

Association of Professional Engineers

of the

Province of Manitoba

# Certificate of Engineering Achievement

presented to

**ISIS CANADA AND MANITOBA HIGHWAYS AND  
TRANSPORTATION**

for the

**TAYLOR BRIDGE IN HEADINGLEY, MANITOBA**

*This certificate honours the Network of Centres of Excellence on Intelligent Sensing for Innovative Structures Canada, and Manitoba Highways and Transportation, for the concept, design and construction of the Taylor Bridge - the world's longest span bridge using advanced composite materials and remote sensing technology. The significant combination of conventional and innovative technology in this structure allows engineers to collect performance data on a direct comparison basis. The installation will help the technology gain widespread acceptance in the international engineering community.*

*The Taylor Bridge, which opened October 28, 1997, represents a significant departure from traditional design in its use of carbon and glass fibre reinforced polymers (FRP) - a stronger, lighter, more durable material that resists corrosion and is on its way to becoming the new global standard in engineering and construction. Carbon FRP was used for the prestressing and shear reinforcement of four girders and to reinforce part of the deck slab. Glass FRP reinforcements were used in a portion of the barrier wall. ISIS Canada's internationally recognized research in this field is resulting in structures with longer life cycles and reduced maintenance costs.*

*The Taylor Bridge is a "smart" structure, engineered to monitor and communicate bridge performance data on a daily basis. It is instrumented with fibre optic sensors coupled with conventional electric strain gauges embedded in the bridge girders, deck slab, and barrier wall. Data is transmitted through two telephone lines for continuous monitoring of the bridge's behaviour under traffic loads and extreme environmental conditions. This leading edge technology allows engineers to monitor the bridge from a computer anywhere in the world.*

*The Taylor Bridge project partners are congratulated on their visionary approach to innovative technologies and partnerships. This bridge represents success in academic milestones, government leadership, and commercial enterprise, as well as in bringing tangible benefits to the citizens of Headingley and Manitoba.*

March 1998