

## Structural Restoration and Adaptation to Modern Architecture of the Baroque Oppersdorf Palace, Wrocław, Poland

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**Abstract** This paper is an overview of structural interventions which should be made to the Baroque Oppersdorf Palace during its renovation. All main technical problems were analyzed and proper constructional solutions were presented. Several characteristic types of destruction were detected, caused by natural deterioration and also by mechanical influences (war destruction, lack of conservation etc.). The main building structure has survived from the Baroque period, except for the wooden roof. Some of the cellar vaults and some of them over the first floor were also not destroyed. However, some main reconstruction work was done, probably in the last few years of the 19th century. For example, a break with a new staircase and some masonry vaults over the cellar were changed to ones of Klein type on steel beams. The main aim of the reconstruction was to strengthen the historical structure of the building and adapt it to the modern architecture and to reorganize the buildings inner space, but keeping the external proportions, architectural details and ornaments unchanged.

**Keywords:** Historical building, revitalization, architectural research, structural interventions

### Introduction

The building of the Oppersdorf Palace with several hundred years of history, was subjected to repeated alterations and modernizations during its life. Exposures of the structural elements as well as the building functional-structural set and characteristics from different periods of construction, can serve as confirmation of these activities. Only the stone foundations, brick vaults and fragments of existing wooden floors can be accepted as the oldest structural elements. The interior decor of the Palace was largely not kept as it was partly restored. Modernizations of the building often consisted of great functional changes to its elements, for example, the bricking up of existing entrance holes, building new ones, altering window openings that resulted in changes to the elevation, changes to the arrangement of rooms, partition walls and so on. Within the entire plan of the building development, the building is three-storey including the basement, with an internal staircase from the ground floor to the first floor and with access to the second floor from a staircase from the neighboring building. The roof of the building was made up of a steep wooden gable roof with dormer windows, covered by plain ceramic tiles. The load-bearing walls of the building were made of brick, mainly from lime mortar. The structural system of the floors are all different: WPS type (small prefabricated RC slabs on steel beams), Klein brick slabs, wooden floors, brick vaults, reinforced concrete slabs and serial brick slabs on steel beams. The foundations of the building are made from stone pebbles. The general view of the buildings front elevation is shown in Fig. 1.

### The Oppersdorf Palace – a Historical Overview

In Rudolf Stein's publication from 1926 about Wrocław burgher apartment houses, the author wrote that the palace had probably been built in 1726 and the founder was Anna Maximiliana Louisa von