

Keynote presentation at Tel Aviv, IACIE Conference, May 22, 2017

Title: **“Punching of reinforced concrete slabs: Lessons learned from collapses and research”**

Abstract:

Reinforced concrete flat slabs (two way slabs on columns without beams) are widely used in building construction as they offer significant advantages such as large open spaces, reduced story heights, simplified formwork, reduced construction time and cost. The drawback of this structural system is the significant concentration of shear forces around the columns which may lead to unexpected punching failures associated to tragic collapses. The presentation will focus on the lessons learned from the investigation of some collapses and the resulting principles and rules to be applied for good design and practice. In addition, intensive research on this topic has shown that the risks can be mitigated by simple and efficient technical solutions.

Aurelio Muttoni, short CV

Over the past three decades, Aurelio Muttoni has been active as a consulting engineer for the design of numerous building and civil engineering structures. He is particularly recognized for his innovative structural solutions. Since 2000, he is also Professor and Head of the Structural Concrete Laboratory of the Ecole Polytechnique Fédérale de Lausanne, Switzerland. His teaching and research activities focus on the conceptual design of structures, theory and dimensioning of concrete structures as well as bridge design, punching shear of slabs, shear, bond between steel and concrete, mechanical behaviour of ultra-high performance concrete and soil-structure interaction. He is currently the leader of the Project Team in charge of the revision of the European standard for concrete structures EN 1992-1-1 (Eurocode 2).