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REINFORCED CONCRETE AS A RUIN AND AS A RUIN'S EXPRESSION

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Abstract

The crumbling reinforced concrete reveals reinforcement bars that crack and bend gradually. This way the hidden parts of the construction elements are transformed into a mean of expression, a kind of a predatory detail of a ruin that is not present in the ruins of structures built of traditional materials. Using the image of reinforced concrete as a ruin would not be possible without the catastrophe of the Second World War and the future reflection on the mechanisms that caused its outburst and made it so tragic. Concrete and its reinforcement, transmuted into a symbolic quality – even at the cost of actual destruction or in the process of at least partial recomposition and stylization of the ruined elements – are the means of expression that seem promising for many contents of contemporary architecture and large-scale sculpture complexes. The above-mentioned problems were discussed in cases of military barracks in Westerplatte, ruined in 1939, ruins of Warsaw in 1945, drawing by B. W. Linke *Powrót* (*Return*, 1946) and memorial in former Nazi extermination camp in Belżec (1997–2004).

Keywords: ruin, reinforced concrete, Westerplatte, Warsaw, Belżec

Streszczenie

Kruszący się żelbet obnaża pręty zbrojeniowe, stopniowo wyginające się i pękające. Tym samym ukryte składniki elementów konstrukcyjnych przekształcają się w środek wyrazu, swoisty drapieżny detal ruiny, nieobecny w ruinach struktur zbudowanych z materiałów tradycyjnych. Wykorzystanie wizerunku żelbetowej ruiny jako środka ekspresji nie byłoby możliwe do wyobrażenia bez doświadczenia katastrofy II wojny światowej oraz późniejszej refleksji nad mechanizmami, jakie do niej doprowadziły i uczyniły tak tragiczną. Beton i jego zbrojenie, transmutowane w jakość nośną symbolicznie – nawet za cenę faktycznej destrukcji lub w procesie chociażby częściowej rekompozycji i stylizacji elementów już zrujnowanych – okazują się obiecujące dla wielu treści współczesnej architektury i wielkoskalarnych założeń rzeźbiarskich. Zjawiska te zostały zanalizowane na przykładach ruin koszarów na Westerplatte z 1939 r., ruin Warszawy z 1945 r., rysunku B. W. Linkego *Powrót* (1946) oraz założenia pomnikowego na terenie byłego hitlerowskiego obozu zagłady w Belżcu (1997–2004).

Słowa kluczowe: ruina, żelbet, Westerplatte, Warszawa, Belżec

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1. Transmutation, reinforced concrete, ruin

The title transmutation, which is the „conversion of one chemical element into another as a result of radioactive transformation”¹ was a long held dream for alchemists, who tried to convert base metal (particularly lead and mercury) into gold. Finally, this dream came true in 1947, when Arthur Dempster’s team obtained isotopes of gold in a nuclear reactor by bombing isotopes of mercury with retarded neutrons. At the same time, transmutation turned out to be completely unprofitable as the method of obtaining gold². In the 20th century, people experienced many similar disappointments, when their successful endeavors did not bring expected benefits, only disappointment and unpredicted side effects.

There is no reason why the concept of transmutation should not be used metaphorically. The literal fire the alchemists used to melt something into gold, destroyed one material to create a new one, of such a different quality that the process itself was no subject to explanation. Transmutation understood this way (as a concept and as a physical effect) can be inspiring for contemporary artists and it may be applied to various materials.

Concrete and reinforced concrete constructions erected for practical reasons, but also as the expression of the optimistic ideas of the building of the „brave new world” were subject to a kind of a technological transmutation while being built: concrete solidifies as anamorphic liquid or pulp and turns into (artificial) stone. A change, which is predictable from the perspective of material physics, bears a possibility of so many fine arts effects that they create a broad spectrum of measures of artistic expression that can be used as a carrier of many ideological contents³.

The motive of ruins has been used in literature and art since Romanticism, although it did not refer to an active process of falling into ruin, but a kind of state beyond time – the state of even older objects that had been devastated a long time ago and people contemporary to them managed to put them into perspective⁴. Due to their age, those objects were either made of bricks or stone and constructions made of those materials have their characteristic way of falling into ruin: they crumble and particular elements of a construction fall out, which results in the “softening” of the edges and slumping of some parts of the walls, while others exist among a great amount of rubble. In turn, abandoned wooden constructions usually rotted too fast to interest anyone as an object of emotions or ideas. When they were destroyed by fire, after a long time the ashes did not look spectacular enough to arouse any emotions in people who were not harmed directly.

The motive of ruins became dramatically dynamic when two generations of Europeans experienced two world wars and observed big-scale devastation of buildings that were already appreciated and symbolic, as well as those erected recently: an achievement of their generation, a hallmark of modernity and progress, an object of local or national pride. Those buildings often had steel or reinforced concrete constructions. Later on, catastrophic pictures of wars happening in other parts of the world were even more vivid thanks to cinema and

¹ K. Hoffmann, *Sztuczne złoto*, transl. G. Gostwicka, Wiedza Powszechna, Warszawa 1985, p. 227–228.

² *Wielka Encyklopedia PWN*, vol. 27, PWN, Warszawa 2005, p. 561.

³ M. Charciarek, *Związki idei i materii w architekturze betonowej*, Politechnika Krakowska, Kraków 2015, p. 14–23.

⁴ G. Doufour-Kowalska, *Caspar David Friedrich. U źródeł wyobrażeń romantycznych*, transl. M. Rostworowska, Lexis, Kraków 2005, p. 89–91.

television. This fact had to influence the general feeling of uncertainty, despite the decades of peace and prosperity in Europe and North America. It shook the optimistic perception of the idea of progress. The progress itself revealed its dark, even felonious reverse⁵.

Walter Benjamin made an accurate observation that “history decays into images, not into stories”⁶ – and particularly: history turns out to be fixed in the form of images. Those images, carried in human memory, need to have their material substrate, no matter how precisely the memory of witnesses preserves their real course and how emotions deform the image stored in memory. This is why the new type of ruins – steel and reinforced concrete skeleton frame objects – delivered new images, then saturated with real emotions triggered by memories or these aroused artificially by artistic expression measures or propaganda announcements.

A close observation of the details of this process and the image it creates let us realize that it includes additional elements that enhance the already mentioned drama. The crumbling reinforced concrete reveals reinforcement bars that crack and bend gradually. This way the hidden parts of the construction elements are transformed into a mean of expression, a kind of a predatory detail of a ruin that is not present in the ruins of structures built of traditional materials. The reinforcement allows existing of a cracked reinforced concrete pillar that is bent in a way that none of the broken post of brick or stone would be able to. A bent reinforcement, visible together with a cracked, concrete massif makes such a ruin – considered in artistic categories – get a double-scale detail: a massive solid with cubist breaks acquire thin lines of rods that are related to one another in a way resulting from previous engineer project and the power of the catastrophe the massif was subject to. Such an effect is spatially richer than a similarly bent ruin of a steel construction, comprised of linear elements only: twisted posts, beams, angle braces, whole trusses of a comparable thickness.

The above-mentioned remarks, regarding only the visual features of the reinforced concrete ruins, should not suggest indifference against the fate of the victims of catastrophes and wars that caused the existence of those ruins. Conversely, this visual character became the material of expression that goes farther than the experiments with openwork used in the sculpture of the interwar period (Naum Gabo, Antoine Pevsner, Katarzyna Kobro, Mieczysław Szczuka among others), without burdening conscience with the trauma of a total catastrophe. Such a way of expression, burdened in the post-war time with the recent memory of mass victims, became actual and desirable, together with other forms of abstract art that, first a niche that interested only a few groups of artistic avantgarde, were promoted as the mainstream measure of artistic expression. And the mainstream art is almost the only type of art that can be public art that expresses collective emotions and needs to use the means that are generally understandable for a general audience. An additional factor that is favorable to using the measures typical for various kinds of abstraction was the lack of mimetic references, which, taking into consideration the fact of the extreme deindividualization of collective, repeatable, mechanical circumstances of death, did not allow rendering its details in the forms of objects built for commemorating victims, without additionally depreciating them.

⁵ Por. Z. Bauman, *Modernity and the Holocaust*, Cornell University Press, Ithaca N.Y. 1989.

⁶ W. Benjamin, *The Arcades Project*, transl. H. Eiland, K. McLaughlin, ed. R. Tiedemann, Belknap Press of Harvard Univ. Press, Cambridge Mass. – London 1999, p. 476 [N11,4].



2. Westerplatte, 1–7 september 1939, 1963–1966

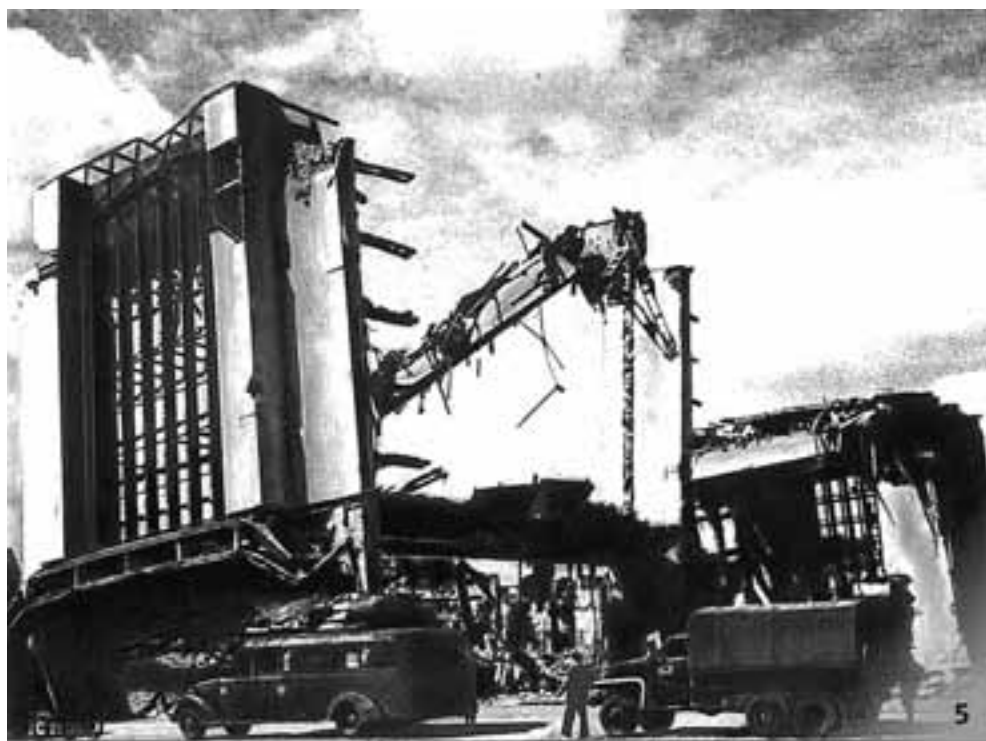
In the course of time, in the 20th century art, the elements found in particular places (including traces of tragic and dramatic events) became supplements to the elements that were created from scratch. They were incorporated in the whole artistic object, somehow on their own terms, and became crucial for the ideological message of such a whole, regardless of their accidental spatial or artistic values. An example of such places, comprised of two types of commemorating objects, is Westerplatte. The stone obelisk-statue (1963–1966) of Westerplatte defenders was designed by Franciszek Duszenko and Henryk Kitowski. Covered with sharply cut reliefs and inscriptions, it preserves the massiveness of carved Romanesque pillars (e.g. in the Holy Trinity and Our Lady church in Strzelno, 12–13th c.). The depth of the grooves and hollows and the surface they cover are proportional to the mass and roughness of the stone in a way that they do not infringe the clarity of the shape. Thanks to that, the obelisk is “unmovable” in its final shape. It is an accurate picture of the unwavering attitude of the defenders, but – at the same time – a static picture without any points of reference to the dramatic dynamics of a battle that happened there.

Undoubtedly, the obelisk placed on a mound became the “the culmination point of the project of the memorial that covers (...) the whole peninsula”⁷. The urban arrangement by Adam Haupt covered the whole 70 ha territory of the Westerplatte Military Transit Depot. Apart from the place for the obelisk, it includes the localization of the defenders’ grave, a museum and a commemorating square with permanent torches. The whole includes also the pre-war guardhouse and the barracks you pass on your way to the obelisk. The reinforced concrete skeleton of the barracks’ survived, but the walls were completely shattered. The power of the fire that destroyed this small territory since the 1st of September 1939 until the capitulation that happened a week later is proven by the remnants of the reinforced concrete ceiling slab that is crumpled like cardboard and torn off along one of the edges of a horizontal girder, pathetically droopy, with cracked edges, staying as a whole thanks to a bent angle brace. This image lets even a layman imagine what was behind the words of the defenders, who said that after a few days of fights the earth there was so densely ploughed up with missiles that the entire greenness disappeared, and a few stumps were all that remained. Today, it is difficult to believe, when you walk through a dense forest that grew back in the meantime. Among the trees, one can see a relic made of the material whose durability is generally known from everyday experience, and now it is destroyed by the power that by far exceeds its endurance. At the same time, the power that tore off a thin slab did not break the massive elements of the skeleton, although they are cracked too and stay as whole thanks to the shreds of angle braces, visible from the outside. Today, when

⁷ A. K. Olszewski, *Dzieje sztuki Polskiej 1890–1980*, Interpress, Warszawa 1988, p. 137.

Ill. 1, 2. Ruined Telephone Centre at Zielna street in Warsaw, state at 1945. Photo. Edmund Kupiecki [after:] B. Bierut, *Sześćioletni plan odbudowy Warszawy*, Książka i Wiedza, Warszawa 1951, p. 16

Ill. 3, 4. Ruined military barrack at Westerplatte, state at 1995. Photo. Piotr Winkowski



looking at the ruins of Westerplatte barracks, one can guess how strong the power of the bombardment was 78 years ago⁸.

3. Warsaw 1939–1945

Due to the size of the city, Warsaw, destroyed several times during the Second World War, provided the citizens returning to the city in 1945 with a dramatic picture of an extensive “sea of ruins”. They were mostly ruins of brick buildings, which showed rows of holes of burnt-down wooden ceiling beams on the stumps of walls.

Ruins of particular buildings were more distinctive than others due to their size and construction that were completely deformed by destruction. Over the brick wall of the Telephone Exchange building at Zielna street, one could see bent steel plate girders that once were part of construction frames of a greater span that covered the hall⁹. In turn, the unveiled reinforcing bars still supported single concrete blocks – the remains of reinforced concrete intermediate ceilings.

The most spectacular ruin of a skeleton construction in the centre of the capital was the ruin of a longitudinal hall of the Main Railway Station (1930–1939) designed by Czesław Przybylski¹⁰. The station was built on a reinforced concrete skeleton and its walls were filled with bricks. Almost finished in 1939, it was then partially damaged during the defense of Warsaw in the same year. Germans repaired the damages and used the station until the outburst of the Warsaw Uprising. After the Uprising collapsed, it was almost completely destroyed¹¹. A bent fragment of a shorter wall and a fragment of one of the construction frames with a torn off reinforcement – it was all that remained out of a hall, that was originally 84 m long, 20 m wide and 26 m high.

„Warsaw citizens who were returning to the ruins of the capital in 1945, remembered the dramatic ashes of the station, with unveiled, ragged elements of construction, sticking out,

⁸ P. Winkowski, *Ethical Factors in Spatial Environment*, Urbanistika i Architektura / Town Planning and Architecture, XXXI tomas, no 1, 2007, p. 4–5.

⁹ B. Bierut, *Sześćdziesięcioletni plan odbudowy Warszawy*, Książka i Wiedza, Warszawa 1951, p. 16.

¹⁰ C. Przybylski, *Dworzec Główny w Warszawie*, Architektura i Budownictwo No 2, 1931, p. 48; J. Wołkanowski, *Projekt Dworca Głównego w Warszawie*, Inżynier Kolejowy No 3 (79), 1931, p. 78.

¹¹ K. Krzyżakowa, *Wiele historii prawie jednego dworca*, Stolica No 7 (1315), 1973, p. 5; K. Uchowicz, *Architektura dworców kolejowych w dwudziestolecu międzywojennym*, [in:] *Obiekty kolejowe. Układy przestrzenne, architektura, elementy techniki*, eds W. Czarnecki, M. Proniewski, WSFiZ, Białystok 2005, p. 170–172.

Ill. 5. Ruined Central Railway Station in Warsaw, Czesław Przybylski, 1930–1939, state at 1945. Photo. Jan Bułhak [after:] G. Jonkajtys-Luba, *Czesław Przybylski*, Arkady, Warszawa 1989, fig. 30

Ill. 6. Bronisław Wojciech Linke, *Powrót*, 1946 [after:] S. Kobyliński, *Bronisław Wojciech Linke. Studium warsztatu plastycznego*, Arkady, Warszawa 1969, p. 13, fig. 2



lonely in the empty space like a symbol of a dead city”¹². This picture is part of a common memory, not as one of many, but as one particular image. Surely, it was caused by the site at Aleje Jerozolimskie, close to the cross of Marszałkowska street, the size of the huge hall structure and gloomy dynamics of the single posts system, beams with wide spans, together with the skeleton of the curtain wall and the scraps of reinforcement. It was recollected many years after those tragic events, also by architects¹³.

The surreal landscape of destroyed Warsaw – whose dominants are the above-mentioned buildings – had its expressive potential, which was proved by the artistic works in which this motive was used. They did not document the destruction, but condensed the features of such a landscape to show existential drama. One of them is *Ruch Oporu* (*Resistance Movement*, watercolor 1949), by Bronisław Wojciech Linke, where the exact image of the ruin of Main Railway Station is placed in the further plan of the work¹⁴. The other one is *Powrót* (*Return*, 1946, drawing, ink, pen on paper) also by Linke¹⁵. A Warsaw citizen returning to his city kneels in front of the ruins that are transformed (in his imagination) into a dreadful, crippled statue – a kind of the personification of the city – bent down and reaching out his hands to the man. In fact, the drawing shows the hands as cantilever elements made of brick, which is incompatible with the properties of this material, but the plaster, partially flaked off, creates a suggestive image of rags the symbolic figure seems to be dressed in. At the same time, a clear stylization of a ruin as a human figure allows interpreting the cuboid head as made of reinforced concrete and the hair as twisted reinforcement bars with concrete pieces, like those in the ruins of the Westerplatte barracks, the Telephone Exchange building and Main Railway Station.

There are also stacks of bricks around and twisted steel I-beams. They strengthen the picture of chaos and destruction, but there are no particular relations between their previous construction role and the way they fell into ruin. The whole drawing proves the overwhelming picture of massive devastation that covers whole districts, the ruins of both historical and modern buildings – made of reinforced concrete and steel. The ruins of common objects, being the frames of everyday life, became the way of reflecting individual feelings, grief for people and places, but also some new quality that is connected with such a big-scale damage of a city.

¹² G. Jonkajtys-Luba, *Czesław Przybylski*, Arkady, Warszawa 1989, p. 24.

¹³ *Fragmenty stułetniej historii 1899–1999. Relacje, wspomnienia, refleksje*, eds T. Barucki, J. Cybis, St. Jankowski, K. Niekrasz, M. Piechotka, M. Pietrzak, R. Szczepański, Oddział Warszawski SARP, Warszawa 2000.

¹⁴ S. Kobyliński, *Bronisław Wojciech Linke. Studium warsztatu plastycznego*, Arkady, Warszawa 1969, fig. 17.

¹⁵ *Ibidem*, p. 13, fig. 2.

Ill. 7, 8. Memorial of former Nazi extermination camp in Bełżec, sculptors Zdzisław Pidek, Andrzej Solyga, Marek Roszczyk, architects Marek Dunikowski, Piotr Uherek, Piotr Czerwiński (DDJM), 1997–2004. Photo. Lysy [after:] https://commons.wikimedia.org/wiki/File:PL_Belzec_extermination_camp_6.jpg; https://pl.wikipedia.org/wiki/Plik:PL_Belzec_extermination_camp_8.jpg

4. Belżec 1941–1943, 1997–2004

The means of artistic expression presented in this article, resulting from destruction of a reinforced concrete structure or used to increase the picture of terror, have also been used recently to commemorate the events of the Second World War – probably the most tragic event in modern history. Those means were used by sculptors Zdzisław Pidek, Andrzej Solyga and Marek Roszczyk, the authors of the memorial complex on the terrain of the former Nazi extermination camp in Belżec. Their concept won the competition organized in 1997. This task was also accomplished with the help of DDJM architecture studio of Marek Dunikowski, Piotr Uherek, Piotr Czerwiński, who designed the building of the museum, integrated with the wall that closes the complex¹⁶.

The former camp, located among meadows and forests, was used as a landscape sculpture composition. Its basic element is a concrete plate of 220 m x 160 m that covers the whole territory and the ground where the victims are buried. This way the plate protects the ashes both symbolically and most practically. This “dreadful field” (Jerzy Halbersztadt)¹⁷ is cut with a path that leads gradually underground and becomes a deep crack. The path follows the former camp way, so in this place, the violation of the ground did not cause the infringement of the ashes. However, it forces the visitors to walk among them, although the side walls of the crack are protected with concrete. The wall that divides the crack at its deepest point (11 m deep) is covered with a great amount of female and male names, certainly the names of the victims. Thanks to that, those people are not anonymous anymore, they get their names back, although their particular identification is not possible at all. The wall that closes the perspective of the path in a tight, deep hole, makes visitors turn right or left. In both cases, they encounter hidden stairs that let them get back to the surface and head to the gate, following the path that surrounds the plate, along its western or eastern border, depending on the stairs they chose.

”The poetics of the monumental memorial in Belżec, which commemorates the martyrdom of the Jewish nation, seems to be one of the most moving and shocking poetics that could be achieved in such realizations. Its ascetic, minimalist layout, limited to a sequence of events (entrance – passage – exit) makes the message contained in this sequence timeless and universal. It does not close in the orthodox canon of necropolis, whose semantics is dictated by the sepulchral rules of one religion. The only relic that remains of it is a rectangular frame, which encloses the graveyard as an extraterritorial, empty space – *the waste land*. The sinister image of a grave of 600,000 people, uncovered among the seemingly idyllic landscape (...), constitutes an intentional dissonance that introduces a disturbing drama. It does not incline to contemplative reflections. Emotional tension is so high, that it does not allow to remain motionless – the path, somehow delving optically, awakes fear and draws the visitor inside. None of the means of artistic expression can be missed here.”¹⁸

¹⁶ M. Dunikowski, P. Uherek, P. Czerwiński, *Budynek muzeum* [in:] *Rzeźba – architektura. Wzajemne relacje i strategie*, ed. M. Rydiger, Rocznik „Rzeźba Polska”, vol. XI, Centrum Rzeźby Polskiej, Orońsko 2005, p. 147–150.

¹⁷ J. Halbersztadt, *Belżec – Szczelina Zagłady* [after:] *ibidem*, p. 150.

¹⁸ M. Knorowski, *Blizna*, [in:] *ibidem*, p. 143.

At this point, one should get back to the motive of reinforcement bars compared with irregular surface of concrete that was previously discussed in various roles in the space, but always as a visual picture of a drama. Such twisted bars were placed in Belzec along the edge of a crack. They create unique, sharp texture and make this field physically inaccessible. Compared to a spacious, dead field, those elements are light, delicate and tragically torn. It is not a destroyed reinforcement, since nothing had been built there and there was no such plan. Instead, a visitor who gradually walks inside and sees the edge of the plate closer and closer, can look at the bars and the whole spacious area through them, when they are on the eye level for a moment.

5. Conclusion

While the catastrophe of Pompeii devastated brick and stone buildings, making this city available, first to archeologists and then visitors, demanded to dig it out and then partially reconstructing it out of the same materials. Destroyed wooden settlement in Biskupin, Poland, required reconstruction to give the visitors the idea of how it could have looked. Last but not least, World Trade Centre skyscrapers in New York – demolished in the terrorist attack in 2001 that ruined a construction of steel and glass – were rebuilt from the same materials, although in a different form, and commemorated in a steel and stone fountain of memory.

Today, when undertaking the task of commemorating in the public space the events of the era of Internet, smartphones, QR codes and virtual reality street games, the authors can use the common conscience of the public, who know how those things are used. Their everyday availability makes them imperceptible and this imperceptibility is what artists often use. They give special features to banal objects and processes, they modify them slightly and this way make them noticeable again as the medium of existential content, preserving the reference to a common way of using the prototype as a cultural and psychological context.

In this situation, using again concrete and a visible angle brace or a stylization of such an angle brace has the features of historicism, which refers to a recent, but closed past chapter of culture. The ruins of concrete objects – together with their specific details, described above, were seen for the first time on such a big scale by the Europeans after the Second World War and the picture of this type of ruins will be connected with this period. Therefore, going back to this measure of expression becomes an intertextual process – searching for the meaning of the already existing culture codes and not for absolute innovation. It does not diminish the value of such a procedure at all.

The unsuccessful attempts of transmuting lead into gold have a long history in alchemy, they preceded its realization in the 20th century that took place after making other discoveries and obtaining by the physicists the skill of manipulating the structure of the atom. Using the image of reinforced concrete as a ruin was similarly fruitful for culture and it would not be possible without the catastrophe of the Second World War and the future reflection on the mechanisms that caused its outburst and made it so tragic. Concrete and its reinforcement, transmuted into a symbolic quality – even at the cost of actual destruction or in the process of at least partial recomposition and stylization of the ruined elements – are the means of expression that seem promising for many contents of contemporary architecture

and large-scale sculpture complexes. The way it was used in the memorial of the Bełżec camp places this monument among the most precious works of contemporaneity. It is one of the monuments, which stimulate many human senses simultaneously, directing the audience to a designed sequence of the process of experience, which serves to improve the process of comprehension¹⁹.

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