--- *S U M M A R Y* ---

ANALYSIS OF STRENGTH AND CRACK PATTERN OF BRICK SEGMENTAL ARCHED LINTELS

Conducted analyse of the knowledge of design brick arched lintels shows lack of information about the mentioned process. The only piece of information, reached by the author, includes simplified matching method of arch's shape by empirical use of ultimate limit state method. Presented paper contains review of more interesting empirical and numeric research. Additionally, the analyse of technical state of pre-war buildings (including typical damages classification) was conducted. Topicality and necessity of the paper's research was based on premises mentioned above.

The paper contains analyse of available load capacity criterion for similar problems, along with substantiation further numeric research. The author conducted analyse of micro and macro modelling and substantiated choice of material isometric macroscopic model for further research.

Series of empirical tests on various samples were conducted, in order to supply necessary parameters for further numeric modelling. Verification results for main lintels models were satisfactory, however no convergence for separated arches could be proved. Results of empirical tests for main lintel models showed that great importance for capacity load of brick arched lintels have brick levels above lintel.

The author created computer programme for analyse the paper's topic. The programme includes integrated load capacity criterion for main tensile stresses. Received results were verified with results from empirical tests.

Many numeric research for various arch's shapes, various extents, various types of load were conducted. Analyse concerns differences from incorporated changes on arch effort state and on brick level above lintel.

Implementation conducted research was achieved by creating analytical tool as well as by proposing numerous repair methods, which were also published in many periodicals. One of the proposed solutions was applied on a building in the city of Szczecin.