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## Maintenance and Strengthening of the Timber Roof Elements in the Church of St. Dimitar

**Marina Traykova**, Prof., PhD, Struct. Eng., University of Architecture, Civil Engineering and Geodesy, Sofia, Bulgaria

**Doncho Partov**, Prof., PhD, Struct. Eng., University of Structural Engineering and Architecture, Sofia, Bulgaria

### Brief Description of the Presented Case, Including Project Aims and Challenges

Saint Dimitar is a Bulgarian Renaissance church (*Fig. 1*). It is located in the eastern part of Kuystendil city. It was built between 1864 and 1866 through the initiative of the Kuystendil-based teacher Dimitar Stoyanov-Dimitry and carries the name of Saint Dimitar, Miracle worker of Solun (Thessaloniki). The creator of most of the icons in the church was the famous Samokov-born artist Ivan Dospevski, a representative of the Samokov Art School. The church is a three-nave pseudo basilica. The funding for the construction and decoration of the temple was provided by wealthy citizens, craftsmen, teachers and religious representatives. In 1865, the second school was founded. The initiator and main teacher was Dimitar Stoyanov-Dimitry.

Most of the buildings constructed until the beginning of the 20th century in Bulgaria are made of masonry, mainly stone masonry (exterior and some interior walls), and timber elements (floors, roofs, ceilings, interior and some exterior walls). According to Ref. [1], if properly connected, these elements promote good global behavior: the masonry walls support the floor beams and roof trusses, which act as horizontal braces, inducing a more uniform distribution of stiffness and loading throughout the structure. This type of structure is disseminated all over the country and represents one of the most applied structures of Bulgarian heritage buildings, justifying the increasing interest in its preservation as a memory of culture and identity. Unfortunately, most of these structures are seriously damaged and abandoned, requiring urgent interventions.<sup>2</sup> In this field, and particularly for old timber structures, many authors, respecting the International charts and ICOMOS,<sup>1</sup> recommend techniques using traditional materials such as wood and steel. These techniques, consisting of the addition of timber elements and steel plates, have been applied in the rehabilitation of old buildings with very good results.<sup>3</sup> One example is the strengthening of