



**SNC • LAVALIN**

**ATKINS**

Member of the SNC-Lavalin Group

# Hunterhouse College Sixth Form Virtual Open Event

February 2021

# Who I am....

My Name is Emma Seddon and I am a former pupil of Hunterhouse College.

I completed my GCSEs, AS & A Levels at Hunterhouse College.

I successfully achieved my A levels in the following subjects: **Maths, Physics & Biology.**

This then allowed me to pursue my career in becoming a Civil Engineer.

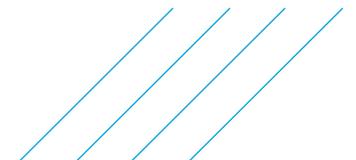
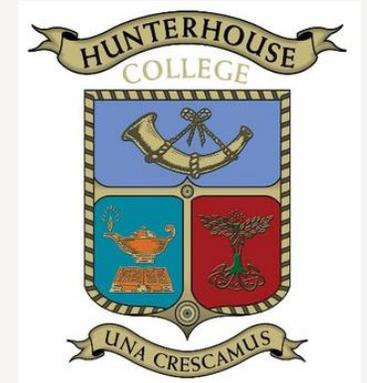
## Undergraduate Degree – 2009 -2013

I applied to Ulster University, Jordanstown to study a degree in BEng (Hons) Civil Engineering where I was successfully accepted onto the course following my A level results and went on to accomplish a 2:1.

I also achieved a distinction for a Diploma in Industrial Studies (DIS) 1 Year in Industry where I worked within the Water & Waste Water Infrastructure discipline and was able to develop my experience and confidence for working within the industry.

## Post Graduate Degree – 2014-2016

After working within the industry, I decided that I would apply to Ulster University, Jordanstown again to study an additional degree in MSc Infrastructure Engineering. This allowed me to further develop my skill set as well as developing my experience within other disciplines within the engineering field: highways & transportation engineering, structural engineering, sustainability engineering etc.



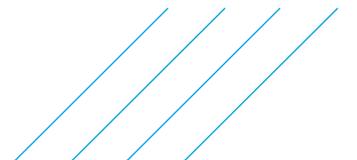
# Why study your A levels at Hunterhouse College?

I really benefited from taking my A levels at Hunterhouse College because of the teachers.

The support I had from every single one of my teachers was a tremendous help for me.

If I had any questions or uncertainties about any of the topics I was studying, they were so helpful in helping me overcome and understand any problems that I may have had.

The teachers were all so approachable, which made it easier to air any concerns that I had about anything instead of worrying and getting stressed – which is a wonderful attribute, especially during a reasonably stressful period such as taking your A level exams.



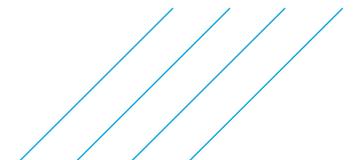
# What is Civil Engineering?

Civil Engineering is defined as:

*“.....a professional engineering discipline that deals with the design, construction and maintenance of the physical and naturally built environment, including public works such as roads, bridges, canals, dams, airports, sewerage systems, pipelines, structural components of buildings, and railways.”*

The link below is great introduction video into Civil Engineering from the Institution of Civil Engineers (ICE)

<https://youtu.be/Rib0qYAxsPY>



# What I do...

I am an engineer who specialises in clean water infrastructure engineering. My job is to hydraulically assess mains and networks to ensure that any water being received within our homes, businesses etc. all receive potable water at an adequate pressure and quality.

I have worked on various projects throughout the UK and Ireland and have worked with well-known clients such as Northern Ireland Water, Irish Water & Scottish Water.

Some of the projects that I have been involved in:

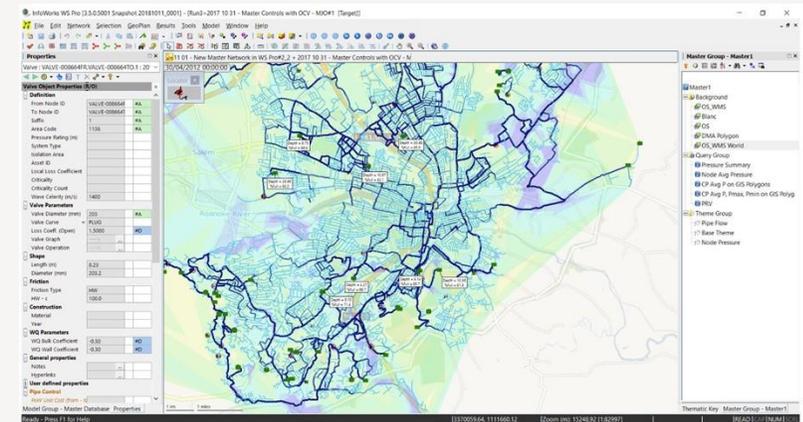
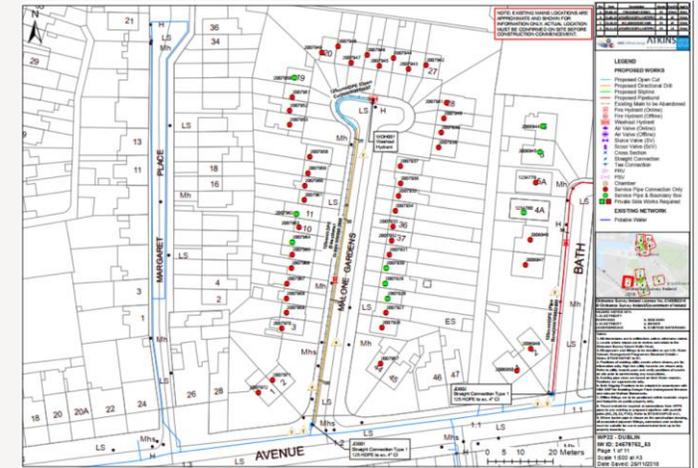
## Water Mains Design

Designing for the rehabilitation of deteriorating water mains; sizing of mains & associated fittings

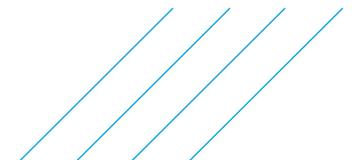
## Hydraulic Modelling

Assessing water supply to properties – Pressure achieved at properties (m), flow through the pipes (l/s), headloss through the mains (m/km)

Highlighting supply deficiencies or pollution incidents and investigating network to resolve the issue



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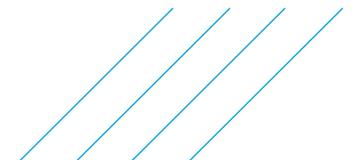
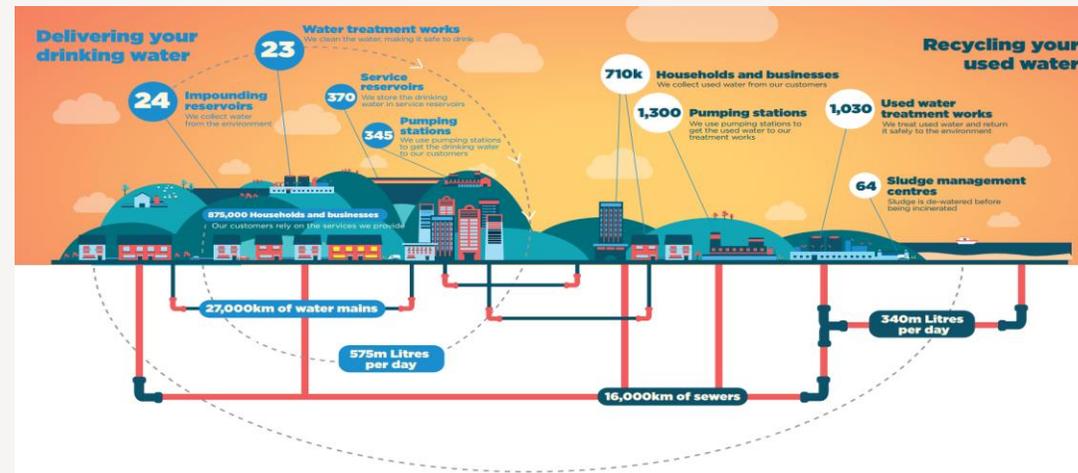
# What I do...

## Pre & Post Rehabilitation Assessments (PPRA)

Examining improvements through a variety of assessments to determine the condition and performance of the networks from comparing pre & post rehabilitation information, all while comparing operational expenditure as a direct result of the investment in the distribution network.

## Asset Management – Deterioration, Risk and Reliability Modelling

Using models in conjunction with an asset management software to determine optimal asset management planning and operational strategies which deliver service and performance improvements at minimal cost, subject to resource and capacity constraints.



# What do I need to become a Civil Engineer?

According to the Institute of Civil Engineers, the A level subjects for a civil engineering career are:

**Maths** - Engineers use maths to understand the theory of engineering and to analyse materials and structures.

**Physics** - Studying physics helps you understand concepts such as energy, forces and motion, which are key to solving problems engineers face on a daily basis.

**Geography and geology** - Understanding the physical world – like the behaviour of rivers, tides and currents in the sea, and the strengths of different rocks and soils – is important in civil engineering.

**Information and communications technology** - Computer programmes and digital applications are integral to the civil engineering process. These skills are much in demand.

**Languages** - Civil engineering is an international profession and languages help you to work and live abroad.

**Technology, Art and Design** - Engineers are creative problem solvers and help design the built environment.

For more information on how to become a Civil Engineer, have a look in the link below;

<https://www.ice.org.uk/what-is-civil-engineering/how-can-i-become-a-civil-engineer>

