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# HISTORICAL COLOUR SCHEMES OF ARCHITECTURE: SELECTED METHODS OF PRESENTATION

## HISTORYCZNA KOLORYSTYKA ARCHITEKTURY: WYBRANE SPOSOBY EKSPOZYCJI

A b s t r a c t

Paint research aims to detect the colour schemes used in architecture whether they be the original colours from when the structure was new or schemes used for repainting and renovations. Discoveries, often partial, may result in making difficult decisions since we have to select polychromes worth preserving and to choose the best method to present them. In the following paper, selected examples of the presentation of original colour schemes from Silesia, Lower Austria, Saxony and Brandenburg are discussed.

*Keywords: colour, elevation, conservation Silesia*

S t r e s z c z e n i e

Badania stratygraficzne mają na celu określenie pierwotnej kolorystyki oraz wtórnych przemalowań. Dokonane odkrycia, nierzadko fragmentaryczne, mogą wymagać podjęcia niełatwych decyzji: co warto zachować, co i w jaki sposób eksponować. W artykule zaprezentowano wybrane sposoby ekspozycji historycznej kolorystyki elewacji ze Śląska, Dolnej Austrii, Saksonii i Brandenburgii.

*Słowa kluczowe: barwa, elewacja, konserwacja, Śląsk*

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# 1. Introduction

Examinations of original colours of architecture date back to the late 17th century, when colour schemes of ancient ruins were examined in Herculaneum and Pompeii. In Silesia, paint research probably took place in the 19th century and at the beginning of the 20th century[1]. After 1945, original colour schemes of exteriors were seldom investigated and it was not until the mid 1990s that paint research became an integral part of the examination of monuments especially when the aim is the preservation of monuments closer to their original state[2].

The value of historic colour schemes is obvious to some conservationists whereas others underestimate it[3]. As a result, the research and conservation of historical colour schemes remains under discussion, and little has been done to examine them despite paint loss and the deterioration of finishes. Nonetheless, due to decisions made by some public officials, numerous exteriors have been examined in the last twenty years in Silesia in order to both identify original colour schemes and those used during repainting – some of these schemes have been reused during renovations.

The successful determination of colour schemes from all eras depends on a few factors such as the amount and condition of remnants of the original coloured substance (e.g. paint) and also on the scope and methodology of examinations. It happens that an examination allows establishing the colour scheme of the first chronological phase of all parts of a building (usually from the time of construction), but it may also happen that these discoveries are partial; thus, different methods of the preservation and presentation of findings are used in practice.

The following article presents several cases illustrating different approaches towards presentation of the original colour schemes. Field studies were conducted in the years 2010–2013, mainly in Silesia, but also in Lower Austria, Brandenburg and Saxony[4].

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[1] The beginnings of paint research and attempts to preserve original colour schemes may vary from country to country. For example, research on historic colour schemes took place in Germany in the 19th century, but regular examinations of exteriors commenced in Austria and Germany in the late 1960s and mid 1970s, respectively [2]. More data on this subject is also available in the conference materials on paint research in architecture, including the volume: Line Bregnhoi, Helen Hughes, Jenni Lindbom, Tone Olstad and Edwin Verweij (eds), International Conference on *Architectural Paint Research in building Conservation*, Copenhagen 8–11 May 2005, London 2006.

[2] Research did not uncover documents from before 1945; however, there are sporadic comments on examinations conducted before 1945 in literature on Silesian architecture [8]. Data on post-war examinations was collected by the author in 2010–2013 during doctoral studies at Wroclaw University of Technology. Results were published in [2].

[3] The issue was discussed by conservationist, architects and artists, including Marian Arszyński [1], Edmund Małachowicz [9], Sławoj Dreszer [5] and Maria Wojtysiak [10].

[4] Case studies were collected during doctoral studies that focused on historic colour schemes of Wroclaw and Lower Silesia. Further research in other regions may reveal different methods of presenting original colour schemes. For example, examinations of entire rows of buildings could increase our knowledge on methods of treating whole streets and districts of the past in terms of colour and prove on what scale theoretical guidelines on colour by F C Schmidt and others were used in practice.

## 2. Presentation of historical colour schemes

Field studies revealed a few methods of presenting historical colour schemes:
– presentation of original colour schemes;
– presentation of partial colour schemes from the first chronological phase;
– presentation of later repainting;
– presentation of partial colour schemes from different chronological phases;
– presentation of small samples as evidence of original colours.

The preservation of historical colours also includes the recovery of lightness and saturation of a certain hue – this is discussed at the end of the article.

### 2.1. Presentation of original colour schemes

As previously mentioned, an examination may be successful and colours of all parts of a building from the first chronological phase may be identified. In such cases, we know what colours were applied to the wall surfaces and to the architectural details, window frames, doors and other items such as guttering, railings etc. Once the original colour scheme of a monument is discovered, the decision is often made in favour of restoring it; however, it is easier to make such a decision in cases where refurbishments and alterations do not require any rebuilding.

Such a restoration as that described above took place at the former Pokoyhof department store at 2-4 ulica Świętego Antoniego in Wroclaw. The building was erected in 1910 and since then, the only significant damage to have occurred was the destruction of the stone details of the entrance area – these were destroyed during the Night of Broken Glass in 1938. The examination of the exterior walls and courtyard was conducted in 2010[5]. It was revealed that originally, the ground floor of the façade was covered with travertine. Above the ground floor, the light grey plaster imitated stone with regard to both colour and texture. A grey hue was achieved by adding an organic black pigment, probably charcoal, to lime. The examination revealed that panels below windows were decorated with glazed green and gold mosaics made of 2 cm × 2 cm squares [2]. The discovered original colour scheme was resorted during recent refurbishment (Ill. 1).

### 2.2. Presentation of partial original colour scheme

Presentation of the partial colour scheme may occur in a few cases, this often happens if the examinations have revealed only partial findings; however, this approach to the presentation of colours has also been spotted on some buildings that have been rebuilt and have therefore lost their original form. In such cases, colours aimed to indicate the building's original form. This solution has also been spotted on buildings on which the discovered original colour scheme was mixed up with contemporary colour schemes.

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[5] Examiantions were conducted by Agnieszka Witkowska.

Ill. 1. Wroclaw, ulica Świętego Antoniego, 'Pokoyhof' – the former department store from 1910 after recent refurbishment to the original colour scheme

As mentioned above, it happens that the examination of original colours achieves partial success; often, either the colour of the wall surfaces or the colour of architectural details is detected In such cases, colours that were sometimes discovered were combined with colours that were considered by conservators, architects or public officials as the most suitable.

For instance, an examination of the Baroque Hochberg Chapel in Wroclaw revealed partial information about the original colours – the wall surfaces were painted red[6]. The conservator who conducted examinations suggested a two-coloured colour scheme (red and white) as the stone sculptures, according to written sources, were painted white [4, p. 119][7].

Furthermore, buildings are often rebuilt, expanded and allocated different functions throughout the centuries. As a result of this, an original form may no longer exist; therefore, the restoration of colour schemes from the time of the erection of such a building may be in question. However, it seems that the original colour scheme may also serve as the only witness to a building's origins.

A dwelling at the Market Square in Eggenburg, Lower Austria, is an example of a rebuilt building with the restored original colour scheme. The dwelling of medieval origins has probably been refurbished several times since the Middle Ages so the character of the late Gothic residence vanished. With time, the doors, windows, and window surrounds have been replaced with a newer design, the roof windows were also added. As a result, only the restored colour scheme, dating back to 1450, reminds us about the building's medieval origins (Ill. 2).

Despite the discovery of a complete, original colour scheme, it can happen that an original colour scheme is not restored, or at least not fully resorted – as a result of this, an executed colour scheme can be a mixture of both historic colours and colours that are the personal preferences of key individuals, usually architects, conservators, public officials or investors. The other factors that influence the choice of colours may be the price of paint or, for example, an attempt to match the building with its neighbourhood.

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[6]  Examinations were conducted by Piotr Wanat.

[7]  However, the chapel was painted yellow and white during its last refurbishment.

Ill. 2. The dwelling of medieval origin in the Market Square in Eggenburg, Lower Austria.
Photo by the author



Ill. 3. Examples of colour schemes based partially on historic data and partially on other factors such as personal preferences of key individuals – the Baroque dwelling at 12 ulica Kuźnicza, Wroclaw (left) and the modernist observatory at 11 ulica Kopernika, Wroclaw (right). Photos by the author

A combination such as that described above is currently visible on a dwelling at 12 ulica Kuźnicza, and on the observatory at 11 ulica Kopernika, both in Wroclaw. According to the results of paint research, a monochromatic colour scheme was applied to the exterior at 12 ulica Kuźnicza in the first and second chronological phases, these were green and red, respectively[8]. The wall surfaces and the stucco works were originally painted light green, close to 9385/9369 in the KEIM colour chart. It was not possible to establish the original colour of stone components due to the poor condition of paint remains [2]. As previously mentioned, red was established as a colour of the second chronological phase. A two-coloured scheme of green and red that combined results from both phases was designed during the refurbishment and finally applied to the façade. In this way, a new composition was created which was unproven by paint research (Ill. 3).

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[8] Examinations were conducted by Piotr Wanat.

A similar effect to that applied at 12 ulica Kuźnicza was achieved on the elevations of the observatory at 11 ulica Kopernika. The observatory was erected in the first half of the 20th century and its colour scheme, as presented on the original design, represents a colourful trend in Modernist Movement architecture[9]. Red and blue horizontal stripes were juxtaposed with white in between them. Blue was also intended to be on the observatory dome; however, blue was replace with green on the elevations and on the copper dome during recent refurbishment (Ill. 3).
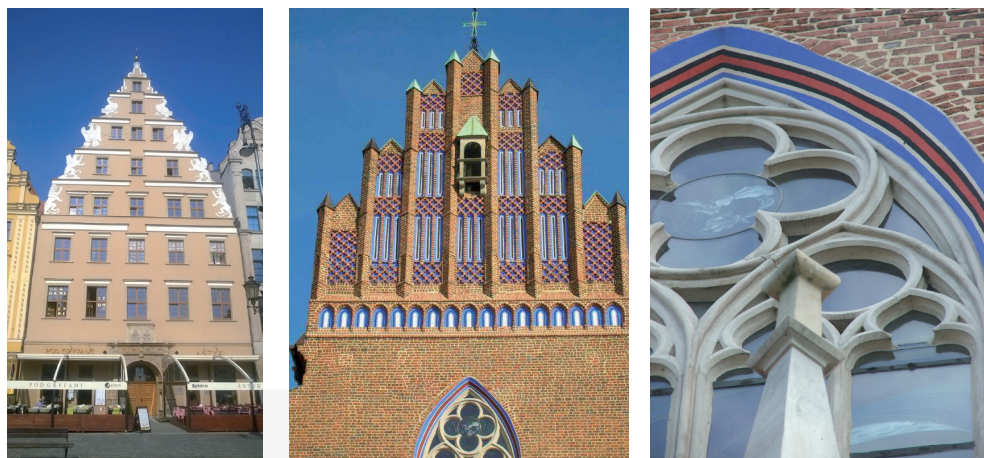
## 2.3. Presentation of later repainting

Due to a lack of original substrates or poor methodology of paint research, it can happen that examinations only allow the identification of colours from later chronological phases which are not stylistically connected with the form of a given building or its original ornamentation. As a result, it may happen that repainting form later chronological phases is restored. For example, this happened at the dwelling at 2 Rynek in Wroclaw. The façade of medieval origin was rebuilt in the late Renaissance and it is a rare example of the Mannerism style in Wroclaw. Primary sources indicate that the façade has been repainted several times since then. In the 17th century, the walls were repainted and in the 18th century, they were whitewashed and repainted with, probably, black, green and ochre colours – this is assumed on the basis that such pigments were mentioned on a receipt [2]. During renovation in 1935, it was estimated that the façade originally was two-coloured in blue and yellow [8]. Examinations were conducted in 2011; however, due to very few remains, they did not yield complete results[10]. The conservator who conducted paint research discovered remains of pigmented plaster with charcoal, and traces of light blue and dark ochre paints; however, it was not possible to connect these findings with certain chronological phases. The first colour scheme which was possible to identify and put an approximate date to was the beige colour scheme from the 19th century. This colour scheme was applied to the Mannerism building during the last refurbishment (Ill. 4).

A similar situation to that presented above applies to remains of old polychrome that were detected on the medieval façade of Corpus Christi church at 26 ulica Świdnicka in Wroclaw[11]. However, the conservator who examined the building estimated that all the discovered plaster comes from later refurbishments. Light creamy, lime-sand plaster with paint on top was detected on the arch of the front lancet window. There were traces of black, blue and red stripes emphasising the form of the stone arch. Traces of blue were also detected on the upper part of the gable. The conservator suggested that these polychromes were introduced in 1927. During recent refurbishment, the Neo-Gothic polychromes were restored on the medieval church (Ill. 4).

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[9]   Building Archive, Museum of Architecture, Wroclaw, call number 1535/31138.

[10]   Examinations were conducted by Agnieszka Witkowska.

[11]   Examinations were conducted by Piotr Wanat.

Ill. 4. Examples of presentations of later repainting – the Mannerism façade of a dwelling at 2 Rynek, Wroclaw and the 19th-century colour scheme (left); the medieval Corpus Christi Church at 26 ulica Świdnicka, Wroclaw and later polychrome, probably from 1927 (middle and right). Photos by the author

## 2.4. Presentation of partial colour schemes from different periods

Buildings are usually rebuilt and expanded in the architectural styles and painted colours popular at the time of refurbishment. It can happen that conservationists decide to simultaneously expose two or even more discovered colour compositions, all of them be the original colour schemes of particular extensions of the building. We can see such solutions on churches with porches that were added sometime after the initial construction such as the Franciscans church in Vienna City Centre and Corpus Christi church in Wroclaw. The Viennese church has a Renaissance façade covered with blue-grey imitation of stone, whereas the Baroque portico is painted ochre and white. Similarly, the medieval brick façade of Wroclaw church was differentiated from the 19th-century brick porch by the colours of the mortar joints. The conservator who examined the Wroclaw church estimated that the medieval joints of the first chronological phase were light cream, and of the second chronological phase, were yellow or ochre[12]. Added in 1875, the Neo-Gothic porch was decorated with cherry-red pigmented mortar joints. The colours of joints were reproduced to the original colours, in accordance with the style in which both the main building and the adjacent porch were originally erected (Ill. 5).

The above solution seems to be easier to identify and understand by a passer-by when different colour schemes are applied to the clearly separated, different parts of a building such as the churches with added porches discussed above. However, it may also transpire that two different historic colour schemes are applied to the building that is a one solid block. As a result, such a solid block with a flat surface is divided into smaller parts by means of colour. Such a solution was spotted on dwellings in the suburbs of Vienna and in Rust am See, Lower Austria. Two two-coloured schemes were restored on a rectangular building

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[12] Examinations were conducted by Piotr Wanat.

Ill. 5. Examples of presentation of colour schemes form different periods – the Franciscan church, Old Town, Vienna (left); Corpus Christi Church, 26 ulica Świdnicka, Wroclaw (middle and right). Photos by the author



Ill. 6. The dwellings in south Vienna (above) and in Rust am See, Lower Austria (below). By introducing two different colour schemes to a flat surface at the same time, the building is divided into smaller parts. Photos by the author

in south Vienna. A 16th century colour scheme is restored on the east end of the building: grey plaster covers the surface of the wall and white is applied to the architectural details; whereas the west end of the building is painted ochre and white, imitating architectural details (Ill. 6). A similar presentation method with two different colour schemes on one flat elevation is visible on a dwelling in Rust am See; however, while standing at a distance from the building, we can notice a difference in the height of each end of the roof that somehow explains the change of colour scheme. The ground floor and part of the first floor above the entrance door is covered with an ochre block imitating stone. The remain part of the first floor is a light grey-yellow, additionally decorated with grey and white friezes. Brown is applied to all of the window frames. In both cases, the colour of the roof and the cornice somehow unify the whole building (Ill. 6).

Colour schemes that are composed of various elements from different chronological phases – pieces that were applied in different centuries and were attributed to different styles – may in fact create a new composition that is more or less clear to passers-by. This way, all the valuable remains are saved, preserved and exposed, but the completely new composition may in fact be slightly chaotic. Such a solution was spotted on the back wall of a dwelling in the Old Town in Vienna – the entire wall is covered with various elements from the Middle Ages and the Renaissance. Similarly, the façade of a dwelling in Perchtoldsdorf, Lower Austria was decorated with items from different phases: black and red window surrounds; black, yellow and white window surrounds; white window surrounds; a multi-coloured corner rustication, a multi-coloured cornice; a yellow and green wall surface – yellow imitating stone blocks and green imitating mortar joints (Ill. 7).

Ill. 7. The details of elevations of dwellings in central Vienna (the upper row) and Perchtoldsdorf, Lower Austria (the lower row) – the colour compositions are an effect of juxtaposing various remains of polychrome from different phases and styles. Photos by the author

Ill. 8. Samples of original substrates presented as evidence in Wroclaw, Berlin, Vienna and Wiener Neustadt. Photos by the author



Ill. 9. Traces of historical polychrome on dwelling in Heiligenstadt, Vienna and remains of Renaissance sgraffito in the Old Town in Prague. Photos by the author

## 2.5. Presentation of small samples as evidence of original colours

Small pieces of the original substrates, plaster or paint, are sometimes exposed on a very small surface, and since those samples are not part of the applied colour schemes, they are usually exposed in a less visible area, such as the back elevation or a corner of a façade (Ill. 8). However, it may happen that original polychrome survived only in a much more exposed place, such as the centre of the front elevation. Here, depending on the method of presentation of the survived remains, such presentation may make an impression as being rather accidental, especially in case the exposed sample does not follow the structure of a whole façade (Ill. 9). Such samples are only partial, yet, this way we are able to at least see on a very tiny area what the original colour may have looked like.

## 2.6. Restoration of colour, its lightness and saturation

Apart from the composition, a restoration of the original colour scheme is also connected with the proper restoration of the original shade of a certain hue, its lightness and saturation, and finally, texture of the earliest finishing material.

Therefore, a restoration of the original colour scheme may consist of a sample of original coating. In this way, original and restored polychromes are usually differentiated by saturation and/or lightness of the same hue (Ill. 10).



Ill. 10. Original remains incorporated into restored colour schemes: dwellings
in Wienier Neustadt (left) and in Görlitz (right). Photos by the author

Examinations of the exterior of Wroclaw Town Hall allowed the partial estimation of colour usage in the third and fourth chronological phase, dated to the late Middle Ages[13]. Although it was not possible to trace the original medieval wall painting, it was estimated that at that time, the wall surfaces were painted a red hue, close to iron red. During the last refurbishment of the south elevation in 2009, paint was applied the way the background layer could be see-through into a rough, wave-like surface, imitating a medieval polychrome as much as possible in every aspect (Ill. 11).

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[13]  Examinations were conducted by Katarzyna Polak.

Ill. 11. The partial reconstruction of medieval polychrome on the Town Hall in Wroclaw – the south elevation covered with wave-like whitewash and painted transparent iron red. Photos by the author

## 3. Summary

The above examples of presenting original colours of exteriors were discovered during field studies conducted in Silesia, Lower Austria, Brandenburg and Saxony in the years 2010–2013. The examined methods of presentation are highly varied and range from fully restored compositions and partial reconstructions, to tiny samples presented as evidences of original colours.

Numerous monuments were preserved closer to their original state while including a colour scheme; however, communication with conservationists revealed that, despite the fact that the preservation of the original colours was highly valued by seniors of the Polish post-war school of conservation, the reconstruction of historic colours invariably proves to be difficult because the personal preferences of all the parties involved in the refurbishment process of a monument still tend to dominate over historical discoveries.

To sum up, generally speaking, conservation serves a monument in two ways, either through the reconstruction of the original structure or by the preservation of the state of a monument at the time of refurbishment. However, the above discussed samples prove that consideration towards colour remains insufficient in the conservation process.

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