

# RECYCLED PLASTIC AS A WOOD ALTERNATIVE

## USES AND BENEFITS





## A new approach

Traditionally wood has been used to make products such as boardwalks, fencing, street furniture, and signage. However, there are a number of disadvantages associated with wood, including the need for ongoing maintenance, treatment, and a limited lifespan.

There is an alternative material derived from recycled plastic, which can be used in many of the same applications as wood – with significant performance benefits and lifetime cost savings.

Recycled plastic as a wood alternative is cost effective, durable, long lasting and is particularly suited to harsh and damp conditions.

The material does not require treatments or preservatives that are potentially harmful to the environment. In addition, recycled plastic does not leach any harmful chemicals into soil or water systems.



## What are the performance benefits?

Products made from recycled plastic offer a number of performance benefits when compared to wood.

- **Extremely durable** – products have an expected lifespan of at least four times that of wood, with little visible wear
- **Labour saving** - significant savings in labour due to reduced maintenance and replacement requirements
- **Rot proof and algae proof** - little or no requirement for maintenance, painting or preservatives
- **Vandal resistant** – due to its surface texture the product is more resistant to graffiti and more resilient to other types of vandalism
- **Less flammable** – most recycled plastic products are more difficult to ignite than wood
- **Lightweight** – some suppliers and manufacturers offer hollow beams, which are lighter and can be easier to install
- **Crack proof and insect resistant** – recycled plastic products will not crack or dry out and are resistant to attack by insects
- **Non-slip** – plastic can be moulded to have a rough non-slip surface (no need for chicken wire)
- **Splinter-free** – plastic does not splinter and handrails can be smoothly finished as required
- **UV resistant** - little or no colour loss or sunlight damage has been recorded on products that have been in place for more than five years

## What products are available?

A range of profiles, planks and sections are available for:

- Fencing – including post and rail, birdmouth, picket and panel
- Walkways
- Seating and benches
- Fishing platforms
- Harbour walls
- Signage
- Bollards
- Litter bins
- Specialist sports items e.g. golf tee

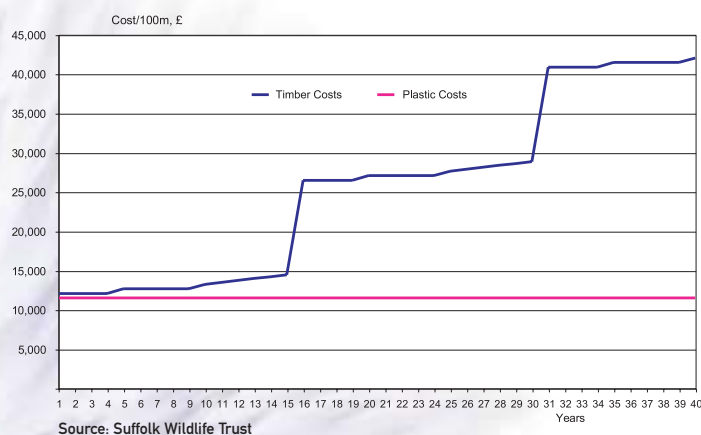




## What are the financial benefits?

Achieving value for money is a key driver for any purchasing decision. Although some recycled products have greater up-front costs, their longevity and durability make them a more cost-effective option over the long term.

The graph demonstrates a cost comparison using average cost information from a typical case study. The real cost advantage is seen once the wood walkway needs to be replaced for the first time.



Recycled plastic walkways can offer savings of up to 50% per annum in whole life cost savings

## Why buy recycled?

There are an increasing number and variety of high quality products made from recycled materials in the marketplace, but there are still a limited number of organisations specifying them.

WRAP (the Waste & Resources Action Programme) is a government-funded organisation created to accelerate resource efficiency. Its focus is on creating stable and efficient markets for recycled materials and products. WRAP believes that there is a great opportunity to increase the demand for recycled products by increasing awareness of the quality and variety available.

As well as commercial benefits, recycled products provide a number of environmental benefits e.g. reduced waste to landfill. Organisations are coming under increasing pressure to demonstrate their commitment to corporate social responsibility and to adopt procurement strategies that consider products with recycled content. For local authorities, recycled products provide an opportunity to demonstrate policy commitments in terms of sustainability and to achieve whole life cost savings.

**In short, purchasing products made from recycled materials makes sound commercial and environmental sense.**

## Ponds Conservation Trust

### Hugh Roberts, Northern Manager

“Through our community based pond creation and restoration project, Ponds for People, the Ponds Conservation Trust has had a great deal of experience of using recycled plastic as an alternative to wood. Working in a wet environment with members of the public using the end product, it is vital for us to have a safe and durable product that also looks good.

“Throughout nearly all of our 40 plus funded UK project sites, we now use a vast array of products made from recycled plastic – from boardwalks, dipping platforms, and fishing pegs, to seats, tables and fencing.

“During construction we have found the material to be very forgiving and easier to work with than wood. Unlike

wood, plastic profiles do not split, snap or splinter and, once screwed and bolted together, the structure is sound and has a softer feel to it than wood.

“There is no need for preservatives because the product does not rot so this is a cost saving and, as a ‘sealed’ product, it cannot leach any pollutants into the water or ground which is very important for the environment. Another cost saving is in terms of labour. There is very little maintenance needed to keep this product safe, as it is virtually self-cleaning when it gets wet.

“We believe there is great potential for recycled plastic products in the UK, particularly in landscaping and estate management sectors and we are a great example of how an organisation can adopt policies to specify recycled products, reaping the rewards in terms of performance, cost and environmental benefits.”



## Fowey Harbour Commissioners: Cornwall

Fowey Harbour is a large commercial port with over 7000 yachts, cruise ships and fishing vessels docking each season. Over the

past three years, more than 1000 metres of recycled plastic has been specified for various applications around the port including pontoons, walkways, and fendering.

Prior to using recycled plastic in these applications, vast quantities of wood were used at the port. However, the wet,



## RSPB: Ham Wall, Somerset

At the RSPB's Ham Wall nature reserve in Somerset, extensive visitor facilities for use by the visually impaired, less able

and wheelchair users have been installed. The reserve is a wetland environment so three years ago, when new boardwalk facilities were being installed, it was essential to identify products that would be able to cope with the damp conditions, where structural decay and leaching are major concerns.

salt-water environment caused the wood to rot, making replacement necessary approximately every two years. When wood rots, bolts can protrude, potentially causing damage to boats docking at the quayside. To reduce both purchasing and labour costs, products made from recycled plastic were sourced and, over the course of the past three years, the majority of the wood at the port has been replaced by recycled plastic.

The results speak for themselves. As well as providing a rot-free alternative to wood in often harsh, wet conditions, the recycled plastic has not shown any signs of damage.

500 metres of ground level and raised boardwalk made entirely from recycled plastic were installed at the reserve.

The boardwalk has been very well received by wheelchair users visiting the reserve. As well as providing an aesthetically pleasing alternative to wood, another major benefit for the RSPB has been its durability – there has been no need to repaint or replace the boardwalk since it was installed three years ago, something that would have been necessary had it been made of wood.

## How to purchase recycled plastic products

- Identify product suppliers who can meet your requirements at [www.wrap.org.uk/plastics/woodalternative](http://www.wrap.org.uk/plastics/woodalternative)
- Obtain a product sample – most suppliers are happy to provide these
- See a product 'in situ' – most suppliers will supply a list of local sites to see the product in use
- Consider a product trial – an opportunity to test the product's performance

For a full list of suppliers and further information visit:  
[www.wrap.org.uk/plastics/woodalternative](http://www.wrap.org.uk/plastics/woodalternative)

For further information about WRAP and other recycled products, please visit the WRAP website:

[www.wrap.org.uk](http://www.wrap.org.uk) or call on **0808 100 2040** (Ref: PLA01)

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