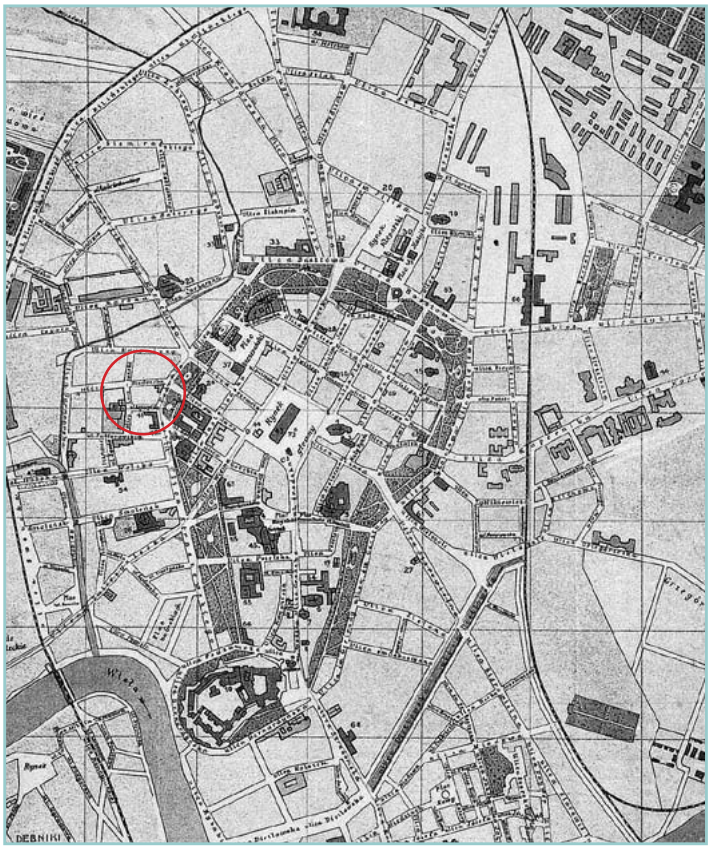
rocare ROMAN CEMENT



Roman Cements for Architectural Restoration to New High Standards

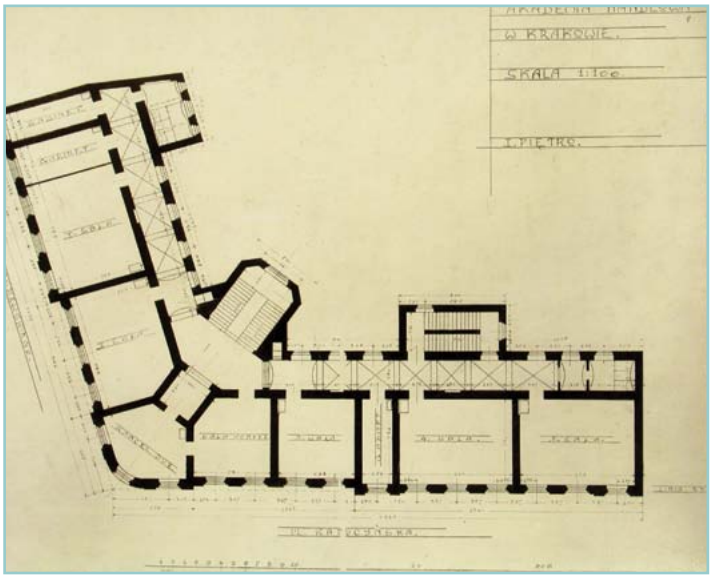




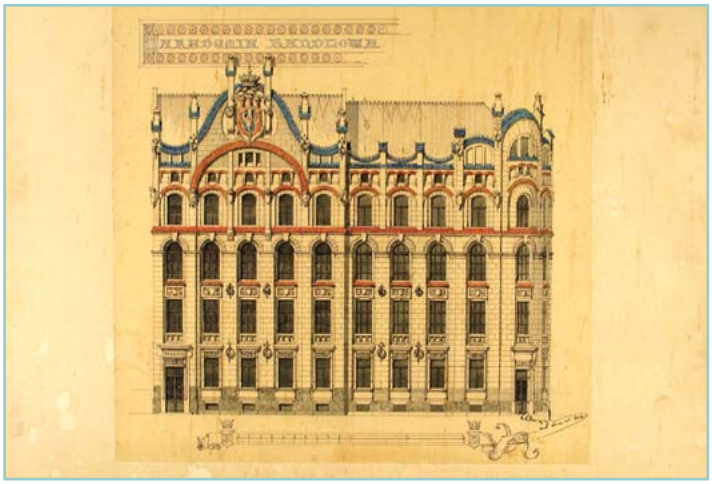
Trade Academy, 1904–1906, by Jan Zawiejski, Kapucyńska 2–4, Krakow, Poland.

A monumental, two-wing school building occupying a prominent corner location in the centre of the town in the densely built urban area. Designed in style between historicism, Art Nouveau and Viennese modernism. The architect employed a variety of decorative materials to achieve an impression of picturesque and lightness. The dominating material of the façade is Roman cement renders combined with stone and metal ornaments, and brick arches. A full-scale restoration of the building's façades was carried out in the years 2005–2007 using the materials and techniques re-established as a result of the activities of two research projects. This was the first restoration of Roman cement stuccoes in the city carried out with the use of the authentic historic technology compatible with the original substance.

Archival plans and photographs.



Layout of the first floor, drawing by the architect, 1904.



Design of the eastern façade, drawing by the architect, 1904.

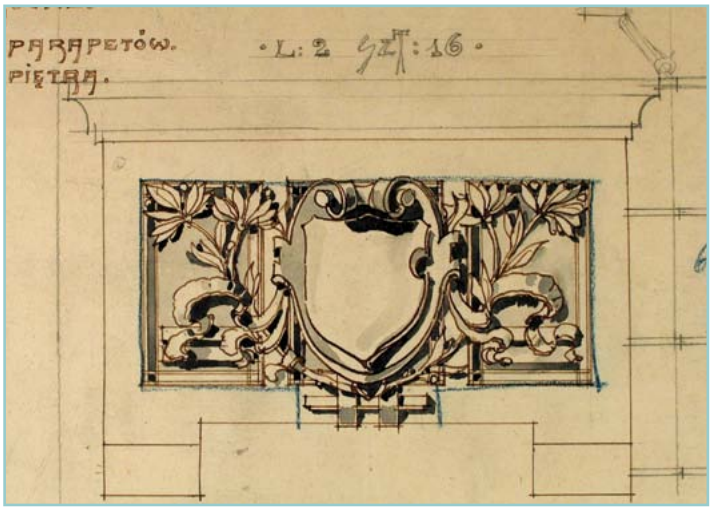


The building in 1906.

Restoration in brief

- restoration of the façade started in 2005, financed through a grant from the Citizen's Committee of the Renovation of Krakow Monuments SKOZK
- the materials and techniques used in this pioneering restoration project were developed basing on the outcome of two research projects: the ROCEM project of the 5th Framework Programme of the European Commission (2003-2005) and a project 'Implementation of the Roman cement technology into the practical conservation of the monuments' supported by a grant from the Polish Ministry of Science and Higher Education within the Sectorial Operational Programme 'Improvement of the Competitiveness of Enterprises' (2005–2008)
- the Roman cement used in the first phase of the restoration was manufactured under highly controlled conditions in a large laboratory electric kiln at the Institute of Catalysis and Surface Chemistry Polish Academy of Sciences in Krakow to ensure optimum quality of the materials
- the restoration works on Roman cements were complemented by the full restoration of stone and ceramic elements; a significant number of missing metal elements were reconstructed using the archival photographs and original architectural drawings.

Roman cement stuccoes.



A design for the decorations below large windows of the second floor. A cast element marked by the architect with a blue pencil is surrounded by run profiles and flat renders with simple rustication imitating stone blocks. Numer of pieces to be cast is indicated on the top (szt: 16).



Decorations below large windows of the second floor, the present state.



Decorations above the windows of the ground floor: several cast ornaments, a run cornice and flat rusticated renders. A test cleaned area on the right reveals the true colour of the Roman cement stuccoes.

The façade before restoration.

The Roman cement renders were preserved in the original state under a later paint-layer in many areas extensively weathered and delaminated, revealing the original colour of the Roman cement substrate.





Restoration works.



Stripping existing modern masonry paint with the use of super heated water.



Cleaning has revealed the original surface of a cornice.



Laying thin Roman cement finish layer (2–3 mm) to re-integrate aesthetically the surfaces of the Roman cement renders.



Re-plastering the decorative turrets on the top of the building where substantial losses of the original renders have occurred.



The missing part of the cornice is reconstructed by applying in situ the mortar and repeatedly passing over a wooden profile.

The façade after restoration.





The conservation has restored the original aesthetic concept of the façade, in particular the colour and texture of Roman cement renders. The colour of the restored fragment of the façade (right) matches well the original colour visible in places where the later paint-layer disappeared (left).



To obtain a uniform appearance of the façade and to avoid dark, wet areas in the period of rain, impregnation with water repellent agents was carried out.



A coat-of-arms of the city, in stone, as well as many metal decorative elements, like golden crowns, were reconstructed.



Romand and Portland cement renders were contrasted by the architect at the base of the façade to imitate different varieties of stone.

Conservation by **AC Konserwacja Zabytków**, Piotrowski, Kosakowski Spółka Jawna, Krakow, Poland.
www.ackonserwaja.pl
Investigations and tests of the materials:
Marcin Błaszczyk
Consultants: Jacek Olesiak and Roman Kozłowski
further information available also at **http://kinga.cyfronet.pl/~ncbratas/conservation_database/**



European Commission Research project: ROCARE
Roman cements for architectural restoration to new high standards

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