Buzludzha Monument/Bulgaria – "It's Big Stuff". Ways to Conserve a Ruined Dissonant Monument

Thomas Danzl

Prologue:¹ "The past is a foreign country"²

I am pretty aware about the fact that I am always not only a warmly welcomed guest in Bulgaria but also still a foreigner, and one with high respect for its past. I hope we agree, that both of us – Bulgarians and foreigners – need a guide, a Cicerone or a Virgil as in Dante's Divina Commedia, to this often pleasant and also unpleasant past. You and I, we feel the same distance in time looking at the remains of the former Buzludzha Monument of the Communist Party, which, in those days of summer 2021, was listed to become a National Monument.

The otherness – the alterity – offered to us by the monument leads to many different scientific, individual and emotional approaches towards a better understanding of our own experience in dealing with the ruins of the Monumental Park Chadschi Dimitar. It is crowned by the Buzludzha Monument itself. The question is about identity – Bulgarian, European and a global one – to be discussed and understood in many, mostly dissonant, perspectives: Damnatio Memoriae, vandalism, Lost Places Tourism, arts, sports and adventure, internet phenomena and a branding of a dissonant site charged with iconic meaning!

The building was inaugurated forty years ago, in 1981, to celebrate the 1300 years of the foundation of the Bulgarian state. Today, the respect for the – let's call them – archeological remains of the still sublime yet heavily fragmented building is literally calling for the focused interdisciplinary teamwork of (art) historians, architects, engineers, conservators/restorers, natural scientists and many other disciplines.

I am glad and proud of the fact that trusted colleagues and I were amongst the very first to start a scientific material survey in the 2019 campaign along with a group of students of conservation, restoration and architecture. During the emergency conservation campaign conducted in Buzludzha between 2019 and 2021, the monument was still regarded as a heritage at risk (2020).³ The 2019 grant awarded to ICOMOS

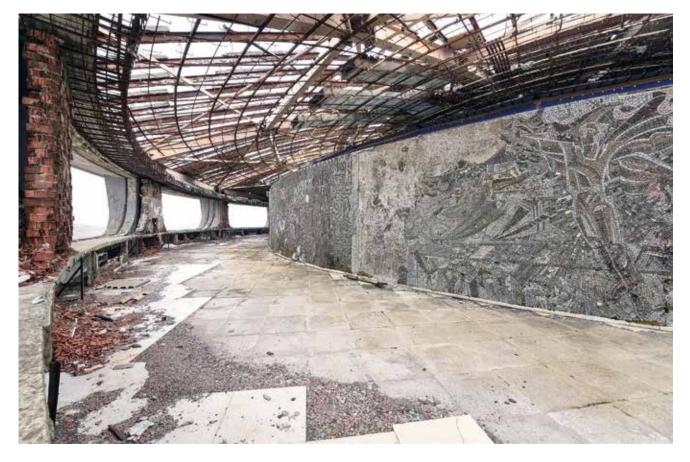


Fig. 1 Main Hall, outer ring, mosaic with natural stone tesserae, condition 2019



Fig. 2 Main Hall, inner ring during the enclosure works, 2020

Germany and the Buzludzha-Project-Foundation within the framework of the 'Keeping It Modern' (KIM) initiative of the Getty Foundation allowed to prepare emergency conservation measures for the mosaics. It also provided funds for the preparation of a Conservation Management Plan (CMP), a design project for future use and of a financial plan for the subsequent conservation and restoration campaigns. The knowledge gained in this process with respect to the general state of conservation of the building and its artworks was then used to successfully obtain another grant for the emergency conservation-restoration works of the mosaics (2020).

Our common ground and guidelines were offered by a Cicerone that awaited us already on the spot:

the historical substance preserved on the site.

The extreme climatic conditions, the enormous dimensions of the building, the advanced state of decay of the art works and the roof as well as the still controversial social and political perception of the ruins of the former Bulgarian Communist Party's monument represented a multi-layered conservation challenge. Reassuring alone was the presence of indestructible reinforced concrete.

Besides this factor, the mosaics and other architectural surfaces near the roof covering of the dome were certainly the most valuable and most vulnerable elements under threat by the ever-increasing decay of the roof. It was all about gaining time to slow down the decay processes and to develop common guidelines. We all agreed on the concept of a controlled ruin⁴ – a concept that helped, in a first step, to successfully preserve (not only dissonant) cultural heritage of the times before and after the political changes in Eastern Germany.

Who of the conservators' team of the first campaign of 2019 was really afraid of this "big stuff"? None of us.

Before starting with a condition survey, the team⁵ wanted to learn more about the monument's past and present consulting archive material and using forensic methods on site. In order to better understand the original setting and the original ideological implications as well as their remaining impact, it seems appropriate to include a brief review here.



Fig. 3 Main Hall, inner ring after the realized enclosure, 2020

Historical, cultural and natural context: the staging of communist iconography up to the Buzludzha Memorial House (1981–1989)

The Dimitâr Blagoev Monument, at the junction road to Buzludzha still marks the beginning of a unique monumental and natural park, where the "sublime" of the impressive Central Balkan Mountain Range is combined with the ideological staging of communist iconography up to the former Buzludzha Memorial House at its peak. The road, which was exclusively built to reach the monumental park with the four most significant places and memorials of recent Bulgarian history is not a mere mountain street. It has been designed to get to the top by public and private transportation providing people with facilities such as parking and resting places, fountains and panoramic views over the Kazanlak Valley. Moreover, it is conceived as a Via Sacra, a pilgrimage to national monuments mostly designed during communist postwar times. While at the crossroad of the street to the Dimitâr Blagoev Monument, the Buzludzha Memorial House can be seen from afar, when the winding road first opens the view to the valley. The crossroad itself shows this distinctive pattern on the hillside, coming up. Its surface area is divided by several expansion joints that interrupt the opus incertum vertically and reveal the casted concrete wall behind. On the left-hand side of this wall the main road to Stara Sagora and Gabrowo first describes a sharp turn to the left – in a close linear distance to the monument - and then reaches, parallel to the treeless mountain, a parking and a meeting place flanked by two monumental fists holding torches. These open the view both onto the valley below and to the Buzludzha Memorial House on the top of the hill. A simple paved path leads up for roaming "pilgrims".

The other visitors are supposed to return back to the same road and to follow the slender way to the Buzludzha Lodge, opened already in 1936, and to the three Monuments installed there between 1961 and 1970 near the historical lawn. All along the hillside walls are disposed in the pattern of an opus incertum. Also here, parking lots for busses and

cars, drinking fountains and a monument for the three generations of Bulgarian socialism and communism were placed in a direct sight axis with the Buzludzha Memorial House.

The still existing hotels Diana, Edelweiß and Nova Hut Buzludza offer their hospitality close to this first monumental area to be experienced travelling around. Different paved and illuminated paths lead to the "sacred" forest with its monuments and for those who want to continue walking up to the Monument, there is a paved path that reaches the end of the forest near the parking lot and the rest rooms.

Leaving Buzludzha Lodge and the memorial site one reaches the street again that leads up to the Buzludzha Memorial House passing by the Nova Hut Buzludza on the left. Soon one will arrive at the parking area with 20 parking lots for busses. It used to offer facilities for the typical visitor with a magnificent wall cladding in natural white marble stone - now destroyed. Starting from here, both a path and a street lead up to the hill and another parking area especially designed for minibuses and cars including the possibility to turn around. The monumental area is reached by stairs to a stepped slope paved by a pattern of squares designed in brown limestone and radially set to design a cobblestone pavement mainly made out of granite. On both sides two granite benches were used probably to lay down floral wreaths. A front stair is designed to axially match the main entrance flanked by the monumental quotation of the Marxian manifesto. It is still framed by the fragments of two gigantic flags, formerly copper plated, and two figurative bronze reliefs - now lost - facing the stairs.

Here, the three million visitors counted in the eight years between the opening and the closure of the Monument were welcomed by the about 150 people working as guides, guards and cleaners. Several groups were guided through the huge monument and its entrance hall with two metal reliefs placed over one of the three stairs. The walls were cladded with ochre lime stone listels, the stairs made out of granite, while the ceilings were covered with a felt-like red wallcovering out of artificial rubber. The stairs were finished with parapets designed to accommodate huge transparent glass panels. Finally, one reached the spick-and-span main hall directly. It was cladded with white marble and with the colorful glass mosaics telling the socialist-communist version of the history of Bulgaria under the portraits of Engel, Marx and Lenin, flanked by red flames. On the opposite side, the Bulgarian leaders were framed by red flags. This should also be seen as a reminder of the sculptures downhill with the fists and torches and flags in front of the building. In the center of the white suspended metal ceiling of the dome, a formerly golden mosaic used to show the hammer and sickle symbols. A multi-coloured light and sound show were meant to overwhelm the visitors while guides explained the mo-

\triangleright

Fig. 4 Main Hall, inner ring, detail of the glass mosaic showing partial loss of tesserae and exposure of the black sinopia

Fig. 5 Main Hall, inner ring, detail of the head of Marx before the left side of the face fell off, June 2019





Fig. 6 Main Hall, outer ring, mosaic with natural stone tesserae and a multi-coloured sinopia

saics. Up the stairs of the hall, the outer corridor with other mosaics made out of natural and artificial stone tesserae offers a fantastic 360 degrees view over the flag tower with two ruby glass communist stars to the Shipka Monument. Although, the 1981 Buzludzha Monument or Memorial House has never been explicitly dedicated to the memory of the battles in the Shipka Pass, it, nevertheless, built up a strong sense of Bulgarian nationalism already tied to this mountaineous location. Both monuments are now co-represented by the National Park-Museum Shipka-Buzludzha. These scenographic parameters continue to be determinant despite the decay and destruction of the monumental site.

Finding a way to deal with these remaining former "images of power" is essential but also inevitable for any future use. Buzludzha is still considered a Gesamtkunstwerk. It is in many parts intact in its emblematic quality, also or precisely because of its state of neglect. A definite and clear break with this originally intended visual language should be achieved by finding a new use, which can only be made possible through careful and thoughtful conservation-restoration strategies. Such approach allows preserving as much as possible of what can still be read while new narratives may emerge.

Conservators-Restorers' have developed an important know-how in this respect when working on the preservation of the Socialist Monumental Art and Architectural Surfaces in Eastern Germany.

The positive experience of the author in conserving Monumental Socialist Art in the first decade of the new millennium (e.g. the Halle/Neustadt, 1964-1967, the Dresden Palace of Culture, 1969) instilled the team with confidence in regards to architectural surfaces of 500 and up to 2000 m^{2.6} The material's catalogue elaborated in this first campaign respected not only the basic traditional art and building technologies as well as proven conservation strategies but was also open to the unknown, the unexpected and the intricate technical and material phenomena of modern materials.

As a matter of fact, the detailed description of the above-mentioned decorative apparatus in the enormous material catalogue of over five hundred pages allowed asking the right questions in respect to the materials' changes, the processes of decay and the dynamics of degradation including the effect of deliberate acts of destruction such as vandalism and political iconoclasm.

In order to find common grounds for the discussion amongst the different stakeholders involved, the analysis of the different states of conservation and deterioration patterns the socio-cultural and political dimensions into account. In this context the wise advice of Ivo Hammer is always dearly remembered: "Surface is an interface"⁷.

We started our survey campaign by keeping the theoretical principle of "preserving the authenticity of all the existing materials by giving dignity to all the phases in history" in mind – thus, staging these as a *Palimpsest* to consider the impacts of time from the very beginnings up to the present day.

In the context of architectural surfaces, the term *Palimpsest* should be understood as the result of a sequence of deliberate acts of destruction, uncontrolled decay processes



Fig. 7 Main Hall, inner ring, "gold-like" glass mosaic with metal foils of different alloys

and unplanned consequences of a material's specificities. Together, these factors are responsible for the unintentional aura of a ruin in the process of deterioration; indeed, they strike a precarious balance between (in)visible decay and a constant loss of material.

However, this approach is neither generally recognized as an *opus operandi* in the practice of heritage conservation – although it should indeed be taken as a starting point for further discussion – nor is its ever-present role in the ultimately inevitable steady loss of any historic substance fully accepted.

The end of the operating life of the monument and its closure to the public allowed for a new – the third – chapter of its history; most anthropogenic impact factors could thus be excluded in favor of mere environmental impacts.

With our survey and the following emergency campaign for the conservation of the mosaics in 2020 our action followed the conservation principle to "manage change", and our informed conservation practice certainly allowed an economic, organizational and practical advantage with respect to unthoughtful activism.

A sustainable use of local materials and human resources as well as a pragmatic, low-tech attitude in respect to materials and applied techniques revealed to be effective both in terms of time and money.

Thanks to the project management of the Buzludzha Foundation and ICOMOS Germany and with further Getty funding in 2020, it was finally possible to record the inventory of materials and deterioration patterns of the Agit-Prop mosaics. The project "Emergency measures to stabilize the mosaics of Buzludzha", funded by the Getty Foundation, managed to install a protective shelter over the most endangered mosaics of the monument, i.e. those of the inner mosaic circle. Another main goal of the team was to preserve the most endangered mosaics of the outer ring in September 2021 before wintertime further accelerated decay processes.

Apart from some members of the former conservator-restorer's team of the Technical University of Munich, the National Academy of Arts in Sofia, the Academy of Arts in Plovdiv, the Bern Academy of the Arts and last but not least the non-governmental organization Diadrasis (Interaction) from Athens could finally guarantee an initial conservation campaign to tackle the most urgent needed conservation and restoration works.

This campaign focused on the mapping of all the hollow and detached or otherwise damaged areas of the mosaics securing the mosaics' edges by means of filling mortars, conserving the preparatory drawings – sinopia – in an adhesive and cohesive way, documenting and saving detached or fallen sinopia and mosaic fragments by storing them for future possible uses and to keep the detached areas of the mosaics in place by means of non-invasive mechanical means.

Regarding the roof and the missing protective effect of this due to its bad state of disrepair, the most practical way to slow down decay and to guarantee a holistic attention for all the material aspects was to introduce a continued control of the microclimate in the surrounding of the mosaics. Video cameras were installed along with a shelter that consisted of a metal construction and the hanging of a water repellant fabric to protect from direct contact with liquids or frozen water, heavy winds and snows and, finally, to lower the risk of condensation phenomena.

After the first winter of our campaign, we realized that all these expected results were achieved!

The following chapter will illustrate, in general terms, the decision-making process and the methodology applied based on three main prioritization working steps.

Priority I: Preparations – before action

The abovementioned motto *surface is an interface* implies that any action aiming for the safety of structural parts, i.e., the refurbishment of structures, must follow the theoretical



Fig. 8 Main Hall, inner ring, detail of the head of Marx after the left side of the face fell off and during mechanical securing of the hollow mosaic, September 2019



Fig. 9 Enclosure, October 2020

principle of preserving a maximum amount of architectural surfaces, as they carry the material information and values both quantitatively and qualitatively.

In order to avoid irreversible damages to these surfaces, one should take all possible technical consequences into account that may come up in case of emergency measures. Regardless of any aesthetic considerations one should keep an eye on the technical aspects of compatibility and sustainability duly aligning with the concept of minimal intervention. Indeed, the intended project of a place for pan-generational learning and encounters might receive decisive impulses from the authenticity of the preserved material sources.

A necessary professional prerequisite in this first phase consists in pragmatism based on the professional's relevant experience gained during previous similar projects. The skills include analyzing specific points of the building to gather the highest amount of information in the shortest possible time while keeping a sense of proportion in mind given the sheer size of the building and the time constraints. This allows establishing a methodological framework for processual work involving agile and swift reactions.

The relatively small budget requires further prioritization of measures during anamnesis as to understand the construction history, the building and artistic techniques, the quality of materials and the ways of execution. The mapped phenomena were categorized according to their description and "layers" – starting with the construction and ending with the architectural surface. The result is a phenomenological catalog with text, photos and graphics, and, at the same time, a systematic inventory of the constructional and superficially relevant materials at any location of the monument.

At this point of the research, no in-depth damage description or assessment has been done as this type of mapping requires basic photographic documentation and a condition survey of the architectural surfaces.

Priority II: During the implementation

Fundamental for any working step were, on the one hand, the comparison of archival materials with the different stages of the design planning phases, and, on the other hand, the identification of changes made during the construction process. The primarily historical data were based on photo documentation, enriched by means of oral history and onsite inspections and interpreted in final interdisciplinary discussions.

"In Absentia", so to speak, i.e. the losses owing to vandalism and historical or current usage (e.g. building services, infrastructures, monumental and cultural landscapes, politics, sports and recreational purposes).

The architectural and artistic appreciation of all material phenomena in detail (artistic techniques, "pentimenti," traces of old repair and use) and their qualitative and quantitative classification as a basis for an architectural and art-historical as well as artistic and technical classification and evaluation, included the continuous recovery of representative material samples (of construction, surface and furnishing, if available) and their adequate storage.



Fig. 10 "Hammer and Sickle" mosaic in the dome 2019

The final determination and description of all the phases in the life of the monument in a timeline helped to clarify both a relative diachrony and synchronicities. At the same time, it helped to classify certain aspects such as interventions and "uses" by individual and organized "lost places" tourism (advertising stickers) and works by graffiti artists.

It should thus become clear that all historical relics were initially conceded equal importance and an equal preservation perspective for each time trace. As a matter of fact, the safeguarding of relevant relics (e.g. spray cans, stickers of tourism enterprises) are fundamental for this purpose.

Due to the aforementioned time constraints, it was also necessary to prioritize the work steps to secure the mosaics and the architectural surface. Within this context, the concept of a controlled decay played an important role, i.e. the establishment of an unstable equilibrium in view of the building's prevailing extreme physical conditions (water balance, climate control, wind speed, rain-, snow-, and frost-load, outside-, room- and surface-temperatures: determination of ice melting events) through active and preventive conservation interventions. These encompass the (real time) control of the achieved measures through long-term data acquisition, e.g. through video-camera and data logger monitoring.

After a general scientific of the properties and aesthetics of ruins exposed to extreme weather conditions, a thorough identification of material weaknesses should be undertaken in the next future. In addition to raising awareness of the consequences of environmental exposure of materials and processing techniques that were never intended for outdoor use, special attention should be paid to traces of vandalism (direct weakening of materials) and the absence of a roof.

So far, these phenomena could only be identified by visually describing obvious potential and actual material incompatibilities – for instance lime-based plasters covered by Portland cement ones, heterogeneous composites in the support as wood, metal, brick, in-situ concrete, reinforced concrete and concrete slabs. Clarity can still be achieved with indepth manual and then digital mapping of representative degradation phenomena, which – for sure – need to be further specified by chemical and physical analytics.

Priority III: Next steps

Now, what is the most urgent thing to do next? – In fact, this is only a rhetorical question as we have a very clear-cut answer to it: the emergency conservation of mosaics with a second Getty Grant 2020!

Indeed, professionals with relevant experience in the practice of Preventive Conservation, such as in the field of archaeology and building conservation, have to adapt their skills to the extreme conditions the sinopia is exposed to in order to preserve the fresco mosaics in the short term.⁸

In the absence of the financial means to build a new roof, this could only be achieved by excluding the direct influence of water through a preliminary protective roof. The hope to isolate the internal climate from the external climate



Fig. 11 Main Hall, outer ring, enclosure with weather station, 2021

by means of an enclosure and to completely stop the direct exposure to abrasive and erosive factors also played a role. "Classical" conservation-restoration methods of wall paintings and mosaics – such as edging repair – had to be adapted to the special material techniques applied in the early eighties of the 20th century when these mosaics were created.

Since only a few material parameters could be determined in the short time available, the experts generally privileged principles of minimal intervention combined with preventive non-invasive mechanical conservation. An exception was made to fix the individual tesserae with acrylate or meta-acrylate (film-forming binding media) on heavily cementitious substrates (such as fiber-reinforced concrete slabs and cement mortar) trusting in a full reversibility. When clearing the contaminated building material (such as glass fiber mats roof insulation) a possible future anastylosis was prepared documenting a layer-by-layer salvage of all mosaic and sinopia parts and storing them in a deposit.

Summary and future challenges and perspectives

The international cooperation involving university training courses for conservators-restorers and young architects, has made its proofs in other projects in the past. Indeed, it allows teaching and research at the highest theoretical level. The intense field work we came to conduct under the most difficult climatic conditions on site should stay an exception, yet, in our case we had no other option, we had to do it this way.

There is no doubt that the desirable future use of the building as a place of remembrance and learning and aiming at enhancing the physical qualities of a monument preserved as a controlled ruin poses a certain competition of possibly divergent concepts.

Next tasks and recommendations

- Clarify the question of whether the adhesive and cohesive conservation of plaster, paint layers and mosaics should be continued or not given the fact that attempts to secure the edges had renounced on injections of adhesive and filling compounds;
- Possibly develop adequate preventive measures to reduce the salt load (compresses, sacrificial plaster);
- Discuss and agree on the aesthetical treatment of defects (lacunae) in the mosaic.
- Clarify the question of preservation and presentation of architectural surfaces (floor, wall, ceiling);
- Discuss the question of possible anastylotic additions (Marx, Engels, Lenin) in an international expert group;

- Clarify the process to improve scientifically informed decision-making on the preservation of graffiti or vandalism damage;
- Clarify the question of how to deal with covered graffiti;
- Ensure that any pending constructive safeguarding activities consider these findings, including in connection with a partial opening of the monument;
- Prepare a didactic concept to explain the material, artistic and socio-political dimensions of the mosaics:
- Develop a digital format to visualize lost conditions, e.g. showing the creation, destruction and rescue of the mosaics in fast motion;
- Ensure that the conservational-restorational findings feed into the Conservation Management Plan (CMP) and the utilization concept;
- Bear in mind that the conservation and restoration of the mosaics can only be completed once the building materials have dried completely!

Bibliography

- Thomas DANZL, Zur aktuellen Situation der Abnahme und Übertragung von Wandmalereien, in: VDR Beiträge zur Erhaltung von Kunst- und Kulturgut, 2019, Nr. 2, pp. 8–16.
- Thomas DANZL, Architekturoberflächen der Ostmoderne als Aufgabe der Restaurierungswissenschaften. Formen der Forschung und des Umgangs, in: Mark ESCHER-ICH (ed.), Stadtentwicklung & Denkmalpflege 18: Denkmal Ost-Moderne II. Denkmalpflegerische Praxis der Nachkriegsmoderne, Berlin 2016, pp. 142–154.
- Matthias EXNER, Dörthe JAKOBS (ed.), Klimastabilisierung und bauphysikalische Konzepte. Wege zur Nachhaltigkeit bei der Pflege des Weltkulturerbes/Climatic Stabilization and Building Physics. Sustainable Approaches to Safeguarding the World Cultural Heritage, ICOMOS Hefte des Deutschen Nationalkomitees XLII, München, Berlin 2005.
- Erwin EMMERLING (ed.): Toccare Non Toccare, ICOMOS Hefte des Deutschen Nationalkomitees XLVII, München 2009.
- Ivo HAMMER, Surface is Interface. History of the Tugendhat House 1938–1997. Criteria for the Preservation, in: Daniela HAMMER-TUGENDHAT, Ivo HAMMER, Wolf TEGETHOFF, Tugendhat House, Ludwig Mies van der Rohe, Berlin, Munich, Boston 2020.
- Mo Michelsen Stochholm KRAG, The Controlled Ruin: Preserving Collective Memories through Building Transformation, Future Anterior, vol. 13 no. 1, 2016, p. 147–154, muse.jhu.edu/article/633316 (consulted last on 3.1.2022).



Fig. 12 The "Buzludzha Memorial": view from the torch-bearing fists 2019

- David LOWENTHAL, The Past is a Foreign Country, 1st edition, Cambridge University Press 1985.
- David LOWENTHAL, The Past is a Foreign Country Revisited, Cambridge University Press 2015.
- Christoph MACHAT and John ZIESEMER (eds.), ICOMOS Heritage at Risk, World Report 2016–2019 on Monuments and Sites in Danger, Berlin 2020, https://openarchive.icomos.org/id/eprint/2430/ (consulted last on 3.1.2023).
- Ursula SCHÄDLER-SAUB (ed.), Weltkulturerbe Deutschland. Präventive Konservierung und Erhaltungsperspektiven, ICOMOS Hefte des Deutschen Nationalkomitees XLV, Regensburg 2008.

The task of developing methodological foundations for practical steps in terms of conservation and restoration to ensure the material preservation of an intended monument (Alois Riegl) – a communist party monument of the late 20th century – was too stimulating to do without.

¹ When I first had the pleasure to meet Dora Ivanova in February 2019, before a board meeting of ICOMOS Germany, she was striving for nothing less than the rescue of the Buzludzha Monument. I did not hesitate for a moment to offer her the support of my chair at the Technical University of Munich for her ambitious project.

- ² LOWENTHAL, The Past, 1985; LOWENTHAL, The Past Revisited, 2015.
- ³ MACHAT, ZIESEMER (eds.), ICOMOS Heritage At Risk, 2020.
- ⁴ See KRAG, Controlled Ruin, 2016. Although the use of the term has similar roots and concerns – especially in relation to dissonant heritage – in our case the concept is derived from a long-established practice of preventive conservation in historic building conservation and archaeology. Especially the monument care institutions in the former German Democratic Republic usually acted very subversively with this very concept in relation to churches, castles and other heritage of the so-called "Feudal Period". As a rule, the defect roof covering and the roof structure were taken away and the upper parts of the outer walls were secured. Rarely, shelter roofs

were already installed as they require more care and maintenance.

- ⁵ The members of the team were Master students and young professionals training as conservators-restorers at the University of Fine Arts in Dresden (HfBK) or as architects at the Technical University of Munich.
- ⁶ See: DANZL, Abnahme und Übertragung von Wandmalereien, 2019. See also DANZL, Architekturoberflächen der Ostmoderne, 2016.
- ⁷ HAMMER, Surface is Interface, 2020.
- ⁸ Cf. EMMERLING, Toccare, 2009; SCHÄDLER-SAUB, Weltkulturerbe Deutschland, 2008; EXNER, JAKOBS, Climatic Stabilization, 2005.

Credits

All images: Buzludzha Project Foundation