

# Redevelopment theater Nuithonie, Villars-sur-Glâne

2018

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The Nuthonie Theater, with its 590 seats, is part of the cultural scene of the Canton of Fribourg. As the glued joints on the important girders were slowly disintegrating, those responsible commissioned a condition analysis. Under the direction of Timbatec, the cultural venue was renovated.

## The project

**The analyses:** To check the damage, Timbatec engineers carefully analyzed the beams and columns. In addition, material samples were taken from various locations and sent to EMPA for analysis. Since the residual strength of the bonded joints was significantly below the limit values, the theater was temporarily closed as a precautionary measure.

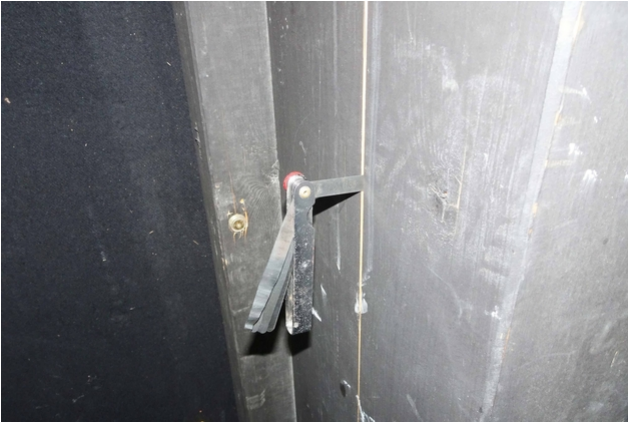
**The rehabilitation:** To rehabilitate the damaged components, Timbatec proposed reinforcing the posts and beams with metal profiles and screws. To rehabilitate the vertical posts and support the loads from the roof, 70-centimeter-long fully threaded screws were screwed into the wood.

## The construction

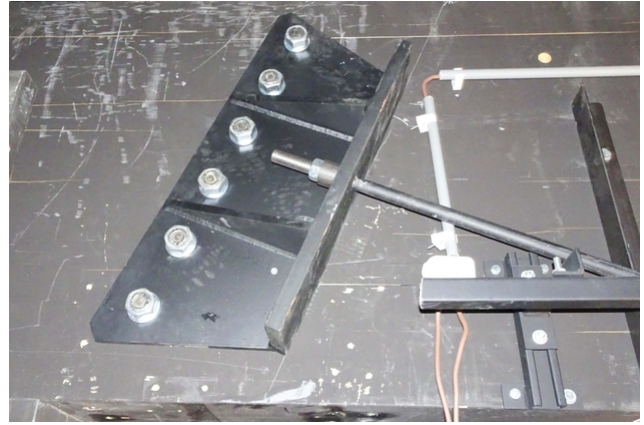
In order to restore sufficient stability to the horizontal beams, they were reinforced with a system under tension. Tie rods were installed directly under the existing beams. The forces are transferred into the wood via a metal profile.

## The challenge

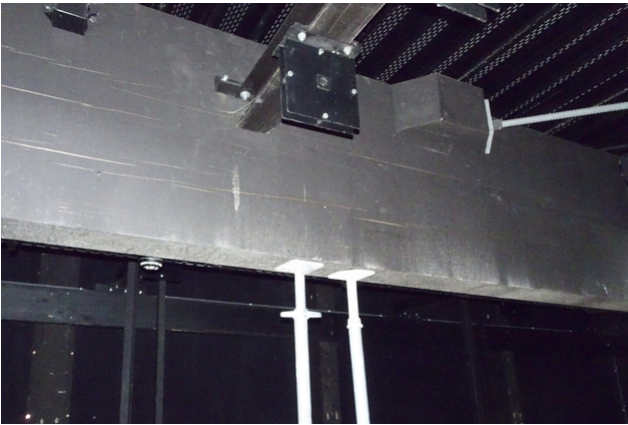
The numerous technical installations throughout the room were allowed to carry high loads and could not be displaced. Furthermore, the new structure had to fit inconspicuously into the existing space and not interfere with the theater operation with its numerous facilities.



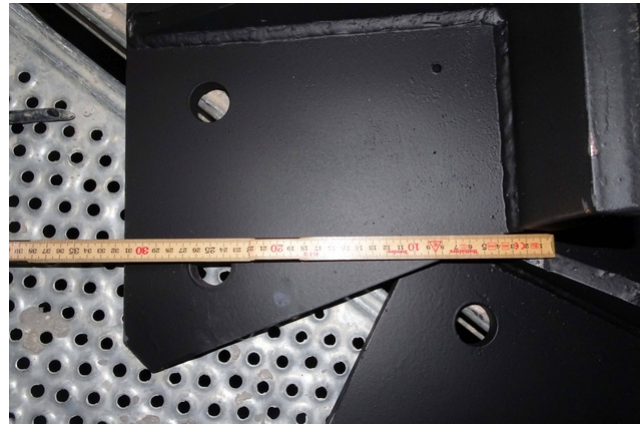
Measuring the gap widths



Fastenings of the tie rods by means of steel plate



Temporary support for the carriers



Reinforcement of the beams with metal parts

**Construction Data**

- Structural steel 13
- 6 t
- Fully threaded screw 13 x 700
- approx. 2'700 pieces

**Services of Timbatec**

- SIA phase 31 preliminary project
- Cost estimate
- SIA Phase 32 Construction project
- SIA Phase 51 Implementation project
- SIA Phase 41 Tendering and comparison of offers
- Statics and construction
- Site supervision and site inspections

**Timber construction engineer**

Timbatec Holzbauingenieure Schweiz AG

**Buildingowner**

Commune de Villars-sur-Glâne  
1752 Villars-sur-Glâne

**Building user**

Théâtre Nuithonie  
1752 Villars-sur-Glâne

**Architect**

ASS Architecte  
1705 Fribourg