



Shetland's Viking Wind Farm takes shape

The pouring of concrete on the final wind turbine base marked a major milestone at the Viking Energy Wind Farm on Shetland.

The base construction process started in September 2021 and since then over 70,246m³ of concrete has been poured across 103 foundations.

Tony Gee designed the foundations, with construction operations carried out by principal contractor RJ McLeod and its sub contractors.

In early 2023, the next phase of the project will begin with the arrival of the 4.3MW Vestas turbines on site. The turbines will have a maximum tip height of 155m.

The project is supporting the supply chains of the Shetland islands, Scotland and beyond, creating around 400 jobs at peak construction.

Turbine supplier Vestas is now also awarding contracts and recruiting long-term local operations and maintenance teams, including apprentices.

By challenging previous design methodologies and utilising design automation the Tony Gee team was able to reduce the concrete volume by 30% compared to previous design methods. This, combined with other design efficiencies, resulted in a 23% reduction in carbon from the tender design.

Once operational it will take less than two months for the WTG foundation carbon footprint to be offset, with the expected carbon payback for the whole project estimated to be less than two years, meaning up to 500 000 homes will effectively be provided with carbon zero electricity.

Success at the GE awards for Northumberland Energy Park

Tony Gee's team at the Northumberland Energy Park has won the award for a 'UK Project with a Geotechnical Value of £1-3M' at the Ground Engineering Awards.

The work was a close collaboration with Farrans Construction. Cyrus Toms, Executive Director, said: "This award is fantastic recognition of the hard work and innovative solutions we strive for at Tony Gee. It has been an exciting project for our geotechnics and marine teams to be involved in and a great example of the types of schemes we undertake."

ICE corporate partnership deal

Tony Gee is delighted to become a Corporate Partner of the Institution of Civil Engineers (ICE), a small group of eminent organisations dedicated to training and professional development.

ICE Director of Membership Sean Harris said: "Tony Gee has been involved with the institution for many years and this position recognises its forward-thinking approach to the development of its staff and the exciting opportunities it offers them."

Tony Gee Managing Director, Chris Young, said: "This recognition is a real testament to the hard work of everyone in the company who supports our staff's professional aspirations. The ICE is at the forefront of driving civil engineering forward as a contributor to global issues and we are fully on-board with that too."





Chris' corner

The start of the year is always a good time to look back and review at what has been achieved, and work still to be done.

Following hard on the heels of COP26, we set out to improve our sustainability credentials and whilst we have made good progress, we recognise there is a huge amount still to do.

It feels that public opinion is changing, and sustainability is becoming a real consideration in how we work. I am heartened by the enthusiasm of old, grey-haired professionals, such as myself, but even more so by the passion shown by next generation of engineers.

There are many challenges still but these also bring an upturn in opportunities. The growth in renewable power generation, and the increased scrutiny of a project's carbon credentials bodes well for the future of our industry and the planet.

Power generation is a key element to this and the mix of renewables and nuclear is almost certainly the way to go for now. I am proud that Tony Gee is involved in nuclear, wind and solar power generation as well as some significant storage and EV charging infrastructure.

So, while we recognise that there is plenty to do, to succeed we must all work together and play our own small part in reversing some of the damage that has been caused.

To end, I repeat remarks I made at our own COP26 event. If we are not doing enough on sustainability, do challenge us to do better. If we are then please share the good work and challenge others to be just as good. We are all in this together.

Chris Young
Executive Managing Director



Iconic bridge takes shape in India

Tony Gee is involved in a new project to build the Shunya Bridge in Mumbai, India. This is a cable stayed bridge set over the Vakola Nala branch of the Mithi River. It is an iconic structure supporting a 130m stretch of the Mumbai Metro and was developed by Indian architectural firm Designfakt with Tony Gee as the lead designer.

The 'zero' shaped pylon represents the transition of Mumbai into a modern and vibrant city in the digital world. The bridge has an asymmetric span arrangement with 80m over the river and a 50m back span over a local road.

Stay cables are spaced every 9m along the main span and 7.5m on the back-span. Each cable is anchored in a transverse beam at deck level and both the deck and pylon facilitate stressing of the cable to give the contractor the utmost flexibility.

The foundations are currently under construction and completion is expected in 2024.

Dream Networks partnerships brings play area to Manchester

Throughout 2022, Tony Gee partnered with Dream Networks to deliver a new playground at Crowcroft Park Primary School in Longsight, Manchester.

Volunteers from the Tony Gee Manchester office helped run eight workshops with groups of Year 5 children. The workshops introduced and promoted engineering to the children encouraging them to consider the existing playground site, propose materials and sustainability, as well as the safety aspects of the play equipment.

The collaborative design process encouraged the children to discuss and share ideas within their teams and effectively

communicate their ideas to a wider audience.

Alongside the workshops Tony Gee staff used one of their Social Value Days to help with the final touches of the playground, sanding and painting, staining and varnishing the wood used.

The final playground combined ideas from all the groups with a theme of "nature in the city" and the aim of promoting imaginative play styles. It included a new agility course, tyres and wooden bridge, an outdoor gathering space with benches, a custom games hut with chalkboard wall and sensory play equipment. A decorative willow sculpture will become a live-willow sculpture next summer.

Sustainability strategy in action

Tony Gee has launched a Sustainability Strategy for the whole company to ensure sustainability is at the heart of everything the company does. The vision aligns with Tony Gee's 'design once, engineer right' approach, balancing the needs of industry, society and environment equally.

Everyone in the business will have a role in making this vision a reality and all staff will be focused on how they can make a meaningful difference, from design work to office operations. The aspiration is to nurture a culture where thinking about sustainability is second nature and integral to everything staff do. It recognises that sustainability is a critical issue for employees, clients, and public users of civil engineering infrastructure. The priority themes (carbon, resource use and waste, biodiversity and social value) are all impacted by the decisions taken on projects and within the business.

The strategy is backed by a full programme of activities including training and skills development to build staff knowledge, and technical development projects to provide tools and guidance for staff. The new strategy sets out the vision, the activities this year will be the positive steps to realise that vision. Part of the strategy includes creating a new apprenticeship opportunity in Corporate Responsibility and Sustainability.



Westside Metro earns CEEQUAL recognition

Tony Gee was recently awarded a CEEQUAL Very Good – Construction Award for the Birmingham Westside Metro Extension Phase One – Centenary Square Midland Metro Alliance.

The assessment highlighted social, environmental and economic wins for the project, including the use of community feedback in the design.

The team will now build on this success in the next phases of the project to ensure ongoing improvements.



Summer of active travel campaign supports greener lifestyles

Tony Gee's Summer of Active Travel campaign was a business-wide initiative designed to encourage employees to use greener travel methods.

The initiative followed research that showed moving away from passive travel, by car or train, has mental and physical benefits for staff as well environmental benefits.

The company has always encouraged greener travel through its Cycle to Work scheme but in this initiative donated 10p per mile walked, run or cycled by staff, to go to local charitable activities.

There was fantastic engagement by staff with 3293 'active' journeys logged and some 16500 miles

travelled, resulting in an estimated 3000 kg CO₂e saved on route to and from work.

Donations generated were given to a number of projects including active travel equipment for Turing House School, local to Esher, to keep students safe when travelling to school car-free. Esher office staff also visited the school to promote active travel and civil engineering. The Manchester office supported the Manchester City of Trees scheme, helping with tree planting; while the St Albans office planted trees for Earthworks, a local charity which offers horticultural work experience and training to adults with learning disabilities.



1946
journeys
by bike



1347
journeys
on foot



16500
miles
travelled



3000 kg
CO₂e
saved

That's equivalent to three trips from London to New York!

Awards hat-trick

Tony Gee has picked up three awards at the IStructE Midland Counties Awards.

The company won the Bridge Award for work with Skanska on the SAS/13 bridge, the longest span railway bridge in the Midlands.

The team, working as the Midland Metro Alliance (MMA) with Egis and Pell Frischmann, was commended in the Infrastructure Award for work on the Wednesbury to Brierley Hill Metro extension. The team developed a structural solution for the tram infrastructure project, the largest currently being undertaken in the UK.

Senior Engineer, Chris Ellis also won 2022 Young Achiever Award, for outstanding achievement from a structural engineer under 30. Chris works in the Birmingham office joining as a student in 2014.



Technical Paper Award

Evan Ho, Group Director in Tony Gee's Malaysia office was awarded the 'Best Technical Paper Award (1st place)' at the Malaysian Road Conference & Exhibition and International Road Federation Asia Pacific Regional Congress.

Evan delivered the award-winning paper titled 'Alternative Design and Construction of DASH CBI Mainline Long-Span Bridge'. It focused on the optimisation of design philosophy, construction methods and logistics adopted to suit the challenging site conditions.

Savings for the DASH Highway – the most complex intersection in Southeast Asia



Tony Gee's has been working on a complex route network in Malaysia to create a new shortcut from the south to the east of Kuala Lumpur.

The Spaghetti Link involves seven ramps from other existing highways and is part of the Damansara-Shah Alam Elevated Expressway (DASH) project. Tony Gee was engaged by main contractor, Acre Works, to produce an alternative design for a special span segmental box girder bridge forming part of Package CBI on the DASH project.

The design resulted in a material savings of up to 30% by reducing the number of bored piles in the conforming design from 37 to only 24. The cross-section of the viaduct was also re-engineered to make form traveller construction easier, and reinforcement detailing was addressed, changing the original tapered webs to vertical.

Fast facts:

- DASH is a 3-lane, dual carriageway expressway measuring 20.1 km in length but with all interchanges factored in it is actually 55.4 km long including the junctions, and has 13 intersections.
- The site is 90% elevated.
- The project includes numerous eco-initiatives such as the first fully enclosed highway noise barrier in Malaysia, solar panels and rainwater harvesting systems.
- The construction of the highway began in August 2016 and was completed on September 30, 2022.
- The project has cost RM4.2 billion (approx. £800m).

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