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CPD Article

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Sustainable Design

As the damage to our planet becomes clearer, sustainability needs to be at the forefront of future architectural and interior design. Sadly, sustainability and high-end design don't always go hand in hand, resulting in less sustainable solutions being specified.

Here, we look at just what to consider when approaching thoughtful sustainable design and focus on a great place to start: drinking water.

Key Learning outcomes

- Understand the different considerations for sustainable design.
- Understand the areas of sustainable design that are overlooked.
- Understand the importance of workplace hydration.
- Understand the drinking water delivery options.
- Learn how plastic waste is affecting the planet.
- Learn what third party accreditations influence sustainable design and products.

1.0 Sustainable design: what do we mean?

Sustainable design aims to reduce or eliminate negative environmental impact through thoughtful design. This includes working to create buildings and products that:

Have a lower energy and water consumption – Reducing energy and water consumption should be a consideration through the entire lifecycle of a building, from manufacture, everyday use and disposal.

Reducing carbon footprint – To lessen The impact of climate change, building and product design needs to consider the carbon footprint.

Limit resource consumption – A simple action towards a more sustainable building, limit consumption and be mindful of usage levels.

Reduce or eliminate waste – By reducing consumption, reusing and recycling levels of waste can be dramatically reduced or even eliminated completely.

Have a positive impact on people's health and wellbeing – Give preference to design and products that consider the health and wellbeing of the people using the spaces every day. This will not only boost moral but also result in increased productivity.

Highlight quality and durability over price – Specifying a product that is high-performing and boasts longevity is a far more sustainable option than choosing to prioritise price for a short-term quick fix.

Unfortunately, a big part of sustainable design that is often overlooked is the aesthetics. Desirable objects are more likely to be specified, especially in a home environment and increasingly on office and commercial areas. There is no point in designing a functional, sustainable product if no one will want to use it every day.

Manufacturers must implement sustainable design with aesthetics front of mind. That way, interior designs, fit-out companies and architects can create stunning spaces that also look after the future of the planet.

It is your responsibility to specify or recommend eco-friendly products wherever possible, and beautiful sustainable design will make this task much easier.

Sustainable design also needs to focus on aesthetics, as desirable products are more likely to be specified.

2.0 Sustainable design: back to basics. Drinking water.

Drinking water is one area crying out for sustainable design and should be a key consideration when designing and specifying for a residential, commercial or public space. Drinking water is one of the main pillars of life on earth, so how we deliver and consume this resource is incredibly important.

Hydration is key to health, wellbeing, happiness and productivity. Some forms of commercial drinking water solutions can be incredibly sustainable, though traditional solutions are renowned for being bad for the environment – thinking of energy guzzling water coolers and planet damaging plastic bottles.

It's time to move forward and reassess our main water provisions, which require innovative thinking.

Just how important is it to keep hydrated?

Pure water is a key element in blood, lymph and sweat. It aids digestion, cushions our joints and tissues and helps regulate body temperature. Detrimental effects on cognitive and physical performance are known to be proportional to the degree of dehydration and is highly significant at 2% dehydration for all mental functions.

Water's effect on the body:
- Moistens tissue such as those in the mouth, eyes and nose.
- Regulates body temperature.
- Lubricates joints.
- Protects body organs and tissue.
- Helps prevent constipation.
- Lessens the burden on the kidneys and liver by flushing out toxins and waste.
- Carries nutrients and oxygen to cells.
- Helps dissolve the minerals and other nutrients to make them accessible to the body.

With the recent explosion in wellness culture, staying hydrated is now not just a necessity, it's a status symbol.

Hydration is key to health, wellbeing, happiness and productivity. Just a 2% degree of dehydration has a detrimental effect on cognitive function.

3.0 What are the water delivery options?

The two most common water delivery options are tap and bottles.

UK water companies place the highest priority on assuring the quality of water provided to their customers. Strict standards for the quality of the UK public supply are laid down in national regulations derived from the EU Drinking Water Directive. These standards are based on advice from the world health organization (WHO) and are regularly reviewed.

Water quality is also closely checked and regulated by independent drinking water inspectorates in England, Wales, Scotland and Northern Ireland, who report each year.

However, to achieve these standards certain chemicals, such as chlorine, are added to eliminate any dangerous chemical compounds – such as weed killers from agricultural land, that may have leached into our water courses and other dangerous bacteria. Yet many users express a dislike for the taste and odour associated with chlorine.

Water can also be transported through pipework that is not in the best condition and therefore can contaminate the water at the point of delivery. Lead pipes are of particular concern and were widely used in building projects up to 1970. Lead is harmful if excessive levels are allowed to build up in the body. Pregnant women and young children are especially vulnerable to the risk of lead.

The only way to make sure water is pure and tastes good is to use a water filter that removes sediment, volatile organic compounds, lead and parasitic protozoan micro-organisms – all of which can still be present in tap water.

Further issues can arise due to hard water. In many areas of the UK there is a significant problem caused by the presence of limescale, which can alter the taste of drinking water and cause damaging build up in kettles and taps.

For practical purposes, it is preferable to have water available without these potential problems.

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4.0 Bottled water: it comes at a price.

There has been a huge rise in the popularity of bottled water as the demand for an ‘instant solution’ increases. In fact, we drink more bottled water in the UK than we do milk.
The British public want to drink water that is healthy, great tasting and free from dirt and contaminants.

However, bottled water is expensive, often priced at £1.00 a litre. It needs to be purchased, stored, managed and chilled. Open bottles need to be kept in controlled temperatures and out of direct sunlight. But the price and storage should be the least of our worries.

Worldwide, 26 million plastic bottles are made each year, equaling 3o million tonnes of plastic. This is set to top half a trillion bottles by 2021, far outstripping recycling efforts and jeopardising oceans, coastlines and other environments.

The manufacturing process is associated with a very large carbon footprint – plastic water bottles are typically made from crude oil and takes three times the amount of water to make than ends up in the bottle itself. During production, pollutants such as nickel, benzene and ethylene oxide are released, harming the environment.

Though plastic bottles are recyclable, most end up in landfill sites and our oceans, rather than recycling centres. Fewer than half of the bottles bought in 2016 were collected for recycling and just 7% of those collected were turned into new bottles.

Campaigners are predicting that this could create an environmental crisis that will be as serious as climate change. Between 5m and 13 tonnes of plastic leaks into the world’s oceans each year to be ingested by sea birds, fish and other organisms. According to research, by 2050 the ocean will contain more plastic by weight than fish. Experts have warned that plastic is already finding its way into the human food chain.

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5.0 The solution: instant filtered water taps.

As designers we are asked to plan-in the provision of drinking water for both commercial and residential buildings. Many kitchen and other facilities will now have their drinking water available through an instant boiling and chilled filtered water tap.

The market has been huge innovation and growth over the past ten years. Instant filtered taps provide convenience and taste, without the waste! The products pair all the benefits of tap water plus state-of-the-art filtration to remove bad taste and odour – often associated with tap water – and heavy metals, other contaminants and limescale.

Instant water that tastes great will influence more people to fill up reusable bottles rather than fall back on unsustainable plastic bottles. Many taps on the market also offer multiple water options, boiling, chilled and sparking, from the same product.

What about energy efficiency?

Instant filter water taps can offer a functionality that enables maximum energy efficiency, operational effectiveness and choice. The taps are 100% water efficient, not one drop is wasted if the product uses air cooling technology.

Manufactures also offer energy saving models that turn off when they sense darkness and only heat the amount water required. Some manufactures are also considering sustainability through a product's entire life cycle, from recycling waste created during manufacture and ensuring any parts at the end of their life can be recycled.

For those with an eye for style, these instant filtered water taps need tie in with kitchen design trends in order to be the preferred choice for specification.

Accreditation: what to look out for.

Trusted third party accreditation means you can be sure you are receiving the safest and highest quality product available on the market today.

- RoHS compliant – Manufactured to comply with the European Restriction of Hazardous Substances Directive 2001/95/EC.
- WRAS – The Water Regulations Advisory Scheme (WRAS) is a conformance mark that demonstrates that an item complies with high standards set out by water regulations.
- BREEAM compliant – BREEAM (Building Research Establishment Environmental Assessment Method) is the world's longest established method of assessing, rating and certifying sustainability of buildings.
- Environmental Product Declaration (EPD) – An Environmental Product Declaration (EPD) is an ISO standardised and LCA based tool to communicate the environmental performance of a product or system.

Instant filtered boiling water taps not only deliver advanced filtration, but also offer an accessible sustainable option for quality drinking water that can be easily paired with high-end design.