



London Stock Exchange lists ECS Engineering as inspirational and a leader in its sector

ECS Engineering Services has been selected as one of UK's most inspiring companies for 2019 and listed to receive the London Stock Exchange's "1000 Companies to Inspire Britain" award.

ECS's Operations Director Jamie Wesley says the nomination came as a surprise. "We knew nothing of this beforehand. It is not something you apply for and hope to be short listed; the Stock Exchange independently review lots of companies and draw up their own nominees. As such it is very gratifying to be included in such an illustrious group."

ECS Engineering Services specialises in bespoke design and construction of water, energy and environmental processing and management projects. Its clients include UK water and utility companies, government agencies, drainage boards, building and construction companies and architects.

1000 Companies to Inspire Britain is an annual programme that recognises the achievements of the UK's fastest growing and most dynamic small and medium-sized enterprises (SMEs). Part of its remit is to identify the sectors and trends that are shaping the national economy. The London Stock Exchange (LSE) uses a rigorous methodology for selecting companies that have outperformed their peers and are likely to continue doing so due to their dynamic and innovative approach to business.

The selection process starts by identifying all eligible companies, the criteria for which are: they must be registered at Companies House, have been operating for at least three years and have a turnover of between £6m and £250m. This long list is then divided up by Standard Industry Classification (SIC code) groupings and the average growth rate for each sector is calculated over the last four years.

The LSE then selects those companies that have best outperformed their contemporaries.

The overall idea is to identify high growth British businesses that are helping the national economy evolve. They are, or shortly will be, part of the backbone of society, creating high quality, well paid jobs, innovating and driving economic growth.

Jamie Wesley says: "Being an engineering company, in many ways we just get on with our work; concentrating on delivering the best engineering solutions possible to our customers and providing infrastructure that is important to the local community and/or the national economy. Much of our work is far from glamorous and is often invisible to the general public, so getting recognition through the 1000 Companies Awards is very gratifying."

Thinking bigger...

From new contract wins to big projects and our ISO recertification - there is plenty to catch up with across the company in this issue of the ECS newsletter.

There is the latest news on our works on the Caledonian Canals with Scottish Canals, a large-scale project that really demonstrates our capability. In addition, we've been 116 metres underground to help the Coal Authority pump mine water!

The recent audit conducted at ECS reaffirmed our BM TRADA accreditations regarding our health and safety, quality and environmental business standard. TUV UK also recently renewed our welding and CE Marking accreditations - so thank you to everyone for ensuring we passed these assessments with flying colours.

Until the next time

Bob Nix

Chairman



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The LSE then selects those companies that have best outperformed their contemporaries. The overall idea is to identify high growth British businesses that are helping the national economy evolve. They are, of course, only a part of the backdrop of existing, ongoing high quality, well paid jobs, retraining and driving economic growth.

Jamie Wesley says: "Being an engineering company in many ways we just get on with our work, concentrating on delivering the best engineering solutions possible to our customers and providing reliability that is important to the local community and the national economy. Much of our work is for them, generous and it often invisible to the general public, so being recognised through the 1000 Companies Awards is very gratifying."



ECS to refurbish three strategic Lincolnshire pumping stations

The Environment Agency has awarded a three part contract to ECS Engineering Services, which collectively upgrades the flood defence capability of the low lying Isle of Axhome region of North Lincolnshire.

The contract covers work at three separate pumping stations, Good Cop, Bull Hassocks, and Candy Farm. West of the River Trent and between Doncaster, Scunthorpe and Gainsborough, much of the Isle is flat topography and renowned for its arable farming and rich peat soil.

"The area is subject to variable water levels, which in part accounts for its fertility. The levels are controlled via a network of the pumping stations and drainage channels," observes ECS's Business Development Manager Steve Crapper.

The main work undertaken at Good Cop will be the removal of the old, life-expired weed screen cleaner and its replacement with a new one. This will require the installation of a new automated weed screen cleaner for collecting debris, seasonal weed build up and transferring it to a skip, from where it will

periodically be collected. The screen cleaner serves a relatively large drainage channel, being 12m wide and 2.8m deep with a flow rate of around 0.4m/s, with the grab able to lift loads of up to 270kg. This will be made by ECS's supply partner company Landustrie. At the Bull Hassocks pumping station the screen cleaner is to be fitted with a new grab unit. Steve again: "We looked at various options for this part of the contract. The screen was fine and did not need replacing. We appraised and costed refurbishing the existing grab, but in fact it turned out more cost effective to replace it with a new one." Bull Hassock is also to get a new standby generator, along with the Candy Farm site, with the original units reaching the end of their service life. These generators are vital for the reliable performance of the pumping stations. Due to their location storms can blow in off the North Sea and disrupt the mains power supply, the generators provide the resilience that ensures reliable operation in the worst possible conditions.

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ECS to improve Nottingham's flood defences in time for winter rains

ECS Engineering Services is helping the city of Nottingham reduce the risk of flooding this winter, having been commissioned to improve the watertight seals on flood doors around the area.

Running through the centre of the city, the River Trent's name is of Celtic origin and means 'strong flood'. Nottingham has had many flooding incidents throughout its history, one of the largest being in November 2000. In recent years the city has done much to improve the flood defences, most of which were installed following a particularly devastating flood in 1947.

Flash floods tend to occur in the summer months when sudden heavy downpours on the surrounding moors and hills work their way down and through the city. Winter flooding can be for long periods, based on a build up of ground water during the wet weather. Spring can also see flooding due to snowmelt feeding the River Trent and its many tributaries.

The city has now commissioned ECS to inspect and refit 23 flood doors in the area. The doors are in three separate districts, with each having a different type of door.

The seven doors in the Attenborough region are predominantly "on-seating" doors, i.e., the more flood water being forced onto the doors the tighter they will seal due to the increasing water pressure. Testing has shown that most of the doors leaked along the bottom seal, so engineers from ECS have designed a new clamping arrangement which will pull the bottom seal tighter and reduce leakage rates.

Victoria Embankment has eight doors under review, all of which are "off-seating", designed so that the pressure builds up behind the doors to push them onto the seals. These have also been subject to the same improvements that were initially tested in water filled tanks at ECS main workshops in Mansfield.

At Right Hand Bank there are eight doors to be upgraded, all to an "on-seating" design. ECS has inspected their clamping arrangements and deemed them to be adequate once the seal has been created. However, after being surveyed it was decided that the existing seals were of the wrong type, making it difficult to achieve sufficient compression to form an effective seal. ECS will replace the existing seals on these doors with a softer compound rubber, which should provide an immediate improvement in performance.

ECS has programmed that the works will be phased to minimise the impact on the flood gate, thus allowing the client to maintain the flood protection required in times of heavy rain.

The business is renowned for delivering high quality, reliable and cost-effective engineering solutions, for water, energy and environmental processing and management projects. With in-house fabrication capabilities, ECS offers a turnkey, project managed service for mechanical and electrical installations for projects of any size.



ECS to replace all gates at Scotland's World Heritage Site canal lock flight

Clean sweep as ECS is re-certified across the board

ECS Engineering Services has been re-certified for all three of its BM TRADA accreditations, OHSAS 18001 (occupational health and safety management), ISO 9001 (quality management systems) and ISO 14001 (environmental management).

Auditing for these took place in April 2018, the same month in which ECS was re-assessed by TUV UK for the annual renewal of its ISO 3834 (welding quality) and BS EN 1090 (CE Marking) certifications.

"Certification and approval is how we confirm the quality of our services," explains Clark Williamson of ECS. "By having these and keeping them up to date, customers and potential customers can see at a glance the high standards to which we work. They speak volumes for our company and help us substantiate our claims of being amongst the best.

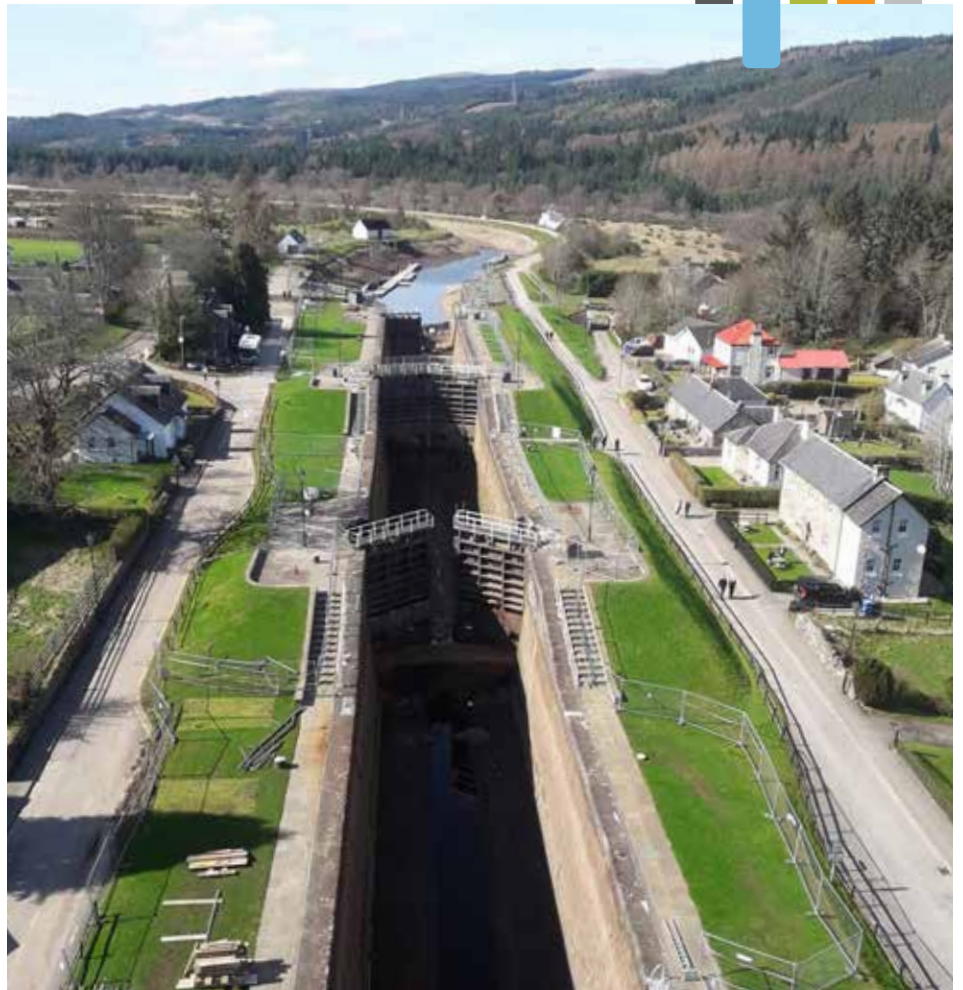
"In many cases, customers insist on certain relevant approvals for reassurance that suppliers have the correct systems, procedures and culture embedded and would not employ any supplier that did not have them."

Most standards are reviewed regularly and updated versions issued when required. In such cases, companies must comply with the new requirements at their next audit or be stripped of the approval.

This year, both ISO 9001 and ISO 14001 were revised, but ECS was on top of this and had put new procedures and systems into place before the audits were undertaken.

C Williamson again: "Certifications are vital to us, so audit periods are always a little fraught, even though we make a point of bringing our processes up to date the minute new requirements are published."

"There is a lot of hard and detailed work involved to get ready for the reviews, so it is always nice to be able to go around to say 'thank you and well done' to all involved."



ECS Engineering Services is to replace all the gates on the Fort Augustus flight of locks on the Caledonian Canal in Scotland, under a contract with Scottish Canals

The Caledonian Canal runs for 70 miles through the Great Glen from Inverness in the east to Fort William in the west. One of Scotland's most important tourism and leisure drivers, it was constructed by Thomas Telford in the early 19th century so that shipping did not have to brave the stormy waters around the north of Scotland. By careful routing, most of its length is made up of the natural waters of Loch Ness, Loch Lochy and Loch Linnhe. The change in levels to the east of Loch Ness is addressed by the six-gate lock flight at Fort Augustus.

The current lock gates were installed in the mid-twentieth century and are approaching the end of their life expectancy. ECS has a single source framework agreement for lock gates with Scottish Canals, the organisation which also looks after the Crinan Canal, Forth and Clyde Canal, Union Canal and Monkland Canal.

ECS is to survey the six locks and design gates for each location, these gates will be manufactured by our in-house fabrication team, inhouse before installation.

The newly designed gates will be some of the largest in the UK, made of steel with freshly designed sealing and self-lubricating bearing systems. These gates have been designed to provide a long working life, with little need for maintenance in an extremely tough working environment.

Jamie Wesley, ECS Operations Director says: "Whilst these gates may look almost identical to the existing, Fort Augustus is both a World Heritage Site and one of Scotland's premier visitor destinations and so, in conjunction with renowned design house KGAL, we have ensured that these modern designs are sympathetic to the location whilst being able to stand the test of time in the Scottish Highlands. ECS will also plan our operations to cause as little disruption to locals and visitors as possible. The draining of these iconic locks for this work is a mammoth task, in conjunction with Scottish Canals this will be done in a controlled process to protect the Environment and local tourism whilst providing a safe working site for our teams."

The first of the new gates is planned to be installed in March 2019, and the rest will follow in stages up to Easter 2020.

New mine pumps assure East Midlands' water quality

ECS Engineering Services has completed a mine water pump upgrade project in Derbyshire that will protect public water supplies as well as local rivers and lakes from pollution.

The 'A' Winning mine water treatment scheme (MWTS) in Blackwell, near Chesterfield, safeguards the Nottinghamshire Permo-Triassic aquifer, which supplies much of the potable water for the whole of the East Midlands and also connects to a number of rivers and several disused coal mines. It works together with other similar installations across the coalfield to keep the water below the level where it could overflow into the aquifer or an underground watercourse.

The project was awarded to ECS by the Coal Authority, a government body that manages the effects of past coal mining operations to protect aquifers and water quality, rivers and the wider landscape and the wildlife they support. It involved renewing and upgrading the pumps, motor control centre and electrical infrastructure at 'A' Winning.

One major aspect of the project involved removing and replacing two large submersible pumps that had reached the end of the serviceable life. The new pumps are both 210 kW units with a capacity of 110 litres per second and were installed in a new location 116 metres below ground, at a level some 60m lower than the original ones. To facilitate this, ECS also had to structurally assess, and strengthen the existing steel headworks to accommodate the additional loadings. Additionally, the project required the installation of new coated pipework to the lower pump position and replacement of an aging transformer.

As part of the same project ECS also supplied and installed a new bespoke motor control centre (MCC) for the pumps' motors and renewed the lighting, power supply and heating services.

ECS Contracts Director, Clark Williamson, explains: "Like all MWTS, 'A' Winning is designed to recover polluted water so that it can be purified by oxygenating it through cascades, cleaning it through reed beds and other recovery techniques. Having been treated, it is safe for release back into the wider environment."



"At 'A' Winning one of our major objectives was to keep the site functioning, recovering and cleaning water, while we upgraded the pumping equipment."

It was an absolute requirement to maintain continuity of operations at 'A' Winning throughout the period of the project. This meant ECS had to get the new equipment into place and running within a short window of opportunity, with resilience plans in place if pumping needed to be restored at short notice during the shutdown.

"In summary ECS has delivered a very successful refurbishment and modernisation project for our client, and has delivered well within the contracted time and budget constraints. Our experience in delivering schemes such as this enabled us to highlight several areas of risk, and successfully mitigate these potential issues with the minimum of impact. Our client has commented on several occasions how happy they are with the delivered scheme and our performance on site."

ECS works hard to deliver high quality, reliable and cost-effective engineering solutions for water, energy and environmental processing and management

projects and is proud to be recognised as one of the foremost companies in its field. Many of its projects entail bespoke designs that are tailored to the individual needs of each project, so it is also known for the expertise of its design department.

The Coal Authority is responsible for 75 mine water treatment schemes across Britain, handling and treating over 120 billion litres of mine water annually. This protects over 350 km (200 miles) of rivers, several important regional aquifers, biodiversity and amenity land. As such, it is highly reliant upon the expertise, commitment and services of companies such as ECS.



ECS works with Environment Agency to protect South East against flood and coastal risks



ECS Engineering Services has signed a new Flood and Coastal Risk Management (FCRM) Agreement for the South East with the Environment Agency. It covers all coastal, navigation and asset works and replaces an older framework agreement.

The areas included extend from Hertfordshire in the north, through London and the Thames Region to Kent, the South Downs, the Solent and the Isle of Wight.

"The Agreement allows us to be directly appointed for works up to a value of £50,000 and to tender alongside other registered suppliers for bigger jobs," explains Dave Searle, ECS's Contracts Manager for the region. "The average size of jobs is about £100,000, but of course some are much bigger than that, so can cover all types of work including new build, scheduled maintenance, repair and emergency call out."

In detail the contract covers: minor civil engineering, low value project packages, early contractor involvement (feasibility studies, design, costings, etc.), routine servicing and intermittent maintenance of assets. In addition to inspection and repairs, installation of flow control structures, channel clearance, dredging and maintenance, works can involve telemetry stations, bridge maintenance and repairs as well as river management, restoration and soft engineering. ECS can also deliver the design, manufacture and installation of fabricated structures such as bridges, handrails, gates and fences.

"Under the Agreement we also provide emergency response cover," says Dave. "This embraces just about anything, so can be very challenging – and rewarding. Naturally, emergency call-outs are often in winter, during bad weather or at night. However, we always react as quickly as possible, to resolve any situation that may have developed as a result of increased water levels."

ECS Engineering Services has been a long-term supplier to the Environment Agency for all regions

of the UK and has a reputation for delivering high quality, reliable and cost-effective engineering solutions. It specialises in bespoke design and construction of water, energy and environmental processing and management projects. Other clients include water, gas and electricity supply companies, the Highways Agency and other government bodies, internal drainage boards, builders and architects.



Dave Searle
ECS Contracts Manager - South East



ECS wins nationwide award for modelling

ECS Engineering Services' ability to use software to enhance every stage of complex construction projects has won it a UK Tekla Award and it will now go forward to the international stage of the competition.

The UK Tekla Awards celebrate the success of projects modelled using Tekla software in the UK and Ireland. Tekla is a software product family that consists of programs for analysis and design, detailing and project communication. It is widely used in the construction and related industries around the world.

Projects of all sizes and degrees of complexity could be entered into the competition, so long as they demonstrated collaboration and innovation using digitisation solutions. Many prestigious construction projects, both large and small, were entered into the 2018 UK awards, including multi-storey offices, cultural buildings and sports facilities, industrial and commercial developments and infrastructure projects.

For the competition ECS created a model that integrated a number of recently completed water control projects set in a fictional site. It included lock gates, an FRP (fibre reinforced plastic) footbridge, trash screens, radial gates, fish passes, radar sensors and platforms, stop logs, limpet dams, a hydraulic lift bridge, flap valves, penstocks and associated ladders, access steel, winches, hand railing and fencing.

ECS's James Kirk explains: "We really wanted to demonstrate our ability to bring together different parts of a project, seamlessly integrating all the data so that everyone has complete information on the project and its progress. Our ambitious entry paid off because it was liked by both the judges and the voting public. The judges said they particularly appreciated the inclusion of the moving mechanical items such as lock gates, which added extra dimensions to the model."

As a winner, representatives from ECS were invited to a day of celebrations at the stately Bowcliffe Hall near Wetherby to formally receive their award.

ECS is no stranger to award ceremonies. It has just won a RoSPA Health & Safety award for the tenth year in succession. Kirk again: "Awards let us benchmark ourselves against the best in our industry, bring prestige and publicity and are something the whole company can celebrate."



ECS performance-tests upgraded flood gates for Nottingham

ECS Engineering Services is supporting the Environment Agency in Nottingham by designing and testing a new clamping arrangement for flood gates. The system has been developed and installed by ECS engineers to improve the seal integrity of the flood doors, thereby reducing the threat of flooding to residential areas in Nottingham city centre.

In 1947, the first defences were built in order to minimise the impact of inundation from the River Trent and its tributaries. These were updated most recently in 2000, resulting in the Nottingham Left Bank Flood Alleviation Scheme. The investment has resulted in widening of embankments and the installation of protective walls in six sections along the River Trent.

Matt Coles, Project Engineer at ECS, explained: "We are committed to keeping communities safe from flooding. This means ensuring that the flood defences function at all times by regular inspections to assess their condition and identify any necessary repairs."

As a result of a recent assessment, ECS was commissioned to carry out improvements to several third-party demountable flood protection systems in three districts. Thanks to its ability to deliver high-quality, reliable and cost-effective engineering solutions for water, energy and environmental processing, ECS was able to design, manufacture and install a number of upgrades to the protective structures to improve their performance.

According to the British Standards Institution (BSI) regulations on flood protection products (PAS 1188: 2014), the testing required for temporary and demountable systems is carried out solely in laboratory conditions. Nonetheless, ECS and the Environment Agency wanted to perform real-world tests on the installation to prove that the new design would solve the issues previously experienced, i.e. the doors could withstand the pressure from large volumes of river water.

The contract required each one of the flood doors with the clamping arrangement to be performance tested. Following the construction, ECS assessed the gates' static leakage rates in line with PAS 1188:2014.

Minimising the inconvenience to property owners that may need to leave or access the property was a must. As a result, ECS needed to assemble the temporary structure, assess the presence of leaks and disassemble the structure without inconveniencing the residents.

ECS managed to conclude the hydraulic test on each flood gate in less than a day. Also, a thorough inspection by the company and the Environment Agency indicated a nil leakage rate, which attested to the quality of the new clamping arrangement.

ECS builds Scottish Canals three deployable bridges for short term access requirements



ECS Engineering Services has supplied three Bailey-type bridges to Scottish Canals for use as temporary crossings at various locations on the waterways when construction or repair work is in hand.

Each bridge is a different length, 8m, 10m or 13.5m and all are made of Infracore FRP (fibre reinforced polymers) so are strong and durable yet light enough for easy transportation and lifting by small plant.

Other than length they are all essentially identical, being 1.8m wide between the parapets and designed for foot, bicycle and wheelchair users. Each has a factory-applied silica anti-slip coating resin bonded to the deck and complies with the safety and robustness requirements of Eurocode 0 (EN1990 para 2.1 & 2.2) concerning impact, damage resistance and quality control.

ECS has also supplied six entry/exit ramps, each of which will fit any of the bridges.

Jamie Wesley, Operations Director of ECS says: "We have made sure handrails and other fittings are all made of galvanised steel so that they do not corrode because the bridges will be spanning water and will be subject to extreme weather in the Scottish Highlands. By using FRP, we have also designed the bridges to be buoyant, even with the fittings in place, which opens up the option of them being floated into position, although we expect aerial lifting to be the main method of installation."

As a material, FRP has many benefits compared to steel, concrete or wood, including being low maintenance, lightweight and sustainable. It is so durable that ECS offers it with a 50-year warranty against a 100 year expected design.

"Its many properties make it very versatile and able to blend into environmentally sensitive locations, which is a important factor with canal-side jobs," says Jamie.

ECS Engineering Services has a reputation for

delivering high quality, reliable and cost-effective engineering solutions. It specialises in bespoke design and construction of water, energy and environmental processing and management projects and works with utility and water companies, government agencies, drainage boards and other building and fabrication companies. It is the sole UK supplier of Infracore FRP technology.

ECS has regularly supported Scottish Canals, which is responsible for maintaining and improving the Caledonian, Crinan, Forth & Clyde, Monkland and Union Canals. It cares for 137 miles (220km) of waterways, 17 reservoirs, the navigation rights to four lochs and the magnificent Falkirk Wheel boat lift. Once the arteries of Scotland's manufacturing economy, today the canals have been transformed into valuable visitor attractions which play a major part in the nation's tourist industry, as well as providing important habitats for an incredible range of wildlife.













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