

PROJECT BRIEF

CHINA

Flexural and Shear Strengthening of Yue Jin Bridge with the TYFO® Fibrwrap® Composite System



Suzhou Highway, China
December 2004



After years of service, it was found that the present-day traffic loads exceeded the original design capacity of the Yue Jin Bridge structure. All sixty-six longitudinal beams were in need of strengthening for both shear and flexure. Any works to be carried out had to abide by one main precondition set by local authorities: all existing traffic beneath these bridges were not to be suspended during retrofit works. Therefore the installation works had to be carefully coordinated with the authorities for partial diversion at low-traffic hours.

Due to the operational flexibility, ease of application and speed of application, the TYFO® Fibrwrap® Composite System was chosen to retrofit this structure. The TYFO® Fibrwrap® Composite System uses aerospace technology and materials, i.e. carbon/glass/aramid fibres and epoxy composites and works on the concept of wrapping structural members such as columns, beams, slabs and walls to enhance ductility and load carrying capacity of the members.

Flexural capacity of the bridge beams was enhanced by placing the designed number of layers of TYFO® SEH51 composite on the soffit of the beams. Shear capacity of the beams was enhanced by placing the designed number of layers of U-Shaped TYFO® SEH51 composite shear wrap near the support regions of the beam. From start to finish, the project took approximately 2 months to complete with minimal disruption to traffic under the bridge.

FYFE Asia Pte Ltd

8 Boon Lay Way, #10-03 Tradehub 21, Singapore 609964

Tel: +65 6898 5248 • **Fax:** +65 6898 5181 • **E-mail:** info@fyfeasia.com • **Web:** www.fyfeasia.com