



Project Summary:

Thriving in a Global Market:

Technology Strategies for UK Civil Engineering Exports

An ICE-led study, supported by DETR under the Partners in Technology Scheme, carried out during 1997 and 1998

Project Management by Venables Consultancy

The Technology Support for Civil Engineering Export Project was carried out under the auspices of the Institution of Civil Engineers, with the aim of increasing civil engineering exports through increased technological capability. The study was initiated in response to the UK Government's Foresight programme, to provide a knowledge base of information on world construction market trends, to identify and define supporting technology needs, and to recommend how industry and government should act to maintain and develop industry competitiveness overseas.

The project focused on sectors of the UK civil engineering industry that are expected to offer opportunities for development and growth, such as:

- coastal and river engineering;
- environmental improvement and sustainable development;
- infrastructure for urban development and megacities;
- transport planning and infrastructure;
- water and wastewater engineering.

Cross-sector workshops were held to secure a range of perspectives from industry representatives and to generate recommendations on how to change the attitudes of those engaged in setting research priorities and allocating resources.

The research was undertaken by a team comprising Venables Consultancy as Project Managers, and Reading University's Department of Construction Management & Engineering as lead researchers. The final report, *Thriving in a Global Market: Technology Strategies for UK Civil Engineering Exports*, was produced in 1998 and is available from the Institution of Civil Engineers, One Great George Street, Westminster, London SW1P 3AA.

Further Details on the Project

The objectives of the Technology Support for Civil Engineering Exports Project were:

- to assess technological and export performance trends in the major overseas markets for UK civil engineering;
- to assess comparative strengths and weaknesses in UK civil engineering technologies compared to overseas competitors, and to propose measures to build on the strengths and rectify the weaknesses;
- to identify technologies that are considered critical to export success in civil engineering, and their interaction with other techniques such as financial engineering;
- to identify and promote appropriate research programmes to cultivate UK expertise in the identified areas;
- to engender a greater export promotion culture in the UK civil engineering research community, industry and professions, and to direct the industry towards supporting R&D aimed at enhancing or strengthening civil engineering exports.

Some of the key recommendations and messages from the project were:

Global competition: UK industry must compete globally by adding intellectual value. Industry and Government investment must focus on technologies that create or maintain a leading edge.

IR into DA: There is a great challenge to translate Innovation and Research into Development and Application. A higher proportion of industry and Government resources for technological development needs to be focused on Development and Application.

Population, development and society: The civil engineering industry, its clients and suppliers must embrace environmental, societal and sustainability dimensions in their projects and use of technology.

Strategic research: A new industry-Government partnership needs to be forged for the long-term maintenance of centres of excellence.

Demonstration projects: Industry has to be able to demonstrate new technology, successfully applied in high-profile projects. Clients, including Government, and the industry must develop mechanisms to enable new technology to be applied, tested and proved on 'home market' projects so that it can be offered successfully in export markets.

Integrated and adapted technologies: The future lies in the integration of design and construction, with adaptation to local circumstances. The industry and the research community should seek to advance and exploit those areas where it finds it has, or can gain, real technical superiority, including the creative application of existing knowledge and research results.

Design for whole-life value: Long-term performance and integrity of infrastructure are key issues. The industry must deliver projects that provide good whole-life value for money. Clients, including Government, must encourage industry in this direction through suitable project specifications, evaluation and procurement policies.

Finance and procurement: Financial engineering is an important part of winning projects. Industry must work harder at project integration, and Government needs to give practical assistance in international project financing.

International standards: Government and industry should lead the development of civil engineering-related codes and standards.

Education of overseas students: High quality engineering education is a UK strength and a human investment that yields future business. Overseas students are the clients of the future, and should be encouraged by Government and industry alike.