'Dissonant' Heritage of Cold War Modernism or European Heritage of Modernist Architecture of the second half the 20th century in conservation perspective: residential houses of Katowice, Poland - a case study

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Abstract

The architectural heritage of the second half of the 20th century in countries of the former Eastern Bloc, including Poland, that inherently accompanied by the cold war spectre of the Iron Curtain was until recently treated as a „dissonant” heritage of Communism.

The increasing time distance allows an objective look at this architecture of so-called Cold War Modernism in the European or even global perspective, and to reject of the political connotations allowed its value to be identified.

Interest in sites built during that period is on the rise and the discussion of the need to undertake actions protecting such sites against demolition is very timely.

The process of conservatory protection of this architectural heritage is very difficult and complex, particularly if it concerns individual residential houses of those times. Currently, such sites, remaining in the hands of private owners, undergo uncontrollable transformations and often incorrect upgrades, leading to their irreversible deformation and to a loss of their architectural and stylistic values. No studies, directives or systemic solutions dedicated to their protection are available in our country.

The objective of the presented project was to create a model of research procedure and a package of conservation guidelines and project recommendations for selected example of a building from this group of sites located in Katowice, Silesia. The area selected for the study is rich with examples of such architecture, as confirmed by the subject literature and local visits. In order to analyse the problem, the Authors have assumed a view based on quality studies, preceded by a source analysis, as well as by a survey. They performed a full range of conservatory studies of the site (archive, architectural and conservatory, structural and physical studies using advanced, non-invasive techniques).

The obtained results may be used as the basis for creation of a model conservatory procedure related to the studied individual residential houses and for determination of rules for their upgrades and adaptation to modern standards.

Keywords: architectural heritage; modern architecture; Cold War modernism, individual residential houses; survey; building conservation; modernization
Introduction

A general view of the topic as a research problem - background to the study

The term ‘cultural heritage’ became widespread only in the 1970s, inter alia, thanks to the international “Convention Concerning the Protection of the World Cultural and Natural Heritage” approved by UNESCO during its 17th session in Paris, in November 1972 [1, 2]. This document imposed the duty of heritage protection on the entire international community. Among other aspects, this Convention especially emphasised two key issues: heritage is a shared value and its protection is a shared duty, and heritage as a non-renewable value, which once destroyed, is lost forever.

However, the term 'heritage' is an ambiguous concept, and many intricate meanings and interpretations are hidden behind the deceivingly obvious description. It transformed into a separate field of knowledge and a research discipline named heritology - a new scientific discipline including studies on heritage, and interdisciplinary reflection on the term of heritage, which includes the issues of heritage interpretation, management, protection, and its functioning in the future. The American geographer David Loventhal is considered the founder of the discipline, and its leading representatives: John Tunbridge and Gregory Ashworth.

Gregory Ashworth formulated the opinion which synthetically describes the essence of the notion: “Heritage literally assumes both a legatee and an inheritance; the latter only being definable in terms of the former” [3]. Thus, heritage is the transfer process of specific, cultural values. It takes place across the ages and is a form of intergenerational relationship, including not only the transfer, but also acceptance of specific objects. However it also generates many questions, transferring heritage into the area of unclear and fuzzy definitions. John Tunbridge and Gregory Ashworth introduced the notion of „dissonant heritage” to emphasise the problem of disinheriance and rejection of non accepted heritage of the past [4].

The architectural heritage of the second half of the 20th century is currently a widely discussed topic among architects and conservators across the world. In countries of the former Eastern Bloc, including Poland, the architecture from this particular period was until recently treated as a 'dissonant' heritage of Communism. The memories of the past system are inherently accompanied by the cold war spectre of the Iron Curtain. This element also plays an important role in the discussions about the architecture of that time. The term ‘Iron Curtain’, understood as the isolation of eastern socialist countries in Europe from the western world, started to be used at the end of the Second World War and
lasted, with various intensity, until the fall of the system. [5] Despite the fact that a slightly pejorative term “socmodernism” was used not so long ago – following Professor Adam Miłobędzki [6] – when addressing the architecture from this particular period, currently the view of architectural achievements of the second half of the 20th century is changing dramatically. The increasing time distance allows an objective look at this architecture and rejection of the political view allowed its value to be identified [7, 8]. This active interest resulted in an increasing number of studies, publications, conferences and exhibitions. The most spectacular events include the exhibition organised in 2008, in Victoria and Albert Museum in London, dedicated to the European art and architecture of the Easter Bloc after World War II. It had a significant tile: “Cold War Modern: Design (1945-1970)” and presented the unique value of works created in the difficult political context [9, 10].

Currently, many national and international conferences dedicated to these topics take place in Poland, too. This topic is also undertaken by national research centres and organisations promoting architecture, including the notable ones listed below: The Wroclaw Architecture Museum, City of Gdynia with its long-term initiative: “Gdynia Modernism”, the International Culture Centre in Krakow or the Architecture Documentation Institute, Silesian Library in Katowice. The topics outlined above are ever better represented in scientific studies and publications.

These initiatives cover modernist phenomena, including ours, in the European or even global perspective, and call for recognising the radical form of social realism as heritage, as an independent phenomenon, despite political contexts.

After an analysis of the literature and of previously published results of studies on Polish architecture of the second half of the 20th century it may be noted that the interests of researchers have focused mainly on state initiatives, such as public buildings, large residential complexes or urban planning assumptions (as described in detail in the part of the paper dedicated to the analysis of the state of research). The architecture of residential houses built by an individual investor, comprising equally valuable architectural and cultural heritage in the context of its documentation, analysis and conservatory protection, however, has not yet been a subject of studies and publications [11]. Thus, an urgent need for planned studies, preparation of documentation and site evaluation exists, in order to protect the valuable architectural heritage, continuously subjected to uncontrollable transformations, and even demolished. They are not legally protected and no conservatory guidelines for them exist.
Thus, the lack of relevant knowledge was indicated by the authors of this text as a scientific problem. An objective was formulated, together with research questions, which allowed the authors an attempt at tackling the problem.

**Study scope and objective**

The objective of the studies is to supplement the current knowledge regarding architectural heritage of detached residential houses from the second half of the 20th century, as well as to develop a conservatory guidelines model. This objective includes several aspects, which may be defined as detailed objectives: a research-cognitive objective, a methodological objective, an application and promotion objective.

- **The research-cognitive objective** is to supplement and order the knowledge regarding Polish architectural heritage of detached residential sites from the second half of the 20th century.

- **The methodological objective** assumes development of conservatory study methodology and formulation of recommendations related to said heritage.

- **The application objective** is to use the results of the studies in conservatory and practical activities by creating a proposed, model conservatory process for individual residential houses as historical sites of modernism of the second half of the 20th century.

- **The promotion objective** is to popularise knowledge of cultural heritage and to raise social awareness of said heritage. It is an important factor supporting heritage protection.

The following research areas have been accepted for thus defined objectives:

- **The material and time scope.** The subject of the study includes existing residential houses, individually designed and built during the 1956-1989 period. The arbitrary end of the socrealism period in architecture was accepted as the starting point of the time scope. The end point is 1989, when political and economic transformation of the country began. Contrary to the stereotypical opinion, the post-war detached houses are not just the so-called “Polish cubes” built according to a copied, typical design, but also very modern residential buildings constructed according to global and European, modern trends, characterised by interesting spatial designs and avant-garde forms.
• **The area.** The studied area is located in Katowice, the second most dynamic growth centre of modern architecture during the discussed period, after Warsaw. The studied area is located within the low residential building area 'Ptasie Osiedle' residential estate, in the Brynów District in Katowice.

• **The material scope** of the presented studies includes archive and source studies (historical studies), in situ studies in the form of a reconnaissance, photographic documentation and stock-taking (architectural studies), architecture and style analysis, analysis of preservation and valorisation (structural studies), thermal analysis of a site selected for the study (physical studies). The aforementioned groups of studies allowed conclusions to be drawn, together with conservatory recommendations related to the discussed subject of the studied heritage.

**Research questions**

Formulation of research questions is the basis for execution of the accepted, detailed objectives. The following questions were asked for the accepted scope of studies:

• **What is the current knowledge of the sites?** The following analysis shall be performed: whether and to what extents have the studied sites been a subject of studies and publications before and whether source materials from the period when the sites were built exists.

• **Are the sites a cultural value in terms of modernist architecture?** The sites shall be evaluated in terms of architecture, artistic and stylistic and structural aspects in order to determine their value as sites representing modernism of the second half of the 20th century.

• **How well are the sites preserved?** The preserved conditions shall be evaluated in the aspect of the current function of the site, their structure, integrity level in the area, preservation of finishing materials and details and the performed transformations (demolishing, modifications, expansions).

• **What factors cause destruction of the studied sites?** Problems related to the use of the sites shall be identified, in the technical aspect (requirements related to the current way of life and comfort of the residents) and in the cultural aspects (owner and user awareness of the heritage value).

• **What systemic, preventive actions should be undertaken for the studied sites?** A conservatory procedure model shall be developed, together with a package of guidelines related
to renovation and preservation of the studied heritage, as well as recommendations related to possible legal protection.

The current knowledge - a summary of the existing literature

The topic of architecture of the second half of the 20th century in Poland has reached a significant number of scientific and popular science publications, although a clear increase of interest in this particular topic has been observed only in the recent years. The few research works from the last century (namely from the period when the studied sites were built) include a very important work by an architect and a researcher – Tadeusz Przemysław Szafer, namely a series of monographic publications issued as three diary volumes presenting the panorama of Polish architecture during the 1966-1980 period [12,13,14]. The classification system of the presented sites accepted by the author includes a wide discussion of the development of residential buildings, in addition to education, cities, infrastructure, communication, sports, leisure and health centres and industry. The topic of areas constructed on the basis of typical, detached houses, is further supplemented by individual examples of detached residential houses. It is worth to mention here the design of a detached residential house at a hill slope in Żegiestów by Zbigniew Gądek presented in the publication [12], the projection of a pavilion house by Jan Szpakowicz in Zalesie Dolne [13], or photographs of a villa located in the Woła Justowska district of Kraków, designed by Wojciech Pietrzyk [14]. The 1947-1994 period was the time, during which a specialised publication of the Main Board of the Polish Architect Association (SARP) was issued as a monthly magazine. It presented competition results, published designs and reviewed new investments within the country. An issue dedicated to detached housing was published in 1971, in the introduction to which Andrzej Stasiak underlined the need to have the critics interested in the often neglected topic of detached house architecture [15].

The first years following the systemic transformation in Poland saw the topic of the Communist Poland heritage rarely touched by researchers and historians alike. In 1994, Adam Miłobędzki in his book "The Architecture of Poland: a chapter of the European heritage" undertook the first attempt at evaluation of the heritage of the previous regime, introducing the term “socmodernism”, which did not lead to positive associations and indicated the relative disregard of this trend according to the author [6]. This pejorative evaluation of the modernist heritage resulted in no interest of researchers in this topic for years. The following years brought a gradual increase of interest in the topic. Andrzej Basista
issued a book “Betonowe dziedzictwo. Architektura w Polsce w czasach komunizmu” (Concrete heritage. Architecture in Poland during the communist times) in 2001, which included not only considerations regarding urban planning and examples of architecture, but also presented knowledge on the operation of the construction industry during the Communist Poland period and statistical data, including data related to residential housing [16]. The same year saw a monograph by Adam Maria Szymski, presenting the architecture in Szczecin during the 1945-1995 period [17]. In 2010, Piotr Marciniak published another publication on the post-war, local architectural heritage titled: “Doświadczenia modernizmu. Architektura i urbanistyka Poznania w czasach PRL” (Experiences of modernism. Architecture and urban planning in Poznań during the Communist Poland period) [18], while Aneta Borowik issued the book “Nowe Katowice. Forma i ideologia polskiej architektury na przykładzie Katowic (1945-1980)” (New Katowice. The form and ideology of Polish architecture in the example of Katowice) in 2019 [19]. The listed books are a significant contribution to the view of the architectural heritage of Communist Poland as a valuable heritage, however, they describe mainly state investments, such as large architectural and urban areas, while the phenomenon of individual residential houses and their architecture have been omitted. The few research publications dedicated to the topic of individually designed private houses include, inter alia, the paper by dr Zuzanna Napieralska, in which examples of experimental architecture related to detached residential houses at the break of 1960s and 1970s in Poland are presented. The author selected and discussed two dome buildings (Wrocław and Warszawa) and two examples of Warsaw residential areas using atrial building layouts [20].

An important source of knowledge also includes doctoral dissertations and publications prepared as a result of research projects in our region, such as e.g. the work by Aleksandra Tomkiewicz “Determinanty modernizmu w rozwoju przestrzennym Katowic na tle przykładów europejskich” (Determinants of modernism in the spatial growth of Katowice compared to European examples), which introduced a valuable perspective of comparison with the heritage of European modernism [21].

Another group of sources, significant from the point of view of current knowledge, includes a group of legal and normative acts. Acts, ordinances and resolutions of the Presidium of the Government of the Polish People Republic, related to residential housing (including individual housing) are available and prepared according to archived Journal of Laws and Polish Monitor in the
Internet Legal Act System. The most important documents, from the point of view of the studied heritage, include the housing normative of 1954, the resolution of the Council of Ministers of 15th March 1957 on the state help for residential housing funded by citizen, or the resolution of 22nd May 1965 on state help for building of detached residential houses and apartments in small residential houses by individuals.

The sources related to individual residential houses include archives of state agencies and private collections of architects and site owners. They also rarely include archives of design agencies or state archives, as the studied sites were usually built as private buildings.

The knowledge of sites and of their creators can also be obtained from centres interested in science and promotion of knowledge about the architectural heritage of the second half of the 20th century. The Architecture Documentation Institute acting together with the Silesian Library in Katowice documents and collects resources related to work of architects in the Silesian Voivodeship. The archive resources of the Institute include archived materials, such as drawings, project documentation, photographs and books of architects, such as Henryk Buszko, Aleksander Franta, Jerzy Gottfried or Jurand Jarecki, who are also authors of individual residential houses. The promotion work of the Institute also includes publications presenting the lives and works of the designers: Jerzy Gottfried [22] and Jurand Jarecki [23]. The research activities of the Institute resulted in preparation of the valuable, interdisciplinary compendium of Upper Silesian architecture of the second half of the 20th Century, edited by M.Żmudzińska-Nowak and J.Herok-Turska [24].

Methods

A proprietary research methodology was developed for the undertaken research problem and for the research objective, scope and questions. It was based on the two basic scopes: the accepted, theoretical research assumptions and the accepted conservatory perspective. This is illustrated by the following proprietary diagram:
Setting of the study- theoretical perspective

The presented studies included a qualitative approach as an approach offering a wide range of possible identification, analysis and evaluation of the subject of the publication, namely of individual architectural sites and of individual conservatory and upgrade problems related to it.

Qualitative studies emphasising the detailed and thorough understanding of the analysed phenomenon use varied, mainly dedicated sets of research techniques and tools [25]. The qualitative studies use all techniques and tools enabling the assumed objective to be reached, combining experience of multiple scientific disciplines, in particular of sociology, psychology, anthropology or cultural sciences. They are an independent research trend which began in 1960s, following the wave of changing values of the paradigm of quantitative studies and quickly became very popular in science. They have also become widely used in research in the fields of architecture and urban planning, as is widely described by L. Groat and D.Wang in their book “Architectural Research Methods”. For example, they wrote that the use of various strategies by a researcher may be compared to the “bricolage” technique aimed at effective and comprehensive collection of the required data. They have also distinguished at least two main groups of topics, to which the quantitative approach may be applied. The first group is a group, in which site users are the main subject of analysis, and the second group is a group, in which architectural sites and urban planning assumptions are analysed. Thus, they suggested use of mostly interactive techniques in the first case, such as: interviews, focus groups, participation tasks, inclusive observation, in situ observation, context and artefact analysis. Non-interactive techniques are suggested in the case of site studies: documentation (drawings, photographs, videos), stock-taking, in situ architectural studies, analysis of sources and literature and other techniques [26].
Despite the fact that the described studies are related mainly to architectural sites, they also include the widely understood context of the building, including its users, assuming that the topic of a residential house is not just a technical problem, but also cultural, aesthetic problems, a matter of lifestyle and living standard, and even that of fashion [27]. This approach to the problem led to a conclusion that combination of both technique groups: non-interactive and interactive techniques is necessary, namely of techniques including the participation of site owners and users in the research process.

Thus accepted research assumptions are reflected in the grounded theory, which became an important element of the theoretical basis of the presented study. The beginnings of the grounded theory are related to the 1967 publication of the book by B. Glaser and A. Strauss titled *The Discovery of Grounded Theory*. The grounded theory is a qualitative research method, which assumes development of theoretical basis, research assumptions and hypotheses by systematic collection and analysis of data. As E. Niezabitowska wrote “The researcher begins field studies without previously developed theoretical assumptions, namely without pre-conceptualized theories. A theory emerges from and during the studies (interviews, behaviour observations, etc.), namely, it becomes “grounded” in the field.” [25] It allows the nature of phenomena and their wide context to be understood. Observation, photographic documentation prepared in the field and interviews are an important element of building research hypotheses based on this theory [28].

Because of the pioneering nature of the studies performed by the paper authors, the grounded theory approach proved to be useful, as it allowed research assumptions and hypotheses to be constructed during information collection in the field, analyses of source material and of literature. Individual case study was accepted as a detailed research method, and the procedure conforming to the grounded theory allowed precise selection of the example (case) for the study. Case study is one of the main methods of qualitative studies, including studying one or several sites, at the same time using multiple information sources (such as: documents, interviews, observations and artefacts), taking into account the context (e.g. physical, historical, social or economic contexts) of the studied case [29]. The study may be performed as a single case study (monographic method) or as a multiple case study (e.g. a comparative study) [30] The individual case study including a detailed study of the given site, taking into account the spatial and social context, enabling identification of characteristics and structural elements of the architectural site, rules of its operation, as well as the scope of the introduced
transformations, proved to be a particularly adequate method for our study. The presented case study has been performed by the authors as a pilot study. As E. Niezabitowska wrote: A pilot study is a laboratory on its own. “Methodological work in a pilot case study provides information related to questions in important areas and logistical problems related to research tasks [25]. Thus, in addition to obtaining detailed knowledge about the studied site, one of the objectives behind the case study we performed also included creation and verification of the accepted research methodology (as described further in the text).

Setting of the study - conservatory perspective

The proprietary methodology described in this paper is based on selected, strategic documents and modern conservatory approaches, assuming protection of site value and integrity, but open to their appropriate upgrades and adaptation to current conditions and standards. The main document is the Venice Charter approved during the II International Congress of Architects and Historical Site Technicians in 1964, which is an international convention specifying rules of historical site protection in five points, emphasising, inter alia, the protection of the original substance and of the surroundings of the building [31]. This document provided the basis for preparation of other doctrine texts in many countries. In 1996, the Polish National Committee of ICOMOS prepared the first selection of European doctrine texts, issuing their Polish translation preceded with a specialised introduction. Its last, updated revision was published in 2015, titled: “Vademecum Konserwatora Zabytków. Międzynarodowe Normy Ochrony Dziedzictwa Kultury: edycja 2015” (Historical Site Conservator Compendium. International Standards of Cultural Heritage Protection: 2015 edition), which included 29 documents approved by ICOMOS, UNESCO and by the Council of Europe [32].

A wider theoretical background is provided, for example, in book publications by Andrzej Kadłuczka: “Ochrona Zabytków Architektury. Rozwój doktryn i teorii” (Protection of Architectural Historical Sites. Development of doctrines and theories) [33] and by Edmund Małachowicz “Konserwacja i renowacja zabytków w środowisku kulturowym” (Preservation and renovation of historical sites in the cultural environment) [34]. Bogumiła Rouba considers theoretical basis of conservatory activities and selection of the subject of protection in the chapter “Teoria w praktyce polskiej ochrony konserwacji i restauracji dziedzictwa kultury” (Theory in practice of Polish protection of conservation and restoration of cultural heritage) [35]. Valorisation of a historical site is a
very important aspect of the undertaken studies. This problem was discussed, for example, by Bogusław Szmygin [36]. He notes that historical site valuation should be performed individually and should result in an answer to the question: what should be strictly protected in the given historical site. Conservatory objectives and approaches may be designed as a function of the accepted scale and value criteria. This general rule requires special care and responsibility for decisions made. The works of Jan Tajchman, who in his publication “Metoda konserwacji i restauacji dziedzictwa architektonicznego w zakresie zabytkowych budowli” (The method of conservation and restoration of architectural heritage within the scope of historical buildings) [37] performed a holistic analysis of the conservatory process, ordering individual activities in the aspect of conservatory design, and thus provided an important source of knowledge in the development of the research methodology. The latest publications describing the conservatory procedure, taking into account the use of advanced techniques and non-invasive research tools, were equally important. These include, inter alia, works by Małgorzata Korpala [38], Magdalena Krause [39] or the monumental work edited by Marian Arszyński “Badania architektoniczne: historia i perspektywa rozwoju” (Architectural studies: history and development perspective) [40].

**Processes and methodologies employed**

The study methodology developed and applied by the authors included several stages resulting from the accepted theoretical assumptions:

1. **Stage I (Initial research)**
   - Initial literature and on-site studies intended to provide solid basis for the research problem and for research assumptions and hypotheses.
   - Selection of the site for the study on the basis of the accepted criteria.

2. **Stage II (Detailed research)**
   - Source query (state and city archives, private collections): site documentation and biography of the designer.
   - In situ research (documentation, photographic and measurement stock-taking, thermal vision studies of the site structure and of physical properties).
   - Interviews: owners, users (analysis of needs, opportunities and expectations).
3. Stage III (Synthesis of study results and conclusions)

- Site valorization and conclusions (evaluation of the preserved condition and of the site value with its surroundings, performed transformations, threats).
- Evaluation of the site in the view of effective regulations and standards, conclusions.
- Conservatory guidelines

The course of the research project is presented in the diagram below:

![Research methodology diagram](image)

**Fig. 2** Research methodology diagram. (elaborated by the authors).

**The course of studies**

**The course and results of initial studies (Stage I)**

The current analysis of the structure of Katowice showed the presence of a cohesive set of post-war detached houses. In the southern district of the city – Brynów – between ul. T. Kościuszki and the Katowice Forest Part, starting from mid-1950s the 'B' residential area, commonly known as the 'Ptasie Osiedle' residential estate, developed. Already our local visit and interviews with local inhabitants of the residential area led to a conclusion that the phenomenon of detached private houses being built progressed along two paths: „popular” mode and the more individual one. Due to this, the houses in the area of research may be divided into two general groups. The first includes the houses built on the basis of repetitive designs mostly developed by state-owned BPTiSBM office (Typical Projects and City Building Studies Office). The second group of houses includes those designed individually, according to individual orders, mostly by well known and respected architects. The latter group of sites, clearly distinguished against the typical houses with its interesting form, used finishing materials
and often original spatial concepts, became the subject of scientific interests, not only in terms of the architecture and technical solutions, but also of culture understood as the medium of information about lifestyle of local residents, back-then preferred aesthetics or fashion. Furthermore these houses represent many formal references to European architecture [41].

The initial literature studies did not provide many results related directly to the architectural heritage of the area covered by the publication. The only site within the Ptasie Osiedle residential estate, characterised in the book dedicated to villa architecture across centuries in Poland, is a detached house designed by architect Jurand Jarecki in 1969, located at ul. Drozdów [42]. Other literature sources present the residential area in a brief outline only, as an attractively located within green areas and provided with good communication links with the city centre, prestigious enclave of detached buildings.

![Jurand Jarecki's detached house](photo by J. Bródka)

Preliminary survey proved that a lot of particular types of individual building forms in the area of Ptasie Osiedle residential estate can be distinguished: single storey and two storey houses and atrial houses. Likewise a very interesting mixed type e.g. two storey house with a low functional ground
floor and the living space (including kitchen) on the upper floor, or very particular example of a so-called split level house where floors in one part of the building are on mezzanine levels.

**Fig. 4** Types of individual building forms in the area of Ptasie Osiedle residential estate (elaborated by the authors).

The interviews with local residents of the area allowed the investor profile for the analysed houses to be drawn. After the war, together with dynamically growing technical, scientific and academic centres, qualified specialists, such as engineers, architects, doctors or professors flocked to Katowice from the entire country. This group comprised the basis of the new intellectual elite of the city, which strived to ensure comfortable living conditions as a result of their high positions. They built private houses on construction parcels obtained within the Bird District, designed by hired architect taking into account individual needs, requirements and aesthetic aspirations of their customers. The efforts of the designers translated into very interesting effects in the form of unique, often avant-garde houses.

Unfortunately, the passage of time had most of the investors leaving and new house owners often did not respect the value of these sites, subjecting the houses to controversial renovations, modifications and sometimes – demolished them. The group of houses remaining in their original form is small. The initial research showed that this state is related to the fact that the preserved houses are occupied by their first, still living owners. One case, however, is different from the rest. The house at ul. Słowików, which drew attention already during the initial research with its original shape, cleverly matching the local landscape. The three storied building is characterised by a combination of two visually contrasting building blocks - massive cuboids without any windows, and a gable roof
covered with ceramic roof tiles. Numerous undercuts and partial overhangs, giving the building the impression of lightness, are also noticeable. It was purchased by the current owners after 2000. The owners indicated in the interview that their decision to buy the house was based not only on its unique architectural values, but also on its history (architect Zbigniew Weber was the investor and the author of the project) and wished to preserve the original condition of the site, if possible, while being aware of the need to upgrade it, pointing out some inconvenience related to thermal comfort.

The initial study of the biography and the works of the designer and the house investor showed that he was the creator of many known sites, not only in the Silesian Voivodeship (avant-garde religious sites stand out here, mainly), but also abroad, including the United States. Unfortunately, no publication has been dedicated to this architect so far, and the collected, fragmentary information is only an introduction at best.

The individual nature of architecture of the own house of Zbigniew Weber, the original condition of the building and the clearly related landscape management condition, as well as the biography and works of the designer-investor allowed this site to be selected as the subject of the planned case study already after initial research. Another advantage lies in the contact with the current owners of the house, open and aware of the value of owned heritage, and more importantly, eager to cooperate and to make the site available for in situ studies. The aforementioned components allowed us to assume, that the selected case of the studied site should enable almost complete studies to be performed, including various aspects: architecture, urban planning, landscape elements and the influence of lifestyle and personality of the investor on the shape of an individual, residential house.

**Archive query (Stage II)**

The archive and historical studies were related to queries made with the following institutions: National Archive, Katowice branch, Katowice City Hall Archives, Archive of the Main Board of Polish Architects Association in Warsaw. Some of the archive materials could be obtained from the private archive of the current house owners. We have collected materials related to the person of the designer and investor, his professional activity and related to the studied buildings (as i.e. project and construction documentation, drawings, archive photographs).

Documentation prepared by Zbigniew Weber in relation to his award of the Creator Status was a helpful source, ordering the scattered information about professional life of the designer and the
investor. This documentation included a description of all architectural, scientific works and the list of
the held positions. Zbigniew Weber graduated as an architecture student from the Faculty of
Architecture, Kraków University of Technology. During the 1955-1963 period, he worked at
“Miastoprojekt Tychy” design office. The 1973-1988 period of his professional life was related to
“Inwestprojekt” design office in Katowice. He is an author or a co-author of several executed
commercial, residential and religious buildings and sites, in Poland and abroad. An interesting episode
of professional activity of Weber included a yearly contract at the design agency “Berkus ASS” in
Chicago in the United States (1971-1972), where he worked in a team designing residential areas.

The archive query with the Katowice City Hall Archive led to source material partially presenting
the design process of the studied site, namely the house Weber owned. Unfortunately, the file
contained an incomplete version of project documentation from the execution stage, prepared by
Zbigniew Weber. It includes two parts: a description (technical descriptions, static calculations, bills of
materials) and a drawing part, including drawings of floor projections, cross-sections and facade
layouts. By comparing the file contents with the list of contents it could be noticed that the file is
missing an overall layout drawing, the land parcel management project and a second cross-section.

Fig. 5 Archive project documentation of the house of Zbigniew Weber, the drawing part. (a) Ground floor plan;
(b) Top floor plan.
There are still remaining sources in the form of house photographs, documenting the site from outside and inside. The photographs were taken by Weber, shortly after the end of construction works, and added by the author to the aforementioned Creator Status documentation as a graphical illustration of the design works.

**In situ research (Stage II)**

A visual inspection, as well as photographic survey, drawings and measurements were taken for the land parcel, the external shape of the buildings and for its interiors during this stage. The landscape shape and management, the external form, the composition and layout of building shapes, its spatial layout and finishing materials were studied.

The house of architect Zbigniew Weber is located in the central part of the 'Ptasie Osiedle' residential estate, at ul. Slowików, one of the main streets of this residential complex. It is surrounded by parcels occupied by one and two floor residential houses built in 1960s and 1970s. The parcel,
formed as an irregular polygon, covers an area of 907 m². It is characterised by wavy terrain, with steep (with slope angles over 30°) slopes. A narrow stream comprising a source of Kłodnica River, which flows along the north-south direction, flows through the parcel. The river flows from a discharge protected by a ferroconcrete trough, dug into an embankment. Old, large trees grow directly near the Kłodnica River. The approximately fifty years old willow growing near the northern boundary of the area is a particularly picturesque example. Varied broad-leaved trees and tall bushes grow deep within the parcel. Grass and moss grow on the ground.

The house outline was composed into the irregular landscape. From the view of the ul. Słowików the building seems to have two floors, however, the designer used the land morphology such that the building actually has three levels on the side of the garden.
The building is characterised by an extensively divided shape. Its layout includes combinations and intersections of cuboid and angular shapes. Two visually heavy shapes of different width, slightly protruding beyond the front of the ground floor, devoid of windows in the facade plane, draw attention from the side of ul. Słowików. The roof angle intersecting these shapes is visible between them, forming a spatial combination perceived as interesting. This solution has also been used in the other end of the building, on the north-western side.

The facade on the south-eastern side has also been shaped using the roof angle and cuboid forms. A significant part of the ground floor covered by the sloped roof has been moved significantly in front of the house outline, thus creating a massive overhang above the covered terrace available from the cellar level. The analysis of finishing materials led to a conclusion that vertical external walls have been covered with a lime-cement plaster with added gravel, the characteristic structure of which provides visual depth. The walls of cuboidal pylons, located near the surfaces of sloped roofs, are finished with narrow pine planks, painted in dark colours and nailed vertically. The same planks are present in the entrance facade, as a door cover and as a garage door cover. Sloped roofs are covered with red, ceramic tiles.

**Fig. 10** Photographic documentation of the house of Z. Weber from the outside (a) View of the building from the east side; (b) A perspective presenting the entire view on the garden side and on the stream side (photo by J. Bródka).
The studied building includes three levels: the basement level, partially dug into the embankment, the ground floor and the first floor. The main entrance is preceded by an entrance space provided as a terrace suspended above the embankment, leading from the driveway, on the side of ul. Słowików. The closed atrium leads directly to the imposing, open space of the living room comprising a partially cubic, single level room, partially limited by the roof slope on one side. This roof smoothly transitions into the open, top floor in the form of a mezzanine. A single staircase leads to the mezzanine, the ferroconcrete steps of which are anchored in the load-bearing wall. The bedroom area comprises a part of the topmost floor, located behind the mezzanine.
Two trapezoidal windows draw attention on the ground floor, in the living room. Their shape is dictated by the line of the roof slope. A corner fireplace is located in the further part of the living room, covered with decorative stone. The single space of the ground floor interior is closed by the dining room, where light is provided by a spacious window and glass doors, leading to the suspended terrace. A separated kitchen has been designed next to the dining room, separated with a sliding door. The ground floor also includes a toiled, a staircase leading to the cellar and a single space garage composed as a part of the building structure.

The space of the topmost floor includes two areas: the semi-open area with the mezzanine and an array of closed rooms: two bedrooms and a spacious bathroom with a toilet. The master bedroom is located inside a cuboid shape. Practical storage spaces and wardrobes are hidden in slick, cuboidal spaces created by overhanging parts of the overall shape between roof slopes.

Fig. 13 Photographic documentation of interior of the house of Z. Weber. View of the two trapezoidal windows in the living room (photo by J. Bródka).

Fig. 14 Photographic documentation of interior of the house of Z. Weber. (a) View of the living room on the hall side; (b) View of the living room on the dining room side (photo by J. Bródka).
Physical studies (Stage II)

Thermal vision studies were performed in order to study the building structure in more detail, including its potential weak points and in order to approve the adequate conservatory instructions and protective measures for the building [43]. The measurements were performed on 23/01/2020, in the evening, at ambient temperature of -2°C. The measurement was performed using a thermal vision camera FLIR E95. During the study, the temperature difference between the house interior and the surroundings was approximately 20-25°C.

Analysis of thermograms recorded on the outside of the analysed building indicates low quality of external walls in terms of their thermal insulation. Detection of infrared radiation on the inside of the building additionally revealed strong local cooling of internal surfaces of the sloped roof. Thermogram analysis indicates the presence of numerous, intense, linear thermal bridges. Geometric and structural bridges were identified among those thermal bridges. A thermal bridge present along the joint between the roof structure and the ceiling above the ground floor is particularly noticeable and manifesting as strong cooling of internal surface of the roof and of the ceiling.

Attention should also be paid to the significant disruption of the temperature field present at all joints of external ceilings, closing the overhanging parts of the building from below, with external walls – the simultaneously present here, geometric and structural thermal walls are strongly present in thermograms performed on the outside (thermograms no. 4, 6, 7, 8, 13, 14, 15).
Cooling of partitions at the joints between floors and external walls is clearly visible on the inside of the building. The oblique corners of external walls are also subjected to strong cooling, providing an example of geometric thermal bridges. The described problem also applies to corners present along the joints between ceilings and external walls. Linear disruptions of the temperature field are visible in the ceiling, above the attic – material and structural, linear thermal bridges, most likely generated by structural elements of the ceiling (thermogram 44). Spot-type thermal anomalies are also observed inside the building – they are related to the joints of load-bearing elements above the ground floor with external walls.

A significant temperature drop may also be observed on surfaces of internal partitions, caused by utility elements obscuring walls in spaces such as wardrobes. The total coverage of walls with furniture elements prevents access of hot air to internal surfaces of such partitions, translating into their cooling and as resulting in conditions promoting damp condensation.
Structural studies (Stage II)

Structural studies of the building were performed on the basis of the preserved elements of project documentation by the architect Zbigniew Weber, the performed measurement, drawing and photographic records and using the results of thermal studies. They enabled structural systems present within the described building to be studied and analysed.

The analysed building includes three levels. The lowest level – the cellar/basement level – is a box with ferroconcrete walls, 38 cm thick, cast between load-bearing, ferroconcrete pillars, which also provide the vertical frame of higher floors. The basement level cuboid is half-dug into the embankment, the average slope of which is 30°. The ceiling above the basement spaces is monolithic with the exception of one room covered with a groin vault made of bricks. The internal height of the level is 215 cm.

The middle level – the functional ground floor – is a space placed on the basement box and partially overhanging and protruding beyond the basement outline. The overhang is supported on massive, ferroconcrete binding joists comprising an extension of basement ceiling beams. The load-bearing ferroconcrete pillars have been complemented with a monolithic structural wall used as the anchor for ferroconcrete steps of a single staircase. The space between the pillars is filled by lighter walls. The sloped roof passing through the height of two levels and terminated behind the knee wall of the overhung living room draws attention. The roof, made as a steel and wooden structure, is supported on two ferroconcrete binding joists. The ceiling above the ground floor is made of prefabricated elements of the Ackermann system. The height measured inside the ground floor spaces
is 250 cm. The space above the living room (within the outline of the sloped roof) is open, making the impressive ground floor intersecting the mezzanine space located one level higher.

The first floor, clearly lower inside the level (215 cm) is characterised by different structural layouts of external walls. A brick wall erected on a ferroconcrete binding hoist is the first type. A wooden frame wall is the second type of used walls. It is used to close the slick cuboids tangent to the structures of sloped roofs. It should be noted that the second discussed solution results in a lighter partition, which is important taking into account the line of ferroconcrete binding hoists and load bearing pillars originating a level below. The ceiling above the first floor is made using the Ackermann system, with a wooden structure used above the slopes. A 50 cm tall, brick attic is present above the ceiling-roof, along its circumference.

Water is removed from open, flat spaces in two ways. The overhanging ground floor terrace and a part of the ceiling-roof above the attic is provided with openings in the attic discharging rain water to spouts. The main part of the ceiling-roof includes an opening discharging water to a protected discharge pipe running through all floors.

![Building structure diagrams](image)

**Fig. 18** Building structure diagrams (elaborated by the authors).

**User interview (Stage II)**
The interview with the site users was intended to precisely specify their needs and expectations resulting from their every day use of the house. The users were asked to point out the factors decreasing the utility value of the building in their opinion. Next, they were asked about their intentions, if any, to make changes to the building structure and to the surrounding area.

The first indicated factor, significantly influencing user discomfort, includes large heat losses (confirmed by results of the performed thermal vision study). The owners noticed that the areas directly neighbouring the joint between the sloped roofs and the ceilings are significantly colder, the same observation applied to the spaces of built recesses caused by a part of the building outline protruding outside.

They also pointed out the faulty structure of wooden windows throughout the house, also resulting in significant heat losses.

The second factor is also related to the wooden windows, with the user raising doubts regarding functionality of the trapezoid wooden windows limited by the sloped roof surface above the living room – for cleaning, the windows have to be removed from the frame, as the designer did not foresee the option to open the windows temporarily.

Taking the above into account, the owners decided to increase the thermal standard of the building, by providing thermal insulation on the sloped roofs and on external walls in the near future, as well as by replacing the wooden windows throughout the house with new windows with perfectly restored form, but with improved thermal insulation and functionality. The non-standard shapes and dimensions of window openings require windows to be individually designed and accomplished. The owners do not foresee other changes related to the functional program and the intended use of the building.

Results

The third stage includes site valorization in the aspect of condition preservation and integrity, evaluation of introduced changes, of the value and definition of potential hazards and problems. Then, the building was evaluated according to the effective regulations and standards. This stage ended with a summary in the form of clear conservatory instructions.

Site valorization
The evaluation of preserved condition included building verification in terms of three aspects: management and layout of the property garden, its shape, the condition of finishing materials and joinery, the preserved condition of the interiors in terms of their spatial assumptions and equipment.

The analysis led to the following conclusions:

- The garden is characterised by a landscape with significant terrain drops and embankments descending towards the course of the Klodnica River. A tree habitat with different species and ages was observed. According to the reconnaissance, the interview and a comparison with archive materials (photographs and project documentation), the garden preservation condition was deemed to be good. The original, brick fence with forged metal elements requires renovation (missing material in some parts).

- The house shape is varied and made of combinations of intersecting cuboids and angles. Walls are covered with plaster with added gravel and wooden facade planks. The roofs are covered with ceramic tiles. The preserved condition was evaluated as good and is influenced by: the building shape which has not been transformed and with layout conforming to the preserved archive materials. The divisions of wooden windows, finishing materials and their colours have also been preserved. The roof cover requires maintenance. Missing ceramic tiles and partial damage to wooden elements protecting the sloped roof structure are visible.

- The interior is characterised by many open spaces. The interior is finished using high quality materials (oak, larch, terrazzo, marble). The preserved condition should be evaluated as very good – the floors (wood panels), ceramics, finishing materials on walls and their original colours just require some refreshing. The preserved details, such as bespoke, designed handles, door knobs (attention is drawn to the sliding door between the dining room and the kitchen) and original, built wardrobes increase the value of the interiors.

The evaluation of introduced changes included analysis of history of building modifications from the initial condition until now, in the following aspects: land management, shape, finishing materials and interior equipment. The analysis led to the following conclusions:

- The garden landscape did not change; the plants are almost the same other than ivy reduction in the 1990s.
• In terms of shape composition and finishing, the original exterior of the building has been preserved. A VELUX-type roof window was added in the entrance facade, in the sloped roof, in 1998.

• The interior layout remains unchanged. A significant change of the intended use of the room above the garage was introduced on the first floor: from an unused cellar into a room (which was the reason why the aforementioned roof window was added). The initially open recesses formed by a part of the building shape protruding outward were also closed.

**The general evaluation** included analysis in the aspects of architectural and stylistic value, urban and landscape value, functional and utility value, cultural value:

• The architectural and stylistic value: the studied building, designed in the latter half of 1970s, is an interesting and outstanding example of detached housing architecture of the studied period, not only in terms of its architectural value, but also because of its preserved, nearly original condition. It is also a testimony of the intention of the designer to implement stylistic tendencies dominating the global architecture at the break of 1970s and 1980s.

• The urban and landscape value: the surroundings of the building combine values of valuable natural landscape and of cultural landscape. The integrity of the building and of its surroundings is a conscious decision of the architect, who designed a picturesque complex including a building with a complex shape set, providing an excellent match to the irregular landscape. Natural conditions of the parcel, i.e. the present, significant terrain level differences, steep slopes and the stream in the valley of the parcel were used, enabling zones with varied privacy levels to be shaped in the street-garden-house relation.

• The functional and utility value: the use of space by the architect ensured high functional value of the studied detached house. The clear gradation of functional zones of the house draws attention: from the open, presentable zone with the semi-open leisure space on the top floor, to the bedroom part with access to bathroom and toilet, separated by a sluice-like corridor. Cleverly hidden storage spaces in the form of wardrobes built into cuboid bays are present on the top floor. The skillful placement of window openings and visual separation of leisure terraces had the architect provide the users with privacy; if viewed from the side of ul. Słowików, from a pedestrian perspective, the house seems to have no windows.
• Cultural value: the house execution based on an individual design allows preferences and individual needs of the investor, as well as the current standards and fashion to be identified. The case of the studied site is more interesting, as the investor is also a known and reputable designer with extensive domestic and foreign portfolio, enriching the cultural context. The own house designed by Zbigniew Weber is a proof of imagination and creativity of the author, who created a unique work, not only in the local area, despite the normative restrictions.

The analysis of threats and problems included verification of factors negatively influencing the studied building. It was related to the following checks: of potential external threats and problems, potential threats and problems resulting from daily use of the house. The analysis led to the following conclusions:

• The external partitions of the house are not currently insulated, contributing to conditions promoting damp condensation inside;
• The closure of cuboid recesses of the first floor (resulting from parts of the building shape protruding outward) with wooden partitions and local obstruction of walls by functional elements results in improper ventilation and presence of damp and mould on internal walls.
• The uncut plants have a destructive impact on the building facade by pressing against the house outline.

**Assessment of the site in the view of effective regulations and standards**

Residential buildings built before 1989 need to be upgraded to ensure their conformity with the effective construction law. The main relevant regulations include the Ordinance of the Minister of Infrastructure 'On technical conditions to be met by buildings and their locations' (Journal of Laws 2019, 8th April), the Construction Law Act of 7th July 1994 as amended, of 13th February 2020. The following document is used in calculations – the PN-EN ISO 6946 Polish standard published in December 2008, related to structural components and building elements, thermal resistance and the heat transfer coefficient. The calculation method is also based on the PN-EN 13187-2001 Polish standard related to thermal properties of buildings, qualitative detection of thermal faults in the building outline and to the infrared method. The 'Act on protection and care of historical sites of 23rd July 2003' is a very important Act, which should be remembered.
The studied building does not meet the requirements related to thermal insulation and other requirements related to energy saving. Currently, effective law should be balanced with respect to the conservatory approach, said balancing act poses a significant challenge.

**Conservatory guidelines**

Conservatory conclusions developed during the previous stage were used to formulate a set of instructions providing a response to the identified problems and comprising proposed preventive activities, protecting against potential threats. The prepared instructions include both the surroundings and the internal environment of the studied site.

**External protection guidelines**

The first group includes instructions related to the external context – the land parcel area:

- The landscape, including pits and formed embankments, should be preserved;
- The dug in retaining walls of embankments (especially along the parcel boundaries) should be reinforced;
- Patency of the river (Kłodnica River) and the shore line quality should be taken care of.
- The ferroconcrete outlet portal of Kłodnica River source bed should be secured.
- Trees and bushes should be maintained and cared, regularly cut (this applies, in particular, to tall trees present directly next to the building);
- The fencing foundation should be reinforced and missing material should be replaced.

The following recommendations have been developed for the building structure:

- The layout and structure of external shapes forming the house outline should be protected;
- The terrace above the overhanging part of the building and the ground floor terrace should not be covered.
- The present, flat roofs may not be modified/expanded into sloped roofs;
- The height of attics influencing perception of shape ratios should be retained. The attics may not be raised.
- No new window or door openings are permitted in all external surfaces of the building.

**Internal protection guidelines**
The performed physical examination indicated a problem related to building freezing. The first group includes instructions intended to improve the thermal standard of the building:

- Providing thermal insulation of external walls on the inside using cubes with a heat transfer coefficient of 0.045 W/(mK);
- The ceiling-roof should be insulated using mineral wool or foam with a heat transfer coefficient in the range of 0.030 W/(mK) – 0.045 W/(mK);
- The sloped roofs (attic) should be insulated on the inside using mineral wool with a heat transfer coefficient in the range of 0.030 W/(mK) – 0.045 W/(mK);
- Air circulation should be improved using hygro-controlled window inlets.

Other instructions are related to retaining the original structure, details and interior layout:

- The interior layout, namely room ratios and heights, should be protected;
- It is recommended to restore the original partitions on the first floor, namely to remove the light wooden structure with doors, separating the heated rooms from the storage space in recesses resulting from the overhang of external parts of the building. This recommendation is related to the assumed restoration of thermal balance in the interiors and in partitions and elimination of the destructive impact of closing the recesses.
- Large functional equipment should be moved away from external walls. This recommendation is related to the assumed restoration of thermal balance of the partitions;
- It is recommended to follow the drawing instructions of the designer, related to furniture placed inside the functional space, included in the project documentation.

**Discussion**

The performed studies and obtained results provided a good basis for discussion regarding the undertaken research problem, the accepted research methodology, the obtained results and their usefulness.

**Discussion of the research problem.** The performed studies showed that the research problem undertaken by the authors, namely the need to supplement the current knowledge about the architectural heritage of modernist, detached residential houses from the second half of the 20th century in Poland and to develop a model conservatory procedure remains important and current:
• The analysis of current knowledge (both of subject literature and unpublished materials) proved that studies dedicated to modernist architecture neglect the topic of individual houses.

• Analysis of archives showed a rich pool of resources, which requires ordering and publishing.

• The initial architectural analyses also indicated the high value of the studies sites as a modernist cultural heritage.

• On-site studies revealed significant threats to the studied sites in the current state of unavailable legal protection.

**Discussion of the accepted research methodology.** The accepted methodology is derived from theoretical scientific assumptions and from the accepted, conservatory perspective.

• The presented studies accepted a general, qualitative method, enabling detailed identification, analysis and evaluation of the subject of the study.

• An approach resulting from the widely accepted theory was also accepted. It proved to be useful, as research assumptions and hypotheses could be formulated and partially verified during field collection of information and analysis of materials.

• A single case study was accepted as a detailed study method, enabling thorough study of the selected site using multiple information sources, various techniques and research tools. The case study also allowed to verify the accepted research methodology.

• The accepted conservatory perspective of the study was derived from the conservatory approach, which assumes protection of site value and integrity, while it remains open to their correct upgrades and adaptation to modern conditions and standards.

The performed study included three stages:

• The initial study (stage I) provided the basis for the research problem, enabled verification of initial hypotheses and assumptions and selection of criteria for selection of a site for the case study.

• The detailed study (stage II) included the entire study of the selected site (archives and field studies) using various techniques and tools.

• The last stage of the study (stage III) is the final valorization of the site according to the synthesis of the performed studies and preparation of conservatory guidelines.
The pilot case study presented in this publication proved effectiveness and correctness of the accepted research methodology. It allowed a complete image of the site and of its context to be built, thus providing the basis for evaluation and indication of a conservatory procedure. The accepted methodology is thus effective, and its comprehensive nature allows it to be used in future studies. The applied methodology is also of framework (open) nature and may be easily adapted through expansion or reduction of its elements. Thus, the objective of this work in terms of research development was achieved.

**Discussion of achieved results and their usefulness.** The achieved results of the case study are complete and exhaustive, confirming correctness of research methods, techniques and tools, and correct selection of the site as the study objective.

- The study allowed to collect and prepare archive materials.
- Detailed in situ studies were performed, together with evaluation of the preserved condition and introduced transformations of the site.
- An analysis of hazards and of upgrades needed was performed.
- An recommendations package intended to protect the site (conservatory guidelines) was prepared and limits of possible transformations required from the point of view of modern standards and legal requirements.
- The achieved results are directly useful to the owners of the site, who plan a building upgrade with full respect of its value.
- The prepared guidelines package may also be treated as a model in terms of structure.

In a summary, the presented studies confirmed correctness of the presented research problem, correctness of the accepted methodology and allowed the approved objectives of this work to be achieved.

**Conclusions**

Currently, the architecture of the second half of the 20th century, born behind the Iron Curtain, has ceased to be treated as a "dissonant" heritage, but still remains at risk of neglect and destruction. Particularly difficult is the situation of private single-family houses, which are not under conservation protection and are undergoing an uncontrolled transformation.
The presented case study is an attempt to develop a model of complex conservation processes regarding landscape, urban, architectural and structural aspects that can be used in a variety of cases. This process also includes increasing the comfort and quality of residents’ life in accordance with modern standards.

The presented studies confirmed the correctness of the presented research problem and of the accepted methodology, and allowed the approved objectives of this work to be achieved.

Furthermore the study launches the perspective for future research development. These studies signalled an important research problem with enormous growth potential in regards to the research, but also in terms of application of results and promotion of knowledge. The perspective of studies on architecture of detached houses from the second half of the 20th century, previously not undertaken, remains open, and the increasing interest in the topic of modernism may facilitate the growth of research.

The need to protect the threatened heritage of modern culture, including the studied object, provides a real dimension for a continuation of studies in this field. The legal environment, including stipulations of the Act on planning and spatial development (Journal of Laws 2003 No. 80 item 717 of 27th March 2003) clearly indicate the obligation of the municipality in terms of creation of “rules of protection of cultural heritage and historical sites, including cultural landscapes and resources of modern culture” (art. 15). Future studies and their results may become in this perspective a basis for creation of such rules.

The development of research may also contribute to promotion of knowledge of cultural heritage and raising social awareness related to said heritage, which is a factor supporting heritage protection.

**Declarations:**

**Availability of data and materials:**

The archives plans (fig. 5. Fig 6.) analysed during the current study are available in the Archive of the City of Katowice repository, [https://bip.katowice.eu/UrzadMiasta/Rejestry/dokument.aspx?idr=94840&menu=653]. Dataset derived from public resources and made available with the article. Data sharing is not applicable to the rest of this article.
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