

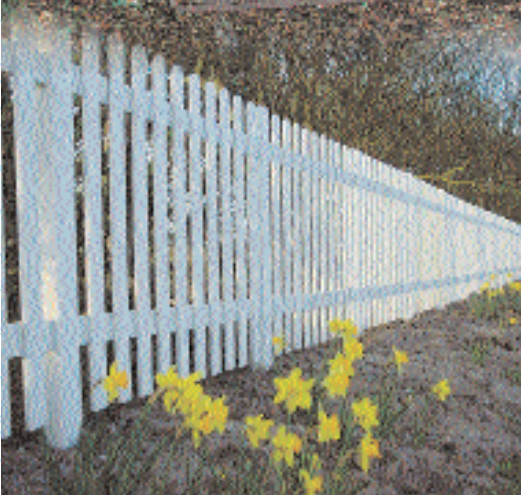
COST EFFECTIVE SOLUTIONS FOR SUSTAINABLE LAND MANAGEMENT

In town and country, we are seeing more and more recycled plastic fencing and walkways. They are chosen because they have a significantly lower whole-life cost than conventional timber alternatives.

Landscapers prefer this material because it is rot and algae-proof, splinter-free, resistant to vandalism, UV-resistant and light and easy to install.

Inside this newsletter you will see many examples of how high performance recycled plastic profiles are helping to transform the application of walkways, fencing, path edging, signage, bird hides and a host of sports and leisure applications across the country.

As the UK's leading manufacturer of profiles, sheet and board for over 20 years, Centriforce is proud to have pioneered many of these developments, and to being at the forefront of current innovation.



Our products have been used for many years in a whole variety of land management applications, from river paths and nature reserves to canal towpaths and zoos. We are including a selection of projects that demonstrate the characteristics of our Profiles. But don't just take our word for it. On page 4 we publish the results of two independent tests.

Purchasing Recycled Plastic Fencing and Walkways for Wet Environments

The document "Buying Recycled in Estates Management", prepared by Environmental Resources Management Ltd for WRAP, considers the performance of recycled plastic fencing and walkways compared with timber. It looks at:

- fencing made from recycled plastic that is available in most conventional forms including post and rail, birdsmouth, picket and panel;
- walkways constructed from a wide variety of planks and bearers to form straight or curved sections with

options for handrails;

- other recycled plastic products including signage, fishing platforms, bollards and furniture.

Performance Benefits

- Extremely durable, with a life span at least four times that of timber with little visible wear;
- Rot and algae-proof, requiring little or no maintenance and no painting or preservatives;
- Crack-proof and insect-resistant;
- Labour saving, because so little maintenance is required, and it does not need frequent replacement;
- Plastic can be uniquely manufactured to have a rough, non-slip surface;



CASE STUDY FILE

Centriforce products enhancing land management throughout the UK

Howden Marsh Local Nature Reserve - Recycled Plastic Boardwalk



The 6.5 hectare Howden Marsh in the East Riding of Yorkshire has been reclaimed by the Ponds Conservation Trust (PCT). They have replaced approximately 500 metres of wooden timber boardwalk,

mostly installed 10 years ago, with extruded recycled plastic profiles from Centriforce. The new raised boardwalk provides safer access for enthusiasts and the public, and will prevent further erosion.

"The Centriforce recycled material that we have used for pathwork and decking was chosen as an environmentally friendly, rot-free, vandal resistant, maintenance free and durable solution. It helps us to ensure that ponds become an important visual amenity in rural and urban landscapes, where communities get the best visual benefits from their ponds whilst maximising heritage and wildlife objectives."

Hugh Roberts, who manages over 40 schemes in the North of England for the Trust

Cost Comparison

(Average annual cost over 13 years).

TIMBER £717 PLASTIC £249

Ham Wall RSPB Reserve - Recycled Plastic Boardwalk

When the RSPB created a 500m flat (ground level) and raised boardwalk at its Ham Wall Reserve Visitor Centre in Somerset, it chose recycled plastic for its suitability in a wetland environment, where structural decay and leaching are major concerns.

The facilities are used by the blind, less able and wheelchair visitors, and according to them, the recycled plastic from Centriforce with its unique roughened surface provides a safe slip resistant decking. Handrails can also be extruded in a smooth finish so that they do not chaff the skin.

"We are very pleased with this safe, secure and economic installation." Sally Mills, RSPB



Cost Comparison (Average annual cost for 100m of raised walkway over 15 years)

Timber £986 Plastic £425

British Waterways – Fradley Junction

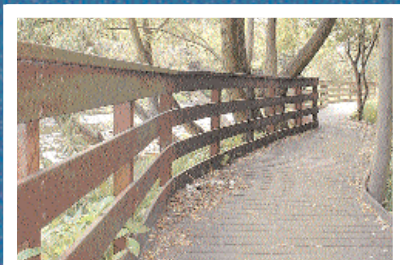
Centriforce planks were the ideal solution for British Waterways when they were making improvements to a former derelict reservoir at Fradley Junction in Staffordshire. The Fradley Pool Nature Reservoir needed a safe and attractive

boardwalk, together with circular and semi-circular pond dipping platforms and a bridge for its many visitors. Leela O'Day, Environment Projects Officer for British Waterways is very pleased with the results. The whole site now incorporates many exciting new features, including bird hides, CCTV systems to monitor and record breeding, nesting and feeding birds, idyllic walks and pond dipping platforms, which can be used and enjoyed by all.



Walkway along the River Colne – Huddersfield

The footpath along the River Colne in Huddersfield needed to be constructed using a raised boardwalk because of the fluctuating level of the river bed in wet weather. Because the water would still rise above deck level after heavy rainfall, the Council wanted to find a non slip alternative to timber. Slip resistant Centriforce planks were chosen as they can be walked on safely without fear of falling, and, as the photograph shows, fit well into the landscape.



SUSTAINABLE LANDSCAPE

- There is no need for chicken wire, which adds to the cost;
- Plastic retains latent heat efficiency, meaning a reduced frost or ice hazard during cold snaps;
- Plastic is splinter-free, and handrails can be smoothly finished;
- UV-Resistant, with little or no colour loss or sunlight damage;
- Resistant to graffiti and more resilient to other types of vandalism;
- Less flammable, it falls under Rating Class 3 in accordance with BS476.
- Solid profiles in particular are more difficult to ignite than timber.
- Hollow beams are light and easier to install.

Environmental Benefits

- By using recycled plastic fencing or walkways you help to stimulate a more active market for the raw material, and divert it from landfill.
- Timber products are subject to new legislation based on concerns over sustainable timber sourcing and restrictions on the use of Copper Chromium Arsenate as a timber treatment.
- Recycled plastic materials are completely inert, and will not leach any chemicals into water or soil.

Cost Benefits

Whilst some recycled plastic products have greater up-front costs, their longevity, durability and low maintenance make them a more cost-effective option over the long term. Recycled plastic fencing and walkways have significant whole-life cost savings compared to conventional alternatives.

Many of these benefits apply to all the following examples.



Fusion Marine – Pontoon

Fusion Marine, who specialise in the supply of high quality equipment to the international fish farming industry, uses Centriforce products to ensure that their products meet the highest standard of performance.

Formed as a division of Fusion Group in 1989, its main products are now strong and durable fish cages, along with the supply of moorings, nets and other associated items. Pontoons, rafts and floating walkways also form a large part of their business.

“From the beginning, we needed to source a material for providing a deck on some of our products. Flexibility, toughness and a long lifespan were the primary considerations. These considerations led us to look at a range of recycled plastic

profiles that had just been developed. We worked closely with various manufacturers and settled on a product which had the necessary characteristics. Centriforce in particular were extremely helpful in developing a “rough one side” profile, which gave us the added benefit of anti slip surface.” Alan McCleod, Director

Sizewell Belts Nature Reserve – Boardwalk and Bridges

Sizewell Belts near Aldeburgh is one of nearly 70 reserves managed by the Suffolk Wildlife Trust. In summer 2003, site manager, Alan Miller, was looking for a more robust and durable alternative to timber for the raised boardwalk he was planning to construct through woodland. He was well aware that with timber, repairs and maintenance are required every 5 years, and in some cases, wood requires complete replacement within 10 years.

He therefore chose recycled plastic material from Centriforce for a 30-metre boardwalk, and found even more immediate benefits. Had he used timber, to prevent the boardwalk from being in direct contact with the wet ground and rotting, he would have had to fit posts into the soil and place the boardwalk on top. With plastic, the boardwalk could be placed on bearers directly onto the ground.



“A much better alternative than timber and has brought us many benefits.” Alan Miller, Site Manager

Cost Comparison (Average annual cost for 100m section over 15 year lifespan)

Timber £960 Plastic £286

Suffolk Coastal District Council – Fencing at Felixstowe

The Waterfront and Spa Gardens, popular attractions on the sea front at Felixstowe, have fences placed along pathways to mark the edges of roads, pathways and cliffs, and to ensure that people keep off the grounds. As graffiti is a permanent



problem, Eddie Peters from the Leisure and Tourism Department, was tasked with finding an alternative to timber that would prove more difficult for vandals to damage, and be more resistant to sea air.

His research led him to recycled plastic, and following his recommendation, the Council replaced a 143.3 metre-long section of wooden fencing with post and rail “Ranch Style” recycled plastic from Centriforce.

“The pilot scheme has been very successful, and more extensive replacement is planned.”

Eddie Peters, Leisure and Tourism, SCDC

Cost Comparison (Average annual cost for 143m fencing over 20 years)

Timber £226 Plastic £100

CENTRIFORCE

Changing the face of plastics



OTHER APPLICATIONS



Path edging at Formby Golf Club



Sports pitch and perimeter barrier

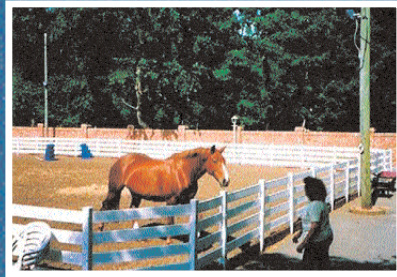
Lay new pitch over existing level ground, save time and money.

Golf tee

Horse paddock fencing

Signage at Bath Showground

Signage at Knighton Wood



INDEPENDENT VERIFICATION

We are proud to have the endorsements included in the preceding case studies. But our products have also been subjected to two rigorous independent tests, the conclusions of which we are pleased to publish below.

EVALUATION OF WEATHERING IN MIXED POLYETHYLENE AND POLYPROPYLENE PRODUCTS

WRAP PROJECT CODE: PLA0007-008

PRODUCED BY: University of Brighton and RAPRA Technology

This study, commissioned by WRAP, provides a technical evaluation of how mixed waste plastics, including the Centriforce products shown in the case studies, are affected by weather and other aspects of their habitat. The main findings show that as far as the two primary criteria are concerned – mechanical strength and UV degradation – there has been no appreciable deterioration of the materials after continuous exposure of 5 or more years in the field.

The tensile strength of Centriforce materials was found not only to be unaffected by UV exposure, but the study concluded that it might have slightly increased. The bulk solid properties and melt flow characteristics also remain unaffected by UV exposure.

The study showed that the results of the Centriforce products that had been in use for several years were almost identical to the materials we had just produced.

MATERIALS TESTING SERVICES – UNIVERSITY OF PORTSMOUTH

Full Testing Programme commissioned in May 2004.
Summary of key issues:

TENSILE/BENDING TESTS – BS 373
Researchers comment "Because of the nature of the material, will deflect under excessive loading, but not break".

SLIP RESISTANCE – BS 7976-2 : 2002
Unique extra rough surface rated at Excellent in dry conditions and Fully Satisfactory in wet conditions.

IMPACT RESISTANCE - BRE SCREED TEST
Product showed "no visual signs of distress" and performed significantly better than concrete.

CENTRIFORCE - THE PROFESSIONAL'S CHOICE

We hope that the case studies on pages 2 and 3 have given you a feel for the many benefits of recycled plastics in estates management: a better, longer lasting and easier to maintain product that yields significant whole-life cost benefits. The materials mentioned in this newsletter are all are tried, tested and fit for purpose. Of course each project is different, which is why we at Centriforce pride ourselves on our product development and technical expertise to provide customers with:

- Planks that are manufactured to exact requirements.

- A unique capability to make hollow sections as well as solids.
- A range of colours.
- A choice of surface finishes, including a unique rough one-side plank, which has a tested slip-resistant surface that is ideal in wet areas.

So please access our website, or call us for more information or to arrange a meeting.

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