



CTU in Prague  
Faculty of Civil Engineering  
Department of Building Structures

# Restoration of load-bearing structures

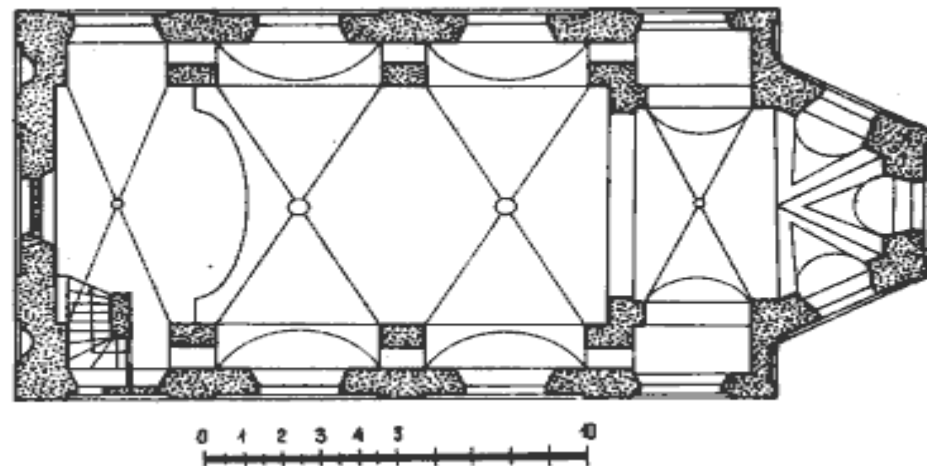
Holy Trinity Church in the Zahořany near Litoměřice

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# Description of the object

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- ▶ Early Baroque church
- ▶ built between 1653 – 1657
- ▶ ground plan dimensions 24 x 14 m
- ▶ mixed masonry - brick, ceramic, slate, phonolite
- ▶ groined vaults
- ▶ saddle roof, hip roof over the altar
- ▶ interior balconies and choir - wooden structure



# Description of defects

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- ▶ Formation of defects
  - ▶ new roof in 1816 - increase loading
- ▶ Defects in floor structure
  - ▶ main tension cracks along the length of the church
  - ▶ crack width from 20 to 30 mm
  - ▶ locally cracks width up to 50 mm
- ▶ For reasons of large defects was the church in 1980 closed



# Description of defects

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- ▶ Walls defects
  - ▶ longitudinal tension crack in the wall
  - ▶ significant boom of cracks on the east side
  - ▶ cracks extend into the door lintels
  - ▶ crack width 10 - 30 mm, locally up to 40 mm





# Description of defects

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- ▶ Cracks in load-bearing wall



# Analysis of defects

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- ▶ Gradual development of tension cracks due to insufficient capture horizontal forces from the truss

