

Marshall's Response to:

Water Challenges for the 22nd Century



Marshall's

Creating Better Landscapes



WE SUPPORT

Background on UNGC Engagement:

United Nations Global Compact



As the world's largest global corporate citizenship initiative the United Nations Global Compact (UNGC) was launched in 2000 to harness the power of collective action in the promotion of responsible corporate citizenship. The UNGC is a framework for businesses that are committed to aligning their operations and strategies with the ten universally accepted principles in the areas of human rights, labour, the environment and anti-corruption.

The UNGC is concerned with demonstrating and building the social legitimacy of business and markets. Marshalls plc. became a signatory of the UNGC in January 2009 and a member of the UK Network later the same year.

The Global Compact is a purely voluntary initiative with two objectives: (1) To mainstream the ten principles in business activities around the world; (2) To catalyse action in support of broader UN objectives, such as the Millennium Development Goals.

As part of its commitment Marshalls is required to produce an annual Communication on Progress report which details how Marshalls is aligned with the ten principles and how the plc intends to develop its activities in support of the framework laid out by the UNGC over the forthcoming months. Marshalls work to uphold the UNGC principles, including its work regarding children's rights; can be found in its three COP reports at www.marshalls.co.uk/sustainability/publications.



UNGC Ten Principles

Human Rights

Principle 1: Businesses should support and respect the protection of internationally proclaimed human rights;

Principle 2: Make sure that they are not complicit in human rights abuses.

Labour

Principle 3: Businesses should uphold the freedom of association and the effective recognition of the right to collective bargaining;

Principle 4: The elimination of all forms of forced and compulsory labour;

Principle 5: The effective abolition of child labour;

Principle 6: The elimination of discrimination in respect of employment and occupation.

Environment

Principle 7: Businesses should support a precautionary approach to environmental challenges;

Principle 8: Undertake initiatives to promote greater environmental responsibility; and

Principle 9: Encourage the development and diffusion of environmentally friendly technologies.

Anti-Corruption

Principle 10: Businesses should work against all forms of corruption, including extortion and bribery.



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Group Marketing
Director, responsible for
Sustainability, and UNGC
UK Network Chair

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RESPONSIBLE
BUSINESS
GAME
CHANGER
BUSINESS IN THE
COMMUNITY

Chris Harrop, Marshalls Group Marketing Director, responsible for Sustainability, recipient of a BITC Game Changer accolade in 2012 and Chair of the UNGC UK Network.



As a leader in its field Marshalls recognises that it, and others in the private sector, have an important role to play in helping to address the water challenge faced by the world today.

Companies have a responsibility to make water-resources management a priority. They can have a direct impact on water management in their own business, as well as an indirect impact by encouraging and facilitating actions by those in their supply chains to improve water management.

The business benefits of effective corporate water stewardship are numerous; from ensuring social and legal license to operate in a specific location; preventing or reacting to operational crises resulting from inadequate water availability or management; gaining competitive advantage, assuring investors and markets that business operations will continue to be profitable, to upholding corporate values and ethics.

Water stewardship is a key priority for Marshalls and to demonstrate this at the end of 2012 we committed to the UN CEO Water Mandate. Launched at the UNGC

Leaders Summit in July 2007, it is designed as a private-public initiative with a focus on developing strategies and solutions to contribute positively to the emerging global water crisis.

Water challenges will increase significantly in the coming years. Continuing population growth and rising incomes will lead to greater water consumption, as well as more waste. The urban population in developing countries will grow dramatically, generating demand well beyond the capacity of already inadequate water supply and sanitation infrastructure and services. According to the UN World Water Development Report, by 2050, at least one in four people is likely to live in a country affected by chronic or recurring shortages of freshwater.

This latest booklet in Marshall 'Environmental Sustainability in Action' Series focuses upon the challenges that our business faces and seeks to inform our stakeholders

about our far reaching actions across the business; from developments & changes in production process, product research and development, supplier education, supply chain engagement and our commitment to making a positive contribution to water challenges by delivering products which help to address the pressing issues of flooding and urbanisation.

Our absolute commitment to ground breaking product development will ensure that we continue to respond to key environmental issues of flood, drought & pollution with innovative solutions. This booklet tells you more about what we've been doing so far.

You can follow Chris Harrop on twitter: [marshalls_chris](https://twitter.com/marshalls_chris)



UN International Decade for Action 'Water for Life' 2005 - 2015

The primary goal of the 'Water for Life' Decade is to promote efforts to fulfill international commitments made on water and water-related issues by 2015. Focus is on furthering cooperation at all levels, so that the water-related goals of the Millennium Declaration, the Johannesburg Plan of Implementation of the World Summit for Sustainable Development, and Agenda 21 can be achieved.

The challenge of the Decade is to focus attention on action-oriented activities and policies that ensure the long-term sustainable management of water resources, in terms of both quantity and quality, and

include measures to improve sanitation. Achieving the goals of the 'Water for Life' Decade requires sustained commitment, cooperation and investment on the part of all stakeholders from 2005 to 2015 and far beyond.

Two initiatives have been launched by UN-Water to support the 'Water for Life' Decade:

◆ The UN-Water Decade Programme on Capacity Development (UNW-DPC). Hosted by the United Nations University in Bonn, Germany, the UNW-DPC strengthens the coherence and effectiveness of capacity development activities in the framework of the Decade.

◆ The United Nations Office to Support the International Decade for Action 'Water for Life' 2005-2015/UN-Water Decade Programme on Advocacy and Communication (UNO-IDA/UNW-DPAC). Located in Zaragoza, Spain, and led by the United Nations Department of Economic and Social Affairs (UNDESA), UNO-IDA/UNW-DPC facilitates information, implements communication activities and raises awareness in the framework of the Decade

Source: <http://www.un.org/waterforlifedecade/background.shtml>

2013 The UN International Year of Water Cooperation

Water's unique characteristics mean that good management of this resource is especially challenging. It is unevenly distributed, the hydrological cycle is highly complex and perturbations have multiple effects. Rapid urbanization, pollution and climate change threaten the resource while demands for water are increasing in order to satisfy the needs of a growing world population, now at over seven billion people, for food production, energy, industrial and domestic uses.

As a shared precious resource, the management of water needs to take into account a wide variety of conflicting interests. This therefore provides opportunities for

cooperation among users. Promoting water cooperation implies an interdisciplinary approach bringing in cultural, educational and scientific factors, as well as religious, ethical, social, political, legal, institutional and economic dimensions.

The United Nations Educational, Scientific and Cultural Organisation (UNESCO) was appointed by UN-Water to lead the preparations for both the 2013 International Year of Water Cooperation and the World Water Day, in collaboration with the United Nations Economic Commission for Europe (UNECE) and with the support of the United Nations Department of Economic and Social Affairs (UNDESA), the UN-Water Decade

Programme on Capacity Development (UNW-DPC) and the UN-Water Decade Programme on Advocacy and Communication (UNW-DPAC).

UN-Water has called upon UNESCO to lead the 2013 International Year of Water Cooperation in view of the organization's multi-dimensional mandate in the realm of natural and social sciences, culture, education and communication, and its significant and long-standing contribution to the management of the world's freshwater resources

(Source: <http://www.unwater.org/water-cooperation-2013/water-cooperation/en/>)



The Water Challenge for the 22nd Century

Water challenges, such as water scarcity and pollution, are having an increasingly negative impact on businesses. Now more than ever, companies need to assess their water performance and the watersheds in which they operate in order to address these challenges and ultimately stay in business. Each watershed is unique, but there are a number of water trends that are occurring in many parts of the world.

- ◆ **Increasing water demand.**
- ◆ **Water scarcity/unsustainable supply.**
- ◆ **Declining water quality.**
- ◆ **Un-met needs.**
- ◆ **Changing expectations.**
- ◆ **Climate change.**

Water and sanitation management are vital in both developing and

developed economies. Certain areas of the world are experiencing, or are expected to experience, acute water stress. These areas are identified and discussed in the Global Environment Outlook Report and Global International Waters Assessment, published by the United Nations Environment Programme (UNEP), and the Human Development Report 2006, published by the United Nations Development Programme (UNDP).

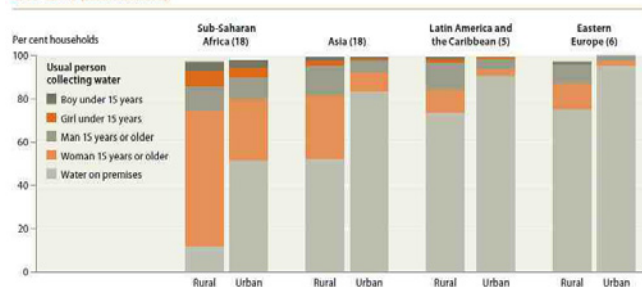
Four of every ten people in the world do not have access to even a simple pit latrine; and nearly two in ten have no source of safe drinking water. Every year millions of people, most of them children, die from diseases associated with inadequate water supply, sanitation, and hygiene. According to the World Health Organization, each and every day some 3,900 children die because of dirty water or poor hygiene; diseases transmitted through water or human excrement are the second-leading cause of death among children worldwide, after respiratory diseases.

EVERY YEAR MILLIONS OF PEOPLE, MOST OF THEM CHILDREN, DIE...

Water scarcity, poor water quality, and inadequate sanitation negatively impact food security, livelihood choices, and educational opportunities for poor families across the world. Water-related natural disasters such as floods, tropical storms and tsunamis exert a heavy toll in human life and suffering. And all too regularly, drought afflicts some of the world's poorest countries, exacerbating hunger and malnutrition.

INFOGRAPHIC RIO +20

Distribution of households by person responsible for water collection, by region and urban/rural areas, 2005–2007 (latest available)



Source: (The) World's Women 2010. Trends and Statistics. UNDESA, 2010

The importance of involving both women and men in the management of water and sanitation and access-related questions has been recognized at the global level. It has become increasingly accepted that women should play an important role in water management and that this role could be enhanced through the strategy of gender

mainstreaming. The differences and inequalities between women and men influence how individuals respond to changes in water resources management. Without specific attention to gender issues and initiatives, projects can reinforce inequalities between women and men and even increase gender disparities.

Sources:
Resource guide:
Mainstreaming gender in water. United Nations Development Programme (UNDP), 2006 Gender, water and sanitation. Policy brief. Interagency Task Force on Gender and Water, 2006

Gender, water and the MDGs

- ◆ Targets, such as those in the Millennium Development Goals relating to water, are unlikely to be achieved unless gender perspectives are integrated into planning and implementation activities
- ◆ Reduced time, health, and care-giving burdens from improved water services give women more time for productive endeavours, adult education, empowerment activities, leisure
- ◆ Convenient access to water and sanitation facilities increase privacy and reduce risk to women and girls of sexual harassment/assault while gathering water
- ◆ Higher rates of child survival are a precursor to the demographic transition to lower fertility rates; having fewer children reduces women's household responsibilities and increases their opportunities for personal development.



The CEO Water Mandate; Commitments; Actions; Measurement & Monitoring; Progress.



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31st December 2012

Dear UN Global Compact Office

THE CEO WATER MANDATE: MARSHALLS PLC

Marshalls plc has been a UNGC signatory since early 2009. During the last four years the organisation has very largely experienced the positive impact of UNGC engagement in a plethora of ways. Of key importance has been the development of our business strategy regarding the environmental principles, and also the resulting product development as we seek to contribute positively to the issues regarding water; namely drainage particularly in relation to the challenges posed by increasing urbanization.

As a result I believe that the time is right for us to engage fully with The CEO Water Mandate. I recognize that the private sector has an important stake in helping to address the water challenges faced by the globe. Both myself, Marshalls board and senior management team, as well as a great number of our employees, recognise that water stress is set to worsen in many parts of the world as a result of numerous factors including; urbanization, population growth, increasing food production, changes in consumption patterns, continued industrialization, water pollution and climate change.

I understand that strategic frame work presented in The CEO Water Mandate is voluntary and aspirational and that it represents an excellent opportunity for Marshalls to engage, excel and make a positive contribution to the water challenges which are very real and set to worsen.

With my full backing and commitment Marshalls is ready to embrace The CEO Water Mandate and to work in the six areas identified within the Mandate, Direct Operations, Supply Chain and Watershed management, Collective Action, Public Policy, Community Engagement; and Transparency.

I look forward to sharing our progress in this area in our 2013 Communication on Progress.

Yours faithfully,

Graham Holden
CEO
Marshalls plc

This initiative grew out of a highly collaborative partnership between the United Nations Global Compact, the Government of Sweden and a group of committed companies and specialized organizations dealing with the problems of water scarcity and sanitation. Launched at the Leaders' Summit in July 2007, it is designed as a private-public initiative with a focus on developing strategies and solutions to contribute positively to the emerging global water crisis. The CEO Water Mandate seeks to engage a critical mass of companies from around the world, willing to undertake serious efforts, in partnership with other stakeholders, to address this challenge. Whenever possible, this initiative will coordinate efforts and work with existing water programs – both global and local – in order to maximize impact.

In December 2012 Marshalls became a signatory of the CEO Water Mandate. As leaders of business organizations we recognize that the private sector has an important stake in helping to address the water challenge faced by the world today. It is increasingly clear that lack of access to clean water and sanitation in many parts of the world causes great suffering in humanitarian, social, environmental and economic terms, and seriously undermines development goals. Marshalls recognises that:

- Water stress is expected to worsen in many parts of the world as a result of factors including urbanization and population growth, increasing food production, changing consumption patterns, industrialization, water pollution, and climate change.
- The main user of fresh water is agriculture. Though much less is used in manufacturing and services, these sectors can still contribute positively.
- Scarcity and related problems pose material risks but can also, when well-managed, create opportunities for improvement and innovation.
- Unsafe drinking water and lack of appropriate sanitation profoundly affect the health and well-being of billions

of people, including those who are our customers and employees. In this regard, we note the 2010 resolutions by the UN Human Rights Council and the UN General Assembly recognizing the human right to safe drinking water and sanitation.

- Companies can have a direct impact on water management in their own business, as well as an indirect impact by encouraging and facilitating actions by those in their supply chains to improve water management.
- In order to operate in a sustainable manner, and contribute to the vision of the UN Global Compact and the realization of the Millennium Development Goals, companies have a responsibility to make water-resources management a priority.
- Individual and collective efforts – involving partnership with the public sector and civil society and through the supply chain – will be required to adequately address this crisis.

The CEO Water Mandate is voluntary and aspirational. Nonetheless it represents a commitment to action. Its structure covers six key areas and is designed to assist companies in developing a comprehensive approach to water management.

The six areas are:

- ◆ **Direct Operations;**
- ◆ **Supply Chain and Watershed Management;**
- ◆ **Collective Action;**
- ◆ **Public Policy;**
- ◆ **Community Engagement;**
- ◆ **and Transparency.**

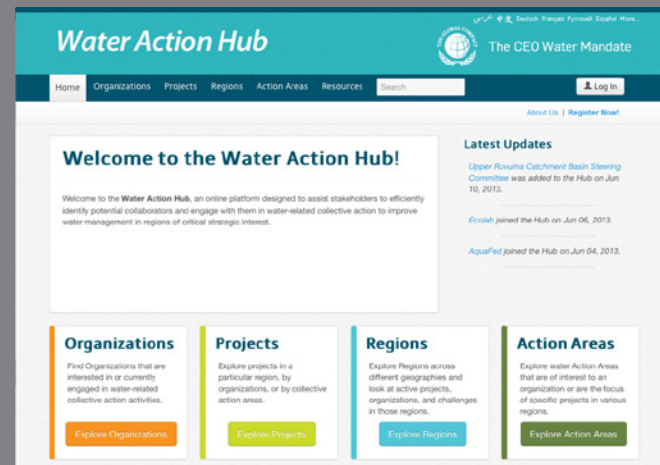
Corporate water stewardship is both good business and critical for the well-being of communities, ecosystems, and watersheds. Stewardship helps companies identify and manage water-related business risks and allows them to contribute to and help enable more sustainable management of shared freshwater resources. Stewardship also reduces operational costs; protects the company from ensuing water stress; and improves the company's image in the eyes of consumers, investors, and nearby communities.

Benefits of effective corporate water stewardship:

- ◆ **Ensure social and legal license to operate in a specific location**
- ◆ **Prevent or react to operational crises resulting from inadequate water availability or management**
- ◆ **Gain competitive advantage**
- ◆ **Assure investors and markets that business operations will continue to be profitable**
- ◆ **Uphold corporate values and ethics**

Water Action Hub:

Marshalls is an active member of the Water Action Hub, an online platform designed to assist stakeholders to efficiently identify potential collaborators and engage with them in water-related collective action to improve water management in regions of critical strategic interest.



INCREASING WATER DEMAND

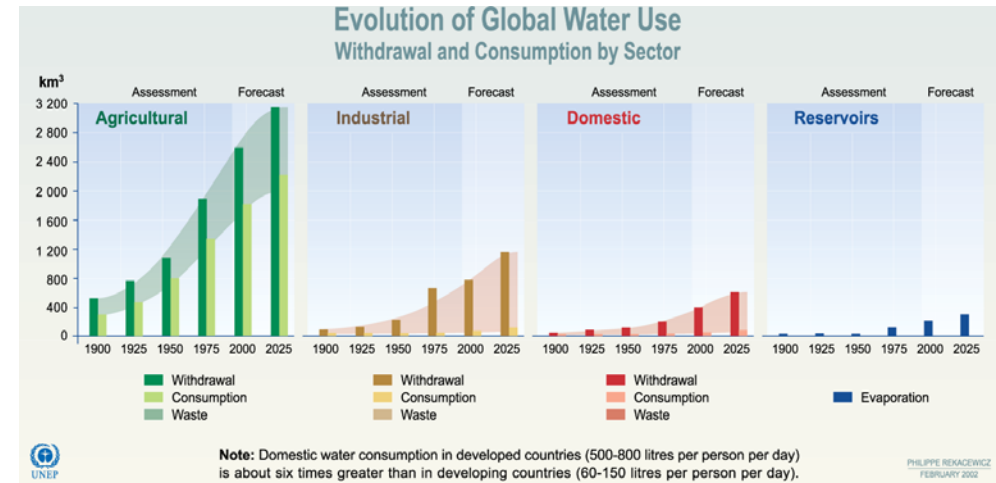
The demand for water among industry and agriculture is increasing significantly due to population growth and economic development. Freshwater consumption worldwide has more than doubled since World War II and is expected to rise another 25 percent by 2030.

- 💧 Agriculture accounts for more than two-thirds of global water use, including as much as 90 percent in developing countries.
- 💧 World population is expected to increase from 6.6 billion currently to 8 billion by 2030 and over 9 billion by 2050.

Business Impacts of Increasing Water Demand

- 💧 Higher costs for water.
- 💧 Regulatory caps for water use.
- 💧 Conflicts with local communities and other large-scale water users.
- 💧 Growing demand for water efficient products and technologies.

Global Water Withdrawals: UK Water Stress Graphic



Source: Igor A. Shiklomanov, State Hydrological Institute (SHI, St. Petersburg) and United Nations Educational, Scientific and Cultural Organisation (UNESCO, Paris), 1999.

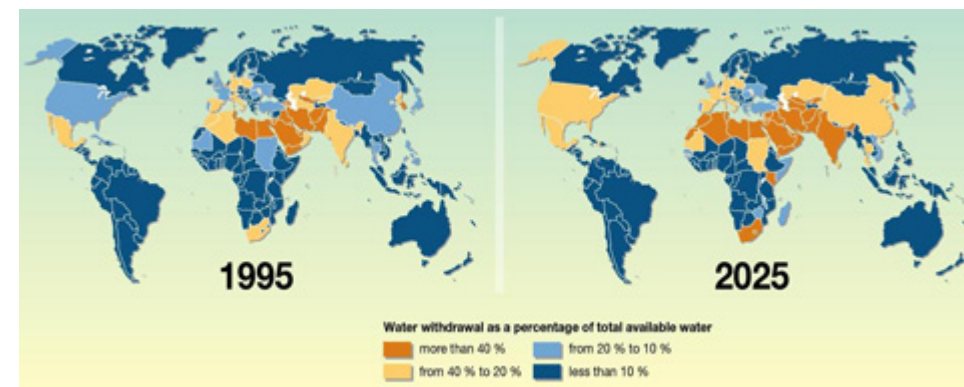
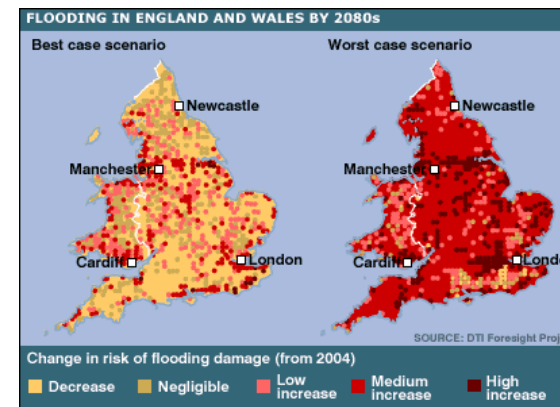
WATER SCARCITY AND UNSUSTAINABLE SUPPLY

Water is already over-appropriated in many regions of the world. More than one-third of the world's population – roughly 2.4 billion people – live in water-stressed countries and by 2025 the number is expected to rise to two-thirds. Groundwater tables and river levels are receding in many parts of the world due to human water use. In many areas, there is not enough water left in the environment to support healthy ecosystems and the services they provide.

Many local governments do not have the capacity or funds to manage their water resources. This often leads to insufficient and inconsistent delivery of water; low quality, polluted water sources; unreliable infrastructure; and a lack of planning for water shortages or climate change.

Business Impacts of Water Scarcity and Unsustainable Supply

- ◆ Decreased water supply for business activities.
- ◆ Increased water costs.
- ◆ Operational disruptions and associated financial loss.
- ◆ Impacts on future growth and license to operate



Global Water Stress Source: UNEP GRID-A 2009

DECLINING WATER QUALITY

Declining water quality is an acute problem around the world due to agricultural runoff, industrial wastewater, improper disposal of human waste, and many other issues. Water pollution is most problematic where there are large increases in agricultural and industrial production and inadequate wastewater treatment.

In many developing countries, waterways traditionally used for drinking water or other community needs have been heavily contaminated. Decreased environmental flows exacerbate water pollution by further concentrating existing contaminants in smaller quantities of water.

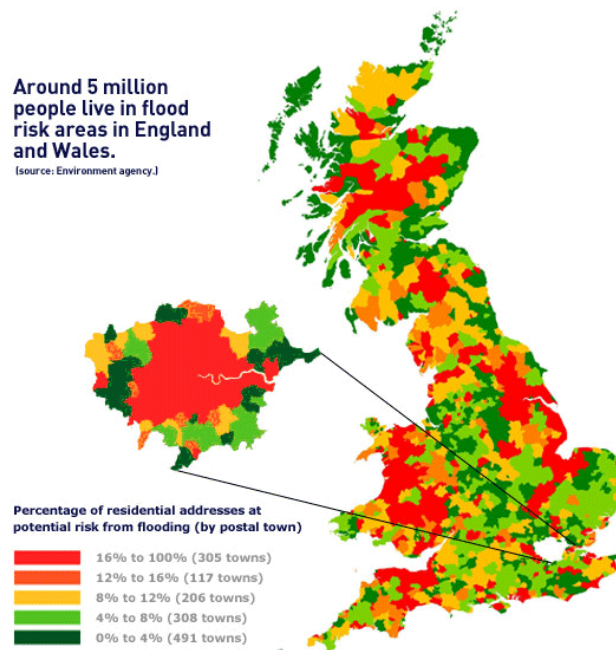
In China, many rivers are so polluted that industry cannot even use the water. Two-thirds of China's largest cities do not have wastewater treatment facilities, adding to the problems.



Business Impacts of Declining Water Quality

- ◆ Increased costs for pre-treatment to obtain desired water quality.
- ◆ Increased costs for wastewater treatment to meet more stringent regulations.
- ◆ Regulatory restrictions for specific industrial activities and investments.
- ◆ Increased health costs for employees in highly-polluted areas.
- ◆ Increased responsibility (and costs) to implement community water infrastructure and watershed restoration projects to mitigate reputational risks.

Around 5 million people live in flood risk areas in England and Wales.
(source: Environment agency.)



UNMET ENVIRONMENTAL, SOCIAL, AND ECONOMIC NEEDS

Many key water needs – especially environmental and basic water services for the poor – are currently going unmet. In many cases, there is sufficient physical water supply to meet the demand, but water managers do not prioritize the need for drinking water or environmental flows, or don't have the capacity or funding to meet the need. These problems will only deepen as agricultural, industrial, and residential water demand continues to increase.

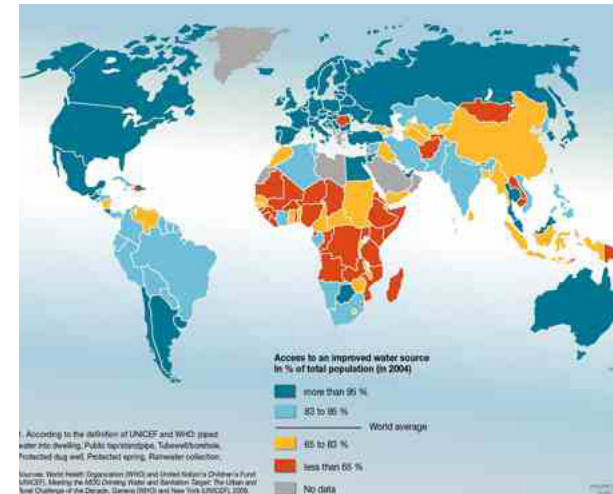
♦ Almost 900 million people worldwide do not have access to safe drinking water and up to 5 million people die each year from water-related illnesses.

♦ Insufficient water levels for rivers, lakes, and streams threaten habitat and valuable ecosystem services.

Business Impacts of Unmet Demand

- ♦ Reputational damage if companies are seen as competing with population for limited water supplies
- ♦ Conflicts with local communities and NGOs
- ♦ Decreased water availability for business activities (if water managers prioritize local public needs)
- ♦ Increased health costs for employees in the countries that are impacted

Global Access to Improved Water Sources



Source: WHO & UNICEF 2006 via World Resources Simulation Center

Changing Expectations

In the last decade, environmental sustainability and social responsibility has become very important to many company stakeholders such as investors, consumers, and the general public. There is now increased pressure for companies to operate in a way that reduces adverse impacts on the environment and local communities.

Investors

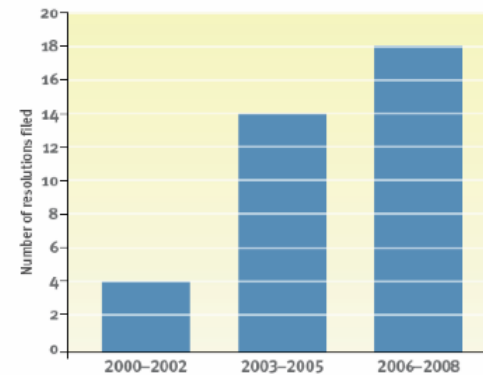
Investors are increasingly filing resolutions asking companies for more disclosure on water practices, including policies, environmental and social impacts, and water usage throughout the value chain.

This concern is not just about brand reputation but also about fiscal prudence. Water-related risks have increasingly being seen as significant in evaluating long-term business viability.

“Corporate disclosure of water-related risks is seriously inadequate and is typically included in environmental statements prepared for public relations purposes rather than in the regulatory filings on which most investors rely.”

- JP Morgan Global Equity Research

Shareholder resolutions on water



Source: Data from the Interfaith Center for Corporate Responsibility's Ethvest database. See: www.iccr.org

Source: ICCR Ethvest via Ceres-Pacific Institute

Consumers

Consumer demand for “green” products and responsible corporations has led to a competitive advantage for companies perceived as environmentally and socially responsible.

♦ **In the United Kingdom, expenditure on ethical goods and services has tripled in the last decade.**

♦ **81% of Koreans, 70% of Singaporeans, and nearly 50% of British consumers are willing to pay a premium for environmentally-friendly products.**

The water sustainability certification system being developed by the Alliance for Water Stewardship will create a new standard by which consumers and investors can compare a company's water performance.

General public

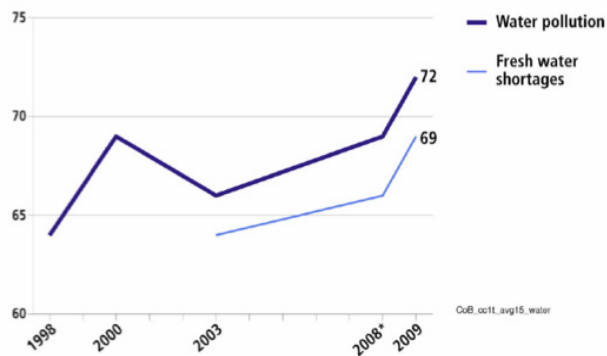
People around the world identify water issues as one of the most serious sustainability challenges facing the planet.

As awareness about water challenges continues to grow, so will expectations that companies minimize the impacts of their business on ecosystems and communities and contribute to sustainable water management in the regions in which they operate.

A 2009 GlobeScan and Circle of Blue survey of 32,000 people from 15 countries found that concerns about access to water and water pollution have outpaced concerns about global climate change, natural resource depletion, and biodiversity loss, as the world's greatest environmental challenges.

Survey Results: Seriousness of Environmental Problems

"Very Serious," Average of 11 Tracking Countries,* 1998–2009



Source: Circle of Blue & GlobeScan 2009



CLIMATE CHANGE

Climate change affects the hydrologic cycle, leading to more frequent extreme weather events, such as droughts and floods. It is also causing the sea level to rise, which has a variety of impacts, including salination of surface waters and groundwater aquifers.

These changes often compound existing water risks. For example, in many areas, climate change will concentrate annual precipitation into a shorter time frame, thereby putting stress on local infrastructure and storage capacity in the dry months. Catastrophic weather events can also exacerbate existing water problems, whether it be a hurricane spreading pollution or a drought exacerbating water scarcity.

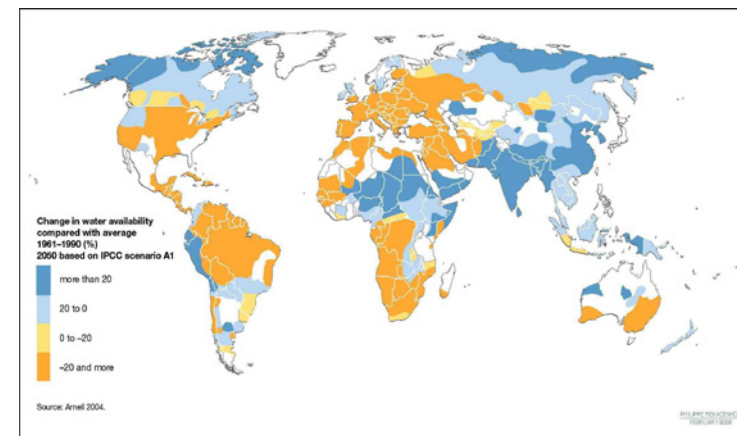
Climate change will be felt differently in different parts of the world, but it will have a greater impact on companies with footprints in areas with inadequate infrastructure or lack of capacity to adapt.



Business Impacts of Climate Change

- ◆ Decreased amounts of water available for business activities.
- ◆ Increased costs for water.
- ◆ Operational disruptions and associated financial loss.
- ◆ Increased costs for pre-treatment to obtain desired water quality.
- ◆ Increased health costs for employees in the countries that are impacted.

Projected Contribution of Climate Change to Declining Water Availability



Source:
UNEP GRID-A 2009

Water Related Business Risks

◆ Physical Risks.

Physical risks entail having too little water, too much water, or water that is unfit for use.

Scarcity can halt industrial production simply because there is not enough water for production, irrigation, material processing, cooling, washing, or cleaning. Flooding can disrupt the flow of operations because workers have to tend to the effects of the flood rather than work. Contaminated water supply may require additional investment and operational costs for pre-treatment. Availability and affordability of clean water may affect the interest or ability of customers to purchase or use certain water-intensive products and services.

Water is a fundamental business input... too much, too little, too polluted and companies may be unable to maintain consistent production.

◆ Reputational Risks.

Expectations about corporate responsibility continue to increase all around the world. Because of these, many water-related business risks stem from stakeholder perceptions that company does not conduct business in a sustainable or responsible fashion.

Affected communities, civil society, investors, consumers, and the general public are increasingly engaged in issues of water sustainability.

Inefficient water use or excessive pollution by a company in a sensitive watershed, whether real or perceived, can be incredibly damaging to a global brand's reputation, share price, and ability to conduct business.

When a company is, or is perceived to be, inefficient, unsustainable, or otherwise irresponsible, the following reputational damage can occur:

- ◆ **Decreased brand value and consumer loyalty**

- ◆ **Reduced investor confidence**

- ◆ **Adverse regulatory responses**

- ◆ **Loss of social and legal license to operate**

As public interest in water sustainability grows, companies' water practices are facing greater scrutiny. Water-related controversies often gain the attention of major media outlets and investors are taking into account how companies control their water use and plan for water-related business risks

◆ Regulatory Risks.

Regulatory risk stems from changing, ineffective, poorly implemented, and inconsistent water policy and regulations.

Global water challenges, unsustainable industrial water practices, and increased concern among local communities about water scarcity and pollution, are all putting pressure on local authorities and policymakers to consider water reallocations, regulations, and development of water. In many countries, water service providers are considering pricing policies that promote greater efficiency in order to

curb water scarcity. In others, governments are regulating industrial effluent to clean up their rivers, lakes, and streams.

In many part of the world, local governments do not have the capacity to consistently deliver high-quality water to local industries and agricultural growers.

However, regulatory risk is also present when governments are not able to effectively manage their water resources or create effective policies and regulations. In many areas of the world, crumbling infrastructure leads to incredible water losses thereby exacerbating water scarcity. In others, a lack of water quality regulations causes rampant pollution to the extent that local industries must pay high costs to treat their incoming water before it is suitable for use.

◆ Risks in the Value Chain.

Water-related business risks can occur throughout a company's value chain, including:

Raw Material Production: For most industry sectors, the largest portion of their water footprint is embedded in the production of raw materials such as food crops, fibers, and metals. Many companies' raw material production lies far upstream from direct operations; as a result they typically fail to assess water-related risks in this segment of their value chains. Nevertheless, water scarcity, pollution, climate change, and other challenges can decrease agricultural yields and quality thereby limiting production or increasing costs for companies purchasing those goods.

Suppliers: In some sectors (e.g., high-tech/electronics and apparel), the bulk of the water footprint is associated with the manufacturing activities of suppliers. This can lead to a false sense of security about water risk exposure, with companies dismissing water issues as not being material to their business.

Direct Operations: Water risk has a tremendous effect on direct operations. A water shortage or a

polluted supply will affect production output and costs. Changing, ineffective, poorly implemented, or inconsistent water policies can also disrupt a company's access to water, potentially limiting their ability to consistently produce their goods.

End Product: Companies may also be exposed to water-related business risks if their products are water-intensive (e.g., washing machines) or contribute to water pollution (e.g., certain detergents). These risks are further exacerbated when a large proportion of a company's consumer base is located in areas of high water stress.

◆ Sector Risks.

Many, if not most, industry sectors face significant water-related risks. However, the degree and nature of these risks differ widely depending on how much water they use, how their water footprint is distributed across the value chain, the degree to which they contribute to pollution, and if they tend to be located

in areas prone to water stress, among other things. Below is a chart the relative water footprint of different industry sectors.

◆ Shared Risks.

Businesses are not the only ones susceptible to water risks. Communities, customers, suppliers, and governments are all exposed to risk because of common water issues such as scarcity, pollution, aging infrastructure, floods, droughts, and climate change. These issues also drive the missions of environmental and human rights organizations and intergovernmental agencies, such as UNEP and UNDP.

This collective risk calls for collective action. Collaborative cross-sectoral efforts to reduce shared water risks can emerge through common understanding, strategies, and solutions, and are often the most effective path toward sustainable water management. All sectors need efficient water use, clean water, and

effective infrastructure, and all rely on sustainable water management to address these issues and to respond to short-term priorities and plan for long-term risk.

Collective action allows for more efficient use of resources, greater visibility and leverage to encourage change, and a more dynamic understanding of water challenges that considers a wider range of perspectives and needs.

Everyone benefits by cooperating for safe water management. For example, inadequate water quality has the following impacts:

◆ **Companies – Increases the costs of doing business.**

◆ **Local populations – Decreases overall health and quality of life.**

◆ **Governments – Failure to provide the basic human need and right to clean water.**



Marshall's Response; Product Innovation

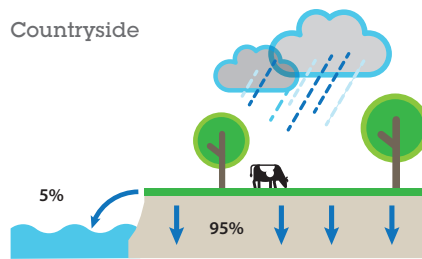
What's the issue?

Many developed areas across the world are now entering a state of 'water stress' - not because there's less water available, but because we're mismanaging this essential resource.

As we continue to develop over green land, we are fundamentally altering the way rainwater maintains our landscapes. Increased levels of impermeable hard standing areas (such as roads, roofs and paved surfaces) intercept and redirect surface water run-off before it has a chance to infiltrate naturally into the ground. This creates a number of problems, which are likely to get worse as global development continues...

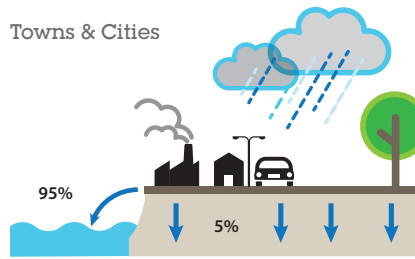
Of the 57,000 homes affected in the 2007 summer floods, over two thirds were the result of surface water run-off - not swollen rivers.

Countryside



In completely natural environments, the majority of rainwater permeates naturally into the ground at source and only a small amount runs off into waterways.

Towns & Cities



In developed areas, the majority of rainwater falls onto impermeable surfaces, where it is diverted away from its natural course into storm drains and waterways.

💧 Flooding

In the UK, surface water run-off is typically diverted into piped networks. The consequence of this is that when heavy rainstorms create high peak flow rates and high volumes of run-off, the piped networks become overloaded and at risk of creating an external flood.

Climate change means that the UK's weather patterns are changing; we now encounter more frequent bursts of much heavier rainfall than ever before. The increased severity of these events, combined with inadequate piped drainage infrastructure, only serve to compound the levels of flooding now experienced.



💧 Pollution

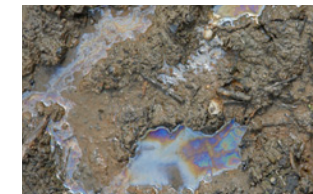
An additional and often overlooked problem created by our increased urban development is that of increased drought risk. By diverting water away from its intended course, it is prevented from entering the water table ('deep infiltration'). Even after a heavy and prolonged period of rain, water is quickly channelled away from its natural path and prevented from soaking deep into the ground where it would naturally have maintained our aquifers, artificially creating a drought situation. This has the effect of choking our natural landscape by reducing the amount of groundwater available to maintain the lush, green spaces which would normally provide us with a wide variety of biodiversity benefits.



💧 Pollution

In addition to the risk of flooding, large volumes of surface water run-off can cause water quality problems. Surface water run-off from impermeable urban surfaces can potentially transport pollutants resulting in contamination of surrounding watercourses. Pollutants such as hydrocarbons, nitrates, phosphates and heavy metals can be contained within urban run-off.

The increased frequency and cost of rainfall related external flooding events, has rightly focussed public and government attention on the development of policies and associated guidance documents promoting the use of sustainable water management methodologies.

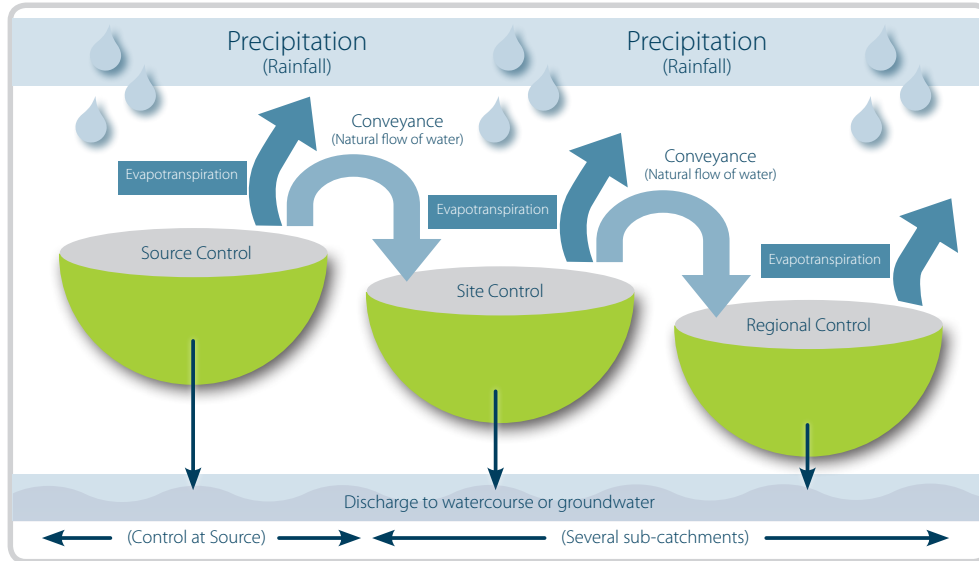


What's the Solution?

Sustainable Urban Drainage Systems (SUDs) provide an alternative approach to traditional piped systems. This approach mitigates many of the adverse impacts of storm water run-off on the environment in terms of both volume and pollutants. The SUDs treatment train

follows a sequence of SUDs measures ensuring potentially contaminated surface water run-off passes through an appropriate series of SUDs measures before being discharged into the receiving watercourse.

SuDS Treatment Train



Sustainable Urban Drainage Systems

SUDs stands for Sustainable Urban Drainage Systems. Essentially, the term refers to a combination of drainage techniques which deal with surface water run-off in an environmentally friendly way. SUDs provide an alternative approach to traditional piped systems. The SUDs philosophy is known as the SUDs Triangle and addresses three areas of concern:

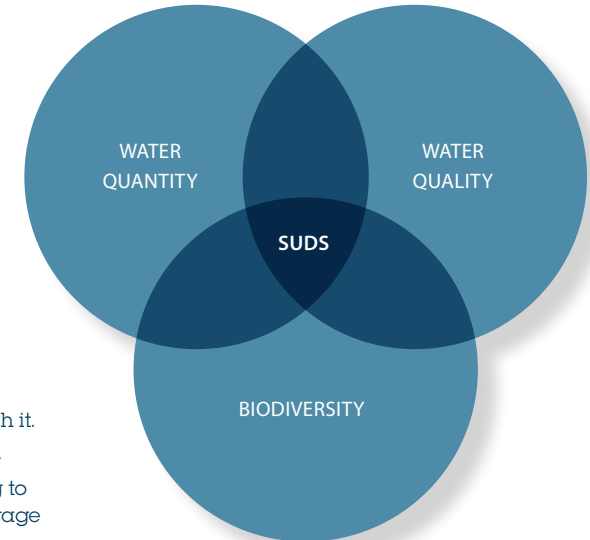
- ◆ Water Quantity
- ◆ Water Quality
- ◆ Biodiversity

A successful SUDs design mimics natural processes to deal with excess water, providing control at (or adjacent to) the source:

- It should deal with Quantity by keeping surfaces clear of standing water, and releasing it into the ground or into traditional systems at a controlled rate.
- It should improve Quality by filtering pollutants from the water that flows through it.
- It should provide Biodiversity benefits by maintaining the local water table, helping to maintain lush, green spaces which encourage the growth of flora and fauna.

By considering these three factors during the design stage of a project, it is possible to create drainage systems that provide natural water quality treatment, encourage infiltration, reduce the impact of peak flows and minimise impact

The SuDS Triangle



Legislation is Driving SUDS

Whilst there is an acceptance that SUDs can play a vital role in creating sustainable landscapes, it is still a relatively new philosophy. As such, there is a need for clear guidance.

The Flood and Water Management Act 2010 was a major legislative step towards improving both flood risk management and the way we manage our water resources. The act seeks to define clearer roles, responsibilities and standards for the creation of sustainable drainage systems in line with proposed flood risk management strategies. Whilst the act places responsibility for managing SUDs on Local Authorities' SUDs Advisory Boards, responsibility for the specification, design, implementation and maintenance of SUDs schemes remains shared between local government, designers, town planners, landowners,

developers and even homeowners. With so many stakeholders involved, decisions about new developments and increasingly essential water management systems cannot be taken without a complete understanding of surface water risks - and the most effective solutions. Further Government planning advice is available within both Planning Advice Notes (PANs) and Scottish Planning Policy (SPP) documents.



Examples of SUDS Techniques

Utilising green areas to provide natural filtration is known as 'soft SUDs'. Using man-made materials to achieve the same result is referred to as 'hard SUDs'.

The following are examples of both hard and soft SUDs techniques:

◆ **Filter strips** – wide gently sloping area of grass or dense vegetation that filters storm water run-off from impermeable areas.

◆ **Swales** – wide shallow grass lines channels intended to transport or store storm water run-off and allow infiltration

◆ **Infiltration Basin** – surface depressions in the landscape intended to store storm water and allow infiltration

◆ **Wet Ponds** – used to store storm water run-off and are permanently wet and provide amenity features

◆ **Detention Basins** – used to store storm water run-off but are only wet following a storm event

◆ **Wetlands** – shallow ponds with vegetation intended to reduce pollutants in storm water run-off

◆ **Filter Drains** – trenches filled with permeable material

◆ **Soakaways** – buried storage point for storm water run-off where it will infiltrate into the ground

◆ **Green Roofs** – planted roofs which slow and reduce the amount of run-off whilst also providing a host of biodiversity benefits

◆ **Rills** – open surface channels which transport water cleanly and safely from one point to another.

◆ **Permeable Paving** – hard surfaced areas which allow water to permeate through the surface and into the ground at source

Examples of SUDS Techniques

Adopting wider use of these features will make a marked difference to our landscapes, improving habitats for wildlife and flora and reducing the risk of flooding. However, we cannot ignore the growing need for hardstanding. People need to drive and park vehicles, ride bikes, and push prams and wheelchairs comfortably and easily. We all enjoy aesthetically appealing public spaces which retain their clean, sleek looks with the minimum of maintenance. Even taking into account the growing awareness of green issues, we have to accept that we all want to go about our modern lives with the least amount of mess and difficulty; hard standing is here to stay. So, the question is: how do we satisfy these modern requirements whilst mitigating the effects of water stress?



Marshalls linear drainage directed to a tree pit



Marshalls linear drainage into open drainage canal



Marshalls permeable paving



Marshalls linear channel into an attenuation pond



Marshalls Beany combined kerb and drainage into a swale

Traditional Pavements vs Permeable Pavements

Permeable paving is not a new concept, but has started to gain wide acceptance with the construction industry only in recent years. It marries the requirement of durable and attractive hardstanding with all three elements of the SUDs triangle.

💧 Traditional Paving

A traditional pavement construction includes integral cross falls which direct surface water into a drainage system, such as a road gulley or linear drainage channel. This ensures that during a storm, rainwater is removed swiftly and efficiently – preventing unsafe, unhygienic and potentially damaging standing water from ponding on the surface. The problem with this type of drainage is what happens next. Rainwater continues to flow through the system into the main sewers, culverts and eventually streams and rivers. The time it takes for this journey is relatively short, and

as the area of impermeable surfacing is increasing the extra burden placed on the river systems can have disastrous consequences. In other circumstances, where there is no opportunity to outfall to a water course, the storm water is frequently directed to a combined sewer where it will be treated (at great expense and environmental impact) despite it being fresh water.

💧 Permeable Paving

Combines hardstanding with SUDs and works in a very different way to a traditional pavement. It is designed to allow rainfall to percolate immediately through the surface near to where the

raindrop lands – so surface ponding is completely eradicated without the need for an additional channel drainage system. The water flows into a specially prepared sub-base, where the voids between the stones which make up the structure act as a temporary reservoir. During a rainstorm, the water is collected in the sub-base ('attenuated') before it is released slowly either by natural infiltration into the ground beneath the pavement, into the main sewer at a controlled rate via a flow restrictor, or a combination of both.

Most importantly, to the untrained eye, there is no discernable difference between a traditional concrete block paved surface and a permeable pavement!



Marshall's Tegula Concrete Block Paving (CBP),
Huddersfield University



Marshall's Mistral Piora Concrete Block
Permeable Paving, Woodberry Down, London

Benefits of a Concrete Block Permeable Paved System

💧 **Quantity** – Helps to reduce the impact of storm water on the river systems by attenuation and infiltration thus reducing the risk of downstream flash flooding.

💧 **Simplicity** – A form of source control - ie deals with the water where it lands. Source control is the preferred method of treatment from the SuDS hierarchy.

💧 **Quantity** – Improves the quality of the water in two ways:

a. The stones within the sub-base act as a filter medium which remove heavy particles such as silt and heavy metals.

b. Over time microbial organisms begin to cultivate in the pavement which break down hydrocarbon leaks such as exhaust fumes and sump oil drips.

💧 **Legislation** – Complies with current SuDS legislation and planning regulations.

💧 **Cost** – Frequently less expensive than equivalent conventional impermeable surfaces plus drainage and storage.

💧 **Practicality** – A low land take option. All new developments will require some form of hard landscaping; permeable paving combines hard landscaping with a SuDS drainage solution.

...in addition to the existing benefits of a standard Concrete Block Pavement, including:

💧 **Aesthetics** – The varied combinations of texture, form and colour provide rich visual appeal to a huge range of landscape projects.

💧 **Strength** – In addition to the inherent strength of each unit, the interlocking design of the pavement dissipates loads evenly over the surface.

💧 **Durability** – Resistant to frost damage and most chemicals, fuels and oils, CBP forms a hardwearing surface with an exceptionally long lifespan.

💧 **Slip-Skid resistance** – Excellent performance for pedestrian and vehicular traffic alike, due to the joint profile and surface finish.

💧 **Reinstatement** – Underlying surfaces can be accessed by the removal of a small number of blocks, which can be easily replaced for immediate trafficking with no visible effect drainage system. The water flows into a specially prepared sub-base, where the voids between the stones which make up the structure act as a temporary reservoir. During a rainstorm, the water is collected in the sub-base ('attenuated') before it is released slowly either by natural infiltration into the ground beneath the pavement, into the main sewer at a controlled rate via a flow restrictor, or a combination of both.

Marshalls Priora – Permeable Paving Made Easy

Marshalls Priora, the best selling permeable paving system in the UK, is an ideal SuDS solution. The designs of both the sub-base and the block itself have been continually developed over the past 10 years to provide a solution which delivers on all levels in terms of cost, performance and aesthetics.

A traditional pavement It is important to acknowledge that a permeable pavement is a system and not just a paving block; the design of the sub-base is essential to the system's performance, and allows the pavement to perform structurally (by supporting the load on the pavement) and hydraulically (by storing the required amount of run-off water).

Rainwater falls onto the surface...

Where it seeps immediately through the specially created voids between the blocks...

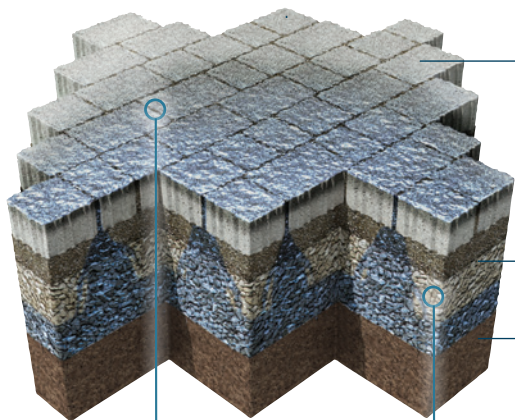
Into the specially designed sub-base...

Where it is stored...

Until it permeates into the ground...

...or is released into water courses at a controlled rate.

Each block features a series of six patented Priora nibs around its edge, which interlock on eight separate faces in three different directions. These nibs also create the voids through which water run-off percolates into the sub-base.

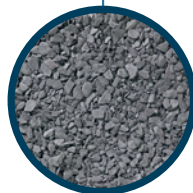
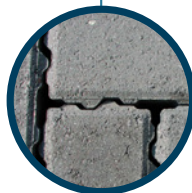


Marshalls Priora deals with water **Quantity** issues by eliminating pooling

The system improves water **Quality** by filtering the water as it falls through the sub-base.

It also provides **Biodiversity** benefits by replenishing the water table at source, which will maximise ecosystem services in the area.

The sub-base is composed of two different grades of aggregate. These are specially selected to provide maximum internal friction (offering enhanced stability) whilst also providing a void ratio of over 32% (offering adequate water storage)



A Patented Nib Design for Superior Interlock

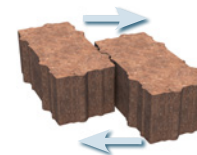
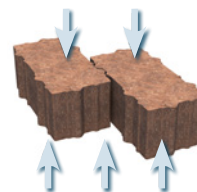
A key factor in the way a block paved surface behaves is the way in which each block interlocks with its neighbours. Interlock helps to spread the load evenly across the area of the paved surface, improving surface stiffness and reducing pressure on the laying course immediately beneath the blocks.

There are three different kinds of interlock: horizontal, vertical and rotational.

Vertical interlock refers to the ability of each block to move against its neighbours on a vertical plane. If the sub-base has been designed and installed to our specifications, it is unlikely that this will be a factor in a Priora surface. However, the unique patented Priora nib improves vertical interlock by increasing the amount of 'brick to brick' contact. The 6mm aggregate between the blocks further improves vertical interlock by bridging the gap between blocks.

Horizontal interlock refers to the ability to move against its neighbours on a horizontal plane. In all CBP installations, horizontal interlock is maximised by the geometric shape of the block. The interlocking nature of the Priora nib reduces the ability of a block to move horizontally against its neighbours. This feature can also be enhanced by the laying pattern. A herringbone laying pattern has been proven to provide the best possible horizontal interlock which makes it the recommended style for heavy loading applications.

Rotational interlock refers to the ability of each block to rotate against its neighbours on a horizontal plane. This is where the unique patented Priora nib has a proven advantage; in laboratory tests at Newcastle's Rolling Load Facility (NUROLF), Professor John Knapton discovered that the Priora nib maximises rotational interlock between blocks, and can therefore reduce pressure on the laying course by up to 40% compared to other surfacing options.



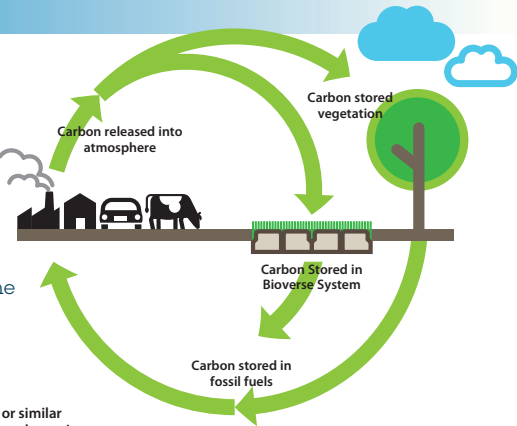
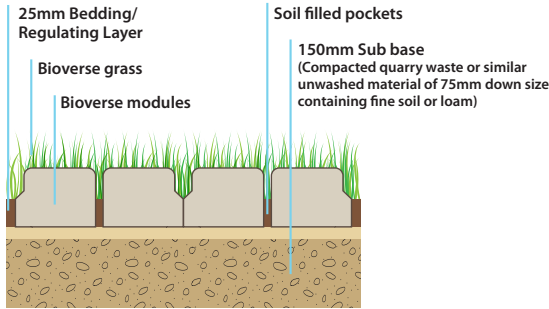
Marshalls Bioverse®

Marshalls Bioverse® is the world's first carbon neutral paving system. Special Marshalls grass seed mix sequesters additional CO2 over normal grasses equal to the carbon footprint of the paving.

How does it work?

The Bioverse system consists of reduced-carbon concrete modules, specially formulated Bioverse Grass Seed and a carefully designed sub base. The elements of the system together create a hardstanding area which is not only attractive and hardwearing, but is also a Biosphere which takes carbon from the atmosphere.

The Bioverse Paving System becomes carbon neutral over the life of the driveway, providing the grass is maintained.



The Bioverse System

Bioverse: Interlocking Modules

- Interlocking Bioverse modules allow water to travel between the blocks whilst ensuring structural stability
- Each pack contains two different pebble designs, allowing a wide variety of laying possibilities
- The modules can be used for a wide variety of applications from driveways and additional car parking areas to pathways and soak away areas



Bioverse: Optimised Grass Seed

Bioverse seed mixtures are designed to create a dense, attractive appearance and are individually matched to different growing conditions throughout the UK. All mixtures have the ability to absorb CO2 helping you create a landscape which becomes carbon neutral over the life of your driveway.

Bioverse Seed mixtures are;

- Environmentally responsible, with high CO2 lock up
- Are low growing, reducing surface wear and making them ideal for Bioverse driveways
- Have a slow growth pattern so that the grass requires less cutting
- Have a high plant density, to restrict invasion of weeds and alien grasses



Area of UK	Seed type
North	Bioverse GN
South	Bioverse GS
East	Bioverse GE
West	Bioverse GW

Priora System

Priora has a specific design methodology and sub-base specification. Priora Machine Lay allows surface water to be controlled at source. Water can be drained directly into the ground, recharging the ground water whilst also controlling the surface water runoff at source.

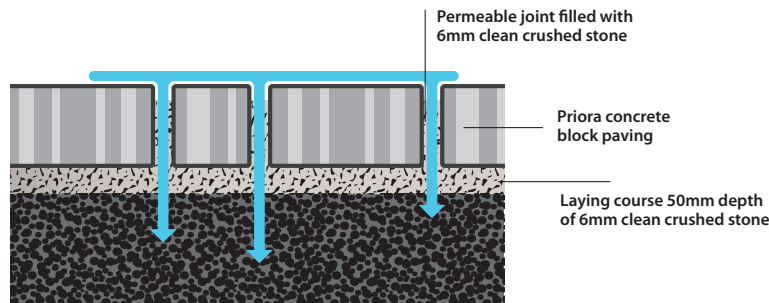
The Priora System

Priora: Permeable Paving

- Manages rain water run-off on hardstanding areas without adding to local drainage problems or gaining planning permission
- Can help recharge the water table by rehydrating the ground in areas which are prone to droughts
- No need for linear drainage, tanking systems or membranes

Priora: Sub base

Sub base 200mm depth of 20mm clean crushed stone with well defined edges



The Bioverse System

Priora Sustainable Urban Drainage Systems

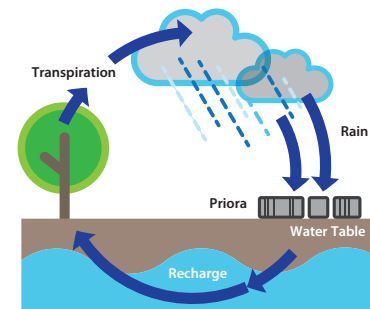
Marshalls Priora permeable paving solutions allow infiltration of rainfall into the sub soil where it can drain harmlessly away.

Featuring a patented nib design, Priora allows surface water to pass between blocks into a specially calculated sub base without compromising the structural performance of the driveway .

Marshalls Priora is available in a wide variety of finishes and colours

How does it work?

Marshalls Priora allows rainfall to travel between the blocks, through the sub base and into the watercourse in a slow and measured way, as close as possible to the natural process of rain falling on undisturbed ground.



As an urban drainage solution the product benefits include;

- High load bearing capacity due to the unique interlocking characteristics. The system can withstand the dynamic stresses offered by vehicular trafficking and point loads
- Large drainage openings allowing the efficient infiltration of surface water runoff
- Lasting surface water infiltration capacity due to the unique layout of the interlocking spacer profiles
- Conservation of space on the site, allowing the needs and requirements of both PPG3 and PPG25 to be achieved
- Reduction of surface water runoff by as much as 100% for infiltration sites
- Increased recharge of groundwater
- Allowing new developments in areas restricted by current surface water drainage constraints
- Reduced overall project development costs owing to a reduction in storm sewers and drainage accessories
- The filtering and removal of metals and suspended solids in any surface water
- The development of naturally occurring bacteriological breakdown

Linear Drainage

Marshalls' unique linear drainage systems combine the clear-cut advantages of linear drainage over traditional point drainage, with the benefits of a high quality, robust precast concrete product.

Surface water interception

- More efficient at intercepting running water
- Ponding is reduced or eliminated as is streaming water across a site

Shallow depth of construction

- Inherently shallow construction required
- Savings due to reduced excavation
- Reduces construction time, offering further savings
- Less conflict with existing underground services
- Reduced quantities of spoil to be disposed of

Ease of design

- Performs more efficiently with just the use of concrete channels, grates, outfalls and reduced amounts of pipework.
- Only requires shallow depth construction
 - Limited number of components required
 - Does not require complex crossfalls to be incorporated
 - Design of crossfalls and longitudinal falls of adjacent hard landscaping is straightforward
 - Improved end user performance

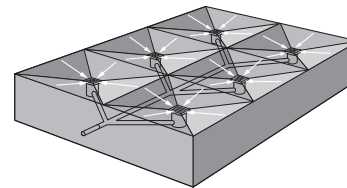
Ease of installation

- Channel line and level can be set out with ease
- Crossfalls are less complex to set out or construct compared with point drainage

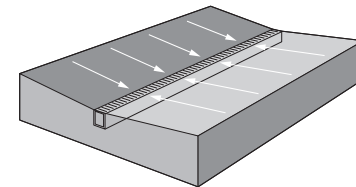
- Expensive construction time saved due to shallow construction
- On-site errors are easier to avoid
- Unlike other options, Marshalls' systems do not require temporary ballast (e.g. Sand) during installation
- Inherently strong and robust precast concrete reduces on-site damage

Significant cost savings by reducing carrier pipes

- Many schemes can utilise the inherent ability of a channel or combined kerb and drainage system to act not just as the traditional gully in point drainage, but also as the carrier pipe in storing and transporting surface water.



Typical point drainage system, illustrating the need for complex crossfalls with attendant implications for design, installation and cost



Typical equivalent linear drainage system

- Any carrier pipes will be at a shallower depth with resultant cost savings
- Fewer expensive manholes required
- Less spoil to be removed from site
- Improved health and safety on site through reduced need for deep excavation work

Storage of surface water

- Linear drainage can utilise the storage capability of its channels to good effect where there are limitations placed on the total outflow of the scheme. This temporary storage facility has been utilised to:
- Attenuate peak flows
 - Avoid or reduce costs of balancing ponds or reservoirs
 - Reduce pipework sizes at outfalls

Reduced maintenance

- Easier and less costly to maintain than other forms of surface water drainage systems
- Easy to access along the whole length of the linear drainage system via removable gratings or regular access points
- Blockages will not completely disrupt the whole system and can be dealt with easily
- Inherently strong and robust precast concrete systems resistant to the effects of freeze thaw and de-icing salts

Aesthetics

- Wide choice of decorative metal gratings or textured and coloured top blocks to enhance the aesthetics of a scheme
- Straight lines of linear drainage can be incorporated into the overall design

Control of spillage

- Allows total control of unwanted liquids in an emergency

End user comfort

- Eliminates false falls and consequent 'roller coaster' effect for vehicular traffic associated with point drainage
- Level surface offers greater comfort to pedestrians

Smart Design Drives Down Cost

Marshall's recently undertaken a major project with Professor John Knapton, one of the world's leading structural engineers, to develop & refine the high calibre design advice that we offer our customers.

Benefits

The result is Marshall's' Nine New Design Models, ranging from light domestic to a heavy duty 'ports and docks' option, which eclipse the six offered by the British Standard.

💧 **Environmental:** Less energy used in excavation, less waste to dispose of and less imported aggregate all add up to reduce project carbon footprint.

💧 **Practical:** In areas where excavation is limited (to avoid services, for example), our new designs frequently make a Priora surface a preferred option.

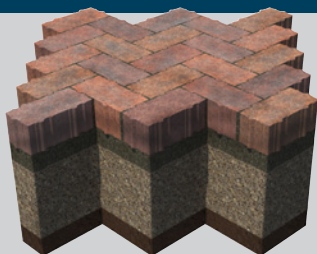
💧 **Financial:** Crucially, our new design models combined with our rationalised sub-base designs drive cost from the Priora structure, making permeable paving a more cost effective option than ever before.

British Standard Design*



Build Up:
80mm Block
50mm Laying Course
350mm Sub-base (OGCR)
Total Depth = 480mm

NEW Marshall's Design* 31% shallower than the BS



Build Up:
80mm Block **Same as BS**
50mm Laying Course **Same as BS**
200mm Sub-base (OGCR)
43% shallower than BS
Total Depth = 330mm

*Example used: Cars & Light Vans (or equivalent), 5% CBR

Priora Sub-Base Construction

The aggregate installed beneath a Marshall's Priora surface is an essential element of the Marshall's

Priora system. The aggregate must provide sufficient porosity to store water in the voids between the granular elements. It must also be of sufficient structural strength to withstand the loads to which the structure will be subjected.



20mm Aggregate

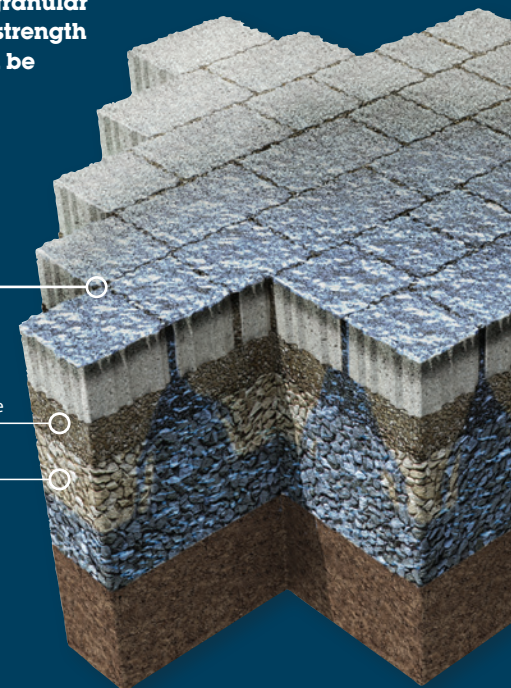


6mm Aggregate

6mm Jointing

6mm Laying Course

20mm Sub-base



Full specification of suitable aggregate is set out in EN 13242: 2002

Marshalls Priora Design Service

Marshalls fully qualified and experienced team utilises a proven system to provide comprehensive support for your project from concept to installation. Our permeable paving designs consider both the structural and hydraulic requirements for the pavement during its intended design life using methodologies developed from a combination of laboratory testing, desktop

analysis and market leading experience. Crucially, Marshalls' team never loses sight of the requirement to create the most welcoming, visually appealing open spaces imaginable. They will use the wide range of textures, colours and sizes from the Priora portfolio, along with the full suite of Marshalls landscaping product range, to create the perfect landscape for your project.

Benefits:

- ◆ Project-specific structural design
- ◆ Project-specific hydraulic calculations
- ◆ Potential cost savings
- ◆ Schedule of components
- ◆ Installation advice.



Marshalls Services

Samples

Marshalls operate a comprehensive, free of charge samples service. Marshalls always recommend that samples are obtained to ascertain actual colours and textures; because our products are made with natural aggregates, slight variation from photographs should be anticipated. Where multiple colours are a feature of the product more than one sample will be sent. For larger units such as flags, kerbs and drainage channels, a section or slip may be supplied to meet guidelines regarding manual handling.



Technical Support:

Marshalls dedicated Technical Hotline Team is available at the end of the phone for any technical queries. They will be able to supply: **Product Data Sheets, COSHH Data Sheets, Specification Clauses**

They will also be happy to answer any questions you may have prior to or during installation of Marshalls Products.

To contact our Technical Support Team, please call 08704 112233 or visit our website to use our new 'live chat' online support system.

Continuous Professional Development Seminars:

Marshalls provide a full range of CPD seminars, many of which are RIBA accredited, which cover a comprehensive range of landscaping topics. Our expert team share their knowledge and experience to ensure that our customers receive presentations featuring the most up to date thinking and the most respected opinion in the industry. These sessions can be delivered at your convenience in your offices.

To arrange a CPD, simply call 0845 302 3131 or book online.

Web Assistance:

Marshalls' website offers the best way to keep up to date with the full range of Marshalls products, services and research. It is an invaluable resource from which customers are free to download the following information:

- Product Information
- Technical Information
- Brochures
- NBS Plus Documents
- DWG Files
- Case Studies

Visit www.marshalls.co.uk

Further Reading/ Useful Resources

UN International Decade for Action
'Water for Life': <https://www.un.org/waterforlifedecade/>

UN International Water Cooperation:
<http://www.unwater.org/watercooperation2013.html>

UN Task Force on Gender & Water
<http://www.unwater.org/TFgender.html>

CEO Water Mandate: <http://ceowatermandate.org/>

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