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A Voice on Polish Socialist Brutalist Architecture: Protection of Concrete Element Surfaces in the Context of Sustainable Development

Głos w sprawie polskiej socjalistycznej architektury brutalistycznej – ochrona powierzchni elementów betonowych w kontekście zrównoważonego rozwoju

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Introduction

Since the promulgation of the *Nine Points of Monumentality* manifesto in 1942 by Josè L. Sert, F. Lèger and S. Giedion, the construction of the Unité d'habitation by Le Corbusier in 1953 and the promulgation of the ideological theses of New Brutalism by Rayner Banham¹ in 1955—the new architecture was treated as a continuation of thinking about a building that could clearly show all the elements without hiding their purpose and what it is made of. Thus, the building blocks of Brutalist theory and aesthetics emerged from the post-war works by Le Corbusier, Team X, and Alison and Peter Smithson. At the same time, a surge in corporate purchasing power, low labor costs, and a stubborn belief in progress after the Second World War led to an astonishing acceptance of the idea of Brutalism that resulted in the creation of a succession of monumental works of architecture that were significant in the landscape of many European and world cities.

With the new concept of architecture reflecting the symbolism of sincerity and openness in its matter and

meaning, the founders of Brutalism proclaimed that the use of concrete in architecture should be rethought, but only to give expression to its pure materiality, in which all context and metaphor had to be rejected. Brutalism made concrete the main content of architecture for the first time in modern architecture. The stylistics of the raw concrete formula began to account for the overtones and essence of the meaning of monolithism—a structural principle in which an idea is created in a homogeneous, visible material. Thus, the creators began to achieve the effect of a certain aesthetic formal structural-material domination, the essence of architecture consisting in the form “outgrowing” its internal organization. The program of finding the basis of architectural art thus defined, initiated by Le Corbusier in discovering the meaning of *béton brut* and defining concrete as the indivisible and irreplaceable essence of architecture, found its full meaning in the form of architecture innovative in thought. Brutalism and New Brutalism postulated in the British Isles became an idealized “discovery” of the qualities of structure and natural texture of concrete that had been hidden for decades.

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Fig. 1. Forum-Orbis Hotel by J. Ingarden, Cracow, 2003, source: https://commons.wikimedia.org/wiki/File:Forum_Krak%C3%B3w_10-2003.jpg; photo by B. Pindor.

Ryc. 1. Hotel Forum-Orbis projektu J. Ingardena, Kraków, 2003, źródło: https://commons.wikimedia.org/wiki/File:Forum_Krak%C3%B3w_10-2003.jpg; fot. B. Pindor.

Observers highlighted the efforts of key artists in bringing out individualism in the postulate of using building materials “as found”—in the slogan of exposing the structure in the architectural form and in the imperative of its sincerity and literalness. The naturalness and authenticity of the solutions were dictated by the idea of architecture as a representation of a way of life. The building was not supposed to pretend that masses of reinforced concrete are something more than just a building material. Brutalist buildings are therefore devoid of any finishing—only the basic technological process, the layout of the interior, its circulation areas and installations are reflected in the walls. In defining the characteristics of Brutalist architecture, it is important to emphasize the overarching relationship between structure and its meaning, becoming the meaning of *decorum* for which architects try out different forms, always seeking plastic expression in physical construction.²

The narrative surrounding Brutalism changed radically. Initially, it was seen as something spectacular in its innovative and expressive language of Modernism, but in the 1970s it began to be perceived as a symbol of a lack of understanding of the existing context and as the picture of the architecture favored in countries perceived as totalitarian.³ By that time, lack of maintenance had already become a major problem, which quite quickly led to the destruction of many buildings and damaged their image even further. Over the past decades, many Brutalist buildings have been demolished without regard to their qualities and original intentions. In recent years, we have seen a revival of interest in Brutalism thanks to the international mission of Docomomo International which records modernist buildings, books and research projects⁴ and a surprising renaissance of Brutalism on social media and among architects referring to this aesthetic in their projects.

Utility (wear) of the architectonic thing

Architecture is applied art. Physical wear of an object is inevitable and usually means the end of its life. If a utilitarian object is made to provide sensual and emotional experience, its life span is related to both its pragmatic and aesthetic functions. The case of brutalist architecture is not unique to a utilitarian object produced to please the eye and not necessarily in response to demand. Dariusz Kozłowski wrote: “The nature of architecture makes the physical and moral wear, [...] much longer, uneven, and this process can be—surprising.”⁵ Physical utility can be prolonged by changing, supplementing, adapting, and rebuilding those structures of things that are amenable to it. But the question must be asked whether the fulfilment of these three factors—the physicality of the work, its utility as well as its meaning—are the three independent functions of the duration of architecture?

Kozłowski’s argument leads to the conclusion that physical wear can mean either restoration (a monument) or termination of a structure through demolition (the case of the St. Louis blocks). Functional wear can be replaced by a new more adequate function in an old or expanded physical structure (a factory converted into apartments, a cinema converted into a shopping mall). In all cases, the symbolic layer most often appears worn out—or sometimes merely “unfit for use”—its meaning remains relevant over time through official protection or user sentiment. Thus, it is the purely useful thing that perishes faster in time than the thing endowed with meaning and having its symbolic message, “the usefulness passes away completely and irrevocably, while the form that has lost its meaning may condemn the thing to oblivion, but its resurrection and return of a second life, of an existence sometimes quite different, is not excluded.”⁶

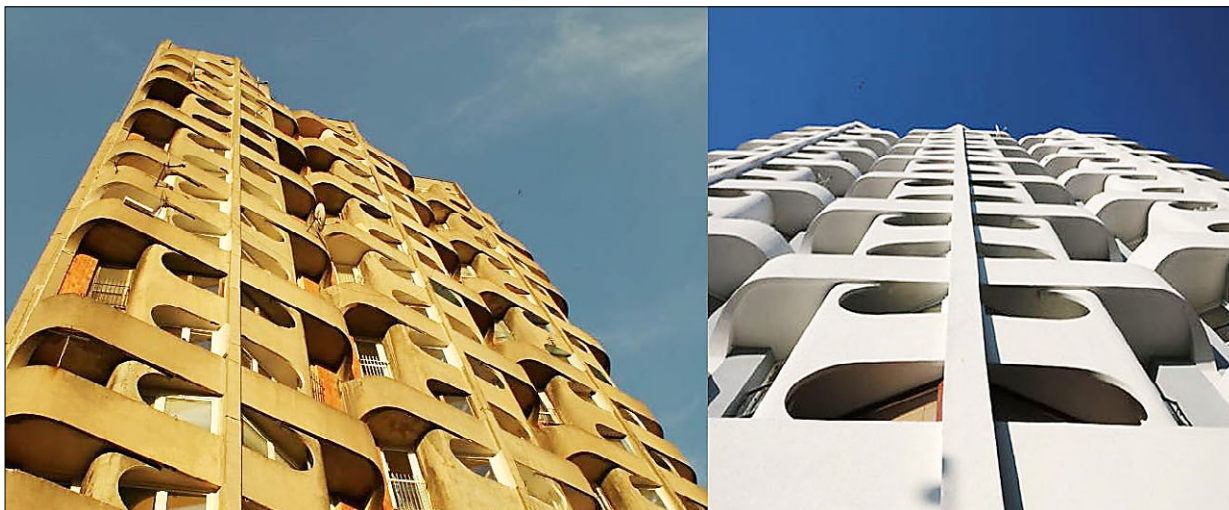


Fig. 2. J. Grabowska-Hawrylak, Residential complex at Grunwaldzki Square in Wrocław, 1970, view before and after renovation in 2016; source: wp.pl (accessed: 13 VI 2021).

Ryc. 2. J. Grabowska-Hawrylak, zespół mieszkaniowy przy placu Grunwaldzkim we Wrocławiu, 1970, widok sprzed renowacji i po renowacji w roku 2016; źródło: www.wp.pl (dostęp: 13 VI 2021).

The authors of the article *Dobra kultury współczesnej. Zarys problemu ochrony*⁷ provide a different opinion in their analysis of the duration of the Modernist architecture, drawing from sociological foundations, examining the reasons for the acceptance or lack of social recognition for the heritage of Modernism and late Modernism. The authors divide them into four groups—the first one includes the preserved “wanted” buildings (these are most often important and iconic structures). The second group includes “unwanted” projects that were demolished despite their undoubted architectural value (Super Sam in Warsaw). The third group includes “ignored” buildings whose existence was not recorded and which are deteriorating. The last, significant group of projects, are the “tolerated” resources, whose existence is unquestionable. These are, for example, modernist housing estates, which still constitute an important part of residential construction. Their urban and architectural values are beginning to be recognized, but not to a sufficient extent yet.

The continuance of ideas through the preservation of matter

Unlike in Western Europe, the Polish example of Brutalist architecture is not associated with the progression of the modernist style, the liberation through the expression of creative freedom from the principles of socialist realism and Gomulka’s functionalism. Few see in them a post-Corbusierian architecture, an attempt to arrange the future along the lines of English New Brutalism, in which there would be no hierarchy or simply a protest against the rigid corset of communist norms and typifications. Despite the recent renovation of buildings such as Spodek (1971—by M. Krasiński, M. Gintowt, A. Żórawski, W. Zalewski, J. Hryniewicz) and Superjednostka (1972—by M. Król), the

housing estate at Plac Grunwaldzki in Katowice (1973—by J. Grabowska-Hawrylak), the Jagiellonian University’s Kolegium Polonijne in Przegorzały (1975—by T. Mańkowski, Z. Nowakowska, D. Kozłowski, K. Bojanowski), many examples of Brutalism in Poland must be considered endangered. These buildings are at best abandoned, at worst replaced by commercial developments. Barring a few exceptions, the visible and undying enthusiasm applies only to complexes that are difficult to demolish, such as housing estates. Such iconic buildings as Hydrotrest in Cracow (1999—by W. Obtulowicz) or Hotel Forum (1988—by J. Ingarden) are still threatened with demolition because the owners of the properties want to build a new hotel or housing estate in their place.⁸ Even though the building has become part of the cultural and recreational landscape of Cracow, there are many signs that it will suffer the fate that befell the station in Katowice less than a decade ago. The popular Brutal, as the residents of Katowice used to call it, was one of the most interesting and valuable modernist monuments in Poland. After long battles between the investor and the city conservator, it was replaced by a shopping mall, which is part of the restitution (commemoration) of the old reinforced concrete cup-shaped pillar structures and their adaptation to the new function. Polish brutalist religious architecture⁹ is in a better situation as its legal nature and ownership makes it seem unthreatened and it survives in the landscape of Polish cities.

Examples of conservation projects undertaken in Britain are perhaps an interesting point of reference for Polish brutalist architecture. Many post-Second-World-War buildings have been legally protected in the UK since 2000, including the monumental 1982 Byker Wall in Newcastle, designed by Ralph Erskine, which received prestigious Grade II*12 protection, and the striking London residential high-rise buildings, Trellick

Tower and Balfron Tower, designed by Ernő Goldfinger and built between 1966 and 1972 (which received the least restrictive Grade II protection). The same is true of Sir Denys Lasdun's buildings—London's National Theatre (1967), the University of East Anglia (1970) in Norwich or the superb complex of monolithic terraced housing at the Alexandra Road Estate (1978) designed by Neave Brown in London's Camden.

By contrast, the Birmingham Central Library building (1974, by John Madin) was denied protection and was demolished in 2016 after public criticism by Prince Charles in the 1990s. The same happened to the 1972 Robin Hood Gardens complex designed by Alison and Peter Smithson. Due to the poor state of maintenance, the local authorities decided not to list Robin Hood Gardens on the register of protected historic buildings in 2015. In doing so, they opened the way for the demolition and replacement of the estate with new development projects. The story of Robin Hood Gardens demonstrates the full complexity of the problem of preserving post-war Modernism. The poor condition and rapid ageing of the complex facilitated discussion of the need to demolish rather than renovate it. However, the negative end of the Robin Hood Gardens dispute does not change the fact that every year more and more brutalist buildings and complexes from the 1960s and 1970s are granted protection in the UK.¹⁰ One of the most outstanding buildings of German Brutalism, The Central Animal Laboratory of the Free University in Berlin (by Gerd Hänska, 1971–1980), is under great threat because the university wants to demolish it, arguing that the building is not suitable for new scientific and teaching functions.¹¹

Thus, the experience of Western European countries teaches us a rational approach to brutalist structures. Undoubtedly, they should be placed under conservator's protection, but it seems that the best way for these cultural assets of the second half of the twentieth century is the general idea of balancing the parties (investor-conservator), balancing often contradictory reasons. In her article entitled *Polska architektura późnego modernizmu – kategorie stanu zachowania, syntetyczne studia przypadków i dylematy konserwacji*, Marta Urbańska wrote that “in the case of any heritage under discussion, it is a matter of finding an appropriate modus operandi between the extremes of conservation: ‘freezing’ the buildings by absolute prohibitions on superstructures or extensions, and their complete, destructive reconstruction or even demolition. Practice shows that an indisputable prerequisite for the preservation of structures is their functional, usable value from the perspective of the owner/investor.”¹²

Protection and conservation of reinforced concrete in the era of sustainable development

Another important topic related to the argument for the preservation of the architectural and structural fabric is the problem of the durability of the concrete/re-

inforced concrete used in brutalist buildings. Most of the time, architects have been overly optimistic in their predictions about preservation. Both in Europe and Poland, the cost of maintaining large, often poorly insulated residential and public buildings has decreased and the quality of the concrete has deteriorated rapidly. It was not uncommon for ongoing renovations to rely on the cheapest way to deal with ageing concrete—namely, by merely painting over it. By forgetting the essence of raw exposed concrete and the details of its texture, such actions are part of a series of fatal mistakes in the protection of the top layer of concrete—actions that most often deviate from the essence of Brutalist and monolithic designs. To make matters worse, some projects are wrapped in layers of insulation (the example of the housing estate at Plac Grunwaldzki in Wrocław from 2018), which further interferes with the original design intent. The technology for the proper restoration of exposed concrete surfaces has come a long way in recent years, and it is now easier and cheaper than ever to stay true to the original design.

Concrete is still considered to be the most durable material due to its high chemical and physical resistance to various exposures. Reinforcing steel has played a key role in expanding the use of concrete in twentieth-century architecture, but corrosion of reinforcement is the primary culprit in the deterioration of many historic reinforced concrete structures. Reinforcing steel embedded in concrete must be surrounded by a sufficiently thick layer of concrete which not only ensures proper interaction of the two materials but also protects the steel from heating up too quickly during a potential fire. In addition, the alkaline environment of properly compacted concrete (a pH above 10.5) is the most effective protection against corrosion of the reinforcement. Design requirements for minimum concrete cover thickness have changed over the years—while in the 1950s it was possible to make 15 mm thick concrete covers, nowadays the minimum requirements usually oscillate within the range of 25–45 mm.

The reduction of the protective properties of concrete in relation to steel is mainly due to the carbonation phenomenon occurring over a long time, i.e., the action of carbon dioxide on the hardened cement slurry.¹³ Therefore, to ensure increased durability of reinforced concrete structures, it is necessary to pay great attention to proper concrete compaction which guarantees impeded penetration of rainwater and moisture into the concrete structure. Taking into account that in the period when the most important buildings of Polish Brutalist architecture were constructed, the technologies of shaping the properties of concrete and the methods of its compaction were poorly developed and the quality of workmanship was very low, it must be stated that the durability of many buildings constructed in monolithic technology was lowered by insufficient concrete covers (sometimes as thin as several millimeters), sloppy execution of construction joints during concreting and excessively porous or even cancerous external surface

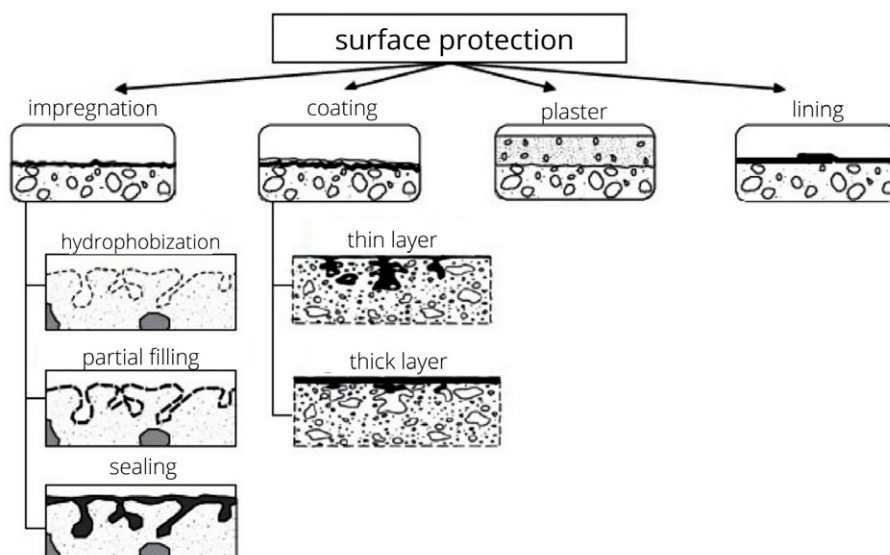


Fig. 3. Methods of surface protection according to PN-EN1504-2; source: L. Czarniecki, *Praktyczne reguły napraw konstrukcji z betonu*, "Builder" 2018, No. 6, p. 50–52.

Ryc. 3. Metody ochrony powierzchniowej według PN-EN1504-2; źródło: L. Czarniecki, *Praktyczne reguły napraw konstrukcji z betonu*, "Builder" 2018, nr 6, s. 50–52.

of the concrete. Corrosion of reinforcing steel can be significantly accelerated in concretes containing increased chloride ions. Chlorides in concrete may be the result of the popular addition of calcium chloride to the concrete mix at that time, mainly to increase the setting temperature of cement, accelerate the hardening of concrete during the initial period and lower the freezing point of concrete. They can also come from the exposure of concrete surfaces to seawater or de-icing salt solutions. Also, the use of unsuitable aggregates contributes to the reduced durability of many structures. Alkali-silica reactions (ASR) occur in concrete when alkalis in cement react with certain aggregates, leading to the formation of an expansive crystalline gel that increases in volume when exposed to moisture and causes the aggregate and concrete matrix to crack. Degradation of concrete surfaces is also caused by erosion of the cement slurry that exposes the aggregate grains under the influence of wind, precipitation or even fog. This phenomenon was much more intense in regions with acid rain as a result of high sulfur dioxide content in the air—such was the case in many Polish cities back in the 1980s. Erosion can also be caused by the mechanical action of water flowing through the concrete, for example from damaged gutters or downpipes or high-pressure cleaning of the facade.

We are now more likely to see that protecting the existing built environment is beneficial not only for preserving cultural heritage, but also for limiting urban sprawl, aiding economic development, and other arguments that together fit into the goals of broadly defined sustainable development. Lech Czarniecki wrote that "sustainable development is a civilizational necessity as well as a legal imperative."¹⁴ According to this Regulation – Construction Product Regulation, CPR – UE 305/201, one of the ways to ensure sustainable

use of natural resources is to ensure the sustainability of buildings. The protection of the structure directly serves to ensure this durability, while repairs, depending on the moment at which they are undertaken and their extent, serve either to maintain or restore serviceability and consequently contribute to restoring or extending the expected durability. In this way, conservation and repair activities become an important tool for shaping sustainable construction.¹⁵

Globally, the principles of architectural conservation inherent in environmental, economic, and social sustainability were shaped relatively long ago. In the 1987 UN Brundtland Commission report *Our Common Future*, sustainable development was defined as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs."¹⁶ As early as 1966, the US Congress stated in the text of the NHPA that "the spirit and direction of the Nation" are founded upon and reflected in its historic heritage, including its architectural heritage, and its preservation is in the public interest.¹⁷ At the beginning of this century, the Heritage Canada Foundation formulated a compelling voice for future discussions about desirable scenarios for dealing with existing buildings: "Currently, the challenge is to prove that an old building is so valuable that it ought to be saved; rather the owner/developer should be required to prove that an old building cannot be adapted to new use."¹⁸ In other words, the first option that should be considered is the preservation of the building, and other solutions, such as demolition, should be properly documented with attention to environmental concerns as well as architectural heritage.

No special measures for active protection of concrete building surfaces (such as protection against the ingress of moisture or contaminants and anti-corrosion

measures) were envisaged for buildings designed and constructed in the second half of the twentieth century. Therefore, the most sustainable approach to managing these buildings is to perform periodic technical inspections (which includes not only a cursory visual inspection but also several structural tests, including chemical testing of the concrete) and to apply preventive maintenance to avoid or at least minimize the need for major renovations or demolition. Such maintenance may include the use of:

- coatings, usually in the form of resin emulsions or cement-resin preparations, characterized by a high diffusion resistance to CO₂, watertightness, but also permeability to water vapor, the ability to bridge cracks, good adhesion to the concrete substrate, and resistance to environmental factors and ageing. However, coatings are often unsuitable for use on historic buildings because they tend to alter the color and appearance of the surface;
- deeply penetrating impregnates or hydrophobic materials that do not change the porosity but only reduce the absorbability of the concrete. These may be considered for use on historic concrete, but one should be aware that the areas thus protected have a different appearance after rain than the more saturated fragments of the original concrete;
- protection of reinforcement in the form of re-alkalization of concrete cover (soaking of carbonated concrete cover in alkaline solution) or introduction of cathodic protection consisting in the creation of galvanic cell in which a reinforcing bar serves as a cathode, the loss anode is a specially introduced material with the potential lower than that of iron (e.g., zinc, magnesium, aluminum), and the water solution in the pores of concrete constitutes an electrolyte.

Maintenance treatments are undoubtedly much more effective in extending the service life of concrete structures than allowing degradation to spread and only making sporadic repairs, often of poor quality. Each subsequent renovation contributes to the creation of new waste, further consumption of natural resources, and despite this, often does not restore the desired durability of the facility. A cost analysis of a life cycle of a given building can easily show how much financial impact is created by a lack of maintenance and deferred repairs.

The proclamation that the repair of concrete is “the ultimate act of sustainability”¹⁹ seems hugely relevant to the social meaning of developmental sustainability in this context—but it cannot be overstated. Rehabilitation of buildings has an increasing share in construction activity, but it should not be expected to become a total means of meeting ever-increasing societal needs. Building structures are often transformed from office buildings to residential ones, from factories to restaurants, from old houses to museums, etc. The adaptation of existing buildings—combined with its repair—to new needs is, of course, not only a natural transformation of the architectural function but also the most important principle of sustainability.

Conclusion

It is important to remember that “words pass away, architectural objects remain and last.”²⁰ Mieczysław Porębski’s statement reminds us that the image of architecture that surrounds us is not permanent, that many of its contents and meanings are forgotten, and that new and more current phenomena describing the existing architectural reality take their place. It is worth asking whether the undeniable change in the meaning of architecture does not cause the disappearance of manifestations of material culture along with words, ideas and meanings? Doesn’t the original sense of the idea, concept, or proposal used by the architect get lost over the years, and does the visual sphere retain merely the material quality of the architecture, characteristics of the style, proportions, scale, texture used, etc.? It turns out that the destruction of ideas and matter in architecture is accompanied by the destruction of human memory. It seems that the survival of architecture is related to its ideological and formal indifference, to its ability of rational and logical continuity. We keep some things in our memory and unconsciously push out others. Modern civilizations that understand the words of a rational approach to their past try to preserve the most valuable examples of their own identity as evidence of the persistence of material and ideological culture. It does not help in protecting Brutalism as a “thing of the past” to be aware of the problem, natural for the entire twentieth century, of the passing of an architectural idea as a discontinuous fact of events, which was—simply—a programmatic avant-garde negation of previous achievements.

The statement by an expert in contemporary iconology about the transience of words and the permanence of the material is a pretext for tackling the problem of the disappearance of formal meanings and contents of the idea of architecture through the conservation of concrete. Paradoxically, it may seem that it is the matter of the work that wins the battle for the survival of architecture. The phenomenon of the permanence (memory) of a material shape contains both the potency of information recall and evidence of an attachment to the importance of architecture as material culture. This is confirmed by the practice of attributing the power of full reconstruction of the ideological essence of architecture to ruins. Another important source of this belief is the conviction that objects, as opposed to words, “do not lie.” Everything may seem to be recorded in the matter as a medium of information because material culture is believed to be truer than the written one. Is architecture, then, a vehicle for memory, or is it merely a means of actualizing an idea that defines an extra-moral, inexhaustible repertoire of technical and aesthetic solutions devoid of the spirit of the times? According to Robert Krier, architecture is simply a treasury of the art of building and the resulting ideas.²¹

In recent years, concrete has gained increasing recognition as a historic material. Preservation of such con-

crete requires a thorough understanding of the causes and types of deterioration, as well as a good knowledge of repair materials and methods. It is important to allocate sufficient time in the planning stage of repair work for a thorough analysis of the causes and extent of concrete degradation (mere visual assessment of surface quality, or a simple examination of the depth of the carbonated concrete layer using phenolphthalein, is certainly not sufficient) and for making test fields for trial repairs to assess the effectiveness and aesthetics of the technology applied. It is also of great importance to choose a contractor and project supervisors who possess adequate knowledge and experience in the repair of concrete surfaces since many treatments involved in this type of work are irreversible. Unfortunately, experience shows that repairs to concrete structures that are not properly carried out can have the opposite effect and accelerate their deterioration.

Why, then, is it vital to save brutalist buildings? This collection of structures cannot be enriched today because systems, times, technologies and materials have changed. Modernism and Brutalism created today is different from the one seventy years ago. One cannot claim that the cup-shaped pillars of the Katowice train station are recreated as we simply received mere copies of them. The authenticity of this architecture disappeared when the twenty-one-day demolition took place on January 11, 2011. The original structure of the old reinforced concrete, its composition and the way it was made were characteristic of its period, and we neither know how nor want to replicate it today. Brutalism defined a significant point in architectural history that will not return. By tearing down Brutalist buildings, we risk repeating the mistakes of the past.

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¹ R. Banham, *The New Brutalism: Ethic or Aesthetic?*, New York, 1955.

² M. Charciarek, *Związki idei i materii w architekturze betonowej*, Kraków 2015.

³ As early as the late 1960s, Brutalism was under attack not

only from the general public—both from steadfast supporters of post-Bauhaus modernism in the style of Walter Gropius and from Nikolaus Pevsner, who called Brutalism "postmodernism." The critic regarded the new style as too "expressionistic," "narcissistic," and "sculptural." For him,

- Brutalism represented “the self-expression of the artist-architect,” an “ardent avoidance of lightness and anything that could be called elegant, as well as anything that could be explained by purely rational means”; N. Pevsner, *Architecture in our Time: the Anti-Pioneer*, “The Listener” 1967.
- ⁴ One of the first major projects concerning the restoration of concrete Modernist buildings is the European program InnovaConcrete. It is a grant addressing and highlighting the importance of the heritage of twentieth-century concrete architecture, ways to preserve both technical and more ideological elements, and to raise public awareness of the value of the heritage of twentieth-century concrete architecture. In Poland, the Centennial Hall in Wrocław and the stops of the cross-city route in Warsaw designed by Arseniusz Romanowicz were restored as part of this renewal program.
- ⁵ D. Kozłowski, *Figuratywność i rozpad formy w architekturze doby postfunkcjonalnej. Projekty i budynki 1982–1992*, Kraków 1992, p. 11–12.
- ⁶ Ibidem, p. 12.
- ⁷ A. Bialkiewicz et al., *Dobra kultury współczesnej. Zarys problemu ochrony*, “Wiadomości Konserwatorskie – Journal of Heritage Conservation” (hereinafter: “WK”) 2020, No. 63, p. 152–163.
- ⁸ In July 2020, according to the decision of the Lesser Poland Voivodship Heritage Conservator Monika Bogdanowska and the provisions of the Study of Spatial Development Conditions and Directions for the City of Cracow such Modernist buildings as the former Forum Hotel building should be protected as cultural assets.
- ⁹ W. Niebrzydowski, *Wpływ brutalizmu na polską architekturę sakralną*, “Architecturae et Artibus” 2016, No. 3, p. 137.
- ¹⁰ M. Wiśniewski, *Moderna – modernizm – socmodernizm: burzyć czy chronić?*, “Autoportret – pismo o dobrej przestrzeni” 2015, No. 3/215, <https://autoportret.pl/moderna-modernizm-socmodernizm-burzy-czy-chronic>; (accessed: 23 V 2021).

- ¹¹ Frankfurt’s Deutsches Architekturmuseum (DAM) is one of the institutions doing the most to promote, document, and study architecture today, not just in Europe. The German curators have an excellent sense of current topics, an ability to develop discussions about them and to collect the data necessary to do so. In 2015, the museum, together with the Wüstenrot Foundation, launched a campaign to protect brutalist buildings. It was promoted with the slogan “SOS Brutalism – Save the Concrete Monsters!”
- ¹² M. Urbańska, *Polska architektura późnego modernizmu – kategorie stanu zachowania, syntetyczne studia przypadków i dylematy konserwacji*, “WK” 2016, No. 48, p. 56.
- ¹³ When dissolved in water, contained in the capillaries of the concrete, carbon dioxide chemically reacts with the various phases of the cement slurry, most commonly with portlandite or the C-S-H phase.
- ¹⁴ L. Czarnecki et al., *Budownictwo zrównoważone budownictwem przyszłości*, “Inżynieria i Budownictwo” 2012, No. 1, p. 72–73.
- ¹⁵ Idem, *Praktyczne reguły napraw konstrukcji z betonu*, “Builder” 2018, No. 6, p. 50–52.
- ¹⁶ World Commission on Environment and Development, *Report of the World Commission on Environment and Development: Our Common Future*, Oxford 1987.
- ¹⁷ National Historic Preservation Act of 1966, Public Law 89–665, U.S. Statutes at Large, V. 89, 1966.
- ¹⁸ P. Frey, *Making the Case: Historic Preservation as Sustainable Development*, Washington D.C. 2007.
- ¹⁹ D.L. Whiteley et al., *Sustainability for Repairing and Maintaining Concrete and Masonry Buildings*, www.icri.org, [http://www.icri.org/resource/collection/1023A08D-21D0-4AE9-8F9A-5C0A111D4AC9/ICRI Committee160 Sustainability_ whitepaper.pdf](http://www.icri.org/resource/collection/1023A08D-21D0-4AE9-8F9A-5C0A111D4AC9/ICRI%20Committee160%20Sustainability%20whitepaper.pdf) (accessed: 23 V 2021).
- ²⁰ M. Porębski, *Ikonafera*, Warszawa 2015, p. 156.
- ²¹ R. Krier, *Modernizm i pamięć*, Warszawa 2001, p. 72.

Abstract

Half a century after the dominance of Brutalist architecture, the majority of discussions about these buildings concern their continued existence. Sadly today, there is more talk about the demolition of Brutalist buildings than about their protection and preservation. And yet, many Brutalist buildings expressed a progressive vision of community living and sustainable public ownership. The effort to preserve them, therefore, is not merely a fight to defend heritage, but also the idea that through the necessary process of adaptive reuse, maintenance, and preservation of existing buildings, the trend of constant “replacement of the fabric of the building” should be halted. In the era of seeking “sustainable” solutions in architecture, this kind of re-evaluation of the meaning of Brutalism and its concrete matter seems to be more than a will to preserve the legacy of the past. One may say that restoring or even prolonging the life of these valuable reinforced concrete structures, primarily in the form of properly selected protection of the concrete surface, is the core of activities aimed at their conservation.

Streszczenie

Pół wieku dominacji architektury brutalistycznej sprawiło, że dyskusję o takich realizacjach zdominowała kwestia dalszego ich istnienia. Niestety, obecnie więcej się mówi o wyburzaniu budynków brutalistycznych niż o ich ochronie i zachowaniu. Należy jednak pamiętać, że wiele obiektów brutalistycznych prezentowało nader istotną w połowie XX wieku ekspresję postępowej wizji życia społecznego i zrównoważonej własności publicznej. Trud ich zachowania nie jest więc jedynie walką o obronę dziedzictwa formalnego, lecz także ochroną konkretnej kulturowej idei. Poprzez konieczny proces readaptacji, utrzymania i zachowania istniejących budynków, należy położyć kres trendowi ciągłego „wymieniania tkanki zabudowy”. W erze poszukiwania „zrównoważonych” rozwiązań w architekturze ten rodzaj ponownej ewaluacji znaczenia brutalizmu i jego materii betonowej zdaje się czymś więcej niż wolą zachowania spuścizny przeszłości. Można powiedzieć, że rewaloryzacja lub przedłużanie życia tych cennych żelbetowych obiektów, głównie w formie odpowiednio dobranej ochrony ich betonowych powierzchni, jest podstawą działań zmierzających do ich konserwacji.