BOATS FOR A SUSTAINABLE FUTURE

Project Aims

The project aims to increase awareness of 'Sustainable Boating' on the Norfolk Broads. In this context, this term refers to the design, construction, operation and decommissioning of boats in ways which have the lowest possible impact on the environment and which enhance the quality of life for the local and wider community.

To this aim the project will

- Increase the awareness of sustainable boating design, technologies (reduced carbon emissions, power sources, novel materials etc) and environmental best practice (waste handling, boat dismantling, recycling etc).
- Provide information so that environmental considerations are central in the design, construction and operation of boats on the Broads.
- Provide information about the opportunities for reuse, recycling and disposal of whole boats and their components at the end of their life.

Scope

The areas to be covered by the research will include:

- technology for reduced carbon emissions from propulsion systems, including the use of bio diesel, electric motors, fuel cells and solar/PV systems;
- waste handling and treatment including on board biodegradation reactors, membrane technology for separation of solids, water treatment and waste compaction;
- sustainable materials for lower resource use, reduced pollution and landfill impacts and increased recycling;
- novel propulsion technolgies;
- design of craft for minimum impact on waterways;
- design of domestic systems to suit sustainable life styles.

Detailed recommendations from these studies will be supported by Life Cycle Analyses and an assessment of impact on the Broads and the wider environment, demonstrating a 'league table' in environmental terms, of all the alternatives.

Methodology

The research work will be broken down into five key activities, some undertaken in Newcastle and some in East Anglia. The activities are: a desk study to review the state-of-the-art, elicitation of local knowledge, analysis of data, synthesis of new proposals, dissemination of results with opportunities for feedback, and submission of final report.

Proposed Work Plan

1. State-of-the-art review: This desk study will be undertaken primarily in Newcastle where the information resources and expertise of the University are most readily available. This study will establish the current level of understanding, knowledge and technology available for the build, operation and decommissioning of recreational craft, throughout the world.

   Output: State-of-the-art report.

2. Elicitation of local knowledge: the current practices, aspirations of, and constraints on, boat designers, builders and operators on the Norfolk and Suffolk Broads will be established. This will achieved using the most appropriate techniques and may include procedures such as surveys, interviews and workshops.
   Output: Survey results.

3. Analysis of Data: the results of the state-of-the-art review and elicitation of local knowledge will be reviewed to establish what procedures, knowledge and technology are most appropriate to apply to the building and operation of recreational craft on the Norfolk and Suffolk Broads. Initial ideas may be supplemented by consultation with key organisations/institutions who have, in particular, knowledge of emerging environmental technologies.
   Output: Report on relevant and appropriate technology.

4. Synthesis of new proposals: detailed recommendations will be developed indicating alternative ways forward in order to achieve a boat that is environmentally sustainable in its building, operation, and decommissioning.
   Output: Interim report for review/feedback from local boatbuilders

5. Final Report and Dissemination of Results: the dissemination of results will be led by the Norfolk and Suffolk boatbuilders association, however the Newcastle team will provide full support. This will include provision of material for publicity purposes, provision of material and contributions to the proposed Conference, data and information for a website and the submission for publication of at least one paper in a relevant Journal.
   Output: Final Report, Submitted paper, information on website, assistance with Conference.