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Exterior Plasterwork in Gdynia's Modernist Architecture and Its Preservation

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Introduction

Poland's modernist architecture of the late 1920s and the 1930s applied a great variety of façade finishing materials.[1] Various types of natural stone and ceramic or cement brick were popular, along with multiple types of cladding, including ceramics and concrete. An important role in modernist building exterior finishes was also played by various plasters which made it possible to decorate and diversify the façades.

Customised and oftentimes very striking finishes were obtained using special plaster mixes and decorative work on the façade surface. Excellent results were achieved through a special application of stucco mixes used as a finishing coat on a previously prepared backing coat. The stuccos consisted of specially selected ingredients, including single- or variously-coloured aggregate of a specific size, pigments to provide the mix with distinctive and durable colours and an appropriate binder.[2] Façade finishes came in a wide range of types and varieties. On top of that, there were various plastering techniques and many finishing methods at the various stages of setting and hardening. Plasterwork's excellent visual effects were made possible by the highly skilled building craftsmanship of the time.

The construction material market in 1930s Poland provided a large selection of ready-to-use plaster mixes made by small manufacturers and huge factories alike. Generally sold in 50 kg bags, dry mixes required only to be mixed with water at the construction site.[3] Manufacturers offered exclusive mixes with flamboyant trade names such as Terrabona, Terrazyt, Novozyt, Litozyt or Felzytyn. The ingredients of the plaster mixes were often a trade secret, with some solutions patent-protected.[4] Various product descriptions and advertisements of stucco manufacturers, published in the trade magazines of the time including *Przegląd Budowlany*, *Architektura i Budownictwo* and *Arkady*, are proof that this type of finish was extremely popular. Many articles in construction magazines provided information about render types along with on-the-job tips.[5] In a 1939 advertisement, one of Poland's largest plaster producers, the Felzytyn & Trocal Industrial Plant of Lubartów, announced: "this season we have produced 1,450,000 kg of Felzytyn stucco."[6] This means an impressive quantity of 29,000 bags at 50 kg each of this type of plaster alone.

Historically, the use of stuccos in Polish architecture has a very long-standing tradition.[7] Devoid of façade detail in the historical sense, modernist architecture had worked out new decorative ways of using stuccos. This is relevant not just to buildings in Gdynia but also all over Poland. To quote a fragment of a 1930 article which praised the Felzytyn stucco: "architecture has categorically rejected needless ornamentation. We now encounter only large unbroken façade surfaces. Therefore, an immense scope is opening for the use of Felzytyn, whose technology enlivens and enhances the new façade style, down-to-earth in character and yet in tune with artistic requirements.[8]" Several decades on, one may say that the stuccos made in the 1930s are indeed very often of an individual character, representative only of modernist architecture.

The significance of exterior plasterwork in the architecture of 1920s and 1930s Gdynia

Façade plasters played an important part in the modernist architecture of Gdynia, whose beginnings date back to the late 1920s and the 1930s. The city's dynamic development in the 1930s caused the number of new buildings to increase very rapidly. At the time, despite the availability of various façade materials, plastering was definitely the most frequently used as the final finish for Gdynia's modernist buildings. In the most densely built-up, central part of the city, other façade finishes were occasionally used. By the outbreak of World War II, the number of buildings

1. The subject of modernist façades was addressed, among others, by: Lewicki Jakub, *Kolorystyka architektury modernistycznej w Polsce*, [in:] *Kolorystyka zabytkowych elewacji od średniowiecza do współczesności. Historia i konserwacja*, Proceedings of an international conference on the 30 years of the Warsaw Old Town's inscription on the UNESCO World Heritage List, Warsaw, 22-24 September 2010, Publ. KOBiDZ, Ed. K.Guttmejer, Warsaw 2010, pp. 213-224. The author suggested that modernist façades should be categorised by material and structure. The subject of Gdynia's modernist façades was introduced in an article by Huk-Malinowska Izabela, Kriegseisen Anna, *Problematyka konserwatorska elewacji gdyńskich kamienic modernistycznych*, [in:] *Architektura pierwszej połowy XX w. i jej ochrona w Gdyni i w Europie,* eds. M.J. Sołtysik, R. Hirsch, publ. by Urząd Miasta Gdyni, Gdynia 2011, pp. 315-318.
2. Mielnicki Stanisław, *Materiały budowlane,* Wiedza-Zawód-Kultura, Kraków 1946, pp. 203-204.
3. Nechay Jerzy, *Wyprawy szlachetne i kamień sztuczny,* Państwowe Wydawnictwa Techniczne, Warsaw 1951, p. 54.
4. For example, Patent 13907, granted in 1931 by the Polish Patent Office, in which the subject of invention was described as "coloured render, intended to coat building walls, walls and other similar structures, characterised by great durability".
5. From among the articles in trade magazines, one can mention a sizable text by Bobieński M. *Szlachetne wyprawy fasadowe,* "Przegląd Budowlany", No. 3, 1931, pp. 103-108.
6. Full-page advertisement published in "Przegląd Budowlany", No. 5, 1939, no page number.
7. For example, the widely-known multi-coat decorative sgraffito render had been used in Poland's Renaissance architecture. The subject of historical plaster finishes and their restoration was addressed, among others, by Płuska Ireneusz, *Zabytkowe tynki - aspekt techniczny i estetyczny,* [in:] *Kolorystyka zabytkowych elewacji od średniowiecza do współczesności. Historia i konserwacja*, Proceedings of an international conference on the 30 years of the Warsaw Old Town's inscription on the UNESCO World Heritage List, Warsaw, 22-24 September 2010, Publ. KOBiDZ , Ed. K. Guttmejer, Warsaw 2010, pp. 301-315.
8. Friedman Arnold, *Felzytyn, wspaniała ozdoba elewacji,* "Przegląd Budowlany", No. 8, 1930, p. 580.

1. *Felzytyn company stand at the 1936 Gdynia Fair, "Przegląd Budowlany", No. 7, 1936*

with natural stone clad façades was about a dozen. There were only individual instances where cladding tile or brick was used on larger façade surfaces.[9] Therefore, exterior plasterwork, better known at the time as "façade rendering", was of great architectural significance. For hundreds of Gdynia's modernist buildings, the plaster finish became one of the key components of their architectural form.[10]

Popular stuccos, known all over Poland and made by recognised manufacturers, including: Felzytyn, Skalenit, Litozyt, were used on Gdynia's construction sites, especially in the second half of the 1930s. The names of stuccos were oftentimes provided in the building design descriptions. Stuccos were also advertised in Pomerania's daily newspapers, such as for example the *Gazeta Gdańska*. The popularity of the stuccos in Gdynia was also contributed to by the Gdynia Fair, organised in Gdynia in 1936 and 1937,[11] with several exhibitors presenting them at their stands. The well-known local Elewacja Company, with its head office at Morska 49 in Gdynia, advertised itself as "Pomerania's premier stucco factory", displaying products including faux stone.[12] The exhibitors also included the Felzytyn & Trocal Industrial Plant[13] (Fig. 1), which at the time already had its branch in Gdynia at Świętojańska 71. In the late 1930s, the previously mentioned Litozyt company of Krzeszowice also had its representative office in Gdynia, Świętojańska 49. The importance of stuccos for the construction industry was symbolically emphasised in a 1930s press advertisement. The local Litozyt representative advertised its products in *Gazeta Gdańska* with this slogan: "The value of your house will increase if you plaster it with top-class LITOZYT façade render". The slogan was located next to a drawing of a plasterer at work[14] (Fig. 2). All this proves the enormous popularity of various façade finishes in the local construction market.

Gdynia's surviving historical modernist buildings make it possible to distinguish a number of exterior plaster finishes. But it needs to be said that the original renders on Gdynia's late 1920s and 1930s modernist buildings have survived only to a limited degree. Many façades had been destroyed during World War II, while post-war renovation over a period of several decades did much to erase pre-war solutions. Any analysis of the surviving plaster finishes has been made difficult by both the passage of time and natural wear. In many cases, an interesting artistic effect was achieved by setting ordinary plasters against various other materials. These plasters were not always enriched

9. As per the author's findings.
10. The use of decorative renders on Gdynia's façades can be observed already in the 1920s. The buildings of the time, with historically flavoured forms and ornaments, rich in architectural detail, were often additionally decorated with special types of plaster finishes. In buildings with rich architectural detail, decorative render was used mainly to emphasise details including portals, pillars, pilasters, rustication, balusters, cornices, trims, etc.
11. Mikołajczuk Barbara, *Targi Gdyńskie,* "Rocznik Gdyński", No. 11, 1992/93, pp. 111-115; Gątkiewicz Zbigniew, O *przedwojennych Targach Gdyńskich,* "Rocznik Gdyński", , No. 13, 1998, pp. 99-102 (p. 99).
12. *Targi Gdyńskie - 20.VI - 4.VII.1937 r. Przegląd stoisk,* "Przegląd Budowlany", No. 7, 1937; Mikotajczuk Barbara, op. cit., p. 113.
13. *Targi Gdyńskie - 20.VI - 4.VII.1937 r. Przegląd stoisk,* "Przegląd Budowlany", No. 7, 1937.
14. "Gazeta Gdańska", No. 200, 31 August 1937.

2. *Litozyt stucco advertisement, "Gazeta Gdańska", 1937*

with any special ingredients. Apparently, it is sometimes difficult to work out if the preserved render, covered with many layers of paint, is a stucco or ordinary plaster shaped in a more decorative way.

When identifying modernist building finishes, it is very helpful to refer to the construction literature of the 1920s, 1930s and the post-war period, when traditional plastering techniques were still in use.[15] The analyses of Gdynia's surviving exterior plasterwork, in comparison with the original contracting reports, allow us to distinguish several main types of façade finishes used in the 1930s. The finishes described below have been divided by plastering technique, in other words mainly by the observable visual and technological features related to the rendering process. In order to characterise each type of finish and the related preservation issues, an attempt has been made to answer the following questions: What types of plaster were used and in which parts of the façades? What decorative effects was the plaster used to achieve? What problems are currently related to plasterwork restoration and what restoration experience has been gained in Gdynia?

The main types of Gdynia's exterior plasterwork

FLOATED FINISH

Floated rendering was the most widespread and simple to make; wood or metal floats were used to rub down the surface for a smooth finish, owing to the use of fine-graded aggregate.[16] These plasters could be refined by adding pigments or light-reflecting mica for a sparkling effect. Juxtaposed with other finishes, the light-coloured and smoothly rendered surfaces worked perfectly on the façades of the simply-shaped modernist buildings. The compositional significance of ordinary floated plasters was to be observed already in Gdynia's first modernist buildings. In the Port of Gdynia, the Rice Mill (Łuszczarnia Ryżu) building complex was launched on 1 May 1928,[17] with its façades composed of horizontal strips finished alternately with smooth plaster and red brick. The plaster finish applied here worked mainly by

15. See for example Nechay Jerzy, op. cit., pp. 203-204; Żenczykowski Wacław, *Budownictwo ogólne,* Vol. IV, Arkady 1970, pp. 447-450.
16. In terms of aggregate size, renders are classified into fine-grained, with 0-2 mm grains, medium-sized, with grains of 1-3 mm, and large-sized, with grains of 3-5 mm or more, see for example Nechay J., op. cit., p. 55.
17. Hordyński Roman, *Przemysł w Gdyni,* [in:] *XV lat polskiej pracy na morzu,* Ed. A. Majewski, Gdynia 1935, p. 167.

3. *Detail of the 1928 Rice Mill building façade, where ordinary plaster finish was contrasted with face brick, status as at 2012*

4. *Rubbed Tyrolean render in yellow, in composition with red faux stonework render on a building façade at Chylońska 39, Gdynia*

5. *Tyrolean render applicator used to restore the façade in Gdynia*

being contrasted with another material (Fig. 3). The façades' horizontally striped finish visually integrated the complex which included several rice-mill buildings of complimentary functions. The juxtaposition of smooth plaster with parts of the façade finished off with other materials will be used very frequently in modernist Gdynia architecture.

Floated rendering was often used to complement more decorative plaster finishes. In downtown Gdynia's row housing, in many cases coloured plaster finishes with special aggregate were made at the front, painstakingly rendered, with ordinary floated plaster at the rear. There are also many examples of floated render finishes on entire frontal façades, while more decorative plasters would be used to emphasise selected elements, including portals, cornices or rectangular piers.

During the currently performed restoration work, floated rendering is relatively easy to reconstruct but requires the use of traditional materials and construction methods. In this way, missing plaster was successfully filled in on parts of the façade of the Gdynia Maritime University (Gdynia Grabówek) during the 2013 restoration.

TYROLEAN FINISH

Tyrolean render was an easy-to-make and very popular façade finish. It is a textured porous finish obtained by applying the finishing coat using various methods, for example with a brush, with a trowel through a mesh or with a crank-powered hand gun also known as the Tyrolean flicker gun.[18] The render usually contained fine-graded aggregate; pigments and sparkling mica particles were also added. Tyrolean render was rather easy to apply, which is why it was often used on large façade surfaces.

The extra visual effect in Tyrolean finishes was obtained by slightly smoothing out parts of the surface with a steel float or trowel, shortly after the render was applied. This yielded a porous surface with intermittent wall face. In construction literature, this type of render is known as rubbed Tyrolean finish.[19] Two different colours of the base coat and the textured finish coat could be used for an added decorative effect. This is how the smoothed-out surface was made to contrast with the concave parts. The passage of time additionally caused the concave porous parts of the finish to darken and provide a contrasting visual effect. Rubbed Tyrolean render has survived in Gdynia on many buildings, for example at Chylońska 39, where the surviving rubbed Tyrolean finish in yellow is contrasted with red faux stonework render (Fig. 4).

During contemporary restoration projects, the repair and restoration of Tyrolean finish does not generate major problems. However, it is necessary to use historically equivalent methods, for example a flicker gun (Fig. 5). In Gdynia, this is how the façade render was restored in 2010 on the District Court (Sąd Rejonowy) building in Plac Konstytucji (Fig. 6). Rubbed Tyrolean render can be just as easily repaired or reconstructed. However, this requires the use of both traditional plastering materials and methods. In Gdynia, rubbed Tyrolean finish was successfully repaired on the façade of a building in Słupecka 9.

SCRATCH FINISH

Scratch rendering was a popular façade finish in the 1930s. This render involved using medium- and large-size aggregate to achieve a textured porous finish with cavities left by the aggregate. The texture was obtained by scraping the surface with a special tool which caused the outer layer aggregate to fall (be scratched) out, leaving distinctive cavities behind. The outer layer was usually scraped off by means of a scraping tool made of a thick sheet metal strip with serration on one edge. A piece of a wooden plank, densely studded with nails, could also be used.[20]

In the 1930s, such finishes were used, for example,

18. Nechay J., op. cit., pp. 65-66.

19. Nechay J., op. cit., p. 74. In some publications, rubbed Tyrolean finish was treated as a separate type of façade render, for example Konic T., *Tynki (wyprawy),* [in:] *Kalendarz Przeglądu Budowlanego na rok 1939,* Warsaw 1938, Vol. 2, p. 1471.

20. Bobieński M., op. cit., p. 108.

6. *Detail of the façade of Gdynia District Court (Sąd Rejonowy), with Tyrolean finish applied during the 2010 restoration project*

7. *Scratch finish applied after World War II on the façade of the Most Sacred Heart of Jesus Catholic Church at Armii Krajowej St., Gdynia*

8. *The original colour of the 1930s scratch render is revealed during a cleaning procedure (building at Bema 5, Gdynia, 2013)*

9. *A view of the washed render texture on the façade of a townhouse at Świętojańska 47, Gdynia*

10. *Washed render on the townhouse façade at Świętojańska 105, after restoration. Left - original finish, right - reconstructed finish.*

on the building façade at Bema 5. Scratch render was very popular in Gdynia also after World War II. This type of finish was used, for example, on the façades of the Most Sacred Heart of Jesus Catholic Church at Armii Krajowej 46 (Fig. 7), as well as on pre-war buildings which were finished after the war, for example the townhouse at Świętojańska 55.

In recent years, Gdynia's restoration projects have also come to include its historical scratch finishes, for example on townhouse façade at Bema 5. Completed in 2013, the work began with the plaster surface being cleaned by washing (Fig. 8). The project also included filling in the missing render fragments on this façade. After many tests and trials, the colours and type of aggregate were successfully chosen but it proved difficult to blend the filled-in surfaces with the original ones.

WASHED FINISH

Washed render (also known as exposed aggregate finish) has a porous surface formed by the exposed grains of usually large-sized protruding aggregate. The texture is obtained by washing the surface, in other words by washing the binder off the face while the render is setting. Such finishes were used on the façades of Gdynia's many modernist buildings in the 1930s. In the Świętojańska 105 townhouse, washed render was applied on the frontal façade above the ground floor to create clearly separated rectangular fields and combine various plastering techniques. The render was made with white and black large-sized aggregate on a white binder. Large areas of the finish were separated with narrow bands of ca. 3 cm made of light green plaster, additionally rendered in grooves, very common in Gdynia's buildings.[21] The green plaster with fine-grained white aggregate, used in the apparent joints, corresponded to the finish used in the cornices, the window reveals and the ground floor façade of this townhouse.

11. *Building at 3 Maja 27-31; the façades are finished with natural stone (left-hand side up to the loggias) and imitation stone cladding render (right-hand side with the loggias)*

Washed finish with white and black large-sized aggregate, but on a yellow binder, was applied on the frontal façade of the townhouse at Świętojańska 47 (Fig. 9). The yellow colour of the binder gives the façade a clearly yellowish appearance. In this case, the small rectangular fields of plaster were divided with narrow joints which had not been additionally highlighted. Washed finish was often combined with other façade materials and other types of render. In the Swedish Sailor House in Jana z Kolna 25, washed render was used as a visual element juxtaposed with red face brick surfaces. Washed finish, with white and black large-sized aggregate, was used in the entrance section. The rectangular fields of washed render were connected with narrow joints. The rectangular division of the washed render surface was determined by the technique used. The longer time required to complete this finish was reason enough to divide the façade into smaller fields, which could be completed at different times, while the joints helped achieve a uniform effect.

Washed render was also used on building façades after World War II. This type of finish was applied on part of the façade of the former Polish Sailor House, currently the Gdynia Maritime University's Navigation Faculty at Jana Pawła II No. 3. The building had not been completed before World War II broke out so the rendering was made only after it had ended. On the plinth course and the overhang columns, the washed render was made with fine-grained gravel.

Gdynia's experience with the restoration of washed render concerns several different façades. The largest scope of restoration work was performed in 2012 on a townhouse in Świętojańska 105. During the project, it was necessary to fill in the missing render over a significant surface. The biggest problem was not the rendering technique itself, which had been perfected after several tests. What proved difficult was to find the right aggregate, close to the original in both colour and size. After extended search, however, a good result and façade integrity were achieved. There is only a slight difference between the original and the filled-in fragments (Fig. 10).

IMITATION STONE CLADDING FINISH

Many of Gdynia's modernist buildings feature smooth render with clear rectangular divisions to imitate the joints between stone cladding.[22] In many cases, plaster mixes

21. During the 2012 restoration, details of the workmanship became visible in the places where the washed render had been damaged. The layer of washed render was applied on joints which had previously been made of green plaster. It follows from the construction files kept by the owners of the house that the renders were made by Józef Langiewicz's company in 1936.

22. Construction literature does not usually distinguish this type of render but due to a large number of similar examples, they have been singled out here as a separate group.

12. *Felzytyn & Trocal Gdynia Branch letterhead, 1937*

13. *Felzytyn S advertisement in "Przegląd Budowlany" No. I, 1939*

with ground stone were used. When completed, often by sanding, such render was deceptively similar to stone slabs, in both colour and texture. Because many of such finishes were painted over while renovating, today it is difficult to identify the original colour and texture of the render. Without intrusion into the façade, it is often difficult to determine whether the surviving historical render was an ordinary floated finish, diversified with dividing lines, or a stucco which had once been deceptively imitative of stone cladding.

The principle behind these types of finishes can be best observed on the exterior façades of the building at 3 Maja 27-31. This complex was built in three stages but the façades received great architectural integrity. The exterior façades of the first part built in 1935-36,[23] located at the intersection of 10 Lutego and 3 Maja streets, feature natural stone cladding. Meanwhile, the exterior façades from the two subsequent stages in 1937-39 were given a render which repeated the layout and sizes of the first part's stone cladding (Fig. 11). The façade's render finish superbly imitates stone slabs. These renders contained a lime binder with stone aggregate which was probably the ground stone from the building's first part.[24]

Imitation stone cladding finishes were very popular in the 1930s, with their application made easier by the availability of special plastering mixes. At least several façades in Gdynia were given imitation stone cladding render, manufactured by the well-known Felzytyn & Trocal company of Lubartów. One of their widely advertised plasters was Felzytyn S, first marketed in the second half of the 1930s. This stucco was advertised as imitation sandstone.

In a 1937 advertisement, Felzytyn S was described as an innovative "smooth coloured stucco render"[25] (Fig. 13). Another advertisement described it to be a "sanded, matt and smooth render, deceptively imitative of natural sandstone".[26] From a list of completed projects, it follows that Felzytyn S was used on at least a dozen building façades in Gdynia.[27] The Felzytyn S façades generally featured a layout of large faux cladding slabs separated with incisions to imitate the joints between stone slabs. This was the way the rendering was made on the building façades at Świętojańska 71, Świętojańska 84, Skwer Kościuszki 10-12, Bema 7 and Armii Krajowej 24, which all received a Felzytyn S finish.

An interesting way to use the Felzytyn S stucco as a natural stone imitation, can be seen on the façades on the Municipal Market Halls in Jana z Kolna. Innovative in the 1930s, a steel structure was used in these buildings[28] but on the outside it was almost completely built over, with a smooth light-yellow plaster finish to imitate sandstone. This finish was used on the larger surfaces of the Hall's façades but also on the steel columns and arches of the supporting structure visible in the façades. The wartime destruction of the halls and the subsequent renovation allowed the original render to survive only on a small portion of the surface.

In 1936, Felzytyn & Trocal set up its Gdynia branch at Świętojańska 71 (Fig. 12). The company was also a contractor, rendering the façades of various buildings in Gdynia. Archive construction files show that Felzytyn & Trocal's completed rendering projects included the façades of the Cotton House (Dom Bawełny) at Derdowskiego 7 and the villa at Sieroszewskiego 1a.[29]

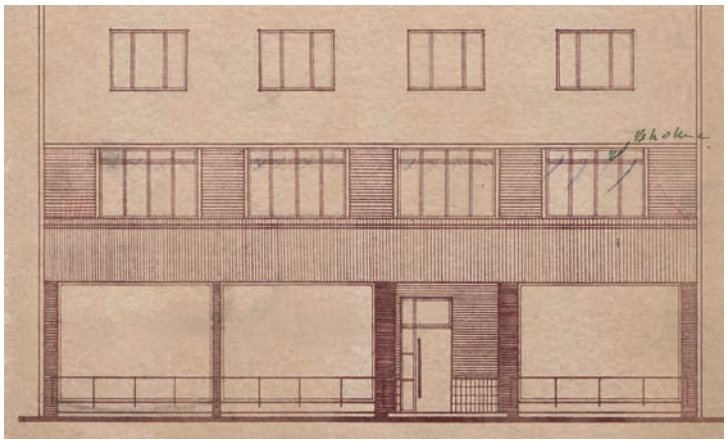
The majority of the imitation stone cladding façade finishes were painted over after the war so their visual effect today is far from the original. During subsequent renovation projects, they were repaired and painted and therefore lost their original appeal. They did retain their distinctive slab-like divisions and smooth surfaces, but generally lost both their colour and texture. In Gdynia, successful restoration was performed on the façades of the building at 3 Maja 27-31. With contemporary restoration and construction methods, such projects are not complicated at all.

FAUX STONEWORK FINISH

Faux stonework rendering was among the most labour-intensive but at the same time remarkably decorative ways to finish off a façade. It was made with special stucco mortars which, after being applied on a façade, had to reach

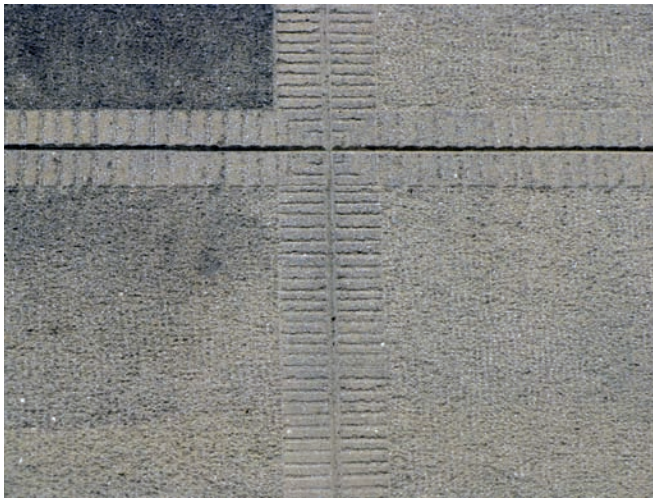
23. Data from the building's construction files from the Gdynia City Hall's Architecture and Construction Dept. Archive.
24. The render was analysed in a laboratory, see Dembek Elżbieta, Dembek Tomasz, Macur Andrzej, Mikulski Tomasz, *Ekspertyza konserwatorska do remontu elewacji budynku w Gdyni przy ul. 3 Maja 27-31 i Batorego 26,* typescript, Gdynia 2000, documents in the Gdynia City Hall collection; laboratory tests on the stone and plaster for the purpose of the expert reviews were performed by the Polish Studios for Conservation of Cultural Property (PP PKZ) Science and Research Laboratory, Toruń, in November 2000, see Appendix 2 pp. 2-3.
25. "Przegląd Budowlany", No. 9, 1937, full-page render advertisement, no page number.
26. Render advertisement in "Arkady" magazine No. 11, 1937, p. 134.
27. "Przegląd Budowlany", No. 7, 1937. The advertisement quotes reference buildings in various cities. In Gdynia, these included the Bath House in Orłowo, the Market Halls, townhouse Świętojańska 71, townhouse Świętojańska 84, townhouse in Skwer Kościuszki 10-12, townhouse Bema 7, townhouse Krasickiego, Jerzy Muller's tenement house and the Bananas Company House Armii Krajowej 24.
28. Muller Jerzy, Reychman Stefan, *Hala targowa w Gdyni*, "Architektura i Budownictwo", No. 4-5, 1938, p. 155.
29. According to the buildings' files in the Gdynia City Hall's Architecture and Construction Dept. Archive.

14 a, b. *Faux stonework finish fragment with visible structure and workmanship detail*



15. *A 1935 design drawing for the townhouse façade at Władysława IV 53, Gdynia, showing a grooved faux stonework finish*

16. *Faux stonework finish on the townhouse at Świętojańska 53, Gdynia, stylised to resemble stone cladding*



17. *Detail of the townhouse façade at Świętojańska 49, Gdynia, with imitation stone cladding finish*

their final hardness; only after a period of time, from 5 days to as long as 2 weeks, it was detailed using stoneworking methods and tools.[30] Faux stonework finishes were prepared by plasterers but when hardened they were worked by stonemasons.[31] Their thickness was considerable, from 8 to as many as 20 mm of the outer layer.[32] Due to its time- and cost intensity, this render was mainly used on relatively small-sized parts of façades, such as plinth courses and the frontal façades of lower storeys.[33]

Gdynia has many examples of faux stonework render application. This finish was most frequently used on: portals, plinth courses, window trims and strips, rectangular piers, cornices, balcony undersides and edges, structural or decorative elements including pilaster strips, piers, columns, bay window trims etc. The faux stonework finishes used in Gdynia are found in four main colours of the render mix: yellow, green, red and black. The colours of the aggregate are even more varied.

Archive records and construction files sometimes describe these finishes as "chiselled render". This term is a good description of the technology involved, which was to chisel a decorative motif out with stoneworking tools.[34] The analysis of well preserved elements with faux stonework finish makes it possible to get a rather good sense of the technique used to make the ornamental motifs. Stoneworking details and traces are visible on façades which have not been renovated since their completion, for example the façade of the building in Słowackiego 42 and the portals of townhouses in Bema 5 and Wolności 5. The detailing of the finish involved the following procedures: layered onto a façade, the stucco render was worked smooth after it had hardened. Next, the whole surface was tinted, usually in the colour of the binder, to obtain colour intensity. The next stage was to engrave a decorative pattern on the surface. This is proven by the traces of a burin visible in many places. Stencils could be used for complicated patterns to be engraved. Next, the background was chiselled out using stoneworking tools, for example a chisel, a bush hammer etc., while the decorative motif remained smooth and intensely coloured. The result was a flat, uniformly coloured surface and chiselled-out fragments which showed the structure of the material with the aggregate (Fig. 14 a, b).

Many distinctive decorative motives were used on Gdynia's façades with faux stonework finishes. Due to a certain repetitiveness, they can be divided into several main groups. Straight groove finish was the most popular. Such decorations can be found on at least several dozen façades. This ornamentation had oftentimes been planned already at the façade design stage in the 1930s (Fig. 15). A zigzag grooved motif was somewhat rarer. There were also rectangular fields stylised to resemble stone slabs or blocks, for example at Świętojańska 49 and Świętojańska 53 (Fig. 16-17). Geometric, vegetal and folk patterns were also popular, for example at Starowiejska 21 and Wolności 5 (Fig. 18-19), along with individualised motifs, for example on the façades at Młyńska 23 (Fig. 20). The faux stonework technique was also used to make commemorative panels with inscriptions, for example with the designer's name and year of construction, as at Abrahama 28. Sanded faux stonework finish was also used as imitation cladding, for example on the entrance sections of the façades at Słupecka 9 and Starowiejska 54. The decorative motifs used in Gdynia, as well as many original ones, can also be found in other cities (Fig. 21-23). The wealth of visual solutions indicates that this type of finish provided extensive artistic possibilities.

30. Mielnicki Stanisław, op. cit., p. 208.
31. Nechay J., op. cit., pp. 80-81.
32. Lenkiewicz Władysław, *Roboty tynkowe,* Państwowe Wydawnictwa Techniczne, Warsaw 1953, p. 49.
33. Żenczykowski Wacław, *Budownictwo ogólne,* Vol. IV, Arkady 1970, p. 449.
34. For example in the original construction documentation for the house in Świętojańska 105 kept by the house's owners.

18. *Detail of the townhouse ornamentation at Starowiejska 21, Gdynia, with a faux stonework finish folk motif*

19. *Detail of the townhouse portal ornamentation at Wolności 5, Gdynia, with a faux stonework finish folk motif*

20. *Faux stonework finish decoration at the building entrance, at Młyńska 23, Gdynia*

One of the best known producers of ready-to-use faux stonework dry mixes was the already mentioned Litozyt company of Krzeszowice. It manufactured Litozyt K, dedicated for faux stonework renders.[35] As touted by the producer, the mix was made exclusively from natural marble and, due to the "machine fabrication method", Litozyt was durable and defect-free. The company was probably also a contractor. The *Litozyt* company trademark - logo has survived on some 1930s façades in Kraków. This symbol can be seen on, for example, the townhouse at ul. Żuławskiego 8a, corner of Kolberga 17 (Fig. 24). Of course other producers also made faux stonework mixes, which allowed for a great diversity in façade solutions. The makers of render mixes distributed them all over Poland in the 1930s, which is why similar finish applications can be seen in many cities, albeit in various wall arrangements.

Faux stonework stucco offered many advantages which were utilised by modernist architecture. Because of its thin finishing coat, faux stonework render could be used on reinforced concrete structural elements, including cantilevers, thin pilasters and columns, to imitate stone slabs or blocks. Many such applications can be seen on buildings not just in Gdynia but also other cities (Fig. 25). The faux stonework rendering technique made it relatively easy to coat curved surfaces.

Faux stonework finishes were difficult to make and required great skill and patience. Such features are also today a prerequisite for restoration work, which requires great know-how, experience and patience as well. Restoration methods can be very diverse and depend on various factors.

35. "Przegląd Budowlany", No. 11, 1936, p. 502.

22. *Detail of the townhouse portal decoration, Moniuszki 26, Toruń, with a repetitive decorative motif. Photo by Alina Limańska*

21. *Detail of the townhouse façade at Mazowiecka 26a, Kraków, with faux stonework finish*

One of the more important ones is the render's condition and how well it has been preserved.

The restoration of Gdynia's faux stonework renders involved very different solutions depending on the circumstances. From the simplest solutions - used on well-preserved finishes, which were cleaned and had small cavities filled in - to the more labour-intensive ones, involving the prefabrication of panel components to imitate faux stonework finish[36] (townhouse at Abrahama 28). Notably, a replica of a grooved finish was made of natural stone slabs (building at Skargi 14).

The Bema 5 townhouse portal project is one of the examples of comprehensive contemporary restoration of faux stonework render. The building has a recessed portal with a composition including a door and also two windows. The entrance surround has a red faux stonework finish, with

36. This example of faux stonework render reconstruction was described in: Hirsch Robert, *Prawna ochrona XX-wiecznych układów urbanistycznych na przykładzie Gdyni,* "Ochrona Zabytków", No. 1-4, 2010, pp. 274-275.

23. *Commemorative plaque in faux stonework finish on a townhouse façade, Krowoderska 63A, Kraków*

24. *Fragment of a townhouse façade at Żuławskiego 8a, corner of Kolberga 17, Kraków, with faux stonework finish including the Litozyt logo*

25. *Faux stonework finish on a reinforced concrete bay window cantilever, townhouse in Katowice, Stalmacha 23*

grooves as a decorative motif. The portal was preserved in a generally good condition but was damaged in many places, losing its visual appeal completely (Fig. 26-27a). The restoration brought it back close to its original condition. After the surface had been cleaned, all the major places of damage and cavities were repaired. The restoration was performed by a qualified heritage restorer, using methods close to the original technology. The cavities were filled in with coloured render with aggregate, to match the original. After sanding and tinting, decorative motifs were chiselled out. The final result is very close to the original (Fig. 27b-28).

Conclusion

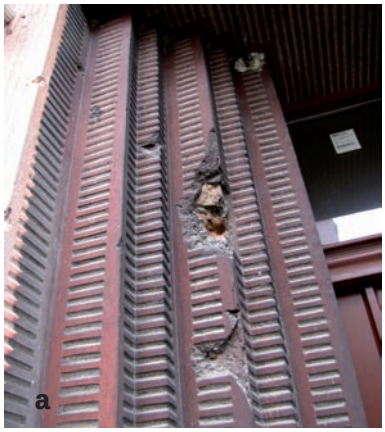
The painstakingly executed façade finishes demonstrate that modernist architecture placed great emphasis on façade aesthetics. The use of render provided extensive arrangement possibilities. At the design stage and later in execution, no time, expense or effort were spared to give diversity to façade finishes. Therefore, exterior plasterwork on modernist buildings should be treated as an integral part of this architecture and a historically valuable finish in its own right. It is a distinctive type of façade finish on buildings from the second quarter of the 20th century, not only in Gdynia. Monument conservation and restoration measures should take this into account.

At present, several main issues related to the preservation of plasterwork on modernist buildings can be indicated. These include insufficient knowledge about the significance of the decorative finishes among investors, designers and contractors. Render destruction is contributed to by the popular trend to retrofit and renovate façades using construction methods that involve contemporary plaster finishes. What is more, there is the absence of legal protection for render finishes or their most important features.

During render restoration projects, various technical and technological problems appear. The lack of historically equivalent materials is noticeable, for example the right-sized and coloured aggregate, resulting from the depletion or discontinued production of deposits. Restoration is difficult due to the decline in traditional crafts and the poor quality of contemporary workmanship. There are also difficulties with matching the plaster fillers, which require restorative bonding as the original finish was made in one go.

Several research propositions can be defined with reference to modernist plasterwork. It would be appropriate to perform studies on the structural renders in as many different buildings as possible. The next stage should be to run comparative studies on the renders, and the next one may be to identify their composition in detail. This, in turn, would allow a catalogue of historical products to be compiled. The render composition analysis would be helpful in devising contemporary restoration materials to be used as fillers.

26. *Portal at Bema 5; faux stonework finish before restoration*



27 a, b. *Detail of the portal at Bema 5, Gdynia, before and after restoration*

28. *The building's co-owners, restorers and representatives of Gdynia city authorities during the acceptance of the restoration work, Bema 5, Gdynia, December 2013. Photo by Alina Limańska*

The experience from the research on and restoration of the plasterwork on Gdynia's modernist buildings is based on several dozen various restoration projects. Many 1920s and 1930s façades undergo restoration every year. With its publicly co-funded programme for restoration projects, the City of Gdynia has been contributing to this for several years now.[37] Public subsidies for restoration encourage preservative renovation using restoration methods. At the same time, they are causing an increase in investors' awareness and in designers' and contractors' skills. Public funding support for restoration projects is currently one of the most important instruments conducive to preserving and restoring historical render finishes.

37. The project subsidy system for Gdynia's heritage buildings and its results was described, among others, in: Hirsch R., *Śródmieście Gdyni jako zabytek* [in:] *Architektura pierwszej połowy XX w. i jej ochrona w Gdyni i w Europie,* eds. M.J. Sołtysik, R. Hirsch, publ. by Urząd Miasta Gdyni, Gdynia 2011, pp. 247-248.