



Speech by

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FIBRE REINFORCED COMPOSITES

Mr SHINE (Toowoomba North—ALP) (11.40 a.m.): This morning it was indeed uplifting to hear the Premier relate to the house the magnificent news concerning the magnesium mine near Rockhampton. He also referred to the government's other notable recent initiatives, this time in Toowoomba, that is, the attraction to Toowoomba of the 300-person Suncorp-Metway call centre and the much-needed and greatly appreciated new Toowoomba police station. I doubt whether I will tire of telling honourable members of those attainments, simply because of their importance to the economy and welfare of Toowoomba. However, today I wish to inform the House that this is not the end of the story as far as this government's proactive measures in Toowoomba are concerned.

The Department of State Development continues to promote research in the Toowoomba region, particularly in partnership with the University of Southern Queensland. In particular, I wish to notify the house of a potential \$1 billion industry. About a week ago I had the fortunate opportunity to inspect progress on the project in company with the Minister for State Development during his visit to Toowoomba, which included a visit to the university. The project of which I speak involves research into the use of fibre reinforced polymers for bridge construction.

The project essentially involves a partnership between the University of Southern Queensland; Connell Wagner Consulting Engineers; Composite Fibre Technology, which is a subsidiary of the Toowoomba based Wagner industries; and Huntsman Chemical Company of Australia. The involvement of the Department of State Development relates to the provision of a grant of \$200,000 under the Collaborative Industry Venture program to facilitate the development of this industry.

The present activities of the project represent a final phase of extensive collaborative research that involves the detailed design and construction, and extensive testing—including testing to destruction of a full-scale model with a span of 10 metres and a width of five metres—of Australia's first carbon fibre reinforced polymer road bridge. I understand that this phase is an essential step in the process of the acceptance of this new development for use in Australia's public road network.

The advantages of this new type of bridge are many, including that it is lightweight and high strength, with significantly reduced installation times and very low maintenance costs. The importance of the project for Australia's civil industry is reflected in the number of industry leaders involved in the project, which include the New South Wales Road and Traffic Authority, Queensland Main Roads and Aust Road. The aim of the project is to finalise research and commence commercialisation both nationally and internationally.

Fibre reinforced composites are new engineering materials that are about to revolutionise the construction industry. These materials are up to six times stronger than steel and concrete at a fraction of the weight. But that is not all: composites are also non-corroding and non-magnetic, and can be ingeniously designed to locate strength and stiffness where it is needed.

Composites are very attractive for use in the replacement of bridge decks and in new bridge systems. Due to their light weight, it will be possible to construct a 10-metre span bridge in a factory and transport it to a site on the back of a single truck. By lifting the bridge into place as one piece, installation can be completed within 24 hours, resulting in shortened closures of major roads. In addition, the replacement of heavier concrete and timber decks by lighter fibre composite decks allows for an increase in traffic load without an overall increase of load on the supporting bridge structure.

The current composite bridge design is extremely innovative and is the first in the world that is price competitive with steel and concrete bridges, while having all the advantages of fibre composites. The commercial potential of this new development is enormous.

Work began on this project in 1996. There was prolonged and extensive testing, and work on the project has taken place over the ensuing years. In the year 2000, the Huntsman Chemical Company joined the project as a materials expert and major sponsor. Composite Fibre Technology, CFT, which is a Toowoomba-based fibre composites manufacturer, is the latest addition to the project team. CFT will be constructing a full-scale test bridge in an access road to one of its quarries. In return for its substantial financial contribution, CFT will obtain the manufacturing rights and associated intellectual property for the new bridge. The background intellectual property will remain with the University of Southern Queensland.

The advantages associated with this project are enormous. There are approximately 40,000 road bridges of seven metre span or larger in Australia, with a total asset value estimated at around \$10 billion. The program is designed to—

Time expired.
