

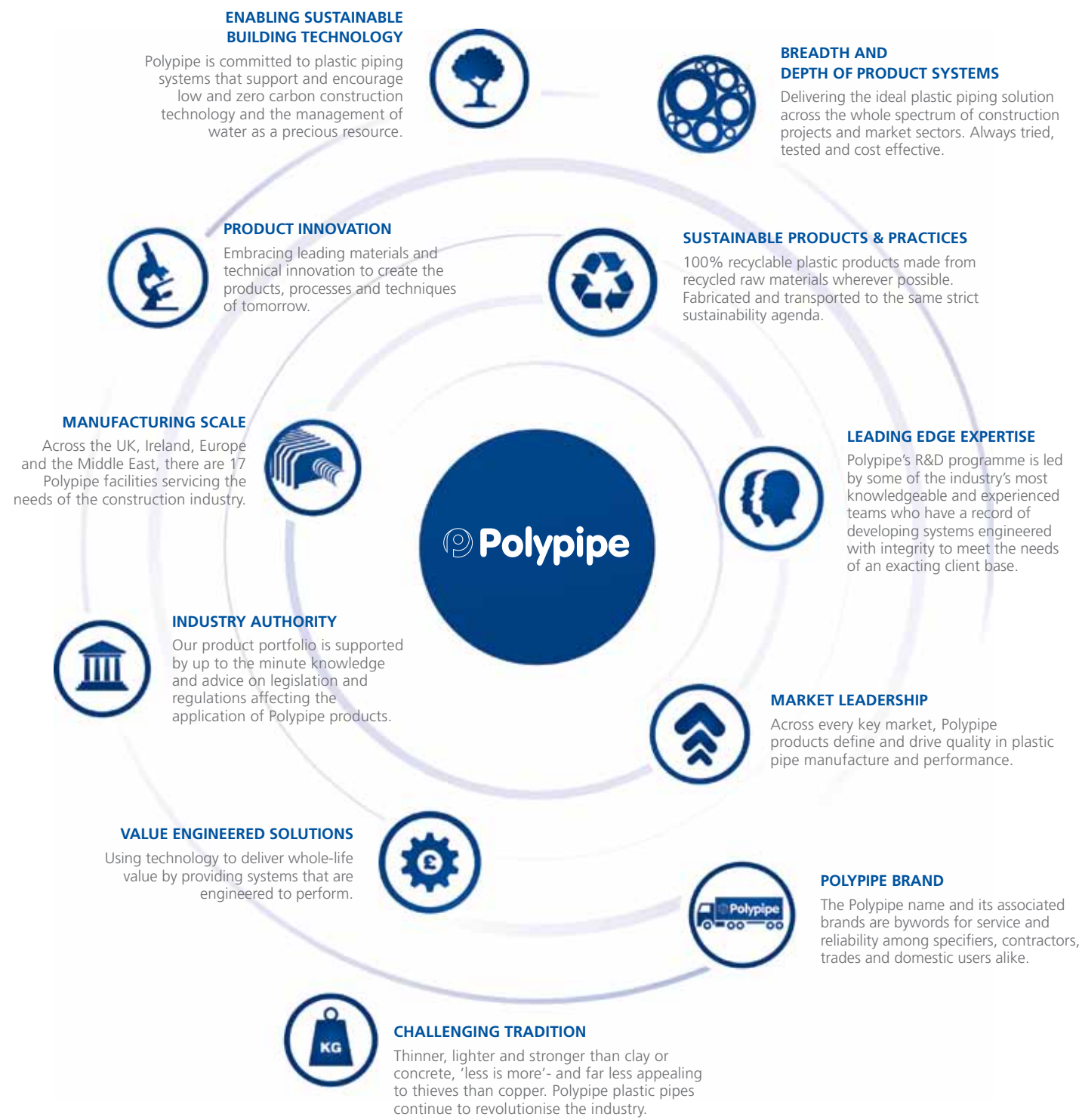
Civils and Infrastructure



Surface Water Drainage • Cable Management

Polypipe

We design, develop and manufacture the widest range of plastic piping products, with over 20,000 product lines available. Our primary focus is on developing and supporting pragmatic product systems through specific knowledge and understanding of the residential, commercial, civis and infrastructure market sectors. We ensure that customers can trust our unrivalled expertise to provide value engineered, fit for purpose piping solutions for the growing diversity and complexity of construction and building technology challenges they face.



Civils and Infrastructure

Polypipe Civis is a market leader in the production and manufacture of plastic building products and systems for infrastructure, utilities, commercial, industrial, retail and housing sectors. We offer innovative solutions and unrivalled technical support to help our customers meet today's construction challenges.

In recent years, those challenges have come in the form of far reaching legislation such as the Flood and Water Management Act and the EU Water Framework Directive, demanding 'joined up' solutions for controlling water at every stage of its journey from roads and rooftops to its eventual outfall into receiving water bodies.

To help planners, engineers and developers play their part in this process, Polypipe has developed a range of products for water storage, re-use, drainage and treatment. In addition to the comprehensive range of water management systems available, Polypipe Civis are able to protect valuable infrastructure assets with it's extensive range of cable protection solutions. Together with the water management systems, this represents a truly holistic resource for every civis and infrastructure project.



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Polypipe Holistic Solutions

Polypipe offers the most advanced and diverse range of products to the industry which are independently certified to British and European standards

From sewerage pipe systems for water authorities to land drainage for agricultural applications, surface water drainage and cable protection solutions for infrastructure projects, to water management which provide sustainable drainage solutions to tackle both quality and quantity.

Surface Water Drainage and Sewerage Systems Pages 6-7

Ridgidrain is the market leading structured wall drainage brand and is the complete technical and commercial answer to all non-pressure surface water drainage applications. In combination, Polysewer and Ridgisewer make the largest range of structured wall pipe systems kitemarked to W15 4-35-01. Ridgisewer is the only kitemarked structured wall alternative to concrete pipes.

Cable Protection System Pages 14-15

An innovator in cable protection technology, Polypipe manufacture the most comprehensive range of cable protection products in the UK.

Value Engineering Solutions

Pages 20-21

Technical, planning and installation support, available on tap from Polypipe's expert teams, plus a full range of product support literature.

Water Management Solutions

Polypipe Water Management Solutions (WMS) is a dedicated team housed within Polypipe Civils solely focused on providing engineered sustainable drainage solutions to the UK construction industry. There is a range of solutions available to the specifier for attenuation, soakaway and rainwater harvesting including complete holistic water management solutions for residential, commercial and infrastructure applications.

• Storage and Management Pages 8-9

Storage is a critical element in any water management solution, with the Flood and Water Management Act in particular identifying it as central to the measured release of water to surface water sewers and water courses.

• Treatment of Surface Water

Pages 12-13

Diffuse pollution from petrol and oil deposits poses a significant threat to groundwater quality and the environment. The EU Water Framework Directive makes water treatment a priority in its objectives for all member states to achieve 'Good' ecological status by 2015.

• Re-use and Control of Rainwater

Pages 10-11

Rainwater re-use systems provide a sustainable alternative to mains water for irrigation, laundry and washroom use. They help support local planning policy targets for water conservation and provide quick payback return periods on commercial and other buildings used by the public, such as schools and leisure centres with significant cost savings achieved against water rates.



Surface Water Drainage and Sewerage Systems



Ridgidrain is the market leading structured wall drainage brand and is the complete technical and commercial answer to all non-pressure surface water drainage applications

Ridgidrain

The very first twinwall drainage system in the UK with Highways Authority Product Approval Scheme (HAPAS) status, Ridgidrain is the complete solution for non-pressurised surface and sub-surface drainage applications. It has a high strength to weight ratio and a flexibility that allows it to resist high traffic loads and settlement without cracking or leaking.

Land Drainage

Polypipe offers an unrivalled commitment to the sports, leisure and agricultural sectors with landcoil, the durable and easy to install land drainage system. There is a choice of materials, diameters, colours and coil lengths, complemented by a unique range of systems specifically designed to aid in the effective management of land drainage.

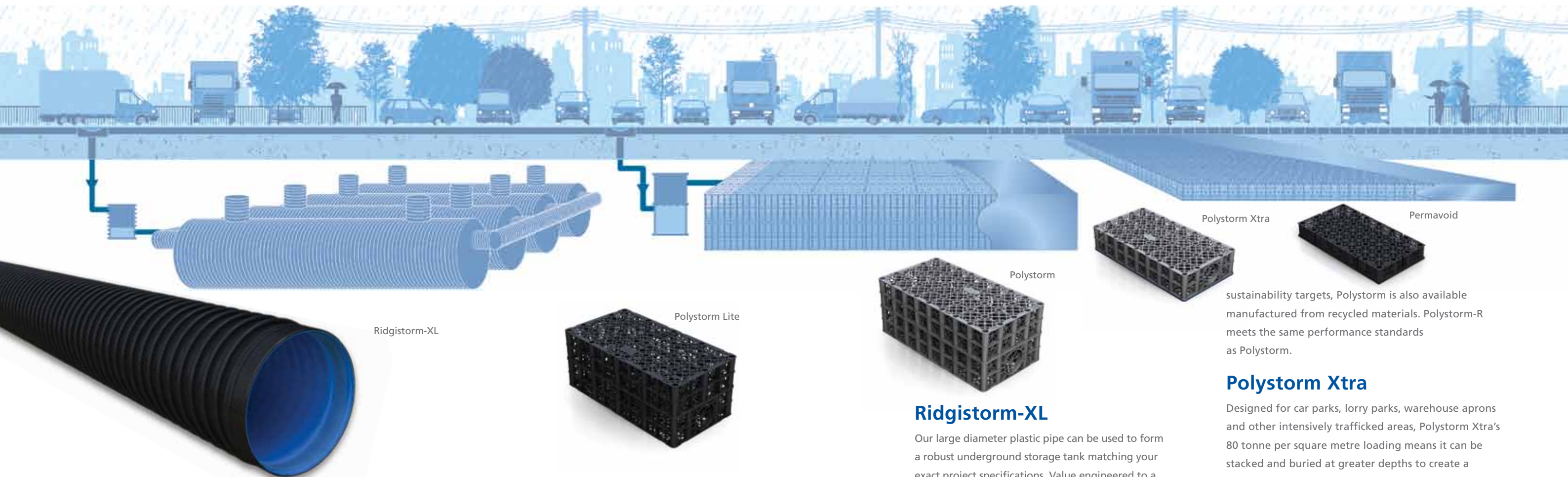
Polypipe Civils are able to offer the largest range of pipes and fittings for use in gravity sewers

Polysewer & Ridgisewer

Combining light weight and easy handling with extreme strength and durability, Polysewer and Ridgisewer provide a flexible and proven sewerage solution in every application from residential to large-scale infrastructure developments. Available in a range of sizes from 150mm right up to 600mm to help you match project specifications to product performance exactly. There is a full range of bends, junctions, fittings and accessories to complement the range.



Water Management Solutions



Water management strategies can no longer simply begin and end with the requirements of your project. As part of today's holistic approach, they must integrate with wider policies on water collection and control established by Councils, Internal Drainage Boards, Highways Authorities and the Environment Agency

Storage & Management of Rainwater

Storage is essential in SUDS design because it serves to remove or arrest water that could otherwise go on to overwhelm drains, sewers and rivers during extreme storm events or periods of sustained rainfall. It can comprise of large volume, underground tanks of the kind used in major commercial, civils and infrastructure projects, or shallower 'modular' techniques. We will advise you on which products are right for your project and on how they integrate with other systems as part of water re-use, attenuation or treatment processes.

Ridgistorm-XL

Our large diameter plastic pipe can be used to form a robust underground storage tank matching your exact project specifications. Value engineered to a precise profile strength and pipe stiffness, it combines exceptional performance with a flexibility that allows it to adapt under settlement and surface traffic loads without loss of structural integrity.

Polystorm Lite

Polystorm Lite is designed for lightly loaded and pedestrianised areas such as shopping centres, parks and sports fields. Because it shares the same interlocking mechanism, it can be combined with Polystorm and Polystorm Xtra in a value-engineered hybrid solution to accommodate a broad range of surface loadings and ground conditions.

Polystorm

Polystorm modular cells combine in an interlocking raft to provide water storage beneath paved areas such as car parks and shopping centres. Each cell has a 95% water capture volume to provide a highly efficient, SUDS compliant water storage, attenuation or soakaway solution. For projects which have high

sustainability targets, Polystorm is also available manufactured from recycled materials. Polystorm-R meets the same performance standards as Polystorm.

Polystorm Xtra

Designed for car parks, lorry parks, warehouse aprons and other intensively trafficked areas, Polystorm Xtra's 80 tonne per square metre loading means it can be stacked and buried at greater depths to create a higher volume storage capacity. It can also be combined with other Polystorm products in a versatile hybrid solution.

Permavoid

Charcon Permavoid is a geocellular system designed to provide ground water storage in shallower applications. Although it uses the same modular principal, it is half the depth of Polystorm modular cells, allowing it to be used in areas where excavation is limited by ground conditions or high water table.

Stormcheck

One of the key aims of SUDS regulations is to ensure run off rates from developed areas match those of the original, undeveloped site. The Stormcheck vortex flow control system offers a way to regulate run-off rates by controlling how quickly water is released into rivers and streams. As part of a total water management solution, it provides precise, predictable flow rates in a durable sealed unit that requires very little maintenance or cleaning.

Water Management Solutions

Water is a precious natural resource that is becoming more precious by the day. Climate change and population growth are putting increased pressure on our water supplies

Re-use and Control of Rainwater

In parts of South East England there is less available 'fresh' water than in countries surrounding the Mediterranean.

Non-domestic buildings are currently assessed under the Building Research Establishment Environmental method (BREEAM 2009) and whilst this is currently not mandatory, it is not possible to achieve the highest rating of 'excellent' through water efficiency techniques alone. This has led to an increase in demand for rainwater re-use systems on commercial projects.

Rainwater re-use systems reduce mains water demand by around 80% in commercial and other infrastructure buildings used by the general public such as schools, hospitals and leisure centres.

Efficient rainwater re-use systems dramatically reduce the cost associated with mains water. Payback periods of around two to five years depending on the project specifics can easily be achieved.

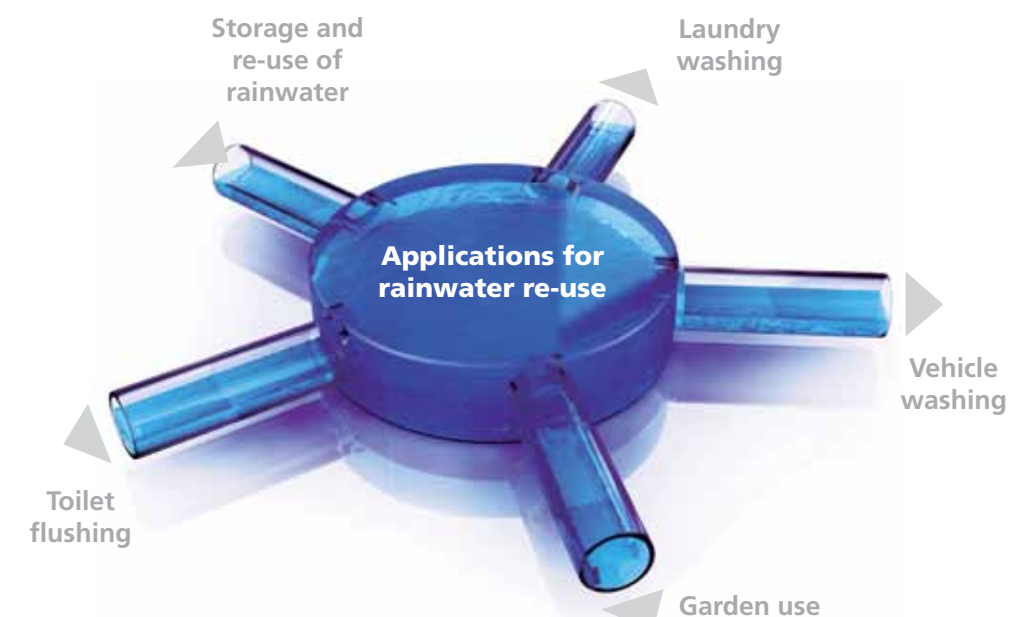


Rainstream-XL

Polypipe's Rainstream-XL system provides an effective and versatile way to harness rainfall for use in a whole range of non-potable applications. Consisting of a below ground, structured wall tank into which run-off from the roof area is stored, the system can dramatically reduce mains water consumption by up to 80% in commercial buildings (50% reduction in domestic buildings). For commercial projects, Rainstream-XL provides water for use in vehicle washdown areas, commercial laundries, cleaning windows and irrigation of landscaped areas. The unique nature of the tank construction means that it can be installed without the need for a concrete surround, or the need to fill the tank with mains water to weight it down during installation - a feature which is unique to the Rainstream system.



Rainstream-XL can reduce mains water consumption by up to 80% in commercial and infrastructure buildings



Water Management Solutions

Alongside the challenges of managing run-off to minimise flood risk, designers of SUDS systems also have to make provision for limiting and treating pollution from surface water

Treatment of Surface Water

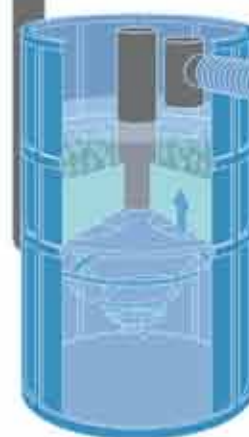
The EU Water Framework Directive sets clear targets to reduce levels of diffuse pollution from petrochemical deposits, agricultural run-off and industrial waste. These targets are incorporated in a variety of domestic legislation, including the Drinking Water, Ground Water and Sewage Sludge Directives and the Flood and Water Management Act.

Silt Traps

Located between attenuation systems and soakaway or watercourses, silt traps isolate heavier particles such as silt, grit and organic material by settlement. They can be designed and fabricated to suit individual drainage requirements, based on the desired performance and projected flow rates of the development.

Permavoid Biomat

A modified Permavoid cell containing a floating mat that first traps fuel and oil deposits, then breaks them down through microbial digestion, Permavoid Biomat is highly effective even against heavy spills. And because it relies on biological processes, it is a self-cleaning, self-sustaining system that gets more effective over time.



Silt Trap



Permavoid Biomat

Permafilter

Permafilter is a self-cleaning geotextile membrane that traps pollutants while allowing clean water to pass through its needle-punched surface. It can be used to wrap Polystorm tank structures in attenuation or soakaway applications, creating a habitat for the micro-organisms that feed on trapped oil and remove pollutants through natural digestion.

Ridgitreat

Ridgitreat is a semi-permeable membrane used as an outer wrap for Ridgidrain perforated pipe in soakaway applications. It acts as a fine filter against petrol and deposits, capturing them in a microporous mesh and breaking them down through microbial action. It has a high oil retention capacity, making it extremely effective against sudden localised spills.

Storm-X4

A self-contained unit using a four-stage upward filtration process to separate and remove silt, oil and heavy metal pollutants from surface water run-off, Storm-X4 allows water to be treated and cleaned close to source. Its highly effective oil retention unit makes it ideal for car parks and forecourts, where hydrocarbon pollutants are at their most concentrated.

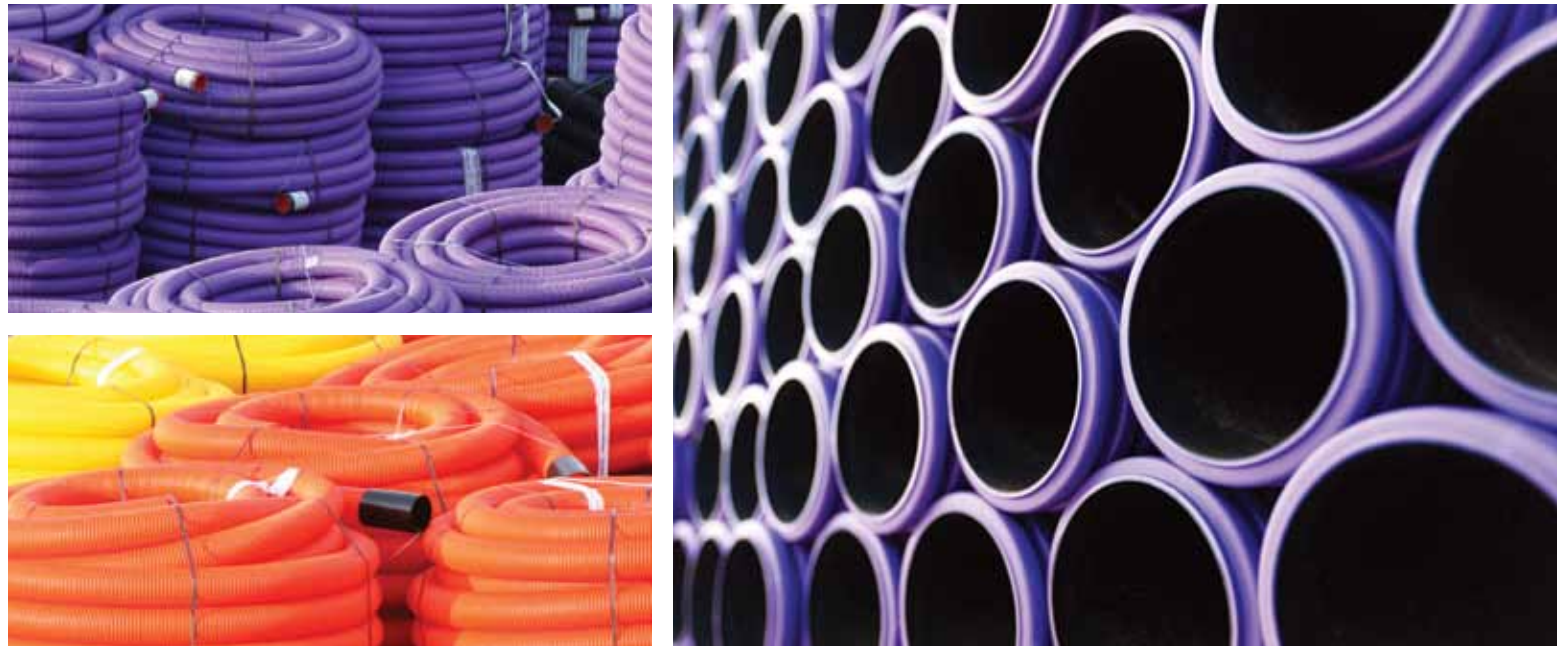


Permafilter



Storm-X4

Cable Protection Systems



Polypipe provides a complete range of cable protection systems for power, lighting, and communications cable networks

Their inherent strength and flexibility allows them to resist cracking even under heavy loads and settlement. They provide protection to the infrastructure whilst retaining easy access for repairs and replacement of the cables or pipelines they protect. The range has been extensively used for protecting fibre optic cables, power cables and cold water pipe supplies on a variety of projects including highway, rail, commercial and infrastructure projects.

All cable protection solutions are colour coded according to National Joint Utilities Group guidelines and include a full range of access boxes, pole boxes and covers.



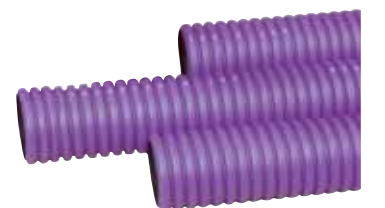
Ridgiduct power

A flexible, twin wall pipe system that provides high levels of protection to underground power cabling, Ridgiduct Power is made from robust HDPE. Available in a range of sizes, it is fully compliant with ENATS 12-24, the electrical supply industry specification for cable protection products.



Ridgiduct comms

Specifically designed for motorway communications cabling, Ridgiduct Comms is a BBA certified, fully sealed system. It is available in 94mm, 100mm and 150mm diameters and comes in 6m and 12m lengths to minimise joints and maximise strength and integrity. Where increased flexibility is required, or where cable access is restricted, Ridgicoil Motorway Comms eliminates the need for special bend joints and provides a low internal co-efficient of friction for easy cable draw through.



Ridgiduct lighting

Ridgiduct Lighting combines a low weight for easy handling and installation with a robust twin wall construction for protection of critical streetlight and traffic light power supplies. Polyduct Lighting is a single wall alternative for use in either open trench or trenchless applications.

Case Studies



Tesco

Following advice on water efficiency from the Environment Agency, Tesco turned to Polypipe Civils to provide a water recycling system for its stores, starting with Bridgend in South Wales. Working in close co-operation with Tesco's main contractor MITIE, Polypipe Civils supplied its Rainstream Rainwater Harvesting System, utilising two seamless polyethylene tanks, each with a capacity of 5,000 litres to cope with the 1,672 cubic metres of rainwater that falls on the store's 1,500 square metre roof area every year. The harvested rainwater is now used for all applications not involving drinking water or food preparation and accounts for around 36% of the store's total usage. The Rainstream system will recover the total capital outlay within the first 36 months of operation, saving the store in excess of £3,000 per year on metered water.



Terminal 5

We provided the drainage and cable protection elements of the supply chain agreement for the prestigious Terminal 5 project at Heathrow Airport alongside Laing O'Rourke and AMEC. Ridgidrain was supplied to provide a surface water drainage system on the new runway and Ridgiduct was provided for the airside lighting at Terminal 5. Traditionally the cable protection is supplied in 6 metre lengths, however specialist manufacture was carried out to provide the cable protection in 12 metre lengths. This specially manufactured product demonstrated value engineering for the customer and reduced the time and cost of installation. Working in partnership with the contractors and merchants allowed Polypipe to supply 150mm cable protection pipe in bespoke pallet loads allowing the contractors to continually feed product onto site as and when required.



Macclesfield College

We provided a complete drainage system for a £16 million project in Macclesfield, for the development of the new Macclesfield College, as part of the £38 million Macclesfield Learning Zone Development. Contractor Interserve Project Services Limited worked with the partners involved in the project. The world-class educational campus consists of a new College, a new joint Sixth Form College, a new School for Henbury High School, a new joint Sports Centre, the European Centre for Aerospace Training (ECAT) and the integration of Park Lane Special School.

Interserve approached Polypipe Civils, to advise on and consequently supply a tailored solution for complete surface water drainage and stormwater management on the site. As the depth of installation required was critical from a health and safety aspect, background work was undertaken with the consultant management team and our team of expert designers and technical department.

A bespoke drainage system, combining Polypipe Civils' Ridgidrain, Polystorm and Ridgisewer products was recommended to provide the perfect solution to efficient drainage underneath the playground area and next to the main road. The system had to be designed not to interfere with the locations' existing drainage currently in place. 300 metres of Ridgidrain pipe was supplied by Polypipe Civils as a drainage system. The Structured wall pipes were laid to receive the rainwater collected from the road and car parking area.

400 cubic metres of Polystorm units were also supplied for attenuation purposes on the hardstanding area of the car park. These units were installed underneath the car park area to capture and store the rainwater before it is slowly released back into the existing drainage system, using our flow control unit, Stormcheck. 120 metres of Ridgisewer was also specified for the diversion of sewers underneath the car park area.

Case Studies



Chipping Sodbury

We supplied a modern, bespoke and complete drainage solution for the four kilometre long Chipping Sodbury Tunnel on the main-line rail link between London's Paddington Station and South Wales. Opened in 1902, the tunnel cuts through a major Cotswold aquifer and flooding had been a serious problem prior to the new solution being implemented. 600mm Ridgisewer, was agreed as the preferred pipe within the tunnel to cope with excess load bearing. 600 and 750mm Ridgidrain with a higher than standard wall thickness and 300mm Ridgidrain pipes were also installed outside the tunnel, with all piping constructed with non-standard perforation patterns.



M60

A tailored solution was provided for the cable protection of street lighting and electrical works as well as drainage on the site of the M60. The M60 has undergone road widening between junctions 5 and 8, designed to ease congestion for commuters. The work included the creation of two additional lanes on both sides of the motorway and several 'trunk' roads. Ridgidrain Advanced Drainage System was selected to provide an efficient and highly effective drainage system on the M60 site.

Ridgiduct Power, Ridgiduct Lighting and Ridgiduct Comms were all selected as the preferred choice for use in street lighting and traffic signal applications by contractors Alfred McAlpine and AMEC, as all three products provide a light, flexible, yet robust alternative to conventional cable protection systems. 34,440 metres of Ridgiduct and 7,664 metres of Ridgidrain have been installed over the life of the project. We were able to supply a consistent range of pipes as and when required.



Kilda Road

A 2100mm attenuation tank was required for use under a car park to help alleviate flooding during heavy rainfall as part of a £500,000 flood alleviation project near Swindon.

As the tank was specified as requiring a full concrete surround, to prevent floatation due to the site's high water table, Polypipe WMS' technical team were able to value engineer the pipe used to a stiffness classification of 1.0kN, ensuring that the tank was not over engineered. The design process was supported by Polypipe water management solutions as detailed tank design drawings were provided to assist the customer to ensure suitability for the project. With the project being the first time the customer had used large diameter pipes, Polypipe WMS was on hand to offer on-site guidance throughout.

Additionally, we carried out the electro-fusion jointing on-site to the Ridgistorm-XL attenuation tank. Optimise is a joint venture between J Murphy and Sons, Clancy Docwra Ltd, Barhale Construction Plc and MWH, which delivers capital and operational projects across the whole Thames Water Region.

The project at Kilda Road highlights the versatility and flexibility of Polypipe's products, adapting the Ridgistorm-XL to meet specific surface water drainage requirements and incorporating a cost effective solution that could be easily installed on-site in rapid time.

Value Engineered Solutions



Polypipe is the only manufacturer to offer a complete range of products that covers surface water drainage, cable protection and the entire process of water management in an holistic solution

But our product portfolio is only part of the reason we're first choice for so many planners, engineers and developers. Equally important is the unrivalled experience, expertise and technical knowledge our teams bring to every project. From initial site assessment and design to bespoke fabrication and installation, you can be confident their input will deliver an optimised, value engineered system that not only offers reliable performance but benefits the overall scheme.

UKAS accredited laboratories

The in-house Polypipe Research and Development facility is one of the best of its kind and includes the independent UKAS accredited Berry & Hayward laboratory. That gives us the body of knowledge and expertise needed to produce the most advanced range of products for the management of stormwater available anywhere.

Planning

In recent years, legislation such as the EU Water Framework Directive, the Flood and Water Management Act, SUDS and the Code for Sustainable Homes, plus a plethora of local authority conditions, have all increased the complexity of the planning process. In addition, Planning Policy Statements - specifically PPS 25 - and building regulations part H have further added to the workload for planners, engineers and developers seeking approval for their commercial, infrastructure and residential projects. Our teams have the technical and regulatory knowledge to help you meet the broad range of demands needed for project approval and will advise you at every stage on satisfying their requirements.



Design

Your water management system will be developed to a bespoke design that meets the individual needs of your project. It's an end-to-end service, drawing on our full range of in-house facilities and the in-depth knowledge of our designers, technical specialists and engineers. All as part of an integrated cycle that feeds into our fabrication, installation and on-site support services to provide a truly holistic, value engineered solution.

Technical and on-site support

From initial design consultation, through scheme development, groundworks, installation and beyond, your project couldn't be in safer or more experienced hands. Our full project co-ordination services will help you manage and prioritise your on-site resources to deliver your project by the most economical and effective route. You'll be assigned a dedicated Project Co-ordinator who'll advise on integrating water management with your overall development and oversee the co-ordinated delivery of components to site in line with your project timescales. At any stage, you can call our technical helpline for a rapid response to all your enquiries on **01509 615100**.



In-house bespoke fabrication

Polypipe is the only UK manufacturer to operate an end-to-end, in-house system fabrication service to its customers, offering you all the benefits of a made to measure solution. It means your surface water drainage, cable protection or water management system will be a truly bespoke one, designed and prefabricated according to the precise requirements and conditions of your site and its desired performance. In addition, it allows our designers and engineers to plan for any unorthodox or problematic site conditions. So you won't have to compromise with inappropriate or over engineered solution as you might with a standard products supplier.

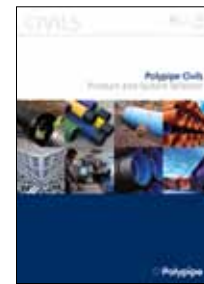
On-site maintenance & guidance

Most Polypipe systems feature innovative low or no maintenance products utilising durable, proven plastics and state of the art technology. They have been designed and developed to provide easy 'fit and forget' functionality. For those products that have a nominal maintenance requirement, however, Polypipe offer ongoing maintenance support and technical advice from system experts.

Product Literature

Product Literature

A range of product literature is also available from Polypipe Civils each with further details and support information. The literature is available to download from the Polypipe website www.toolbox.polypipe.com or to request a printed piece of product literature please contact Polypipe Civils brochure hotline on 01509 217671.



Polypipe Civils
Product Selector



Water Management
Solutions
Product and System
Selector

Polypipe enabling sustainable building technology

Polypipe provides plastic piping systems that enable the effective installation and performance of sustainable building technology, meeting the twin global challenges of carbon reduction and water management.

CARBON EFFICIENT SOLUTIONS

'SUSTAINABLE INDOOR ENVIRONMENTS'

Ever stricter building regulations and ever more environmentally conscious customers are driving the demand for greener building products and technologies. Polypipe fulfils that demand with a full range of systems that enable collection, transmission, emission and control in heating, ventilation and cooling systems.

WATER MANAGEMENT SOLUTIONS

'ROOF TO RIVER'

Offering a comprehensive range of standalone and modular SUDS products, rainwater harvesting and surface water treatment solutions plus legislative and technical support services, Polypipe water management solutions address the surface water requirements of every construction and civil engineering project.



Market Sector Literature

Additional market sector literature is available please visit www.polypipe.com or contact the telephone numbers appearing under each brochure.



Commercial
01622 795200



Residential
01709 770000

Sector Focus

Our product systems respond directly to sector-specific requirements thanks to focused technical and development teams with hands on expertise in the following areas.

CIVILS AND INFRASTRUCTURE

Delivering performance and sustainability, Polypipe's surface water drainage and cable management systems, supported by our in-house fabrications team, offer civils and infrastructure project planners a complete suite of solutions.

RESIDENTIAL

Polypipe offers the broadest range of residential product and service solutions for both new build and RMI applications, as well as innovative solutions in response to legislative and industry targets for more sustainable housing.

COMMERCIAL

Major commercial projects from car parks and high rise office blocks to hospitals, educational premises and shopping centres have all benefited from Polypipe's range of value engineered products and comprehensive service support.

All descriptions and illustrations in this publication are intended for guidance only and shall not constitute a 'sale by description'. All dimensions given are nominal and Polypipe may modify and change the information, products and specifications from time to time for a variety of reasons, without prior notice. The information in this Brochure is provided 'as is' on September 2011. Updates will not be issued automatically. This information is not intended to have any legal effect, whether by way of advice, representation or warranty (express or implied). We accept no liability whatsoever (to the extent permitted by law) if you place any reliance on this publication you must do so at your own risk. All rights reserved. Copyright in this publication belongs to Polypipe and all such copyright may not be used, sold, copied or reproduced in whole or part in any manner in any media to any person without prior consent. © Polypipe is a registered trademark of Polypipe. All Polypipe products are protected by Design Right under CDPA 1988. Copyright © 2011 Polypipe. All rights reserved.

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