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Analytical Models and New Concepts in Concrete and Masonry Structures,
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REINFORCED MASONRY STRUCTURES – EUROPEAN HISTORY – HUNGARIAN PRESENT PRACTICE

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Content

- 1. The actuality and competence of RM
- 2. Historical review
- 3. Weaknesses and benefits of RM
- 4. Hungarian state of RM

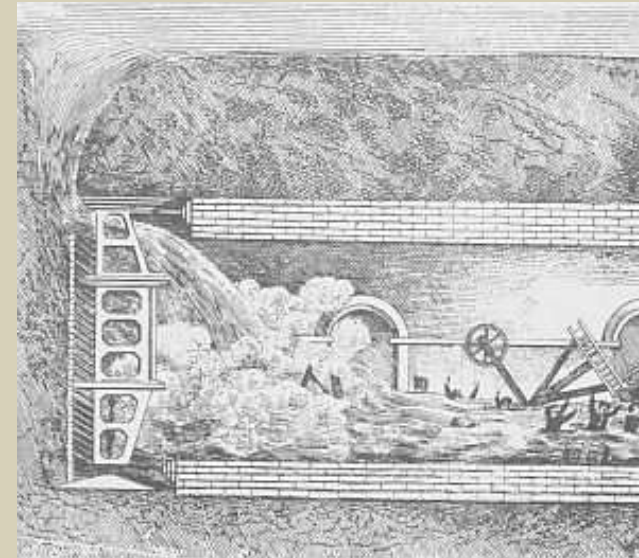
1. Historical review

„...They said to one another, `Come, let us make **bricks** and bake them. `They used bricks for stone and bitumen for **mortar**. Then they said, `Let us build ourselves a city and a tower with its top in the heavens.’”

/Holy Bible, Book of Genesis, Chapter XI, Verses 3 and 4/

1. Historical review

- 1825 Marc Isambard Brunel:
Blackwall Tunnel under the
Thames



1. Historical review

- 1900-1910 flower stands of the Park Güell

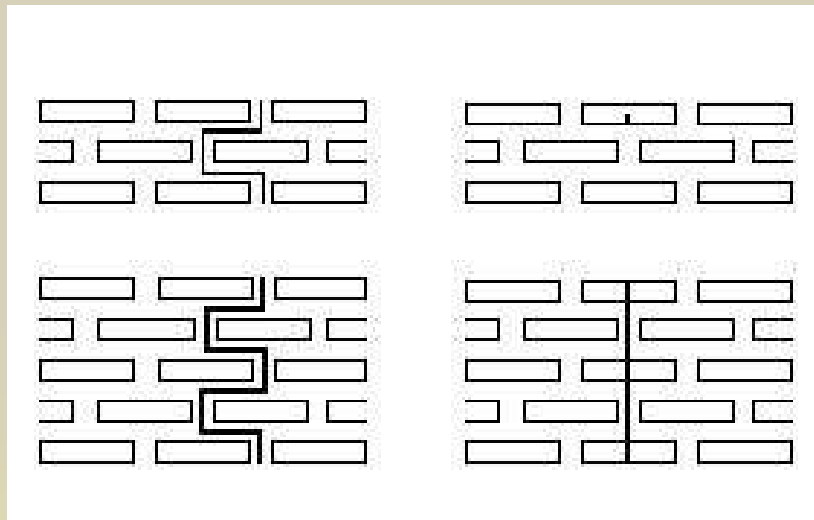


- After the 2nd World War:
huge lack of steel



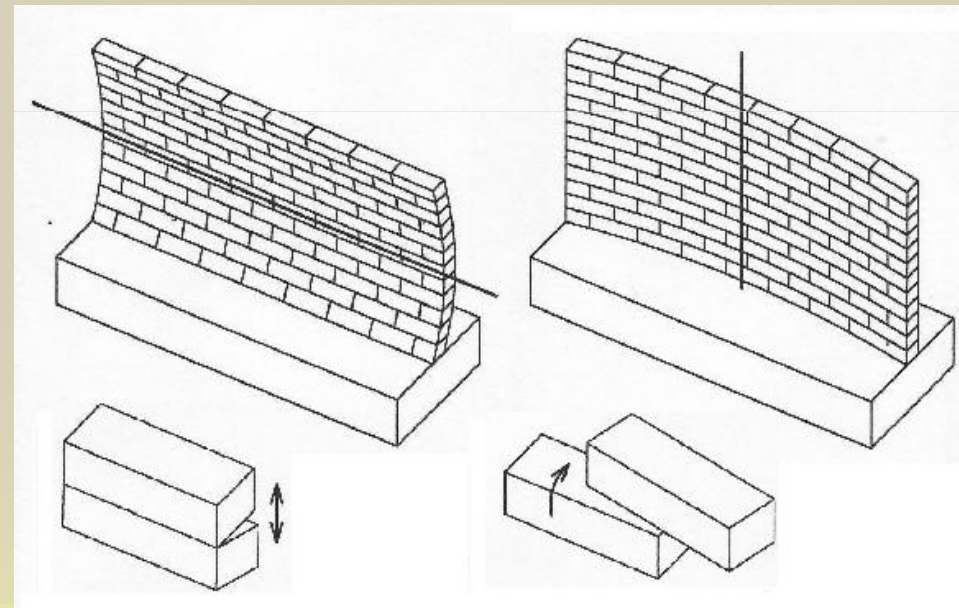
2. Typical weaknesses of masonry

- The sensitivity to cracks
- The low tensile and flexural strength



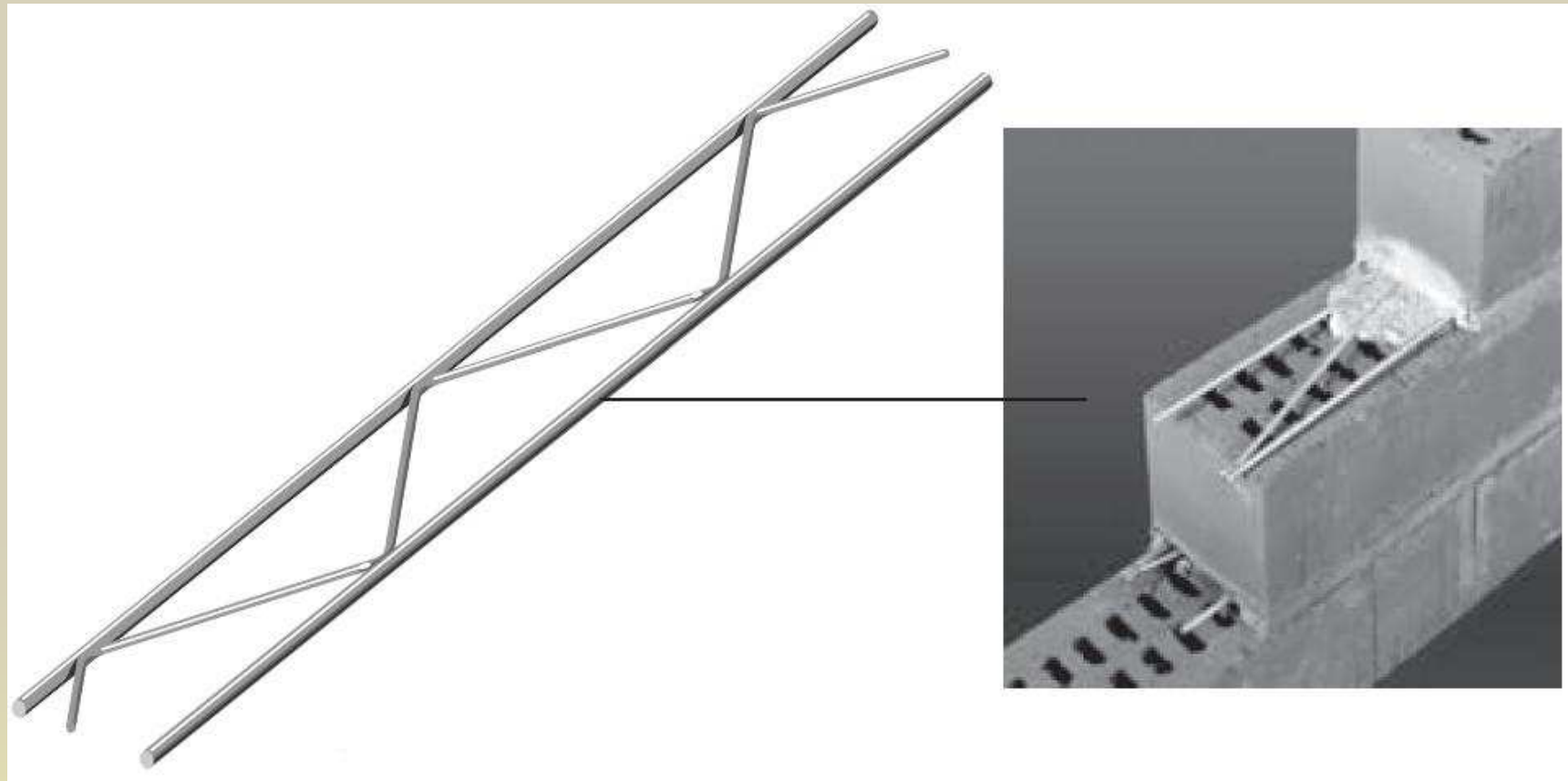
Stepped cracks through head and bed joint

Cracks running vertically through the unit and the head joint



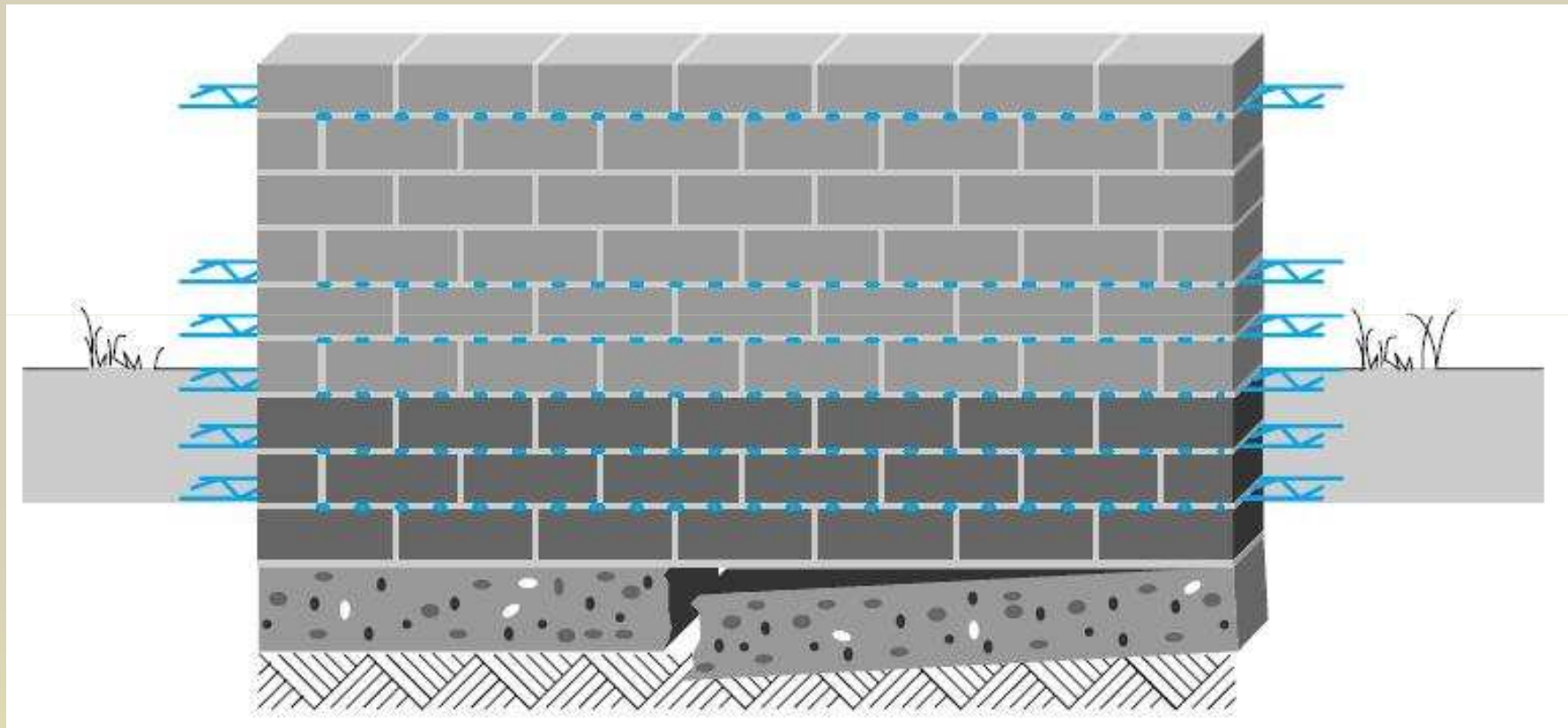
Failure modes of the walls subjected to horizontal forces

2. The benefits of the RM

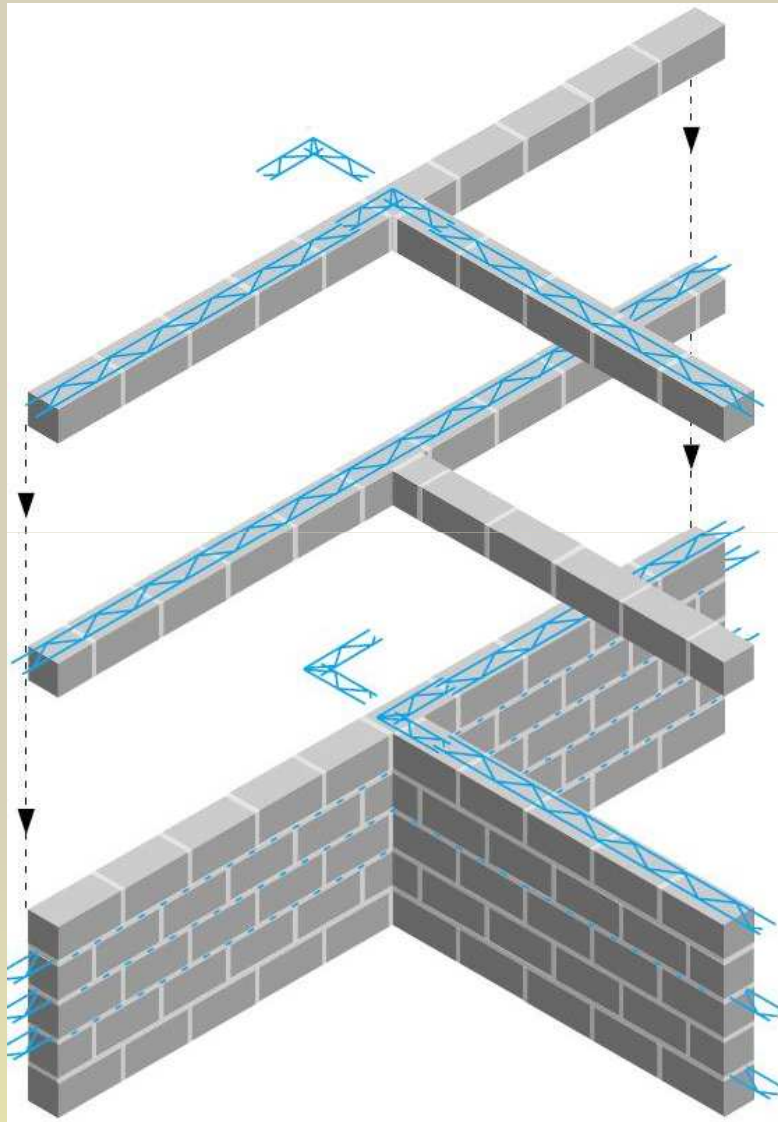


Horizontal bed joint reinforcement

The reducing of crackings



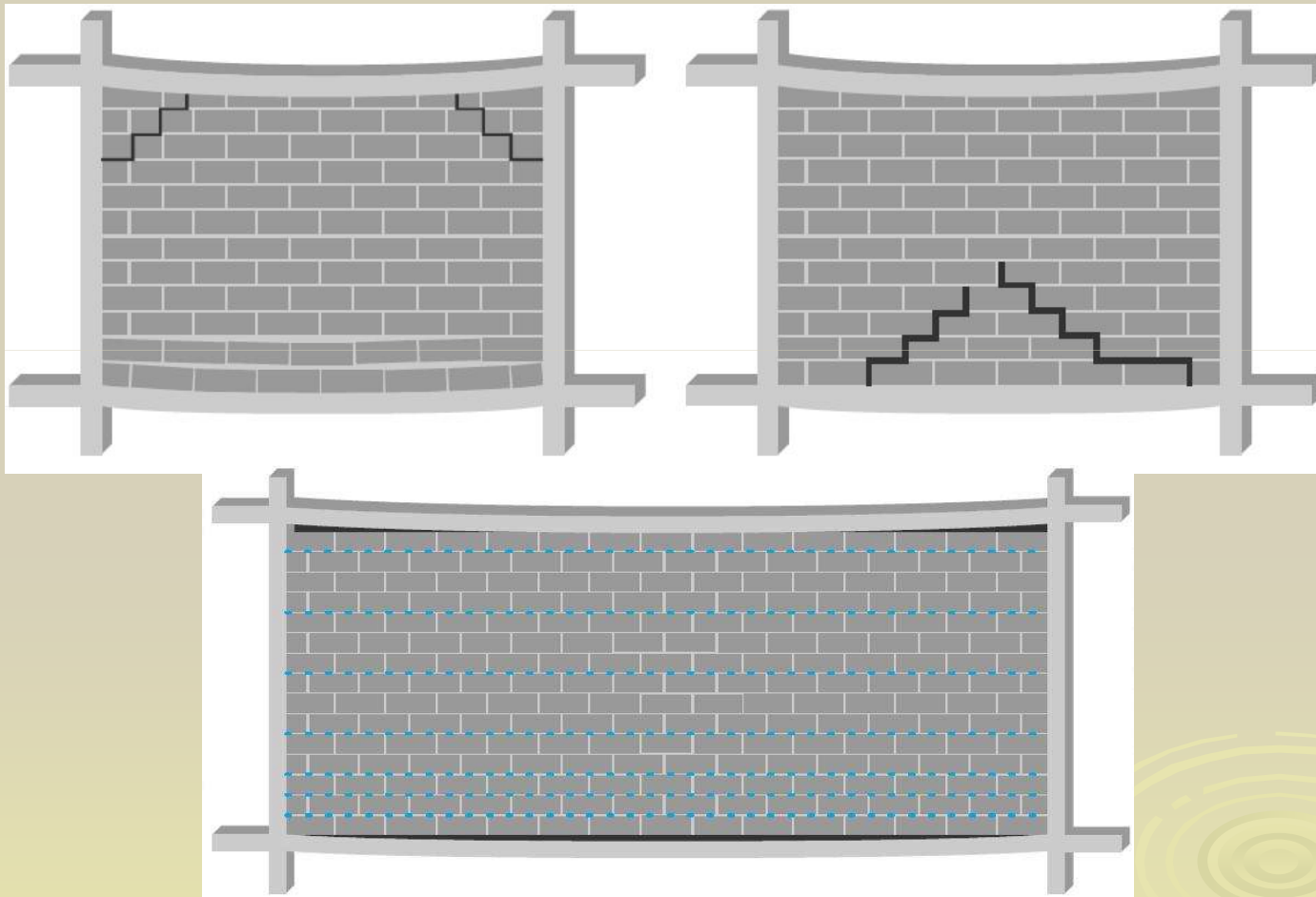
The differential settlements can be prevented



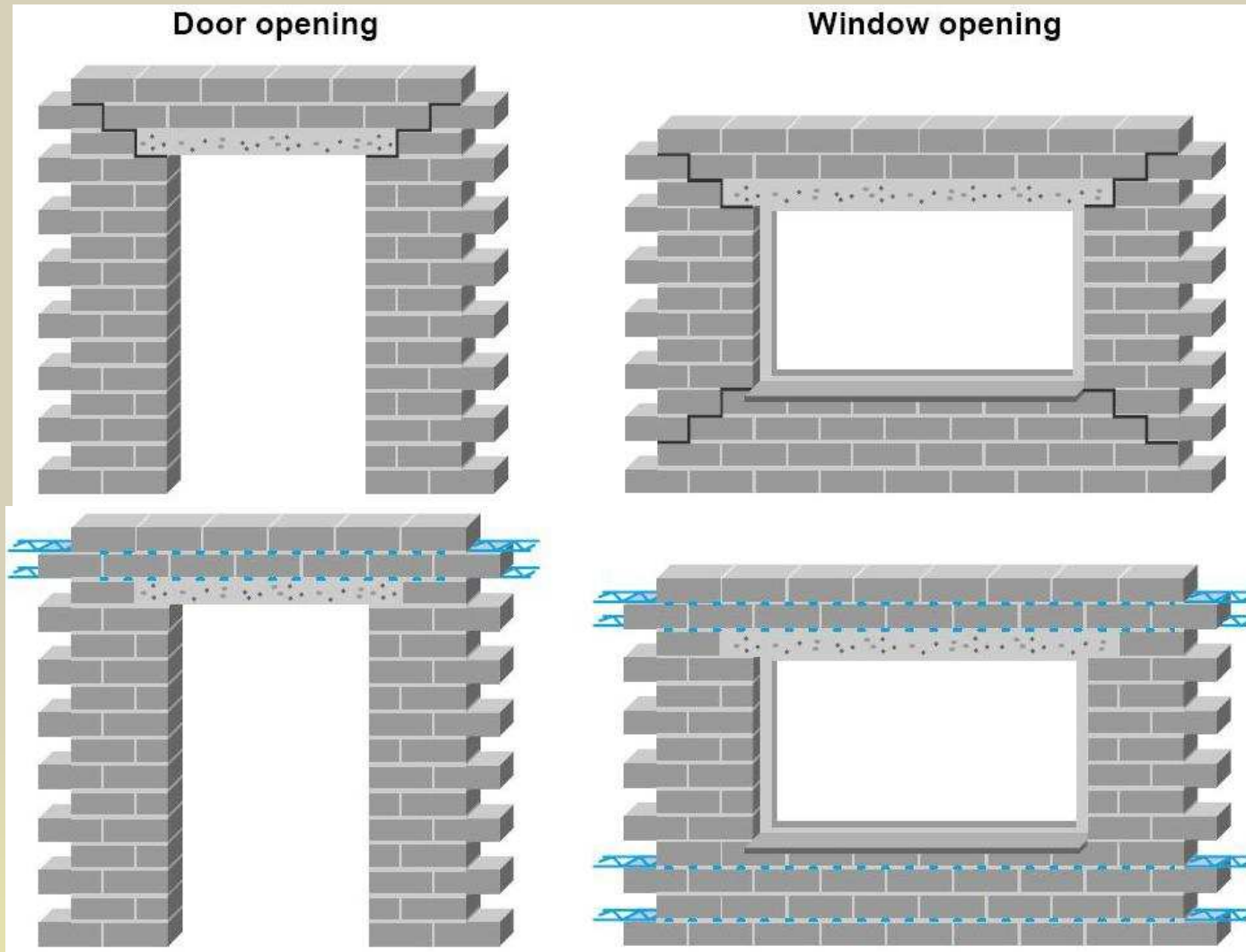
The reducing of crackings

The consecutive layers of the brickwork in case of a T-junction

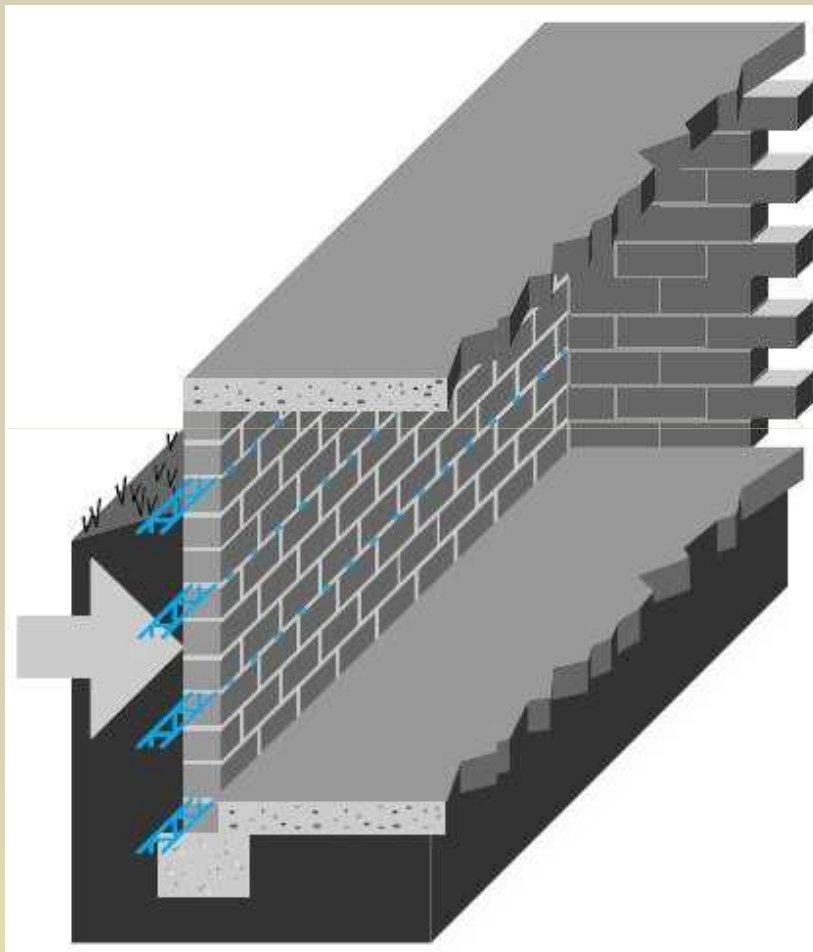
The reducing of crackings



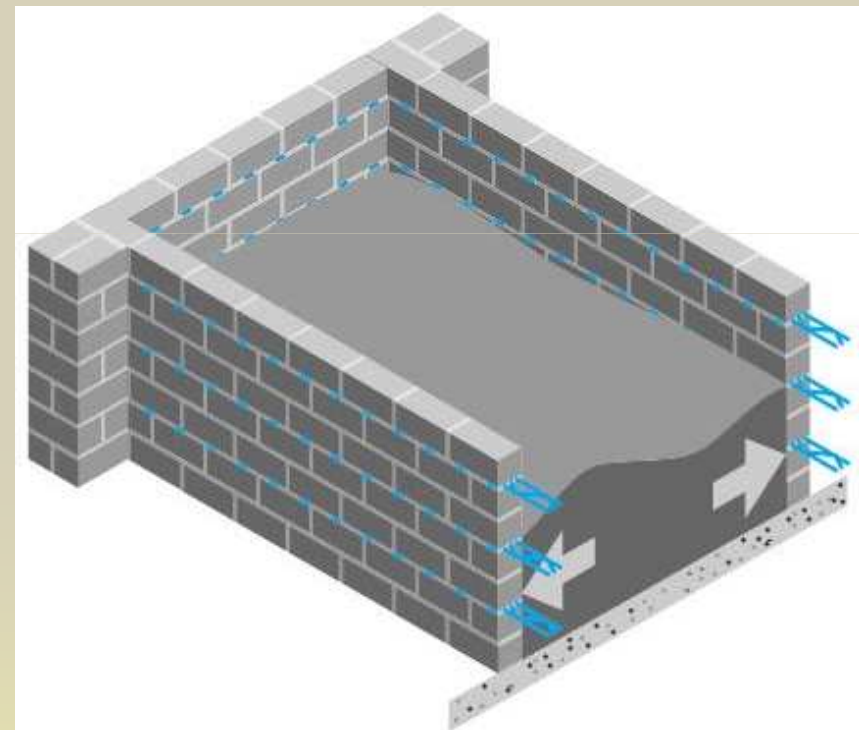
Structural application



Structural application

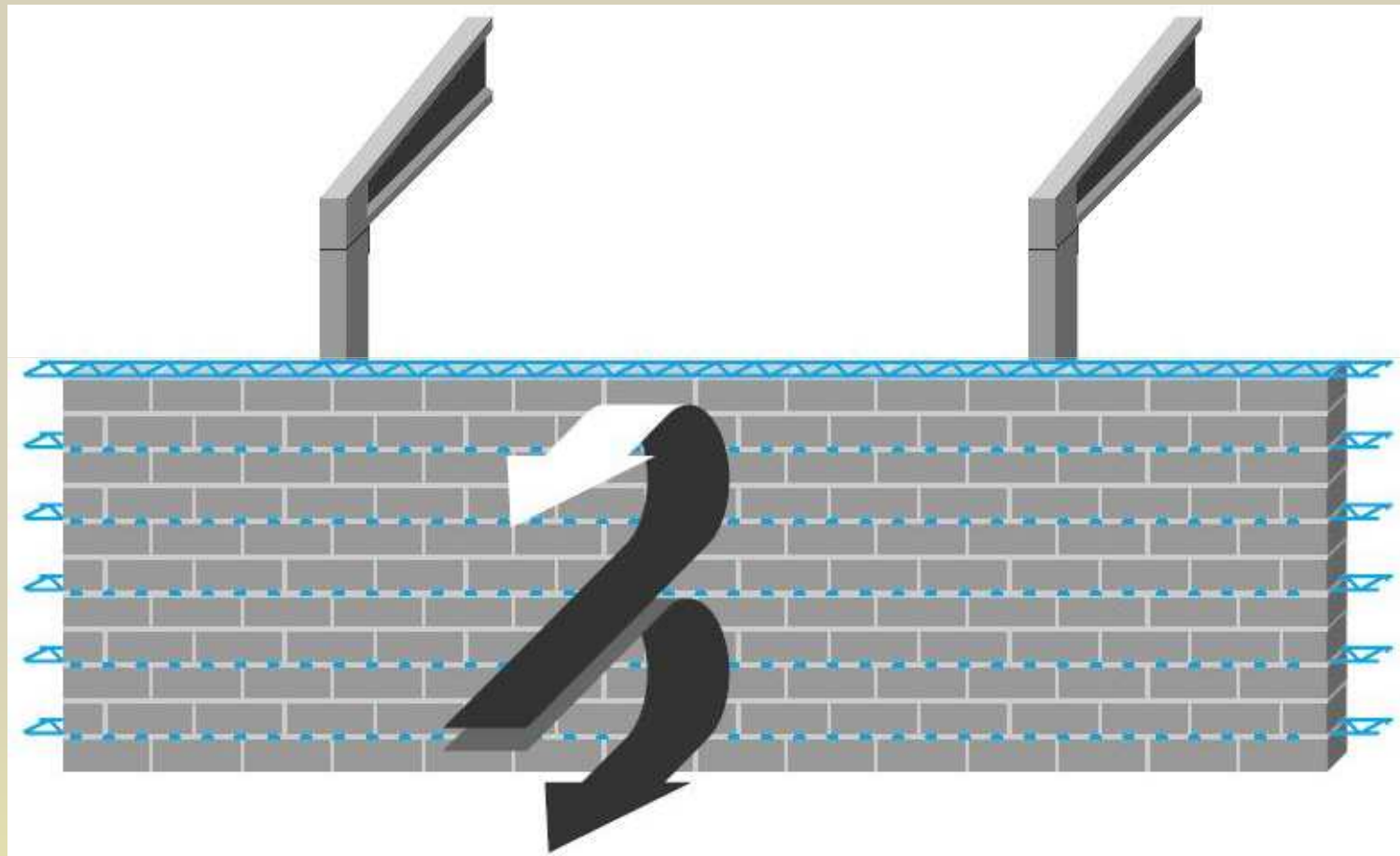


A wall of a cellar



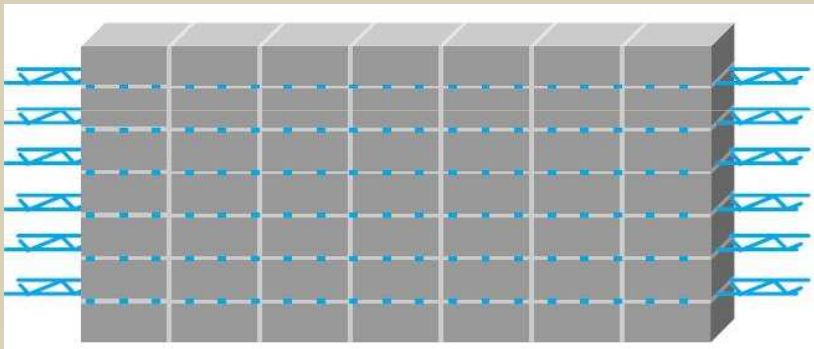
A wall of a silo

Structural application

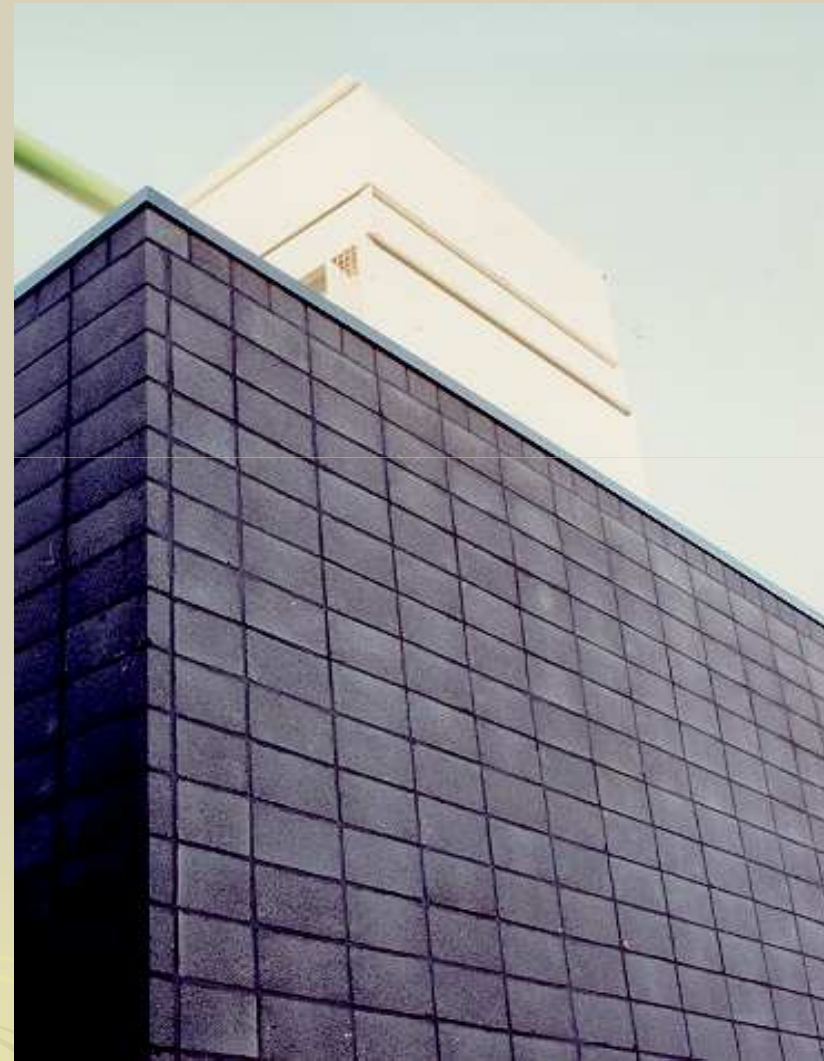


Wall subjected to horizontal load

Architectural benefits



Non stack bonded brickwork in Moen
(Belgium)



4. The Papp László Sportaréna



During construction



Thank you for your kind attention!

