

PROJECT BRIEF

Upgrading of Bridges for the Bangkok Metropolis Administration with the TYFO® Fibrwrap® System



Bangkok, Thailand  
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With many rivers flowing into the heart of the Kingdom of Thailand, Bangkok alone accounts for more than 1,000 bridges, linking together all the roads and lanes running across these rivers. In a capital-wide inspection of bridges, many of the reinforced concrete bridges were found to be in deteriorated condition; signs of concrete cracking and spalling due to reinforcement corrosion were observed, which could be attributed to aging, harsh environmental conditions and increase in traffic loadings over the years. The Bangkok Metropolis Administration (BMA) required these bridges to be retrofitted to enhance their resistance against corrosion with further strengthening to adapt to higher traffic volumes.

After assessing the situation, TYFO® Fibrwrap® Composite System was proposed as an effective solution for the retrofitting work and as a viable material to address the needs of strengthening, corrosion protection and long term durability simultaneously. With its composite technology derived from the aerospace industry, rendering it to be a light-weight and strong material, it was chosen over conventional methods due to its speed and ease of application in difficult site conditions. As traveling by boat is one of the daily modes of transportation for the local people, it was essential that the use of the rivers and bridges remain undisrupted.

Located on the outskirts of Bangkok, Yaipian Bridge and Tonlan Bridge were the first two bridges earmarked for repair and upgrading. All the girders, piers and deck slabs were repaired and reinstated before the application of the TYFO® Fibrwrap® Composite System. The project was executed under strict quality control within the stipulated project schedule. It was completed within a short one-month period, to the satisfaction of all parties involved.

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