Φ Little book

Synchronisation of nature

Historically, we humans have spent much effort trying to shape the natural environment to fit us. Native Americans have always promoted a lifestyle in harmony with nature but their awareness of the natural world's needs was ignored for centuries. Now, with fossil fuels dwindling and the fear of global warming, we are at last being more mindful of the impact we have on the ecosystem. The following are examples of how ingenuity has been used to encourage synchronisation between man and nature.

We hope you enjoy reading this little book.

Shane D Mullins, CEO.

A different kind of engineer

The Great Yu lived in ancient China, around 4,000 years ago. His father, Gun, had died trying to control the Yellow River to prevent it from flooding homes and villages.

- Yu must have been a wise man and thoughtful engineer.

  He took over his father's challenge to prevent the flooding of the Yellow River each year but instead of continuing to try and dam the water he took the time to survey the river before taking action.

  This was a fruitful approach – he studied how the river behaved and worked out how he could channel the flooding into areas away from homes and villages. He was one of the first humans to demonstrate how working with nature is beneficial.

4,000 years ago

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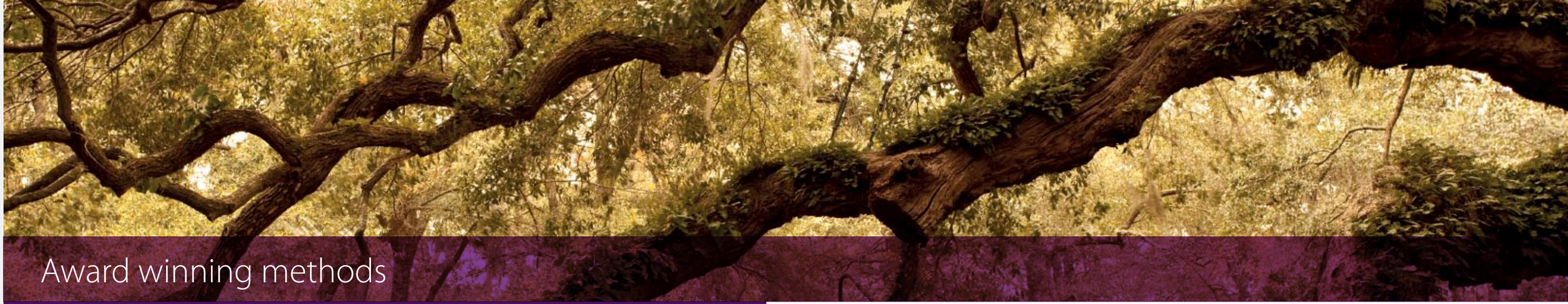


Award winning methods

A modern equivalent of the Great Yu's triumph is the Beam Parklands development in Dagenham, East London. An inner city brownfield site was used to create a part of London's flood defence systems and provide a wetlands nature reserve and public green space amenity.

- The project won two awards – the Brownfield Award, for 'Best Use of a Brownfield Space' and the Living Wetlands Award, presented by the Chartered Institution of Water and Environmental Management (CIWEM).

  It now attracts visitors who can enjoy a natural habitat that is home to dragonflies, water voles and great crested newts to name but a few creatures living there.

Wild road safety

In Cambridge a new bus way was recently completed to make travel around the city easier.

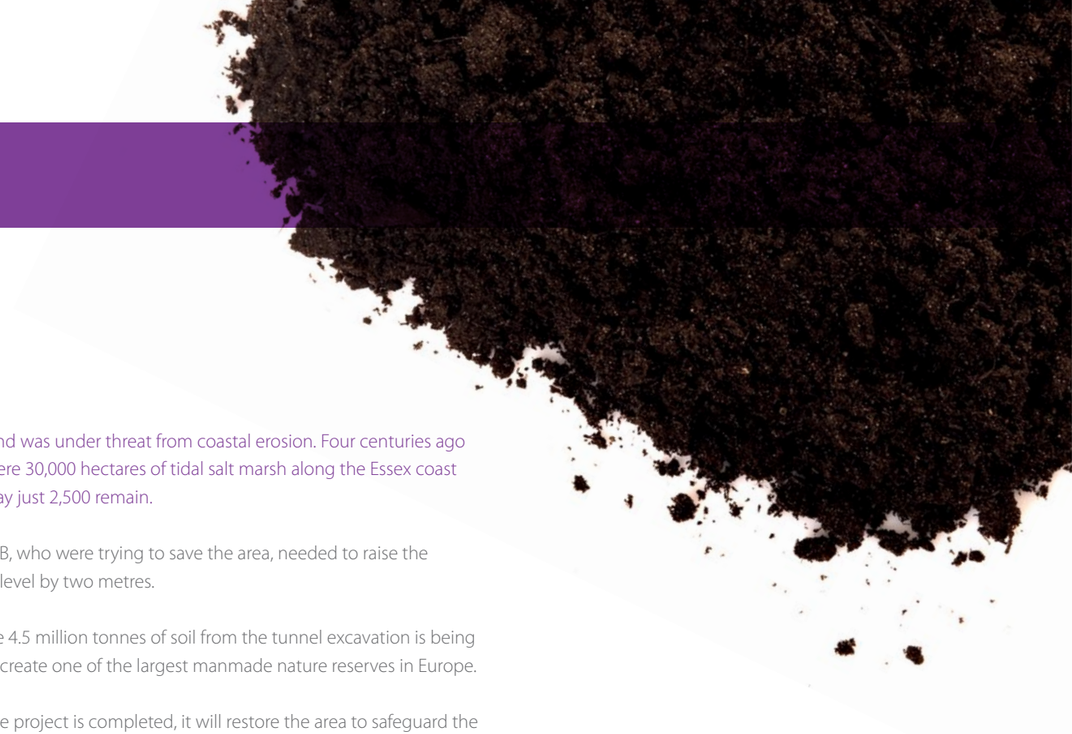
- Unfortunately it caused huge problems for the frogs and toads that live there as it cut across their migratory paths.

  The solution was more than 40 'toad tunnels' to allow the amphibians to travel under the huge expanses of concrete and avoid getting squashed by the passing buses.

  There are similar projects around the world to help other animals cross the road – butterflies in Taiwan, otters in Cornwall, badgers in the Netherlands and a plant-bedecked bridge for bears in Canada.

Cross rail to coastal rescue

The soil excavated from the new crossrail tunnel under London was initially going to prove problematic, until it was found to be ideal for use at Wallasea Island in Essex.



30,000 hectares

Fiscal Engineers / Little book

- The island was under threat from coastal erosion. Four centuries ago there were 30,000 hectares of tidal salt marsh along the Essex coast but today just 2,500 remain.

  The RSPB, who were trying to save the area, needed to raise the ground level by two metres.

  So some 4.5 million tonnes of soil from the tunnel excavation is being used to create one of the largest manmade nature reserves in Europe.

  Once the project is completed, it will restore the area to safeguard the homes of birds that already use the salt marshes, as well as attract back some species that no longer migrate there.

Mountain wolf: eco-warrior

Reintroducing wolves to the Rockies has proved to be of mixed success. Opinion is strongly divided about the wolves' return.

- As predators, wolves have had a positive effect on the wildlife ecosystem by controlling the burgeoning elk population. Without predators, elks have been stripping the landscape of trees and bushes.

  Other positive effects from the wolves' reintroduction ranged from an increase in the beaver population to providing new habitats for insects, fish, amphibians, reptiles, birds, mammals and even moose.

  On the flipside, the ranchers losing livestock to wolves want them removed. Wildlife activists want the wolves protected. For now an impasse has been reached and the wolves continue to howl in the Rockies.

anti-turbulence

A greener big apple

In New York, attempts have been made to reintroduce nature to the urban environment. The High Line Project took a historic freight rail line on the verge of destruction and transformed it into a public amenity.

- The High Line is now maintained as an extraordinary public green space with plans afoot to develop more of the disused rail line.

  Each year, the 'Friends of the High Line' group hosts more than 450 public events, from star gazing to open air theatre and art walks; it is a rich resource for the city's residents and visitors alike.

Call of duty: nature conservation

When it comes to preserving the natural world, spreading the word of conservation is vital. Four proactive conservationists have set up a website that promotes collaboration between nature conservation and video games.

- Their idea suggests video games offer a platform to raise awareness and inspire players to utilise the games' ethos in reality.

  Via the website community and social media, gamers can obtain the resources and connections necessary to find, play and discuss games with a nature conservation theme.

video games

07

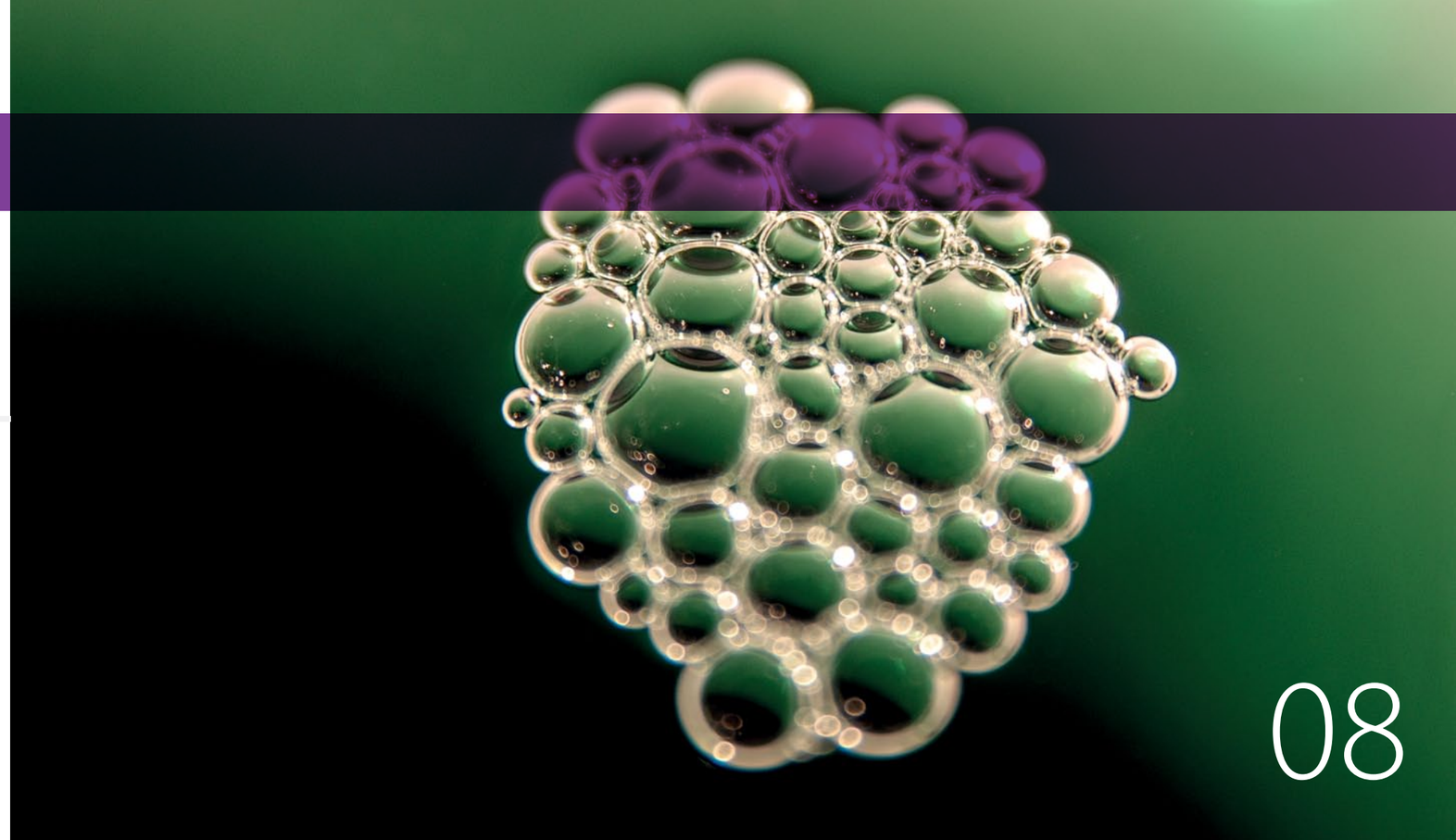
It’s slimy but good!

An Israeli company has successfully used algae to reduce carbon emissions from power plants in China, Italy and the USA.

- The algae have been grown in huge ‘ponds’ that utilise power plant effluent and sunlight to produce oxygen.

  Each pond can offset 1% of the carbon dioxide produced by power stations and the algae can be used to create bio fuel.

  Other byproducts are also developed for the nutraceuticals industry.



Managing pests with pests

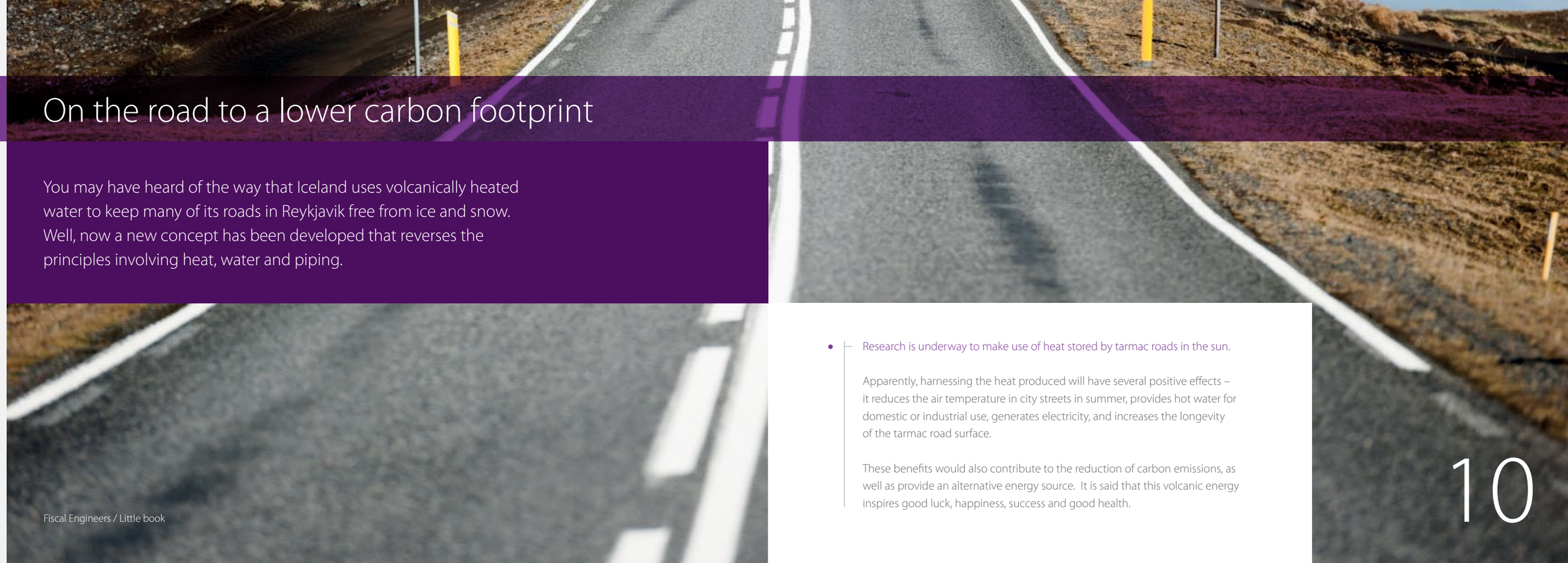
Another Israeli based company has developed 'integrated pest management' which introduces 'beneficial insects' to crops of red peppers, cucumbers, strawberries and aubergines to control unwanted pests.

- This reduces the need for the use of pesticides by at least 75%.

  For Mediterranean fruit growers, a sister company cultivates sterile male fruit flies to limit the fruit fly population which would normally devastate fruit production, thereby drastically reducing the need for pesticide use.

On the road to a lower carbon footprint

You may have heard of the way that Iceland uses volcanically heated water to keep many of its roads in Reykjavik free from ice and snow. Well, now a new concept has been developed that reverses the principles involving heat, water and piping.



- Research is underway to make use of heat stored by tarmac roads in the sun.

  Apparently, harnessing the heat produced will have several positive effects – it reduces the air temperature in city streets in summer, provides hot water for domestic or industrial use, generates electricity, and increases the longevity of the tarmac road surface.

  These benefits would also contribute to the reduction of carbon emissions, as well as provide an alternative energy source. It is said that this volcanic energy inspires good luck, happiness, success and good health.

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