Advanced Fibre Composites in Concrete Rehabilitation

Dr David S Thorpe
Queensland Department of Main Roads
Advanced Fibre Composites (AFCs) rapidly gaining acceptance as structural materials

Estimated saving through composites in rehabilitation and retrofitting is US $10B to $20B annually

Field has advanced rapidly

Australia lagging in uptake of AFC technology
Background

- Need to research application of AFCs
- Need to examine trends, needs, development of material
- Rehabilitation of structures a major ongoing need
- Composites (fibre reinforced materials) have properties which should meet Australian needs
- Research to confirm
Research Needed

Focus on application of AFCs:

- range of available products
- properties, including durability
- application approaches (e.g., anchorages, bonding)
- standards (Australian standards do not exist)
- economics
- industry perceptions
- technology transfer
A Research Strategy

- **Initial scoping study**
  - assess current knowledge and research
  - assess needs of industry
  - develop priorities
  - build on what has gone before

- **Work with industry groups, professional associations, other researchers**

- **First stage of larger project on innovation in construction materials**
Innovation in Construction Materials

- Their Definition
- Focus of Study
- Use of Knowledge

Advanced Fibre Reinforced Polymers

Selected Other High Performance Materials

Repairs and Rehabilitation: Infrastructure (roads, bridges); Buildings

New Structures
What has happened already ……