

## Case Study

### HUBER Technology upgrades the inlet works at Duncrue Street, Belfast.

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.

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.

A thorough understanding of the hydraulic conditions of the site were 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.

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.

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

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.

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.

**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.

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. Screening handling has been vastly improved by the installation of the HUBER WAPs and launder trough system."



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**HUBER**  
**TECHNOLOGY**  
 WASTE WATER Solutions

Duncrue Street, Belfast

## Solutions for Preliminary Treatment



**HUBER Technology** was incorporated in the UK in 1993 (Registered name Rotamat Ltd.) as a wholly owned subsidiary of HUBER SE, the manufacturers of the ROTAMAT range of waste water treatment equipment.

**Our mission is to protect the environment with sustainable waste water solutions.**

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Our mission is to protect the environment with wastewater solutions. HUBER Technology's UK head office is based in Chippenham, Wiltshire with regional centres in Rotherham, Dundee and Portadown providing dedicated installation and a full aftersales service programme to customers in these areas.

HUBER equipment is designed and manufactured in Germany where we have state of the art manufacturing facilities and incorporate the very latest production techniques. Machines are customised to meet individual customers' requirements at our workshop facility in Chippenham.

We design and build bespoke control panels to ensure efficient and cost effective operation of our equipment. We also offer an extensive range of plant for hire and trials to meet customers' short term needs and help with on site development work.

### HUBER Solutions for Preliminary Treatment

- ▶ Coarse / Fine Screening
- ▶ Combined Screening
- ▶ Screenings Handling
- ▶ Packaged Inlet Works



# HUBER Technology – Lowest WLC Preliminary Treatment

## Coarse & Fine Screening

### Solutions

- **HUBER Multi-Rake Bar Screen RakeMax®**  
Coarse Screen
- **HUBER Belt Screen EscaMax®**  
Perforated plate escalator fine screen



HUBER RakeMax® coarse screen installation at Culmore STW

### RakeMax® coarse screen

#### Features & benefits:

- Easy retrofit into existing 500 mm wide channels up to 4 m wide & 20 m deep
- High screenings discharge capacity
- Low headloss
- No washwater required
- Numerous bar spacing & installation angles available
- **RakeMax® Hi-Flow** screen available with a higher hydraulic throughput



HUBER EscaMax® fine screen installation at Hull WwTW

### EscaMax® fine screen

#### Features & benefits:

- World class screening efficiency - 84% average solids capture ratio
- Unique sealing design ensures continued efficiency with minimal maintenance
- No requirement for self adjusting brush due to clever design
- Different perforation sizes & screen installation angles available
- 300+ installations in UK & Ireland

Range of launder systems, screenings handling plant & control panels available to compliment the screens

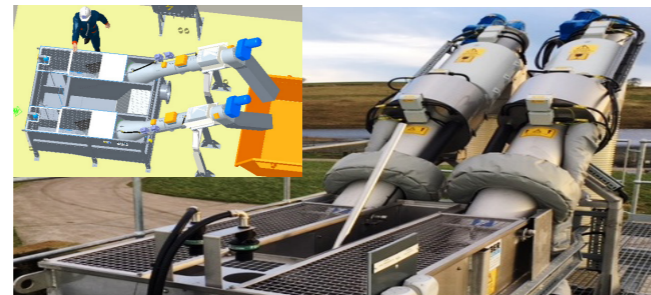
## Combined Screening

### Solutions

- **HUBER Micro Strainer ROTAMAT® Ro9**  
Combined Fine Screen  
The original 'spiral sieve' screen - Screenings removal, washing, transportation, dewatering & compaction with a single low kW drive



Channel mounted HUBER Ro9 combined screen installation at Michaelwood STW



DfMA tank mounted HUBER Ro9 combined screens installation at Bishop Middleham WwTW. Tank also incorporates a central handraked bypass screen

### HUBER Ro9 combined screen

#### Features & benefits:

- Ideal for new or existing works above or below ground
- Safe, easy & quick to maintain in situ
- 1500+ installed in UK & Ireland
- Complete range of versatile solutions 500 P.E. to 10,000+ inhabitants

#### DfMA (built off site) tank solutions include:

- Duty only **HUBER Ro9 combined screen**
- As above but also incorporating a handraked screen bypass.
- Duty/Standby or Duty/Duty **HUBER Ro9 combined screens** with or without a handraked bypass screen.

#### Design features include:

- Out of the flow, intermediate auger support bearing to avoid unnecessary auger wear
- Wear sensor for above bearing
- Optimised washwater control for reduced consumption.
- 6 mm 2D screening as standard – Smaller apertures available upstream of sensitive processes

Range of solutions includes screenings conveyors & control panels available to compliment the screens

## Screenings Handling

### Solutions

- **HUBER Screenings Wash Press WAP®**  
Screw Compactor
- **HUBER Screenings Wash Press WAP®L**  
Washer Compactor
- **HUBER Screenings Wash Press WAP®SL**  
Intensive Washer Compactor



HUBER WAP®L Wash Press installation at Plymouth Central STW serving coarse & fine screens



HUBER WAP®SL Wash Press installation at Hull WwTW serving 3 No. HUBER RakeMax® screens

### HUBER WAP® range of screenings handling plant

#### Features & benefits:

- Wet screenings throughput up to 24 m<sup>3</sup>/hour
- Volume, weight & disposal cost reduction up to 85%
- Low power & washwater consumption
- 600+ installed in UK & Ireland

#### Typical applications:

- WAP®** - Direct coupling to an inlet screen, screenings screw or belt conveyor
- WAP®L** - Screenings from launder systems or direct from screens where screen washwater rate is high
- WAP®SL** - Screenings from launder systems where odour is likely to cause a nuisance to neighbouring properties

Range of launder systems & control panels to compliment the screens & wash presses

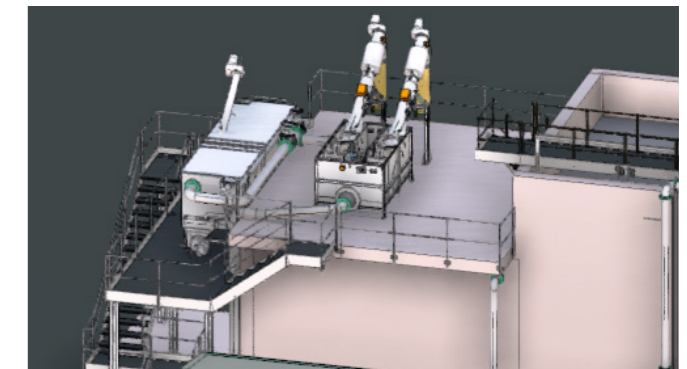
## Packaged Inlet Works

### Solutions

- **HUBER ROTAMAT® Ro5 Complete Plant**  
Screenings removal, washing, dewatering & compaction, grit removal & treatment with optional FOG/grease removal in a single box
- **HUBER ROTAMAT® Ro6 Longitudinal Aerated Grit Trap**  
with upstream HUBER inlet screen package. Grit removal & treatment with optional FOG/grease removal in a single box



HUBER Ro5 Complete Plant installed at Invergordon STW



3D representation of HUBER Ro6 Longitudinal Aerated Grit Trap with upstream HUBER Rotamat® Ro9 fine screen inlet screen package

### HUBER Ro5 & Ro6

#### Features & benefits:

- **Ro5** - the original packaged inlet works
- Can be installed above or below ground
- Excellent hydraulic throughput versus footprint
- Any HUBER screen can be located in the **Ro5**
- Lower CAPEX & operating costs than competing grit treatment technologies
- No level control, grit pumps or separate classifier required
- Optional grit washing & automatic grease removal available
- 100+ UK & Ireland installations

Control panels available