

ECOCRIB CASE STUDY

CENTER PARCS WOBURN FORREST



PROJECT IN BRIEF

LOCATION: Center Parcs, Woburn Forrest

MAIN CONTRACTOR: Bowmer & Kirkland

ARCHITECT: Holder Mathias

STRUCTURAL ENGINEER: Peter Brett Associates

ECOCRIB SYSTEM: reinforced soil

MAX. RETAINED HEIGHT: 8.8m

FACE AREA: 1000 m²

PLASTIC WASTE DIVERTED FROM LANDFILL: 75 tonnes



PROJECT IN FULL



The Challenge

In 2012 Bowmer & Kirkland (B&K) were awarded the £95M contract to build the 5th UK Center Parcs village in the heart of the Bedfordshire countryside. Integration and conservation of the surrounding forrest was a key strategy for the team of specialist consultants tasked with the design of 3 large multi-purpose leisure complexes of over 40,000m² in the 365 acre site. Peter Brett Associates' cut-and-fill strategy required the construction of significant height & length retaining walls to support the Plaza hotel car park and a linking bridge. PC Construction were approached by B&K to provide a design supply and installation solution. The proposal had to satisfy the aesthetic, structural, sustainability and budgetary requirements of the scheme architect, structural engineer and main contractor.

The Solution

PC Construction providing a one-stop-shop solution consisting of the design, supply and installation over 1000m² of geogrid reinforced soil Ecocrib and segmental concrete block retaining systems. Ecocrib has a BBA certified design life in excess 120 years and suitable for all demanding structural applications. The 50mm x 125mm Ecocrib profiles are manufactured entirely from recycled UK plastic waste. No waste is created during manufacture or installation with all surplus material re-processed to form new Ecocrib profiles. When the Ecocrib retaining system reaches the end of its useful life the Ecocrib profiles can be recycled again.

Site-won fill material (Woburn sand) was used between horizontal layers of geogrid reinforcement helping further to reduce waste and provide a highly cost effective solution. For lower height retaining walls the Ecocrib system is designed as a mass gravity structure only switching to geogrid reinforced soil for greater heights. Samples of the site-won fill were tested to ensure that the reinforced soil design was as efficient as possible.

Approaching 1,000 SQM of Ecocrib was used on the scheme equivalent to 18 million plastic bottle tops or 75 tonnes of plastic waste diverted from landfill. Ecocrib is one of the most sustainable yet highly durable retaining wall systems available helping to reduce the immediate and long-term environmental impact of this new Center Parcs development.

Bowmer & Kirkland's quantity surveyor, Gemma Tuckwood, said, "The Ecocrib system was extremely cost effective yet ticked all of the other boxes required by our client particularly sustainability. PC Construction carried out the installation work quickly and helped us to keep to our programme of work." She further commented, "I would have no hesitation in recommending both the Ecocrib system and PC Construction on other similar projects. I will certainly contact them again when I have a project that needs retaining walls."

