

reconstruct

better business | better profits | better building

Using recycled plastic products in construction



For construction clients,
contractors and professionals,
including:

- Developers
- House-builders
- Housing associations
- Local authorities
- Blue chip companies
- Major contractors
- Architects
- Consultants
- Quantity surveyors

wrap

The Waste & Resources Action Programme

Recycled plastic products

In 2004, the Government's Sustainable Buildings Task Group recommended setting a minimum standard for the overall percentage of re-used and recycled material incorporated into a construction project. The recommendation that recycled materials make up 10% of the total materials value of a project is now included in both the Code for Sustainable Building (to be launched in late 2005) and in Building Regulations.

To help facilitate this goal within the construction sector, WRAP (the Waste & Resources Action Programme) has

launched 'reconstruct' – a programme which aims to make sustainable procurement easier across the sector.

Its objective is to help create competitive advantage through materials resource efficiency, by increasing recycled content.

This brochure details how this may be achieved with reference to products which contain recycled plastic and shows the many ways in which you can utilise these products to benefit your organisation.

Recycled plastic products for construction are usually made from post-consumer and post-industrial plastic waste from one of three main plastic materials:

- Polyethylene; sourced from plastic bottles, bags and wrapping film.
- Polystyrene; from sources such as CD cases, vending cups and food packaging.
- PVC; from windows and industrial products.

Some products are made from 100% recycled plastic, and others, known as 'wood polymer composites', use a novel blend of recycled plastic and recycled wood.

Both materials are readily formed into an almost infinite variety of shapes, sizes and colours.

This brochure includes information on a wide range of recycled plastic construction products, including:

- Damp proof membranes
- Water drainage
- Pipes and ducting
- Kerbstones
- Wall cladding, soffits and fascias
- Roofing materials
- Piling and ground stabilisation
- Scaffolding planks
- Decking and flooring products
- Fencing
- Street furniture
- Traffic management

To find out more about who can supply these products, take a look at the list of suppliers on pages 6 and 7.

The facts

Purchasing recycled plastic products is a win-win situation:

They are often cost neutral.

They can help win tenders.

A wide and ever-growing range of applications are catered for.

Products are widely available in small or large quantities.

They help demonstrate your business's commitment to sustainability.

Using them stimulates demand for more recycled raw materials.

The benefits

Save money

Many factors influence the decision to specify a particular product including performance, reliability and the purchase price. In addition the life costs of maintenance, installation and replacement will contribute towards a product's 'value for money' rating.

Recycled plastic products score highly in all of these categories. They are also widely available and price competitive.

When you consider the 'whole life costs' of products made from recycled plastic, the benefits become obvious. Case studies show that over the long-term, due to their durability and longevity, recycled plastic products are a smart, cost-effective investment. For example, plastic fencing does not require treating or painting, hence saving on project costs in the building stage. In addition, recycled plastic products do not rot and require minimal maintenance.

Improve performance

Recycled plastic produces strong and versatile products suitable for a wide range of construction applications. One of the main advantages of plastic is its high strength to weight ratio. Plastic products are generally light and so can help alleviate manual handling issues and ease compliance with Health and Safety regulations.

A good example of this is recycled plastic kerbstones. These products are available in a full range of kerb components, all of which are lightweight, which means that the parts can be placed manually rather than requiring mechanical handling. At the same time these products retain the necessary impact, strength and corrosion resistance to meet the required BSEN1433 standard.

Did you know?

Construction is the second largest user of plastic in the UK after packaging, consuming 23% of all plastic. Therefore the potential for using recycled plastic is considerable.



Case Study 1

Recycled fencing

A number of fencing products manufactured from post-use recycled plastic are now available. These products are flexible, light, maintenance free, sustainable, and can be used alongside traditional wood fencing and posts. For example, Centriforce's recycled plastic fencing is used by Suffolk Coastal District Council in the Waterfront spa and gardens at Felixstowe to overcome problems of graffiti and damage by the sea air.

Supalite fencing systems are manufactured from 88% recycled materials and come in a wide range of styles. They are lightweight, very easy to install and do not crack and chip, so reduce wastage from damaged fencing.

These fencing products are being used successfully by a number of house builders who are using these lightweight materials to meet Health and Safety regulations; a standard Supalite post weighs just 6.4kg, and so comes well within the limit of 25kg for individual manual handling. As a result, companies such as Persimmon Homes, Charles Church Homes and Redrow have all ordered Supalite fencing for their housing developments.



Case Study 2

Recycled damp proof membrane (DPM)

Visqueen EcoMembrane is the first DPM on the market to be produced exclusively from 100% post-use material. As such, it has attracted much interest from developers and specifiers, as Visqueen's Gareth Grindal explains: "The EcoMembrane meets our customers' increasing requirements for sustainable products, without compromising product performance. We therefore actively promote the environmental credentials of all our products because it brings a real business benefit for both us and our customers."

The DPM can be used as a Type A damp proof membrane as defined by BS EN 13967: 2004. It is available in a variety of thicknesses and is suitable for horizontal applications within all construction projects requiring a damp proof membrane.

The benefits

Win new work

Increasingly, organisations are finding that having a reputation for good practice in sustainable procurement improves their chances of winning new work.

This is particularly relevant for public sector contracts, or when in pursuit of local authority planning permission, where evidence of a track record of sustainable policies is becoming a key requirement for any successful bid.

In addition, professional bodies are lending their support and recognition to recycled products, with many viewing the use of recycled products as key in delivering a sustainable construction project.

Protect the environment

Recycled plastic products offer sustainability benefits and they often require minimal upkeep and repair. What's more, recycled plastic products can be fully recycled again at the end of their lifespan.

Recycled plastic materials are totally inert and will not leach chemicals into water or soil, even in wet environments.

The purchase of recycled plastic products stimulates demand for materials which are collected for recycling, diverting material from landfill.

Did you know?

Recycled plastic products are highly durable. They are also UV resistant and do not suffer from colour loss or sunlight damage.

Next steps

The easy way to get started and order products

It is easy to start making a difference. Use of more sustainable products doesn't require an overnight shift in your purchasing strategy. Many of the products detailed within this brochure are available nationwide for large and small projects. To order, all you need to do is:

- Use this brochure to identify suppliers who meet your requirement;
- Call the supplier and quote this brochure code: 07PLA;
- Obtain a product sample – most of these suppliers will be happy to oblige;
- Visit a site to see the products in action – suppliers can provide a list of local sites;
- Order your selected product.

After evaluating recycled products and experiencing their cost and reputational benefits, you can consider widening the range of recycled products you use.

Thinking bigger

Having a sustainable procurement strategy can offer real tangible benefits. It demonstrates that such policies are at the heart of your organisation, and can bring business, social and environmental gains.

As part of this strategy, you could set a requirement for higher recycled content to be used in the delivery of all your projects. By incorporating sustainable procurement clauses into your contracts you can also ensure your subcontractors are on board and contribute to the sustainability of your projects and your reputation.

Did you know?

On average, 1000 plastic bottles are diverted from landfill in making a single metre of recycled plastic decking.



Case Study 3

Sustainable drainage system Colten Homes Ltd

Colten Homes needed a storm water management system for a new 55-bed nursing home in Poole, Dorset. Their key issue was speed of installation - as the only suitable location was at the site entrance, which would disrupt normal access during the build phase.

They turned to Hepworth Drainage's GEOLight sustainable drainage system. This low-weight, modular, honeycombed structure, made from recycled PVC, offers 95% water retention void, fewer distribution pipes and reduced excavation over traditional systems.

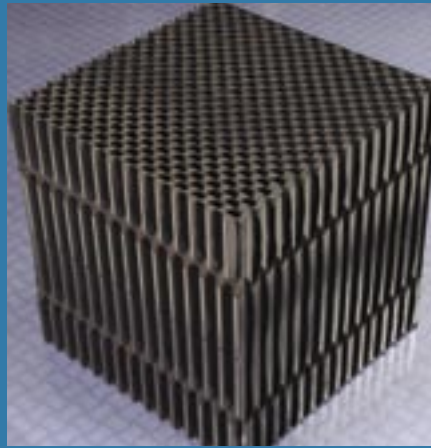
Its ease of use led to the system being installed within a day, and with minimum disruption to the rest of the build. Colten Homes were so impressed with the GEOLight system that they plan to install it at other developments.

Where to buy recycled plastic products

A wide range of recycled plastic products for construction and landscaping projects are now available. The following tables detail product ranges and suppliers you can contact for further information.

Please note that this list is not exhaustive and whilst every effort has been made to ensure the following products contain recycled content and are available in ready supply, we recommend that you check product details with each individual supplier before you order, as products may be subject to change.

Product	Company	Brand	Web address	Telephone
Structure				
Cladding	Extrudawood Ltd		www.extrudawood.com	01983 527575
Cladding/doors	Highwood Ltd		www.highwood.uk.com	01983 568154
Cladding	Plaslyne Building Products	Plaslyne	www.epwin.co.uk	01952 292511
Damp proof course & damp proof membrane	British Polythene Industries PLC	Visqueen	www.visqueenbuilding.co.uk	01993 776346
Damp proof course & damp proof membrane	Capital Valley Plastics Ltd		www.capitalvalleyplastics.com	01495 772255
Damp proof course & damp proof membrane	Landline Containment Solutions		www.landline.co.uk/gas_barriers.htm	01787 476699
Damp proof course & damp proof membrane	Tough Sheet Building Products		www.toughsheet.com	01942 841111
Membranes	Sarnafil Ltd		www.sarnafil.co.uk	01603 748985
Mouldings	Composite Timber Products	Kindawood	www.kindawood.co.uk	0845 056 4147
Roof tiles	Plasrock			01422 201161
Vents	Gendex Ltd	Lapvent	www.lapvent.co.uk	01202 628124
Drainage/ducting				
Drainage channels	Naylors Ltd	Aqua-lite	www.naylorducting.co.uk	01226 794059
Drainage pipes	Delleve Plastics		www.delleve.co.uk	01789 740102
Drainage pipes	Wavin Plastics Limited		www.wavin.co.uk	01249 766600
Drainage pipes	Hepworth Drainage		www.hepworthdrainage.co.uk	0870 4436000
Drainage pipes	Polypipe Civils Ltd		www.polypipecivils.co.uk	01509 615100
Drainage pipes	SVR plastics Ltd		www.svrplastics.co.uk	01695 50717
Ducting	Hepworth Drainage		www.hepworthdrainage.co.uk	0870 4436000
Ducting	Polypipe Civils Ltd		www.polypipecivils.co.uk	01509 615100
Ducting	Naylors Ltd		www.naylorducting.co.uk	01226 794059
Access chambers	Naylors Ltd		www.naylorducting.co.uk	01226 794059
Access chambers	SVR plastics Ltd		www.svrplastics.co.uk	01695 50717
Pipe fittings	SVR plastics Ltd		www.svrplastics.co.uk	01695 50717
Stormwater storage	Hepworth Drainage	Geolight	www.hepworthdrainage.co.uk	01226 371088
Groundworks & ground engineering				
Ground engineering	Cooper Clarke Ltd	Ecoblok	www.heitonuk.com	01204 862222
Ground engineering	Ecogrid	Ecogrid	www.ecogrid.co.uk	0151 2828455
Ground stabilisation	Lankhorst Recycling UK	Ecogrid	www.lankhorst.co.uk	0151 6506999
Ground stabilisation	Netlon Turf Systems	Netpave	www.netlon.co.uk/_turfsystems	01254 266833
Paving	Lankhorst Recycling UK	Ecogrid	www.lankhorst.co.uk	0151 6506999
Paving	Netlon Turf Systems	Netpave	www.netlon.co.uk/_turfsystems	01254 266833
Piling & retaining walls	HL Plastics		www.hlplasticsltd.co.uk	01332 832389
Trench covers	Centriforce	Stokbord	www.centriforce.com	01606 301067
Trench covers	Lankhorst Recycling UK		www.lankhorst.co.uk	0151 6506999



Product	Company	Brand	Web address	Telephone
Highways & civils				
Bollards	Glasdon UK Ltd		www.glasdon.com	01253 600410
Bollards	British Polythene Industries PLC	Plaswood	www.recycledproducts.bpipoly.com	01387 247110
Bollards	Lankhorst Recycling UK		www.lankhorst.co.uk	0151 6506999
Kerbstones	Pipeline & Drainage Systems PLC	Envirokerb	www.pds-plc.com/ envirokerb_info.htm	0870 7541300
Kerbstones	Tempakerb Ltd		www.tempakerb.co.uk	01685 814604
Signs	Filcris Ltd		www.filcris.co.uk	01954 718327
Traffic calming	Oxford Plastic Systems Ltd		www.oxfordplastics.com	01608 678888
External works				
Decking	Lankhorst Recycling UK	Ecodeck	www.lankhorst.co.uk	0151 6506999
Decking	Mainedeck	Mainedeck	www.maine-deck.co.uk	08456 123104
Decking	Recology PLC	Novadeck	www.recology.co.uk	0845 6017181
Decking	Composite Timber Products	Kindawood	www.kindawood.co.uk	0845 056 4147
Decking	Trex Company Inc		www.trex.com	07966 198828
Fencing	Atkinsons Fencing	Supalite	www.atkinsonsfencing.co.uk	01977 550441
Fencing	Filcris Ltd		www.filcris.co.uk	01954 718327
Fencing	British Polythene Industries PLC	Plaswood	www.recycledproducts.bpipoly.com	01387 247110
Fencing	Octaveward Ltd	Envirowood	www.octaveward.com	01254 773300
Gates	Octaveward Ltd	Envirowood	www.octaveward.com	01254 773300
Gates	Applied Technologies Ltd		www.appliedtech.co.uk	01952 287 250
Gates	Metrolite Industries		www.metrolite.org.uk	01942 497861
Seating	British Polythene Industries PLC	Plaswood	www.recycledproducts.bpipoly.com	01387 247110
Seating	Marmax		www.marmaxproducts.co.uk	01207 283442
Seating	Glasdon UK Ltd		www.glasdon.com	01253 600410
Other construction materials				
Carpets	Green Concept Ltd		www.greenconcept.co.uk	01772 741321
Floor tiles	The Versatile Flooring Company	Ecotile	www.ecotile-uk.com	020 8449 1541
Safety flooring	HL Plastics Ltd	Suredeck	www.hlplasticsltd.co.uk	01332 830867
Scaffold boards	Uniq Extrusions	Supadek	www.uniq-extrusions.com	01495 350782

Do you supply or manufacture any recycled plastic products? If so, and you would like WRAP to help promote your products, please contact Peter Skelton at WRAP on 01295 819651.

Did you know?
 Many of the top construction contractors have already been specifying recycled plastic products for many years.

While steps have been taken to ensure its accuracy, WRAP cannot accept responsibility or be held liable to any person for any loss or damage arising out of or in connection with this information being inaccurate, incomplete or misleading. The listing or featuring of a particular product or company does not constitute an endorsement by WRAP and WRAP cannot guarantee the performance of individual products or materials. For more detail, please refer to our Terms & Conditions on our website www.wrap.org.uk



Case study 4

Lightweight kerbstones

Following the introduction of the 2005 Manual Handling Regulations (MHR) and their restrictions on the allowable weight of manually handled items, many construction companies are now actively seeking lightweight alternatives to traditional materials.

Envirokerb provide a permanent kerb solution, which has been used in a wide range of construction projects and within Highways Agency contracts, such as the M60 motorway in Manchester. The Envirokerb, made from recycled plastic, weighs just 16kg per unit and so meets the MHR's manual handling weight limit of 25kg per person.

Tempakerb's temporary plastic kerbs are also laid manually and have been used by developers George Wimpey, Jones Homes and Taylor Woodrow. Tempakerb is laid at stage one to prevent kerb damage and remedial work and replaced by permanent kerbstones before the wearing course of tarmac. Tempakerb's 4kg permanent edging kerb is simple to lay and also withstands chips and breakages.

Further Information

Based on their advantages in the key criteria of strength, reliability and availability, every construction and landscaping project should be specifying and procuring products made from recycled plastic.

For more information on available products, contact the suppliers listed on pages 6 & 7 of this brochure.

If you believe that you would benefit from a face-to-face meeting with a representative from WRAP to discuss recycled plastic, contact Peter Skelton on 01295 819651 or peter.skelton@wrap.org.uk

For a directory of additional recycled products, visit the Recycled Products Guide at www.recycledproducts.org.uk which lists over 1800 products available for construction, landscaping and garden use.

WRAP's Aggregain website www.aggregain.org.uk also provides a resource for the use of sustainable aggregates for the construction sector.

About WRAP

WRAP (the Waste & Resources Action Programme) is a major UK programme established to promote resource efficiency. Its particular focus is on creating stable and efficient markets for recycled materials and products and removing the barriers to waste minimisation, re-use and recycling.

A not-for-profit company in the private sector, WRAP is backed by substantial Government funding from Defra and the devolved administrations in Scotland, Wales and Northern Ireland.

www.wrap.org.uk/plastics/construction

For general information on WRAP initiatives, contact:

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Banbury, Oxon
OX16 0AH
www.wrap.org.uk
Email: info@WRAP.org.uk

Helpline (Freephone): 0808 100 2040
Please mention reference 07PLA when calling

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