

Reinforced concrete floors in historic buildings from the beginning and the middle of the 20th century – examples of structural strengthening in the process of revitalization

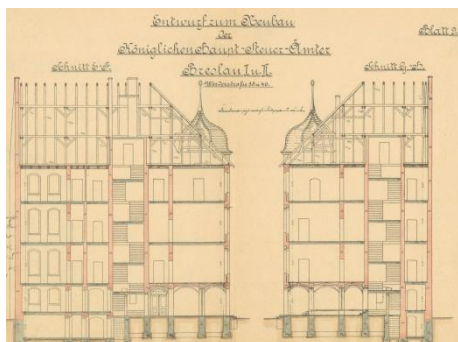
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ABSTRACT

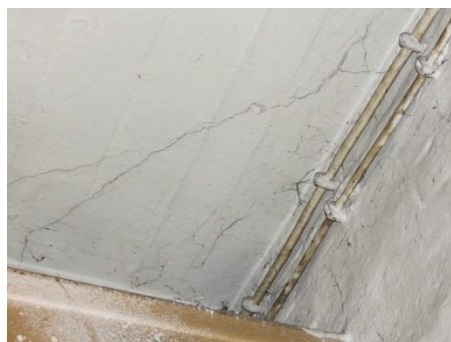
The paper presents a historical outline of design and structural solutions of reinforced concrete floors from the beginning and the middle of the 20th century, based on the analysis of archival documentation [1] and research carried out during the revitalization processes of historic public and industrial buildings. The structural typology of early post-German reinforced concrete slabs and typical constructional solutions used in the early 1950s in buildings erected in western Poland are discussed. Nowadays, while some of these buildings undergo remodeling processes to accommodate them to new functional goals these slabs have to be strengthened using classic or modern methods. Procedures of technical state assessment of old RC structures as well as selection of adequate strengthening methods [2] are described in the paper.



Cross-section of historical building with RC slabs



View of revitalized industrial building



Typical cracks in historical buildings slabs



RC slab-and-column structure to be strengthened

REFERENCES

- [1] R. Ahnert, Rudolf and K.H. Krause, *Typische Baukonstruktionen von 1860 bis 1960. Zur Beurteilung der vorhandenen Baussubstanz, Band 1*, Berlin. Verlag für Bauwesen, 1991 (in German).
- [2] M. Raupach, T. Büttner, *Concrete Repair to EN 1504. Diagnosis, Design, Principles and Practice*, CRC Press, Boca Raton, 2014.