

Belfast Sewers Project News



Project pumps up for final year

The close of 2008 saw the Belfast Sewers Project, Northern Ireland Water's £120 million infrastructure scheme, make giant strides towards its goal of reducing flooding and making the city's rivers cleaner.

In December the Project took delivery of six large water pumps, which will play a key role in the ambitious scheme. Having been lowered down 40 metres into position, the pumps – worth over £1 million in total and weighing up to 15 tonnes each – were carefully assembled in the purpose-built Terminal Pumping Station, the largest excavation in Northern Ireland, at Duncrue Street.

The pumps form a crucial element in the project and, once operational, will manage storm water and reduce the risk of flooding in the city. Each pump has the capacity to pump around 3,500 litres of water per second - which is powerful enough to drain an Olympic sized swimming pool in less than two minutes.

The Terminal Pumping Station, which houses the pumps, lies at the end of a 10 kilometers network of new storm

tunnels being constructed below Belfast. The tunnelling machines, up to four metres in diameter, have been burrowing at an average pace of 30 metres per day at depths up to 30 metres.

Once completed, the Belfast Sewers Project will provide a wastewater system capable of managing a 1-in-30 years' storm. It will cater for the needs of a growing city and will provide a better quality of life for its communities with reduced flooding and cleaner, healthier rivers.



Timeline of Belfast Sewers project

2005 – Phase I -Sewer Rehabilitation Works begins

August 2006 – Appointment of Phase II Contractors Morgan Farrans

October 2006 – Launch of Phase II of Belfast Sewers Project, Stormwater Management Works

November 2006 – Work begins on Terminal Pumping Station Work begins on first and second group of access shafts

January 2007 – Work begins on third group of shafts

February 2007 – Work begins at Corporation Square

May 2007 – Arrival of 4 metre high tunnelling machine

August 2007 – Completion of largest excavation in Belfast, at Duncrue Street

March 2008 – 2.5 metres high tunnel boring machine arrives Project scoops Considerate Constructors Award

April 2008 – First tunnel breakthrough for 4 metres high tunnel

October 2008 – Bored pile shaft work commences. Pipejack work begins

December 2008 – Arrival of water pumps at Terminal Pumping Station



Name: Chris Mellor
Position:
Chairman and
Acting Chief Executive
City of Origin:
London

GroundView

Project news caught up with Chris Mellor to discuss one of NI Water's biggest investments to date.

Why was the Belfast Sewers Project Created?

For half a century Belfast has been struggling with a Victorian sewerage and stormwater system, resulting in regular flooding and pollution of low lying areas and the Lagan. There was no way the existing system could continue to cope with these new demands. With each new building or area of tarmac, water that previously would have soaked into the ground now has to be drained away through already burdened sewers. It was crucial that a long-term solution was developed and delivered to underpin the growth of the city.

station and a series of storm water tanks designed to handle anything up to 1-in-30 years' events – the highest industry standard.

How will the Project help Belfast?

The scheme will be hugely significant for the Greater Belfast Area, efficiently managing huge amounts of water which might otherwise have flooded streets, offices, factories and homes. The Project will bring evident long term benefits to the city's residents and environment.

How have we benefited from the experience of an international team?

To deliver the project accurately, safely and on time; we've sourced contractors and international experts with the experience and skills needed for a project of this scale. At the peak of the project we have had up to 200 tunnelling and engineering experts from across the globe providing their know-how and commitment to realise the ambition of the project.

A scheme like this simply would not have been possible without securing the skills of the very best experts in their field.

In your view, what has been the most important element of the Project?

We have always worked hard to involve the communities who are affected by the ongoing work and who stand to benefit from the scheme. We cannot

understate how important good community relations have been in making this project happen. We have put in place an outreach programme that not only keeps everyone informed of our progress and planned work, but more importantly, listens to and responds to any problems or concerns communities and businesses may have about the Project.

What makes this Project unique?

The Belfast Sewers Project is a hugely ambitious scheme in a busy, growing city with its own challenging environment. For example, hard basalt dykes – walls of hard rock sometimes several feet thick – and the city's infamous sloop, the soft ground which causes the Albert Clock to lean, have had to be considered when devising the tunnel route. Thanks to careful planning and surveying, the project has remained on course, with a minimum disturbance to the city of Belfast, with few people even realising we are working hard below the ground.

What element of Project delivery have you found most satisfying?

Our goal has always been to deliver much needed benefits of the scheme, with minimum inconvenience to traffic, businesses and residents. Only a few years ago a project of this kind could not have been envisaged without large-scale and prolonged disruption to city life. But with careful planning, the use of cutting-edge technologies and a truly world-class team of experts, the project has advanced virtually unnoticed in some areas, but with overwhelming support in all.



Explain the scale of the Project?

With an investment of £120 million, the scheme represents one of Europe's largest wastewater schemes and the largest infrastructure project ever undertaken in Belfast. When finished, the project will deliver a network of tunnels up to four metres in diameter, a purpose-built terminal pumping

Special delivery for Belfast Schools

Contractors for the Belfast Sewers Project, Morgan=Farrans and Atkins, stopped off at schools located close to the project's sites of work in October to make a series of special donations.

The donations of £250 for each school were made in appreciation of the goodwill that exists between the Project and the local schools during the ambitious scheme's journey to

completion. The team have taken great pride in ensuring the benefits of the programme are delivered with minimum disruption to everyday life in the growing city.

Working closely with local communities, proactive steps were taken at each work site to inform schools of ongoing activities and to reduce noise levels during school hours.



⌘ Back Row (L-R) – Adam Green (Atkins), John McReynolds (Morgan-Farrans) and Brian Henderson (NI Water) present a cheque for £250 to pupils Daniel Doherty and Gavin Mercer and teacher Miss Diane Nugent from Park Education Resource Centre.

⌘ Back Row: Adam Green (Atkins), Mrs McCaughan Principal, Brian Henderson (NI Water), John McReynolds (Morgan Farrans) and Mr. Duggan, teacher at St. Michael's Primary School.



⌘ (L-R) – Adam Green (Atkins), John McReynolds (Morgan-Farrans) and Brian Henderson NI Water present a cheque for £250 to principal Mr.White from St. Malachy's Primary School.



⌘ (L-R) – Top right caption – Adam Green (Atkins), Brian Henderson (NI Water) and Siobhan Donnan (Morgan-Farrans) present a cheque to Eithne Ni Chonchuir (Senior Teacher from Scoil an Droichid – centre) and pupils, John Sloan, Tammy-Lee Walsh, Roisin O'Halloran and Jack Dermott.



⌘ (L-R) – Adam Green (Atkins), Brian Henderson NI Water, and John McReynolds (Morgan-Farrans) present a cheque for £250 to St. Joseph's Primary School Head Teacher, Mrs McQuillan and pupils Joseph Callaghan, Jamie Crilly, and Exequiel Delos Reyes.

Water way to learn!

Pupils from Park School and St Malachy's Primary School Belfast recently attended the Wastewater Heritage Centre to find out about the history and importance of wastewater management in the city. The students got to see and learn about the vintage machinery used and the modern approaches to tackle waste water.



Focus on training

Open theatre

Behavioural safety was top of the bill at a recent two-day training seminar which employed some innovative techniques to provide staff with the confidence to question and stop unsafe acts and behaviours.

Supporting traditional classroom tuition, leading theatre-based learning group – AKT Productions – delivered an interactive role-play scenario to create a memorable and effective training experience.

University days

Students from the University of Ulster and Queen's University Belfast recently attended special lectures delivered by senior members of the Project team.

Focusing on the important role that civil engineers play in developing infrastructure and the nature of technical report writing, the talks looked at specific areas of expertise and provided the students with a chance to put their questions to the team.

Hands on teaching



The Belfast Sewers Project welcomed a special temporary operative in January when Una Orr, a 'Learning for Life and Work' teacher at Cedar Lodge School, came on site as part of a three-day work placement with Farrans (Construction) Ltd.

Arranged through the Teacher Work Placement Programme, a joint initiative between the Council for the Curriculum Examinations and Assessments (CCEA) and the Construction Industry Training Board (CITB), Una spent the time gathering insights into all aspects of running a construction company including health and safety management, financial management and programming.

As well as exploring the scale and complexity involved in delivering the Belfast Sewers Project, Una also spent time in Farrans Head office and a day at their DBR01 – Westlink Project. The initiative aims to develop teachers' awareness of the working environment and the day-to-day activities of a construction business.

Farrans and the Belfast Sewers Project said they were delighted to strengthen their educational links through this valuable scheme.

If you would like more information about the project please contact:

Waterline: 08457 440088
www.niwater.com

Project gallery

Project makes donation to Children's Hospice

Angela Davidson from the Children's Hospice receives a £300 donation from Paul Ronicle on behalf of Morgan=Farrans. The money was raised as part of a safety awareness initiative which asked operatives to stop and take five minutes on the first Thursday of each month and identify any safety issues to senior management.



Industry body makes site visit

Delegates for the Chartered Institute of Building got a close inside look at the Project when they visited the Terminal Pumping Station and met key members of the team in November.



Project designers take prestigious award

In December the ICE awarded Bill Gowdy (NI Water), Alan Skates (Atkins) & Paul Ronnicle (Morgan=Farrans) the Poskitt Medal for their work on the Belfast Sewers Project. The award, founded in honour of the Institute's late Chairman, Fred Poskitt, is presented to the best paper written on design or construction of water resource or water supply work submitted in any year by a regional member.

