lettering on the tarmac, 100 m long and 15 m high, is still preserved at the old airport. Its white colour was intended to provide orientation for arriving aircraft. With the beginning of the air war over Berlin, the lettering was darkened and its white paint was removed. Of the letter R, the concrete edging in the floor has been preserved, as in isolated cases the paving stones laid in rows with remnants of paint.

Fig. 3: Archaeological excavation in a barrack at Columbiadamm, 2012 (© Jan Trenner)

Fig. 4: Splinter protection trench of the camp in the area of Tempelhofer Damm, 2013 (© Jan Trenner)

During the construction of the Berlin Wall Memorial in Bernauer Strasse, extensive archaeological excavations were carried out in 2007 and 2010 in order to document the remains of the Berlin Wall and the previous buildings in the ground affected by the construction measures. A selection of the remains in the ground was included in the Berlin Monument List in 2010. Several archaeological windows make visible and accessible the authentic remains of the Wall and the buildings located in this area before the Wall, such as the foundations of the Church of Reconciliation situated in the border installations of the GDR and blown up four years before the fall of the Wall.

Several excavations have been carried out to document the individual construction phases of the inner-city border installations in Bernauer Strasse. In Bernauer Strasse, the GDR's differentiated border security system could be documented in the ground. It could also be shown that on the northern side of Bergstrasse the former cemetery wall of the Sophiengemeinde was demolished in the course of the straightening of the border system and that graves were given up. The discovery of modern small finds, such as grave marks, used tracer ammunition (Fig. 5), barbed wire fragments, porcelain spools belonging to signal fences, and cartridge cases of the AK-47 assault rifle used by the border troops of the GDR underline the poignancy and frightening precision with which the border system was secured and expanded.

Fig. 5: Tracer ammunition, 2018 (© Torsten Dressler)

Further archaeological results were the localisation and documentation of the foundation walls of the former Church of Reconciliation. On 21 and 25 January 1985, it also fell victim to border security when two blastings were carried out and the remains were removed.

The oldest traces of border fortifications were documented in archaeological prospections of the former houses at Bernauer Strasse 9, 10, 10a and 18–20. Most of these houses were destroyed during the Second World War. The houses on Bernauer Strasse 9–10a became famous, because their inhabitants attempted to flee to the West in August 1961 by abseiling and jumping out the windows. Initially, the GDR had the windows and doorways of the buildings bricked up, and later the buildings were demolished. At the beginning of the construction of the Wall, parts of the façade walls bordering Bernauer Strasse were incorporated into the border system as temporary walls. As a visible sign of the ruthless demarcation of the border, the cellar niches with their hollow blocks of concrete were found during the archaeological prospections of the former houses 9–10a. Visitors to the memorial can experience the foundation walls of the border houses 9–10a as a walk-in archaeological window and view the walled-in cellar niches (Fig. 6).

On one of the few still undeveloped plots of land on the southern edge of the open-air site of the Berlin Wall Memorial, the unusual course of the border installations, which were elevated here, was documented in 2017 in the area of Nordbahnhof. They crossed the track of the Stettiner Bahnhof, which had been moved higher from 1892–97. The station bridged streets that crossed in the terrain (Figs. 7, 8).

With the help of additional slabs and backfills, the border wall, which also included other elements such as control strips, vehicle barriers, guard paths, light lines, signal fences, signalling networks and hinterland walls, was brought up to the rail track and even crossed it. At a height of approx. 3 m above the top edge of the terrain, the border installations bent northwards. In the area of this bend a round watchtower BT 6 was in operation from 1969–83 and a square watchtower BT 9 from 1983–89/90, which gave this area the appearance of a bastion.

During the time of the GDR border installations, the underground S-Bahn station in the Nordbahnhof was closed. The station's buildings above ground were located in the restricted area and were closed from 1961–89, bricked up and secured against possible escape attempts. The workshop building located in the restricted area was first used by the transport police and the GDR border troops as a guard house and base and demolished in 1969.

The Berlin Wall Foundation secured a number of building and equipment parts of the border installations in the ground recovered in the area of the Nordbahnhof in order to be able to show them as original and archaeologically dated evidence of the installations in the open-air area. These include the concrete slabs that enabled the border wall to be brought up to the rail track, barbed wire remains from the early days of the border installations, concrete poles of the signal fence with remains of the barbed wire, and a cable duct of the light line laid in a casing pipe and covered with clay blocks.

The foundation of the square watchtower was recovered with the aim of extending the open-air site to its original location, of setting it back close to its original location and making it visible. Together with the tower, the installations that maintained its function were salvaged: parts of the glazed clay sewage pipe leading out of the tower foundation, the drinking water pipe next to it, a yellow painted steel girder with rail profile and concrete poles of the signal fence south of the foundation.

By chance, in 2017/18 a vehicle barrier and the accesses to escape tunnels at the edge of the Wall Park came to light. Due to an exchange of areas, the remaining evidence of the early border installations of 1961–63 in this area was not replaced by the more recent barriers, which led to the rediscovery of the vehicle barriers and escape tunnels that no longer existed in other areas.

A concrete bed weighing 28 t and measuring about 6 m length x 4 m width x 0.60 m height with five separate dragon's teeth embedded in it formed the in-situ foundation of the vehicle barrier, which lay in front of the border wall and thus represented the first obstacle of the border installations (Figs. 9, 10). In the middle of the bed, two separate iron girders of a barbed wire fence were embedded as additional barriers. The iron girders were 2.20 m apart, formed a row and were arranged parallel to the border wall. Several layers of barbed wire rows were stretched between the girders. Vehicle barriers served to prevent a border breakthrough with heavy vehicles, as was feared in this area bordered by several roads.

After the completion of the construction work, the vehicle barrier, like the watchtower, is to be placed close to its original position and made visible. This area will then also be one of the extensions to the open-air site.

A shed located behind the border wall and on the West Berlin side offered favourable conditions for the construction of an escape tunnel. Its entrance was visible by a rectangular, dark discolouration of 3.70 m length x 1.40 m width in the southeast corner of the shed. On the basis of sources, it could be the entrance to the Weinstein escape tunnel, which had been constructed in 1963. The access and the tunnel were not further excavated as they are not endangered.

The tunnel was constructed from March to July 1963. The underground jacking from west to east over a length of 65

Fig. 6: Archaeological window in the open-air exhibition of the Berlin Wall Memorial on Bernauer Strasse, 2016 (© Wolfgang Bittner)

Fig. 7: Nordbahnhof excavation site, border installations west of Postenweg, 2017 (© Torsten Dressler)

Fig. 8: Nordbahnhof excavation site, border installations east of Postenweg, 2017 (© Torsten Dressler)

Fig. 9: Vehicle lock as found on site, 2017 (© Torsten Dressler)

Fig. 10: Lifting of the vehicle lock, 2017 (© Torsten Dressler)

m, a width of 0.80–1.00 m and a height of 1.00–1.20 m was difficult and time-consuming due to the clay soil. Within the narrow tunnel tube, the hard clay was removed centimetre by centimetre, pulled through the tube in buckets, transported upwards and stored in the shed. The clay naturally ensured the stability of the tube. The tunnel was neither completed nor used as it was discovered and destroyed. People associated with the construction and use of the tunnel were sentenced to long terms of imprisonment.

For a long time, there had been a request to excavate an escape tunnel and make it accessible to the public. For structural and above all ethical reasons as well as reasons of monument conservation, there was scepticism about this wish.

In 2017/18 the Berliner Unterwelten e.V. built the 26.5 m long, 1.95 m high and 1.0 m wide visitor tunnel between Brunnenstraße 141 and 143 in order to make the Herschel escape tunnel visible. Starting from the corner building at Brunnenstr. 137/ Bernauer Strasse on the West Berlin side, the Herschel escape tunnel running along the Bernauer Strasse area was constructed as the last escape tunnel in the winter months of 1970/71. Behind the entrance, the tunnel led down an inclined ramp about 6–7 metres below the building's basement floor, before crossing below the border for a length of 120 metres. This tunnel, too, was neither completed nor used, it became known and was destroyed. The people associated with the construction and use were also sentenced to imprisonment.

For the non-destructive exploration of the tunnel, geophysical measurements were carried out in 2014, which detected anomalies at a depth of 5–7 m below ground level. In

Fig. 11: Herschel escape tunnel, cross section, 2018 (© Torsten Dressler)

2017, pile-driving core soundings at a depth of 5.5 to 8 m below ground level revealed concrete remains without cavities, which suggested that the tunnel had been backfilled with lean concrete. Further sounding at a depth of 3.3 to 5.8 m below the top edge of the terrain located a cavity without concrete remains.

For the first time, the archaeological documentation required for the construction of the visitors' tunnel provided information on the state of conservation, the course and the composition of a longer section of an escape tunnel in Berlin.

During the excavation of the visitor tunnel, a cavity measured at a depth of approximately 3 to 4 m below ground level was first encountered, which proved to be a fault situated above the tunnel ceiling. After removing the earth from the cavity, the actual tunnel tube with a cross-section of about 1 m in height and 0.65 m in width was encountered (Fig. 11). The depth of the bed was measured at 5.10 m to 6.10 m below ground level.

Evidence was found of the Herschel escape tunnel at a length of about 28 m in a slightly curved course. The tunnel tube was laid in solid marl and thus naturally secured. The groundwater horizon was below the bottom of the tunnel tube. No penetration of stratum water and of water from cut-off pipes, which hindered the completion and use of escape tunnels elsewhere on Bernauer Strasse, was detected in the exposed area. Nails to fix the light cables and small boards were recovered from the tunnel.

The tour of the escape tunnel will be made possible by the Berliner Unterwelten e.V. as part of guided tours through the visitor tunnel.

The archaeological monuments and finds of the Second World War and the Cold War in Berlin have not only multiplied considerably, from the initial bunkers and forced labour camps to the testimonies of the Berlin Wall. They are gaining interest in a city that is changing as a result of growth. They move into the present and thus closer to the people living in the city, lending their history a face.

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Archaeology of World War I in the Alpine Region. Locations and Traces of the High Mountain Front of the First World War in the Dolomites and on the Ortler Glacier

Waltraud Kofler Engl

The region of Tyrol, a Habsburg land since the year 1363, was in the course of its history always a land of transit, situated along one of Central Europe's most important north-south routes, with intensive cultural and economic contacts. Although located on the Italian language border, up until the outbreak of the First World War it was never in fact a borderland and only affected by minor localised military conflicts. From 1915 to 1918 however, despite its proximity to "Welschtirol" (now Trentino), at the time part of the Habsburg Empire, it was seriously affected by the mountain fronts between Austria and Italy (Fig. 1).

The end of the war in 1918 brought about the disintegration of the Empire and, with the Peace Treaty of St. Germain in 1919, the part of Tyrol south of the main Alpine ridgeline was awarded to Italy as victor. It thus became its northernmost province and a territory in its own right, separated from North Tyrol, with the character of a borderland under the rule of Italian Fascism. The demarcation line, the result of a political decision rather than military victory, would have far-reaching political, social and cultural consequences. Among the population of the land emerged long-standing linguistic, cultural and political-ethnic divides. With the adoption of the Autonomy Statute in 1972, both for Trentino and South Tyrol, some of this tension was relieved and certain linguistic and cultural barriers were removed – but by no means all. Following the Schengen Agreement, the military installations along the frontier were at any rate dismantled.

The Alpine region of Alto Adige (South Tyrol), Tyrol and Trentino contains large numbers of military constructions and relics of fighting, both used and unused, ranging from fortified medieval castles and Habsburg forts and military roads from the 19th century, to positions of the mountain front of the First World War and the structures of Mussolini's *Vallo Alpino* (Alpine Wall), with bunkers, military roads and barracks that were refurbished during the Cold War (Fig. 2). There are also cemeteries whose occupation has changed over time, with reburials and nationalistic, glorified reinterpretations of the First World War, as well as legacies such as the Victory Monument in Bozen/Bolzano, unveiled in 1928 by the Fascist regime as a symbol of Italy's (highly stylised) victorious war in the mountains and its legitimate occupation of South Tyrol. Together with the emergence of the "New City of Bolzano" in the interwar period, with both imperialistic and high-quality buildings reflecting rationalism, and with the Brenner frontier, these are all visible consequences of the First World War. The memory of the Great War is more deeply etched than we might expect.

The main issue here, however, relates to the traces of war that were carved into the landscapes of the Dolomites and the Ortler/Ortles glacier, as well as the approach to all tangible legacies, whose protection, preservation, selective securing (without reconstruction), investigation and presentation as cultural assets in didactic and touristic terms are all stipulated and required by both the Italian law governing the

Fig. 1: Dolomite Front, Schwalbenkofel (photo Waltraud Kofler Engl)

Fig. 2: Sexten, Kreuzbergpass, bunker (photo Waltraud Kofler Engl)

Fig. 3: Dolomite Front, Eisenreich barrack, 2016 and 1916 (photo Rupert Gietl, Sexten)

protection of monuments and by supplementary regulations (Fig. 3). The conservation offices have a duty of supervision and co-ordination and are expressly obliged to provide specialist support to initiatives undertaken by municipalities, associations and stakeholders.

After Italy's entry into the war in 1915, the high-mountain front in rock and ice, active until 1918, ran between Austria and Italy for some 600 km on the territory of four countries (Switzerland, Italy, Slovenia and Austria) from the Stilfserjoch/Stelvio Pass on the Swiss border, across the glaciers of the Ortler massif to Lake Garda, from Cortina d'Ampezzo via Sexten/Sesto, the Carnic Alps and thence to the Isonzo and the Adriatic coast. The establishment of the front and the fighting at up to 3,900 metres above sea level were unheard of in military history and placed a tremendous strain on the organisation, positioning and resupply of the soldiers.[1]

Although a military sideshow, away from the main battle areas on the Isonzo and Piave rivers where the decisive actions were fought, this terrain witnessed extreme positional warfare and enormous losses. Between 150,000 and 180,000 soldiers died in the three years of the high-mountain war, with two thirds falling victim to avalanches, hunger, disease and frost, and only one third killed in the actual fighting.

Although the fronts were far from the inhabited areas, the civilian population was nevertheless affected by the difficulty in obtaining supplies, the fate of the male family members, the heavy burden of housework on women and children, the quartering and encampment of soldiers in the valleys and sometimes by the shelling of settlements such as Sexten. The border war was not only waged in the high mountains but also experienced by civilians.[2]

The ongoing discovery of positions – in Trentino even of corpses – caused by the retreat of the glaciers on the Ortler massif (intently followed by those with an interest in military history and looters alike), today still evokes personal and emotional memories of the fate of the mountain troops.

Owing to the unusual topography, as well as to the archenemy Italy, the remembrance of the "*war in the rock and ice*" had in the interwar period already achieved the status of a "heroic myth" complete with nationalistic overtones, which in some cases persists in today's popular scientific media. This elevation to heroic status in the films by Luis Trenker, the ideological interpretation of history and the bombastic monuments to the dead created by Italian Fascism, as well as the preservation of the Tyrolean militia structures, have all substantially contributed to this.[3] An investigation into the war experiences of the common soldier and the civilian population has only in recent decades become a more relevant subject for research and learning.[4]

Locations and traces of the high mountain front of the First World War in the Dolomites and on the Ortler glacier

South Tyrol, after North Tyrol, contains the shortest section of the former mountain front. While the organisation of the glacier front on the Ortler was to a certain extent determined by topography and climate, the Dolomite Front – whose spectacular landscapes extend far into the Veneto as far as East Tyrol and Carinthia – was several kilometres wide around the "Tre Cime/Drei Zinnen" [Three Peaks] and the Sexten Dolomites.[5] In addition, there were transport and supply infrastructures located in the hinterland. Countless traces in the mountain landscape, including paths, command posts, trenches, gun-crew shelters, caverns, cable-car stations and inscriptions, supplemented with historical photos and reports by the soldiers, make it almost impossible to grasp the area of research and documentation of this scene of conflict (Fig. 4). The trails that hikers use today were created as military routes before and during the First World War. Individual mountain massifs, such as the Paternkofel and Lagazoi, are virtually riddled with caverns, while only a cone remains of the Col di

Lana following the triggering of a massive explosion in 1916. Sleeping quarters can be found in the crew shelters carved out of the rock, and even the occasional installation or personal item that has been spared from the intensive "treasure hunts". The reused rope curtain of a fortress was discovered in debris material from the Rotwandscharte/Croda Rossa.

Much has already disappeared from the landscape as a result of the weather conditions, with no possibility of saving the fragments even by means of complex attempts in the field to secure or reconstruct them, as the next winter will sweep these away. Only photographs, large-scale surveys and some small-scale excavations of particular structures are available for recording and documentation purposes and, in combination with historical photographs, archive material and eyewitness accounts, these are often the only conservation methods possible. Given its enormous extent, the thousands of structures located on the changing sections of the front and the different cultures of remembrance (due also to the severance of South Tyrol), the war in the mountains must be considered both in a holistic and in a transnational way.

The development of satellite geodesy and photogrammetry now permit the economical, precise and even three-dimensional imaging and documentation of extensive installations and landscapes. This in turn means that virtual visualisations, hiking guides and other applications all offer a potential use that concentrates information without the need for reconstructions or on-site displays (Fig. 5).

Initial pilot projects by conservation offices in Trentino and South Tyrol have been extended in recent years, but full coverage of the area will take some years. The projects are being conducted by freelance "conflict archaeologists" and surveying companies with the appropriate technical equipment, supported by local partners with a good knowledge of the area and of the mountains.[6]

Often only traces are left in the terrain, such as the comfortable former officers' quarters, known as the "Million Hut", above the Rotwandscharte; while the structure collapsed, the rock cavern remained (Fig. 6). Even on the exposed Schwalbenkofel, which like many other theatres of war is only accessible via climbing routes, recording and documentation of the remaining structures, built before and during the war, have been supplemented by minimal measures to secure the chosen approach (Fig. 1).

The entire area of the Dolomite Front is nowadays a nature park and a UNESCO World Natural Heritage Site and should not be further developed through new routes. There are therefore no signs or indications in the landscape; they would be short-lived, spoil the landscape, lead into rough terrain and encourage the search for relics even though this is a criminal offence. Knowledge of accessible scenes of battle – where located on trails – should nevertheless be conveyed by means of historical and geographical maps, peace trails and digital and other yet-to-be-developed formats, both in the field and in museums.[7]

The historical stratum of the First World War, long dominated by heroic tales or left to personal memories, is carved into this landscape and is gradually emerging from the shadows thanks to "conflict archaeology" and the questions and

Fig. 4: Dolomite Front, traces on the Frugnonisattel (photo Rupert Gietl, Sexten)

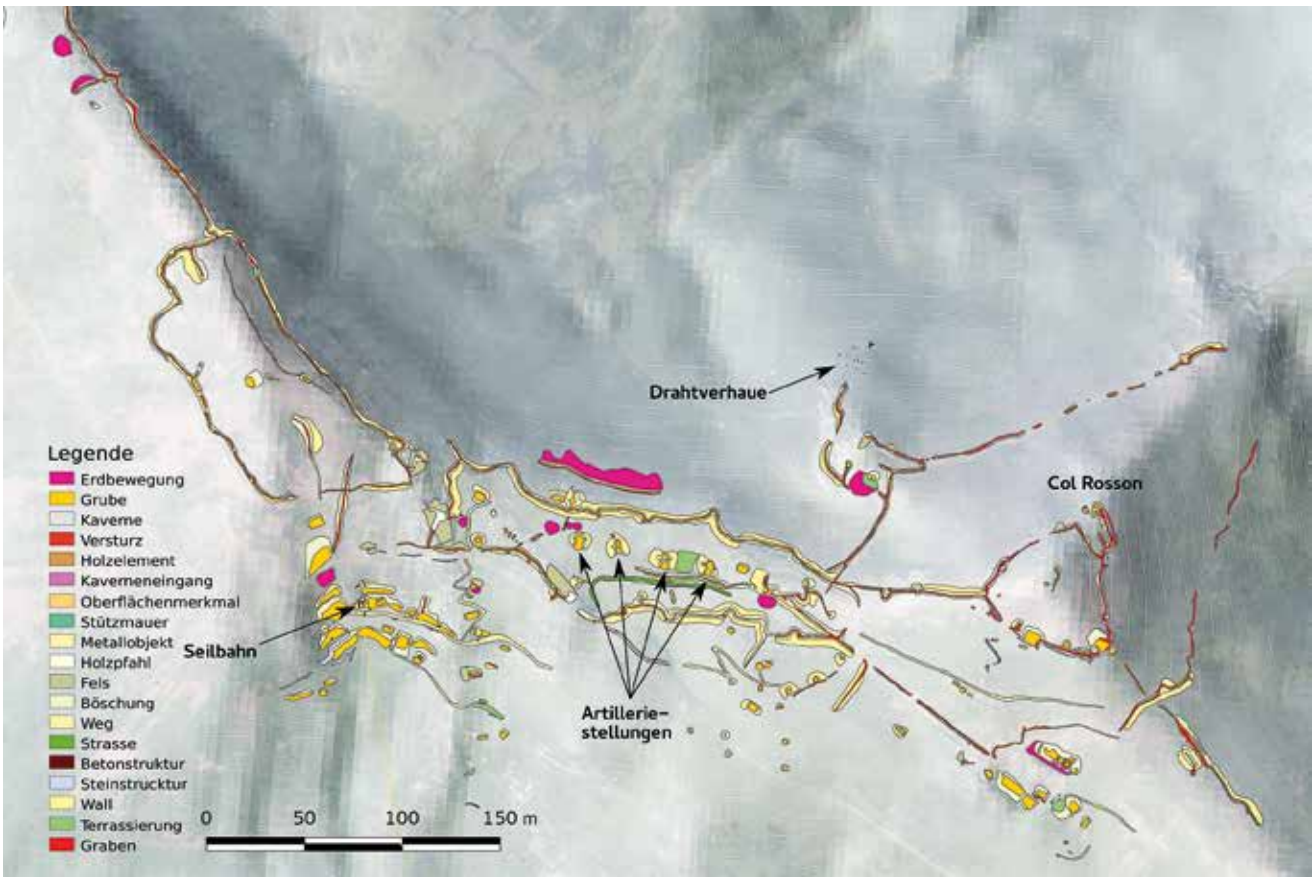

Fig. 5: Dolomite Front, documentation of survey Col Rosson (Arch-Team Archaeology)

methods that it addresses to landscape and archaeological issues (Fig. 7).[8]

The Habsburg fortress of Mitterberg in Sexten has achieved protected status in recent years and will in future host an exhibition on the Dolomite Front in the Sexten Dolomites and the area around the Three Peaks. The *Bellum Aquilarum* association in Sexten actively documents, secures, preserves and teaches about the material and immaterial traces of the First World War.[9] The association receives technical support from the Offices for Field, Building and Artistic Monuments and the Austrian Society for Fortification Research.[10] The local tourist office, in collaboration with the Austrian municipality of Kartitsch in East Tyrol and that of Comelico Superiore in the Veneto, has already published a historical tourist map of the traces of the First World War (*I resti della prima guerra mondiale*) as part of its efforts to promote tourism.[11]

Fig. 6: Dolomite Front, Sexten, Rotwandscharte, officer quarter (Million Hut), 1930 and 2015 (photo Rupert Gietl, Sexten)

Fig. 7: Dolomite Front, documentation of landscape (photo Arch-Team Archaeology)

Fig. 8: Boundary stone, 1753 (photo Arch-Team Archaeology CC BY-SA 40)

Fig. 9: Dolomite Front, Carnic Ridge, archaeological excavation (photo Waltraud Kofler Engl)

A cross-border surveying and research project conducted by the Italian provinces of South Tyrol, Belluno and Trentino, and the Austrian province of Tyrol, is aimed at tracking the border between Austria and the Republic of Venice, established in 1753 by means of surveying and landmarks over a length of 350 kilometres from the Carnic Ridge via the Kreuzberg/Monte Croce di Comelico Pass to Lake Garda (Fig. 8). During the First World War, the front ran along this borderline; in the interwar period Mussolini built bunkers here as part of his *Vallo Alpino*, which were maintained in functional state during the Cold War (Fig. 2).

During the First World War, one of the front lines between Austria and Italy also ran along the so-called Carnic Ridge, which forms the present-day border. Supply routes, gun positions, casemates, trenches, shelters, military hospitals and cemeteries are the traces of the former fronts over large areas and across the borders of this zone of conflict. No documentation or educational work is of use unless it is transnational, large-scale and multi-layered in nature. The Austrian Office for Conservation and Monuments in Tyrol therefore works closely with the corresponding authority in South Tyrol in seeking protected status here. There are no plans for excavation works, nor – apart from a few endangered structures – for any restoration measures, or for information boards other than the usual trail signposts. We are introducing initiatives in the European Sharing Heritage Year of 2018 to transform this border area into a meeting place (Fig. 9).

Following the abandonment of the Dolomite Front in 1917, the Mountain Front on the Ortler massif and on the Stilfserjoch Pass was extended, with positions reaching up as far as the glaciers. Within the provinces of South Tyrol, Trentino and Lombardy shelters can still be found complete with equipment, trenches, battle stations, ice and rock caverns, all left over from the positional warfare waged by both

Fig. 10: Ortler glacier, Eiskögele barrack (photo Waltraud Kofler Engl)

Fig. 11: Ortler glacier, Pleishorn barrack (photo Waltraud Kofler Engl)

Fig. 12: Ortler glacier, Pleishorn, letter from a Czech soldier, 1918 (photo Südtiroler Landesarchiv Bozen)

the Austrians and the Italians. The melting of the glaciers has led not only to such sensational finds as that 27 years ago of Ötzi, the "Man from the Ice". In recent years too, at the western end of the high mountain front up on the Ortler massif, structures and other finds have continuously emerged from the surface, which are then exposed to illegal looting or loss through collapse. Preservation at such altitudes is scarcely possible (Fig. 10).

The Conservation Office of the Autonomous Province of Bozen/South Tyrol has surveyed the remaining positions over several years, for instance on the peaks of the Eisögele, the Pleishorn (Fig. 11) and the Trafoier ice wall, securing the everyday objects left behind by Italian and Austrian soldiers that have emerged from the ice. Much has already been lost, however, stolen in professionally organised "raids", then sold on the black market. It is a race against climate change and theft. Finds such as the blood-stained coat of an Italian mountain trooper or the letters of July 1918 written by his beloved to a Czech soldier stationed below the summit of the Ortler on the Pleishorn[12] – give a glimpse of the expressive power of such cultural assets. "*Přišla [jsem]* šťastně *před 10tou domů Nemohla jsem dlouho usnouti – [u] pominajic na Tebe. Byl to that sen! Viď! – tak na krátkou chvilenku, je mi smutno ----!... Buď hodným a nezapomeň na Tvou růži...*"[13] ("*My dear rascal! I returned home happy before 10 o'clock but, with my memories of you, I could not get to sleep for a long time. It was just a dream, wasn't it – such a short time. Now I am sad. I have no one with whom I can laugh or talk... Be good and don't forget your rose...*") (Fig. 12).

Without local knowledge, experience of high Alpine terrain and the mountain rescue techniques of the members of the "Ortler Collectors of the First World War Association", as well as without expensive helicopter flights, it would not have been possible either to survey or to salvage the finds.[14] The excavation and documentation of the formerly heated Austrian barracks, protruding from a glacier up on the 3,851-metre high Königsspitze, have repeatedly been postponed owing to weather and safety concerns, but promise to reveal an undisturbed, fully equipped position, frozen in place at the end of the war (Fig. 13).[15]

Next to the three heavy guns at 3,000 metres above sea level at the foot of the Zufallspitze/Cevedale, which were hauled there by prisoners of war and remained there after the armistice, a modest memorial was erected in summer 2017 to the victims of this section of the front.

Concluding remarks

In addition to the legal obligation to protect, preserve, research and educate, there is a keen interest of the public, not just of local associations, in the material relicts of the First World War in the high mountains. The initiatives are observed and probed by the media. It cannot be denied that "dark tourism" and its exploitation by the tourist industry play a role here.

Local associations, without whose local and logistical knowledge documentation would not be possible, require fi-

Fig. 13: Ortler glacier, Königsspitze, Austrian barrack (photo Waltraud Kofler Engl)

Fig. 14: Ortler glacier, Eisögele barrack, artefacts (photo Waltraud Kofler Engl)

nancial and scientific support that historians, archaeologists and conservationists should and must provide.

Owing to the presence of the Great War stratum, the mountain landscapes along the front lines can be construed not only as a hiker's paradise or a UNESCO World Natural Heritage site, but also as multi-layered landscapes of our cultural heritage. They must not be abandoned to the tourist industry or to collectors of "treasures", nor to well-intentioned but short-lived attempts at reconstruction.

The cross-border co-operation with Austria, the Veneto and Trentino, despite the different cultures of remembrance, has produced spaces for encounters and joint educational efforts have come into being across the former fronts.

The cultural heritage of the Alpine high-mountain front can be documented, explored, museumised and illustrated without the intrusion of mock-heroics or mythmaking, only by giving first an overview of the structures and traces in the landscape and the relicts of the everyday routine of war. Historical sources such as plans, images, text and documents of soldiers should be preserved and studied by means of cross-border co-operation, interdisciplinary endeavours and multiple perspectives of research. This cultural heritage has the potential for a research project that could start from the hitherto only partially considered places, militarised landscapes and material traces of everyday life in wartime (Fig. 14).

Finally, I would like to mention the emotional stress affecting all those involved in dealing with the material, everyday and personal legacies of the war, the climatic conditions, the ever-present smell in the former crew shelters, and the narrative potential of these cultural assets.

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1 Generally see Labanca/Überegger, Krieg, 2015.

2 See Hämmerle, Opferhelden, 2015, p. 155f.

3 Überegger, Erinnerungskriege, 2011.

4 For example Brandauer, 2007.

5 Kübler/Reider, Kampf; 2006; Kübler/Reider, Krieg, 2017.

6 For conflict archaeologist Rupert Gietl see http://www.arc-team.com/team.php; https://www.academia.edu/34945524/Frontgebiete_unter_der_Lupe_Die_Archäologie_des_Ersten_Weltkrieges_im_Gebirge; https://www.researchgate.net/publication/328027130_Archeologia_della_Grande_Guerra

7 https://www.researchgate.net/publication/320593110_Frontgebiete_unter_der_Lupe_Die_Archaologie_des_Ersten_Weltkrieges_im_Gebirge_Neue_Ergebnisse_der_grossflachigen_archaologischen_Dokumentationskampagne_am_westlichen_Karnischen_Kamm

8 Gietl/Terzer/Steiner, 2015, pp. 4-25.

9 For information on its activity see www. Bellumaquilarum.it; https://www.drei-zinnen.info/de/sexten/sexten/sexten-erleben/bellum-aquilarum.html; https://www.sexten.it/story/freilichtmuseum/

10 See http://www.kuk-fortification.net/

11 See https://www.researchgate.net/publication/320593110_Frontgebiete_unter_der_Lupe_Die_Archaologie_des_Ersten_Weltkrieges_im_Gebirge_Neue_Ergebnisse_der_grossflachigen_archaologischen_Dokumentationskampagne_am_westlichen_Karnischen_Kamm.

12 Soldiers from all of the Habsburg lands were stationed on the mountain fronts.

13 Thanks for reading to Gustav Pfeifer, Südtiroler Landesarchiv, Bozen.

14 The "Ortler Association of Collectors for the First World War" (Ortler Sammlerverein Erster Weltkrieg) investigates, collects and documents material legacies, organises guided walks and supports the documentation from the Conservation Office of the Autonomous Province of Bolzano/South Tyrol; see https://www.ortlerfront.org/der-verein

15 See the film Rai Südtirol Bergwelt: https://www.youtube.com/watch?v=VF-2OSCoCHs.

The Language of the Dead – Genocide, Forensic Medicine and Archaeology

Klaus Püschel

Introduction

Functioning institutions in the field of forensic medicine are a necessity for the future positive development of society. Forensic medicine plays a key role for a peaceful society and for internal safety. Developments towards increasingly sophisticated violent activities require even more teaching and training in advanced technologies and forensic practice as well as research on forensic pathology, toxicology and DNA-technology. Crimes of the past and in the reality of today should not remain unresolved. This is an urgent need.

Activities/Findings

I. The review starts with a report on the exhumation and identification of unknown soldiers from the 2nd World War. With the help of medicolegal investigation and reconstruction methods, an American pilot presumably murdered by a shot in the head (lynch law) and an interned Italian soldier could be identified after about 70 years and brought back home. – Details of this work were published in the *Archives of Criminology* (compare 1, 2, 3, 9).

II. Between April and July 1994, the genocide against the Tutsi in Rwanda claimed the lives of over a million victims. In order to preserve the memory of the genocide, the government of Rwanda and the National Commission for the Fight against Genocide (CNLG) established different genocide memorial sites, which make it possible to properly bury genocide victims, create places for survivors to mourn and remember the lives of those who died. One of the most prominent sites for remembrance, preservation and the prevention of genocide denial is Murambi in the Southern Province of Rwanda (compare 4, 5, 6, 7, 8). At Murambi nearly 50,000 people were killed during the night of 21–22 April 1994 and buried in shallow mass graves. Years later, the bodies were excavated; for the sake of preserving the physical evidence of the genocide they were conserved with powdered lime. We established a very close cooperation with the conservation experts at the Lower Saxony Heritage Conservation Authority (Niedersächsisches Landesamt für Denkmalpflege, NLD). The conservation experts from this institution have been involved in our project since 2016 in regards to cleaning and long-term conservation of the human remains in Murambi (Fig. 1). The memorial site in Murambi was opened to the public on April 21, 2019 in commemoration of the 25th anniversary of the genocide against the Tutsi (=Kwibuka 25).

To a certain extent, Rwanda, the country that we appreciate, love and deeply admire, and Germany share dark and very sad and violent periods in their history. Germany in the first half of the 20th century was responsible for the First and Second World Wars, killing millions of innocent, unarmed, peace-loving people on battlefields and especially in concentration camps during the so-called Holocaust. Rwanda, with a history of genocidal activities since the late 1950s and 1960s, experienced a brutal, exorbitant genocide against the Tutsi 25 years ago, in 1994.

After the Second World War the Germans swore: Never again! The good thing: In central Europe peace and the supremacy of reason have been a reality for more than 70 years, the longest period ever in European history.

However, days of darkness have come up again and again in other regions of our world, on all continents. This was the case in Rwanda in 1994, when the Hutu killed one million Tutsi within 100 days – unforgettable, unbelievable and inconceivable again!

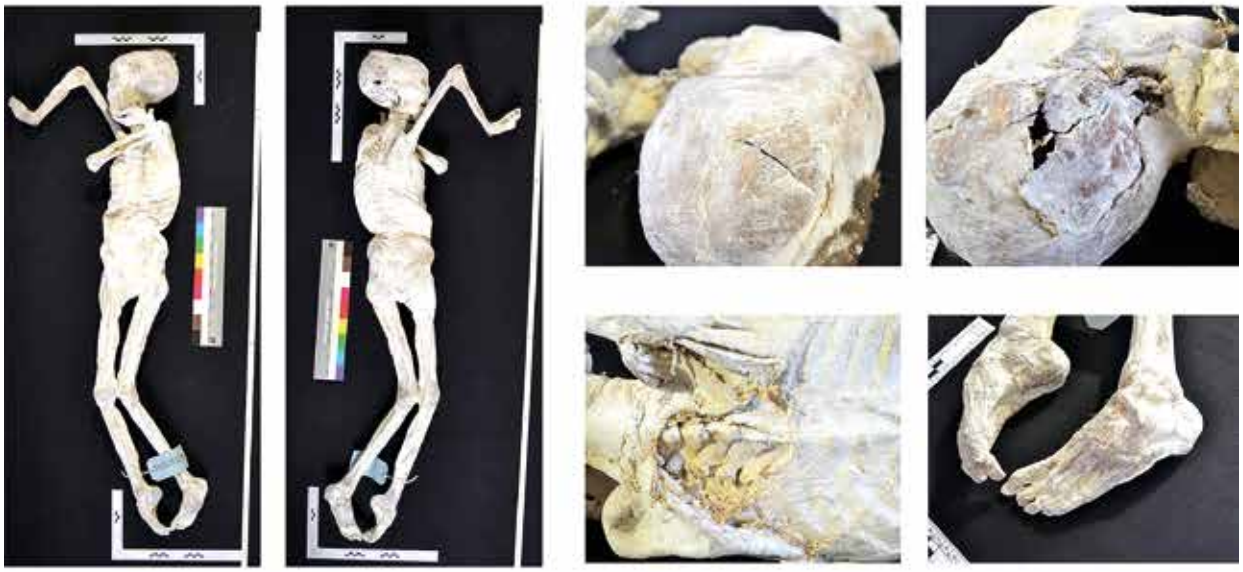
More than 100 years ago, Germany and Rwanda had points of contact in their history. Between 1884 and 1916 Rwanda was a colonial sector of German East Africa. In 1894, the German officer Gustav Adolf von Götzen was the first European living for two months at the court of the Rwandan king. Between 1897 and 1907 the German medical doctor and Africa scientist Richard Kandt explored Rwanda, especially the area around the Kiwu-Lake. In 1898, he described the spring of the Nile, in 1907 he was the founder of Kigali, and since 1906 he acted as resident representing the German emperor. During the First World War, the Germans were driven out of Rwanda by the Belgians. The German colonial activities ended.

We highly appreciated to be back in Rwanda and be part of the 25th anniversary to commemorate the genocide against the Tutsi. It was a great honour for our team from Hamburg and Hannover to work together with CNLG in the preservation of dead bodies of genocide victims in Murambi. The cooperation between our countries as well as between police, legal, governmental and non-governmental organisations and between the societies of our countries has developed into a very positive, sustainable institutional and especially personal cooperation on the basis of mutual exchange, acceptance, confidence, loyalty and friendship. I would like to express my gratitude to our partners at CNLG for their tremendous work to make this cooperation possible. Thanks, too, to all our co-workers in Rwanda and Hamburg and Han-

Human Remain MAR09-04
Gender: : female
Age: 8 – 12 years
Height: 120,8 cm
Weight: 3,31 kg

Time of Death: April 1994
Probable Cause of Death: sharp / blunt force trauma to the head

Remains before cleaning treatment



Remains after cleaning treatment

This young girl was killed by severe blunt and also sharp force trauma to the head. Additionally, the bones of the upper spine lie open and show some injuries. It is not clear if these fractures happened while the girl was killed or at a later date.
This body was cleaned in 2018.

Fig. 1: Human remains in Murambi

Positioning a body on the carrier plate

Inserting the carrier plate into the coffin

Fig. 2: Workplan scenery in Murambi (thanks to M. Lehmann, M. Schaarschmidt, O. Krebs, M. Muhoza and R. Rurenzi)

nover, who have selflessly contributed with their creativity, knowledge, and experience.

The CNLG is our essential partner for all activities concerning anthropology, archaeology, preservation, human remains, and cultural heritage. We notice expansion and new dimensions of cooperation. It's a great honour for our team from the Medical University of Hamburg-Eppendorf and the Heritage Conservation Authority of Lower Saxony to perform scientific and practical efforts within the scope of conservation and presentation of human remains. Special thanks to Monika Lehmann, Dorte Schaarschmidt, Oliver Krebs, Eilin Jopp-van Well, Martin Mukoza and Regis Rurenzi – our team from Hannover, Hamburg and CNLG/Rwanda. They really worked very hard to arrange the exhibition of the mortally injured victims of unforgettable violence, also against children. – Learning from the dead, from death and evil can be a starting point for positive developments. That's our vision.

A clear decision was made by CNLG and the government of Rwanda, namely to choose 20 dead bodies for a preservation project and to put these bodies into transparent coffins to be publicly presented in the memorial. These bodies – 11 adults and 9 children – where chosen on the basis of several factors, such as visible signs of trauma, the appearance of being better preserved than others, and totally anonymous (see Figs. 1–3).

Fig. 3: Final presentation of individual human remains (anonymous) in the conservation hall in Murambi

Discussion

Of course, this is a complicated framework of juridical, cultural, political, scientific and ethical aspects, also in connection with the feelings, wishes, and visions of survivors, victim organisations, relatives and the whole population, an issue of civic and political education.

From my point of view as a university teacher and scientist responsible for matters of truth and proof, violence, injuries and biomechanics, the reconstruction of the exhibition hall is useful and necessary work. The detailed presentation of dead bodies, including those of many children, is impressive. I am truly and deeply convinced of this project. The dead bodies tell us their story more convincingly than any lecture, book, picture or ceremony.

One can directly see, investigate, recognise and reconstruct what happened. Human remains tell us the true story – personally, directly, and clearly, without whitewashing or discrimination.

We summed up our thoughts, feelings, and reconstruction work in a booklet with the title *Never Forgotten – the Genocide Victims from Murambi/Rwanda* (7). From my point of view, the text and the figures give you an idea of our scientific anthropological and archaeological work.

It was great honour and a very emotional personal experience for me to have been at a place where a forensic expert can show and translate what people can learn from the dead. To investigate, restore and preserve dead bodies is a concrete proof of the lessons we have learned, namely to make sure that the people who were killed will never be forgotten!

MORTUI VIVOS DOCENT!

We are very thankful to the following institutions, organisations and foundations in Germany that supported our work with the relevant funding and with continuous personal, long-lasting activities:

- The German Academic Exchange Service (DAAD)
- The Foundation for the Promotion of Science and Culture in Hamburg (Hamburger Stiftung zur Förderung von Wissenschaft und Kultur)
- The Witt-Foundation
- The Heritage Conservation Authority of Lower Saxony (Niedersächsisches Landesamt für Denkmalpflege, NLD) in Hannover, and
- The University Medical Center Hamburg-Eppendorf (Universitätsklinikum Hamburg-Eppendorf, UKE).

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II
Landmarks of Structural Engineering – Tower Constructions

From Innovative Patterns to Symbols of National Identity

Alexander Kudryavtsev

Generally, this type of high-rise structures – radio and TV towers – was considered a tool for innovative high technologies and was constructed on the limits of what was technically feasible. But these structures have become unique city landmarks, a cosmos of science, technology and culture, and even symbols of national identity. They must be carefully looked after; their damage and disappearance would hurt the people.

On 24 March 2018 the TV Tower in the city of Ekaterinburg, in the Ural Mountains between Europe and Asia, was blown up. It was the second-tallest structure of reinforced concrete in Russia – the tallest being Ostankino TV Tower in Moscow, 540 metres, erected from 1960 to 1967. Since then it has become a Moscow landmark and one of the symbols of the Soviet Union and of Russia. The Ural TV Tower, 371 metres high according to the project design, was constructed up to the height of 220 metres. Its erection began in 1983 in a typical project similar to that in Tallinn (Estonia) and Vilnius (Lithuania) and continued until 1991. Then there were financial problems and the tower remained unfinished. Only the trunk of concrete was carried out, including the empty interior space. You can simply imagine it – the cone from 15 to eight metres. In 2000 years, it will attract rock climbers, base jumpers and suicides.

For a long time, the tower and its land were the object of investment and competitions, from fantastic cosmic proposals up to orthodox cathedrals, with the conservation of the tower in 2013. However, the World Championship of 2018 was approaching, and the decision was taken to demolish the tower. Immediately a protest movement of citizens, public organisations, people from the cultural sector was initiated. The final decision on the issue was taken after the president's elections. The process of demolition was observed by the entire city with serious fears; fortunately, it was carried out without any complications. After that the protests diminished and eventually stopped. The State board of conservation of cultural heritage refused to list it, because 1) it wasn't 40 years old; 2) it was unfinished; 3) the project was typical.

I would like to mention the opinion of the French expert on World Expos regarding this case: "The TV Tower in Ekaterinburg included in the project 'The Global Phase' could support the nomination of the city for the EXPO 2025, by

Fig. 1: TV tower in Ekaterinburg, demolished in 2018, general view

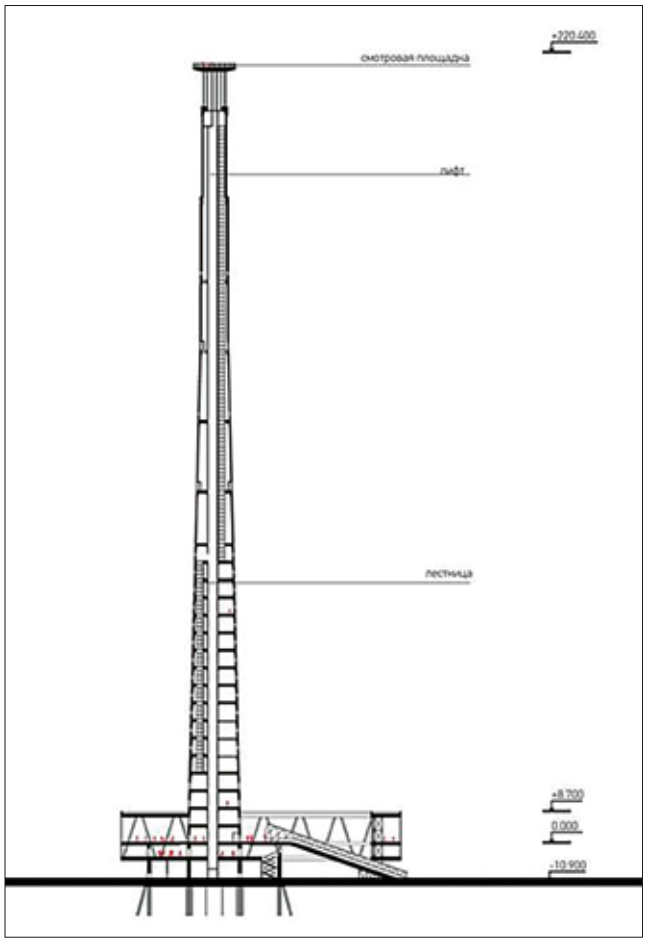

Fig. 2: Design of the TV Tower http://awesomearchitects.co.uk/ru/menu/projects/urbanism/tv-tower-ekaterinburg.html

Fig. 3: The TV tower before demolition (https://neferjournal.livejournal.com/4710982.html)

Fig. 4: The demolition (http://www.brodyaga.com/pages/viewlarge.php?id=51040&cty=Ekaterinburg&place=Russia%20Sverdlovsk&region=Sverdlovsk)

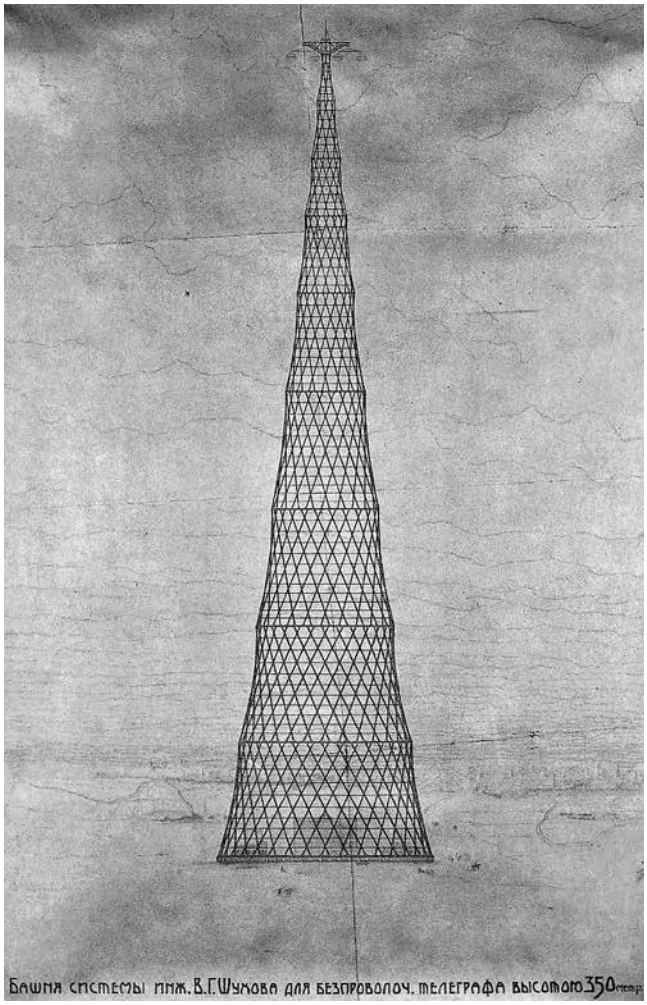

Fig. 5: Radio tower in Moscow, Ing V. Shukhov, design for a height of 350 m (http://inrussia.com/avant-garde-around-the-shukhov-tower)

analogy with the Eiffel Tower, constructed also on the occasion of a World Exhibition".

But at the beginning there was the Shukhov Radio Tower, the world-famous innovative 20th century hyperboloid construction constructed as a structural grid steelwork. Designed by academician V. G. Shukhov and built in the 1920s, it belongs to the Ministry of Communication, was used for radio broadcasting and later for TV broadcasting. Since 2002, it is no longer used for broadcasting, but it still carries cellular network transmitters. Its height: 148.3 metres (in total 160 metres), depth of the basement: three metres. In 1939, the tower faced a serious challenge: a mail plane hit a thick hawser stretched from the top of the tower down to the ground. The hawser had been left after the construction as it was considered harmless. The plane broke apart; the tower was seriously hit. The expertise showed that the tower withstood the test and did not even require repairs.

The tower was recognised as a monument of architecture and engineering, but it has never undergone restoration. Attempts to strengthen it with prefabricated elements are considered vandalism affecting the tower's unique structure. The strengthening ruined Shukhov's basic principle – a certain degree of mobility and self-compensation to external loading. The tower is not protected against corrosion. The moving base of the tower is embedded in concrete, which also violates the kinematic idea of the structure. Access to the tower is restricted and tourists cannot approach it. In February 2014, the Ministry of Communication proposed to dismantle the tower, which had become useless to them, and to move it to another location. This caused a public outcry. The reaction of the Ministry of Culture was distinctly negative. The Government interfered and ordered the owner to conduct conservation work and emergency repairs and to initiate an international competition for the restoration of the tower. In Summer 2014 a referendum was launched for the perspec-

Fig. 6: General views of the built tower (author's archive)

Fig. 7: General views of the built tower (author's archive)

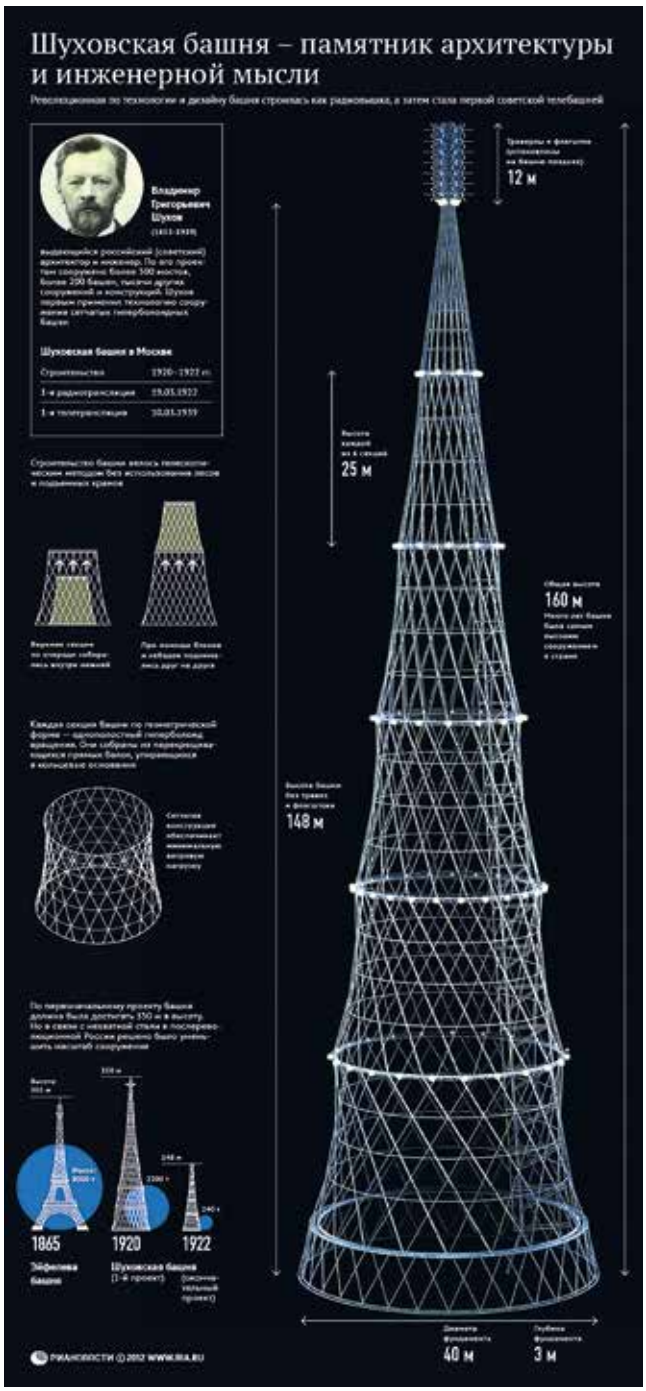

Fig. 8: History of the design of the tower (https://ria.ru/20120319/597065933.html)

tive phase of the Tower, and 90% of the participants were in favour of a conservation of the Shukhov Tower. In July 2014 it was declared that the tower would not be dismantled and that an international competition for a restoration project would be organised. Now the structure is supported by metallic hanger or "coat rack", waiting for the start of the restoration project commissioned in January 2017.

In 2006, the international conference "The Soviet Heritage and European Modernism" in Moscow with the participation of ICOMOS, DOCOMOMO, and UIA adopted a declaration in which six monuments of the Soviet avant-garde architec-

Fig. 9: Protest slogans against the replacement of the tower (author's archive)

ture were proposed for a UNESCO World Heritage nomination. One of these masterpieces was the Shukhov Tower. In 2015 the Foundation "Shukhov Tower" declared such a nomination to the World Monuments Fund.

In 2019 it will be 100 years since the start of the tower's construction. It has survived these 100 years and has demonstrated its capacity and its eternal cultural value, thus becoming one of Moscow's favorites.

There are more than 200 Shukhov Towers in all of Russia. The first one was constructed for the Russian Market in Nizhniy Novgorod in 1896. It also still exists. It is known that the responsible authority of the city has proposed a serial nomination of the Shukhov heritage for the UNESCO World Heritage List. In my opinion, we should support this initiative.

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Fig. 10: Concept proposal for the protection of the tower, 2013 by arch. Y. P. Volchok (author's archive)

Fig. 11: The fixed foot of the construction (author's archive)

Repairs of the Stuttgart Television Tower

Angelika Reiff, Berthold Burkhardt

The history of the television tower

When television broadcasting was resumed in the Federal Republic of Germany on 25 December 1952 (after the Second World War), the Süddeutscher Rundfunk in Stuttgart planned the construction of a broadcasting tower for undisturbed reception in 1953. The Stuttgart civil engineer and university professor Fritz Leonhardt suggested the construction of a slender reinforced concrete tower instead of a steel lattice mast, which would be visible from afar at its high location. In addition to its broadcasting function, a viewing platform and a restaurant in the tower head were intended. Leonhardt, for whom the aesthetics of buildings were always a special concern throughout his life, considered a steel lattice tower ugly. Together with his colleague Walter Pieckert, Leonhardt developed a reinforced concrete tube designed to meet the structural requirements. Architect Erwin Heinle and interior designer Herta-Maria Witzemann, both also from Stuttgart, supported him in design and execution (Fig. 1).

Fig. 1: The first reinforced concrete television tower in Stuttgart, 1953–56

Fritz Leonhardt was an internationally renowned civil engineer; numerous wide-span bridges were built worldwide based on his plans. Leonhardt was not only an innovative engineer for bridges and towers, but also for lightweight structures such as the roofs of the Olympic facilities in Munich in 1972.

The foundation stone ceremony for the television tower took place on June 10, 1954. After 14 months of construction, an aesthetically successful and innovative tower was opened on February 5, 1956, which became a model for the rest of the world. Buildings based on the Stuttgart television tower were built for example in Toronto, Johannesburg, Frankfurt, Seattle, Wuhan Guishan, Moscow and Dortmund (Fig. 2).

In this context, one should also mention the television tower built in 1956–59 in Dequede in Saxony-Anhalt in the GDR, with a height of 185 m without antenna, planned by the project office of the Deutsche Post. This tower is similar to the television tower in Stuttgart, probably because Fritz Leonhardt was already involved as advisor during the planning phase. This tower has also been a listed monument since 1980 (Fig. 3).

The Stuttgart television tower is still used today. Although it no longer has a television antenna, it is still used for radio broadcasts and police radio. It also measures radioactivity levels every second on behalf of the state of Baden-Württemberg. In 1986 the tower was declared a special cultural monument and was added to the monument list of Baden-Württemberg.

The tower consists of the foundation body below ground, the one-storey entrance building, the tower shaft, the so-called Korb (head or basket), and the antenna on top. The upper viewing platform on the four-storey mast basket is 150m high; the total height including the transmitter mast is 217m. The diameter of the shaft is 10.80m at the base of the tower and 5.04m under the tower head. The diameter of the platform is 15.10m. The one-storey flat building, a typical example of 1950s architecture, is divided into the entrance area with access to the elevators, a service building and a small restaurant (Fig. 4).

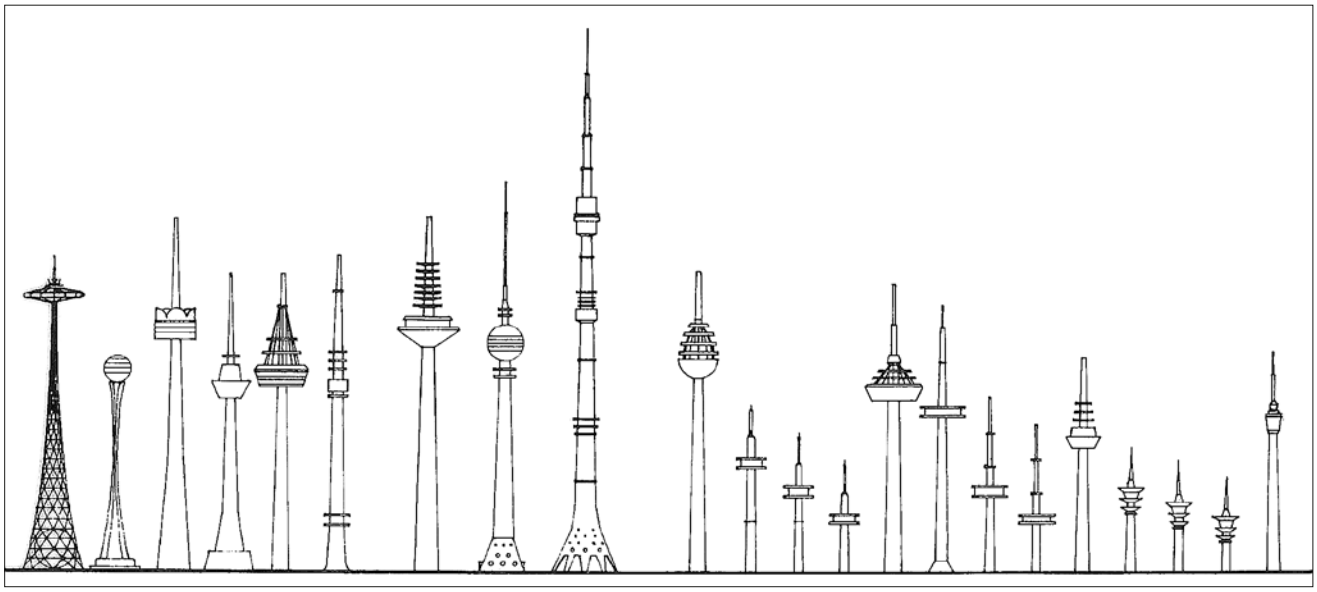

Fig. 2: Comparison of television towers worldwide (selection)

The tower head is reached by two elevators and a staircase in the shaft. The elevators travel at a speed of 5/m second, resulting in a travel time of approx. 36 seconds. The stairs are initially a spiral staircase up to a height of 75m and then a mono track staircase. Inside the tower shaft there were, apart from stairs and elevators, the entire supply lines for the technical broadcasting operation as well as for the restaurant and service facilities (Fig. 5).

The four main floors of the mast head contain the technical equipment of the transmitter, a theatre, a high-altitude restaurant with adjoining rooms, two staggered viewing platforms above and the anchoring of the steel antenna mast.

The foundation of the tower can be regarded as a special engineering innovation. The foundation, which is completely underground, consists of two cone-shaped truncated cones made of reinforced concrete and set against each other. They rest on a pre-stressed reinforced concrete slab with an outside diameter of 27m. This construction appears, according to a description by Fritz Leonhardt, "like a spatial framework of great rigidity". The foundation ends with a one-metre-thick reinforced concrete slab.

The slightly conical reinforced concrete tower shaft has wall thicknesses that taper from 80cm at the base to 19cm at the underside of the mast basket. Structural and dynamic loads, especially wind, and the aesthetic design played a role in the shape of the mast. The concreting process was carried out with a climbing scaffold familiar from chimney construction. 2.50m-high steel sheets were used as formwork.

The head of the tower also has a shape which in turn takes statics and form into account. The upper storey of the four storeys is cylindrical, the lower ones slightly conical and bevelled. In order to keep the wind resistance as low as possible, smooth aluminium without heels and profiles with rounded edges were used for the façade. With glittering reflections, the silver-grey outer skin was meant to "look like part of the atmosphere, depending on the lighting", enthused the builder Fritz Leonhardt (Fig. 11).

Fig. 3: Television tower in Dequede, GDR, 1956–59

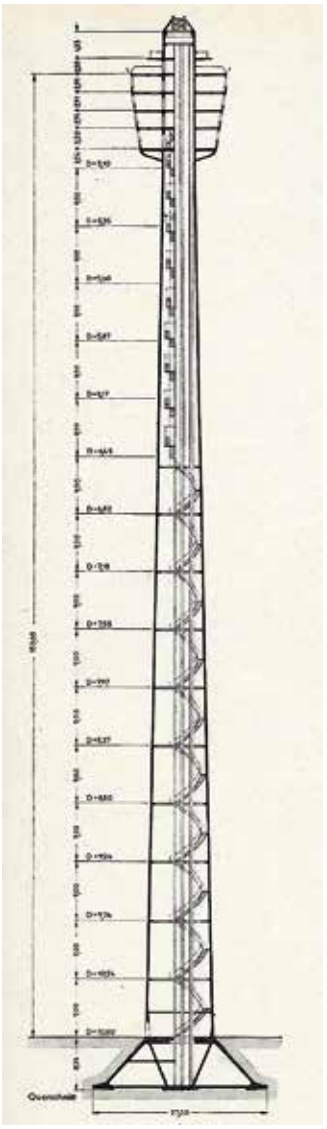

Fig. 4: Section through the Stuttgart television tower

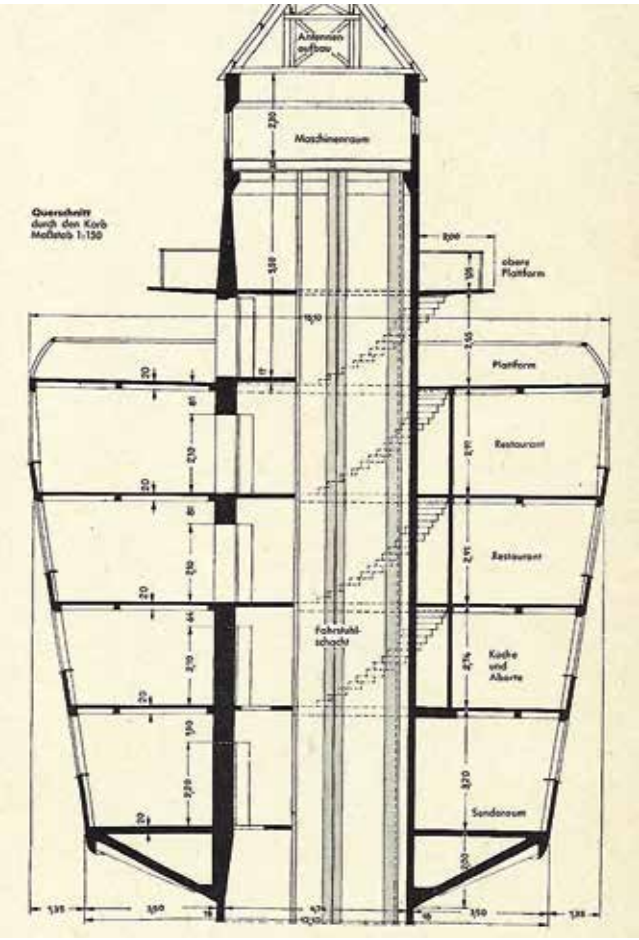

Fig. 5: The mast cage at a height of 150m for technical equipment, restaurant, theatre, viewing platform

Fig. 6: Longitudinal cracks in the tower shaft

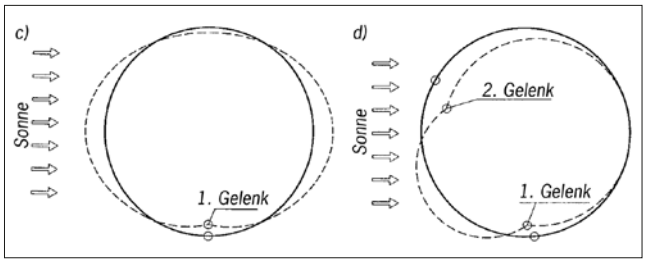

Fig. 7: Deformation of the tower shaft in changing temperatures

For 63 years now, the slender tower has been exposed to wind and weather and has survived storms and hurricanes that were stronger than the experiences prevailing at the time of construction. For the long-term preservation of the stability care, maintenance and safety work have therefore been indispensable.

The owner of the tower, today's Südwestrundfunk (SWR), entrusted the maintenance and repair work as well as the extensive and costly repair measures to the engineering office Leonhardt, Andrä und Partner (LAP), founded by Fritz Leonhardt, to ensure the long-term stability of the television tower. Together with partners, the engineering office regularly recorded and analysed damage developments and checked the reinforced concrete construction as well as the aluminium-clad mast cage with regard to the changed conditions since the construction period, such as the increase in wind speeds.

Concrete repair

As with the construction of the reinforced concrete tower, during the repairs and renovations of both the reinforced concrete shell of the tower (1994–96) and the aluminium shell of the tower basket (2003–06) pioneer work was done. No restoration experience was available.

As early as the 1980s, the temperature fluctuations caused by the winter sun (up to 35 degrees on the south side compared to minus degrees on the north side) were diagnosed as the main cause of the cracks in the tower shaft, which were initially visible from the inside. The cracks were filled with synthetic resin and stiffened inside with steel rings. However, these measures did not prove to be long-term and the cracks increased to the outside of the reinforced concrete pipe.

In 1993, before a further extensive repair of the cracks and concrete spalling, an extensive inventory and damage investigation was carried out in the various areas of the reinforced concrete structure. In the tower shaft, cracks with a total length of 232 m were mapped according to position, length and width. Due to the seasonal and daily changing temperature influences, the circular shaft deformed into an oval shape, in the course of which continuous cracks formed, which can be seen structurally as joints (Figs. 6, 7).

With this damage pattern and the specific conditions of the tower construction, there were no experiences that could be drawn upon. Renovation methods and technologies were extensively tested in the run-up to the renovation measures. The results of the investigations confirmed that the reinforced concrete shell was in a rather unexpectedly good condition with regard to concrete compressive strength and adhesive tensile strength. Compared to previous investiga-

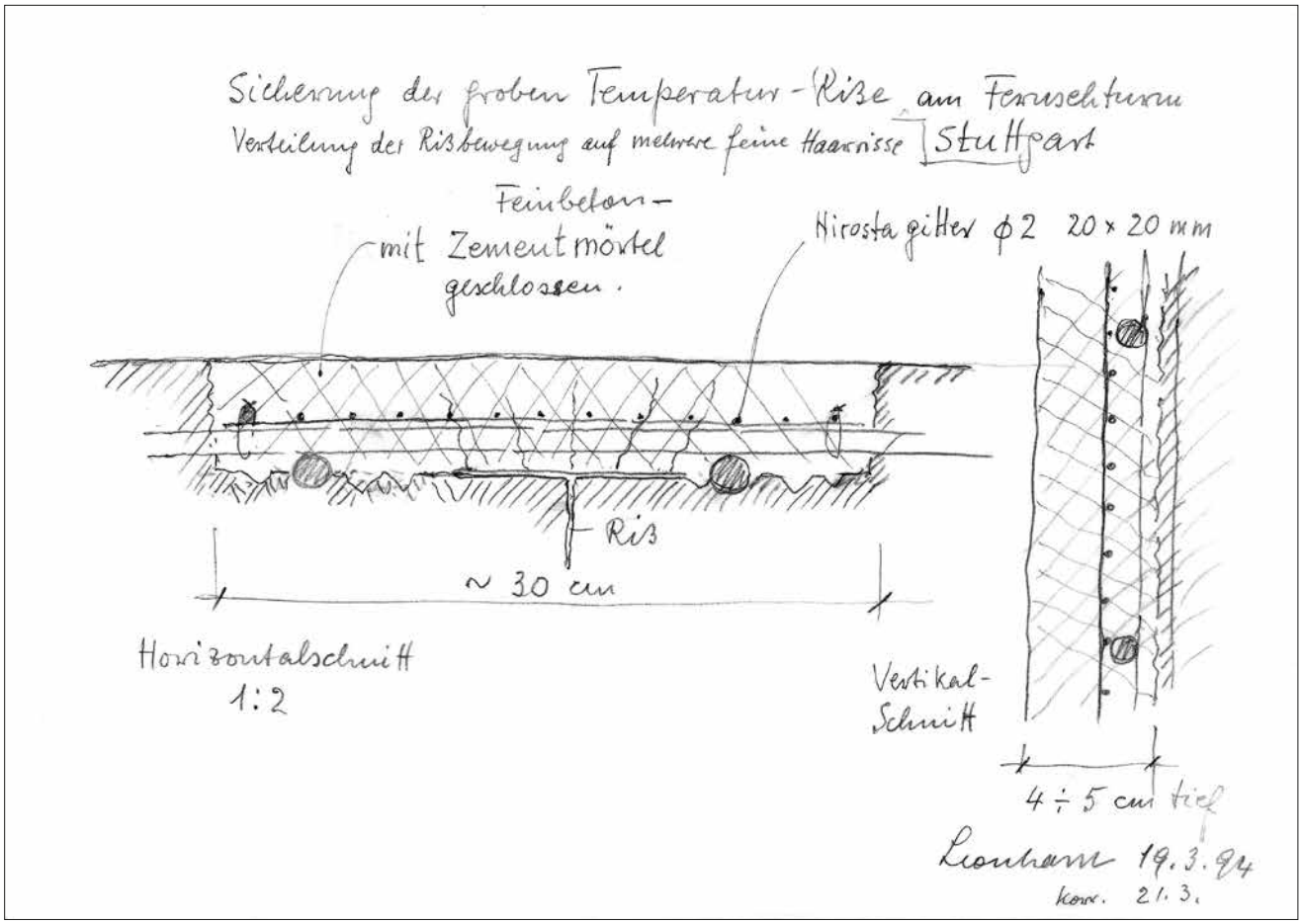

Fig. 8: Sketch for the restoration of the cracks by Fritz Leonhardt

tions in 1984, the damage pattern had not deteriorated significantly. Occasionally, damage was found in the horizontal construction joints from the time the tower was built.

In addition to the scientific, in particular material-technological preliminary investigations and the development of restoration alternatives, the office Leonhardt+Andrä involved the research and material testing institute of the University of Stuttgart (Otto-Graf-Institut – FMPA), as well as the companies Sika Chemie GmbH and Beton-Sanierungs-Technik GmbH for the execution.

The outer concrete surface also showed strong signs of weathering. Corroded reinforcement had led to spalling of the concrete coverings in some places. The testing of renovation methods on fairfaced concrete was in full swing on several buildings during these years.

First, the entire concrete surfaces were cleaned of loose components, moss and algae and coatings applied during earlier repairs with high water pressure. Concealed damaged areas were identified by tapping and closed with the now common methods of reinforced concrete renovation.

The cracks were each milled out with an 18.0cm wide and 2.0mm deep groove. Pores and blowholes were exposed with a wire brush. After dedusting the cracks, the crack-bridging primer was applied by brush. Adhesive tensile tests on the primed surfaces proved that the measure was successful. The cracks were masked with adhesive tape and filled by hand in four operations. After the work was completed, the entire tower shaft shell was water-blasted with high-pressure (working pressure 400 bar) to remove loose mortar parts and the cement paste layer on the surface. A considerable surface roughness and a high abrasion resistance were achieved.

In his old age, Fritz Leonhardt (1909–1999) was still actively involved in the development of suitable renovation methods, and these were ultimately successfully implemented (Fig. 8).

The conservation objective of the heritage authority was to preserve the surface structure and colour of the exposed concrete from the time the tower was built. A coating of the tower shell and truncated cone of the tower head was therefore initially postponed. From a conservation perspective, priority was given to reprofiling and colour matching of the repaired areas to the existing exposed concrete surfaces. Sample surfaces applied several times showed that an alignment could only be achieved to a limited extent and that the concrete surface without coating presented itself as a “patchwork carpet”. A film-forming, opaque coating was excluded. The infiltration of the coating in the area of shrinkage cavities and caverns could have led to detachment. In the end, it was agreed to apply a full-surface scratch and shrink hole filler with a final glaze to protect the surface on the one hand and to achieve a uniform overall appearance on the other. The concrete renovation system must be checked at regular intervals. According to a proposal made by Leonhardt in

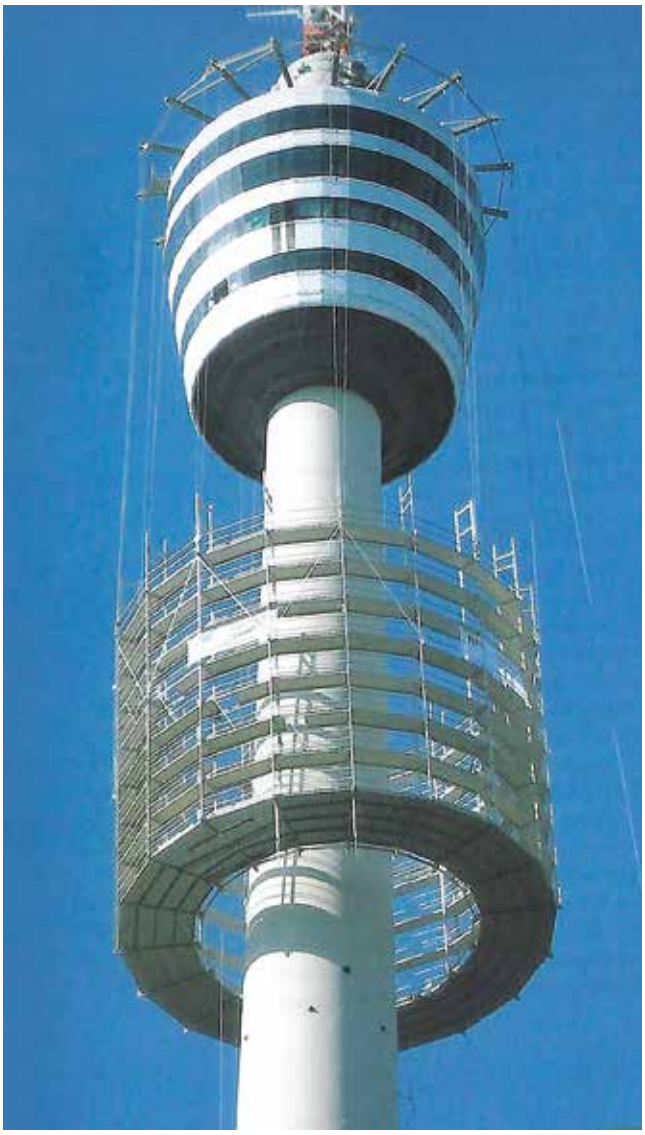

Fig. 9: Elevator on ropes for external repairs

Fig. 10: Replacement of facade elements

1994, for a shaft renovation ropes for mobile scaffolds were attached to the underside of the mast cage.

Renovation of the tower cage

In the early post-war period, not only the construction of such a reinforced concrete tower, but also the façade cladding of the mast cage made of aluminium were new territory. As a result, there was little experience with the service life and any necessary renovations.

For this repair and later maintenance work, cantilever girders were attached to the tower cage, on which a lift cage is installed on cables (Fig. 9). On a cantilever slab with annular conical formwork, the four floor slabs of the tower cage are supported on the outside on 18 reinforced concrete columns. In addition to each slab edge support, there is an aluminium facade post in the field, which extends the height of one storey in each case. It is suspended from the top and bottom of the reinforced concrete slab edge girder via a suspension structure. For this purpose, two horizontal anchor rails were attached to the upper and lower edges of the slab per suspension point in the slab edge beam. Between the facade posts, horizontal aluminium walers and vertically running anchor rails support the facade cladding and window elements. Cork insulation was glued to the outer aluminium cladding.

This renovation measure was also preceded by a detailed documentation of the condition and a damage analysis. At the locations examined, strong corrosion was observed at the anchoring points of the façade construction and on the load-bearing steel parts. The aluminium sheets were examined for decomposition by pitting corrosion. Based on the damage pattern, it was evident that moisture was transported between the aluminium outer skin and the interior cover. One cause was assumed to be the missing vapour barrier on the inside of the cork insulation glued onto the aluminium outer skin. In a manner characteristic for the construction period, the aluminium posts between the interior and exterior were not thermally separated.

However, the commissioned engineers were unable to assess the residual load-bearing strength of the structure and thus its fatigue strength, and due to the difficult conditions

for repair work on the tower structure, they recommended that the facade be renewed. The risk of falling façade parts due to corroded, no longer friction-locked connections was to be eliminated as far as possible.

Corrosion at the connection and anchoring points made of steel angles as well as the desire for an energy-optimised façade by replacing the window elements in the restaurant area had persuaded the client and owner of the Südwestrundfunk tower to carry out renovation work on the top of the tower façade. The engineers' assessment was ultimately the decisive factor in the decision to renew the façade at the top of the television tower (Figs. 10, 11).

The new outer skin was constructed on the basis of the existing facade with thermally separated profiles and insulated panels. The new insulating glass consists of an 8 mm pane inside and a 12 mm pane outside with a 16 mm gap. The offices AIC Haipt GmbH, DS-Plan Ingenieure and Drees+Sommer, all from the Stuttgart area, were involved in the planning.

Fire protection and safety

Several times, the client and the local building supervisor demanded and implemented measures to strengthen the preventive fire protection. For example, a sprinkler system was installed in the tower basket in 1990. The double elevator, which was replaced in 2003, can be operated by the fire brigade for up to 30 minutes in the event of a fire. Last but not least, the theatre, which had been installed in the tower basket in addition to the catering facilities in 2006, was the reason why the building law office of Stuttgart issued the order to build secure escape routes for all levels in the tower basket. Until the implementation of these conditions, the use of the café, theatre and viewing platforms was prohibited with immediate effect. It was not possible to create an additional escape route. A second staircase on the outside of the tower was ruled out not only for monument conservation reasons. Therefore, fire protection experts were consulted in the search for possible solutions, who were able to prove that they were competent in the field of cultural monuments (Halfkann and Kirchner, Erkelenz). The solution approach for a fire protection concept that could be approved included the following points:

– Reducing the risk of fire;
– Rapid detection of the spread of a fire by setting up a comprehensive fire and early warning system and targeted and controlled alarming;
– Optimisation of fire protection and smoke extraction by removing ignition sources. In computer simulations wind dependent smoke developments and distributions were tested;
– Sealing off and encapsulation of fire loads through the use of fire protection cables in conjunction with electronic temperature monitoring of the transmission cables;
– Extension of the sprinkler system and nitrogen extinguishing system;
– Improving and securing escape and rescue routes by creating fire compartments in the basket and on the ground floor and installing escape doors;

Fig. 11: Renewed facade of the mast basket

– Development and implementation of a detailed evacuation concept;
– Optimisation of the organisational fire protection and the fire brigade.

In order to concretise the concept, proof of sufficient stability in the event of a fire was required. Computer-aided fire simulation calculations were carried out to determine the thermal impact on load-bearing and stiffening components of the tower basket and to investigate the possible formation of smoke in the area of the waiting positions on the two viewing platforms (Fig. 12).

The fire protection concept also assumes that the number of people in the tower needs to be limited. As a basis for this, there are the research results of the Moscow scientists and engineers Michailowitsch Predtetschenski and Iwanowitsch Milinski (1965), who investigated the flows of people in buildings, their behaviour in time and density.

A maximum of 320 people (visitors and staff) are allowed to stay in the tower at the same time. For the theatre level, the maximum number of persons is set at five groups of 14 people each, i.e. 70 people (visitors including staff and artists etc.), in order to complete the evacuation in a maximum of five elevator rides of approx. 3 minutes each, i.e. 15 minutes. The number of people in the tower basket is limited to 150, which can be guaranteed by the number of seats and the space available. The engineering certificates for the evacuation were based on this number of persons and an evacuation concept was derived. This is fundamental for both the elevator evacuation and the group evacuation via the staircase in the tower shaft. A turnstile system was installed in the foyer to guide, count and limit the number of visitors.

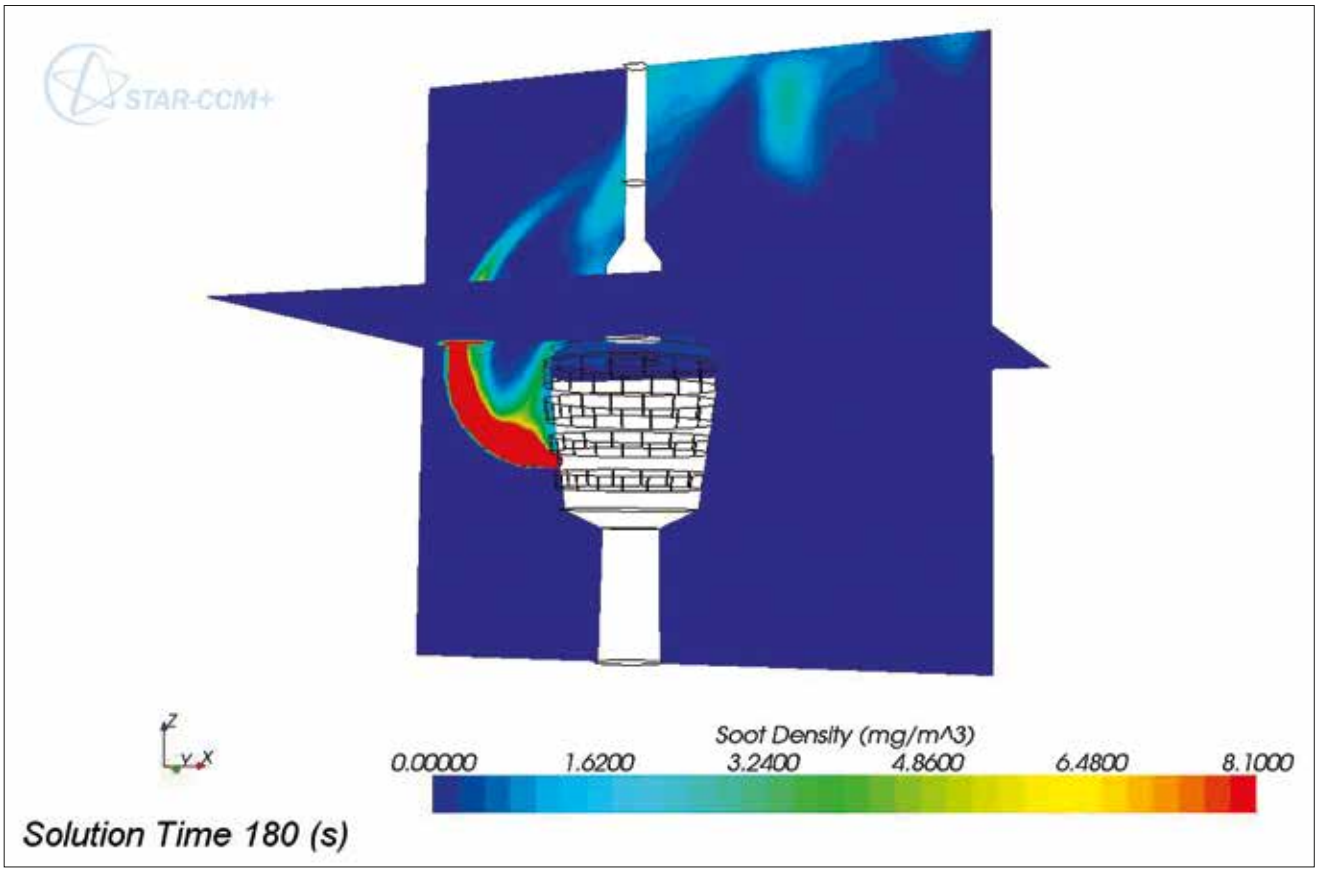

Fig. 12: Simulation of smoke development in case of fire

As an essential retrofitting measure of the feasibility study, the encapsulation of the cable fire loads in the tower shaft was planned in order to avoid an impairment of the escape routes, staircase and lift, which are also located in the shaft.

The transmission and power cables, which led openly upwards in the shaft next to the elevator, were sheathed in flame-retardant material and thus routed in two separate shafts. The next step was to produce a cable shaft for the high and low voltage cables, into which non-combustible fire protection insulation flakes were blown after the cable pull and the cable enclosure. Horizontal fire brakes by means of bulkheads were provided every 1.50 m. Automatic monitoring prevents smouldering fires on cables that are no longer visible. Flame retardant materials and technologies were used to reduce the risk of fire. The existing escape routes, staircases and double elevators, which can be operated by the fire brigade for up to 30 minutes in the event of a fire, were upgraded. The measures ultimately resulted in comparatively minor interventions in the existing structure. They were supported by the monument conservation authority to enable continued public accessibility and use of the television tower.

The interior design of the public rooms was renewed according to today's ideas and regulations. Attention was paid to compatibility with the monument and its history.

On 27 November 2016 the Stuttgarter Zeitung wrote: "The waiting is over after three years: the Stuttgart television tower opens its doors again at the end of January after three years. The new fire protection technology sets global standards."

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The Atomium of Brussels – “Irreparably Improved”?

Charlotte Nys

Although built relatively recently, the Atomium is part of our country’s heritage. In 1958, the Atomium was intended to be a symbol of an era when scientists and engineers were pushing the boundaries of knowledge; it was an emblem of the achievements of Belgian industry, its ability to take on difficult, innovative projects. It has now become a feature of Brussels, a landmark for the capital of Europe and no one would dispute the need for it to be preserved. When it was designed in 1955, it was intended that the Atomium would remain in place for six months, for the duration of the 1958 World Fair. Consequently, it was designed for this limited lifetime. However, 60 years on, the Atomium is still there. This monument underwent renovation in 2006 to ensure its preservation and continued influence. We will now take a close look at today’s Atomium. Is it the same as the one built for Expo 58? Has the renovated Atomium retained its authenticity? How do the adaptations to the original design work from the point of view of heritage conservation?

Brief history

For the World Fair of 1958, Belgium wanted to build a spectacular construction that would serve as both a symbol of the event and a celebration of Belgian industry. André Waterkeyn, the director of Fabrimetal, came up with the idea for the Atomium, representing an iron crystal, and so referencing the iron and steel industry that sponsored the project. The Atomium drew attention to the importance of scientific research and especially to the huge potential of energy concentrated in the atom. The project involved magnifying the distance between the atoms that form the crystal 160 billion times.

Architecture, geometry, habitability

Fig. 1 shows the names used by the Atomium’s designers for the spheres and identifies them by their symbols: I for the lower spheres, M for the upper spheres and B, C, S for the bottom, middle and top spheres. For aesthetic reasons, the crystal was arranged to form a vertical diagonal. The Atomium is 102.705 metres high (from the ground to the top of the upper sphere) and its shape projected on the ground is of a hexagon with a diagonal of 94.750 metres. The perception of the Atomium’s size would be quite different if there were houses along the road leading up to it. The diameter of the spheres is 18 metres.

All the spheres, except for the M spheres, are divided into several levels inside. Due to the Atomium’s distinctive geometry, as well as the central support, the structure needed to be stabilised by three peripheral supports provided by bipods. These bipods have two important functions: to support the three lower spheres and to accommodate the stairways required for visitor access.

The top-most sphere was fitted out as a restaurant in the upper part with a circular viewing platform below. The main

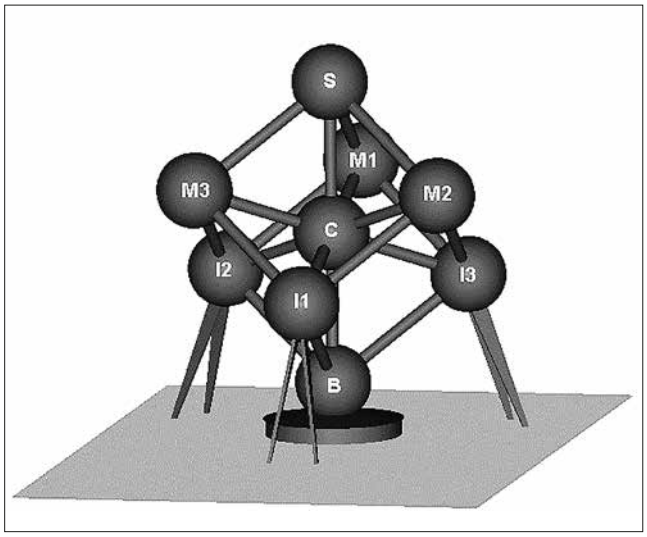

Fig. 1: The Atomium, identification of the spheres (Drawing Bgroup – 1999)

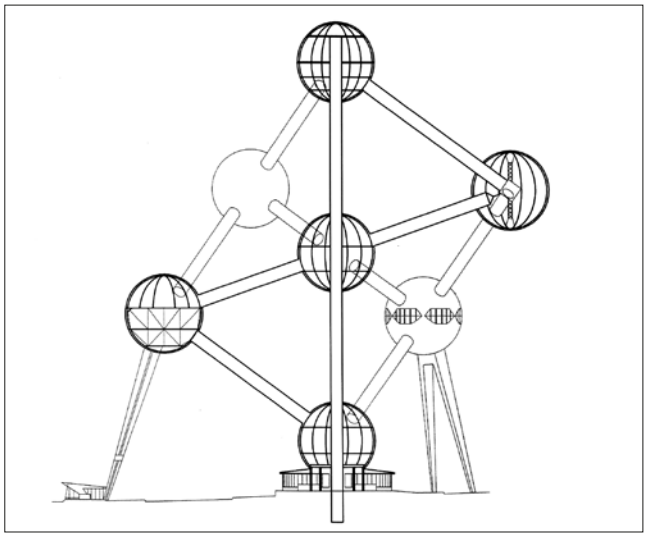

Fig. 2: Diagram of the main structure of the Atomium (Drawing Bgroup – 1999)

access to this sphere was via a lift with capacity for 22 persons, which was, at the time, the fastest in Europe, travelling at a speed of five metres per second. Most of the accessible spheres were designed to house a scientific exhibition on the peaceful applications of nuclear power.

The structure

The central vertical tube, the three bipods, the framework of the lower I spheres and the six connecting tubes linking them form the main structure of the Atomium (Fig. 2). The upper M spheres rest on the connecting tubes via metal frames and for this reason they cannot be occupied.

A point to note is that due to the simplification of the calculations performed using the resources available in 1956, the Atomium's structure has been rendered isostatic. Two links (I1-C and C-M1) have been removed, allowing these tubes to be moved to one of their ends using slotted joints. To reduce the weight of the structure, high yield strength steel of grade A52 was used, equivalent to today's steel S355 JR with a yield strength of 355N/mm² – for the central mast, the arcs making up the various spheres and the bipods. The other structural elements were designed in grade A37 steel, now steel S235 JR. The total dead weight of the Atomium is around 2,500 tonnes.

During the renovation studies, the metal framework was tested by Liège University to detect any vulnerable areas and any problems with fatigue on the joints. The checks were carried out by analysing the original calculations, by a visual inspection on site and by a finite-element study. One of the findings was that the wind loading allowed for in the original calculations following testing in a wind tunnel corresponded to the current recommendations of the Belgian standard.

The analysis of corrosion on the structure was carried out by Vrije Universiteit Brussels. Corrosion was observed mainly at the following points:

- Tubes linking the spheres: localised corrosion of the tubes, reinforcing rings and stiffener angles. Some metal parts were perforated by corrosion;
- Floor plates of the spheres were corroded locally, and some more extensively;
- The profiles on the structure of the M spheres;
- The bipods: bipod I1 showed major corrosion between the joining plates of the beams for the staircase. The staircase in bipod I3 was in very poor condition and was replaced.

This analysis revealed that the stability of the Atomium was not compromised, but that some remedial work was required in order to ensure its durability.

All the elements of the metal structure were cleaned and anti-corrosion treatment was applied. Some profiles were reinforced locally or replaced. The visible structural elements were repainted.

The original skin

In 1958, the spheres were covered with aluminium plates 1.20 mm thick made of alloy Peraluman 15, laminated with a layer of Reflectal giving a mirror effect. These plates, mainly in the shape of arced triangles, were assembled using a system of curved aluminium profiles. Tightness between the plates was provided by an initial PVC seal and a second rubber seal.

Where the aluminium profiles intersected, they were joined by circular plates, via expansion joints (silentblocs),

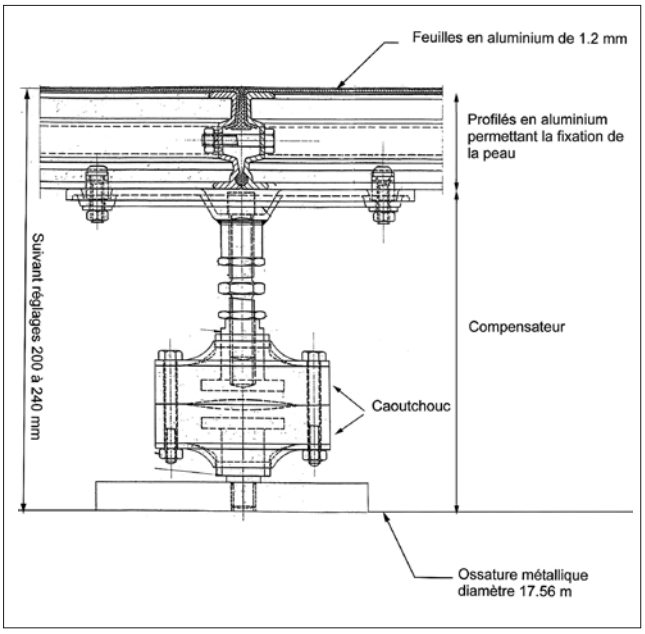

Fig. 3: Detail of the aluminium skin and its fixing to the metal framework (detail: Mét. D'Enghien St Eloi, 1957) N. B. these two drawings must be on the same scale

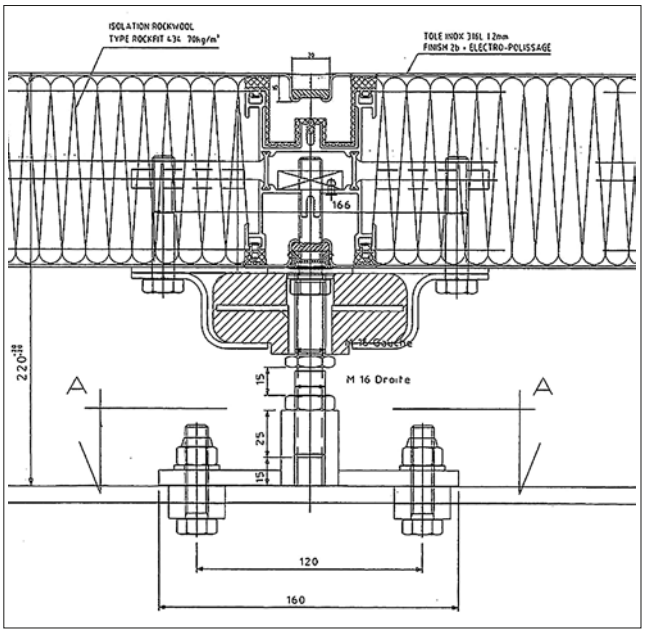

Fig. 4: Detail of the new skin, its insulation and attachment to the structure (drawing: Temporary Partnership Besix – J. Delens, 2004)

between the aluminium skin (plate + profile) and the secondary steel structure (bracing of the arcs of the main structure) (Fig. 3). These expansion joints were needed to absorb the differential expansion between the aluminium profiles and the steel structure and made it possible to avoid all contact between the steel and the aluminium to prevent risks of galvanic corrosion. The skin incorporated portholes and window frames. These openings were fitted with plexiglass.

The new skin

The new skin of the six spheres accessible to the public is made of sandwich panels of a total thickness of 100 mm, made up of a stainless steel plate 1.2 mm thick of the type 316 L 2B on the outside, insulation of rigid rock wool panels and a 1 mm-thick raw galvanised steel plate on the inside. These sandwich panels are fixed to the structure via expansion joints (Fig. 4). The three unoccupied spheres are covered only with the outer stainless-steel plates. The risks of condensation inherent in this cost-saving choice are limited by the inclusion of ventilation. The skin's shiny finish is obtained by electro-chemical polishing giving a polished mirror appearance, improved corrosion-resistance and a smooth compact surface. This makes it much easier to maintain. The new skin retains the same external layout as the original.

For speed of installation, 48 large triangles made up of 15 pre-assembled pieces reproducing the exact dimensions of the original triangles were affixed to each sphere (Fig. 5). Aluminium profiles were added at the joints to provide stiffness for the panels and create drainage channels in case the outer silicone seals fail. On economic grounds, some joints in the large pre-assembled triangles were replaced by dummy joints, thus also reducing the risk of infiltration. The meridian elements (mainly rectangular panels) were assembled in situ, piece by piece, as they provide the connection between the large triangles (Fig. 6). The windows have an aluminium frame with thermal break and double glazing with a double curvature to follow the spherical form.

The original brilliance of the aluminium panels cannot be reproduced these days on large-scale panels and so the material had to be changed. There were various options: steel, titanium, polyester, etc. As the Atomium symbolises an iron crystal, the choice of stainless steel was both obvious and appropriate. Raw galvanised steel was chosen for the inner plate. The main reason for this choice was to reduce the cost compared with using stainless steel. Also, the galvanised steel was intentionally left on show to recapture more closely the raw appearance of the original. Of particular note is that the new skin is more than five times heavier than the original skin. It was checked that the structure would allow for this extra weight.

From a technical point of view, the advantages of choosing stainless steel are mechanical strength, corrosion resistance and ease of maintenance. However, the current appearance differs slightly from the original as the Atomium of 1958 was shinier and less grey.

Fig. 5: Installing a panel of pre-assembled triangles (photo Origin 2005)

Fig. 6: Installing the meridian plates (photo Origin 2005)

Fig. 7: View of the Atomium today (© www.atomium.be – SOFAM – Christophe Licoppe)

Conclusion

The original Atomium was a daring structure of very high quality. Though designed to last only six months, it was still sound even before its renovation. The weaknesses identified were mainly on the outer skin and the finish.

Giving the Atomium a new future involves more than just restoring and renovating it. It also involves informing, documenting, innovating, optimising its use so that it can be passed on to new generations. We are very happy to have played a part in this prestigious project and to once more see the Atomium shine, day and night, on the Heysel plateau.

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Ještěd – Heritage Site between Landscape and Engineering[1]

Petr Vorlík

In 2018, it was 45 years since the Ještěd Mountain Hotel and Television Transmitter was opened to great fanfare. The most famous of the post-war Czechoslovak works of architecture, Ještěd Tower regularly emerges as the favourite in polls among professionals and the public, and even today it remains a reflection of the political thaw and the atmosphere of social and cultural ferment that characterised the 'golden' 1960s. It represents a unique technical experiment, resistance to the pressure that prioritised quantity, a step away from the industrialised approach to construction, a distinctive gesture, and the dream of a generation of architects. The emotional connection it forms between a beautiful landscape setting and a thoroughly executed technicist vision is today the symbol of the town of Liberec and even of the entire region. As a national cultural monument, the tower enjoys the highest level of protection, and since 2007 it has been on the Czech Republic's list of sites to be nominated for inclusion on the UNESCO World Heritage List.

The mountain

Liberec's magical mountain had captured the attention of locals since time immemorial. The first crosses were erected on it back in the 18th century and the rise of tourism in the 19th century led to the construction of first a log and then a stone cabin, an observation tower, and eventually, in 1905, to the construction of a hotel. In this mostly wooden building, Liberec builder Ernst Schäfer mixed modern Secessionist forms with the Romanticism of the more Germanic border region. Popular with tourists, the building survived at the peak of the mountain until one fateful day in 1963. Architect Miroslav Masák recalls its end: "In the early evening of 31 January 1963 the hotel caretaker used a blowtorch and later even burning newspaper to defrost the heating pipes. It worked. The hotel erupted into a bright flame. And as tends to be the case in this country, there wasn't a drop of water in the fire tanks."[2]

Liberec architects and patriots reacted immediately to the devastation and within several days announced an internal competition for the construction of a new building. In addition to a hotel, the competition's organisers added the construction of a transmitter tower, an addition that had been considered even before the fire in order to respond to the growing demand for the transmission of television signals. Among the designs submitted to the competition, which were drawn up with staggering speed to meet the deadline of February 25, the project that most clearly stood out was the one by Karel Hubáček, who in order to reduce the mass united both functions – hotel and TV tower – within a single structure, which with its carafe-like shape forms an extension to the existing silhouette of the mountain.

The tower

The architect's modernist vision was not met with understanding by the general public and he had to explain it at length in various discussions. Nevertheless, nostalgic memories of the earlier, romanticised hotel faded beneath the weight of his arguments, and the new tower ultimately won enough support. The professional community also began to become aware that something altogether extraordinary was being planned in Liberec and the very complex and unique project slowly began to gather numerous enthusiastic collaborators and supporters.[3]

Fig. 1: Photograph of the construction process (© archive of Vítkovice a. s.)

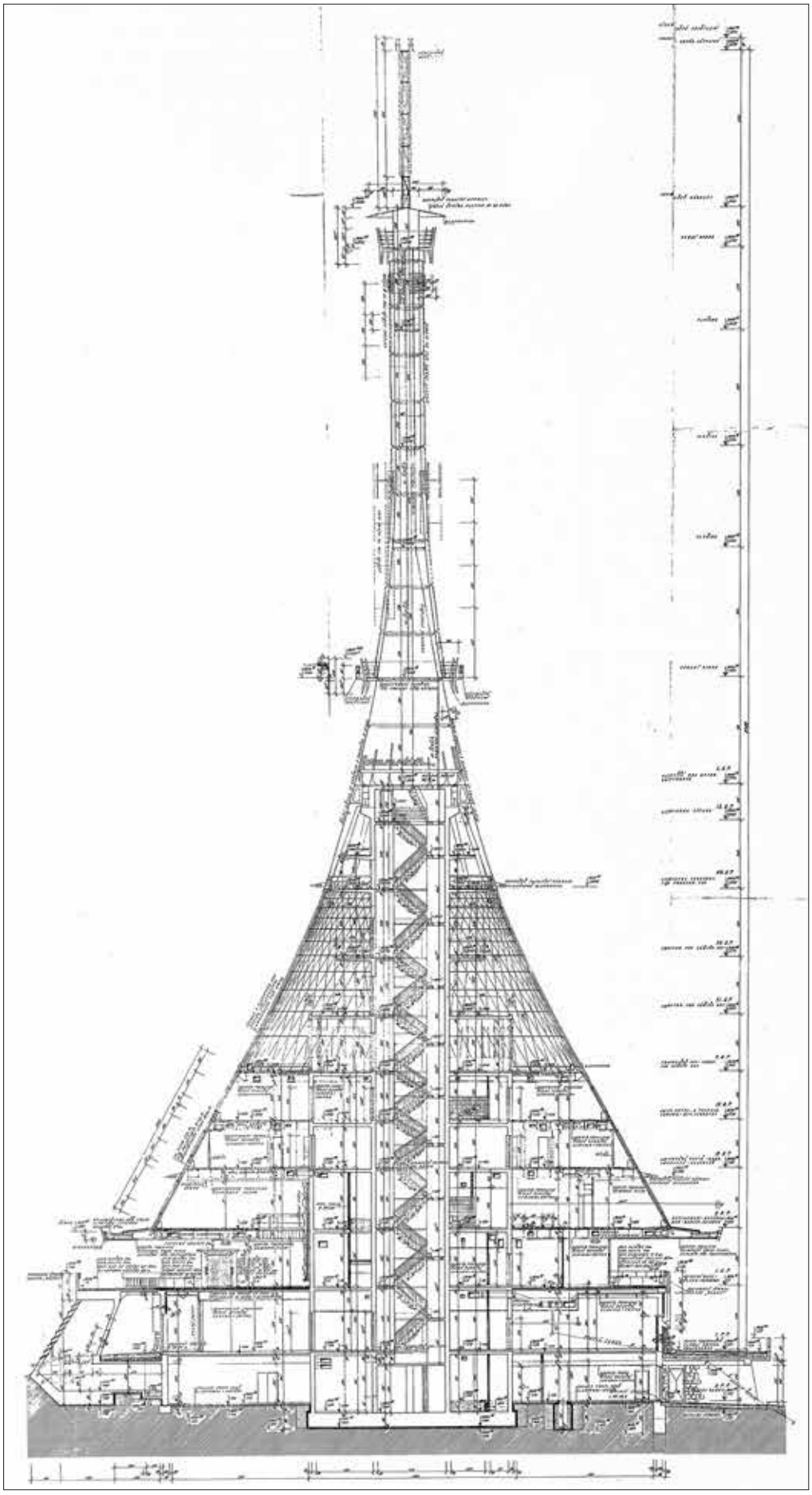

Fig. 2: Cross-section (© archive of the National Technical Museum, donated by SIAL)

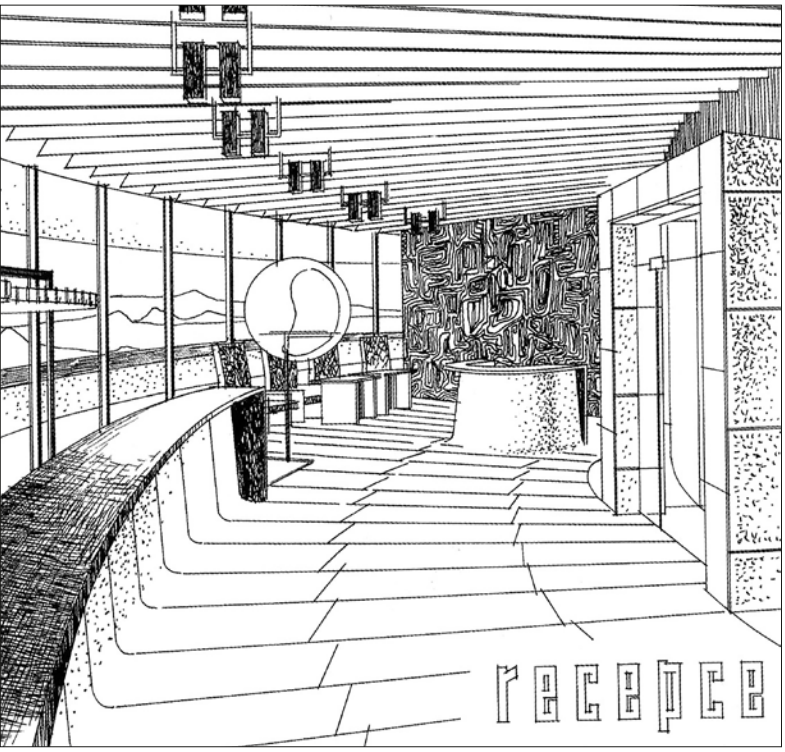

Fig. 3: Third and final design for the reception (© personal archive of Otakar Binar)

Fig. 4: The completed interior of the restaurant (© personal archive of Otakar Binar)

In the ensuing years the design of the tower was refined and polished. Its originally segmented appearance quickly coalesced into a compact and firm architectural gesture that formed an extension to the mountain's peak, but with a caesura that clearly separates it from the ground. In collaboration with structural engineers Zdeněk Patrman and Zdeněk Zachař, civil engineers Václav Bůžek, Vlastimil Křupka, Josef Patrman, and a number of contractors and suppliers, the extraordinarily complicated structural design was also fine-tuned, requiring, among other things, a number of patents. Eventually the project was also joined by Otakar Binar, the architect who designed the interior, and by Karel Wünsch and several artists, who designed the interior furnishings and artworks.

The project was commissioned by the Ústí nad Labem Regional Investment Department and by the future main occupant, the Prague Radio Communications Authority. It was not yet determined who would end up running the hotel, and the architects were thus able to work with considerable freedom. Construction commenced with the laying of the foundation stone on 30 June 1966 and after a long series of standard delays and complications the hotel was officially opened on 21 September 1973. The architects, who were out of favour with the new normalisation regime, were not invited to the ceremony, despite the fact that the study for the project had received a number of domestic awards and in 1969 the then still unfinished tower won the prestigious international Auguste Perret Prize for the creative use of technology in architecture.

In lectures, historian Rostislav Švácha has described the tower's experimental character as "the pragmatism of honest Czech engineering". Hubáček's colleague architect Miroslav Masák referred to it as "home-spun high tech".[4] It was only because of the sophisticated design of the support structure and facing that it was even possible to build the elegant and compact hotel on the mountain's peak.

The two underground floors are made of a combination of cast concrete and a wide range of prefabricated parts. Above that is the massive reinforced concrete core of the structure formed by two concentric and interlinked cylinders. Suspended from their perimeter is the subtle mesh of the steel ceilings of the hotel's floors (i. e. the first to fourth above-ground floors). At the height of 26 metres a steel ring encircles the reinforced concrete core and the sandwich laminate facing that covers the transmission technology is suspended from that ring (i. e. the fifth to seventh above-ground floors); and at the height of 33 metres there is another ring that supports the delicate steel shell that is reinforced with vertical ribs. At the height of 70 metres there is a unique patented damper of horizontal vibrations, and a self-supporting top extension made of patented coiled laminate.

Not even the tower's geometry is as simple as it may look at first glance. It is a reflection of the diverse mixture of structures: the wide cylindrical floors in the lower section of the tower transition to a truncated cone in the middle suspended section and then into a fiberglass and steel circular hyperboloid, terminating in a cylindrically shaped structure again at the peak.

The composition of the facing is equally complex. The technical and entrance floors at the bottom are covered with reinforced-concrete panels, exposed concrete, stone cladding, and large glass walls. Suspended steel-aluminium

Fig. 5: The completed interior of the café (© personal archive of Otakar Binar)

Fig. 6: The completed interior of a room (© personal archive of Otakar Binar)

panels cover the exterior surface of the hotel and restaurant floors, which are thermally insulated with polyurethane foam (which at that time was an innovation and had to be prepared under improvised conditions right at the construction site) and feature Stopray Gold windows imported from Belgium. The middle section, encasing the high-power transmitter, is covered with a light laminate facing, which to enable signal penetration is supported only with prestressed laminated rods and is held together using only plastic screws.[5] The facing on the top section of the tower is formed by the steel support shell itself and a self-supporting laminate extension.

Fig. 7: Karel Wünsch and the tableware he designed for Ještěd (photo Petr Vorlík)

In addition to the experimental design of the structure and the facing, it is necessary to also draw attention to the tower's composition: Karel Hubáček inventively combined the light technicist morphology of the upper part (silvery paint, white fiberglass, and machinist windows) with an almost naturally raw plinth (exposed concrete, the stone pavement on the ground runs from there in a smooth arc up onto the wall cladding).

This established the structure's basic theme of carefully constructed dualities – the uniting of 'earth and sky', 'nature and the work of man', 'earthiness and airiness' – which were also thoroughly reproduced in the design of the interior and the focus of the works of art.

The interior

The design of the interior was developed directly alongside the project for the tower. The primary objective was to unite two hard-to-reconcile worlds – that of the structure as a firm and cohesive gesture arising out the grandness of the surrounding landscape, and the more minutely-scaled segmentedness of the hotel's interior, where the designers endeavoured more to achieve the cosy and welcoming atmosphere that characterises accommodation in the mountains. To this end, in the first stages of the project Otakar Binar prepared several sketches of the interiors for Hubáček that were intended to test its underlying ideas – emphasising the breath-taking and unbroken panoramic view from the windows (e.g. the radial interior layout opening in the direction of the exterior, or the height of the furniture

Fig. 8: The exterior (photo Petr Vorlík)

Fig. 9: Laminate facing (photo Petr Vorlík)

below the level of the parapet), the continuous 'interior landscape' (e. g. the 'infinite' circular layout, the glass partitions, and the transparent stairway leading to the restaurant), and the tension between the poetic realms of 'earth and sky'.

A single interior brought together cosy earthiness and natural materiality of the internal walls and flooring (e.g. coarse moss-green carpeting, exposed concrete of the core, metal relief work, tapestries) with technicist lightness and 'ethereal' airiness (e. g. white leatherette wall covering, panelling and soffits in natural aluminium, details done in white enamelled sheet metal, glass).

And even in the interior, the designers did not shy away from experimentation. The vast majority of the furniture and lighting was custom-designed and manufactured, again using a carefully compiled array of engaging materials and shapes and with surprising, lightly technicist details. These included the rotational standing ashtrays produced by the wind instrument company Amati, the innovative polycarbonate panels of the bannisters, the ceramic tiling by artists Děvana Mírová, Marie Rychlíková, and Lydie Hladíková, the bespoke furnishings and lights by Otakar Binar, the atypical ceramic Rako tiling with cavetto moulding in the corners, the similarly styled ceramic hooks and soap dishes, the light blue bed linen with a white snowflake motif by Karel Wünsch, and so on. Wünsch also designed the restaurant furnishings and materials, such as the menus, the logo, the glassware and stemware, and most notably the ceramic dinner service made from an experimental material called Vitral, normally used for high-voltage isolators and employed here for a more robust appearance. The special 'honeymoon' suite was also marked by playfulness and levity, with surprising Louis XVI-style historicising furniture.

The atmosphere of the interiors was embellished with works of art, which unexpectedly in an admired technicist structure were based on Jungian psychological motifs, and on the closeness of the countryside, nature, and outer space. Examples include the hammered metal reliefs incarnating the 'earth's vibrations' by the hypersensitive artist Miloš Koška, the concrete and glass relief 'Falling Meteorites' by Jaroslava Brychtová and Stanislav Libenský, the motif of a burning sun on a tapestry by Vladimír Křečan, or a rural-rustic wrought-iron grille by Jaroslav Klápště, composed out of parts of agricultural tools collected from a St John's Eve fire. The artists that worked on Ještěd adapted to the structure's overall intensive atmosphere and the intentions of its architects. In the interest of ensuring a total experience they designed and executed work that was unique within the context of their creative output (e.g. concrete from the glassmaking duo Libenský / Brychtová, the metal grille by graphic artist and painter Klápště, textiles and ceramics from the glassmaker Wünsch).

The structure's image as a romantic 'palace in the clouds', detached from mundane reality and everyday socialist life, reached its peak in the interior. For this reason, it is necessary to highlight even beyond the altogether unique technical design the poetry and humanism of the resulting work, which has perhaps been best characterised by architect Lubomír Reml: "Karel Hubáček won the Perret Prize for his tower in Ještěd deservedly. He's a good man and architecture is a reflection of a person's soul".[6] The interior by Otakar Binar analogically, substantively, and precisely gives material form to the central theme of late modernism – bringing rationality and humanity closer together.

The present day

In this balanced and made-to-measure composition, every original component has its place, and any insensitive, inappropriate modifications, additions, or new forms come across as very unfitting and significantly decrease the overall optimistic impression. Unfortunately, Ještěd was negatively impacted by 45 years of intensive use. Despite the minimal investment and interventions in the structure during the normalisation years, as well as the somewhat insensitive and typically neglected maintenance, fortunately most of the elements have survived in their uniquely authentic state.

On the exterior, some of the most striking alterations were that the windows were switched from their originally bronze shade to clear glass, the chimney and laminate attachment were changed, a glass enclosure around the originally open loggia was subsequently introduced, and the tangle of transmission equipment that hung on the outside. Also the amount of peeling paint on the metal facing, the protective white cling-film covering the laminate central section of the tower, and, last but not least, the not very successful, provisional repairs to the damaged exposed concrete.

The biggest changes inside the tower were understandably in connection with the quickly outdated technological equipment, i.e. for the transmission services and the technical facilities. Similarly, the interiors were also impacted by the natural process of physical and moral obsolescence, and most notably by the failed privatisation in the 1990s, which ended with a significant portion of the furnishings being sold off. Generally, it can be said that the elements in the interior that survived best were the ones that were firmly connected to the structure itself, i.e. the surfaces of

the walls, the lighting, and the built-in furniture. Their relatively favourable situation benefitted from the sophisticated spatial and technological design, which made it difficult to exchange them for standard elements, but also from the far-sighted choice of good-quality, visually exposed materials and an emphasis on the solid, easy-to-maintain craftwork of the originally designed elements. The exception to this were some of the technologies popular at the time – especially plastics – which suffered considerable damage and changes in colour.

Nevertheless, as in the case of other historical structures, a significant amount of the less fixed surfaces and elements in the mountain hotel were damaged or became outdated in the course of many years of service and were not very sensitively repaired (using new and different paints, plastering and wallpapers) or replaced (PVC coverings, carpets, textiles, blinds instead of curtains, objects furnishing the bathrooms and toilets, door handles, electrical fixtures). In the future, all the more attention should certainly be paid to some of the unique details that have survived, representing the authentic fingerprints of the time in which they originated. The loose furniture has been heavily impacted by insensitive renovations and unfortunately some items have been irretrievably lost (tables and chairs are missing from the restaurant, bar, cafe, and lounge, as well as serving tables, standing ashtrays, armchairs from the entrance hall, the slot payphone, the fountain, some of the room furnishings, etc.). The furnishings of the one hotel suite are no longer used today and are kept in a museum.

It might be said that these changes have been necessary and reflect new demands and changing lifestyles. However, Ještěd's furnishings were custom-designed for and are a fundamental part of the structure and its powerful atmosphere. Moreover, there has been no change in function and ultimately hotel rooms still need the same standard set of furnishings – bed, night table, chair, small table, etc. By making radical changes and gradually diluting the originally objective, we thus lose what's most important – an authentic, consistent experience.

Fig. 10: Entrance hall and stairway leading to the restaurant (photo Petr Vorlík)

Fig. 11: Stairway leading to the hotel rooms and originally designed ceramic tiling (photo Petr Vorlík)

Fig. 12: Hall of the hotel with wrought-iron grille by Jaroslav Klápště (photo Petr Vorlík)

Since 2008, however, research has been conducted at the tower, most notably under the titular direction of the Research Centre for Industrial Heritage at the Czech Technical University's Faculty of Architecture in Prague, whose task is not just to describe the technical condition but also interpret Ještěd's role in the history of Czech culture and draw attention to the changes and shortcomings caused by development in recent years. Liberec Region and the Museum of North Bohemia in Liberec are also working to preserve Ještěd and its qualities. A crucial role is also being played by the Ještěd 73 civic association, which was founded in 2012 and is gradually refurbishing parts of the interior using financial donations from the public. In cooperation with Otakar Binar the association has partly restored the impressive appearance of the lounge, the hotel halls, the bar, and recently also two rooms through repairs and the introduction of copies of original furnishings. Unfortunately, the other rooms are at the same time being transformed in a 'retro sixties' spirit, which is completely blurring the original concept, but is evidently more aligned with the ordinary demands of visitors.

The structure itself and the technology of the tower have in recent years been approaching the end of their physical lifespan and general refurbishment is planned. Therefore, under the direction of Ještěd 73 a consortium was set up in 2016 that brings together representatives of the region, the hotel's operator, and the owner, České radiokomunikace a.s. The tower has been surveyed in detail; technical and building-history research has also been conducted, and in the summer of 2017 an expert committee selected an architect in a small invitation-only competition. Step by step the time is approaching when Ještěd tower will again begin to shine in full force.

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[2] Masák, Mezi Expy, 2006, p. 27.

[3] Cf. the origin of the famous Liberec Association of Engineers and Architects / Sdružení inženýrů a architektů Liberec = SIAL.

[4] Masák, Mezi Expy, 2006, p. 29.

[5] This patented system was supplied by the Žďár nad Sázavou Fishing Union and Ejpovice Ore Mines.

[6] Vorlík, Lubomír Reml, 2006, p. 127.

III
Modern Green Heritage – Historic Gardens and Landscapes

Recovery and Reconstruction. Post-war Strategies of Regenerating and Restoring War-damaged Parks and Gardens

Nikolay Pereslegin

Post-war reconstruction and commissioning of parks and green spaces are a topic that in Russia is best described by the example of the restoration work in Pavlovsk Park. The park is part of the Pavlovsk State Museum-Reserve and the most important monument of Russian neo-classicism of the late 18th to early 19th centuries. In addition, the Pavlovsk Palace and Park ensemble is an object of cultural heritage of federal importance.

The history of the park begins in the spring of 1778, when works of building a country residence for the heir to the throne began here. The forest was cleared and the preparation of the construction sites began. From 1780, serious work began on the construction of a large stone palace for the grand-ducal family, designed by Charles Cameron, invited to Russia by Catherine II. Cameron, a connoisseur of antiquity and author of the book *The Baths of the Romans*, was an ardent admirer of the Italian architect and theorist of architecture of the 16th century Andrea Palladio, whose work became an inspiration for the design of the palace. Since 1784, the Italian Vincenzo Brenna began working in Pavlovsk. In 1803 a fire broke out in the palace, which resulted in the damage of many palace halls. Then the complex was not only fully restored, but also supplemented with a complex and thorough finishing.

When World War II started, the artistic treasures in Pavlovsk were packed and evacuated. During the war years, the collections of Pavlovsk were kept in the city of Sarapul of the Udmurt ASSR in the building of the Museum of Local Lore, in Novosibirsk in the Opera House, as well as in St. Isaac‘s Cathedral in Leningrad.

On September 17, 1941, the Nazis entered Pavlovsk, and the occupation lasted until January 24, 1944. During these years the Gestapo headquarters , the barracks, and the officers’ hospital were located in the palace, and the territory around the palace was turned into a restricted area, which almost completely destroyed its original appearance. In Pavlovsk Park, 70,000 trees were cut down, bridges were blown up, the melioration system was destroyed, the network of

Pavlovsk Park, Temple of Friendship (© Alex ‘Florstein’ Fedorov, Wikipedia)

roads and pavilions were damaged and in January 1944, during the retreat of the Nazis, Pavlovsk Palace was badly damaged by fire.

The study of the post-war restoration of the palaces and parks of Pavlovsk Palace in the 1940s and 1950s shows that the restoration task was solved by the phased commissioning of various facilities of the palace and park complex. This contributed to the success of the restoration work. Such work should be based on archival documents, many of which were introduced into scientific circulation for the first time. This approach was a novelty in the study of the problem of the post-war restoration of Pavlovsk Palace.

Work on the revival of Pavlovsk began immediately after its liberation on the initiative of Anna Zelenova, appointed director of the Pavlovsk Palace Museum and Park in August 1941. Restorers had to work in very difficult conditions, but it was in the post-war years that they developed and introduced the world‘s first method of integrated recreation of architectural monuments of the 18th and early 19th centuries with rich and varied interiors. An important role in the introduction and development of a scientific methodology for the restoration of architectural monuments, which was carried out in Pavlovsk, was played by Anna Zelenova.

Representatives of the restoration school followed the principle of a comprehensive, maximally complete reconstruction of the monuments of architecture destroyed by the war without limiting the tasks of scientific restoration to their protection and conservation. A unique construction and restoration activity was developed on the basis of a careful study of fragments of monuments, and of iconographic and archival materials. The younger generation of professionals helped the experienced architects, acquiring the necessary skills in the course of the work.

The post-war restoration of the park, exceptional in scale, complexity and depth of scientific research, was the feat of a whole generation of professionals. Over the years, the works of outstanding specialists and restorers have become of independent historical and cultural value. Today, the names of the great architects of the past and of the specialists of the 20th century are in the same row. It is thanks to the mastery and professionalism of the latter that unique monuments are brought back to life. It is important to note that this work is continuing today.

The recreation of the beauty of the suburbs of St. Petersburg deserves an in-depth study and new understanding as an independent fact of interaction with the subject of cultural heritage. Restorers, architects, architectural historians, experts of the Committee on State Control, Use and Protection of Historical and Cultural Monuments – because of these people, Pavlovsk managed to survive. Pavlovsk became the school of national restoration and the first suburban palace and park ensemble revived after World War II.

At the London Congress of Architects in 1945, devoted to the problems of military destruction, it was noted: “The whole humanity has become poorer from the loss of such monuments as Pavlovsk.” In those years, the very question whether the restoration of the palace ensemble was possible at all caused serious doubts among restorers and scientists.

At present, the State Budget Institution of Culture “Pavlovsk State Museum-Reserve” is one of the leading institutions not only in St. Petersburg, but also in the Russian Federation.

Post-war Green Spaces – Recent Restoration and Upgrading Projects in Berlin[1]

Klaus Lingenauber

City squares, parks and the greenery of residential estates of the post-war period are often not yet recognised, valued and protected as heritage worth preserving and are therefore in danger of being redesigned or developed. This is particularly true in the current discussion of increased housing construction with densification in the so-called interspaces. In addition, unprofessional and lacking care sometimes creates confusing anxiety spaces which create problems of use and then lead to the call for the redesign of the facilities. The recording and protection of the stock of the 1950s to 1980s is differently intensive in the individual federal states and depends on how well staffed the state heritage authorities are with regard to qualified garden conservationists. With the participation of the Conference of the Heads of the Garden Offices (GALK), the non-profit organisation of Homeland and Environment (BHU) and the Technical University of Berlin, a research project on green spaces of the 1950s and 1960s has been finished which was funded by the (German Environmental Foundation) DBU and which published nationwide results by 2017.

In addition, the section on historical gardens of the German Society for Garden Art and Landscape Culture (DGGL) has formed a working group on green post-war heritage, which in the coming years, in cooperation with the sponsors of the research project, intends to present principles for dealing with these sites, taking into account the German-speaking countries. The post-war sites have a specific design, use of materials and plants as well as equipment that must be preserved during repair, restoration and maintenance. This will be illustrated in the following with selected examples from Berlin, where numerous green and open spaces from the 1950s and 1960s are already under protection and in some cases have been intensively looked after as garden monuments since the 1990s.[1] Work is also currently underway to record and protect the heritage of the 1970s and 1980s.

Karl-Marx-Allee

As early as the mid-1990s, a comprehensive set of rules and regulations for all open spaces in Karl-Marx-Allee, construction phase of the 1950s, had been drawn up on behalf of the garden preservation authorities.[2] Since 2000, the pavements and the lime-lined promenade on the north side of the avenue have been continuously repaired on this basis in constructive cooperation with the district civil engineering and green space office. In the process, the asphalt laid in the 1970s was removed and the promenade was given back its original water-bound surface on the existing substructure. Drainage gutters, path edges and borders of the tree discs made of Lusatian granite could be repaired using the existing original material, ensuring that the tree discs corresponding in size to the square base plate of the candelabra standing in the rows of trees were not changed to standard sizes. Unfortunately, the hawthorn hedge formerly existing between the promenade and the lawn strip could not be replanted so far due to a lack of maintenance capacity. On the sidewalks, the concrete slabs with reddish-coloured aggregates typical of the time were retained or supplemented by new productions with the same surface structure. The costly measures are being financed without funds from the garden preservation authorities, exclusively from the civil engineering budgets of the senate and district.

A challenge for the senate, district and monument preservation authorities was posed by the more than 200 candelabras, elaborately decorated with ceramic applications, which characterise the avenue. Due to the brittleness of the concrete poles, all of them were no longer stable and therefore in need of renewal. Initially, there was a threat of replacement by inexpensive modern lamps and thus a loss of an essential, characteristic element of the avenue. The compromise that was finally reached after a long struggle because of the enormous costs involved is to produce a replica of the luminaires that is true to form and also largely appropriate to the materials used, using original parts, but simplified in terms of processing, new concrete poles and trusses, in parts also with the elaborate ceramic decorations true to the original. This measure was started between 2008 and 2010 with the intensive support of the garden preservation authorities. For reasons of urban planning and monument preservation, it was also imperative to reinstall the elaborate quadruple candelabra at the Frankfurter Tor as completely as possible in accordance with the historical situation and was finally achieved despite considerable additional costs. In the second construction phase of Karl-Marx-Allee of the 1960s between Strausberger Platz and Alexanderplatz, the restoration or recreation of the original lighting as well as the heritage-compatible restoration of the open and green spaces was also planned in the last years und realised from 2018 to 2020 (Fig. 1).

There will be deficits for some time to come regarding water basins as well as perennial, rose and summer flower plantings in the lawn strips and squares, as professional maintenance is currently not guaranteed. The perennial and rose garden on the northern side of the avenue had been selected as a project to accompany the International Garden Exhibition (IGA) in 2017 and was redesigned heritage-compatibly after 20 years in the sense of an extensification of care.

Fig. 1: Karl-Marx-Allee, with a view of the Frankfurter Tor, postcard from the 1950s (© Zentrum für Berlin-Studien)

Weberwiese

The Weberwiese green area, which has existed since the beginning of the 19th century, was already included in the early reconstruction plans for Karl-Marx-Allee at the end of the 1940s with the pergola house by Ludmilla Herzenstein and corresponding terraced buildings.[3] After the reorientation of the urban planning ideas, the Lingner Collective from the Institute for Urban Development of the Bauakademie in 1952/53 had initially developed a – not realised – proposal here which strictly referred to the high-rise building on Weberwiese by Hermann Henselmann in an axisymmetrical manner.

Helmut Kruse, on the other hand, realised a completely contrasting landscape design in 1954 with a water basin and a curved circular path with a circular seating area and loose groups of tree plantations. The high-rise building by Henselmann was staged here in the spirit of the traditional landscape garden as a park building that can be experienced in changing views. Like the building with its neoclassical décor, the park also referred to the tradition of Karl Friedrich Schinkel and Peter Joseph Lenné.

With its kidney-shaped water basin with a fountain, the combination of natural stone and concrete coverings, the artistic decoration with a bronze boy and the perennial and rose beds, the design shows great similarities with comparable layouts of the 1950s in Western Germany as well; the walkway with a circular square is reminiscent of designs by Gustav Lüttge a few years later in the Hansaviertel.

Helmut Kruse explained the planning in 1953: "While the street fulfils a representative function, the areas behind the building blocks serve the social needs of the working people as useful green spaces. [...] The first construction phase will be the opening up of the Weberwiese and the immediately adjacent area. The design of the Weberwiese will be dominated by the high-rise building, whose lines will be reflected in a landscape-like pond embedded in a meadow. A footpath covered with woody plants leads along resting places and flowering shrub plantations. In the adjoining grounds, two larger children's playgrounds with a total of 200 square metres of usable space will be completed this year (Fig. 2).[4]

Walter Delenk, the long-serving head of the district garden office in Friedrichshain, had already worked on the history of the open space design of Karl-Marx-Allee in 1992 on behalf of the garden monuments authority and also prepared in-depth studies for the Weberwiese including the development of planting concepts for the perennial plantings which no longer exist.[5]

On this basis, it was not until 2008 that it was possible to restore the paths, stairs, natural stone walls, terraces and the water basin with fountain in a heritage-compatible way and to recreate exemplary perennial plantings, especially at the pond edges.[6] A complete implementation of the original planting concept was unfortunately not possible due to the

Fig. 2: Summer fun on the Weberwiese, postcard (Bezirksamt Friedrichshain-Kreuzberg von Berlin, Denkmalarchiv)

Fig. 3: The Weberwiese complex after restoration (photo Büro Hortec 2013)

limited maintenance capacities of the district and the pressure of use (Fig. 3).

An asphalted path was also restored in the original way as a water-bound surface with numerous benches. On the sheltered seating area at the water basin, it was possible to concentrate the remains of the former benches without backrest with stone neoclassical bench feet, which were formerly present along the entire Karl-Marx-Allee. Until 2019, it was not possible to cut down two poplars in front of the high-rise building, thus preventing the desired mirror effect in the pond. However, in 2020 one of the trees will be cut down.

Garden courtyard of the Humboldt-University Unter den Linden

The war-damaged garden courtyard was redesigned in 1960–61 according to the designs of the garden architect and university lecturer Prof. Georg Bela Pniower under the direction of K.-F. Gandert. Following the chestnut grove that has characterised the garden since the Schinkel era, the new, recessed lawn was again framed with chestnut trees and fitted with high-quality artificial stone benches typical of the time, pole lights, a fence designed by Fritz Kühn and ceramic planters from Hedwig Bollhagen's workshop (Fig. 4). This results in the special artistic overall quality of this garden courtyard. The garden courtyard, which is largely original in its structural substance and furnishings, is one of the most important examples of post-war green modernism in the eastern part of Berlin. The Humboldt University has accepted this open space of GDR post-war modernism as its legacy and is endeavouring to carry out the restoration in sections. A garden monument conservation report, which includes planning documents, photos and statements by Prof. Gandert, forms a solid basis for the preservation and restoration.[7] In recent years, it has been possible to restore the two bench types designed in strict geometry (artificial stone bench without backrest, artificial stone box bench with wooden supports) as well as the avant-garde lamps of GDR modernism and the fence installation by Fritz Kühn in a heritage-compatible manner while largely preserving the original substance (Fig. 5).

Within the framework of the new canteen building in a side wing of the Ehrenhof, which was completed by 2015, the side rooms of the garden courtyard were accessed through light shafts and seat terraces while maintaining the garden layout, but the artificial stone shelves of the courtyard were preserved or damaged ones were replaced in accordance with the original concept. The complete renovation of the courtyard in a heritage-compatible way, including the partial renewal of the heavily damaged gridded in-situ concrete surfaces, will only be carried out after the completion of the necessary pipe and façade renovations in the next few years.

Kleiner Tiergarten (eastern part)

Designed by Willy Alverdes (1896–1980), head of the gardening department of the district of Tiergarten and director of the Großer Tiergarten, this important garden monument of the 1950s and 1960s with remaining structures and old trees of the original 19th century design by Gustav Meyer was only included in the Berlin monument list as a garden monument a few years ago, after decades of neglect.

Alverdes developed the garden design ideas for the insertion of the fixtures, special gardens and paths while preserving the traditional old tree population of Gustav Meyer's estate. He used silver maple as the new tree species in the Kleiner Tiergarten. With its picturesque, multi-trunk structure and the filigree foliage in several preserved specimens, it still forms a contrast to the dense crowns of beech and lime trees. The Japanese cord tree (Sophora japonica) can be

Fig. 4: Humboldt University garden courtyard, view 1962 (Archive of the Humboldt University Berlin/Dokumentation Büro Topos)

found as individual specimens in the sunken garden and the bridle tree (Celtis australis) in the eastern part of the park. A transparent hedge of Fontanesia (Fontanesia phylliraeoides), a very typical and rare tree species in Berlin, surrounds the sunken garden. The horticultural engineer Hans Nimmann (1928–2015) assisted him with the technical implementation, especially as designer of the extensive water features in the special gardens.

For the use of materials, the model of the Interbau 1957 is to be mentioned. Concrete Colomент slabs were also used there, which were a new development in the concrete industry. Slabs in three formats and with reddish, yellowish and blue-grey colouring were laid with basalt paving surfaces in a wild pattern to create almost ornamental patterns in the sunken garden. The pebble-washed concrete wall of the sunken garden was handmade on site and is one of the earliest examples in a public garden in Berlin. As a special playful element typical of the time, a roller coaster in the shape of an eight was embedded in an artificial hilly landscape with wooded planting – a miniature low mountain-range landscape for children (Figs. 6 and 7).[8]

Parallel to the protection of the landscape, a landscape architecture competition for the redesign had already been announced, for which the essential garden conservation principles could be provided at the last minute.[9] The winning design of the Latz und Partner office pursued the concept of making the park more transparent, especially at the edges,

Fig. 5: Garden courtyard of the Humboldt University; restored artificial stone benches and upgraded original lamps (photo Klaus Lingenauber, 2011)

Fig. 6: Roller coaster in Kleiner Tiergarten, July 13, 1960 (Bezirksbildstelle Tiergarten/Dokumentation Bernd Krüger, 2013)

Fig. 7: Roller coaster in Kleiner Tiergarten after repair (photo Klaus Lingenauber, 2016)

by means of clearings and introducing new elements such as concrete seating walls and pebbles, but also playgrounds; a substantial or even comprehensive heritage-compatible restoration of the largely preserved post-war furnishings and planting was not initially planned. The coordination process for further planning, however, already took place with the legally binding effect of the garden monument, which has since been listed.

Thus, the result of the new construction and restoration planning of the landscape architecture firm Latz und Partner, which was realised in the years 2012 to 2016 with funding from the Federal Programme "Active Centres", can be characterised as a restored "old picture in a new framework". All elements of the design of Alverdes could be preserved and at least one characteristic water basin with bubbling fountains of the formerly differentiated water garden could be restored and reactivated and the water bowls could be turned into play bowls. All other basins have been preserved in "standby" position in the ground (Figs. 8 and 9).

Also, all concrete slab coverings and clinker edges of seating niches still existing at the time of construction were preserved as traces in the reworked edge areas. Characteristic structural elements such as the old tree population, flowering shrubs and a Fontanesia hedge at the sunken garden, the long fountain basin, a garden courtyard wall with protective roof, the roller coaster, path surfaces and bench seats were

Fig. 8: Water garden in the Kleiner Tiergarten, 13 July 1960 (Bezirksbildstelle Tiergarten/Dokumentation Bernd Krüger, 2013)

Fig. 9: Fountain basin in Kleiner Tiergarten after renovation (photo Bernd Krüger, 2016)

carefully preserved and repaired. The convincing result is not least due to the intensive construction supervision by a contact landscape architect paid by the garden monument preservation department.

The heritage-compatible restoration and supplementary redesign was completed and presented to citizens and the specialist public on May 21, 2016, the nationwide Day of Urban Development.

Southern Hansaplatz in the Hansaviertel

In the atrium courtyard of the Hansa Library, a small basin was planned in addition to the realised angular basin on the south-east corner of the square-shaped library that was opened here.[10] However, this was probably realised in a dialogue between Düttmann, Walter Rossow (leading committee Interbau), the landscape architect of the southern Hansaplatz and possibly also of the atrium courtyard of the library, the Dane Edvard Jacobson, on the west side of the library (Fig. 10). Here it accentuates both the designed square and the entrance area of the library. By deliberately placing it in the north-south pedestrian axis along the subway station, it forms a garden-artistic caesura that forces one to pause and decide between lingering, visiting the library, making a detour to the church, or taking the subway.

The southern Hansaplatz is, in contrast to the area north of the library designed by Herta Hammerbacher, strictly structured in a 5 x 5 m grid and designed in detail through the differentiated use of different materials, plant beds and groups of trees. This square thus forms the small prototype for the Ernst-Reuter-Platz, which was designed a few years later on a larger scale but in the same language by Werner Düttmann, who was already in office as Senate Building Director at that time.[11] On the initiative of the garden monument conservation department of the Berlin Heritage Authority, a precise survey and repair planning of the differentiated floor coverings of Hansaplatz was carried out on the occasion of the 50th anniversary in 2007 (Fig. 11).[12] In 2008/09, the southern Hansaplatz was then repaired in a heritage-compatible way, and with the help of tourism subsidies the overgrown bed of water basins, so essential in terms of design but almost forgotten, was uncovered again and put into operation after the water technology had been renewed and the original fine glass mosaic covering partially repaired. Unfortunately, this repair, which preserved the original mosaic, proved to be unsustainable, as leaks occurred again after a short time. The analysis of the damages forced the abandonment of the fine mosaic and complete sealing and laying of

Fig. 10: Restoration design for the southern Hansaplatz, Büro Margret Benninghoff, 2006

Fig. 11: Southern Hansaplatz: Water basin and adjoining square areas after heritage-compatible restoration (photo Ramona Simone Dornbusch, 2016)

a new mosaic floor, very similar to the original, with a small covering area remaining. This repair and recommissioning in 2015, which is now hopefully permanent, was financed by the Berlin Heritage Authority.

Akademie der Künste

The open spaces of the Akademie der Künste go back to designs by Werner Düttmann and the landscape architect Walter Rossow. Here, two water basins, on the same level as the surrounding slab areas, were conceived as an essential design element in the open space. Based on the experiences with the Hansa Library, interior and exterior spaces were again designed in a very differentiated way with flowing spatial sequences and levels. Furthermore, Theuma slate was also used here inside the building and in the open space.

In contrast, the elongated water basin on the ground floor, which accompanies the covered glass corridor between the public and office areas of the Academy, separates the building, courtyard and garden as well as public and private areas from each other, as was already the case with the library's interior and exterior. The basin itself is also divided by a transparent curtain of concrete steles into a public and an administrative part (Fig. 12). From the inner courtyard one looks through the glass passageway across the water basin, through the academy garden towards the Tiergarten and vice versa. The Academy opens up to its green surroundings in a differentiated manner and at the same time forms closed and protected spaces – reflecting its various functions.

After decades of neglect, the theatre garden of the Akademie der Künste was in a state around 2014 that no longer met the requirements for listed buildings. Although the garden conservation department of the Berlin Heritage Authority had already commissioned a garden conservation report on the gardens in 1999, for many years there were no prospects of implementation.[13]

Numerous non-original trees and shrubs that had been wildly sown or over-developed original trees had turned a light garden with perennials and flowering shrubs and strong visual references to the directly adjoining Großer Tiergarten into a realm of shade. Extensive felling and the removal of an almost closed, dark wall of tall yew trees on the adjacent edge of the Tiergarten, initiated by the author, were necessary to bring out the original idea of a sunny lounge with barely noticeable transitions to the Tiergarten again. A planting concept based on Rossow's planting plans could now be implemented in a modified form, and today the restored garden once again shows the original intentions of its creators to a large extent (Fig. 13).[14] In this context, the restoration of the water basin, deliberately placed between the glass corridor and the garden space, including the concrete stele wall, was also carried out. Here only about 40 per cent of the original concrete substance could be preserved, but the semi-transparent concrete stele wall dividing the basin into two segments was completely preserved by careful restoration.

In addition, the forecourt of the Akademie der Künste was restored in 2016/17 as part of the federal funding programme National Urban Development Policy.

Theses/Conclusions: Challenges for the preservation and restoration of the green post-war heritage (1950s and 1960s)

- **Park maintenance concepts,** including a description of the development and detailed documentation of the current status of the site are essential foundations for the preservation, restoration and development of garden monuments from the 1950s to 1970s. For numerous important facilities in Berlin and partly also in the Federal Republic of Germany, these have been developed since the 1990s.
- **Inappropriate and inadequate maintenance** creates problems for the plantations of the facilities, which in some cases leads to over-shaping and the development of nature conservation claims with corresponding conflicts. Care-intensive parts of the plantings, such as hedges, alternating plantings, roses, tub plants, etc. are sometimes reduced, abandoned or replaced by plants that are easier to maintain.
- The **use of the proper form and material** must be demanded and enforced during the restoration, partly with a view to a sustainable and economic restoration. Substitute materials must be used deliberately while ensuring the correct form. An example is the replacement of sensitive wood by metal in pergolas and trellises.

Fig. 12: Akademie der Künste, restored theatre garden with repaired water basin and stele wall (photo Klaus Lingenauber, 2016)

Fig. 13: Akademie der Künste, theatre garden (photo Klaus Lingenauber, 2016)

– The **preservation of original substance** is a challenge, especially for pergolas, coverings and water basins made of reinforced concrete or exposed aggregate concrete, which requires adapted solutions in each individual case. After an analysis of the initial substances, substitute materials should correspond to the model in composition, texture, grain size, and colour.
– **Fountains, water basins and water features** are very difficult to maintain or restore. Their operation is often only possible with funding from sponsors. Problems arise due to excessive safety requirements, some of which lead to problematic design compromises with disturbing fall protection devices.
– **Barrier-free accessibility** is often rightly demanded, even for all parts of differentiated systems. It requires, for example, ramp solutions that have to be developed from the genius loci and integrated with restraint.
– **Citizens' wishes and citizens' initiatives** play an increasingly important role in maintaining the facilities, both as a support and as an obstacle (protests against the felling of trees necessary for the preservation of garden monuments).
– **Competitions** for post-war modernist facilities lead to redesign demands with difficult planning, coordination and approval processes and, as a result, to the loss of original substance.

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20th Century Gardens: Nature, Landscape and Identity

Mónica Luengo

Introduction

20th century gardens have frequently fallen into oblivion, unlike architecture of the 20th century that is widely appreciated and increasingly revisited. Only in the past few years a discussion has been prompted about the fragility and neglect of the 20th century green heritage (Fig. 1), and even more about the gardens of the mid-to-late decades that are usually overlooked and undervalued.

There have not been publications on the subject for very long ago. Only some 20 years ago, Marc Treib first published what is considered a milestone, *Modern Landscape Architecture. A Critical Review.*[1] Since then, publications have been increasingly frequent, as well as monographs on well-known landscape artists and architects. Exhibitions and other events and activities are contributing to raising awareness on the subject, but much is yet to be studied and researched, especially on the very close relationship between modern landscape design, architecture and urbanism, not to mention the links with contemporary ecological movements or nature conservation.

Some recent initiatives are fortunately taking place, this conference being one of them, and others I would like to mention as examples, like the current revision of the Florence Charter on Historic Gardens that the International Scientific Committee on Cultural Landscapes ICOMOS-IFLA is carrying out, or the 2017 Madrid-New Delhi Document,[2] a document by the ICOMOS International Committee on 20th Century Heritage (ISC 20C) that was first meant as guidelines for the preservation of architectural heritage, and has been revised to encompass other typologies, such as cultural landscapes. There are others with a more practical aim, as the initiative for including mid-to-late 20th century designed landscapes in Historic England's National Heritage List for England (NHLE), within the Register of Historic Parks and Gardens.

All these initiatives mentioned are clear indicators of the concern for historic gardens from the 20th century to be considered as a type of heritage, and thus worthy of protection, conservation, and specific management, just like the architecture of the same period. However, under the label of 20th century heritage most of the national registers include very few or no gardens or parks at all, as is the case of the French Ministry of Culture under the label *Patrimoine XXème siècle*[3], or the very few parks, avenues or gardens included in the Spanish register of protected properties of the 20th century.[4] So, although we have to congratulate ourselves that the situation is changing, there is still a long way to go. Unfortunately, landscape is inherently vulnerable and fragile, and much of this heritage is being lost due to multiple factors, such as primarily a lack of understanding, development pressure, neglect, etc., and society should be conscious that many of these threatened properties have already disappeared.

Historic gardens and national identity

Throughout the century, landscape architecture ran parallel to the rest of artistic trends and was even, in some cases, the spearhead for innovative ideas related to major social, economic, political, artistic, and scientific shifts. While there were artists participating in the international modern, in rationalist movements, and those whose ideas on gardens and landscapes were nearer to a naturalistic style, another strong current was historicism, especially in the first half of the century, when gardens became a symbol indissolubly linked to the identity of certain countries. During most of the first half of the past century, there was a permanent debate between the proposals of national garden styles and followers of a modern, international style.[5]

Mostly during the 1920s and 1930s, garden styles were so clearly linked with certain periods and nations that they came to be called by the nation's name, and were as such known and explained in the garden history books. Many publications also appeared in that sense. Thus, the Renaissance garden was known as the Italian garden, a term used to describe geometric, architectonic and regular gardens in general, regardless of the country where they were. This fact was also due in part to the dissemination of classic Italian gardens linked to the preservation and restoration of Ital-

Fig. 1: Cubist garden, Villa Noailles, Hyères (photo Mónica Luengo)

Fig. 2: Château de Villandry (photo Carmen Añón)

ian Renaissance villas at the turn of the century by an elite, among which were well-known personalities such as Cecil Pinset, Charles A. Platt or Bernard Berenson. In fact, these pioneers in the appreciation of historic gardens, and especially of the formal gardens' classical canon at the beginning of the 20th century, emerged simultaneously with publications that are considered today as classics. In France, there were interesting initiatives such as the poetic reinvention of history at Villandry by Dr. Carvallo (Fig. 2). However, the great promoters of the renewal of the classical French garden were Henri Duchêne (1841–1901) and his son Achille (1866–1947) who worked in Europe, North America and Argentina. Indeed, their aesthetics were closely linked to French nationalism arising after 1870 with the Third Republic.[6]

There is an obvious connection between ideologies, specifically nationalism, and gardens, as in fact these are the formalisation of the feeling of man towards his surrounding nature, his natural environment. Some scholars have made in-depth research on this relationship, such as Joachim Wolschke-Bulmahn and Gert Gröning, who have explored and demonstrated the "ideological character of German landscape design in the early twentieth century and how these ideas and their underlying ideology influenced landscape design in the changed political and social conditions of early twentieth-century Germany".[7]

Thus, the gardens following these historicist trends were considered as part of the cultural heritage due to their historic association, and in most European nations they were restored long before those linked to the modern movement that had a more international character and could be less identified with a specific nation. What is really paradoxical is that the consideration of these historicist gardens as part of the national cultural heritage was often introduced into the country by foreigners, such as the already mentioned Americans in Italy, or the French Jean-Claude Nicolas Forestier (1861–1930) who promoted the new "Spanish" style based on Arabic and Andalusian concepts (Fig. 3). He spearheaded a revolution in the 20th-century Spanish garden scene, and his influence would last throughout nearly the entire century. He created the "neo-Sevillano" or "neo-Moorish" style, based on solid botanical and historical foundations, and adapted to our climate and our unique characteristics.

Forestier was an urbanist and landscape architect trained by Adolphe Alphand and had become the conservator of the *Promenades et plantations de la ville de Paris*[8] and he was also in charge of the gardens and promenades of Paris during the International Exhibition of Industrial and Decorative Arts of 1925 that was to become a turnover in garden art. He became very renowned and was commissioned to remodel Maria Luisa Park in Seville for the International Exhibition of 1929. He considered Andalusia as the birthplace of the great gardens of Europe, so he took the view that the project should evoke its flourishing Moorish past. Forestier would also work in Barcelona on the Montjuïc Hill for another International Exhibition, also becoming a promoter of what he called "gardens under the climate of the orange tree".[9]

Since its opening the Maria Luisa Park and its Plaza de España, a project by the architect Aníbal Gonzalez, has been

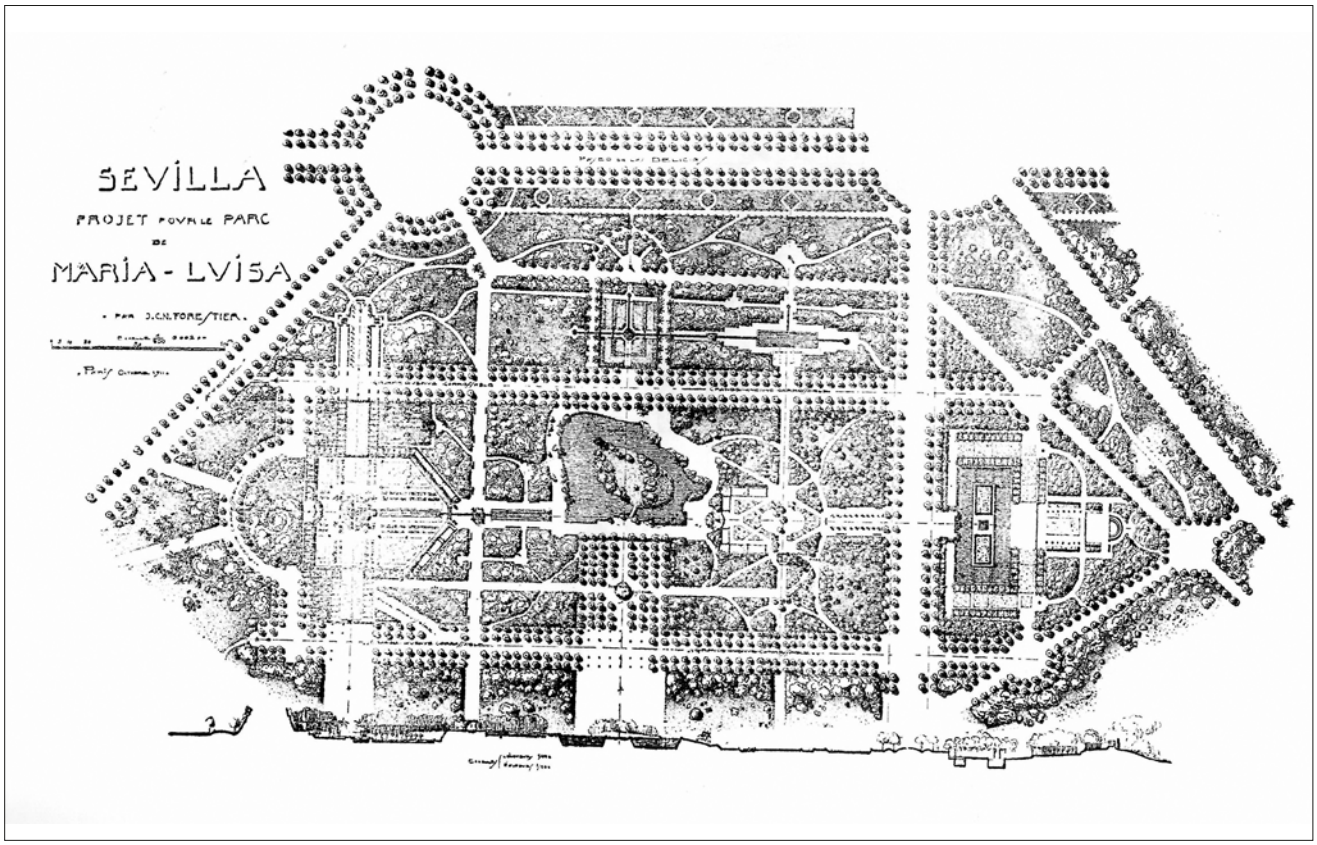

Fig. 3: Plan of Parque de Maria Luisa, Seville, J. C. N. Forestier (Jardins, carnet de plans et de dessins, J. C. N. Forestier, 1920)

an icon for the city of Sevilla.[10] Careful restoration has been continuous almost since its opening, especially due to the fragility of the tiles and some of the ornamental features. It set the standard for a multitude of public and private parks of the first half of the 20th century, not only in Spain but also in France, North Africa and Latin America.

A clear example of its influence is the Andalusian garden of the Rosedal (Rose Garden) in Buenos Aires, Argentina.[11] It is the work of Eugenio Carrasco. In 1924 an Andalusian Patio was donated by the City Council of Sevilla[12] (Fig. 4), with very similar tiles provided by the same factories that had worked for the Parque de Maria Luisa. In 1999, the Rose Garden was restored under the direction of Sonia Berjman, but it was only in 2011 that it was registered as cultural heritage.

As Latin American nations gained independence from Spain (Bolivia and Ecuador in 1809, Mexico, Colombia, Argentina, Venezuela in 1810, and finally Cuba in 1868), the new republics followed garden trends from Italy, France, the United Kingdom, etc., while also looking for a new national style: a blend of their history, their past , their climatic conditions and their incredible botanic richness. We agree with Janet Waymark that by the end of the 1930s, both in North and South America there was an important trend of self-discovery in garden design, and "a new generation of landscape architects began to design for indigenous lifestyles which owed less to Europe than before", while simultaneously welcoming modernist émigrés from Europe (Mies van der Rohe, Gropius, etc.). Major landscape designers "absorbed European modernism, but used it creatively in combination with their own national styles and the climatic requirements of their countries. (…) In this way they helped to evolve national styles of their own."[13]

A major figure of modern landscape design stands out in this sense: Roberto Burle Marx (Fig. 5). His work is an exceptional paradigm of the blending of ideas from two

Fig. 4: Patio Andaluz, Jardín Español, el Rosedal, Buenos Aires (photo Mónica Luengo)

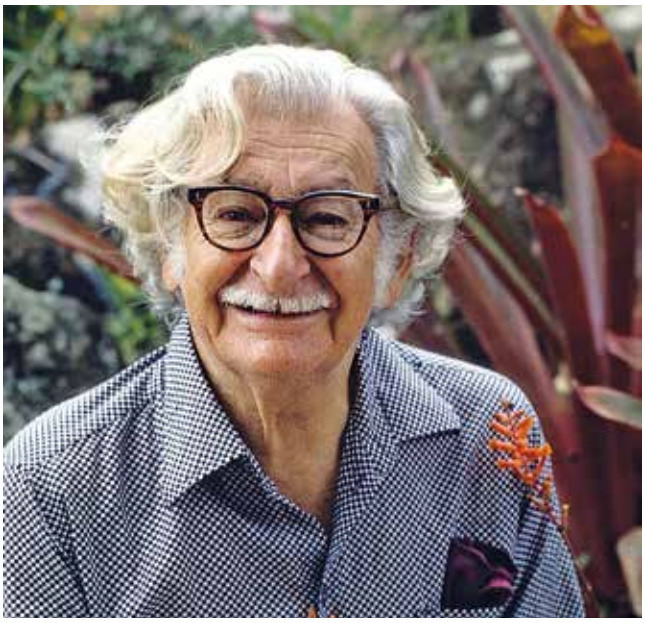

Fig. 5: Roberto Burle Marx (photo The Jewish Museum/ Corbis/Burle)

different continents, creating a shared heritage that had influence beyond borders. He became one of the most influential landscapes architects of the 20th century, with his works ranging from great public spaces to private gardens. He was also a complete artist: painter, sculptor, music lover, illustrator, designer of textiles, jewellery and theatrical sets, and a ceramist (Fig. 6) etc. But above everything else, as the inventor of an "internationally recognized language for modern landscape design (…) he combined research on botanic specimens, respect for ecosystems and an application of innovation concepts in modern architecture with landscape gardening practice. (…) Using abstraction as his guiding principle and grand sweeps of voluminous local vegetation and colourful flora, Burle Marx devised a whole new form of landscape expression that revolutionized garden design."[14] His training as a painter and the influence of visual artists made Burle Marx conceptualise the philosophy of the pictorial modern abstraction in garden and landscape design (Fig. 7).

Fig. 6: Roberto Burle painting tablecloth and tiles at Sitio San Antonio de Bica (photo Claus Meyer/Tyba)

He was the son of a German Jewish father and a Brazilian Catholic mother, and this mixed heritage led to a private education at a German school in Rio de Janeiro, including French and music lessons, and produced in him a deep love for both Brazilian and European (particularly German) culture. The family home of his parents was a centre of culture with musicians, artists and intellectuals from Brazil and abroad, giving him the chance to meet Arthur Rubinstein, Stefan Zweig, Portinari and Le Corbusier. Since he was a child, he developed a strong spirituality and thus considered Nature the most perfect of all the works of art and his role as a landscape architects in biblical terms.[15]

When he was young, he travelled to Weimar with his family, living in Berlin for a year and a half (1928–29). The period was seminal for his development as a painter and landscape architect. He took singing and drawing lessons and got to know the German Expressionists, Picasso and many other of the 1920s' avant-garde. He also visited the Berlin Botanical Garden in Dahlem where he discovered the indigenous Brazilian flora and was amazed by the extraordinary richness of the plant collection that was organized according to ecological criteria. "There Burle Marx discovers species of the Brazilian tropical flora of which he not only has never heard before but which, he understands, contain all the artistic richness of Van Gogh's palette."[16]

When he returned to Rio de Janeiro in 1930, all that he had studied and seen resulted in a strong turn of his artistic vocation that by a series of coincidences would lead him to become a member of a group of artists and intellectuals who were looking for a version of modernity that could also integrate Brazilian native culture, which at the time was being discovered (Fig. 8).

He studied at the national School of Fine Arts in Rio where the architect Lucio Costa was his professor and also a family friend, living in the neighbourhood. He gave young Burle Marx his first opportunity and recommended him to his fellow architects as a designer of gardens. In 1932, Burle Marx took care of the gardens at the Schwartz House. He decided to plant banana trees and organised the garden-terrace with modern iconography, initiating a permanent collaboration between the two, which soon opened a path to another great contemporary architect, Oscar Niemeyer.

His career developed very quickly and only two years later, in 1934, he got his first official employment as Director of Parks and Gardens in Recife (1935–1937), where he met the botanist Henrique de Lahmeyer Mello Barreto, who would train him until he became a consummated expert in Brazilian flora. Burle Marx became interested in studying the plants in situ through expeditions. This would trigger a landscape revolution in the 1930s. He was recommended again by Lucio Costa to reform existing squares and create new public spaces in different neighbourhoods of the city.

In this context he created the modern garden, the Brazilian garden, as an "expression of art shaped by the plant, the

Fig. 7: Moreira Salles Residence, Rio de Janeiro (photo Mónica Luengo)

main plastic element of the composition, along with water, murals, stones, buildings and sculptures. These elements were thought according to principles of composition, such as harmony, proportion, light, opposition of colours, relations between volumes, texture, and also considering the location" (Fig. 9).[17]

Le Corbusier came to Rio, invited by Costa in 1928 and designed the project of the Ministry of Health and Education in collaboration with Costa, Reidy and Niemeyer, and with the remarkable artistic help of Claudio Portinari and of Burle Marx himself in the landscaping of the square and the famous garden-terrace. This was the first significant materialisation of a modern garden on the roof of an emblematic building (1938). He also created gardens around the base of the building, the first public gardens in Rio.

Roberto Burle Marx would actually do a very simple operation, almost instinctive: he worked simultaneously on the garden as landscape painter and as an architect, using the expressionist palette as reference for his projects and also the organic geometries of the abstract – of Arp, Le Corbusier, Leger, Calder. However, he did it as an architect, because despite using gouache, his landscapes were conceived as compositions in a ground plan. This was an alienation from the procedure of the 'views' characteristic of the traditional landscapers and painters. It brought him closer to the architectonic and cubist vision".[18]

Since his time in Recife, Burle Marx conceived the landscape in the city as part of a system, "defining the character of the garden from the natural and built elements for the place and regions, seeking the identity of the place. He presented the garden as 'organised nature subordinated to the architectural laws'".[19] Sa Carneiro summarizes: "The landscape artist Burle Marx's exercise in perceiving the landscape was keen on capturing structures, landmarks, architecture, social facts and other stimuli to conceive of something different from what had hitherto prevailed. Action on reforms and complementary actions in the existing gardens, he implanted a new way of thinking of the public space from the elements of the local landscape interpreted according to artistic principles of painting, music and botany" (Fig. 10).[20]

In the period from the 1950s to the beginning of the 1970s Burle Marx up-dated the programme about park systems that Olmsted had created. Burle Marx made a 'system of parks' his own by redefining the notion of the public and the identity of Rio de Janeiro. In Rio Burle Marx had the opportunity to intervene in large public spaces (an incredible number of public projects, more than 200), which he considered his major and most influential works. They significantly transformed the landscape of the city and the concept of public space, placing the individual in the centre of the conception of landscape[21]. His great works were linked to the great urbanisation works by means of "aterros", gaining ground to the sea and solving some of the city's growth problems.

The city of Brasilia, inaugurated in 1960 and designed by Lucio Costa, posed a considerable challenge from the land-

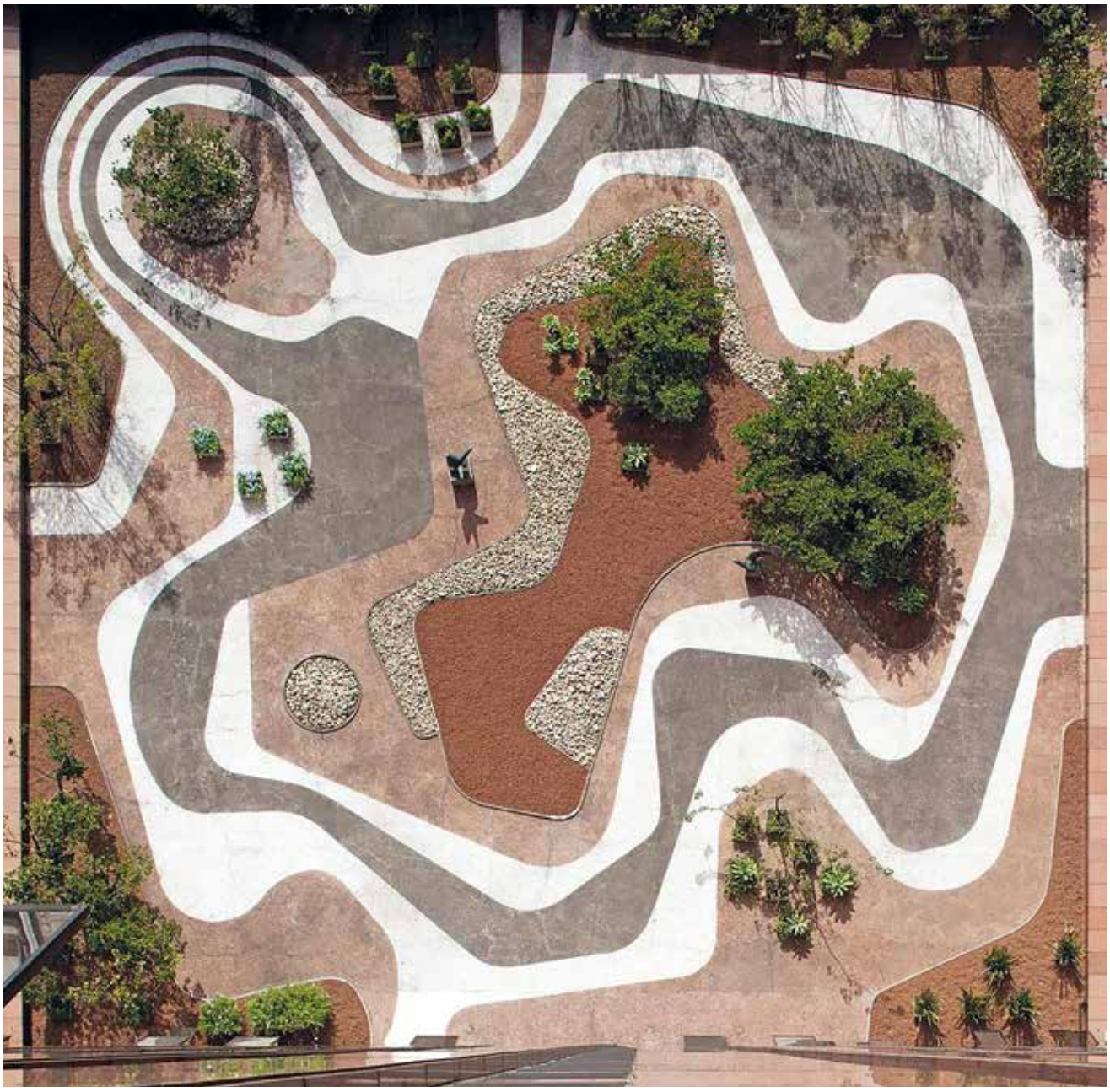

Fig. 8: Banco Safra headquarters, Sao Paulo (photo Leonardo Finotti)

Fig. 9: Cavanellas residence, Petropolis (photo J. M. Hoffmann)

scaping point of view, as it lies in a vegetation zone geographically distinct: grasslands with xerophilous vegetation that is very different from the rest of the exuberant Brazilian ecosystems. Sadly, Burle Marx would only be called to collaborate after the first stages, thus missing a unique opportunity for his participation in the initial plan. He would participate with Niemeyer in 1961 in the urban planning of the city's monumental axis conceived by Costa, and in minor works and accomplished projects, such as the Ministry of Defence (1970) and ltamaraty Palace (Ministry of Foreign Affairs) (1965).

Burle Marx's work was not confined to Brazil, it also expanded to many other countries on the American continent (Argentina, Venezuela, Chile, USA), but also to South Africa and Europe. He had an immense influence globally as he

travelled, lectured and taught. He introduced into modern landscape design not only the artist's vision, but also ecological concepts that remain valid until today. Among these are the present political and cultural awareness of the environment, the recycling of materials in the construction of new gardens and parks, and blending different artistic expressions that range from the vernacular and popular arts and crafts (tiles, building materials, etc) to modern architecture, i.e. integrating modern and traditional artistic currents into a new synthesis. All this was of great inspiration globally in landscape architecture, covering 20th century themes in an exemplary way.

His work had a visionary dimension which came partly from the lucid assimilation of ecological processes into cultural mixing processes as origin of the contemporary public realm. It was also the starting point of a movement for the introduction and conservation of native species in the formation of a country's cultural national identity.

The legacy of Burle Marx is also this: a legacy in favour of beauty, against so many social, functional or scientific determinisms; a legacy that makes art, nature and architecture speak with one voice; a legacy of multicultural values embodied in beautiful living works of art. For this reason, at the end of his life, in 1993, he was commissioned by the city of Berlin to design a public garden for the newly reunified country at Rosa Luxemburg Platz in the Scheunenviertel. Unfortunately, the project was never implemented.

Recently, his work has been more and more recognised and some of his most important works were inscribed as part of two World Heritage sites: The Flamingo Park in Rio de Janeiro and the landscape of Pampulha, a residential complex. Burle Marx's work is the perfect example of a shared contemporary heritage that only began to be appreciated in the past years, while some of his major works, such as Parque del Este in Caracas, are in great danger. Conservation and management issues of his works are yet to be much more carefully studied, but are supported by programmes and initiatives such as the conservation plan of the Sitio de San Antonio de Bica, his own private garden and laboratory.

His works were also recently catalogued by Ana Rita Sa Carneiro and some important restorations have taken place in Recife, where he carried out 13 public projects and a general plan for embellishing the city. In 2001 a project between the Federal University of Pernambuco and the landscape laboratory of the city was initiated to restore three of the emblematic squares that were very damaged: Praça Euclides da Chunha that was used as a parking lot and where the cacti were in bad condition due to the shadow of the too-tall trees; Praça Faria Neves and Praça do Derby. They all pose a challenge due to their very rich ecological and botanical variety and a misunderstanding of some of Burle Marx's principles. In general, as occurs to many other gardens of the time, his works are undervalued and not understood as part of both the natural and cultural heritage of the city. However, the Recife initiative involved the joint work of the city, the university and of residents and generated a discussion in the press and a meeting with institutions on environmental entities that have spearheaded a general conservation movement (Fig. 11).

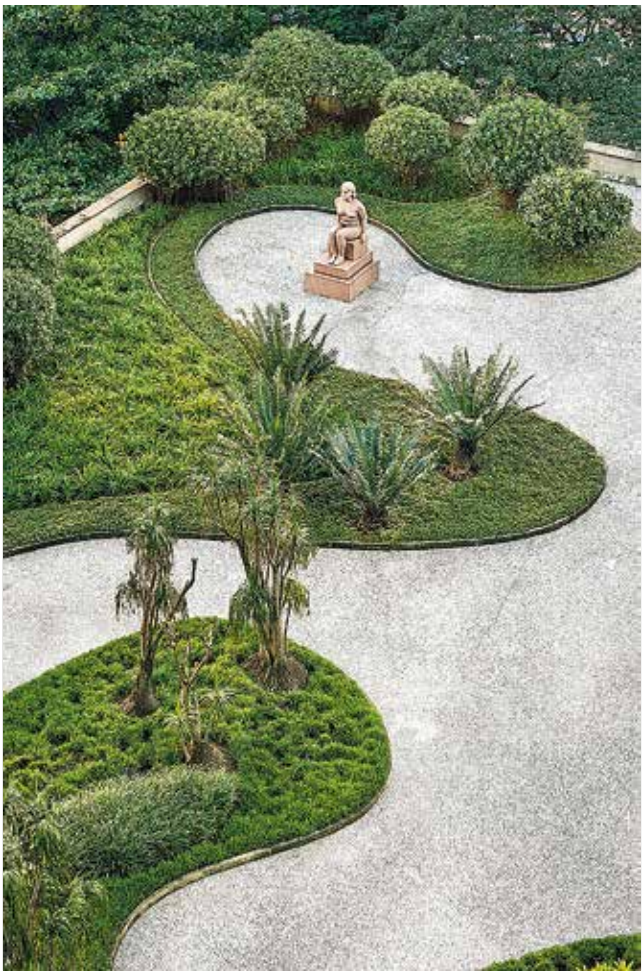

Fig. 10: Garden of the Ministry of Education and Health, Rio de Janeiro, 1938 (photo Cesar Barreto)

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Fig. 11: Praça Salgado Filho, Recife, after restoration (photo A. R. Sa Carneiro)

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IV
Retrofitting and Restoring Modern Architectural Heritage

Outstanding Works of the Soviet Architectural Avant-garde as Joint Heritage: Past, Present, Future

Alexander Kudryavtsev

As you know, the heroic period of the Soviet architectural avant-garde did not last long, only about 10 years – from the 1920s to the 1930s. Its innovative breakthrough put Russian architecture in the front row of world architecture. However, after the contest for the Palace of Soviets in 1934, this page of our history was turned over and condemned. Nevertheless, this period left us a unique cultural heritage that for all these 80 years has retained its importance and attractiveness and has remained a source of inspiration for architects from all over the world. Outstanding examples are objects of pilgrimage, which has not exhausted, in spite of barbaric neglect or monstrous exploitation. The hopes of the world for the cultural breakthrough of Soviet Russia were so great that the masters of the modern movement from the West took part in it. They won contests that became classics of the modern movement and built projects and complexes based on their designs whose scale surpassed the experience of these masters so far. In the anthologies on modern architecture, these works played a huge role for the architecture of the USSR, and in the oeuvre of the masters themselves, but after the triumph of having won the contest their fate was tragic. After the alterations, the creators refused their authorship and their Soviet co-authors tried to fight for the preservation of these remarkable sites. Nevertheless, only during the years of perestroika in 1987–1989 did they gain protection status, albeit the lowest level, i. e. regional. Despite the generally recognised value of these sites, they continue to be threatened by further changes. This concerns buildings of Russian and Western European origin – Centrosoyuz by Le Corbusier and Colley, the Red Banner by E. Mendelsohn and a group of Soviet engineers, Sotsgorod Magnitigorsk in the Urals by E. May and the Bauhaus group, and the Alvar Aalto Library in Vyborg, although the latter has had a happy ending and was also very instructive for the history of joint restoration.

House of Centrosoyuz

In 1928, the project by Le Corbusier and Colley won the competition. Construction began in 1931 and the site was completed in 1936–37. This first large public building by Le Corbusier embodied the famous five principles of modern architecture. By winning the competition, Le Corbusier paved the way for a new direction in Russia. One of the leaders of Constructivism, A. Vesnin, compared it with the Assumption Cathedral at the Kremlin. In addition to innovative compositional techniques, a unique design solution, materials, and the original ventilation system "mure neutralizante" were used in the project. The building underwent significant changes, but nevertheless preserved the components of outstanding universal value.

"Despite the deviations from the initial interior design, it can be argued that the house Narkomlegprom, in which Rosstat is now located, remains faithful to Le Corbusier's architectural plan: the layout of internal directional routes, the interpretation of the exterior volumes of the building correspond to his plan," writes Jean-Louis Cohen.[1]

In the 1970s, the building was reconstructed and the first floor was rebuilt. In 1987, it was declared a monument of

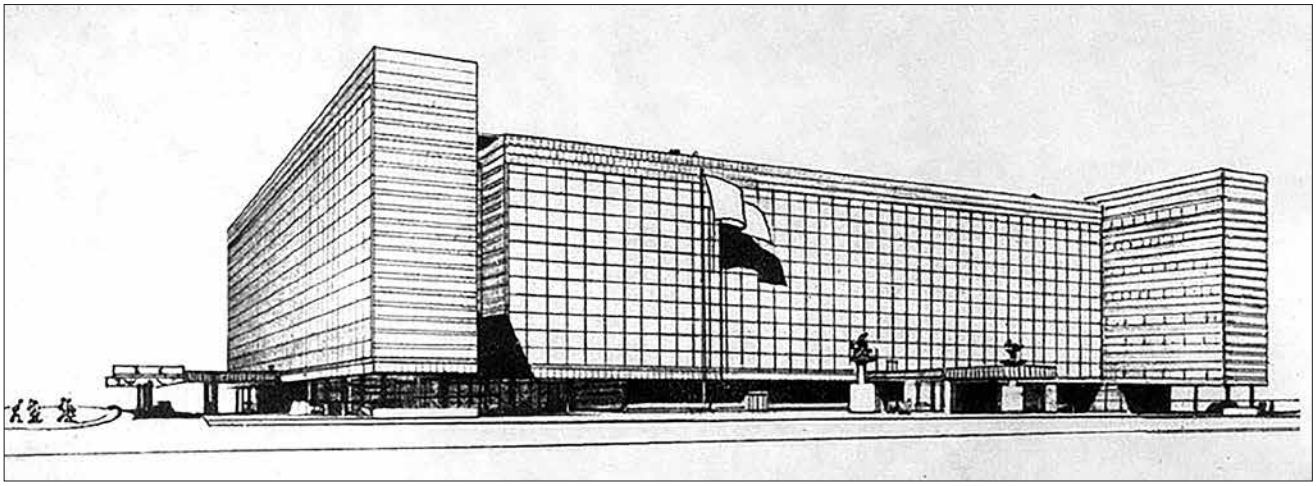

Fig. 1: Moscow, House Centrosoyuz, 1928–1936, architects Le Corbusier, N. Kolley, perspective design, elevation of Myasnitskaya Street (http://corbusier.totalarch.com/centrosoyus)

Fig. 2: Moscow, House Centrosoyuz, contemporary views (author's archive)

Fig. 3: Moscow, House Centrosoyuz, interior views after restoration (https://www.m24.ru/galleries/arhitektura/01022016/4644, https://07122.livejournal.com/3467233.html, author's archive)

Fig. 4: The ramp (https://07122.livejournal.com/3467233.html)

Fig. 5: The cover of a magazine of the 1920s with images of the competition winner (author's archive)

Fig. 6: "Red Banner" power station, 1925–1936, architects E. Mendelsohn, I. Pretro, design by E. Mendelsohn, 1925 (https://ru-sovarch.livejournal.com/506217.html)

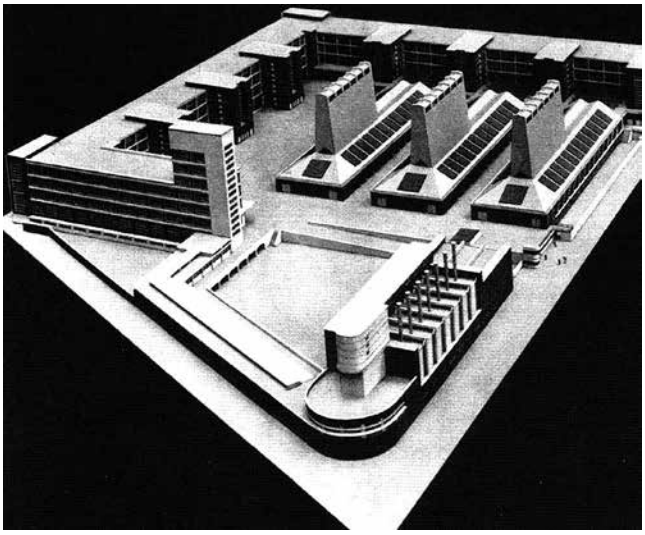

Fig. 7: Model of the plant complex, 1926 (author's archive)

Fig. 8: View of the plant with newly erected building next door (author's archive)

regional importance. In 2006, at the international conference in Moscow "20th Century, Preservation of Cultural Heritage", with the participation of the executive representatives of UNESCO, ICOMOS, DOCOMOMO, and UIA, a declaration was adopted that recommended to include the Centrosoyuz in the UNESCO World Heritage List. In 2016, 17 Le Corbusier buildings from seven countries were included on the World Heritage List – except the Centrosoyuz in Russia, although the Le Corbusier Foundation had not ruled out this opportunity. The building remains an icon of 20th century architecture. This was once again shown at the anniversary of the Le Corbusier in 2012, but it deserves world recognition and protection. To some extent, as an act of repentance towards the great architect the Moscow authorities in 2015 erected a monument in front of his work. In my opinion, this building meets the following criteria for outstanding universal value: (i) (masterpiece), (ii) (impact on the development of architecture), (iii), (iv), (vi). Unfortunately, questions remain regarding the preservation of the building's authenticity and integrity.

The "Red Banner" Factory in St. Petersburg

A monument to E. Mendelsohn is promised to be put before another icon of avant-garde architecture of the 20th century – a complex of the factory "Red Banner" in St. Petersburg, 1927–1937, together with I. Pretro. The plant's power plant or its power unit received a regional level of protection in 1988; only it was built according to Mendelsohn's project in 1925–1926. The remaining complex of factory facilities was completed in 1926–1928 and 1934–1937 on the basis of a modified project (architect I. Pretro, S. Ovsyannikov, engineer E. Tretyakov). The ensemble's appearance is like a metaphor – a "ship" advancing the entire production. "The production workshops of the factory and the building of the CHP (Central Heating Power) form a single architectural composition known throughout the world. The grandiose of the CHP strikes with its power and colossal scale. The ensemble influenced the work of the Leningrad architects of the 1920s–1930s, who called it 'a classic example of a new architecture'."[2]

Currently, the terrain of the ensemble is divided into two parts between two developers operating independently of each other, despite all requests for a review of the decision to build and adjust the project. Since spring 2016, a multifamily residential complex under the name "Mendelsohn" is under construction, significantly exceeding the historic dominant of the ensemble.

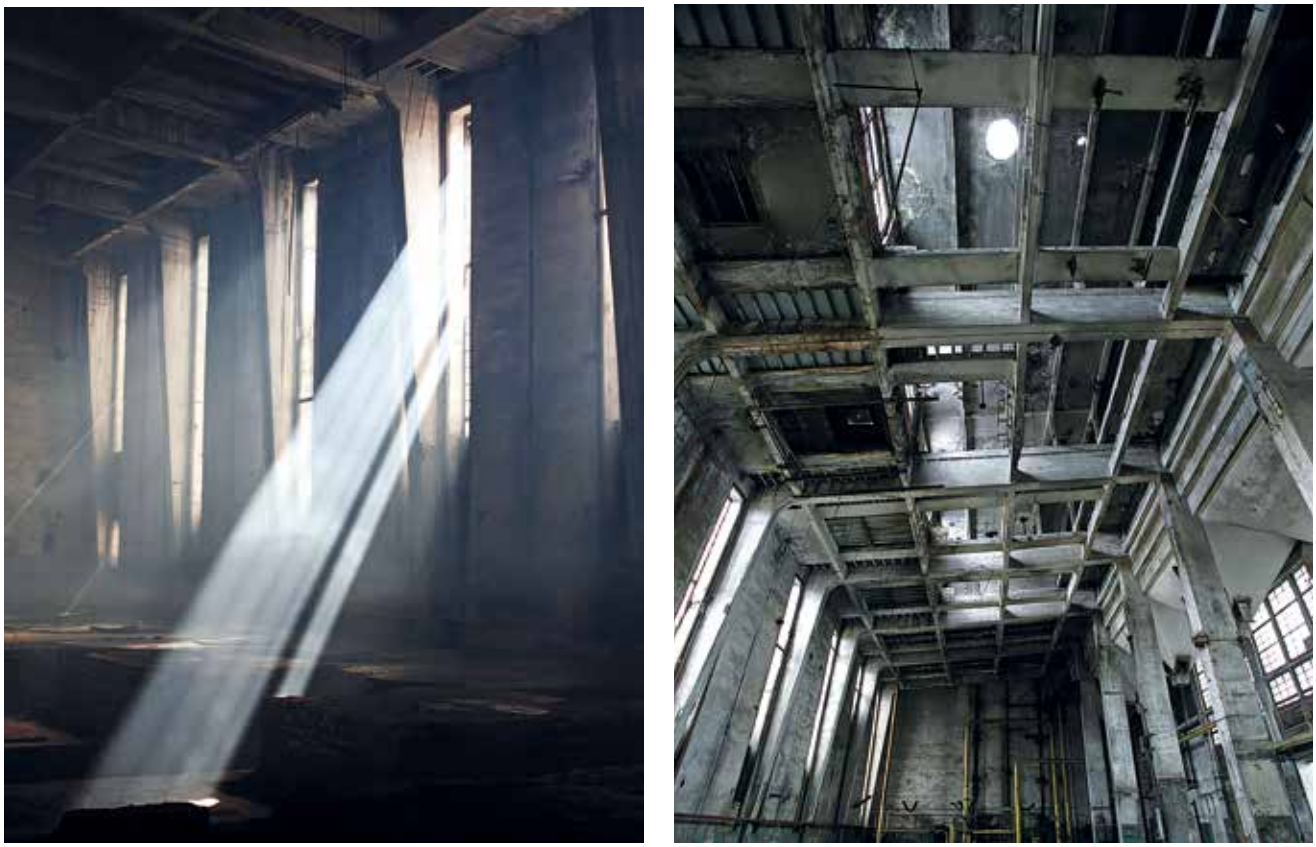

Fig. 9: Interior views of the CP block (https://ru-sovarch.livejournal.com/506217.html)

Fig. 10: General view before the new construction (photo Юрий Молотковец Игорь Яковлев Михаил Макшанов Иван Борисов архив ЦГАНТД. Силовая подстанция https://0i1.livejournal.com/7732.html)

The Socialist City of Magnitogorsk

In June 1930, the first house of Quarter No. 1 of the socialist city of Magnitogorsk was laid (architect S. Chernyshev, E. May, M. Stam, W. Schütte, etc.), which is a unique example of an actually realised urban development of 1930–1933 by a group of German and Dutch architects under the leadership of Ernst May, with the participation of the Soviet architect Sergey Chernyshev. The general plan of Magnitogorsk and the layout of the quarter reflects the achievements of the German urban planning of the time ("Frankfurt School") and the search for the spatial organisation of a new socialist city ("Sotsgoroda").

This was preceded by public discussions about the socialist settlement and contests in which the utopian principles of Sotsgorod were developed in many ways. Today

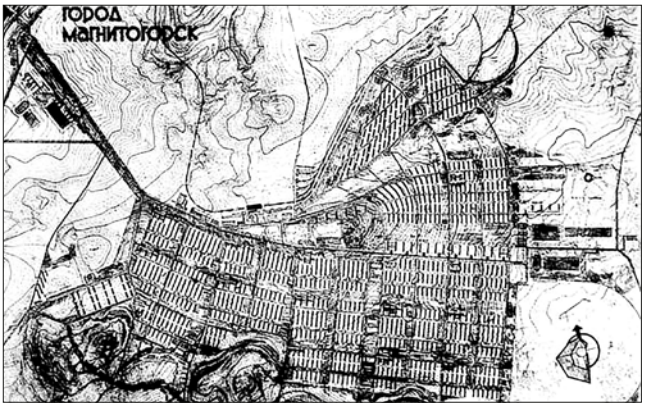

Fig. 11: Sozgorod, Kvartal № 1, Magnitogorsk, 1929–1933, architects E. May, S. Chernyshev, M. Stam, I. Ingeman, M. Schutte, design layout of Magnitogorsk 1930, general plan published in S. Khan Magomedov's book "Architecture of the Soviet Avant-garde", vol. 2: "Social issues".

Fig. 12: Sozgorod, Tchaikovsky Street (https://ru-sovarch.livejournal.com/678699.html)

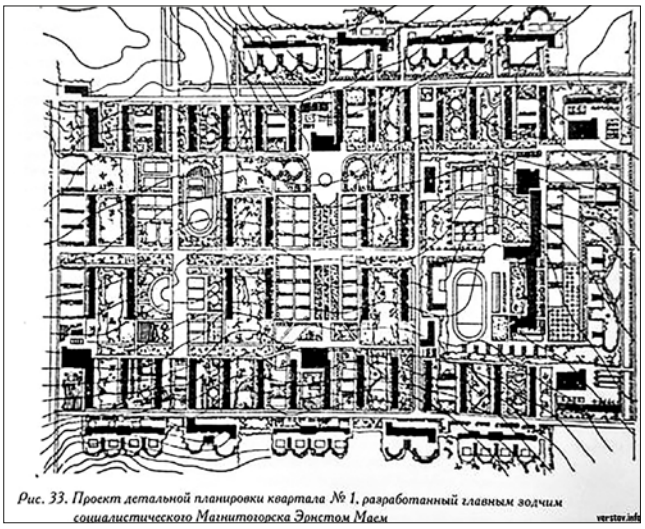

Fig. 13: General plan for Kvartal № 1 of the "social city" Magnitogorsk, E. May team with S. Chernyshev (design of 12 buildings), 1930–1931 (https://www.verstov.info/news/culture/22757-socgorod-vosstanovit-on-zhe-pamyatnik-zhiteley-levoberezhya-budet-ohranyat-yunesko.html)

Fig. 14: Aerial view of the present day situation (https://www.verstov.info/news/culture/22757-socgorod-vosstanovit-on-zhe-pamyatnik-zhiteley-levoberezhya-budet-ohranyat-yunesko.html)

Fig. 15: Aerial view, photo of the 1930s (https://www.verstov.info/news/culture/22757-socgorod-vosstanovit-on-zhe-pamyatnik-zhiteley-levoberezhya-budet-ohranyat-yunesko.html)

Fig. 16: Design projects for the reconstruction of the historical environment of the 1930s, 2012 (www.verstov.info)

Fig. 17: Present-day situation (www.verstov.info)

Fig. 18: Present-day situation (https://ru-sovarch.livejournal.com/678699.html)

Fig. 20: Library in Vyborg, 1927–1937, architect A. Aalto, general view of the library after restoration, 2014 (https://ru.wikipedia.org)

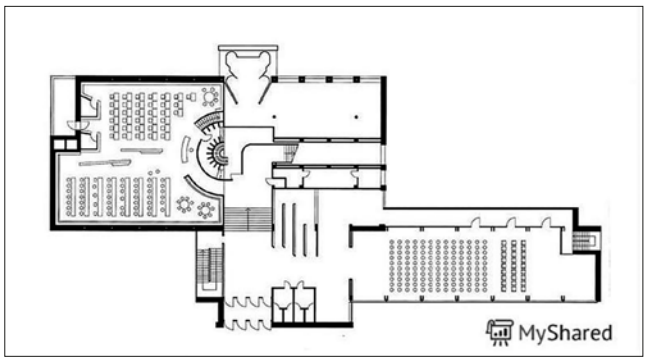

Fig. 21: Plan of the ground floor (© My Shared)

Quarter 1 is the historical part of the city. Its town-planning concept, types of residential buildings, school and kindergartens, organisation and gardening of the spaces between the houses are all material evidence of the search for an ideal city under the real conditions of Russia's first five-year plan.

"Presently, these small fragments of social utopia, realised in stone, are not only on the periphery of the urban space, but also on the periphery of the activities of state protection divisions, surviving in the absence of investment in repairs, restoration, reconstruction, popularization. The historical appearance of many residential and public buildings is irreparably distorted, not only individual buildings are lost, but also the planning structure and, as a whole, the spatial environment reflecting the architectural and town-planning idea of the turn of the 1920s–1930s. Up to the complete destruction that threatens the neighborhood and, probably, in the near future we will be called a 'lost monument'", writes E. V. Konysheva.[3]

On the state security there is only one historic house listed, since it was occupied by the artist A. Soloviev. The city authorities decided to restore the quarter in 2018. On 20 February 2013, a petition was sent by German specialists, including Jörg Haspel, to the authorities protesting against the sale of plots in the Quarter.

The Alvar Aalto Library in Vyborg

The construction of the A. Aalto library in Vyborg started in 1927 and was completed in 1935 (coincidently at the same time as the building of the Centrosoyuz). From 1940 to 1961, the building went through a difficult phase, but the story had a happy ending. From 1994 to 2010 the international project "Integrated scientific restoration of the building of the Vyborg Library A. Aalto" was funded on an equal footing, both from the Russian side and from international sources. In November 2013, the restored library was inaugurated and its restoration was a pilot project for the restoration and conservation of Modernism, implemented in cooperation with the Finnish Committee for Restoration and with ICOMOS. The status of protection is of federal significance registered in 1995.

Fig. 22: Alvar Alto Library, Staircase

Fig. 23: View of the roof
(Google Алвар Аалто. Библиотека в Выборге)

Fig. 24: General view (Google Алвар Аалто. Библиотека в Выборге)

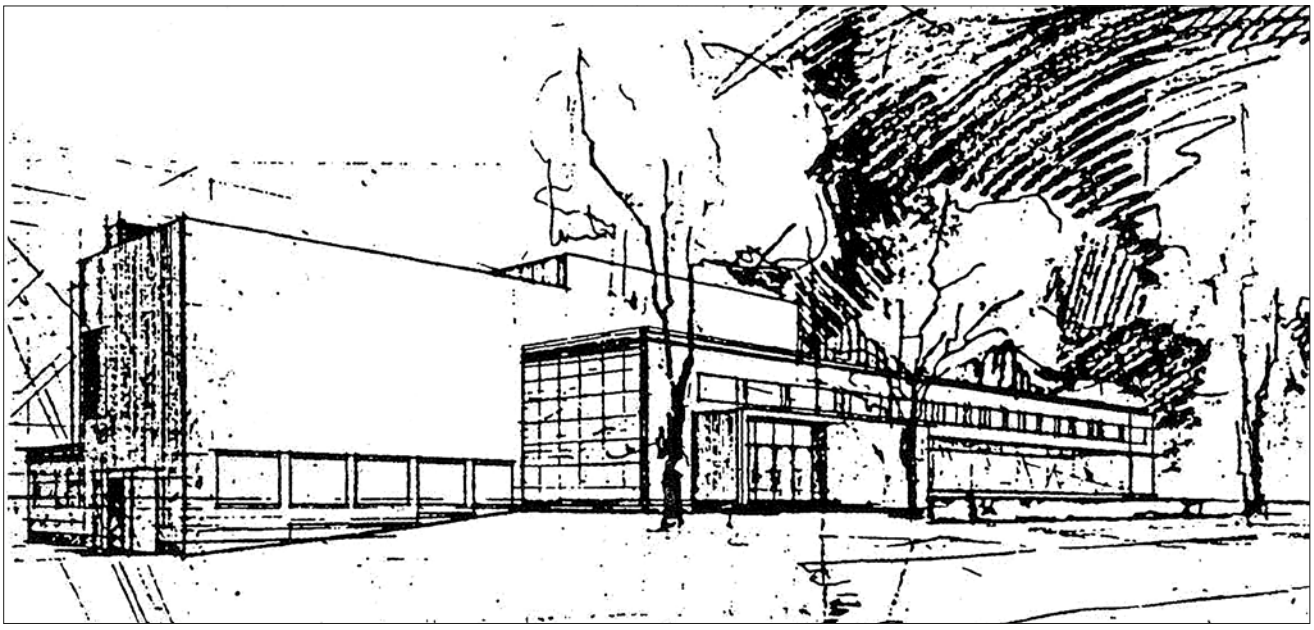

Fig. 25: Sketch of the library, A. Aalto, 1920s (http://aalto.vbgcity.ru/node/210)

With these examples, I presented four icons of the architecture of the 20th century, whose outstanding universal value is universally recognised and in accordance with the criteria of ICOMOS. They have in common a similar creation time, a difficult historical destiny, their location is in Russia, they all had an exceptional influence on the development of architecture in the 20th century throughout the world, and especially their architects jointly created these works. They were part of the fate of Soviet Russia, which was the site of social experiments traumatic for cultural heritage, in that they survived the rise of revolutionary internationalism and the neglect of barbarous obscurantism. Today, they exist in our and the world cultural space, remain to be objects of cultural pilgrimage, and a source of creative

inspiration for future designs. They are also united by the fact that none of them are included in the UNESCO World Heritage List, although this status could protect them at the national level from distortions and maybe loss. Unfortunately, preventive measures – warning letters, inclusion in the list of "heritage under threat", the opinion of the international community – cannot effectively protect against ignorance and commercial aggression. Inclusion in the UNESCO List, albeit conditionally, with the state having the responsibility for preserving the "best of the best" of human civilization can prevent the threat of extinction. And although the experience of saving the Aalto library today is an exception, it can serve as a real example of successfully combining national and international efforts of society and authorities not only in preserving but also in honouring a cultural heritage site of Finland, Russia, Europe, and the rest of the world.

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Do Modern Materials Need a New Conservation Approach? Approaches to Restoring Sandwich Panels, Polyurethane Foam and Shotcrete

Steffen Obermann

Two recent conservation-restoration projects demonstrate that structures of the more recent past require us to handle materials which do not belong to the corpus of classic building materials. Conservation experience of these materials scarcely exists. The two listed structures are briefly introduced and the treatment of their specific materials is described. The conservation-restoration experience gained raises the question of whether or not new materials require a new philosophy to express the conservation-restoration approach to monuments of relatively recent date.

I. The Berlin Circulation and Cavitation Tank

The first project is the Circulation and Cavitation Tank in Berlin (*Umlauftank 2*) (Fig. 1). This structure is situated on a prominent site in the heart of Berlin close to the main axis connecting the western and eastern parts of Berlin. The tank is visually well known, since one of the main railway and suburban train lines pass by directly. And yet to most citizens and visitors its function has been a mystery since its erection in 1974. Even if the pink tube indicates some technical operation is in operation, it neither reveals its purpose nor the medium circulating in it. The inner life of the blue box remains a secret as does the reason why it is propped up on top of the giant pink 'serpent' by a slender green steel structure (Fig. 2).

In fact, the Circulation Tank is a research facility, today operated by the Technical University of Berlin. The tank contains 3300 tonnes of water, the water being driven by a huge propeller and two ship diesel engines. The top part of the tube is only half filled. A large opening allows access to the water, which appears as a steady running flow. Depth and speed can be varied. This section allows hydrodynamic and maritime experiments in and under water with all sorts of vessels and propellers in model scale. The blue box with five storeys serves as a laboratory building. The pink tube is insulated by foam in order to keep the water temperature to some degree constant throughout the year. Scientific tests need stable conditions for comparable results.

The Circulation Tank is one of about 80 similar facilities worldwide. It is the biggest of its kind. But more important is that it is the only one which found an original architectural expression for its function. All other circulation tanks are hidden in industrial sheds as sheer machinery or they are partly dug into the ground. The Berlin Circulation Tank is a hybrid of a machine and a building. The singularity of this building type makes it exceptionally difficult to decipher and to understand. The way this structure was designed by civil engineer Christian Boes and architect Ludwig Leo (1924–2012) has made it an outstanding work of architecture. It has found its place in building history as well as in the townscape of Berlin. There it stands, still somehow puzzling.

Fig. 1: Berlin, Circulation and Cavitation Tank (© adb Ewerien und Obermann)

Fig. 2: South elevation after restoration, 2017 (© adb Ewerien und Obermann)

Materials

Only the two main materials of the construction of the Circulation Tank will be discussed: the pink tube and the covering façades of the blue laboratory building.

The tube is made of curved steel plates, 17 mm thick. The whole welded construction is covered with about 40 mm of polyurethane foam (PU foam), directly sprayed upon the steel and finally painted with a pink coating. Polyurethane foam is commonly used as an insulation material, which is mostly available as boards and usually covered and protected by other weatherproof materials. It is not very resistant to UV light and tends to absorb water after several years. The condition in which the foam was found in 2013 before restoration was characterised by gaps in the coating and by the foam beginning to decay. Many parts of the surface showed cracks or even voids. In some gaps, vegetation had started to grow. Earlier repairs with inappropriate materials such as mortar were also found. Mortar fillings did not coalesce with the PU foam.

Fig. 3: Polyurethane foam with typical damages, 2013 (© adb Ewerien und Obermann)

Fig. 4: Sandwich panels with faded coating and corrosion, 2013 (© adb Ewerien und Obermann)

The façade of the laboratory building is made of sandwich panels. They were industrially produced and consist of a core of polyurethane foam in between two layers of galvanised steel sheets. The outward sheet is coated in blue, the one towards the rooms in white. The panels had lost their colour in the more than 40 years of their existence. The coating had not been renewed since construction. More concerning than the loss of colour were the spots of corrosion that on some of the panels appeared to be covering large areas (Figs. 3 and 4).

The conservation-restoration planning of sandwich panels

The planning team tried to develop repair solutions for these two materials with their specific damages. The aim was to apply established conservation principles, such as retaining as much of the original fabric as possible. Both materials had never been subject to conservation interventions before. It was also clear that polyurethane foam even after restoration would not transform into an endorsed cladding material with reliable durability.

The repair concept evolved was to identify the corroded areas within the panels, to cut them out and to peel them off the PU core. The void would have been filled up in order to achieve a level plane with the surrounding surface, onto which a new repair sheet of steel would have been glued within the next stage. The detailing made provisions for the joints between the panels. The new sheet would have to slip within the existing pleat of the neighbouring panel. Different sorts of glue were investigated and selected in order to fulfil different requirements, such as durability, flexibility and changing temperatures (Fig. 5).

With this concept, only 12 % of the panels would need to be repaired, another 13 % with a filling of asbestos would have to be exchanged for health and safety reasons on account of noxious matter anyway, and the majority of 75 % could be conserved.

For experimental repair methods with little existing experience it is good practice to evaluate samples before the actual restoration. During the planning process various samples were carried out. They involved different types of steel sheets as well as different surfaces and coatings. The original colour had been undoubtedly identified. Beside the technical evaluation also the level of gloss was tested and debated. Heat and frost were simulated in order to control thermal deformation. And last but not least, the repair sheets were tested for their adherence to their substrate.

The concept and tests were convincing. Final doubts had to be resolved since some irregularities appeared. Only when the scaffolding had been constructed could the panels

be scrutinized intensively. A special device allowed inspection of the depth of the panels. The *eddy current method* is an electronic method used for example to detect fine cracks in components of aeroplanes. This instrument was able to identify transformations on the rear side of the steel sheet facing towards the PU core. Since the detector has the size of only about five centimetres it took several weeks to inspect all panels centimetre by centimetre.

The result was disastrous. Two lessons had to be learned: First, the steel had separated from the foam in many places, forming a gap. The result was loss or at least severe reduction of the stability of the panel as a self-supporting structural element. Second, and even worse, the outer steel sheets were corroding on their internal side attached to the foam. Despite the galvanising, most corrosion found had developed from the inside and not as previously assumed from the outside of the panel. The results of the *eddy current method* detection were validated by openings. At the end of the process, the result was that all panels were identified as being at least partially damaged although their appearance from outside had suggested a good condition. There was not a single sound element found on any of the façades. The first assessment of the visible damages had been completely misleading and wrong.

This painful process of learning culminated in the realisation that there was no possible repair method for corrosion within the compound element of a sandwich panel without its dismantling and complete destruction. The intention of a thoughtful repair ended in the exchange and renewal of all sandwich panels. That they are still being produced in the same way, in the same dimension and colour, was cold consolation.

Preserving polyurethane foam

The attempt to repair the pink foam in a traditional way was more successful. Repair samples had also been tested in advance. The repair of masonry had been the role model, although solid stone appears as the complete opposite to the unstable polyurethane foam. Responding to the two main categories of damage, two major repair principles were implemented. First, damaged spots were cut out down to the steel bottom. That was handily achieved with a simple kitchen knife. Preferably rectangular outlines were carved out, just as it is commonly done to repair stone. To guarantee a durable bond with the adjacent foam an undercut was formed, similar to mortar-based repairs in masonry. The void, wider on its bottom than on the surface, was filled by spraying in new foam. The two-component material turns from liquid into stiff foam within seconds. While hardening, the foam expands. Spraying foam needs experience in order to anticipate the amount and allow for expansion. In most cases the new infill expanded slightly over the edges and had to be cut back. Finally, a quick and very thin overspray was applied to adapt to the typical granular texture (Fig. 6).

The second repair principle applied to areas with single cracks or a network of cracks which did not need to be cut out deeply. A survey had shown that the cracks usually ended at a depth of only a few centimetres. Those areas were ground down to the sound material. The recesses were levelled by overspraying fresh foam. Finally, and after washing the remaining surface with water, the pink coating was added.

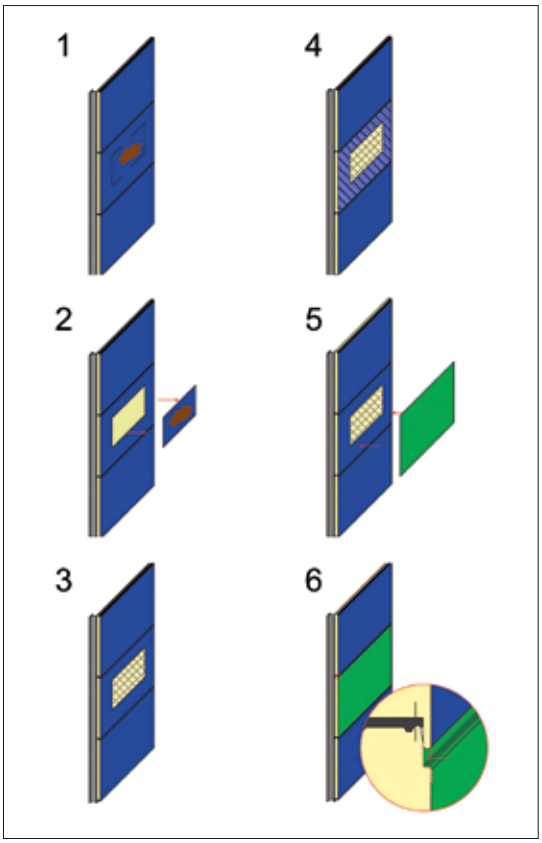

Fig. 5: Repair concept for the sandwich panels (© adb Ewerien und Obermann)

Fig. 6: Fresh foam being sprayed into the prepared voids (© adb Ewerien und Obermann)

The result is that most of the foam has survived and especially its irregular hand-crafted character. On closer inspection, the repair work can be clearly perceived. A closer look also indicates that the foam is not a high-quality material. The emblematic character of the large-format building, however, emerges to its full effect only from a distance (Fig. 7).

Fig. 7: Polyurethane foam after restoration, 2017 (© adb Ewerien und Obermann)

Fig. 8: The decks of the laboratory; the top of the water tube appears on the lower deck, painted green (© adb Ewerien und Obermann)

Conserving the interiors

The blue laboratory box is used as workshop to build and adjust models of vessels in wood and resin. Office space is also available. The interiors had been heavily used and were severely worn after more than 40 years of intensive use.

The architecture again is breathtaking and genuine. Maritime research issues have found their expression in a maritime architecture. The five different floors in the building are still called *decks*, just as the architect Ludwig Leo entitled them in his drawings. The similarity to the decks of a ship is obvious.

The interior looks clean and appealing after restoration. Effectively only straightforward conservation work took place on these decks. The interventions were minimal. Apart from the new shell of sandwich panels, nothing had to be replaced. Only the white partition walls were repainted. All the other surfaces, such as the green and black steel members, were intensively yet carefully cleaned. Conservators used damp, curd soap and brushes. The floor, after decades of heavy workshop use, is still the original floor due to intensive cleaning with scalpels and various complementary means of cleaning and polishing. Cracks and holes in the orange textile barriers were stitched and darned on-site by textile conservator-restorers. Missing cords in the barriers on the top deck could be reproduced in the same manner and colour (Fig. 8).

II. The Observation Deck in Binz (Rügen) by Ulrich Müther

The second model project to be presented was much smaller. Again, it is rather a structure than a conventional building (Fig. 9). It was designed and created by Ulrich Müther (1934–2007). He was a civil engineer who lived on the small island of Rügen in the Baltic Sea.

Hyperbolic paraboloids

Ulrich Müther had specialized in concrete shells. He led a community-owned company in the GDR. From the 1960s and mainly up to the 1980s he designed and carried out approximately 60 to 70 structures, most of them as concrete shells. He became famous for the construction of hyperbolic paraboloids, a geometric surface which is inflected in two opposite directions comparable to a horse saddle. It was Müther who coined the concise term *hypar shell* for the built version of the mathematical phenomenon. Together with Heinz Isler (Switzerland), Félix Candela (Mexico/Spain) and Frei Otto (West Germany) he was one of the international protagonists of this light and wide-spanning construction type.

Müther combined the hypar shells in different ways to outstanding spaces. A single hypar shell could serve as an open but covered space, as for instance a bus stop (Fig. 10). Two, three or four hypar shells of larger size were arranged to

Fig. 9: Observation deck for lifeguards at the beach of Binz/Rügen (© Wüstenrot Stiftung)

exhibition halls and other public spaces. One of his masterpieces was the *Maple Leaf*, a composition of five hyperbolic paraboloid concrete shells. It served as a canteen for the East German Ministry of Construction in Berlin. Sadly, it was demolished in 2000.

Another proof that his work belonging to the recent past is still in danger is a multi-purpose hall in Magdeburg whose future is uncertain. It consists of four hypar shells (Fig. 11).

Müther's construction company operated on the island of Rügen. There, supported by the GDR government, he had the opportunity to experiment with structures of shotcrete, his favoured material. Concrete was shot on a fine mesh of steel and reinforcement, sometimes even without a wooden shuttering. In this context a series of trial constructions were created from which he could gain experience for taller buildings. One of those experimental buildings was an observation deck for lifeguards – often referred to as "rescue tower*"* – at the beach of Binz (Rügen), built in 1975. In this case the shape is not a hypar shell: the shape is bent in two directions, but not in the opposite ones.

His construction plans, which are safely stored at the Müther Archive at the University of Wismar, reveal that the

Fig. 10: Hypar shell for small-scale experimental structure: bus stop in Binz/Rügen (© adb Ewerien und Obermann)

Fig. 11: Multi-purpose hall in Magdeburg (built 1969); endangered structure of four hypar shells, with temporary support in the centre (© Sebastian Schmidt)

Fig. 12: Inside the deck before restoration (2015): frozen condensation on the windows, water and mould on the concrete shell (© adb Ewerien und Obermann)

shell was planned and most probably realised with a thickness of only seven centimetres. Six years later Müther was commissioned to provide a second observation deck further down the same beach. Instead of building the identical structure he tested out the limits of material and geometry and reduced the thickness of the shell down to only four centimetres.

From a structural point of view, it is a superb work. In some other respects, however, it is a failure. This becomes clear in winter. The windows are frosted, water drips from the ceiling and all surfaces are wet and mouldy. Due to the extreme dampness the wooden window frames had rotted from inside and out. Heating and ventilation were non-existent. Only four centimetres of concrete, rapid weather changes at the coast, no insulation and no space for heating cause severe problems to the inner climate and serious harm to the fabric (Fig. 12).

Retrofitting an experimental structure

How could an experimental structure possibly be turned into a functional and long-lasting building? Three main measures were taken:

First: Instead of single glazing, double-glazed panes with a thickness of only 12 mm were inserted without any effect on the frame dimensions. A sample was tested and positively evaluated in respect of appearance, colour and reflection. The completely decayed frames were reconstructed in thermically processed timber, which promises high resistance towards rot.

Second: To avoid or minimise condensate on the concrete surfaces two options were explored. The first option was a plaster with highly insulating characteristics. A notable physical effect on the room climate would have afforded a layer of several centimetres on the inner side of the concrete shell. This corresponds to the thickness of the concrete itself. It would have been impossible to hide this extra layer at the edges and would have been clearly visible at the windows. The other option was to install very thin electric heating wires which were set into a filling of only a few millimetres and which could fade out at the windows. Neither wires nor filling is visible at all. Electronic sensors for temperature and dampness decide when to slightly warm up the shell in order to avoid condensation. With computer-based climate simulations it became clear that these two measures on their own would not be sufficient.

The third component was the most challenging. The idea was to warm up the building slightly and to provoke air circulation. A pipe of about fifty metres length carries air into the building. The air is pre-warmed in a distant and existing facility building and remains warm because the pipe runs below ground at more than a metre in depth. The air runs into the building through a new duct within the shaft of the tower and disperses under the floor. It leaves through slim gaps in

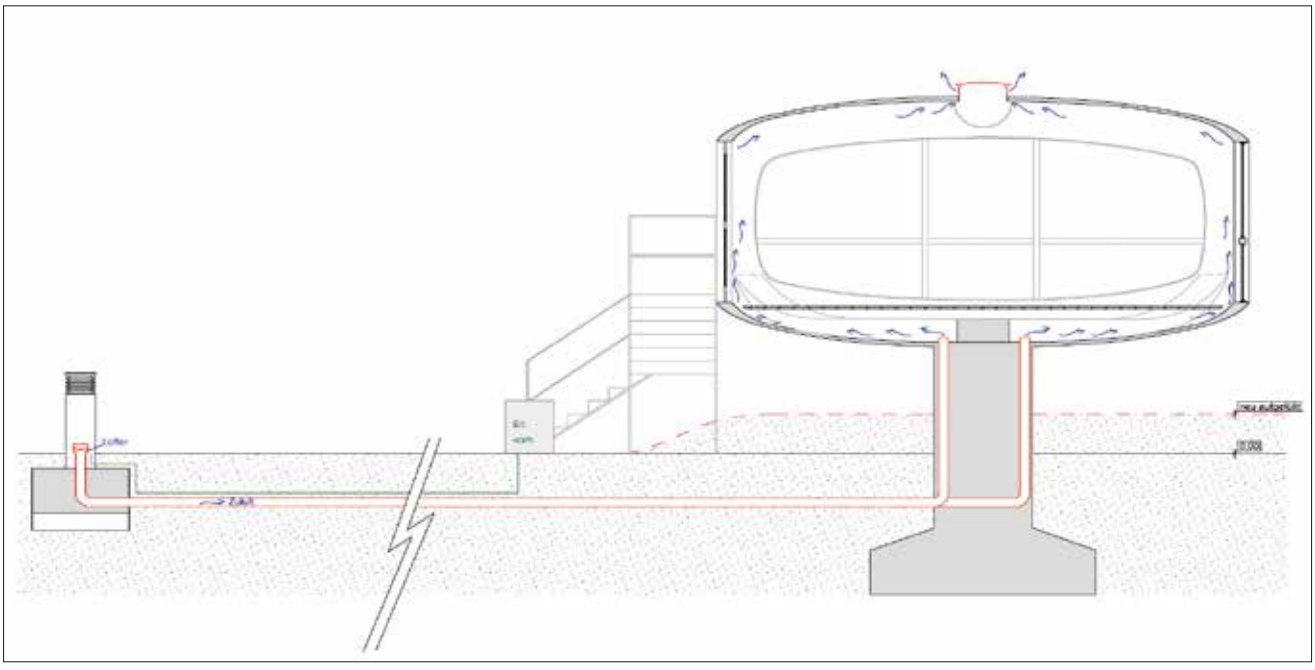

Fig. 13: Ventilation scheme (© adb Ewerien und Obermann)

Fig. 14: View from the former observation deck over the beach of Binz (© Wüstenrot Stiftung)

the floor near the windows from where it can absorb possible condensate passing by the glazing. The humid air then exits through an existing hole in the ceiling. There is absolutely no visual impact of this installation. The uncertain measure of drilling a vertical hole through the massive shaft proceeded successfully (Fig. 13).

The rescue tower is now used not only in summer but also in spring and autumn. It can be hired for civil wedding ceremonies (Fig. 14). The earlier observation deck, however, was destroyed as early as 1993.

Conclusion

The question if new materials need new approaches to conservation practice is provocative but can decisively be answered after evaluating the two model projects presented.

Modern materials often require new methods for inspection and analysis. Modern materials may also involve new repair techniques. The planning instruments however remain the same:
– detailed analysis;
– thorough planning;
– considering alternatives at any stage of planning;
– evaluating samples and tests.

Samples and tests become the more important the less potential repair methods are proven or reliable. Financial means for sample tests and their appraisal are as crucial as time for their preparation and evaluation.
– The conservation claims are the same as with traditionally constructed buildings, namely:
– retaining as much of the original fabric as possible;
– minimal intervention in the fabric;
– preservation rather than repair (as done with the interior of the Circulation Tank);
– repair rather than renewal (as for instance the repair of the polyurethane foam);
– renewal only as a last resort, when all other possibilities have failed.

In buildings of the recent past, pure repair and restoration may sometimes be sufficient. No improvements or technical upgrades took place at the Circulation Tank. Even a model conservation practice, however, cannot convert buildings or materials involved into better quality. Industrially produced sandwich panels or covers of PU foam will remain mediocre fabric.

Retrofitting – in the sense of implementing technical improvements or enhancing technical standards – as carried out at the rescue tower can be helpful. Sometimes they may even be vital if technical solutions prevent the building from further decay.

Between Memory Politics and New Models of Heritage Management: Rebuilding Yugoslav Memorial Sites 'From Below' [1]

Sanja Horvatinčić

Introduction

Second World War monuments and related types of built heritage from the socialist period in former Yugoslavia (1945–1990) – such as memorial centres, museums or memorial parks – have been attracting the special attention of international experts and the global public for more than a decade. Their sudden popularity can be observed as part of the broader phenomenon of (re)discovery and exoticisation of the former socialist artistic and popular culture. Such encounters with the ideological "other" and its unexpected artistic and cultural legacy were enabled by the unprecedentedly fast and immense scope of dissemination of images through the internet and social media. The authors who have analysed the phenomenon of such sudden and broad popularity of Yugoslav monuments agree that the iconic images of a couple of dozen concrete monuments, accompanied with the mystification of their "alien shapes", became viral after the photo-project by the Belgian photographer Jan Kempenaers was released in 2010, both in form of a printed publication[2] and, even more so, through the free circulation of his images in the booming market domain of online social media space.[3] This trend, which I have referred to as the "*spomeniks* effect",[4] has initiated a lot of amateur research projects, presented through dozens of blogs, websites and publications,[5] and – more recently – through tourist routes as well.[6] This tendency is still on the rise, provoking nevertheless timely and insightful critical responses and scholarly analyses.[7] Following such trends, but also relying on the growing amount of contemporary academic research on the topic of commemorative and artistic culture in Yugoslavia, monuments have also gained a more "legitimate" recognition from some of the most prestigious art institutions, such as the Museum of Modern Art in New York,[8] or the interest of global heritage institutions such as ICOMOS [9] or EU-based heritage funds (Fig. 1).

Fig. 1: Display of the exhibition Toward a Concrete Utopia: Architecture in Yugoslavia 1948–1980, Museum of Modern Art, New York, July 2018–January 2019, view of the section dedicated to monuments and memorial complexes (photo: Sanja Horvatinčić, 2018)

Bearing in mind the lack of institutional supervision and maintenance of these historic and memorial sites and buildings, caused by the drastic outcomes of the changed political circumstances in most parts of former Yugoslavia (including war destructions and various forms of political misuse of the recent past), while at the same time witnessing the growing international interest and commercial potential of these sites, we are facing challenges that appear to be particularly alarming when it comes to protecting the interests of local communities and immediate heritage stakeholders.

The aim of this paper is to provide an overview of the monuments' current heritage status and to detect the main challenges concerning their perception and management in future. The emphasis is put on small-scale, local initiatives that emerge and develop independently of the *authorised heritage discourses*, and on heritage practices that grow 'from below'.

I will first outline the main characteristics of this large group of public monuments and memorials, thematically related to the antifascist struggle and the socialist revolution of the Second World War in Yugoslavia, including the conditions and various levels of their production that, among other factors, led to their high density and pronounced typological diversity. In the focus of this analysis is their "post-socialist" condition – their unresolved, contingent and dissonant heritage status, torn between, on the one hand, official *disinheritance* manifested through historical falsifications and political appropriations, and on the other hand the grass-root, activist initiatives or locally supported small-scale renewal projects that challenge or subvert the dominant politics of both memory and heritage management, and – in some cases – even constitute or fertilise new, counter-hegemonic heritage approaches and practices.

Monument production and heritage protection in Yugoslavia

Monuments started to be produced as early as during the Second World War, either as built structures such as tombs, other forms of publicly mediated commemorative and propaganda messages, such as graffiti,[10] or as used places and structures that would later on be listed as heritage and highly valued as "authentic monuments". Soon after the war had ended, all preconditions were set up for the start of the most prolific period of monument production in this part of Europe.[11] The economy of the war-devastated country, based on workers' self-management, was recuperating, and memory culture flourished due to the generous investment in the commemorative practices from both state institutions and local communities, as well as the individual and organised involvement of the new generation of artists and architects who were eager to get their hands on in the newly open, highly competitive, and – even for Western European standards – relatively liberal field of public memorial art production. These were among many consequences of the expulsion of socialist Yugoslavia from the Comintern in 1948, and the consequent changes within cultural politics, i.e. distancing from the Soviet model and opening up to international influences and new global cultural and philosophical currents.

Monument production in Yugoslavia was a widespread social and cultural practice, involving a dynamic multilateral exchange among various social actors and stakeholders – political committees and veteran organisations, artists and architects, urban planners, art critics, and local communities. The highest level of memorial production, which was mainly organised through public federal competitions, enabled the introduction of novel, at times even experimental, concepts and approaches. It is important to emphasise, however, that the majority of monuments were produced locally through direct commissions, often corresponding to local traditions as well as to the practical, infrastructural needs of such communities.

The official legal protection of monuments dedicated to recent historical events was in itself a novel practice in post-war Yugoslavia, often resulting in innovative conservation and preservation methods. Heritage protection laws on this specific category of monuments differed among Yugoslav republics; however, there was a considerable amount of ideological bias in the listing procedures, as is in general the case with most heritage protection policies. Monuments and sites were classified under the new, specialised category of "Monuments to the Revolution" or "Monuments to the Peoples' Liberation Struggle and Workers' Movement". The fruitful professional exchange among Yugoslav heritage experts generated a large amount of fieldwork, statistical surveys, professional recommendations and new standards. Although their condition and legal status within heritage protection systems in former Yugoslav republics largely differ, under the changed political circumstances of the post-socialist period their meaning is once again aligned with the hegemonic cultural and memory politics, often adapted or falsified to meet short-term political interests, or subordinated to the emerging profit-oriented models of heritage management.

Furthermore, lacking high aesthetic qualities, the majority of monuments and memorial sites became overshadowed by the popular, often decontextualised images that have come to constitute a kind of *ad hoc* canon of Yugoslav monuments. (Fig. 2). The insistence on their exquisite aesthetic features as the only or primary criterion of determining their contemporary heritage status undermines the monuments' immense cultural, commemorative and political significance.

Shared or (re)appropriated heritage?

If we choose to avoid an approach by which memorial heritage would be evaluated and prioritised according to such criteria, the concept of 'shared heritage' or serial nominations could be applied as a reasonable solution. However, the new geo-political constellations and ideological uses of the past on the territory of the former socialist countries have imposed new political frameworks for such nomination and interpretation of heritage. One such example is the use of the term "totalitarian" in defining and reframing tangible and intangible heritage of former socialist countries in Europe. By retracing the use of the term since the 1920s, its

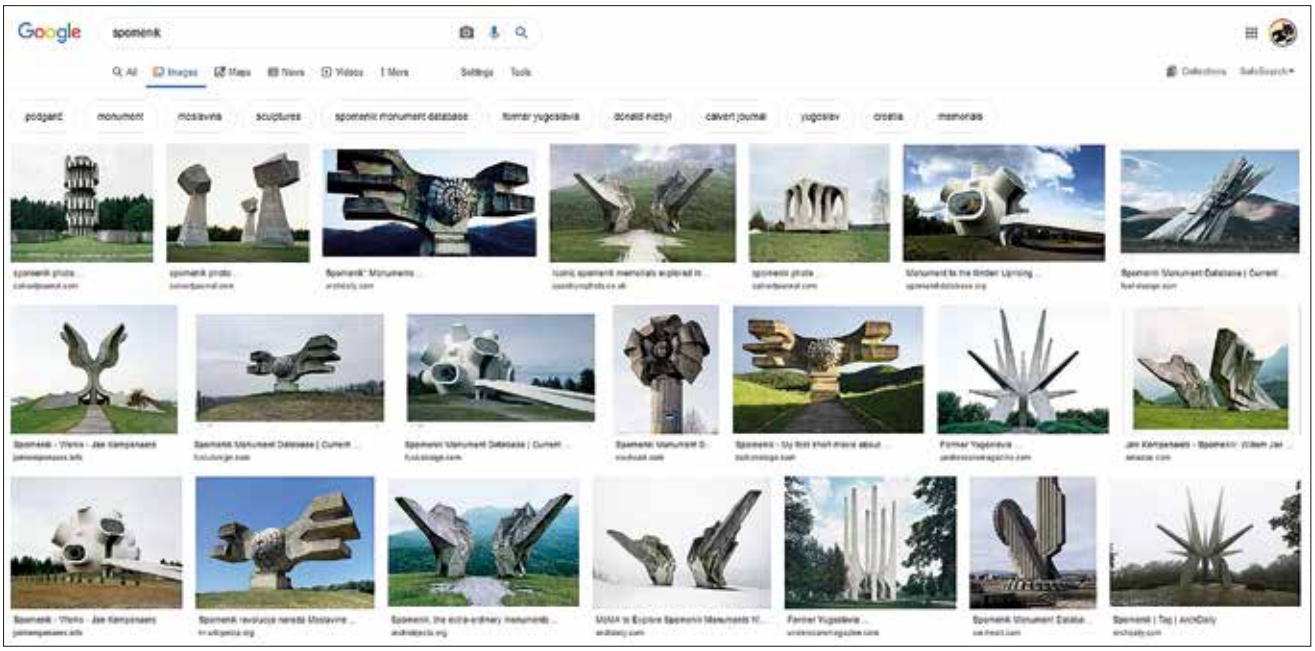

Fig. 2: Screenshot of the Google search results for the word "spomenik", meaning "memorial" or "monument" in south Slavic languages, August 2019

changing meanings and interpretations throughout the 20th century and the reasons behind its introduction to various types of official discourse (political, legal, and socio-cultural), I argue that the function of the term "totalitarian" – as it has been used in the EU heritage policy papers and cultural programmes (such as Cultural Routes of the Council of Europe, Europe for Citizens programme, etc.) – has a clear political agenda with potentially negative effects on the perception of the targeted cultural heritage by its current stakeholders. The term itself became widely used in the political discourse in the mid-1990s, when lobbying circles within the Council of Europe and the European Parliament started imposing a "totalitarian interpretation of Communism in the European assemblies, which directly shaped the EU's remembrance policy".[12] This was done through a series of legal documents calling for "dismantling" or "condemning" of all totalitarian regimes. As the term labels all non-democratic 20th century political regimes – Fascism, Nazism and Communism – the intention of equalising ideologically opposed systems and ideas is evident, while its outcome serves both the aim of absolving the hegemonic ideology – Neoliberal Capitalism – of any links to Fascism and Nazism, and of further efforts to criminalise Communism. Finally, the introduction of the anti-totalitarian discourse into official EU heritage policy is a precedent in that it aims to reinforce citizens' identification with the EU's political system by using oppositional discourse and creating a new type of common *anti-heritage.*

I argue that thus defined "shared" characteristics of the targeted heritage can be found neither on the formal-aesthetic, nor on the functional level of analysis. The term "totalitarian heritage" itself functions as an example *par excellence* of the use of heritage as a metacultural practice,[13] while the on-going programmes that have been certified by the Council of Europe, such as the *ATRIUM European Cultural Route – Architecture of Totalitarian Regimes*, perpetuate the use of non-scientific, unsustainable and contradictory terminology with potentially damaging effects not only regarding the re-semantisation, heritisation and the social use of targeted architectural and sculptural built heritage, but on bolstering the existing cultural and economic divisions and prejudices between the European East and West.

Other EU funded programmes, such as the recent Regional Cooperation Council's "Culture and Adventure Tourism Development and Promotion" call,[14] have prepared a specialised project package called "Balkan Monumental Trail", described as "a new joint regional route, a niche product that focuses on the attractiveness of the art and design, architectural value and in particular *in situ* design of the WWII monuments and buildings as a unique heritage of this specific period".[15] Similarly to the above-mentioned ATRIUM cultural route programme, this one aims to frame the notion of 'shared heritage' according to yet another pragmatic geo-political agenda. Directly referring to the "attractiveness for the international markets (…) best reflected through the Toward a Concrete Utopia exhibition at MoMA (…) the objective of the BMT is to create a pathway which highlights and explores the often forgotten and marginalised heritage of the abstract and modernist WWII monuments of the WB6 economies of Albania, Bosnia and Herzegovina, Kosovo, Montenegro, Republic of North Macedonia and Serbia."[16] Almost paradoxically, Yugoslav monuments are thus no longer 'shared' among (all) former republics, but according to current geo-political power relations and economic interests. Needless to say, this means further alienation of Yugoslav memorial heritage from its original political and cultural context, and its ideological misuse for current political aims.

On the other hand, the common experience of the Yugoslav antifascist resistance warfare did indeed form a genuine concept of 'shared sites' of Yugoslav memory, still active-

ly attracting visitors and stakeholders from all parts of the former state. Today's cultural and commemorative practices that take place under – or despite – the changed political circumstances, still form a shared cultural and linguistic space, thus making a strong argument for heritage management models that would bind together and create cultural and memorial routes based on the territory of former Yugoslavia, or, alternatively, on the shared international experience of the resistance and collective struggles during the Second World War across the Mediterranean, European or even global territory. Such models, however, oppose or even subvert the hegemonic political agendas, be it neo-liberal/anti-communist on the EU level, or nationalist on the level of local politics in the former Yugoslav region.

On the other hand, visible tendencies of the tourism-oriented management of Yugoslav monuments and memorial sites – especially those aimed at an international audience – are often based either on the "ruinophilic" appeal of some sites, or on the aforementioned trend of the exoticisation of the "former East". Although the concept of "memorial tourism" was developed within the self-managed socialist system in Yugoslavia as early as the late 1960s, it was at the time based on comprehensive demographic/economic assessments and detailed physical planning of protected memorial zones. The idea was to supplement novel heritage protection regimes over memorial and natural landscapes and artefacts with recreational and educational purposes to benefit local self-managed communities. The economic profit for the local communities was an important outcome, but not the guiding principle for such a model of heritage management.

Under the changed political circumstances and economic principles, the absence of any kind of professional involvement and dialogue with local communities, the commodification of recent heritage by branding them as 'difficult' or 'dark', could lead to the scenario in which (hi-)stories of fascism and anti-fascism can freely compete on the "open market".

The many shades of physical destruction

The treatment of Second World War monuments in the wake of the bloody and devastating dismantlement of socialist Yugoslavia greatly differed among the former Yugoslav states. There were as many strategies towards the inheritance of the revolutionary legacy of the former state as there were agendas and new ideological positions within the diversified political fields in the former Yugoslav territory. However, most of them had one thing in common: distancing from the legacy of the socialist system and the affirmation of new national narratives and symbols. The level of destruction depended on various factors, primarily on the level of the political extremism of the new nationalist parties in power and the intensity of the 1990s armed conflicts in ethnically mixed communities. It greatly varied: from almost complete and systematic erasure of monuments and memorials in some parts of Croatia, Bosnia and Herzegovina or Kosovo (Fig. 3), to abandonment and oblivion in some parts of Serbia, to the full preservation or partial modification for the purpose of aligning the monuments with new national paradigms, as has been the case in Slovenia or Montenegro (Fig. 4).

The first comprehensive survey done by the Union of Antifascist Associations in Croatia in 2000 showed that out of some 5500 monuments listed in the late 1980s, about 3500 (including plaques, busts and other types of memorial objects) were destroyed or damaged in the first ten years after the fall of socialist Yugoslavia (1990–2000).[17] Another extensive survey of Croatian monuments and memorials, conducted from 2011 to 2017, showed that these numbers were even higher. It resulted in a map of more than 1700 monuments, with different colours representing the degrees of their damage (Fig. 5). The dark red dots mark those that were completely destroyed, which make up some 30 % of the analysed monuments. Another 30 % are dark blue dots,

Fig. 3: View of the monument dedicated to the victims of fascism in the village of Jošan, Croatia, sculptor: D. Džamonja, 1979–1988. The monument was mined in the early 1990s and has been neglected ever since (photo: Matija Kralj, 2016)

Fig. 4: Monument to the fallen soldiers of the 1912–1918 wars and the Peoples Liberation War 1941–1945, Sukovo, Serbia, architect J. Petrović. The original five-pointed star was replaced by an Orthodox cross (photo: Žarko Aleksić, 2019)

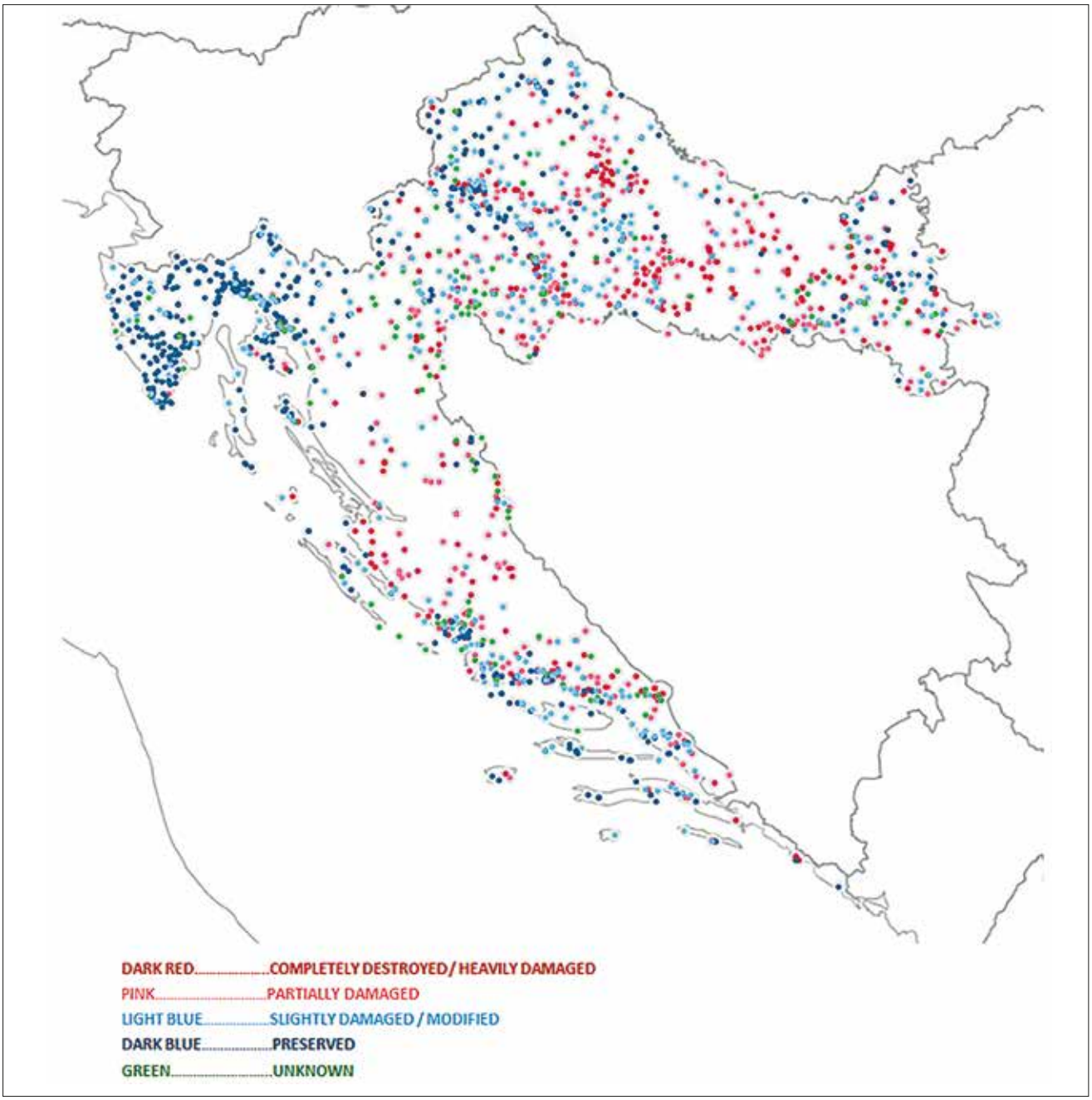

Fig. 5: Map showing the damage degree of the monuments dedicated to the Peoples' Liberation Struggle and Revolution in Croatia in the period 1990–2017 (taken from: Horvatinčić, Memorials from the Socialist Era, 2017, p. 154)

marking monuments that have been preserved. Partially (pink) and slightly damaged or modified (light blue) make up the rest of the 40 %.[18] As the map demonstrates, the destruction of monuments greatly varied in different Croatian regions, and it is easily noticeable that the intensity of war conflicts in the 1990s directly and – after the end of war – also indirectly conditioned the degree of the monuments' destruction. Those were often the same, ethnically mixed communities that had severely suffered during the Second World War, the period to which the monuments were dedicated. After the wars of the 1990s, and still today, Croatia has seen numerous examples of new monuments built on top of the old ones, with their epitaphs, names and symbols replaced, removed or overwritten. These actions have almost never been legally processed or sanctioned.

In her study on heritage management practice in former Yugoslavia, Marija Jauković suggests that the state of devastation of monuments dedicated to the Peoples' Liberation Struggle in Yugoslavia can be interpreted in several ways. "Firstly, it can be regarded as a clear statement of new national states aiming to detach themselves from an 'uncomfortable past'. Secondly, it can be interpreted as the inability of responsible institutions to act upon the burning issues of heritage management (concerning all of its segments), due to limitations imposed by both policy and practice. And finally, it can be regarded as a genuine indifference of the new

'owners' towards this 'expired' heritage, which should in that case be demoted. However, the new 'owners' of this shared heritage are hardly showing indifference while they are assuming an active role in the informal processes of heritage management, as demonstrated in earlier examples." [19] She therefore claims that "the main issue is not held in the domain of the informal heritage management practices, but rather in the inabilities of the formal ones."[20]

Approaching the memorial Yugoslav heritage 'from below'

How should such structural issues concerning memorial heritage be resolved and tackled under the described political circumstances? In order to disable further negative outcomes of political manipulation with their historical meaning, and to secure the resonance of their positive messages in contemporary social reality – such as the struggle for social justice, or international and interethnic solidarity – the management of the monuments should primarily rely on, and be derived from, the local communities. Examples have already shown that heritage initiatives worked best when based on horizontal organisation models and voluntary networking of various social stakeholders, ideally with the support of interdisciplinary groups of experts. Their task should be to empower and employ a multitude of stakeholders in the process, and not to impose or merely implement predefined heritage programmes and agendas. A socially responsible engagement of heritage experts should be based on reciprocity and participation, and aimed towards the development of new research and mediation methodologies and practices. Finally, with the concept of community heritage in focus, they should advocate and appeal to the high-level decision-makers and heritage protection institutions to change or modify legal boundaries, policies and heritage regulation protocols.

Recently, a growing number of grassroots initiatives and movements – still largely ignored in the media – emerging in different parts of former Yugoslavia can be noticed. Despite the fact that in most cases they have neither been supported nor recognised by the state heritage institutions, such initiatives are followed by an emerging interest in critical heritage studies within the academia. Some such examples are Mišo Kapetanović's research on the memory politics and popular commemorative practice of the working-class surrounding the monuments dedicated to the partisan hospital in Korčanica Protected Memorial Area in Bosnia and Herzegovina,[21] or the international interdisciplinary heritage project "Heritage from Below/Drežnica: Memories and Traces 1941–1945", dealing with the legacy of the partisan guerrilla warfare on a micro-historical level, with the emphasis on connecting archaeological, art-historical and anthropological analyses of different types of material traces in the once protected, but now largely depopulated and impoverished mountain area of Croatia. An important goal of this project is to find new models and practical solutions for the (re)evaluation, reconstruction, preservation and local management of memorial areas, complexes and monuments dedicated to the Second World War conflicts in the wider Yugoslav region.[22]

The international fame of Yugoslav memorial complexes and their authors has certainly brought some positive outcomes for local communities. The dire state of many of Bogdan Bogdanović's memorial complexes – often located in the areas hit by the wars in the 1990s – has drawn the attention of foreign heritage and conservation experts. Apart from his MA on the said topic,[23] British archaeologist Andrew Lawler has been working for years on a long-term comprehensive survey of monuments in Bosnia and Herzegovina, published sequentially as "Municipality Reports" on academic social media.[24] At least two more memorial complexes by the same architect, Bogdan Bogdanović, have recently become the object of study of interdisciplinary teams, mostly consisting of local residents or emigrants, young heritage experts and artists, who are – besides the basic aim of reconstructing or revitalising these sites – also interested in their potential as contemporary social and political tools for bridging ethnic divisions and conflicts. The research done at the Partisan Memorial Cemetery in the city of Mostar in Bosnia and Herzegovina resulted in a publication tracing oral histories and personal stories of citizens. This project contributed to the cohesion of several local grassroots organisations to define and attain the common goal of renovating the memorial complex (completed in 2018).[25] This project was followed by a "Curated Walk" to Bogdanović's Memorial Complex Garavice near Bihać: it included guided tours, lectures and open political discussion as a step that the organisers believe should precede the physical renovation of the memorial complex, and a performative method of heritage preservation in itself (Fig. 6).

Some recent heritage projects even transgress national borders, thus opening up new questions of what borders mean when it comes to cultural heritage management 'from below'. With the goal of revitalising a Yugoslav partisan memorial ossuary in the small coastal town of Barletta in southern Italy, a group of architects from Italy and Serbia have been researching this forgotten Yugoslav monument on Italian territory, designed by the sculptor Dušan Džamonja between 1968 and 1970. Interestingly, the memorial ossuary still legally belongs to the non-existent Socialist Federal Republic of Yugoslavia. Despite the fact that neither of the former Yugoslav states claims this piece of land as their national heritage and territory, the group has made architectural reconstruction plans for the elaborate and endangered concrete structure, along with discovering its new social potentials and its resonance in memories of the local Italian population.[26]

Finally, there has been a growing number of contemporary visual artists dealing with various issues concerning Yugoslav monuments, approaching them not only as aesthetic objects, but as important parts of collective and personal memories, and as heritage endangered under the changed social and political circumstance.[27] The 'heritage from below' approach is, however, most commonly and most importantly manifested through locally initiated community endeavours, organised either by individuals, non-profit organisations or self-organised groups. Sometimes they manifest as radical, guerrilla-like conflicts with ideological opponents in the streets (by using graffiti, for example); sometimes they operate by the available legal means (public funding, interna-

Fig. 6: A group of visitors attending the "Curated Walk" programme at the Garavice Memorial Complex near Bihać, Bosnia and Herzegovina (photo: Amina Pečenković, 2018)

tional funds, etc.), but are in most cases disassociated from the heritage institutions. Such approaches respond to the contested state of memorial heritage defined on the higher levels of political decision-making, indicating the crisis of heritage management and the necessity of structural changes within the systems. The methods thus used are equally telling and warning, often in conflict with the prescribed conservation standards. This, in turn, indicates the necessity of addressing urgent epistemological and practical questions regarding the politics of heritage.

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[1] This work has been supported by the Croatian Science Foundation under the project IP-2016-06-2112 "Manifestations of Modern Sculpture in Croatia: Sculpture at the Crossroads between Socio-political Pragmatism, Economic Possibilities and Aesthetical Contemplation".

[2] Kempenaers, Spomenik, 2010.

[3] Kulić, Orientalizing Socialism, 2018. See also Sekulić, Nepodnošljiva težina, 2013.

[4] The Serbo-Croatian word for a monument or a memorial – *spomenik* – has entered English language, albeit in a semantically narrowed version, describing a particular group of objects that have been perceived as a specific aesthetic and cultural phenomenon. Horvatinčić, The Peculiar Case, 2012.

[5] Among them, the work done by Donald Niebyl is especially worth mentioning. See SPOMENIK DATABASE, 2019.; Niebyl, Spomenik Monument, 2018.

[6] See, for example, [N.N.], This new tour, 2018.

[7] Hatherley, Concrete clickbait, 2016.

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[12] Neumayer, Criminalisation of Communism, 2018.

[13] Kirshenblatt-Gimblett, Intangible Heritage, 2004, pp. 52–65.

[14] The official mission of the Regional Cooperation Council is "regional cooperation and European and Euro-Atlantic integration of South East Europe in order to spark development in the region to the benefit of its people". TRIPLE P TOURISM PROJECT, 2019.

[15] Ibid.

[16] Ibid.

[17] Hrženjak, Rušenje antifašističkih, 2001.

[18] I have been unable to verify the condition of all monuments, but unfortunately predictions are that the green spots are mostly either destroyed or damaged.

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Socialist Modernism in Central and Eastern Europe (1955–1991)

Dumitru Rusu

Context

As a concept, socialist architecture or more precisely the modernist tendencies of the 1955–1991 period are becoming more and more popular in specialists' circles. In our case, "Socialist Modernism" is a research platform created by the B.A.C.U. Association, focusing on those modernist trends from Central and Eastern Europe which have been insufficiently explored in the broader context of global architecture.

Socialist modernism is an approach to architecture that was typical of the former socialist countries between 1955 and 1991. Most of it has been left uncovered by writers of architectural history. The modernist trend was officially adopted as a result of historical events. 1955 was the official moment when "useless stylistic elements"[1] in architecture were abandoned, by decision of the Central Committee of the Soviet Communist Party. From then on, Stalinist (or realist-socialist) architecture was replaced throughout the socialist bloc.

This new stage must also be regarded from the perspective of the much-needed post-World-War-II rebuilding of the cities. Countries in the former socialist bloc suffered massive destruction of their built environment and city rebuilding was conducted in a precarious economic context, which required special economic, social and logistical strategies in order to be able to cover the necessary urban infrastructure, housing, industrial and public buildings.

To renew the urban tissue, a set of economic policies was adopted, expressed in architecture by design blueprints and a completely different stylistic orientation. The new building design directions made it compulsory to get rid of "useless stylistic elements", but also to purge shapes and to adorn facades by "a truthful highlighting of wall parts and of large panel elements".[2]

The socialist ideological rule of creating identical blueprints was adapted locally, though projects followed the canonised political guidelines, while introducing certain elements to individualise buildings and to underline their modernist character. By officially renouncing "useless stylistic elements", as required by post-1955 urban policies, architects in the Eastern bloc found an opportunity to take architecture beyond the ideologically imposed limits. Key principles of modernism were adopted to architecture during this period: "form follows function", the use of mass-produced materials, industrial aesthetics, simplicity and clarity of shapes, rejection of unnecessary details, etc. In this way, post-Stalinist architecture became a way to recover modernism; hence our option to define this trend in architecture as "socialist modernism". Socialist modernism was a desire to go back to pre-World War Two modernism, with architecture attempting to fulfil both cultural and utilitarian and economic requirements – the latter having priority.

At the same time, the society resented this type of architecture because of the policies enforced by socialist authorities. Often, this heritage is not seen for what it is, a complex of architectural objects or urban ensembles, but as a result of bad policies.

Fig. 1: A vivid illustration of the situation of the built environment in Chisinau, Republic of Moldova (© Dumitru Rusu, B.A.C.U., PhotoDep., 2016)

Fig. 2: Memorial building of the Bulgarian Communist Party (Buzludzha Monument), Shipka Pass, Bulgaria, built in 1981, architect Guéorguy Stoilov (© Dumitru Rusu, B.A.C.U., PhotoDep., 2016)

The socialist modernist heritage

Central and Eastern Europe boast a number of important architectural monuments that are representative of the post-World War Two identity of each country and express the aspirations of socialist-era architects, starting in 1955 and ending with the fall of Communism in 1991. Between 1955 and 1970, Central and Eastern Europe experienced a strong urban development, as a result of industrialisation, visible in all cities and districts. In large and medium cities (Warsaw, Budapest, Prague, Bratislava and others), collective living neighbourhoods (divided into micro-districts) built during that period covered large areas and included all complementary functions (health, education, culture, shopping, sports etc). Some of the most important buildings associated with modernist socialism were erected at that time. It was a time when the built environment increased considerably, explaining why these buildings form the large majority in many socialist cities. If these urban areas are not protected as a whole, the general image of the city will suffer (Fig. 2).

In the following we would like to introduce a few socialist modernist examples with a promising future:

Aeroport Baneasa, Bucharest, Romania

The former Baneasa Airport, today renamed "Aurel Vlaicu", was built in 1946 to replace the old airport. It has a floor plan shaped like a three-blade propeller whose nucleus is the main hall. The building is organised on a basement, ground floor and two upper levels. It stands out for the rhythmed façades, decorated with a concrete grid alternating with perforated panels and with a hint of stars. The volumetric accent is the hemispheric dome of the hall, dominated by the lookout of the control tower. In 2014, the airport was rehabilitated and massively repartitioned. The elegant volumetry, predominantly modernist, although created in the Stalinist period, is still visible today and the exterior colour was appropriately chosen. It was added to the Historic Monuments List in 2008.

The Telephone Palace – Automatic Telephone Exchange Building (Cluj-Napoca), Romania

In 1969, after a technological study by the Telecommunications Design Institute, a plan was drafted for a G+5 building, and a G+3 was constructed in a first stage. Public and administrative spaces were grouped on the ground floor, while the upper floors hosted the telecommunication equipment. Today, the building is covered in graffiti and visibly decayed. The first register of the façade is strewn with air-conditioning units and unsightly cables that seriously alter its appearance. A stylised map of Cluj, created after drawings by the architect and installed on the façade near the main entrance, was removed in 2010 and probably sold as scrap iron, despite its value, with no reaction from the authorities. In 2018, B.A.C.U. proposed that the building, now owned by Telekom, be listed by the Romanian Ministry of Culture.

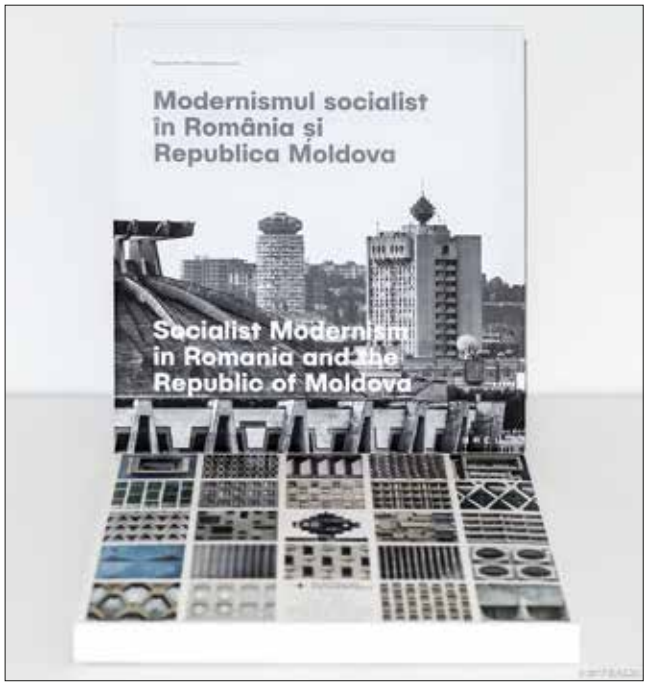

Fig. 3: Socialist Modernism in Romania and the Republic of Moldova

Slovak Radio building, Bratislava, Slovakia

The building of the Slovak Radio is in Bratislava and it is shaped like an inverted pyramid. The architects of this project were Štefan Svetko, Štefan Ďurkovič and Barnabáš Kissling. It was completed in 1983. The building is 80 metres tall and has a large concert hall. The form of an inverted pyramid has attracted much praise and strong dislike, as well as functional criticism for its unsuitability for radio broadcasting due to excessive noise, even though the main studios are located in the perfectly insulated plinth. The Monuments Board announced in 2018 that the building of the Slovak Radio in Bratislava is a national cultural monument.

Federal Ministry of Defense (Generalstab), Belgrade, Serbia

The two buildings designed by architect Nikola Dobrović were constructed in 1955–65 to accommodate what was then Yugoslavia's Secretariat for National Defense. The complex was conceived as an ensemble composed of two modernists blocks that descend in a stepped manner towards Nemanjina Street, thereby creating a city-locked symbol of the city gate. The expressive forms, siting and imposing presence of the complex located at the city's busiest crossroads have made it one of Belgrade's listed architectural landmarks. The building was destroyed during the NATO bombings in 1999. Today it is being restored by the authorities.

Even if we have some examples of good conservation practice and maybe some of promising future restoration works by the authorities, which is great, most of these buildings are still found today in an advanced state of decay. In today's economic and political situation, there is a great risk that these buildings will disappear – some of them being already illegally demolished or inappropriately renovated, without taking into account their architectural value.

On the other hand, we have been able to notice that the interest in this type of architecture has increased. One way to measure this is the success of "Socialist Modernism", the platform initiated by B.A.C.U. and including a website, Facebook pages, Instagram, Tumblr, Pinterest. So far, we have counted about 250,000 users. The growing online trend and the vivid interest of platform members encourage us to extend our initiative with the database and interactive map, even if a large part of the users are not actively involved. Instead, they are spectators attracted by the obscure and abandoned edifices. Nonetheless, publishing and promoting the works of that period in the social media could help us save this forgotten heritage, whose incontestable historic, aesthetic and cultural values have long been ignored.

A palpable result of our attempt to raise awareness and convince the public about the value of this heritage is our publication, hopefully the first of many Modernist Socialist inventory books, entitled *Socialist Modernism in Romania and the Republic of Moldova*. The photo album is an objective illustration of the socialist modernist phenomenon through a series of examples of buildings and architectural ensembles erected between 1955 and 1989/1991. The materials are the result of field research and of archive and library work performed by the B.A.C.U. Association. The members of the Association started documenting this trend six years ago and are still in the process of checking and adding information. This illustrated architecture album presents a set of representative buildings of socialist modernism in Romania and the Republic of Moldova. Although built during the socialist regime, these edifices were conceived in local contexts that were favourable to architectural creation, inspired by pre-World War Two and Western modernism (Fig. 3).

Proposed solutions

An important part in safeguarding the socialist modernist heritage is played by the "Socialist Modernism" initiative. Its actions are directed at the rehabilitation and conservation of buildings in Central and Eastern Europe. Our initiatives seek stylistic discipline and the involvement of both local authorities and the civil society in this process, so as to raise awareness to the architectural value of the buildings, the urban planning and the social and cultural urban tissue still existing. We are currently working on the socialistmodernism.com map and database which are part of a wider programme we launched in 2013. Its long-term objectives are to protect and promote valuable architecture built in the former socialist bloc between 1955 and 1991. Its short-term objectives are to document, archive and distribute information on socialist modernist heritage from Central and Eastern Europe and other regions.

The "Socialist Modernism" interactive map reveals the most valuable examples of modernist architecture created in the socialist period, from buildings to neighbourhoods, parks, recreation areas, etc. The site offers the possibility to navigate

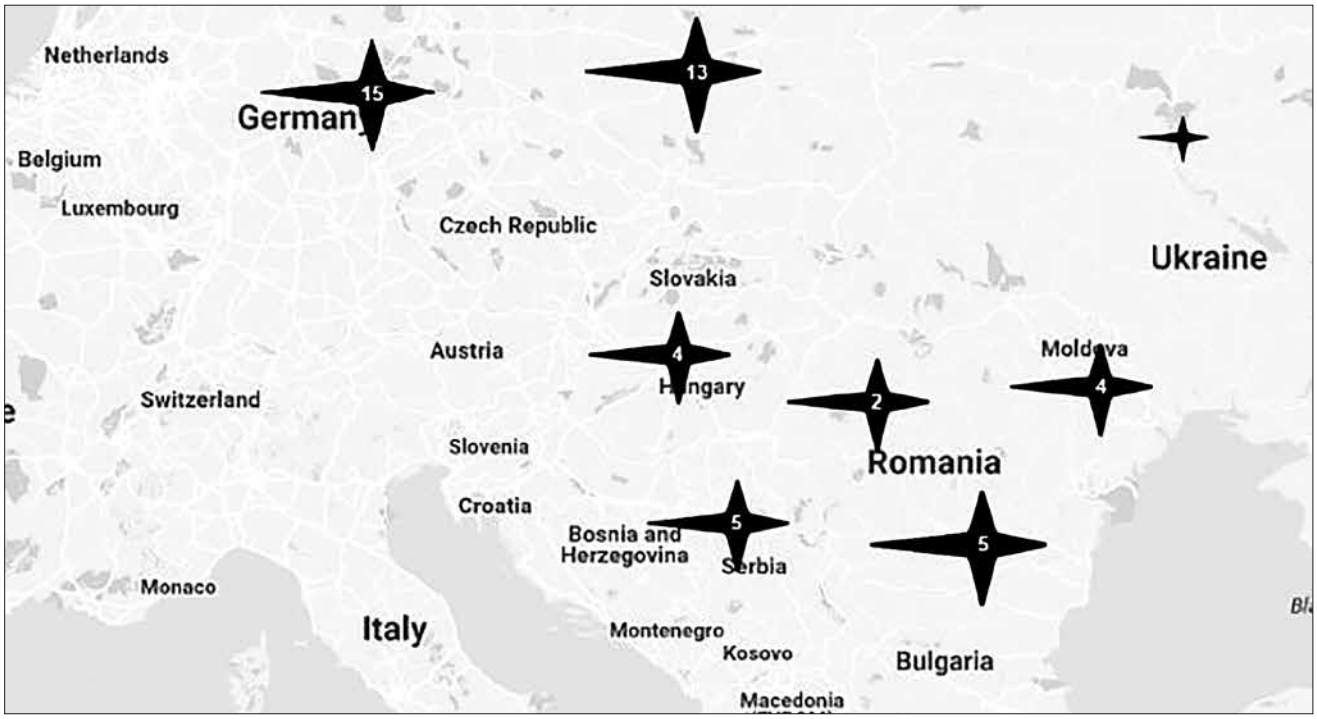

Fig. 4: Socialist Modernism map, version 2

through the map in all the countries of the former Socialist Bloc. The objectives are identified according to architectural, artistic and urban value criteria as well as rarity. They are organised by functional typologies: housing, education, research, culture, medicine, transport, leisure facilities, sports, industry, parks and public spaces, monuments. The search allows selective text searches and the four filters: "country", "current state", "built in" and "function". All monitored objectives are provided with the following details: name, site, planning institute, planning and construction period, bibliographic references and contributor of the research material. An experimental version of the map (version 2) is already available on our site: http://socialistmodernism.com/(Fig. 4).

We would like to turn this map into an interactive, community-driven tool to help us grow our database and increase the awareness needed to preserve these buildings. We have also created a mobile app that allows anyone to contribute to our map.

Users are able to:
– locate sites on our map and find directions to them;
– add new sites they discovered;
– upload their own pictures and videos made on site.

The information already introduced in the database, on a trial basis, is available to experts and members of the public who have an interest in modernist-socialist heritage. They are also invited to contribute to the database with information, images and videos. All information originating outside the Association will be checked and confirmed by database admins.

It must be said that we are still working on the map. That is why some of the options, such as video download or users' forum with individual accounts, are not yet accessible. They will become active one by one, until the map will be fully operational. Furthermore, we are building a community-driven section to better coordinate the efforts made at local level and help organise our members. Anyone who is passionate about this historic period will be able to join our cause on Instagram, Tumblr, Twitter, Pinterest by posting with the hashtag #socialistmodernism. All the important socialist modernist landmarks will be included in this platform, allowing them to be accessed by anyone interested.

The Socialist Modernism platform invites architects, urban planners, historians and art historians or conservationists, artists, activists and anyone interested in this issue to contribute and to broaden the platform. Send us any information regarding neighbourhoods, buildings, monuments, parks and cultural landscapes or any relevant architectural elements – please don't forget to specify their location and address. All the information will be published on our website under the name of the author.

Conclusions

The Bureau for Urban Art and Research (B.A.C.U.) is an organisation focusing on urban and cultural conservation and rehabilitation activities. Its main directions are to protect, preserve and rehabilitate built heritage and art from the socialist period, as well as to monitor how architectural heritage in Central and Eastern Europe is maintained, protected and preserved. Apart from preserving the historical value of buildings, the Association is also interested in improving the overall urban landscape. B.A.C.U. is also striving to make it possible for certain architectural ensembles, buildings and other valuable objects to be classified as heritage and legally

protected, both locally and internationally. In 2016, the Association initiated the classification process for four socialist modernist buildings in Chisinau, Republic of Moldova and in 2018 for another four objects in Cluj-Napoca, Ploiesti, Mangalia – cities in Romania. On August 8, 2019, the State Circus in Chisinau became a protected monument after a decision of the National Historical Monument Committee of the Moldovan Ministry of Culture.

In order to understand how socialist modernism evolved in these countries by following the artistic aspects of architecture, a good knowledge of the various historical conditions of the period is required, the ones that determined a certain historical evolution. Buildings and urban ensembles of the time were the result of centralised planning, which required work in large teams. Socialist modernist architecture evolved differently from one country to another, depending on the particular social and political context, so that it is possible to identify local characters.

We are currently working on revitalisation proposals for several socialist modernist objects built in cities/municipalities of Romania and the Republic of Moldova.

The proposals suggest the demolition of parasitic structures; prohibiting the closing of balconies and any type of DIY abusive rehabilitation; removing excessive advertising from the facades and, finally, making these neighbourhoods, buildings, leisure facilities, parks etc part of the historical heritage. Under such circumstances, the legislation on socialist heritage protection needs to be reviewed, because at least in Romania and Moldova it does not serve its purpose. We are interested in preparing a draft bill that will help preserve these architectural objects and the specific atmosphere they created. The bill will have the objective of preserving built architectural heritage, setting directions for its revitalisation and supporting projects for the classification and conservation of buildings in a bad state of decay.

The reason for adding socialist buildings to the Historic Monuments List is that the liberal policies promoted by former Eastern Bloc countries over the last two decades have neglected the socialist urban heritage. A series of buildings of high architectural value are not protected in any way and have ended in a very bad shape. Whether they are valuable for their composition, proportions, technological innovations or use of constructive elements, these socialist buildings deserve to be taken into consideration, analysed and preserved, irrespective of the political conditions under which they were built. Most of them have elements, often original, that synthetise local tradition and culture. Special attention must be given to those that by function, location, size or conservation state are fit for rehabilitation, adaptive reuse and a new life. They can be easily adapted to hold cultural, administrative, sporting, social or economic activities and fulfil contemporary requirements.

That is why classification and restoration programmes for socialist modernist buildings, first of all for the badly damaged ones, must be the next step in the preservation of the built heritage of the former Eastern Bloc countries.

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V
Restoration and Conservation of Modern Works of Art and Memorials

Images without Image Carrier? Problems in Dealing with Architecture-related Art

Holger Reinhardt

Large-format works of art (murals, mosaics, glass paintings, sculptures) with a direct relation to a building or urban space regarding content or design are often not properly understandable without these. Often they are also inseparably connected to the building, the construction virtually being the image carrier.

At times, the quality of the work of art is rated much higher than that of the image carrier, that is, the architecture or urban space for which it was created. Unfortunately, the latter applies in particular to the architectural heritage of the 20th century. Often only the work of art is evaluated. The time of origin and the architecture as the actual image carrier are not sufficiently considered.

If this is done within the framework of the monument inventory and if only a public interest in keeping and listing the work of art but not the architecture as a picture carrier, this can lead to serious problems in the practical implementation of the preservation of the listed monument. A demolition or conversion of the image carrier leads either to the loss of the listed artwork or to its translocation.

The building of the former mine Paitzdorf of the Soviet-German mining company "Wismut" was demolished in 2006. At the top was the location of the mural "The Peaceful Use of Nuclear Power" by Werner Petzold, created in 1974. Fig. 2 shows the salvaged painting as set up in 2009. Its spatial reference has been lost. As a two-dimensional work of art it now looks like a banner, but hardly like a monument.

Fig. 1: Erfurt, Krämpferstraße, wall relief by E. Toll, 1980 on the outer wall of the courtyard of the former Hotel Kosmos (photo TLDA, Patrick Jung, 2018)

Translocations with the purpose of preserving the artwork have been quite common for centuries and usually technically possible. However, essential information about artistic, creative, art-technological and historical aspects as well as urban-spatial references are always lost. It is precisely these aspects that help us understand a work of art and the intentions of its creator and its clients, and thus the historical conditions under which the work came into existence.

Five examples from Thuringia, all from the 20th century, are used to illustrate the associated methodological problems of heritage conservation. But at first, we look to former West Germany.

Fig. 3 shows the Porta Nigra in Trier in the state of Rhineland-Palatinate. The city gate of the Roman city of Augusta treverorum, built in the 4th century AD, is considered to be one of the best-preserved and most important architectural testimonies of Roman times in Germany. For many generations it was the main attraction of the city. That seems to change.

As you can see in Fig. 4, the Karl Marx monument, which was inaugurated on May 5, 2018 on the occasion of Marx' 200th birthday, seems to have overtaken the Porta nigra. The Karl Marx statue is a gift from the People's Republic of China to the birthplace of the most important son of the city of Trier. It was created by the Chinese sculptor Wu Weishan.

The artist actually wanted a central location for his sculpture, for example in the main shopping street of the city, which begins immediately behind the Porta nigra. This place for the monument of one of the greatest critics of capitalism seems to have been unpleasant to the city. Finally, they agreed on a historically prominent, but ultimately somewhat remote location behind the Porta nigra. The layout of the square was designed in consideration of the remnants of the Roman buildings and the design by Wu Weishan. Anyone who asks what Porta nigra and the new statue of Karl Marx have to do with the topic dealt with here must wait until the end of my paper.

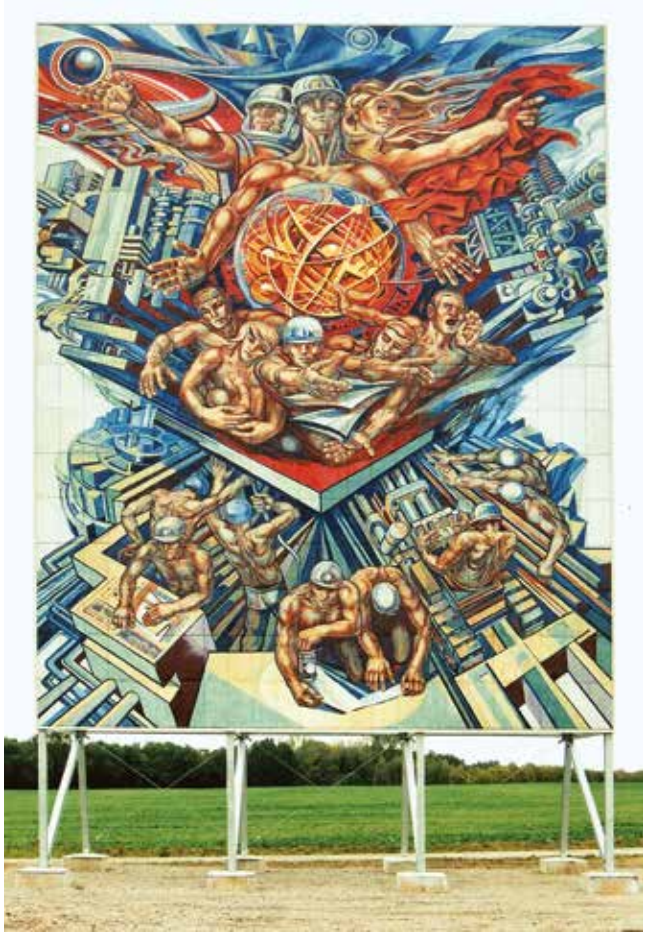

Fig. 2: Beerwalde, formerly Paitzdorf, mural "The peaceful use of nuclear energy" by Werner Petzold, 1974; formerly on the social building of the bismuth pit Paitzdorf; new installation in the field of the district Beerwalde (photo TLDA, Nicola Damrich, 2009)

Example 1: Weimar, murals by Oskar Schlemmer and Werner Gilles in the apartment of Adolf Meyer, 1923

In 1919, the architect Walter Gropius founded probably the most important German laboratory for design, art and architecture of the 20th century in Weimar, calling it "Staatliches Bauhaus". The work of the "bauhaus" had enormous influence on modernity on an international scale. The founding director Walter Gropius succeeded in bringing renowned representatives of the avant-garde as teachers (called "masters") to the Bauhaus, inter alia Wassili Kandinsky, Paul Klee, Lyonel Feininger, Oskar Schlemmer, Marcel Breuer.

In 1923, the Bauhaus felt obliged to organise a first "Bauhaus exhibition" because of critical political voices. In addition to student works, an art exhibition, new room designs in the Bauhaus itself and the building of the model house Am Horn – also an incunabulum of modernism – the newly designed private apartment by Adolf Meyer in Buchfarther Straße 4 was shown.

Meyer was head of the private architect's office of Walter Gropius. Apart from the head of the mural painting workshop Oskar Schlemmer, Bauhaus students Werner Gilles and Hinnerk Scheper also contributed to the design of Meyer's apartment. In keeping with the Bauhaus programme of 1919, Adolf Meyer based the design of his apartment on "the reunification of all artistic disciplines". The general theme was "The New Human". The focus of the design were four murals. Oskar Schlemmer titled his paintings "Et in Arcadia ego" and "A figure between alpha and omega".

The House Am Horn or the large-scale wall paintings by Oskar Schlemmer in the Bauhaus school building were of scientific interest as early as the 1970s. They were subsequently restored. But the paintings in the apartment Meyer fell into oblivion. Reason was the continuous use of the apartment over more than seven decades by different tenants. It was not until the 1990s that the Bauhaus research became aware of its former existence. A restoration study carried out in 2014 revealed that extensive fragments of the painting were still present.

The apartment and thus the artistic fragments are private property. The only way for the state to take hold of this remarkable testimony of the early Bauhaus is the Thuringian monument protection law. Therefore, the ministry of culture

Fig. 3: Trier, Porta Nigra (photo TLDA, Holger Reinhardt, 2018)

asked the monument authority for an assessment of possible reasons for listing the paintings as a cultural monument. Therefore, the apartment was listed in 2016 for historical and artistic reasons. Despite the losses incurred, the fragments of artistic design have a high degree of authenticity. However, the intensive restoration investigation carried out in 2017 revealed that much less had been preserved of the paintings of 1923 than expected.

At present, an association and the management of the Weimar Bauhaus Museum are trying to take off a part of the wall paintings. This concerns the painting "Et in Arcadia ego" by Oskar Schlemmer and its display in the new Weimar Museum. In spite of the highly fragmented state, they are hoping for another highlight for the new museum.

This is understandable from the perspective of the initiators. As a versatile artist and teacher, Oskar Schlemmer shaped the importance of the "Bauhaus" at least as much as his colleagues Paul Klee, Wassili Kandinski or Lyonel Feininger. At the Bauhaus he was not only head of the mural painting workshop, but also as a musically interested person he developed the well-known "Triadic Ballet".

This as well as his paintings contributed considerably to the international reputation of the avant-garde Bauhaus. The museum presentation of a hitherto almost unknown work by Schlemmer would surely bring much attention to the new Bauhaus Museum in Weimar.

The State Monument Authority does not consider the proposed removal and relocation of the wall painting "Et in Arcadia ego" by Oskar Schlemmer to methodically justifiable. This would disrupt the overall design and iconographic context created by several Bauhaus artists. The authenticity of the already only fragmentarily preserved art-work would be further reduced at the authentic location. The painting itself would be deprived of its iconography if it were presented alone. Ultimately, that would be an unacceptable, further reduction of the cultural monument.

Only in the case of an impossible permanent preservation in the authentic place would a translocation to a museum be justifiable. However, this would have to include all artistically designed wall fragments of all participating artists, not just the painting of the most famous among them. The discussion continues. It remains to be seen whether the interests of the museum or the statutory conservation mandate of the monument authority will be accorded a higher public interest.

Fig. 4: Trier, Karl Marx monument by Wu Weishan, 2018 (photo Holger Reinhardt, 2018)

Fig. 5: Weimar, Rudolf-Breitscheid-Straße 4 (former apartment of Adolf Meyer, 1923 interior design by Oskar Schlemmer, Werner Gilles, Hinnerk Schäper), fragment of the mural "Figure between Alpha and Omega" by Oskar Schlemmer (photo TLDA, Holger Reinhardt, 2018)

Example 2: Erfurt, mosaic "Man, Nature and Technology" by Josep Renau, 1983–1986

For the center of a newly built residential area in the north of the city of Erfurt a cultural centre was built between 1979 and 1983. For its urban emphasis, Spanish-born artist Josep Renau was commissioned to create an artistic façade showing the theme "Man, Nature and Technology". Renau opted for a large-scale façade mosaic.

Josep Renau was born in Valencia in 1901. As a committed communist he fought in the Spanish Civil War on the side of the Popular Front. For the 1937 World Fair in Paris he designed the pavilion of the Republic of Spain. For this he commissioned Pablo Picasso's famous painting "Guernica", which deplores the suffering in the war. After the victory of the putschists, Renau emigrated to Mexico. There he worked together with David Alfaro Siqueiros, who besides Diego Rivera and José Clemente Orozco was one of the most renowned representatives of the Muralists. This group contributed significantly to the breakthrough of the "murales", the large-format murals in Latin America.

Invited by the government of the GDR, he moved to the GDR in 1958. Here he designed and realised some large-format murals for blocks of flats and office buildings. His last work was the wall mosaic in Erfurt, whose completion he did not live to see. He died in 1982 in Berlin.

With the end of the GDR in 1990 came the crisis of state cultural promotion. In the mid-1990s, the cultural center was closed and resold several times as a speculative property. Vacancy, vandalism and decay followed.

As early as 1993, the large-format wall mosaic was listed in the monument list of the Free State of Thuringia because of its prominent creator. This concerned the artwork only, however. The reference of the artistic design to the architecture of the building and its urban context was ignored. Finally, in 2006, the cultural center was demolished to make room for a shopping centre. At least, thanks to its listing as a cultural monument, the mosaic was professionally removed and stored in a depot for the purpose of a later re-installation elsewhere.

The loss of the mural was perceived by the population as a loss of local identity. People demanded its re-installation on the facade of the planned new building. At the same time, the Renau Society in Valencia showed interest in the acquisition of the mural and its transfer to Spain. Thanks to a regulation in the Thuringian Monument Protection Law, the purchase of the mural by the city of Erfurt was successful with the aim of setting up the artwork again in the district.

With financial support from the state of Thuringia and a private foundation, the re-installation of the mosaic at almost the same site is imminent. This largely recreates its former effect in urban space. Ultimately, this was only possible by listing the mural as a cultural monument. However, this success cannot hide the fact that the historic context relevant for its creation was lost.

Example 3: Erfurt, residential area centre Rieth, Mainzer Straße 34–38, mural by Erich Enge on the library building, 1977–78

There is a similar problem for another large-format work of art with a direct reference to architecture as an image carrier in the same district. The façade of the district library, built

Fig. 7: Erfurt, residential area centre Rieth, former library building from 1973/74 with wall painting by Erich Enge. Condition 2014 Photograph: TLDA, Werner Streitberger, 2006

Fig. 6: Erfurt, Moskauer Platz 20, former cultural and leisure centre of the residential area Moskauer Platz from 1979–1983 with wall mosaic "Man, Nature and Technology" by Josep Renau; condition before demolition of the building in 2006 (photo TLDA, Werner Streitberger, 2006)

in 1977, is completely covered by a mural by Erich Enge painted in silicate technique. This library was also closed in the course of the social changes after 1990 and sold to a private enterprise. Instead of a library, a hairdressing salon and various offices were installed there.

Here, too, a listing took place in the mid-1990s due to the work of art. Due to the artist's chosen technology, the painting is chemically linked to the plaster as a picture carrier. Unlike the cultural centre, the mural at the library is inextricably linked to the building; therefore, the entire library building was registered as a cultural monument. However, the scope of protection refers expressly only to the work of art, for the existence of which the building is indispensable.

At that time, the listing of the residential area centre for its architectural quality was not considered. Between 1971 and 1974, according to the plans of a German-Lithuanian team of architects, in addition to the library, shops, a terrace cafe, a clock tower, a large fountain, recreation areas etc were built. In the 1990s, the residential area centre was considerably changed.

After the loss of the fountain, the new layout of the square and the impending demolition of the clock tower, there is now a conflict of interest between the inhabitants and the private owner. The inhabitants fear the loss of essential, identity-creating elements in their residential area. The private owner, on the other hand, is only prepared to have the necessary conservatory measures carried out on the mural and the clock tower if these measures are publicly funded.

Incidentally, as in the example above, the socially extremely important task of visual art in public space is evident here. Its relevance usually only becomes evident when it no longer exists or is in acute danger. It turns out that the privatisation of publicly funded buildings and art does not guarantee their preservation, even if they are classified as worth preserving and listed as cultural monuments. The future of the mural on the library façade will only have a chance in the long term if it is publicly funded.

Example 4: Bad Frankenhausen, panorama "The Peasants' War and the Early Civil Revolution in Germany" by Werner Tübke, 1975–1989

The following example is a reverse case in so far as art was not created to embellish and enhance architecture, but ar-

Fig. 8a: Bad Frankenhausen, panorama building on Schlachtenberg, 1975, condition 2013 (photo TLDA, Werner Streitberger, 2013)

chitecture was the shell and frame for a work of art. The artistically highly important panorama painting by Werner Tübke and the museum and protective building near Bad Frankenhausen explicitly created for this purpose even form an existential symbiosis between artwork and architecture.

In 1973, the party and state leaders of the German Democratic Republic decided to build a memorial site for the German Peasants' War of 1525 and its leader Thomas Müntzer. The GDR saw itself in the legitimate succession of the peasants' struggle for social justice. In particular, it referred to the historical-philosophical interpretation of Marx and Engels. Both rated the German peasant uprisings as revolutionary events that ushered in the transition from feudal society to early capitalist society

In accordance with an idea from the Soviet Union, a rotunda for a panoramic painting entitled "Early Civil Revolution in Germany" was built from 1975 to 1978 at the site of the defeat of the central German peasant army near Bad Frankenhausen. The painting was commissioned in 1976 to the then internationally renowned painter Werner Tübke.

On a surface of 1722 m², a monumental work was created that is not only one of the largest canvas paintings in the world. This highly complex painting, with numerous quotations from the European art of the 16th century, the intel-

Fig. 8b: Bad Frankenhausen, panorama painting by Werner Tübke, 1976–1987 (photo TLDA, Werner Streitberger, 2013)

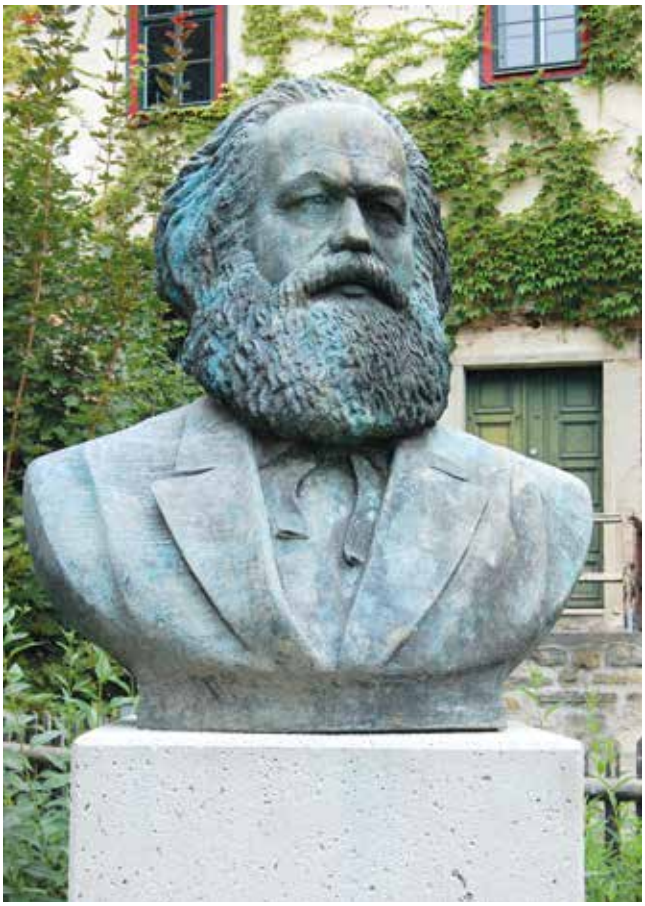

Fig. 9: Rudolstadt, Karl Marx bust by Fritz Cremer, 1953, in the courtyard of the municipal library (photo TLDA, Rainer Müller, 2018)

lectual world and social disruption at the transition from the Middle Ages to modern times are represented from the point of view of the artist. The painting continues to fascinate and polarise three decades after its completion in 1987. Only a few months before the peaceful revolution in the GDR in 1989, the panorama was opened to the public. Together with changing exhibitions of contemporary art in the connected gallery, it has become one of the most frequented art museums in central Germany.

In 1996, the entire complex, including rotunda, paintings, museum construction and open spaces was listed as a cultural monument.

Not only the creation of the painting was an artistic and technological challenge. The same applies to its preservation. The high mechanical residual stress of the picture painted on canvas requires a stable climate in order not to disturb the fragile balance of the physical forces on the painting. This would cause irreparable damage to the colour layer and thus to the painting itself. Therefore, the building was constructed as a double-shell construction. The painting is fixed at the inner shell made of vertical hyparboloid concrete elements. An outer shell, also made of vertical hyparboloid concrete elements serves as weather protection. The narrow, inaccessible space between the two shells serves as a climate buffer. The entire space with the panoramic painting is air-conditioned.

There are currently concerns about potentially possible corrosion damage to the prestressing steels of the concrete elements of the protective casing. The lack of accessibility of the gap between them prevents the standard visual monitoring. The painting cannot be removed for repair work on the protective structure without provoking its destruction. The associated changes in the mounting of the painting would lead to irreversible loss of the colour layer. The painting could not be hung up again.

The alternatively proposed construction of a second outer shell with revision access is not only costly but would also alter the cubature and architecture of the building constructed in early postmodern forms. The building with its specific function tailored to the panoramic painting is useless without this and would be superfluous. A solution to this problem, both from the conservational and the methodological point of view is a challenge for the years to come. At the moment, the heritage conservation authority is in favour of a technical monitoring in order to be able to assess the actual need for action in a well-founded manner.

Example 5: Rudolstadt, Bust “Karl Marx” by Fritz Cremer, 1953

Do you remember the new Karl Marx monument of Wu Weishan in Trier shown at the beginning? There, in his parents’ house, an exhibition and various works of art commemorate this important philosopher. There are several sculptures dedicated to him in the house and in the garden. One of them was made by Fritz Cremer in 1953.

Born in 1906 and deceased in 1993, Cremer was an important German sculptor of the mid-20th century. He is known in particular as the creator of the memorials for the victims of National Socialism in the former concentration camps of Auschwitz, Mauthausen, Vienna and Buchenwald near Weimar.

In connection with an unexecuted Marx-Engels monument for Berlin, Cremer dealt intensively with the characteristic head of Karl Marx. In this context, a bust was created in 1953, which was cast in several copies. These were erected in Frankfurt/Oder, in Neuhardenberg, Neustrelitz, and also in the Marx House in Trier.

Another cast was set up in 1959 on Bayreuther Platz in Rudolstadt, in the course of which the square was renamed after Karl Marx. The garden design did not have any concrete reference to the sculpture. Similar to Neustrelitz or Neuhardenberg, which was renamed Marxwalde at that time, the erection was solely for ideological reasons. Unlike at Trier or at Jena, where Marx received his doctorate at the university, no personal references to Rudolstadt can be derived from Marx’s biography. Incidentally, this also applies to Neustrelitz, Neuhardenberg and Frankfurt/Oder.

Nevertheless, the artistic value of the bust is beyond dispute. It was therefore listed as an art monument as early as 1988. But that did not protect it from oblivion for nearly three decades.

After the reunification of the two German states in 1990, much was considered obsolete that was related to the GDR and socialism. Karl-Marx-Platz was renamed Bayreuther

Platz and redesigned, the Karl Marx bust was dismantled. It disappeared into the municipal construction depot. For its dismantling and storage a permit would have been required in accordance with the Monument Protection Act. But at the time nobody of those in charge in the town of Rudolstadt thought this was necessary. The bust was only considered a relict from the GDR. The monument authorities were not even informed about this measure. That the sculpture was missing, was not even noticed during the revision of the monument inventory in Rudolstadt in 2017.

After all, 27 years after the unauthorised dismantling in Rudolstadt there was a more differentiated view, not only regarding Karl Marx, but also regarding the work of Fritz Cremer. The town decided to set it up again, this time in the courtyard of the municipal library.

Again this happened without coordination with the monument authorities, but not unnoticed by the public and ironically commented by the media. After all: The new site is a worthy place for the sculpture and for Karl Marx. In a well-designed courtyard and surrounded by the library buildings, the location is comparably intimate like the one in the garden of the Karl Marx House in Trier.

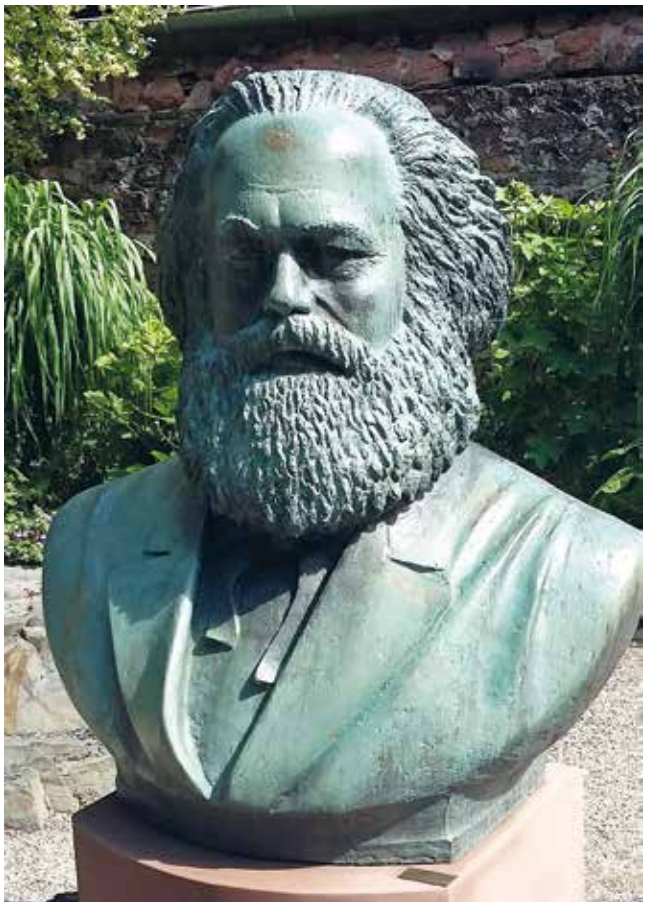

Fig. 10: Trier, Karl Marx bust by Fritz Cremer, 1953, in the garden of the Karl Marx House (photo TLDA, Holger Reinhardt, 2018)

Conclusion

The evaluation of art related to architecture or urban space as part of a monument inventory should not only focus on the artistic aspect. The image carrier and aspects of the object's history must by all means be observed. In case of doubt, even architecture that may be only average or insignificant should be included in the listing. Otherwise, serious methodological problems in the preservation of the work are usually unavoidable. In addition, translocations of works of art created for a certain building or urban space are always accompanied by the loss of art-historical and art-technological information. The authenticity of the work of art is inevitably reduced.

"Unity, Creativity, Beauty" – Decline and Survival of Socialist Memorial Sites in Bulgaria

Emilia Kaleva and *Aneta Vasileva*

Introduction

Cultural heritage is generally accepted as a universal good which is indispensable for the development of human civilisation and is connected to primary values and indisputable human rights. The overall framework of science research and international regulation implies a collective notion of cultural heritage as key achievements of human civilisation, outstandingly important to be passed on to future generations. Hence, the internationally accepted priority action policy towards cultural heritage is its conservation, with the state-of-the-art conservation results having become a criterion for recognising a country's development.[1]

Yet there are cultural areas where we have failed to reach mutual understanding on their "universal value". On the contrary – neutral acceptance is non-existent and social unrest prevails. These are the areas where conflicts arise and the so-called "dissonant heritage" (or "contested heritage") claims its presence. The term "dissonance" was first introduced into cultural theory by sociologists John E. Tunbridge and G. J. Ashworth.[2] Comparing it with musical theory where tension is created when two tones are not in harmony, they argue that "interpretation of heritage is considered dissonant when different groups attribute different stories to a certain object or landscape".[3] In the post-1989 world, from the point of view of a post-totalitarian, post-socialist European country, the quickest and easiest example of contested architectural heritage to come to mind in our society is the legacy of the grand construction efforts of the former socialist People's Republic of Bulgaria. Socialist monuments and socialist architecture as a whole are "dissonant heritage" par excellence that causes social tension and conflicts instead of common understanding as a seamless cultural layer for everybody.

On another level, in the Eastern Bloc, 20th century modernism seems an equally dissonant heritage, especially if regarded from the present neo-conservative stance. We are witnessing the re-emergence of a strong anti-modernity trend today which rejects all achievements of the 20th century (stressing exclusively its failures) and affects the perception of modern architectural heritage as such, putting it slowly, but surely in the position of dissonant heritage. This trend is a result of a more global intellectual debate on why our contemporary society has abandoned the vision of progress and modernisation and heads back to regression and anti-modernity.[4]

It must be underlined that the modern architecture of post-war Bulgaria is in fact the socialist architecture of the People's Republic of Bulgaria. Having said that and keeping in mind the above stated conflicts, it is clear that today in Bulgaria we can hardly speak of conservation and restoration of modern works of art and memorials as deliberate safeguarding measures resulting from a corresponding conservation policy. On the contrary – examples of destruction and neglect are prevailing. However, we can speak of sporadic, informal actions and initiatives that illustrate the slow process of re-thinking the Bulgarian socialist built legacy. One such exception to the general rule is the monument "Banner of Peace" on the outskirts of Sofia, which will be our case study in this presentation.

The Assembly

In 1975 one major shift in the cultural policies of the People's Republic of Bulgaria occurred. As Chairman of the Arts and Culture Committee Lyudmila Zhivkova was elected, daughter of Todor Zhivkov, the long-time Chairman of the State Council and Leader of the Bulgarian Communist Party, in other words the de facto ruler of socialist Bulgaria. The Arts and Culture Committee served as the socialist equivalent of a Ministry of Culture and under Zhivkova's rule concentrated on rapid cultural development, celebrating a number of anniversaries to prove our ancient cultural roots, and on deliberately exporting Bulgarian culture to define a national identity in a global context.

On 21 December 1976, on the occasion of the 20th anniversary of the adoption of the UN Declaration on the Rights of the Child, the UN General Assembly proclaimed 1979 as the International Year of the Child. Bulgaria supported that decision and Lyudmila Zhivkova initiated the preparation for the first International Children's Assembly "Banner of Peace" to be held in Bulgaria. The leadership of the assembly was realised by an International Initiative Committee and by an Organising Committee, both headed by Zhivkova. In 1979, the First International Children's Assembly "Banner of Peace" took place in Sofia, which brought together 2 500 children from 77 countries. The proclaimed aim was to "unite the creative ambitions of children around the ideal of peace, creativity and excellence" under the motto "Unity, Creativity, Beauty". Children from various countries were gathered to play and create together and to get to know each other's culture.

The First World Children's Parliament was held at the National Assembly in Sofia, where a "Letter-Appeal" was adopted by the children participating in the International Children's Assembly "Banner of Peace", who addressed the children of the world. At the 34th Session of the UN General

Assembly the "Letter-Appeal" was distributed as an official document among the member countries.

The preparation of this First Children's Assembly also included the construction of a specially designed monument – "Banner of Peace" – which was inaugurated on the last day of the assembly, 25 August 1979, by the then Director-General of UNESCO Amadou Mahtar M'Bow (Fig. 1).

The monument[5]

The composition is radially symmetrical, set in an entirely natural environment. The vertical body of the monument dominates the surrounding park and the view against the background of Vitosha Mountain. The vertical volume consists of four identical concrete elements, 37 metres high, oriented in the four world directions. It was built in just 30 days using additives that accelerate the hardening of concrete for the first time in the history of Bulgarian monumental art. The image is inspired by the graphics of a children's play, but actually recreates the motif of a bell tower. The bell is one of three key symbolic elements used in the monument. It represents the call for peace, while the other two – the sphere and the spiral – stand for the planet Earth, the Universe, eternity and the continual evolution of life. The imaginary sphere is carved in the upper end of the vertical elements and in its space in spiral progression seven bells are placed. They have seven different musical tones, representing the seven continents. In the midst of the pylons there are 18 "singing" bells, which perform as a glockenspiel (Figs. 2 and 3).

The monument "Banner of Peace" is probably the first Bulgarian example of a symbiosis between architecture and sculpture within one abstract form. Neither architecture nor sculptural imagery prevail. The sculptural component goes beyond particular objects and plays with form-making and organising architectural elements in a complicated, yet playful and dynamic way.[6]

The vertical part of the monument is surrounded by two concrete semi-circles that are fitted with the "bells of the nations". Originally the bells were donated by UNESCO member states and some of them are of extreme value. For example, the oldest bell comes from Nepal, dating from the 9th century and taken from the temple Pashupatinah in Kathmandu. All bells are located at equal distances from the centres of the two semicircles symbolising equality among nations.

The space around the monument was transformed into a unique park, "The International Peace Park", with more than 70,000 plants sent from different countries. An architectural facility was additionally designed as a "spiritual centre" for the creative development of children, which however was never built.

By the end of 1989 four International Children's Assemblies had been held in Sofia, but then fell out of fashion with the change of political priorities after the fall of the Berlin Wall (Fig. 4).

Unique and/or contested

In 2004, the monument was listed as cultural heritage with the argument that this was the only monument in the world

Fig. 1: Banner of Peace monument in Sofia, postcard, circa 1979 (project ATRIUM archive)

Fig. 2: Banner of Peace monument in Sofia, general view circa 1980 (project ATRIUM archive)

Fig. 3: Banner of Peace monument in Sofia, detail of the main bells (Nikola Mihov for project ATRIUM)

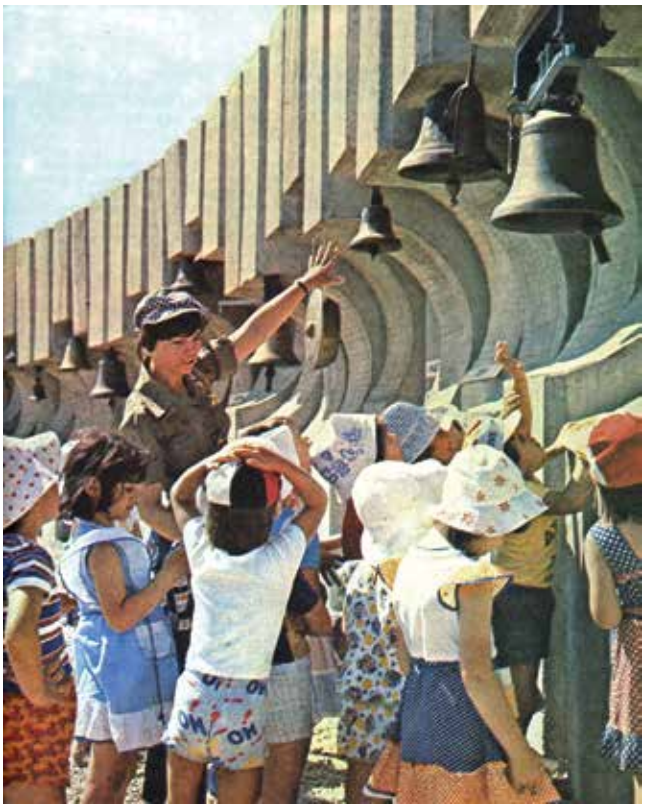

Fig. 4: The bells at the semi-circles, archive view (project ATRIUM archive)

Fig. 5: Children Assembly event at the monument (project ATRIUM archive)

built to symbolise the ideas of UN and UNICEF for the protection of peace and children's rights (Fig. 5).[7]

The idea of the monument being the centre for the organisation of International Children's Assembly "Banner of Peace" events led to the creation of a new type of artistic facility, rich in symbolism, which replaced the old ideological images and strategies of the Bulgarian communist project. The artistic image of the monumental ensemble is a rare fusion of architecture, fine arts and music, intertwined in a complex aesthetic integrity to such extent that activists promoting the monument nowadays describe it as "the biggest percussion instrument in Europe" (Figs. 6–8).[8]

On the other hand, none of this would have happened if the mastermind behind the International Children's Assembly had not been the daughter of the Bulgarian state leader himself. In the context of her ideological upgrade of Bulgarian cultural politics the monument Banner of Peace actually demonstrates the power of Lyudmila Zhivkova's sub-period in Bulgarian cultural history. The monument is ideologically related to the monuments built to celebrate the 1300th anniversary of the Bulgarian state and to the attempts for ideological legitimation of the power of the Bulgarian Communist Party through historicising Bulgarian culture. In fact, in the "Banner of Peace" the totalitarian regime established a new system of aesthetic expression and ideological suggestion.[9]

Decline and survival after 1989

After Lyudmila Zhivkova's death in 1981, the interest in the Children's Assembly and in the monument gradually faded. After the political changes in 1989, the Children's International Movement "Banner of Peace" was closed and the monument was completely abandoned. With the discontinuation of the Assembly the monument lost its function as an open forum for children's creativity. Over time, some of the bells were stolen or damaged (Fig. 9).

The year 1996 was critical for the monument as it turned out to be a lucrative part of the terrains designated for land-restitution after 1989. The Minister of Culture issued an order that the terrain should be cleared and prepared for restitution, the monument dismantled, and the bells put into storage. The residents of the nearby Mladost district went in front of the bulldozers as they considered the place as their favourite park for Sunday outings and family walks. Strong civil protests, which received broad media coverage, saved the monument at the time. However, the park was greatly reduced – two thirds of its original area were nonetheless restituted and covered with buildings.

In 2004 the monument and the park around it were listed as a group monument of culture. Thus, the site became the first and only post-war structure in Bulgaria to be listed as cultural heritage. The historical and artistic value of the monument were highlighted, as well as the immediate threat of demolition. However, this legal protection was highly controversial at the time. The spirit of the then active *Law on cultural monuments and museums* suggested a 50-year

distance between the creation and the listing as a monument of culture, which was accepted as a rule of common sense. Yet the listing of the "Banner of Peace" was never promoted as a forerunner for a new approach towards time distance when evaluating cultural heritage. The legal protection was primarily used as an administrative tool to limit further attacks on the land.

In June 2010 the monument was partially renovated and reopened at an official ceremony organized by the "Lyudmila Zhivkova-Banner of Peace" foundation. The steel construction and the cords of the bells were restored with donations, thus improving the structure of the monument and its compliance with all technical standards. Bell locking mechanisms were mounted and a permanent guard was installed. The proximity of the monument to the south-east residential areas of Sofia and the surrounding park continues to make it an attractive place for recreation which is frequently visited on weekends.

Fig. 6: The vertical body of the monument (Nikola Mihov for project ATRIUM)

Fig. 7: The vertical body of the monument from the inside (Nikola Mihov for project ATRIUM)

Fig. 8: The surrounding semi-circles with the bells of the nations (Nikola Mihov for project ATRIUM)

Fig. 9: Current condition of the monument sign with gunshot traces (Nikola Mihov for ATRIUM)

In 2011 the monument was included in an international project called ATRIUM (Architecture of Totalitarian Regimes of the 20th Century in Urban Management).[10] The project itself was a valuable attempt for a distanced reflection about the historical and cultural identity of South-Eastern Europe. The aim was to suggest a thematic cultural route, based on this young and unexplored heritage. Between 2011 and 2013 a number of activities created a system of cultural and historical sites in 11 countries in the region and was certified in 2014 as a cultural route of the Council of Europe.[11] It recognised that the proposed system is of international significance and promotes cultural exchange. On the other hand, the heritage in question was bound to "benefit" from the integrated approach offered by the concept of cultural routes, a cultural tourism phenomenon in the 20th century that achieves conservation and socialisation by linking sites in a dynamic system capable of constant development and enrichment.

A key initiative related to the ATRIUM project in Bulgaria was the implementation of a "Concert with a monument event" in 2013. The event gathered a lot of people from different generations around the monument. The main target were the children for whom various workshops with instruments revealed the beauty of music. With the sound of music and animated by young people, the site proved that from an abandoned place it can be successfully transformed into a contemporary creative field oriented to children. The current potential of the complex was revealed by taking up again the idea of a musical monument. An inclusion in a supranational system, such as the example of the European Cultural Routes system, had a positive effect by adding a wider context. Especially in the case of the "Banner of Peace" monument, such popularisation helped its recognition as an object of cultural heritage and stimulated its preservation as such (Figs. 10 and 11).

Obviously, the ATRIUM initiative had a positive impact because it was followed by a series of activities in the same direction. Most notably, since 2016 a non-governmental civic organisation called "Save Sofia" has been working actively for the renovation of the monument and its adjacent park, as well as for popularising the complex as part of the cultural life and tourist sights of Sofia. With municipally funded projects Save Sofia have managed to do improvements such as sandblasting of part of the concrete semi-circles, restoration of the artistic lighting, placing information boards in the park, new signs for the bells, organisation of a "Kambanite tour"[12], and others (Fig. 12).

Conclusion

The late 1970s in socialist Bulgaria were a period when children were subjected to special interests, reaching far beyond the usual leftist children-oriented elements of the political ideology. Maybe it is precisely the connection to the always-positive children's theme that saves the "Banner of Peace" monument from being openly dissonant, unlike the rest of the socialist monuments in Bulgaria. Nowadays, nobody defines this monument as "totalitarian", despite all the facts in its history that link it to the regime no less than the others.

As a result of the various activities in the last five years, more and more people start to know and appreciate the place, which not only raises interest, but also intolerance to vandalism and paves the way to its successful reintegration. So, the "Banner of Peace" monument is on its way to successfully overcoming the usual stigma of a "socialist monument". Ironically, the once silently received legal protection as cultural heritage more as a shield against the threat of destruction than as a real appreciation, is now a real tool for legitimacy and approval in the opinion of the general public.

Fig. 10: "Concert with a monument" event (project ATRIUM/Transformatoti archive)

Fig. 11: Musical workshops for children at the "Concert with a monument" event (project ATRIUM/ Transformatoti archive)

Fig. 12: Cleaning of the concrete semi-circles with bells, before and after sandblasting and labelling (Save Sofia archive)

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[1] International documents such as ICOMOS International Charter for the Conservation and Restoration of Monuments and Sites (The Venice Charter 1964), UNESCO Convention Concerning the Protection of the World Cultural and Natural Heritage (1972) and Council of Europe Framework Convention on the Value of Cultural Heritage for Society (2005) support the uncontested idea that cultural heritage is an indisputable good, a positive resource for societies. The constantly increasing UNESCO World Heritage List proves the continuously growing interest in boosting the international status of a country through cultural heritage.

[2] Tunbridge, Ashworth, 1996, p. 27.

[3] In Bulgaria the topic of dissonant heritage was first addressed by culturologist Daniela Petrova-Korudzhieva, based on Tunbridge and Ashworth. On dissonant architectural heritage see also Vasileva, Contested Heritage, 2018 and Kaleva, Contested Heritage, 2018.

[4] The debate itself has been triggered lately by a project called "Die große Regression: Eine internationale Debatte über die geistige Situation der Zeit"/"The Great Regression. An International Debate" launched in 2017 and a book with the same title that followed shortly afterwards, published simultaneously in 14 different lan-

guages and containing essays from 15 renowned authors, academics, publicists and global intellectuals, discussing the "current state of global turbulence". For more on the concept of "regressive modernization" see Nachtwey, Die Abstiegsgesellschaft, 2016.

5 Artists: sculptor Krum Damyanov, architect Georgi Gechev, engineer Anton Maleev. Further description is based on the case study about the monument by Olga Doreva for ATRIUM project (see Doreva, Banner of Peace Monument Case Study, 2011).

6 Zlatanov, Monument Ensembles, 2015.

7 Declaration letter of the National Institute of Monuments of Culture, 84/6.02.2004.

8 According to Save Sofia (Spasi Sofia) at http://spasisofia.org/en/projects/kambanite-monument

9 Doreva, 2011, p. 18

10 Official web site of the project: http://www.atrium-see.eu/

11 Official web site of the cultural route: http://www.atrium-route.eu/

12 Another widely known name of the monument is Kambanite (The Bells).A guided sightseeing tour of the monument, held several times in 2017 and 2018.

Enduring and Ephemeral Monuments – How to Conserve Them

Barbara Ferriani

Starting from a study on Italian artist Lucio Fontana's collaboration with architects and from several conservation treatments carried out on his environmental artworks, the aim of this talk is to present the problems related to conserving and presenting this particular type of artwork. The approach is aimed at investigating the interplay of theory, conservation, and reconstruction through the double lens of historical research on the one hand, and contemporary conservation and museology debates on the other.

The artist's first collaborations with architects date from the 1930s and included Baldessari, Terragni, BBPR, and Figini and Pollini. This led to his experimentation with new kinds of relationships between art and architecture, in both bas-relief and interior decoration; activities that continued until the end of his career. He paired it with his better known research into "spatialism", which he undertook in the mid-1940s.

The first and second case studies deal with artworks by Lucio Fontana that, although created for a specific space, were removed from their original locations and placed in new contexts. The first is related to the intervention carried out on the work created for the atrium of Hotel Alpi in Bozen, Italy. Fontana was commissioned in 1957 to decorate a pilaster (310 x 160 x 70 cm) with enamelled terracotta blocks. The second concerns the ceiling, *Spatial Environment with Cuts* (plaster, six cuts in a white background, 400 x 814.3 cm), which Fontana created in 1960 for the Milanese house of Antonio Melandri, his friend and patron.

The third case study deals with problems linked to temporary artworks that went missing at the end of exhibitions, trade fairs, and celebratory events, some of which were later rebuilt. One of them is *Struttura al neon per la IX Triennale di Milano* (Neon Structure for the 9th Trienniale of Milan), 1951, 51 A 1, designed by Lucio Fontana for Architects Luciano Baldessari and Marcello Grisotti at the Triennale dedicated to the relationship between art and architecture. The work, a "luminous arabesque", was made of 100 metres of neon tubing anchored to the ceiling above the *Scalone d'onore* (Staircase of Honour) in the Palazzo della Triennale. It won the Triennale Award, and photos of it were published in *Architecture d'Aujourd'hui*, *Art d'Aujourd'hui*, *Graphis*, *Madi,* and *Die Neue Zeitung*, which gave international visibility to Fontana's environmental work.

For the first two case studies, a history of the re-installations will be presented, while the third will be dealt with through a description of a new reconstruction carried out for the exhibition *Lucio Fontana. Ambienti/Environments*, curated by Marina Pugliese, Barbara Ferriani, and Vincente Todolì in collaboration with the Lucio Fontana Foundation, 21 September 2017–25 February 2018, at the Pirelli HangarBicocca, Milan.[1]

First Case Study

The use of ceramics as a fourth dimension of sculpture was not new to Fontana, who had begun to experiment with new plastic solutions in the kilns of Albissola, Italy, in the 1930s. In 1939, in an article in the daily newspaper, *Tempo,* Fontana stated, "I am a sculptor and not a ceramist. I have never thrown a dish on a wheel or painted a vase […]. Fire acted as an intermediary for the shape and colour. […] The critics said ceramics; I said sculpture."[2]

In that decade, his first collaborations took place with architects – including Baldessarri, Terragni, Figini, Pollini, and BBPR –, which led him to experiment with new kinds of relationships between art and architecture, with bas-reliefs on external surfaces and as internal decoration. These activities continued until the end of his career, alongside his more famous artistic and "spatial" research.

In 1957 Lucio Fontana received a commission to create a decorative element for a support pillar in front of the reception desk of Hotel Alpi in Bolzano to be inaugurated the next year. He created a very dynamic and sculptural ceramic bas-relief, which was developed around the four sides with figures in movement and marks played out in black and grey hues on a white background (Fig. 1). The narration is divided into two parts: the first diurnal, under the sign of the sun, and the second nocturnal, under the sign of the moon. The marks appear next to figurative elements typical of the artist's decorative repertoire – dancers and knights –, recalling his first spatial experiments dating back to the end of the 1940s. One pillar face bearing the date and the artist's signature presents two dancers: at the top, a pavilion with a sliver of moon and, at the bottom, marks dominated by a complex spiral. On the opposite face, there is a knight on a rearing, almost dancing horse next to a dynamic character on foot. At the top there is a hint of the sun, and at the bottom there are signs suggesting a "large still life" of two interlocking spirals. The more essential marks continue on the lateral faces.

When we were asked to organise the removal of the pillar in 2011 because the new hotel owners had plans for a different lay-out of the atrium that did not include the pillar, we had to deal with the problem of placing the work elsewhere. At that time, a new destination for the artwork had not yet been found. Having decided to show it at an exhibition that would be held the next year, we worked with the Rome-

Fig. 1: Lucio Fontana, Pilastro, 57 A 3, 1957, ceramic, 310 x 160 x 70 cm, Hotel Alpi, Bozen, Italy

based company, Equilibrate, to design a weight-bearing mobile structure. Given the considerable weight of the pillar, it had to be possible to completely dismantle it, so a solution was required that simplified its detachment, subsequent assembly, and storage. Due to its placement almost directly in front of the reception desk, the bas-relief composed of 78 cemented tiles had suffered damage from numerous incidents, some still visible and others roughly hidden by restorations that had altered considerably over time. We further identified cracks and chipped areas due both to the assembly technique and to stress caused by failing weight-bearing structures as well as old "stabilising" procedures carried out with cement and various kinds of glue.

Starting with straightened and reduced photos of the four sides of the pillar and with the measurements of the pieces, a study was made of a highly adaptable assembly system providing, at least in the first stage, broad possibilities for regulating and recording the position of the tiles. Despite the correspondence and continuity between the tiles, which was achieved via a single coat of clay, it was indispensable to be able to distribute and compensate for the differences in levels, the empty areas, and the deformations provoked by the firing of the clay.

For logistical reasons, a structure was made of steel tubes consisting of two longitudinal halves, both divided into three parts. It reproduced the net volume of the pillar encumbered with the decorations and attachment systems, while extensive areas were prepared for anchoring the tiles. The tiles were mounted on individual supports made of stainless-steel plates and having "short legs" to displace at least part of the weight of the pieces. The use of these simple plates made it possible to stabilise the position of the points for attachment on the back of the piece at the time of installation. Anchor points were created on the back with steel-threaded bolts embedded between small masses of epoxy resin. Thanks to two threaded bars that function as adjustable hooks, every plate was coupled with a "counterplate" having two "keyhole-shaped" slots. Starting from the bottom, the tiles were first attached to the structure, blocking the counterplates with clamps and self-tapping screws.

After assembling a significant number of terracotta tiles, verifying the positioning and making all the necessary adjustments, the counterplates were gradually soldered to the structure. A space of at least two millimetres was left between tiles to prevent them from touching and damaging one another. An accurate alignment of each tile with those surrounding it was achieved by adjusting the hooks and screw-spacers.

At the time of the dismantling, which was carried out in reverse order, from top to bottom, the tiles were separated from the counterplates, which at that point were permanently soldered to the structure, making later assembly fast and precise. After the first preliminary assembly, carried out in our studio, the definitive assembly took place for an exhibition where the bas-relief was presented in two halves (Fig. 2). Lastly, a mobile base was designed and built for the definitive assembly of the plates, which made it possible to attach the tiles on the two structures and to later bring them closer together. This mobile base makes it possible to carry out examinations and maintenance in the future and will permit its dismantling and assembly in a new location (Fig. 3). At the beginning of 2018, the artwork was mounted in the restaurant located in the Torre of Fondazione Prada in Milan, thus once again in a public space, and has become a part of the architecture and interior design of Rem Koolhaas.

Second Case Study

Rigorous planning for removal of artworks from their original location must, in our opinion, not only guarantee easy movement and successive assembly under secure conditions, but must also foresee all the possible variables that can arise over time, including further moves to new locations. This

Fig. 2: Lucio Fontana, Pilastro, 57 A 3, 1957, presented in two halves

does not always happen, and the case we are going to present will demonstrate this.

In 1959, Borsani commissioned Fontana with designing the interior decoration for an apartment on the sixth floor of Corso di Porta Vittoria 7 in Milan (Fig. 4). The artist designed a ceiling originally intended to cover the entire living room area of the apartment. There are, in fact, three colour sketches, signed and dated 1959, in which the artist develops different solutions. In the end, only the window section of the living room was involved in Fontana's work, and its construction was assigned to a company whose name we do not know but which must have had the artist's final working plan in its possession at the time.

The spatial environment ceiling, with cuts of different lengths whose depth was emphasised by light from the windows, was the first experiment with his series of "cuts" on an architectural scale, a series that continued until the end of his career. After remodeling work took place in the apartment in 2009, the ceiling was removed by a Milanese restoration company.

As documented by the photos taken during the work and on the occasion of two temporary presentations of the artwork – the first in Maastricht in 2009 and the second at the Galleria d'Arte Moderna di Roma in 2010 –, the ceiling was divided into eight parts, the depth was reduced, beehive panels were applied, and it was no longer mounted as a ceiling but vertically on a wall. The eight panels of approximately 100 kg each were inserted into a perimeter cornice and, at each new location, the cuts had to be plastered and repaired, and the panels repaired all along the perimeter, due to damage caused during the relocations. Furthermore, the existing structure and the kind of support panels used made it no longer possible to place the work of art on a ceiling.

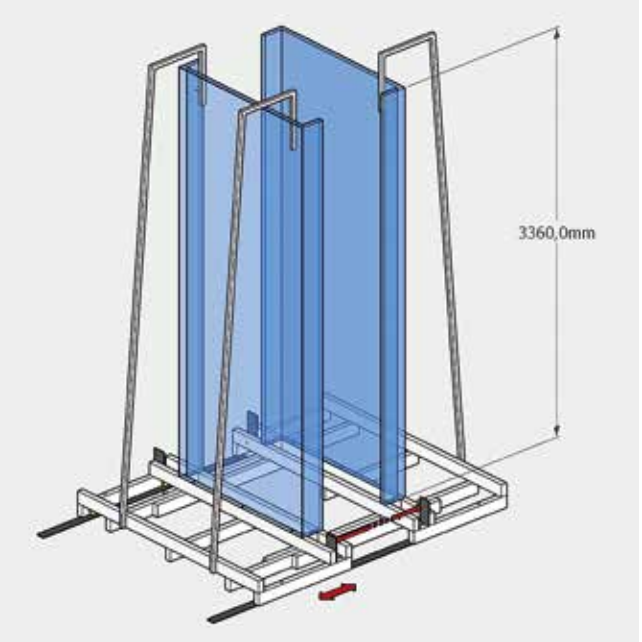

Fig. 3: Mobile structure designed for Lucio Fontana, Pilastro, 57 A 3, 1957 (© B. Ferriani)

Fig. 4: Lucio Fontana, Spatial Environment with Cuts, 1960, Milan, plaster, six cuts in a white background, 400 x 814.3 cm

Fig. 6: Lucio Fontana, Spatial Environment with Cuts, 1960, Milan, installation on the ceiling

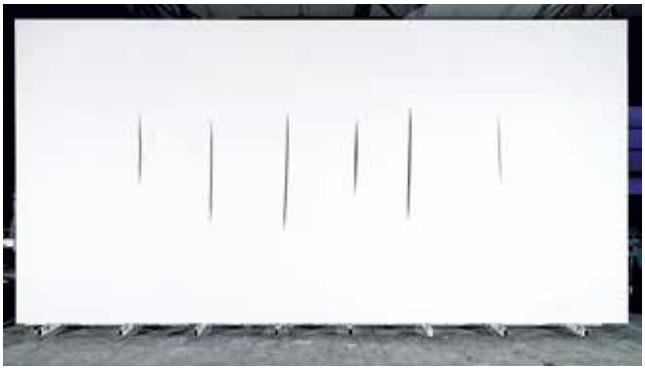

Fig. 5: Lucio Fontana, Spatial Environment with Cuts, 1960, Milan, installation in vertical position

In 2016, upon request of the new owners, it was decided to intervene again in order to permit more appropriate use and conservation of the artwork. The owners wanted to make sure that it could not only be mounted on walls but also, as originally, on the ceiling.

It was decided to make four support panels instead of eight to minimise interference with the cuts, using carbon fiber composite supports that offer high performance and have a much lower weight than other kinds of support. Taking into account the weight of each panel, metal structures were mounted on the back that made relocation and ceiling suspension possible. The support structure we built makes it possible to mount the artwork on either a wall or a ceiling (Figs. 5 and 6). Every element was studied to the smallest detail so that all the operations can be carried out safely by a team of only three or four people (Figs. 7 and 8).

Operations like the one described above, which require the removal of artworks from their original locations, always pose numerous questions. Is it better to lose works that were created for a specific context, leaving them to historical documentation to prove their existence, or is it better to conserve them in new contexts? Although, as seen in all museums, artworks have often been removed from their original contexts, each time taking on new connotations, how can we ensure that these moves will not lead to the loss of their original values over time?

Figs. 7 and 8: Lucio Fontana, Spatial Environment with Cuts, 1960, Milan, during the installation on the ceiling

Fig. 9: Lucio Fontana, Neon Structure for the 9th Triennale of Milan, 51 A 1, 1951, Milan, white neon crystal tubes, 2.80 ca x 12 x 10 m

Fig. 10: Lucio Fontana, Neon Structure for the 9th Triennale of Milan, 51 A 1, 1951, leaflet by VIPLA, 1951

Third Case Study

The same issues are applicable to temporary artworks created by Fontana for exhibitions, trade fairs, and celebratory events. They often went missing at the end of the events for which they were created, and were later rebuilt.

Having ascertained that the reconstruction was the result of the knowledge and interpretative tools of their time as well as of the requirements of new exhibition contexts, an attempt will be made to show how a historically accurate reconstruction, based on the analysis of various sources (original documents, letters, articles, interviews, videos, and critical essays) can be considered a conservation strategy for works that were originally created as "ephemeral" and later became fundamental to art history.

The PhD thesis of Marina Pugliese and four years of follow-up research conducted by Barbara Ferriani led to the exhibition *Lucio Fontana Ambienti/Environments*, held in 2017 at the Pirelli HangarBicocca in Milan. At this show, curated by Marina Pugliese, Barbara Ferriani, and Vicente Todoli in collaboration with the Fondazione Lucio Fontana, nine reconstructed environments and two reconstructed environmental artworks were presented, four of which had been reconstructed previously.

This case study looks at the "Neon Structure" designed in 1951 by Lucio Fontana for the 9th edition of the Milan Triennial (Fig. 9). Fontana was commissioned by Architect Baldessari to make a spatial structure for that occasion. The artwork was installed above the monumental staircase of the building as part of the exhibition itinerary designed by Baldessari.

It was a huge neon structure, an approximately 100-metre arabesque of fluorescent light hung from the ceiling by wires that were almost invisible to the eye. Its creation was entrusted to the Claude company. Until recently, the only documentation of this historic setting were black and white photographs.

The recent finding of a leaflet by VIPLA, a company of the Montedison Group, which at that time had begun to commercialise PVC flooring, has allowed us to ascertain that the neon was actually hanging under a "blue Giotto sky" (Fig. 10). The presence of the blue ceiling is also documented by colour proofs and sketches carried out by Baldessari in 1951 for the installation. In these sketches, the architect defines the colours for the space, floor and walls. As can be seen in one of the sketches, the blue to be used on the ceiling is clearly indicated, as is the word "Giotto" in correspondence with the same blue in another sketch.

After the event, the neon was destroyed, but since then many reconstructions have been made. The environment was first recreated in 1972, on the occasion of the retrospective exhibition on Lucio Fontana at the Palazzo Reale

in Milan, once again organised by Baldessari. Of this reconstruction we knew only that the dimensions of the neon had been slightly reduced to adapt them to the location. The many reconstructions were almost always carried out by the Claude company, which first constructed it in 1951.

A comparison of historical photographs and drawings of many of the reconstructions, discovered through archival research, has allowed us to ascertain that the dimensions of all the later replicas are not those of the original, but those of the first reconstruction in 1972. Through sheer persistence, it has been possible to locate the original design on a one-to-one scale (12 x 10 metres), which is different from those of the first reconstruction in 1972 at Palazzo Reale (11 x 8 metres).

Now there are two versions of the same artwork, shown at La Caixa in Madrid and the Museo del 900 in Milan, as well as a third that was included in the exhibition at the Pirelli HangarBicocca in Milan. This third reconstruction is true to the original and therefore different from the pre-existing reconstructions.

Can these three versions coexist? The possibility of realising several versions of the same artwork should clearly be the artist's choice, but when the artist is no longer alive, is it possible, proper, or desirable for this to happen? Will the legal and historical point of view be in agreement or disagreement?

These are questions that must be faced if we want to conserve such artworks properly.

[1] Marina Pugliese, Barbara Ferriani, Vicente Todolí, Lucio Fontana Ambienti/Environments, Milan 2018.

[2] Lucio Fontana, La mia ceramica, in: Tempo, 21 September 1939.

Annex

Gemeinsame Absichtserklärung der ICOMOS-Nationalkomitees Russland und Deutschland über den Abschluss einer Kooperationsvereinbarung zur Erforschung, Erhaltung und Erschließung des gemeinsamen kulturellen Erbes in der Russischen Föderation und in der Bundesrepublik Deutschland.

Russen und Deutsche haben eine lange gemeinsame Geschichte. Auf dem Territorium der Russischen Föderation und der Bundesrepublik Deutschland befinden sich national und übernational bedeutende Denkmäler und Stätten, die an die gemeinsame Vergangenheit von Russen und Deutschen in beiden Ländern erinnern und zum besseren Verständnis der Menschen aus beiden Staaten beitragen können. Diese Denkmäler und Stätten können im Sinne der Prinzipien und Arbeit von ICOMOS als gemeinsames oder beiderseitiges Kulturgut (Shared / Mutual Cultural Heritage) bezeichnet werden. Dieses gemeinsame kulturelle Erbe verdankt seine Entstehung und Überlieferung insbesondere der langen Geschichte des Kontakts und Austauschs zwischen beiden Seiten auf den Gebieten der Religion, der Kultur und Wissenschaft, der Handels- und Wirtschaftsbeziehungen sowie der politischen, dynastischen sowie diplomatischen Beziehungen, aber auch militärischen Auseinandersetzungen und Konflikten der Vorgängerstaaten des Russischen Föderation und der Bundesrepublik Deutschland im letzten Jahrhundert. Das Russische und das Deutsche Nationalkomitee von ICOMOS nehmen das Europäische Kulturerbejahr 2018 unter dem Motto „Sharing Heritage“ zum Anlass, Schritte für eine partnerschaftliche Aufarbeitung von Denkmälern und Stätten in Deutschland und Russland zu vereinbaren, die die gemeinsame Geschichte und das gemeinsame Erbe von Deutschen und Russen in beiden Ländern repräsentieren.

Das Deutsche Nationalkomitee von ICOMOS (des Internationalen Rates für Denkmalpflege) e. V. und das ICOMOS-Nationalkomitee Russlands, die im Weiteren als „Seiten“ bezeichnet werden, haben sich verständigt über die Einrichtung eine gemeinsame Arbeits- und Redaktionsgruppe für den Entwurf einer Kooperationsvereinbarung zwischen ICOMOS Deutschland und ICOMOS Russland auf dem Gebiet des gemeinsamen Kulturerbes: Der Redaktions- und Arbeitsgruppe gehören die beiden Präsidenten bzw. Präsidentinnen oder eine von Ihnen bevollmächtigte Vertretung sowie je ein Experte bzw. eine Expertin aus den beiden ICOMOS Nationalkomitees an.

Der Entwurf der Kooperationsvereinbarung soll zunächst von einem dreijährigen Arbeitsprogramm ausgehen, dessen Laufzeit im gegenseitigen Einvernehmern verlängert werden kann, und soll

- die langjährigen historischen und kulturellen Kontakte zwischen beiden Ländern berücksichtigen,
- im Blick haben, dass die bilateralen Verbindungen einen erheblichen Einfluss auf die Kultur beider Länder ausgeübt haben und ausüben,
- im Geiste der internationalen Dokumente von ICOMOS zum Schutz des historischen und kulturellen Erbes erfolgen, wie der Charta von Venedig (Internationale Charta zur Konservierung und Restaurierung von Denkmälern und Ensembles), der „Grundsätze von Valetta für Pflege und Verwaltung der historischen Städte und städtischen Bereiche" (2011) oder anderer internationaler Grundsatzpapiere wie der European Charter of the Architectural Heritage (*Council of Europe*, October 1975),
- sich von der gemeinsamen Verantwortung für die Konservierung und Restaurierung des gemeinsamen Kulturerbes leiten lassen,
- sich auf die erfolgreiche langjährige Zusammenarbeit beider Seiten zum Schutz und zur Erhaltung von Kulturdenkmälern auf Territorien mit einer gemeinsamen Geschichte stützen
- die Erfahrungen mit freiwilligen Hilfsaktionen und grenzüberschreitenden Kooperationsprojekten nützen und
- sich bewusst sein, dass Schutz und Erhaltung des gemeinsamen Kulturerbes und die Information und das Verständnis der Öffentlichkeit über das gemeinsame Kulturerbe eine Schlüsselrolle zur Pflege und Vertiefung der bilateralen Beziehungen spielen.

Der Entwurf einer Kooperationsvereinbarung zwischen ICOMOS Deutschland und ICOMOS Russland auf dem Gebiet des gemeinsamen Kulturerbes verfolgt nachstehende Leitvorstellungen und Arbeitsziele:

1. Beide Seiten bekunden die Absicht, die langjährige Zusammenarbeit auf dem Gebiet des gemeinsamen Kulturerbes, die auf dessen Erforschung (Studium), Erhaltung (Bewahrung) und Erschließung (Information) für die Öffentlichkeit abzielt, zu verstärken, unter anderem um einen positiven Einfluss auf andere Bereiche der inneren und auswärtigen Kulturpolitik (Bildung, Wissenschaft, Tourismus u. a.) in beiden Ländern auszuüben.
2. Beide Seiten unterstützen die wissenschaftliche Zusammenarbeit und den Austauschs von Forschungsergebnissen über die historische und kulturelle Wechselwirkungen zwischen beiden Ländern.

3. Die Zusammenarbeit beider Seiten auf dem Gebiet von Denkmalschutz und Denkmalpflege ist dem Wissens- und Erfahrungsaustausch sowie der Entwicklung eines Expertenpotenzials zur Identifizierung, Erhaltung und Nutzung von Objekten und Orten des gemeinsamen Kulturerbes gewidmet und soll zur Verbesserung des Verständnisses und der Lebensverhältnisse der betroffenen Bevölkerung beitragen.
4. Die Beiträge der geplanten Kooperationsvereinbarung werden unter anderem auf der Grundlage von Projekten und Ressourcen der beiden ICOMOS-Nationalkomitees und von Kultureinrichtungen beider Länder geleistet, die Behörden und Partner auf lokaler und regionaler Eben einschließen können.

5. Der Entwurf der Kooperationsvereinbarung soll nach dem Willen beider Seiten im Einzelnen dazu dienen:

- regelmäßig Treffen zur Auswertung der Zusammenarbeit auf dem Gebiet des gemeinsamen Kulturerbes durchzuführen,
- Objekte und Orte des gemeinsamen Kulturerbes zu untersuchen und den Zugang zu Informationen zu ermöglichen sowie „weiße Flecken" auf der Wissenslandkarte beider Seiten zu erschließen;
- gemeinsame Erfahrungen zu sammeln und auszutauschen, etwa durch Musterarbeiten an ausgewählten kulturhistorischen Objekten und Orten;
- Experten und Organisationen einzubeziehen oder heranzubilden, die in den Bereichen Kultur, Architektur und Städtebau, Landschaft, Geschichte und Bildung tätig sind;
- Spezialisten aus- und weiterzubilden im Rahmen von Fachlehrgängen und gemeinsamen Restaurierungsobjekten sowie durch Forschungsvorhaben;
- das Zusammenwirken mit Experten aus anderen Ländern anzustreben;
- Studierende und junge Fachleuten auf dem Gebiet von Denkmalschutz und Denkmalpflege (Emerging Professionals) zu fördern und ihnen den Zugang zum gemeinsamen Kulturerbe und zu gemeinsamen Projekten zu ermöglichen;
- über die Fachöffentlichkeit hinaus die breite Öffentlichkeit in der Russischen Föderation und in der Bundesrepublik Deutschland mit dem gemeinsame Kulturerbe vertraut zu machen und über Kooperationsprojekte zu informieren (alte und neue Medien, Ausstellungen, Veranstaltungen, wissenschaftliche Lehr- und Vermittlungsformen etc.) .

6. Vorrangige Themen, Gattungen, Regionen und Orte des gemeinsamen kulturellen Erbes, die für eine verstärkte bilaterale Zusammenarbeit von Experten beider Seiten behandelt werden sollen, werden von der für den Entwurf einer Kooperationsvereinbarung zwischen ICOMOS Deutschland und ICOMOS

Russland verantwortlichen gemeinsamen Arbeits- und Redaktionsgruppe zunächst über einen Zeitraum von drei Jahren abgestimmt.

Beide Seiten stimmen überein, dass eine Fortschreibung des Arbeitsprogramms zwischen den Beteiligten anzustreben ist.

7. Die vorliegende Absichtserklärung tritt ab dem Tag ihrer Unterzeichnung in Kraft. Die beabsichtigte Kooperationsvereinbarung soll im Laufe der Jahres 2019 abgestimmt sein und mit der Unterschrift der Präsidentinnen bzw. Präsidenten von ICOMOS Russland und ICOMOS Deutschland oder einer von ihnen bevollmächtigten Vertretung in Kraft gesetzt werden.

Die Sammlung und der Austausch von Wissen und Erfahrungen aus verschiedenen Ländern ist Leitidee des Europäischen Kulturerbejahres 2018. Im Geiste des Mottos des Europäischen Kulturerbejahres „Sharing Heritage" verstärken die ICOMOS-Nationalkomitees von Russland und Deutschland ihre Anstrengungen, um über Grenzen und Generationen hinweg Kontakte zu knüpfen und der Vergangenheit eine gemeinsame Zukunft zu eröffnen.

Unterzeichnet in Leipzig, am 8. November 2018 in zwei Exemplaren (jeweils in deutscher Sprache).

Im Namen des ICOMOS-Nationalkomitees Russlands

08.11.2018

Im Namen des ICOMOS-Nationalkomitees Russlands

9. Nov. Leipzig

Im Namen des Deutschen Nationalkomitees von ICOMOS e. V.

Im Namen des Deutschen Nationalkomitees von ICOMOS e. V.

Совместное заявление о намерениях
заключить соглашение о сотрудничестве в сфере изучения, сохранения и идентификации совместного культурного наследия Российской Федерации и Федеративной Республики Германия
между национальными комитетами ИКОМОС
Российской Федерации и Федеративной Республики Германия

Русский и немецкий народы имеют долгую совместную историю. На территории Российской Федерации и Федеративной Республики Германия находятся имеющие национальное и международное значение памятники и достопримечательные места, напоминающие о совместном прошлом россиян и немцев в обеих странах и способствующие лучшему взаимопониманию жителей обоих государств. Эти памятники и достопримечательные места в соответствии с принципами и в рамках работы ИКОМОС могут быть названы совместным или двусторонним культурным наследием (Shared / Mutual Cultural Heritage). Своим возникновением и передачей из поколения в поколение такое общее культурное наследие обязано, в частности, длительной истории контактов и обмена между двумя странами в сфере религии, культуры и науки, торгово-экономических отношений, а также политических, династических и дипломатических связей, но, в то же время, и военным противостояниям и конфликтам государств-предшественников Российской Федерации и Федеративной Республики Германия в течение прошлого столетия. Национальные комитеты ИКОМОС Российской Федерации и Федеративной Республики Германия в рамках года культурного наследия 2018 предпринимают под девизом «Совместное культурное наследие» (Sharing Heritage) совместные шаги по восстановлению памятников и достопримечательных мест в Германии и России, представляющих общую историю и общее наследие немецкого и российского народов в обеих странах.

Национальные комитеты ИКОМОС (Международного совета по памятникам и достопримечательным местам) России и Германии, в дальнейшем именуемые «Сторонами», договорились о создании совместной рабочей и редакторской группы по написанию проекта соглашения о сотрудничестве между национальными комитетами ИКОМОС Германии и России в сфере совместного культурного наследия: в рабочую и редакторскую группу входят

оба президента или уполномоченные ими лица, а также по одному эксперту от обоих национальных комитетов ИКОМОС.

Проект соглашения о сотрудничестве должен изначально вытекать из трехлетней рабочей программы, срок действия которой может быть продлен по согласованию сторон, и должен:

- учитывать многолетние исторические и культурные контакты между двумя странами,
- принимать во внимание, что эти связи оказали и продолжают оказывать значительное влияние на культуру обеих стран,
- действовать в духе международных актов ИКОМОС в защиту историко-культурного наследия, в том числе «Венецианской хартии» (1964, «Международной хартии по консервации и реставрации памятников и достопримечательных мест»), «Принципов Валлетты по сохранению и управлению историческими городами и урбанизированными территориями» (2011) или других международных основополагающих документов, таких как «Европейская хартия архитектурного наследия (Совет Европы, октябрь 1975 г.),
- руководствоваться общей ответственностью за консервацию и реставрацию совместного культурного наследия,
- основываться на успешном многолетнем сотрудничестве обеих сторон в деле сохранения и защиты памятников культуры на территориях, имеющих общую историю,
- использовать опыт добровольных акций помощи и международных совместных проектов и
- осознавать, что защита и сохранение совместного культурного наследия, а также информирование и оповещение общественности о совместном культурном наследии играют ключевую роль в поддержании и углублении двусторонних отношений.

Проект соглашения о сотрудничестве между Национальными комитетами ИКОМОС Германии и России в сфере совместного культурного наследия характеризуется следующими базовыми принципами и рабочими целями:

1. Обе стороны намерены упрочить многолетнее сотрудничество в сфере совместного культурного наследия, направленное на его изучение (исследование), сохранение (защиту) и обеспечение информированности (осведомленности) общественности об этом наследии, среди прочего, с

целью положительного влияния на другие сферы внутренней и внешней политики в области культуры (образования, науки, туризма и т.д.) в обеих странах.

2. Обе стороны поддерживают научное сотрудничество и обмен результатами исследований об историческом и культурном взаимном влиянии обеих стран.
3. Сотрудничество обеих стран в сфере защиты и сохранения памятников нацелено на обмен знаниями и опытом, а также на развитие экспертного потенциала для идентификации, сохранения и использования объектов в местах совместного культурного наследия и призвано служить улучшению взаимопонимания и условий жизни населения таких мест.
4. Вклады в реализацию планируемого соглашения о сотрудничестве будут осуществляться, в том числе, на проектной основе с привлечением ресурсов и с участием Национальных комитетов ИКОМОС и учреждений культуры обеих стран, а также властей и партнеров на местном и региональном уровне.

5. Согласно воле обеих сторон проект соглашения о сотрудничестве призван, в частности, служить следующим целям:

- проведение регулярных встреч с целью оценки сотрудничества в сфере совместного культурного наследия;
- обеспечение возможности обследования объектов и мест совместного культурного наследия и доступа к информации, а также исследование «белых пятен» на карте распределения знаний обеих сторон;
- сбор и обмен совместным опытом, в частности путем проведения образцовых работ на избранных культурно-исторических объектах и местах;
- включение в работу и подготовка экспертов и организаций, осуществляющих деятельность в сфере культуры, архитектуры и градостроительства, культурных ландшафтов, истории и образования;
- обучение и повышение квалификации специалистов на профессиональных учебных курсах и совместных объектах реставрации, а также в рамках научно-исследовательских проектов;
- взаимодействие с экспертами из других стран;
- привлечение студентов и молодых специалистов в сфере защиты и сохранения памятников (Emerging Professionals) и обеспечение им доступа к совместному культурному наследию и совместным проектам;
- повышение уровня информированности широкой общественности в Российской Федерации и в Федеративной Республике Германия о совместном культурном наследии и о совместных проектах

(традиционные и электронные СМИ, выставки, мероприятия, другие формы научной, учебной и информационной деятельности и т.д.)

6. Приоритетные темы, категории, регионы и места культурного наследия, которым необходимо уделить первоочередное внимание экспертов обеих стран в целях углубления сотрудничества, будут согласованы рабочей и редакторской группой Национальных комитетов ИКОМОС России и Германии, отвечающей за подготовку проекта соглашения о сотрудничестве, первоначально на три года.

Обе стороны соглашаются, что будут стремиться к продлению срока действия рабочей программы.

7. Настоящее заявление о намерениях вступает в силу с момента его подписания. Планируемое соглашение о сотрудничестве подлежит согласованию в течение 2019 года и вступит в силу после подписания президентами Национальных комитетов ИКОМОС России и Германии или уполномоченными ими лицами.

Сбор и обмен знаниями и опытом различных стран – ведущая идея Года культурного наследия 2018. В духе девиза Европейского года культурного наследия «Sharing Heritage» Национальные комитеты ИКОМОС России и Германии прилагают все большие усилия к налаживанию международных контактов с представителями различных поколений, чтобы открыть прошлому совместных путь в будущее.

Подписано в г. Лейпциге 8 ноября 2018 г. в двух экземплярах (на русском и на немецком языке каждый).

От имени Национального комитета ИКОМОС, Россия
А.П. Кудрявцев, Президент

09.11.2018

От имени Национального комитета ИКОМОС Германии
Й. Хаспель, Президент

Leipzig, 9. Nov. 2018

Conference Programme

Wednesday, 7 November

19:00 Opening Ceremony of the Leipzig denkmal and MUTEC Trade Fairs
Paulinum-Aula/Universitätskirche St. Pauli, 04109 Leipzig (only for invited guests)

Thursday, 8 November

Congress Center Leipzig (CCL), Leipzig exhibition grounds and trade fair halls

9:00 Opening of Congress Center Leipzig (CCL): Registration of participants

10:00 **Opening Section**

Welcome
Alexander Kudryavtsev (ICOMOS Russia, President)
Leonid Kondrashev (Deputy Head of the Moscow Heritage Department)
Jörg Haspel (ICOMOS Germany, President)
S. Enders/C. P. Echter (ICOMOS Shared Built Heritage)

Signing of a Letter of Intent "Sharing Heritage – Sharing Responsibility" on Mutual Consultation and Cooperation between ICOMOS Germany and ICOMOS Russia

Introduction
Dimitrij Davydov (ICOMOS Germany)
"Very old and unusual". Origin and Evolution of the Term "Monument" in German and Russian Legislation

11:00 **Section 1**
Archaeology of Contemporary History – Difficult Inheritance?

Co-Chairs: *Leonid Beliaev* (Russian Academy of Science) and *Stefan Winghart* (ICOMOS Germany)

Asya V. Engovatova (Institute of Archaeology of RAS of Science, Moscow)
Forensic Archaeology in the Russian Federation

Karin Wagner (Landesdenkmalamt Berlin)
Archaeological Monuments and Finds of WW II and of the Cold War in Berlin

Waltraud Kofler Engl (ICOMOS Germany/Italy):
Archaeology of World War I in the Alpine Region

Klaus Püschel (Hamburg)
The Language of the Dead – Genocide, Forensic Medicine and Archaeology

12:30–14:00 Break – Visit of the Leipzig trade fairs denkmal and MUTEC

14:00 **Section 2**
Landmarks of Structural Engineering – Tower Constructions

Co-Chairs: *Liudmila Buzina* (Institute of World Heritage Russia, Moscow) and *Christoph Rauhut* (ICOMOS Germany, Berlin)

Alexander Kudryavtsev (ICOMOS Russia)
Repairing and Retrofitting Lattice Shell and Tower Structures by V. G. Suchov

Berthold Burkhardt (ICOMOS Germany)
The Stuttgart Television Tower – a Monument to Architecture and the Art of Civil Engineering

Charlotte Nys (Belgium)
The Atomium of Brussels – "irreparably improved"?

15:30–16:00 Break

16:00 **Section 3**
Modern Green Heritage – Historic Gardens and Landscapes

Co-Chairs: *Jörg Haspel* (ICOMOS Germany/ISC 20C) and *Liudmila Buzina* (Institute of World Heritage Russia)

Nikolay Pereslegin (Russia, Kleinewelt Architekten, Moscow)
Restoration and Valorisation of Post-war Parks and Public Green

Monica Luengo (ICOMOS Spain/ICOMOS IFLA)
20th Century Gardens: Nature, Landscape and Identity

Klaus Lingenauber (ICOMOS Germany/ICOMOS IFLA):
Post-war Green Spaces – Recent Restoration and Upgrading Projects in Germany

Friday, 9 November

Congress Center Leipzig (CCL), Leipzig exhibition grounds and trade fair halls

9:00 Opening of Congress Center Leipzig (CCL)

10:00 **Section 4**
Retrofitting and Restoring Modern Architectural Heritage

Co-Chairs: *Sigrid Brandt* (ICOMOS Germany) and *Alexey Ginzburg* (ICOMOS Russia, Moscow)

Alexander Kudryavtsev (ICOMOS Russia)
Outstanding Works of the Soviet Architectural Avant-garde as Joint Heritage: Past, Present, Future

Steffen Obermann (ICOMOS Germany)
Do Modern Materials Need a New Conservation Approach? Attempts to Restore Sandwich Panels, Polyurethane Foam and Shotcrete

Sanja Horvatinčić (Croatia, Institute of Art History Zagreb)
Between High Politics and New Models of Local Heritage Management: Rebuilding Yugoslav Memorial Sites "from below"

Dumitru Rusu (ICOMOS Moldavia/Romania/ISC 20C):
Socialist Modernism in Central and Eastern Europe (1955–1991)

12:00–13:30 Break – Visit of the Leipzig trade fairs denkmal and MUTEC

13:30 **Section 5**
Restoration and Conservation of Modern Works of Art and Memorials

Co-Chairs: *Alexander Kudryavtsev* (ICOMOS Russia) and *Ursula Schädler-Saub* (ICOMOS Germany)

Yulia Loginova (Department of Cultural Heritage of Moscow)
In restauro – Mural Paintings and Architectural Sculptures at the All-Russian Exhibition Ground of Economic Achievements in Moscow (VDNKh – ВДНХ)

Holger Reinhardt (Association of State Curators of the Federal Republic of Germany)
Restoring Post-war Art in Thuringia – Current Examples of Restoration

Emilia Kaleva and *Aneta Vasileva* (ICOMOS Bulgaria)
"Unity, Creativity, Beauty" – About the Decline and Survival of the Post-War Memorials in Bulgaria

Barbara Ferriani (ICOMOS Italy)
Enduring and Ephemeral Monuments – How to Conserve them

15:30 Words of Thanks and Closing Remarks

16:00 End of Conference

Moscow Exhibition Complex of Achievements of National Economy (in Russian abbreviated as VDNH - ВДНХ): contemporary hardhelms for visitors of the listed heritage and construction site (photo Jörg Haspel/ICOMOS)

Curricula Vitae

Berthold Burkhardt: Architect and Structural Engineer, studied in Stuttgart and Berlin, collaborator of Peter Poelzig, also worked with Frei Otto at the University of Stuttgart in such projects as the German Pavilion in Montreal EXPO 1967, Olympic roofs at Munich Olympic Stadium 1972, and others.

Retired Prof. at the Technical University in Brunswick, Germany. Research and office for renovation of monuments, lightweight structures and history of construction. Member of ICOMOS Monitoring Group, Europa Nostra, Society of Construction History and docomomo international.

Dimitrij Davydov is the former chief legal officer of the Monument Preservation Office within the Regional Association of Westphalia-Lippe (2013–2016). In 2016 he was appointed new head of the strategic planning unit of the Hessian State Conservation Authority (Landes-amt für Denkmalpflege Hessen) and was promoted to chief legal officer in 2018. Since 2018 Dimitrij Davydov has been professor of public law at the University of Police and Public Administration of the state of North Rhine-Westphalia, located in Cologne.

Asja V. Engovatova, PhD is the Vice-Director of the Institute of Archaeology, Russian Academy of Sciences, Moscow, Russia, and Head of the Department of Rescue Archaeological Research in Moscow. Dr Engovatova has directed numerous archaeological excavation projects, focussing on the use of modern field methods.

Barbara Ferriani has been head of her conservation studio in Milan since 1983. Among her further activities have been coordinating the restoration laboratory of the Triennale Museum Design of Milan (2010–2018); teaching Contemporary Art Restoration at the Centro di Conservazione e Restauro "La Venaria Reale" of Turin (2016–2018), the Cà Foscari University of Venice (2009–2016), the Postgraduate School of Historic and Artistic Heritage of the State University of Milan, and of the Catholic University of Milan (2011–2018) and the OPD of Florence (2018).

With Marina Pugliese and Vicente Todolì, and in collaboration with the Lucio Fontana Foundation, she was co-curator of the Lucio Fontana-Ambienti/Environments exhibition at Pirelli HangarBicocca (21 September 2017–25 February 2018).

Among her publications are "Materials and techniques in the pictorial oeuvre of Lucio Fontana" (co-authored with: O. Chiantore, R. Ploeger, and T. Poli) in: Studies in Conservation, Vol. 57, No. 2, 2012; B. Ferriani and M. Pugliese, Ephemeral Monuments. History and Conservation of Installation Art, The Getty Conservation Institute, Los Angeles 2013; M. Pugliese, B. Ferriani, and Vicente Todolì, Lucio Fontana – Ambienti/Environments, Mousse Publishing, 2018.

Sanja Horvatinčić is a postdoctoral researcher at the Institute of Art History in Zagreb, Croatia. She is an expert on Second World War monuments, memory politics and modernist heritage of socialist Yugoslavia, while her research interests span from critical heritage and gender studies to Digital Humanities. She was expert advisor at the MoMA exhibition "Toward a Concrete Utopia: Architecture in Yugoslavia, 1948–80" and is currently involved in several conservation studies and community heritage projects in Croatia.

Emilia Kaleva, Ph.D., M.Sc. Architect, is currently chief assistant at the "History and Theory of Architecture" Department, University of Architecture, Civil Engineering and Geodesy – Sofia. She holds a Ph.D. in cultural heritage conservation (see dissertation on "Conservation of Bulgarian Architectural Heritage of the Second Half of the 20th Century"). She is a member of ICOMOS Bulgaria and of the ICOMOS International Scientific Committee on 20th Century Heritage (ISC 20C).

Waltraud Kofler Engl recently became head of the "Forschungsplattform Kulturerbe/Kulturproduktion" (Research Platform Cultural Heritage/Cultural Production) at the Free University Bozen/Bolzano. From 1986 to 2018 she worked at the Heritage Conservation Department Bozen/Bolzano /South Tyrol (Abteilung Denkmalpflege Bozen/Südtirol); from 1995 to 2018 she was director of the Art and Architectural Heritage Office. She studied art history and history at the Universities of Innsbruck and Florence. The PhD degree followed in 1986. Waltraud Kofler Engl is member of ICOMOS Germany and of the "Arbeitskreis für Theorie und Lehre der Denkmalpflege".

Alexander P. Kudryavtsev: born 1937. Graduated from the Moscow Architectural Institute and the Architectural Institute "Jom Mincu", Bucharest, 1960. Author of more than 150 publications on architectural education, history of modern architecture, conservation of heritage. Rector, President of MARCHI (Moscow Architectural Institute – State Academy; 1987–2007); President of the Russian Academy of Architecture and Construction Sciences (1999–2014), Past President of ICOMOS Russia (2014–2018). Foreign member of many European Academies of Architecture, honorary

doctor and professor of national and foreign educational institutions.

Klaus Lingenauber: Deputy head of the garden heritage preservation and archaeology department, Berlin State Monuments Office. Diploma study Landscape Architecture/ Landscape Management at the TU Hannover. 1980–1989 scientific lecturer at the Institute for Urban Design Berlin of the German Academy of Urban Planning and Planning; 1989-1995 Senate Department for Urban Development, Department of garden restoration; since 1995 Landesdenkmalamt Berlin, department of garden and urban monument preservation, from 2011 department of garden monument preservation and archeology.

Member of the Board and spokesman of the working group Green Post-war Heritage in the Historical Gardens Section of the German Society of Garden Art and Landscape Culture (DGGL). Member of the German National Committee of ICOMOS and of ICOMOS-IFLA.

Mónica Luengo Añón: Art historian and landscape architect; former President of the International Scientific Committee of Cultural Landscapes (ICOMOS-IFLA). Her field of expertise is linked to the theory and practice in the assessment, inventory, conservation, restoration and management of historic gardens and other cultural landscapes. She has also worked as World Heritage consultant and has organised seminars, conferences and exhibitions. She is founder and principal of ATP S.L, landscape agency. Her publications include books and articles.

Charlotte Nys is an architectural engineer. She is one of the founding partners and CEO of Origin Architecture & Engineering, an architectural and civil engineering firm with a focus on giving architectural heritage a new future. The restoration, renovation and the rehabilitation of a valuable building or site means to respectfully deal with its heritage and to consider the place, the people and its meaning. Professor at the Vrije Universiteit Brussel and the Universiteit Gent.

Steffen Obermann, Dipl.-Ing. Architect, MA (Conservation Studies), b. 1967. Self-employed architect and conservator in Berlin. Expert on wood preservation and concrete repair. Lecturer at the Karlsruhe Institute of Technology (KIT). Studied at the Universities of Braunschweig, Zurich, Stuttgart and York (Great Britain). His practice focuses on inspecting and surveying historic buildings and restoration planning, lately with a priority on post-war listed buildings.

Nikolay Pereslegin: Graduated from the Moscow Architectural Institute (MARHI) in 2008. Studied under Professor Andrei Nekrasov and Alexander Tsybaykin, Yuri Grigoryan and Alexandra Pavlova. Since 2005 member of the Union of Architects of Russia. Since 2009 member of the All-Russian Society for the Protection of Historical and Cultural Monuments (VOOPIiK). From 2009 to 2012 he worked as an advisor to the head of the Department of Cultural Heritage of Moscow. Since 2014 he has been advisor to the rector of the Moscow Architectural Institute on a voluntary basis. In 2012, together with Alexander Kibovsky, Andrei Batalov, Dmitry Shvidkovsky, Leonid Weintraub and Marina Dobornovskaya he took part in the creation of the book "Security Object: Moscow" that was published for the 95th anniversary of the establishment of the system of monuments. In 2015, at the Moscow Architectural Institute, he defended a thesis on the topic: "The history of the formation and development of Moscow's architectural heritage protection organs in the context of their interaction with society in the Soviet period (1917–1991)". Pereslegin was laureate of the architectural Biennial in Venice in 2004 and of all-Russian and international architectural competitions. In 2013, together with partners Sergei Pereslegin and Georgy Trofimov, he founded the architectural bureau Kleinewelt Architekten.

Klaus Püschel (b. 1952) studied medicine at the Medical University in Hannover (1970–1976). He has specialised as forensic pathologist at the Institute for Legal Medicine of the University Medical Center Hamburg-Eppendorf since 1977. He was appointed as professor of legal medicine at the University Medical Centre Hamburg-Eppendorf in 1985. From 1989–1991 he was director of the Institute of Legal Medicine in Essen (North Rhine-Westphalia). Since 1991 he has been director of the Institute of Legal Medicine at the University Medical Centre Hamburg-Eppendorf.

Focuses of his scientific work: forensic traumatology, biomechanics, sudden death, gerontology, and anthropology.

Angelika Reiff: Studied architecture at the University of Stuttgart, worked in various architectural offices, also on listed projects such as the Heiligkreuztal Monastery near Biberach (architect Manderscheid).

Since 1988 staff member in the State Office for Monument Preservation in Baden-Württemberg, inventory and practical monument preservation.

Holger Reinhardt (* 1960 in Dessau); trained stonemason and graduated restorer; started to work for the conservation authority in Thuringia in 1992; since 2009 regional curator and head of architectural and art monument conservation; board member of the Association of Regional State Conservationists in the Federal Republic of Germany (Vereinigung der Landesdenkmalpfleger in der Bundesrepublik Deutschland); scientific and professional focus: sacral monument conservation and residence culture, architectural heritage and works of art of the modern era, including post-war heritage of "Eastern Modernism" (Ostmoderne).

Dumitru Rusu: born in 1978 in Chisinau, Moldova, Dumitru Rusu is an architect based in Bucharest and co-founder of the Bureau for Art and Urban Research (B.A.C.U.). He studied at the Faculty of Architecture and Urbanism in Chisinau, Republic of Moldova. In 1995, he relocated to Romania and graduated from "Ion Mincu" Institute of Architecture in Bucharest in 2003. In 2014 he completed a post-graduate degree in the conservation of built heritage at the Faculty of History and Philosophy of the Babes-Bolyai University in Cluj. Since 2014, he has been a member of B.A.C.U. Association and ICOMOS Romania Board Member, ICOMOS

Moldova Vice-president, ICOMOS-ISC20C Expert Member, ICOMOS-ICOFORT Associate Member. His efforts, directed through B.A.C.U. Association and projects like "Socialist Modernism", "Soc Heritage", "Soc Monumental Art", "Socialist Mosaics", "Defense Architecture", focus on the listing and protection of buildings, ensembles, and other 20th century architecture objects, both locally and internationally. Besides conservation initiatives, he also works in architecture design and planning.

Aneta Vasileva, Ph.D., M.Sc. Architect is an architectural historian, critic and publicist. She holds a Ph.D. in architectural history and theory (see dissertation on "Bulgarian Architecture from the Second Half of 20th Century. Foreign Influences and Identity Development"). Aneta is a member of A10 New European Architecture Cooperative (a10.eu); she is the architecture critic of the Bulgarian cultural weekly newspaper "K" (kweekly.bg) and co-founder and blogger at WhAT Association (whata.org/blog), dedicated to contemporary architectural criticism, journalism, and the organisation and evaluation of architectural competitions. She is member and secretary of DOCOMOMO Bulgaria.

Petr Vorlík: Studied at the Faculty of Architecture, CTU in Prague. He has done design work for the studios Barva and ADR. Since 2002 he has been focussing on teaching and research. He is the author of a number of publications, including The Grounds of the CTU in Dejvice in the 1960s, Interwar Garages in the Czech Lands, Architecture in the Service of Motoring, Jasan Burin, The Czech Skyscraper, Beton Břasy Boletice. He developed the concepts for a series of databases: industrialnitopografie.cz, dejiny.fa.cvut.cz, registr.cvut.cz/pa.

Karin Wagner, Dr. phil., Dipl. Prehistorian: Head of the department for garden and archaeological heritage at the Berlin State Monument Authority (Landesdenkmalamt Berlin). She is the deputy of the Director of Landesdenkmalamt Berlin and of the State Archaeologist of Berlin. Karin Wagner studied and received her doctorate at Martin Luther University in Halle/Wittenberg. She worked as archaeologist in the State Museum for Prehistory Halle/Saale (Saxony-Anhalt) and in Dresden (Saxony), before she was appointed as chief archaeologist of Berlin in 1995.


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