

MORPHOLOGY OF SERRATED GLASS FACADES. REPETITIVE AND NON-REPETITIVE SERRATION. SINGLE AND DOUBLE SERRATED FACADES

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Abstract

Serrated building envelopes are a very eye-catching element of contemporary architecture. This type of façade in plan resembles the edges of a serrated blade, hence the name. Serrated facades substantially influence the building's tectonics understood as the relationship between the structural and the artistic form. They also have a major impact both on building physics (increased surface of heat exchange compared to flat facades, solar avoidance – decreased solar gains if properly designed) and on visual appeal. This paper examines façade morphology and analyses regular (repetitive) and irregular (non-repetitive) serration of façades and its influence on the aesthetic quality of the envelope. The morphological analysis also includes the direction of the serration. An exceptional feature of serrated façades is that the optical phenomena on the façade change depending on the viewing angle. The presented paper is based on case studies with special attention to morphological and qualitative analysis. Recently completed case studies serve as visual (photographs) and graphical illustrations (diagrammatic drawings). A review of technical and engineering justifications of the use of serrated facades is also included and briefly explained.

Keywords: Façade design; Façade geometry; Serrated façade; Double Façade.