

## HOW GREEN ARE WE?



### Green Credentials - not so easy to achieve

*There is no getting away from it, making components for the construction industry is a resource intensive business. Even the most "Green" of products still use vast amounts of raw materials, be they natural, man-made or recycled and all products use energy one way or another for their manufacture, transport, installation and maintenance.*



Hauraton new production and distribution facility Otigheim, Germany

Encouraged by European Community legislation on waste and recycling, and as a major manufacturer of surface water drainage systems, we decided a further reduction in our carbon footprint should be possible. Since the 1970's our company has strived to produce innovative products efficiently, so it seemed at first all we had to do was moderate the amount of energy used in the manufacturing processes to achieve our aim. However, after an initial assessment it became abundantly clear this action alone would not bring the efficiencies currently demanded. Nothing short of a full energy audit and re-evaluation of the company's manufacturing and distribution facilities, products, processes, and installation techniques would be required if worthwhile, economically viable energy reductions were to be attained.

To help attain our new sustainable goal four guiding principles were established:

1. *Conserve energy* - Whenever possible conserve energy, save energy or reduce its expenditure during the administration, manufacture, transport and installation of products.
2. *Reduce pollution* – Where practical, source recycled materials which would otherwise go to waste or pollute the environment. Including recycling water and generated heat.
3. *Eliminate unnecessary use of energy and materials* – Even where a source of recycled material is not available, reduce the volume of any raw materials and the associated energy needed to achieve the engineering requirement.
4. *Benign energy* - Whenever possible self generate and optimise "Green" energy solutions and use on-site water resources for manufacturing processes.

Tim Connolly, UK Sales and Marketing Director explains the problem, "Our products of course improve the effective control of rainwater and provide tangible environmental benefits, but they have to meet stringent international performance criteria, so components need to be made from materials

like concrete, ductile iron, steel and plastic – all energy intensive materials.

Achieving a carbon neutral status is probably not realistic for companies that manufacturer highly engineered products in the construction sector. But by carrying out an energy reducing stratagem, most could manufacture in a more sustainable way and even improve their bottom line!

Our management team were tasked to reduce the company's overall operational energy requirement. For many years now our Research and Development department have been "designing out" much of the energy and raw materials needed during manufacture, yet still attain reliably engineered products".

### **A new manufacturing and distribution facility is conceived and built**

In 2003 the decision was taken to move the Hauraton manufacturing and distribution facility to a new purpose built development. During the preceding four years, plans were drawn up to ensure the new premises would incorporate the latest energy saving devices and operate at the lowest energy input for this type of plant. Throughout the design stage energy saving features were incorporated into the factory and office complex to significantly reduce running costs and mitigate the company's impact on climate change. Construction on the 100,000 m<sup>2</sup> site started in 2005.

Completed in 2008 the new complex has its own gas driven heat and power plant. As well as guaranteeing all the electricity needed, the heat is captured and used in the production processes and for heating the whole of the 14,000 m<sup>2</sup> building. Even the heat produced from the production machinery is utilised to warm up various materials used to manufacture the company's fibre reinforced concrete channels. A water harvesting system was built into the roof. All the rainwater is stored and then used in manufacturing, virtually eliminating the requirement for mains water for this purpose.

The handling and dispatch of goods came under close scrutiny as this accounted for a large portion of time and energy used. In addition to the automated indoor storage facility, the new factory has a 86,000 m<sup>2</sup> outdoor goods transfer area carefully design to ensure articulated lorries can be loaded and on their way within the hour.



86,000 m<sup>2</sup> outdoor goods transfer area at Hauraton's new facility

## Products and Processes

Hauraton have for the last 50 years been at the forefront of manufacturing robust surface water drainage systems that are today distributed and installed around the world.

The use of fibre reinforced concrete perfected in the mid 70's allow their FASERFIX® channels and trash boxes to have much thinner walls when compared with similar non-reinforced concrete products. Outdoor cable management channels with quick release covers are also offered as part of this range.



FASERFIX® fibre reinforced concrete channels with ductile iron gratings installed at St Ives, Cornwall as part of a flash flood prevention scheme

All FASERFIX channels and trash boxes feature metal protection along their top edges.

The company says this detail provide exceptional wear resistance and increased load bearing capability. Unlike some other well known makes, FASERFIX components are so strong, even prior to installation they are able to endure the rigours of building sites so reducing waste and down time.

Developed in 1995 RECYFIX® branded products incorporate a recycled co-polymer made from polyethylene (PE) and polypropylene (PP). The PE-PP used by the company derives from post consumer and post industrial sources. By combining the properties of these two recycled plastics, tough yet lightweight products can be made. Polyethylene has a natural resistance to Ultra-Violet (UV) energy whilst polypropylene is a very stable plastic that is easy to injection mould into complex shapes. Not only is no prime polymer used in the manufacture of RECYFIX components its the shredded recycled material, not reformed pellets, that is fed directly into the injection moulding machines providing even more energy savings.

RECYFIX range includes, low and high capacity drainage channels, access chambers, yard drainage gullies, surface reinforcement grids and systems for sports fields and athletic tracks. The range has made Hauraton Europe's leading supplier of recycled PE-PP drainage systems.

Both the FASERFIX and RECYFIX channels are offered with gratings or covers made from Ductile Iron or Steel that use a percentage of recycled ferrous metals. Indeed, the company claims all of the components they manufacture are designed to be recyclable.

## Installation and maintenance

Through the careful design of components the company has made every effort to reduce site excavations and backfill materials. For example, their RECYFIX® HICAP® system is the result of an extensive R&D programme where the company's design engineers identified the potential of

using recycled PE-PP materials for drainage channels that allow specifiers and contractors flexibility in heavy duty drainage schemes coupled with trouble free installation especially where tarmac is the surrounding surface. This design work resulted in an innovative surface water drainage system that has the potential of reducing the number of channel runs normally required to drain a given area. Subsequent field experience has shown this reduction has meant less underground excavations, materials and vastly reduced installation times. As there are fewer runs required, the surfaces strength is not compromised whilst maintenance and cleaning are also reduced. What's more, all but the largest size weighs less than 25kg so reducing the need for mechanical handling. Unlike similar "heavy duty" drainage systems on the UK market that use galvanised steel slots, the slotted components on the HICAP® channels are made from strong ductile iron, so accidental distortion of the slots during installation has proved not to be a problem.

We offer six HICAP sizes with volumes ranging from 18.4 to 415.0 litres per metre. The different sizes are designed to easily link up with each other in a step-fall design, so as the volume of water increases downstream the chance of overflow is virtually eliminated. An HICAP array can also be used as a water retention system within a SUDS scheme.



RECYFIX® HICAP® being installed at BAA Heathrow

### **SIDELOCK® a patented boltless grating system..**

#### **Saving time, energy and money**

Another time saving feature developed for their "U" shaped channel ranges is SIDELOCK® a patented boltless grating system which allow easy access to the channel run for maintenance. Once a grating or cover is positioned on the channel, foot pressure is simply applied, a loud click is heard which confirms the grating is securely locked. It can only be removed using a large screwdriver inserted into a discreet leverage point. In practice each SIDELOCK grating or cover can be removed in 15 seconds to allow access, and then replaced in less than 30 seconds - 90% quicker than other fixing methods – saving time, energy and money.



Hauraton cable management channels featuring SIDELOCK® ductile iron covers being installed in a major UK stadium

## **Continuous innovation and improvement**

Tim Connolly, sums up his company's approach to "Green" issues, "It would be naive to suggest our company could become carbon neutral, but we have managed to greatly reduce our carbon footprint in recent years and in the process improved our ability to provide even more sustainable products. As we are committed to a rolling R&D programme, our engineers are continually looking for ways to improve our designs, maximise the use of materials, recycled or otherwise and help minimise site work, backfill materials and time taken to install or maintain our products. To insure our quality is never compromised sample components are taken from our production lines and routinely tested against stringent specifications and the mandatory load requirements demanded. Over the years customers have continued to choose Hauraton products, gaining peace of mind in knowing that all of their drainage projects will meet the highest environmental standards. Each project completed has contributed to our foundation of knowledge. Be assured we take every advantage of this by continuously investing in our design and production facility, tooling, logistics and quality assurance to ensure we achieve at least some "Green Credentials". In addition, to ensure site work is completed efficiently, our support staffs are kept up-to-date with the latest environmental and performance legislation relating to our industry. They are more than happy to provide hydraulic design advice for your more tricky projects".

For more information about Hauraton products and services go to: [www.hauraton.co.uk](http://www.hauraton.co.uk)