HUBER TECHNOLOGY
WASTE WATER Solutions

# NEWS

November 2014

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# Welcome to the latest Huber Technology Newsletter.

Dear Reader,

2014 has been an extremely busy year and we are pleased to share some of the highlights with you.

There is nothing more gratifying than an endorsement from a customer. Which is why we were delighted to be granted approval to supply our electrical control panels to Welsh Water earlier this year. We also successfully completed the upgrade of Duncrue Street STW in Belfast, and received praise from NI Water for the way this hugely important project was managed and for the benefits the new Huber screens are bringing to the works.

Quality is always at the core of everything we do at Huber, and the recent addition of the Health and Safety OHSAS 18001 to our other quality standards demonstrates our commitment to improving quality in all areas of our business.

Sludge treatment is a growing part of our activity, and with the addition of another trial unit and further success of the Huber Disc Thickener, this looks set to continue.

We hope you enjoy reading about all these, and as always if you have any feedback or questions, we'd love to hear from you!

Best Wishes

Steve Morris

The Newsletter of Huber Technology UK

www.huber.co.uk

# Huber Technology upgrades the inlet works at Duncrue Street, Belfast

## A Wastewater Case Study

Huber Technology have recently completed a large £1.2 million project at Duncrue Street, Belfast. The project consisted of supply of equipment, mechanical installation and commissioning at the inlet works. Huber Technology collaborated extremely closely with the main contractor GRAHAM Construction and Northern Ireland Water to ensure the project was delivered successfully.

## Project Profile

The successful delivery of any wastewater project, large or small, doesn't just happen, and typically involves people from many different disciplines and who are highly experienced, and very importantly have good local site knowledge. The upgrade of Duncrue Street, Belfast, was an example of the considerable collaborative effort needed from the outset to ensure a successful outcome which exceeded all parties' specifications and site requirements.

From the initial enquiry, around 3 years ago, regular dialogue took place between Northern Ireland water, the design consultant, contractor and Huber Technology.

A thorough understanding of the hydraulic conditions of the site where of the utmost importance. The elevated works, which occupy a compact footprint, fed by 5-off large screw pumps presented its challenges, and any failure in the fundamental design could have caused extensive damage to the surrounding area.

The existing 6-off coarse and 6-off fine screens on site, along with their associated dedicated (very long) screw conveyors and handling equipment, were continually causing issues with carryover of screenings, leading to reliability problems and requiring high maintenance. This compounded with the high peaks of loadings in respect of flow and rags meant that the operation of the works involved large amount of manpower and monitoring to take place.

Huber Technology were tasked to take into account the very specific site hydraulics and control philosophy requirements for this site along with the right selection of equipment and its associated sizing. The coarse screens chosen were used to protect and reduce the solids loading onto the 6mm escalator screens, which have one of the highest screenings capture ratios on the market today of 84%. This would ensure that pump blockages and rags were not carried over into the works. Additionally Huber Technology suggested that a launder system be utilized to eliminate the need for the very complicated and maintenance intensive screw conveyors and duty/standby change over systems.

As with all projects of this scale, good communication was essential, and regular projects meetings at all stages of the contract, ensured that all parties were informed and agreements about the most important decision were made collectively. The well-known 5-P's acronym (proper, planning, prevents, poor, performance) was particularly relevant in this case.

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## Scope of supply

**Huber Technology supplied;**

- 6 x EscaMax Screen 5000 x 2252 with 6mm perforated plate
- 6 x RakeMax Screen 4300 x 2250 with 50mm bar spacing
- 4 x WAP-SL BG12
- All launder channels
- DN350 knifegate valves

*Having a strong local presence with a dedicated team and skilled technicians able to deliver this to a consistent high standard of workmanship ensures the project is delivered on time with the highest quality to the client*

## Equipment:

- EscaMax Screen throughput 2100 l/s peak flow per screen (5-off duty screens and 1 standby)
- RakeMax Screen throughput 2100 l/s peak flow per screen (5-off duty screens and 1 standby)
- WAP SL max throughput of 15m3/hour per unit (Duty / Standby – Coarse Screens and Duty / Standby Fine Screens)
- Launder Channels for a flow rate of 25 l/s

## Objective

To keep the existing works active, a phased installation of new equipment was essential, and the equipment had to also fit within the existing very tight sites hydraulic constraints.

## Solution

The equipment was delivered directly to site, where Huber Technology's regional office, based in Portadown, took over the mechanical installation and commissioning. The use of local resource proved invaluable and ensured that the project moved forward and any issues were quickly resolved. In October 2013, the equipment was successfully commissioned after a 28 day testing.

*"Having a strong local presence with a dedicated team and skilled technicians able to deliver this to a consistent high standard of workmanship ensures the project is delivered on time with the highest quality to the client. Huber Technology is a global company with a local presence, the client has a local contact and this means project delivery of any size or complexity can be delivered with minimal fuss. Duncrue Street, Belfast will be supported throughout its lifetime by the local regional team with prompt response and support to the end user"* commented Kieran Hagan, Regional Field Manager for Huber Technology, Ireland

Fred Neumann, Regional Sales Manager for Huber Technology also explained *"The complexities of this major project were successfully minimized and overcome, due to early engagement with NIW operations project manager, consultants, main contractor and their subcontractor. Installation phasing and commissioning problems had minimum impact on the project delivery. This was down to the integrity and commitment of the local Huber Technology installation team."*

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*The reliability of the Huber equipment has been excellent giving just minor teething problems which have been addressed and sorted effectively by both Huber Technology and the main contractor GRAHAM Construction*

## Customer Testimonial

*"In January 2013 Huber Technology were appointed as a sub- contractor to GRAHAM Construction to supply and install 6 No new course and fine screens at Belfast WwTW under the IWWF Phase 2 Base Maintenance scheme. Works commenced on site in July 2013 and were successfully handed over to NI Water in May 2014. The quality of product, workmanship and co-operation provided by Huber for this scheme was of a very high standard."* explained Gerard

Mc Keever, Project Manager for GRAHAM Construction

Peter Neeson, Operations Manager from Northern Ireland Water explained how well he felt the project was carried out and the improvements they are seeing:

*"The reliability of the Huber equipment has been excellent giving just minor teething problems which have been addressed and sorted effectively by both Huber Technology and the main contractor GRAHAM Construction.*

*The screening capture rate, by both the coarse and fine sets of screens is excellent, evident now by how quickly the skips fill, and the significant reduction in sewage related debris downstream of the screens. This has meant less pumping and treatment process problems for myself and break downs for Northern Ireland Water M&E. Prior to the new Huber screening system being installed the old one used to pass forward into the works large amounts of sewage debris which often settled out with the sludges .This issue drew complaints of pump blockages etc. from the sludge incinerator team (previously NIW now Veolia water) and NIW M&E. Pump blockages are rarely an issue now on site.*

*Screening handing has been vastly improved by the installation of the Huber WAPs and launder trough system. It replaced a screw conveyor and compaction units which were housed in a purpose built building, this made the maintenance of the old units a dirty and sometimes dangerous job because of space and lighting issues. The WAP's seem to be well capable of dealing with plug flows of screenings that occur from time to time. Belfast WWTW catchment is fairly flat, so in wet weather screenings can arrive at the works on mass after a dry spell. The new WAP's seem to be very good at dealing with this".*

## Product Profile

**EscaMax – Belt Screen versatile inlet screen**

- Excellent separation efficiency due to its perforations
- Reliable cleaning of the perforated plates with a rotating brush
- Very compact system with minimum space requirements
- Easy to retro fit into existing channels

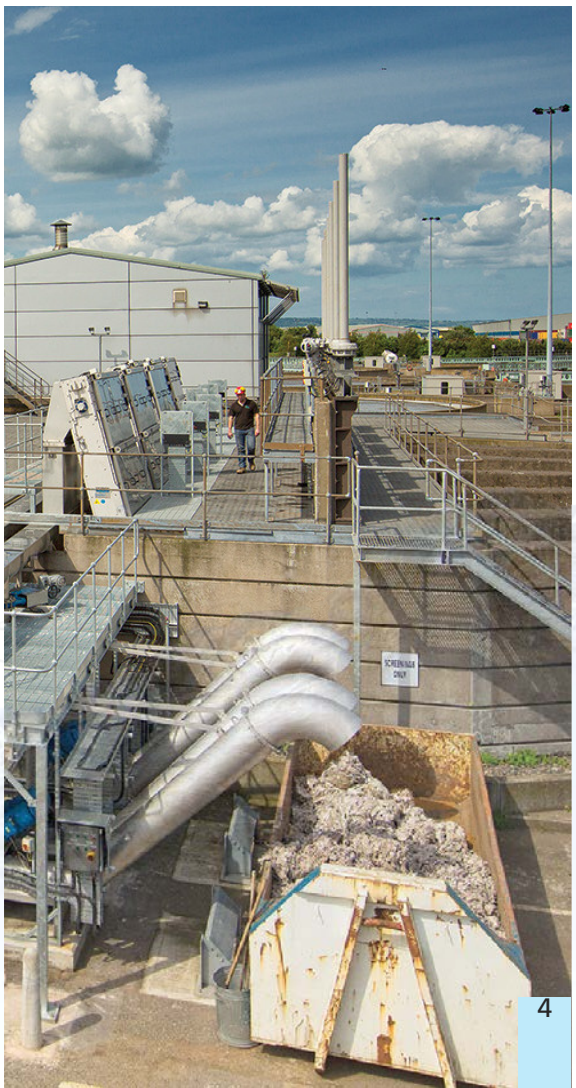
**RakeMax – Multi Rake bar Screen**

- Very high screenings discharge capacity
- Low head loss
- Low installation height above ground level even in deep channels
- Control independent safety system

**WAP-SL– Superior launder Wash Press**

- Volume, weight and disposal cost reduction of up to 85%
- Compaction up to 50% DR
- High washed screenings quality of < 20mg BOD 5/g DR
- Feeding through a launder channel or directly from a screen or conveyor

**For more information please contact Rachael Harvey 01249 765052, email rh@huber.co.uk or visit our website www.huber.co.uk**



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# Huber Technology awarded Northern Ireland Water Framework

Huber Technology are pleased to announce that they have been awarded the Northern Ireland Water Screens and Screenings Handling framework.

The inlet to any waste water treatment works is, as most people know, the most important part of the sewage treatment process. If this part of the process is not correct then it inevitably leads to problems with the rest of the plant. Northern Ireland Water recognised this and after a comprehensive and detailed tender process put in place a framework for coarse screens, fine screens, combined inlet screens, storm screens, screenings handling equipment, grit plant and combined inlet works along with control panels, commissioning spares and maintenance of the equipment in question. The framework was divided up into 7 lots and is estimated to be worth around £10,000,000 in total over an initial 2 year period with an option to extend this to 3 years in total.

Huber Technology are delighted to have been selected as framework partners. Huber Technology look forward to continuing their 25 year long standing relationship with Northern Ireland Water, through the support of existing assets and through new schemes to add to the 600 existing references within the NIW region.

The latest scheme delivered recently was the complete Inlet Works at Belfast (Duncrue) STW which includes 6-off coarse screens, 6-off escalator screens and 4-off large screenings handling units, to handle a flow in excess of 10,500 l/sec with 5 screens working at any time.

Stephen Truesdale – Head of Integrated Procurement for NIW commented

*NIW are pleased that after an extensive framework tender process to award Huber Technology a 3 year agreement encompassing all areas of the framework such as inlet screen screenings handling, storm screens, grit removal equipment and packaged inlet works solutions. Huber Technology is one of only two suppliers to be awarded all 7 Lots within the Framework and this brings huge benefits to NIW in terms of standardisation, continuity and of course cost benefits.*

Nick Hunt

# Keeping up Standards

We live in a competitive world. People who are in business for the long-term take it very seriously and ensuring your systems run smoothly and effectively is paramount in order to stay at the top.

This means that tried and tested methodologies should be implemented across the board to ensure continuity, reliability and excellence of product and service. Changes should be incremental and fully tested before being incorporated into operational procedures.

We started this process at the turn of the century by gaining ISO 9001:1994, (now 2008) for Quality Management. Since then, we have never lost our accreditation and this is a testament to the ethos of the company as well as the support we have from everyone within it. More recently, (2009), we gained ISO 14001:2004 for Environmental Management followed by ISO 14064 for Organizational Carbon Footprint last year and most recently OHSAS 18001:2007 for Health & Safety.

The over-riding and most important factors are to continually strive to improve all our systems along with the involvement and enthusiasm of the whole workforce.

In these, I feel we are approaching this state of perfection.

It's very easy to write a standard and tick all the boxes, (in fact, in my experience that's how standards used to be treated many years ago), but 'walking the talk' is a step change. Involving all your people is not only good for the company, it helps drive improvements and makes working here a pleasure.

The final part of the puzzle is never to be satisfied with the status quo. As a company we are always looking for ways to improve our services, making them slicker, quicker, reducing the incidence of errors, utilizing technological advances, (for our product as well as our systems), generally trying to give the customer precisely what he wants and when.

Richard Aylward

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# Huber Disc Thickener – Improved operator access

Welshpool Disc Thickener installation

In 2013 Huber Technology received an order for an RoS2S Disc Thickener from J.N. Bentley for a project at Welshpool STW for Severn Trent Water.

The treatment works was undergoing a £3.25M refurbishment to improve the treatment process and equipment was required for activated sludge thickening. The Disc Thickener is established technology for sludge thickening, having been developed almost 15 years ago and now with 490 references worldwide.

Huber delivered the Disc Thickener in March this year and it was commissioned in August.

As we would expect for an activated sludge thickening application the equipment worked well and the customer was pleased with the performance particularly after we upgraded the sludge ploughs to the latest design which had been introduced by Huber in Summer 2014.

One aspect of the equipment that Severn Trent Water wanted to change was the interlocked guarding on the machine. Magnetic interlock switches are fitted to access covers on the machine to ensure the machine shuts down whenever a cover is opened. This is in order to prevent operators accessing moving parts. Severn Trent wanted to avoid the need to maintain these safety circuits and asked if these could be safely designed out.

Viewing hatches with open mesh guarding and secondary locking covers

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Together with Severn Trent Operations and J.N.Bentley, Huber reviewed the machine safety risk assessment. The purpose was to consider how plant operators and maintainers could safely observe the operation of the plant at various stages of the process (flocculation, thickening, sludge discharge and spraybar operation):

- without the risk of entanglement in moving parts and
- whilst still containing aerosols within the machine.

By considering each point of access to the machine, we arrived at a solution which involved fitting:

- open mesh guards to the access points which were beneficial for viewing the process and
- bolted covers to those parts of the machine that only required non-routine maintenance access.

Where open mesh guards were fitted, they also had to be designed to have secondary covers to contain aerosols and to be removable (with the use of a tool) for periodic maintenance access.

The necessary parts were designed and manufactured in September and were fitted to the machine by the end of that month. By working collaboratively with Severn Trent Water and J.N.Bentley we have been able to improve the machine design in such a way that operators can more easily monitor and optimize the process without in any way compromising operator safety. Everybody has been pleased with the outcome and this guarding has now been incorporated as standard by Huber for all machines supplied to the UK.

# DCWW Technical Compliance

Huber Technologies in house panel design and manufacturing team gained full technical acceptance earlier this year enabling them to manufacture and supply local control panels for their screens directly to DCWW.

After successfully completing the package plant local control panel electrical audit by DCWW's TGT department Huber is pleased to be able to offer local control panels with its range of screens. This technical sign off, one of many that the company has been working on recently, and its success is a reflection of the amount of work and effort combined with many years of industry experience and knowledge used to great effect.

The comprehensive audit looked into all aspects of the company and department from procurement, design and manufacture through to testing and the completion of technical construction files. Compliance with technical standards were robustly verified and Huber's electrical team demonstrated their comprehensive knowledge with the requirements of all of the relevant standards.

*"Huber are now technically approved to manufacture and supply local control panels used for their Screens without the requirement for a Technical Query (TQ)."*
DCWW 2014

Paul Blackoe

# Trials and Demonstration Equipment

Huber Technology has expanded its range of mobile plants for trials and demonstrations with the addition of an RoS3Q screw press dewatering plant. This will be used to thicken and dewater sludges from a range of different industrial and municipal processes.

Huber's screw press technology is well proven and is used in a wide variety of applications throughout the world. Before selecting new capital equipment, customers often want to see the technology working on their waste water in order to gain confidence in the benefits it will bring, and to validate their investment.

The full sized RoS3Q is containerised for ease of transport and installation on site and contains the necessary polymer dosing equipment and control system required to fully replicate a permanent installation. It is designed to allow a quick and easy connection and interface with customers services on site.

Huber's process engineers work with customers to understand their objectives and develop a trial programme to suit. Huber will set up the trials, commission the unit and provide resource throughout the trial period as required. Following the completion of the trials, Huber use the data generated to provide a fully optimised solution for a full scale permanent installation.

*For further information about Huber trial plants please contact: Nick Hunt 01249 765000*