



## Developing a Green Inland Marina

### Environmental planning

### Calcutt Boats Ltd. Warwickshire

Calcutt Boats Ltd is a family run Marina & boat yard operation based on the Grand Union Canal at Napton Junction, where the Grand Union and Oxford Canals meet. Their current marina was built in 1989 and consists of 100 berths. As the demand for new moorings has increased dramatically in the last few years, a new mooring basin was proposed adjacent to the current one. The initial designs drawn up were dramatically discarded with only months to go before construction started, when the family realised there was a great opportunity to develop a more environmentally friendly and ecologically sensitive marina both in design and construction. The original plans could at best be described as functional and maybe slightly unimaginative with long straight piled edges and concrete capping. The pontoons were to be made of galvanised steel with set steel piling supports.



*Calcutt Boats*

Matt Preen along with the team at Calcutt drove the vision, and with the help, expertise and willingness of the earthworks contractor, Land and Water Services Ltd, the marina was fundamentally redesigned to make the most of the very latest construction techniques and recycled and sustainable materials. The amendments along with reworked environmental impact statement was re-submitted to planning, which subsequently gained unanimous approval.

#### Design Changes

The key reasons for the change in design were:



1. A softer more natural Lakeland style outline, with a central island nature reserve allowed the design to blend into the local environment
2. Soft banking construction techniques to vastly reduce the use of steel piling and concrete engineering works
3. The use of recycled and sustainable materials were used throughout
4. Ecologically sound in terms of its landscape architecture enhancing the development and growth of indigenous plant and wildlife species.
5. The new basin entrance through the existing marina to reduce impact on the canal and reduce the requirement of materials and engineering works.

#### Structure

The basin was formed with a soft edge to the perimeter with the back of each bay protected by 6" rip rap stone compacted into the bank with the waterline being planted with native marginal reed species. This forms a continuous soft edge of plants to protect against wave lap and propeller wash. Promontories were also built at various intervals along the perimeter with pre-planted, bio-degradable coir rolls around them enhancing the integrity of the bank whilst also allowing access by wildlife.



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Major work such as this always produces huge amounts of excavated material which is expensive and disruptive to remove from the site. This construction ensured that all material stayed on site with the clay and topsoil being used to construct a central island nature reserve. The island was designed to produce a natural shape with the banks of this also being protected from wash using reeds. The waterline of the island is wrapped in Canadian Green, a biodegradable fabric bedded onto the clay, this is then punctured and reeds are then planted through allowing the reeds and water plants to become established whilst maintaining the integrity of the bank. The reeds used for this have even been grown on site taking advantage of the flooded borrow pits on the basin floor. (see photo).



### **Jetties**

Deciding not to install the same galvanised steel jetties as the original mooring basin, the new jetties have been constructed from treated Douglas Fir, sourced from a sustainable supply in Scotland approved by the Forest Stewardship Council. Although they have a shorter life than the steel option it was felt that the environmental credentials and the look and feel of the timber jetties improved the overall quality of the moorings. To minimise environmental impact even further steel supports they are recycled safety crash barriers from the M5! Consideration has even been given to the electricity bollards between the moorings. The more expensive LED option was chosen as it uses a lot less power than conventional ones and also includes aluminium oppose to copper wiring.



### **Visual Impact**

To ensure that visitors to the marina really enjoyed their stay the visual impact of the whole site was an essential consideration. By laying the access road at the bottom of the perimeter slope, parking and traffic noise is kept to a minimum. Rather than have one large car park serving the whole marina, Matt opted for smaller ones positioned at strategic points around the basin surrounded by native trees to provide a pleasing visual aspect for boaters and natural habitat for wildlife and birds.

A wooden walkway follows the basin perimeter with more reeds planted behind to create the feeling of space whilst protecting the bank and oxygenating the water.

### **Wildlife**

The family have long been keen to improve the environment surrounding their marina and boat yard and back in 1990 children from a local primary school planted 80 oak trees from acorns. The acorns were planted in yogurt pots and tended to for 2-3 years by the children before being planted at Calcutt Boats. Today, 40 of these trees still exist and knowing how much hard work went into growing them, keeping these trees on site a must! If any of them had to be moved, they were dug up with a ball of soil surrounding the roots then replanted and watered. For those that could not be placed immediately a tree nursery was in place.



Links with local school children still exist and the movement of trees was recorded photographically to be shown to local children while on their annual visit to the SSSI meadows at Calcutt.



The planting programme consists of the same mix of native trees found in the woodland areas that are now maturing (see appendix one). This mix was chosen to complement and enhance the natural feel of the area and provide a habitat for birds, butterflies, insects and pond life, as well as fish and water birds. This programme is ongoing and further purchase of trees are planned to landscape the car parks and promontories. As well as trees, over 2000 reeds and bulrushes were also uprooted from other areas of the site and replanted around the marina.

### ***Conclusion***

The new marina basin at Calcutt provides a great example of how it possible to construct major new developments in a more environmentally friendly way. The final marina will provide a calmer and more peaceful and private setting for boat owners and visitors alike to moor their boats. The significant planting programme and steps made to ensure the banks consist of soft edges allow the marina to blend into the environment and encourage the population of wildlife.

Often there is a significant cost involved in taking a greener approach to construction projects such as Calcutt. However the marina owners took advantage of the fact that moorings are in high demand and increased the number of moorings from the original plan ( in consultation with and approval of British Waterways) thus maintaining economic viability of the project.

Landscaping and improvement work is ongoing as is research into finding more environmentally friendly and economically sound alternatives to traditional construction and maintenance methods.

The marina is due to have its official opening on Friday 3<sup>rd</sup> November 2006.

### ***Further Information***

To find out more about Calcutt Boats visit [www.calcuttboats.com](http://www.calcuttboats.com) or email <mailto:boat@calcuttboats.com>

The Forest Stewardship Council can provide advice on choosing wood from sustainable sources [www.fsc.org/en](http://www.fsc.org/en)

For more information about The Green Blue and other projects and case studies please contact Katherine Rowberry at [info@thegreenblue.org.uk](mailto:info@thegreenblue.org.uk) or call 023 8060 4100



## **Appendix One**

### ***Planting Scheme***

#### ***Trees***

Planting on the island includes,

- 10 x Weeping Willows
- 10 x Crack Willows
- 36 x Chestnuts
- 18 x Alder
- 18 x White Poplar
- 18 x Field maple

#### ***Reeds***

Reeds were purchased to plant around the perimeter of the island (punctured through the Canadian Green) and around the bays.

We purchased 1050 reeds from a grower in East Midlothian

- 350 x Typha latifolia
- 350 x Iris pseudacorus
- 350 x Carex pendula

Grass seed used for all the Bunds, banking and promontories;

- 5% bron top fen
- 25% chewing fescue
- 20% slender fescue
- 50% strong creeping fescue

The objectives of the planting scheme were to protect the marina from strong south-west winds, soften the landscape in a random undulating way and provide a quiet wooded walk for marina visitors. It is also hoped to provide cover for the wide variety of birds currently living in and around the adjoining SSSI meadows to the south of the proposed planting.