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FEBRUARY 2026

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Alconbury Weald Church Academy, Cambridgeshire
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Architect: R H Partnership Architects
Main contractor: Morgan Sindall Construction
Structural engineer: Sweco
Steelwork contractor: AC Bacon Engineering
Steel tonnage: 450t

NSC

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Vol 34 No 2

These and other steelwork articles can be downloaded from the New Steel Construction website at www.newsteelconstruction.com

Reasons to be cheerful are being seen again

Nick Barrett - Editor

Just when investors were hoping for a bit more stability on the geopolitical and national political fronts, attention was forced towards whether disruptive changes might be forced on the UK government by continuing scandal. It matters to the construction industry. Despite the recent downward interest rate trend, investment plans are easily upset by changes, and even the threat of changes, such as that.

Company planners across the production, marketing, sales and other functions are forever on the lookout for signs of whether their projections for the year ahead – on which a lot of investment funds could have already been committed – will turn out to be accurate. Careers and companies alike can be made or broken by the outcomes, so reasons to be cheerful are keenly sought. Fortunately, there have recently been some.

In the property development and related sectors a keenly watched indicator for many years has been the Deloitte Regional Crane Surveys. The just released annual update brought welcome news that construction starts on site are up on a year ago, although the volume under construction has reduced.

So it was a mixed bag, but the Regional Crane Surveys at least confirmed that not all is bleak across the four major markets covered – Belfast, Birmingham, Leeds, and Manchester. There is a separate and possibly even more keenly awaited bi-annual London Crane survey to come soon.

The regional crane surveys monitor construction activity in the central areas of the four cities, showing an overall increase in the number of new starts, but a decrease in the number of units and floorspace under construction. There was an increased level of new construction starts compared with the previous survey, with 53 new schemes compared with 47 in 2024, and 63 in 2023.

Some of the new starts were smaller than a year ago, especially in the residential sector, which accounted for 27 of the 53 new starts. Seven of the new starts were office developments, where a focus on refurbishments was noted, eight were student housing schemes, and five were hotels. There was one new start in retail / leisure and one in education.

Looking to offices, 2m sq. ft. of office space was under construction in 2025, down from 2.8m sq. ft. in 2024, with 1.7m sq. ft. delivered to market in 2025. Looking ahead, Deloitte says they have seen an impact from strategic public and private sector investment and collaboration, with developer sentiment shifting from cautious optimism to commitments to construction in a number of cases.

They see a resilient pipeline, with healthy forward-looking activity across the student accommodation and hotel sectors and a more positive outlook this year across the offices and residential sectors. Deloitte has seen a clear focus on high-quality refurbishment of offices, with strong take up of the best quality office space, and expects headline rental levels to rise in 2026, which may help to unlock further office schemes.

A further reason to be cheerful comes from the S&P Global UK Construction Purchasing Managers' Index that shows improvement despite output remaining in negative territory for the 13th consecutive month. January saw the slowest contraction in seven months as last year's sustained downturn in construction output eased. If that trend remains stable, we can all perhaps breathe a sigh of relief.

Steelwork erection starts on major defence machine shop

Working on behalf of McLaughlin & Harvey, BHC has started installing the steelwork for Sheffield Forgemasters' £210 million machine shop.

Located on a 16-acre brownfield site, adjacent to the company's existing facilities, the 30,000m² building will house 24 new machines, including some of the world's largest vertical turning lathes.

Sheffield Forgemasters Programme Director Craig Fisher, said: "The new machine shop main works contract is a major element within our recapitalisation programme and will create one of Europe's most advanced defence machining facilities."

McLaughlin & Harvey Managing Director Paul Griffen, added: "We are working collaboratively with Sheffield Forgemasters to deliver a facility of such national significance, which will not only help support UK industries for generations to come but also support the local economy in South Yorkshire.

"This contract showcases our talented workforce's ability to manage large-scale, complex construction projects. It strengthens our growing reputation as a construction partner of choice for clients in the advanced manufacturing and defence sectors."

Sheffield Forgemasters' 13,000t forging line and machine shop will create a new generation of engineers and designers trained to support the UK's defence manufacturing sector.

BCSA member celebrates 40 years of supporting UK manufacturing and skills

The Haley Group has marked the start of its 40th anniversary celebrations by welcoming Professor Tim Minshall, Head of the Institute for Manufacturing at the University of Cambridge, to speak to its engineers about the importance of manufacturing capability, engineering skills and innovation.

The event reflected the Group's long-term commitment to engineering excellence and people development. Over the past 40 years, it has successfully brought a number of companies out of administration, safeguarding critical skills and creating sustainable employment.

Professor Minshall's talk explored the importance of strong design thinking, resilient manufacturing capability and technical expertise in supporting innovation, continuous improvement and long-term growth.

The event also formally launched a year of milestone celebrations across the Group's structural steelwork businesses, including 40 years of William Haley Engineering and 35 years of FLI Structures.

Founded in 1986, the Haley Group employs around 170 people across its operating companies.

4,000-capacity venue planned for Milton Keynes

Milton Keynes Development Partnership (MKDP) has selected ATG Entertainment as its preferred partner to operate a brand new, multi-purpose events venue in the heart of the city.

The 4,000-capacity venue at the Old Bus Station, Elder Gate, is expected to attract more than 300,000 visitors annually, hosting a diverse range of performers and acts.

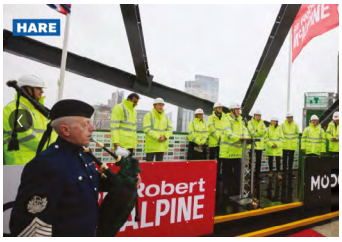
Nicola Sawford, Chair of MKDP, said: "Identifying ATG as our preferred partner takes us one step closer to delivering a world-class events venue for Milton Keynes.

"This project reflects our shared vision with Milton Keynes City Council to create a vibrant, welcoming city centre that offers something for everyone. The venue will not only bring incredible live entertainment to the heart of the city, but also boost the local economy, create jobs and strengthen Milton Keynes' reputation as a destination for music, culture and events."

Nick Potter, Chief Operating Officer at ATG Entertainment, said: "We are delighted to be named preferred partner for this landmark new venue in Milton Keynes. The city has ambitious plans for its future, a growing population, and a strong cultural appetite, making it an ideal location for a large-scale, multi-purpose events venue of this kind."

The venue is scheduled to open in 2029.

Broadgate tower celebrates topping out at level 37



Representing the final phase of the Broadgate campus redevelopment in the City of London, British Land's 2 Finsbury Avenue (2FA) project has officially topped out at level 37.

Designed by 3XN with Adamson Associates as executive architect, 2FA will be an all-electric building and aims to set a new benchmark for highly sustainable workspace in London by targeting BREEAM 'Outstanding', WELL Platinum, EPC A and NABERS 5-star certifications.

The steel-framed structure includes dual office towers, reaching heights of 170m and 100m respectively, both sat on a 12-storey podium.

Delivering a significant carbon saving, approximately 90% of the steel sections have been sourced from Electric Arc Furnace production facilities.

Creating more than 75,000m² of workspace, the project will be an iconic addition to London's skyline, as the towers are adorned with triangular patterns combining a solid and glazed sawtooth-shaped façade.

Working on behalf of main contractor Sir Robert McAlpine, William Hare fabricated, supplied and erected 10,000t of structural steelwork for the project.

MP puts spotlight on West Midlands steelwork expertise

MP for Tipton and Wednesbury, Antonia Bance, praised the strength and potential of the UK's constructional steelwork sector following a visit to locally-based specialist fabricator Angle Ring.

Supplying a range of precision-engineered steel products used across the construction and infrastructure sectors, Angle Ring plays a key role in the regional supply chain, supporting a range of nationwide projects.

The MP discussed the company's operations, growth ambitions and the challenges facing manufacturers. A key focus of the discussions was the British Industrial Competitiveness Scheme (BICS) and how many energy-intensive firms operating within the constructional steelwork sector are currently excluded from the scheme, despite the nature of their workloads.

Antonia Bance MP said: "I have already taken up a number of issues raised with me by Angle Ring and the BCSA, including raising the issue of public money being spent on procuring foreign-made constructional steel products when I was questioning ministers at the Business Select Committee."

Daniel Barnshaw, Managing Director at Angle Ring, said: "We were delighted to welcome Antonia to our Tipton facility and to show her the scale and complexity of the work we do.

"As an energy-intensive manufacturer, rising energy costs and our current exclusion from schemes such as BICS have a real impact on our ability to compete and invest for the future. It was encouraging to have the opportunity to discuss these challenges directly and to highlight the importance of fair support for companies like ours."

Work set to start on world's largest BREEAM 'Outstanding' building

Developer Prologis has appointed Winvic Construction to deliver a new national distribution centre for Marks & Spencer (M&S) at Daventry International Rail Freight Terminal (DIRFT).

Covering 120,773m², the scheme is expected to be the largest in the world to achieve BREEAM 'Outstanding' certification while also targeting an EPC A+ rating.

The project represents a £340 million investment in M&S's food supply chain and forms a key part of the company's strategy to double the size of its food business. The development will combine temperature-controlled storage, advanced automated fulfilment, returns and recycling operations, and dedicated office space.

Over the 52-week build programme, Winvic will construct two low-carbon single-storey warehouses, which include multi-storey office accommodation, a security hub linked via a pedestrian bridge and a vehicle maintenance unit.

Sustainable features include a large-scale rooftop photovoltaic array, EV charging, energy-saving technologies that will further reduce annual operational emissions and extensive use of recycled materials.

Paul Weston, Regional Head at Prologis UK, said: "Prologis is pleased to have appointed Winvic as its construction partner to deliver this complex, large-scale logistics project designed to meet the highest environmental standards.

"This development enables a future-fit supply chain for M&S and brings lasting economic value to the Midlands, through skilled jobs, resilient infrastructure and investment in one of the UK's most important logistics locations."

NEWS IN BRIEF

Simon Boyd, Managing Director of **REIDsteel**, has been made an Officer of the Order of the British Empire (OBE) in the King's New Year Honours List. He received the prestigious award in recognition of his many decades of service to British steel manufacturing and Small and Medium-sized Enterprises (SMEs).

Bouygues UK has been selected by the Department for Education (DfE) as its main contractor for the redevelopment of the Rosedale College site in the London Borough of Hillingdon. The work involves demolishing outdated 1960s structures and replacing them with modern facilities, including new teaching and performing arts blocks and a comprehensive refurbishment of the Science, Technology, Engineering and Mathematics (STEM) block.

Working on behalf of Benniman and Prologis UK, **Caunton Engineering** will be fabricating 2,000t of steelwork for a BREEAM 'Outstanding' cold store warehouse at the Daventry International Rail Freight Terminal (DIRFT) in Northamptonshire.

Willmott Dixon has started work on Acre Wood Academy in Crowborough, a £15.6 million SEND project for East Sussex County Council.

Westminster City Council has approved the redevelopment of the former BHS and UAL College of Fashion site at 33 Cavendish Square, near London's Oxford Circus. Designed by KPF for Berkeley Estate Asset Management, the scheme will provide offices and retail units.

PRESIDENT'S COLUMN

Where's the plan?

At the end of my last column I asked readers to think about what they could do to help both the BCSA and the wider UK structural steelwork industry. As is often the case, an opportunity has arisen straight away with the decision to procure Chinese fabricated steel for the Net Zero Teesside (NZT) project. The BCSA has requested that every member contacts their local MP to raise awareness of this threat to our industry which employs over 100,000 people in the UK and quite simply the more letters sent to MPs the better.

The decisions made on the NZT project will have at least provoked a reaction from the national press and as a result questions are now being raised at governmental level. It is very hard to see how any country could arrive at a position where on the one hand a taxpayer backed project awards a contract to import steel from China, and on the other hand the same taxpayer is supporting one of its own local steel suppliers at a reported cost of £1 million a day. This clearly shouldn't happen, but without any consistency in policy across government departments it can, and will happen again with potentially disastrous implications.

I watched a Sky News report last week which detailed the demise of the once mighty UK chemical industry over the last 10 years. During this time, 11 major plants have shut down with little reporting on this loss of critical infrastructure. Since Roman times Britain has been self-sufficient in salt production but this could soon change with the closure of one of the last two processing facilities. The plant needs replacing but due to the UK having the highest energy costs in the world the operating company will most likely build overseas.

Salt is a chemical building block and is involved, at some point, in 90% of all pharmaceuticals. However, the UK has already lost the ability to produce other building blocks such as soda ash used to manufacture glass and ammonia which is key to the manufacture of fertiliser, but also when combined with sulphuric acid in explosives. In all cases, the cost of energy has been the driver to move production overseas and this is despite the Government's own Industrial Strategy acknowledging that the chemical industry is a key foundational sector.

We are still awaiting the publication of the Government's strategy for steel which was originally due in the spring of last year. The consultation document stated that steel is critical to both the economy now and in the future. It then goes on to describe placing the UK at the forefront of the transition to green steel and unfortunately the current lack of this capability in the UK was given as the reason for importing steel from China in the NZT project. The document also states that the UK can champion decarbonisation without deindustrialisation. However, the experience of the chemical industry would show that this has not been the case to date. Heavy industry is energy intensive and steel producers will require continued support with network charges if they are to have any chance of being competitive globally.

The future strategy is important and the plan for steel cannot come quick enough. However, there must be consistency across government with taxpayer funded procurement of steelwork only being awarded to UK steel producers and fabricators. In a rapidly changing world our core heavy industries are becoming even more important and due to neglect in many sectors we are now over reliant on imports. The NZT project also demonstrates that overtime, importers will move further along the supply chain all the time removing more and more value from the UK jobs market. This does not need to be the case with structural steel but it is already occurring and begs the question, where's the plan?

Chris Durand
BCSA President

Bridge steelwork completed for Enfield regeneration scheme

Working on behalf of Taylor Woodrow Infrastructure, Tubecon (part of Billington Structures) has installed the steelwork for the B1 road bridge within the Meridian Water regeneration scheme in Enfield, North London.

Spanning the River Lea canal and fabricated from weathering steel, which will resist corrosion, the bridge is the longest within the development.

It consists of four 38m-long trough beams; the two outer beams, which include a decorative fascia, are 4.2m-wide, while the two internal beams measure 2.8m-wide.

Using a 1,000t-capacity mobile crane, the beams were individually lifted into place before being temporarily braced together with cross members.

Comprising a steel tonnage of 225t, the bridge steelwork supports the permanent formwork and in situ-poured concrete deck.

The ambitious £6 billion Meridian Water regeneration initiative aims to create 10,000 new homes and generate hundreds of permanent jobs for local residents.

Located adjacent to the Lee Valley Regional Park, the development is being designed with nature and biodiversity in mind. The area boasts a variety of waterways and marshlands, which will provide a green oasis within walking distance for residents.

Work starts on Glasgow Charing Cross Gateway scheme

Demolition works on Glasgow's £250 million Charing Cross Gateway masterplan have kicked off.

Contractors have started clearing the site, near Bath Street and Newton Street, of its 1960s building, making space for the initial phase of the city centre project.

Designed by Michael Laird Architects, Charing Cross Gateway will reclaim and reinstate a historic part of the city, creating a vibrant neighbourhood and a striking gateway to the city centre from the west end.

Overall, the project includes student accommodation, office space, private homes and retail units.

Owned by Tracey Investments, CXG Glasgow is the project developer.

Mark Tracey, Director of Tracey Investments, said:

"We are proud to be involved in a project that will not only modernise the visual landscape of Glasgow city centre, but also assist in reducing the shortage of much-needed student accommodation within the city.

"To date, we have been particularly impressed with how the project team has managed to coordinate our vision of creating one of the most striking purpose-built student accommodation buildings in the city and worked hand in hand with Glasgow City Council and Network Rail to bring this project to life."

Demolition and site clearance are expected to be completed by August.

Fife Council gives green light for new St Andrews college

Major plans by the University of St Andrews to redevelop one of the most significant sites in the town have been given the green light by Fife Council.

Plans have been approved for a £142 million scheme to renovate the former Madras College school building in South Street and construct new buildings on the site.

Once completed, 'New College', as it is currently known, will be home to the new St Andrews Business School as well as accommodating the University's School of International Relations.

Stafford Critchlow, Board Director at WilkinsonEyre (the project architect), said: "It's been a rewarding three-year process of careful dialogue to ensure the design properly stitches New College into the historic fabric of central St Andrews.

"With the restored listed building at its heart, reinvigorated by a newly covered courtyard designed for year-round use in the Fife climate, the scheme delivers outstanding facilities for students, postgraduates and academics. The result is a contemporary academic environment with a strong and distinctive St Andrews character, enriched by a new landscape setting and public access."

Woolwich town centre gets major boost as leisure centre completes

Main contractor Morgan Sindall Construction has officially handed over the Woolwich Waves Leisure Centre to the Royal Borough of Greenwich.

The £80 million project, procured via the Southern Construction Framework, is located in the heart of Woolwich town centre and forms a key part of a much wider regeneration scheme.

On track to achieve a BREEAM 'Outstanding' rating, the multi-storey hub is one of the UK's largest leisure centres and includes four swimming pools, a luxury spa, a six-court sports hall, an indoor five-a-side football pitch, a gym, dance and spinning studios, squash courts and community spaces.

Councillor Anthony Okereke, Leader of the Royal Borough of Greenwich Council, said: "The start of 2026 saw the moment thousands of residents had been waiting for as they were able to experience, for the first time, the leisure centre they helped to name.

"Woolwich Waves is at the forefront of improving the quality of life and health of our residents."

Area Director at Morgan Sindall Construction in London, Richard Dobson, added: "It's a huge achievement to deliver this complex development to the Royal Borough of Greenwich and we are excited to see the community already starting to enjoy these state-of-the-art facilities.

"Sustainability has been at the forefront throughout the design, construction, and ongoing operation of the centre."

Elland Steel Structures fabricated, supplied and erected 1,650t of structural steelwork for the project.

Benniman to build final phase at former MG car plant

Developer Indurent has appointed Benniman as main contractor for the final phase of works for the Longbridge West project in Birmingham.

The former MG Rover car manufacturing plant is being transformed into a new 35,300m² industrial and logistics park, which will act as a catalyst for regional economic growth.

Benniman will construct 13 steel-framed buildings, ranging in size from 1,095m² to 10,614m², suitable for a variety of uses including advanced manufacturing, logistics and distribution.

The energy-efficient units are designed to achieve BREEAM 'Excellent' and EPC A and A+ ratings. The development will also be integrated with the River Rea valley walking and cycling routes, strengthening sustainable transport links in the area.

Benniman Director Paul Barfoot said: "We are delighted to be delivering the final phase of Indurent Park Longbridge West. Having built a strong working relationship with Indurent across multiple developments, we are looking forward to completing another high-quality scheme that will serve the region for years to come."

Planning consent granted for Goole Freeport logistics park

Henry Boot Developments (HBD), in partnership with St John's College Cambridge, has secured an outline planning consent for the Freeport 36 industrial and logistics scheme.

Including warehouses that will range in size from 3,700m² up to 92,900m², the 300-acre site is located adjacent to Junction 36 of the M62 with convenient access to Goole Docks and the M18.

The site will form part of the Humber Freeport Goole tax site, which has already been officially designated following review and approval by the Treasury and HM Revenue & Customs.

Once operational, occupiers situated within the tax site can benefit from a range of financial incentives including business rates relief, enhanced capital allowances for investment in new plant and machinery assets, stamp duty land tax relief, and enhanced Structures and Building Allowance for firms constructing or renovating buildings for non-residential use.

Tim Roberts, CEO at Henry Boot, said: "Manufacturing and logistics hubs are a critical part of enabling business and economic growth across the country and HBD is bringing forward another large-scale project to support commerce in the Yorkshire region."

Finbarr Dowling, Chair of Humber Freeport, added: "This is tremendous news and another major milestone in developing the Humber's economy. The locational advantages of Goole, along with its strong industrial cluster and Freeport incentives, offer end users a real competitive advantage. The future of this site is very exciting."

Diary

For SCI events, contact SCI Education, tel: 01344 636500 email: *education@steel-sci.com* web: *https://portal.steel-sci.com/trainingcalendar.html*
For BCSA events, visit: *https://bcsa.org.uk/events/*

Wed 25 February 2026
Publication Launch - Steel Bridge Guidance Notes (P185, 7th Edition)
Webinar - Free to all
Chris Hendy (Head of Bridge Engineering at AtkinsRéalis and Chair of the Steel Bridge Group) will introduce the 7th Edition of the Steel Bridge Guidance notes (P185). The webinar will provide an overview of the guidance contained in the Notes, as well as the key changes in this update, reflecting development in codes, standards, and industry best practice over the past decade.

Tue 3 & Thu 5 March 2026
High Strength Steel Design
Online course
This course will introduce engineers to the design of structures made from high-strength steel. It will lead designers through the stages of specification, design and execution for structures made from steels with strengths from S460 up to S700, in accordance with European product, design and execution standards. Topics such as product availability and fatigue resistance will also be included. Practical guidance will be given on when and how the benefits of HSS can be exploited in design. Examples of building applications will be shown.

Wed 11 March 2026
Fatigue
Webinar
This webinar introduces fatigue design principles for the design of steel structures subject to cyclical loading. It reviews fundamental concepts such as S-N curves, stress range spectra, and Miner's summation for cumulative damage. The session focuses on the practical application of BS EN 1993-1-9:2005, covering:
- The classification of structural details
- The use of fatigue strength curves
- The 'safe life' assessment method.

Southampton community sports hub reaches milestone

Main contractor Morgan Sindall and Southampton City Council have celebrated the topping out of the new Outdoor Sports Centre.

The £36 million project includes a large steel-framed main building that will accommodate tennis and netball courts, fitness suite, multi-purpose rooms, a café, offices and the main lobby and entrance.

The indoor areas will sit alongside the centre's extensive outdoor facilities that include seven netball courts.

Cliff Kinch, Area Director for Morgan Sindall Construction in the South, said: "Seeing the structure now complete is a great development in the project – we're one step closer to finishing this wonderful facility that will serve Southampton's community for years to come."

Councillor Toqeer Kataria, Cabinet Member for Leisure and Communities at Southampton City Council, added: "This is a really exciting milestone for the Outdoor Sports Centre regeneration. This is a welcoming, flexible space that brings people together through sport, wellbeing and everyday community use, while also supporting our Greener Southampton City Plan goals."

Snashall Steel Fabrications were the project's steelwork contractor.

Rotherham Advanced Manufacturing Park expands with new factory

Working on behalf of locally based manufacturer Vulcan Seals, Caddick Construction is building a new engineering research and development centre at Rotherham's Advanced Manufacturing Park.

The 4,830m² testing, manufacturing and distribution development will provide a new home for the composite seal manufacturer, seven miles from its current home on Troutbeck Road in Sheffield.

Steve Ford, Regional Managing Director of Caddick Construction Yorkshire & North East, said: "This project represents a significant milestone for Rotherham and the wider Yorkshire region as it grows in prominence as the home of advanced innovation and technical excellence.

"We are very excited to be working on behalf of Vulcan Seals to ensure their relocation and expansion plans deliver a state-of-the-art facility that enables world-leading engineering."

Vulcan Seals Chairman and founder Gerard Quinn, said: "Our new global headquarters and manufacturing facilities represent the next phase of that journey, with the aim of strengthening our capabilities, expanding our capacity and reinforcing the quality, consistency and responsiveness our customers rely on worldwide."

Leyton Orient plans new stadium in East London

League One football club Leyton Orient has teamed up with architectural practice Populous for the design of its new stadium and multi-sport campus.

The club's current Brisbane Road ground is deemed to be too small and confined for redevelopment and so a new site is being sought within the London Borough of Waltham Forest.

As well as providing a new home for the club's men's and women's sides, the stadium would also host an American Football team playing in the European Football League.

The development will form part of a revitalised public hub, also including retail, hospitality, leisure facilities and an integrated infrastructure to support matchday and non-matchday activities.

Leyton Orient majority shareholder David Gandler said: "Appointing Populous is a major milestone and a clear statement of our ambition.

"We're building a world-class, multi-sport campus that honours Leyton Orient's heritage while creating a vibrant, affordable, technology-driven destination for our fans and our community. This will be a home that inspires not just for today, but for generations."

Declan Sharkey, Senior Principal and Global Director at Populous, added: "Our vision is to design a unique stadium and mixed-use development that celebrates the club's heritage. Together, we will create a new landmark for East London and beyond."

The benefits of galvanizing

Galvanizing is recognised as a sustainable, durable, hygienic and highly economical solution for long-term steel protection.

One of the advantages of galvanizing is the longevity of the coating.

With up to four per cent of the world's GDP estimated to be lost to corrosion every year, the whole-life performance of steel remains a critical consideration for engineers and specifiers. To combat the damaging effects of rust and corrosion, hot-dip galvanizing is one of the most widely specified and trusted protective finishes, used across everything from major infrastructure and rail projects to small, intricate components such as fixings and fasteners.

Although the galvanizing process dates back to the mid-18th century, it has evolved significantly and today, it continues to be the finish of choice across engineering, construction, rail and architectural applications.

To protect steel from corrosion, items are first chemically cleaned to remove surface rust, oil and mill scale. Once prepared, they are fully immersed in a bath of molten zinc at temperatures of around 450°C. This ensures complete coverage of the steel, including internal surfaces, corners, narrow gaps and other hard-to-reach areas. After removal from the bath, the steel is left to cool, allowing a metallurgically bonded zinc coating to form.

Hot-dip galvanizing is one of the most widely specified protective finishes for steelwork.

This metallurgical bond is a defining characteristic of hot-dip galvanizing and underpins its long-term performance. The resulting coating provides exceptional resistance to corrosion and mechanical damage, offering robust protection during transport, storage and installation. In service, galvanized steel is able to withstand even the harshest environments for decades without requiring maintenance.

One of the most significant advantages of hot-dip galvanizing is its longevity. In many environments, galvanized coatings can deliver more than 70 years of maintenance-free protection. This dramatically reduces whole-life costs by eliminating the need for ongoing inspection, repair or recoating. It also limits operational downtime and reduces the need for replacement, making it an attractive option for projects where long-term value and cost certainty are essential. In addition to its long service life, galvanizing provides an exceptionally tough and durable finish.

Hot-dip galvanizing is also one of the few steel finishes defined by a British Standard, providing confidence in its reliability and performance. The process itself is uniform and well controlled, allowing consistent and predictable outcomes to be achieved time after time. This reliability, combined with the relative simplicity of the process, often enables short turnaround times and supports projects with demanding delivery schedules.

Sustainability is increasingly shaping material selection across the construction and engineering sectors, driven by environmental targets, regulatory requirements and growing client expectations. Hot-dip galvanizing is widely recognised as an environmentally responsible solution. Zinc is a non-ferrous material, meaning any unused zinc remains in the galvanizing bath and can be reused without degradation, resulting in minimal waste. At the end of its service life, galvanized steel can be recycled alongside scrap steel, or stripped and re-galvanized for reuse.

At Wedge Group Galvanizing, sustainability is embedded throughout operations. The company adopts a triple bottom line approach, balancing responsibility for people, planet and profit, while striving to exceed mandatory environmental compliance.

As part of its carbon reduction journey towards net zero, Wedge Group Galvanizing has made significant investments across its national network of 15 plants. These include the introduction of high-velocity Smart Firing technology, delivering carbon emission reductions of up to 35 per cent. Smart-fire furnaces continuously monitor and optimise temperatures, heat exchangers recover waste heat back into the galvanizing process, and insulated tanks retain heat more effectively. Low-temperature degreasers further reduce energy demand through the use of innovative chemical formulations.

Additional sustainability measures include the widespread adoption of electric manual handling equipment, such as forklift trucks, the phased introduction of Hydrotreated Vegetable Oil (HVO) as an alternative to diesel, reducing carbon usage by more than 80 per cent year-on-year, and the removal of lead and chrome from the galvanizing process.

Working closely with engineers and project teams across the UK, Wedge Group Galvanizing continues to support a wide range of steel applications. Whether the priority is long-term durability, reliability, cost efficiency or enhanced sustainability credentials, hot-dip galvanizing remains a proven, future-focused solution for protecting steel throughout its lifecycle. ■

Wedge Group Galvanizing Ltd is the UK's largest hot-dip galvanizing organisation, with more than 155 years of experience and 15 strategically located plants nationwide. For more information, visit www.wedge-galv.co.uk

Wedge Group is a Gold sponsor of Steel for Life

STEEL for life

Travel Hub spurs town centre regeneration

The Travel Hub forms the initial phase of the wider regeneration of Prestwich town centre.

Structural steelwork is playing an important role in the initial phase of the multi-million-pound regeneration of Prestwich town centre.

Four miles north of Manchester city centre, the suburb of Prestwich is undergoing a £100 million makeover, which is set to revitalise its town centre.

The overall plans, being developed by Prestwich Regeneration (a joint venture between Muse and Bury Council) includes a multi-storey travel hub, library, retail units, a new market, community spaces and residential dwellings, with most of the construction earmarked for land currently occupied by the existing Longfield Centre shopping precinct and its surface car park.

Muse Senior Project Manager Hugh Taylor, says: "The transformation of the Longfield Centre will create a vibrant new heart for Prestwich, a welcoming space where the community can come together to meet, socialise and enjoy village life. We're making great progress on the travel hub, which marks just the beginning."

Creating a long-term parking solution for the village and somewhere to park while the other phases of construction work take place, the initial part of the development consists of the steel-framed Prestwich Travel Hub.

Being built by VINCI Building, the three-storey hub will provide 301 car parking spaces (including disabled and electrical bays), electric vehicle charging points and 76 cycle storage spaces. The facility will also provide two City Club parking bays, allowing people the flexibility to hire a car for the day and return it to the hub at their convenience.

Councillor Eamonn O'Brien, Leader and Cabinet Member for Strategic Growth, said: "It's incredibly exciting to see the first phase of this transformation now underway, especially knowing that it marks just the beginning of what's to come. Our vision is to create a vibrant, sustainable village centre that serves the whole community."

The Prestwich Travel Hub project has been designed to be as efficient as possible, minimising the environmental impact of the materials used, while enabling the main contractor to utilise suppliers from within the UK to further minimise the impact on the environment.

This ethos includes the choice of a steel-framed solution for the hub. The material, which has been sourced and fabricated in the UK by steelwork contractor Hambleton Steel, offers the project team the required speed of construction that will minimise any disturbance to the neighbourhood, while also providing the long clear spans wanted for a car park.

"Steelwork was chosen as the construction method for the Travel Hub structure because it offers benefits such as high strength, durability, and resistance to fire, pests, and the weather. The material is also cost-effective, due to offering faster construction, less maintenance, and lower long-term costs," says VINCI Building Project Manager Adam Lynch.

Civic Associate Thomas Audsley, adds: "The material choices that have been adopted simplified the coordination and ensured there were no encroachments into the parking bays, as you sometimes find in car park structures.

"By utilising steel-framed construction, we only had to adopt one central line of columns within the internal footprint of the structure, which allowed us to achieve longer spans."

Work on the hub, which is being built on a site previously occupied by another surface car park (Fairfax Street), began during the summer of 2025.

Prior to the steelwork erection starting, the entire site was remediated as part of the groundworks programme.

The site was underlain by a significant and varying depth of peat across the majority of the plot. Due to the inherent poor bearing conditions

FACT FILE
Prestwich Travel hub
Main client: **Prestwich Regeneration (joint venture between Muse and Bury Council)**
Architect: **Jon Matthews Architects**
Main contractor: **VINCI Building**
Structural engineer: **Civic**
Steelwork contractor: **Hambleton Steel (part of Embrace Steel)**
Steel tonnage: **313t**

"Steelwork was chosen as the construction method for the Travel Hub structure because it offers benefits such as high strength, durability, and resistance to fire, pests, and the weather."

and significant risk in leaving the peat within the ground, a remediation package created the required ground conditions.

Once a piling mat was in place, the team used a single rig to install a series of piled foundations, of varying depths, to support the hub's steel columns.

In-filling the majority of the site, the hub is approximately 100m-long x 32m-wide. Because of its length, the braced steel frame incorporates three movement joints across its width.

The positioning of one movement joint has necessitated an unusual, but vital steel detail to be incorporated into the frame.

Between level one and ground floor, one column could have interfered with the all-important vehicle circulation route. To avoid this, the column has been transferred onto the end of two cranked cantilevering beams, which in turn abut the movement joint.

Creating an efficient car parking layout, the single line of internal columns as well as the perimeter members are spaced at 7.5m centres, with the connected floor beams creating two spans of 16m.

The steel beams forming the first and second floors support precast planks, a method that is commonly used for car park structures due to its inherent robustness under both loading and environmental conditions.

"A precast floor solution was chosen as it allowed us to efficiently design the steel frame by keeping primary beams on column lines, with the precast planks able to span the full 7.5m bay width," adds Mr Audsley.

Allowing vehicles to access and exit from the multi-storey hub, the upper floors of the structure have been designed with a split-level configuration, whereby each side of the hub has a slope. When built with a steel frame, this layout will generally provide the best combination of economy and operating efficiency.

The entrance to the hub is on Fairfax Street and this elevation also provided the only entry point for materials during the construction.

Starting at the furthest point from the entrance, the steel frame was erected using a single 60t-capacity mobile crane.

Positioning the crane was important, as the erection team needed to ensure that lifting duties were not carried out over the residential properties, church and Manchester Metrolink that surround the site.

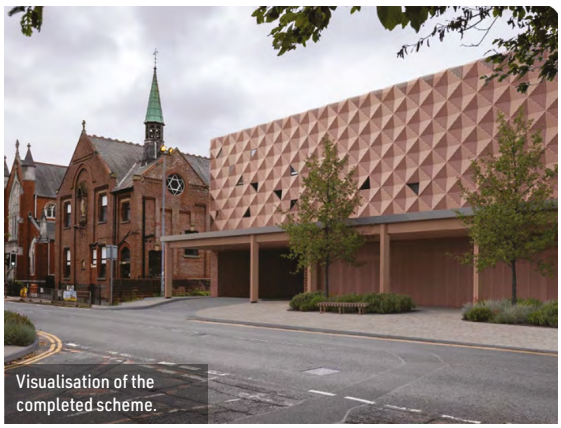
The columns were erected as full-height sections, while the heaviest steel items were the beams, which weigh up to 4t each.

As well as the steel frame, Hambleton also installed precast stairs and a lift shaft, and more than 600 floor planks that weigh up to 2t each.

It is anticipated that the Travel Hub will be fully complete by July 2026. ■

Steelwork has provided the project with the required long spans.

Bracing is located around stair cores.



Visualisation of the completed scheme.

Steel beams support a precast flooring solution for the upper levels.

Steel provides south coast logistics boost

The use of structural steelwork has provided the required speed of construction for an 11-unit warehouse scheme in Bognor Regis.

Helping to satisfy an increasing demand for modern industrial and logistics space, the new Trade City and Logistics City development in Bognor Regis is set to be completed by August 2026.

Being built by Mildren Construction within the existing Saltbox Business Park, the scheme comprises six steel-framed structures that will provide 11 units ranging in size from 1,063m² to 16,141m².

Offering flexible configurations to suit a diverse mix of occupiers, from SMEs to national logistics operators, the development consists of eight smaller Trade City units (up to 5,882m²) accommodated within three separate warehouses, while the remaining structures will house three Logistics City units.

The project forms part of the wider Enterprise Bognor Regis development, a 70-hectare government-supported employment initiative, which is poised to accommodate up to 150 businesses and create 4,000 new jobs.

Strategically located to the north of the town, the development consists of four distinct parcels of land (including the Saltbox Business Park) that have good road access to the ports of Portsmouth, Southampton and Shoreham, as well as being a short distance from Bognor Regis station, which offers a direct rail link to London.

Being developed by Kier Property, the Trade City and Logistics City scheme is designed with a strong emphasis on sustainability and operational efficiency. Aiming to achieve BREEAM 'Excellent' and EPC A ratings, the six buildings will have rooftop solar panels, fresh air ventilation systems and access to EV charging points.

The project is also making use of high-quality, sustainable construction materials, including around 900t of structural steelwork.

Attributes such as cost-effectiveness, adaptability and its contribution to the circular economy through reuse and recycling are all factors that continue to be valued by developers, contractors, designers and building users alike, making steelwork the go-to material for warehouse projects.

Mildren Construction Site Manager Dan Rose says: "The Trade City and Logistics City development will provide much needed commercial and industrial space for Bognor Regis.

"Utilising steelwork to construct the building's frames was imperative, not only for the speed of construction, but also for the buildability. We wouldn't have been able to erect all six structures in less than 10 weeks using any other framing solution."

The project is located within an established business park.

Clear, long-spans are an essential element of each building.

Making use of two erection teams, each with their own mobile crane, Nationwide Structures erected the steel frames in a sequence that followed on behind the completion of the scheme's extensive groundworks programme.

Below the surface, the greenfield site consists of low strength clay and chalk deposits that required a ground improvement package to be carried out in order to make the ground suitable for the building work.

Carried out during the project's initial phases, a combination of rigid inclusions and vibro stone columns were installed, followed by concrete pad foundations to support the building's columns. After a plot's ground was prepared, the erection of a steel frame was able to commence.

The Logistics City structures are known as Unit 1, Unit 2 and Unit 7 (see site plan). They have each been designed to accommodate a single tenant (although like most steel-framed warehouses they have the inbuilt flexibility to be easily sub-divided into two or more units) and have a floor loading capacity of up to 50kN/m², in keeping with typical industrial warehouse requirements. Allowing goods and products to be easily brought in and out of the buildings, they also feature dock levellers.

Within each of the structures there is a two-storey (ground and first-floor) office area. The offices are formed with a composite solution of steel beams supporting metal decking and a

"Utilising steelwork to construct the building's frames was imperative, not only for the speed of construction, but also for the buildability. We wouldn't have been able to erect all six structures in less than 10 weeks using any other framing solution."

FACT FILE
Trade City and Logistics City, Bognor Regis
Main client: **Kier Property**
Architect: **Ian C King Associates**
Main contractor: **Mildren Construction**
Structural engineer: **HDR**
Steelwork contractor: **Nationwide Structures**
Steel tonnage: **900t**

concrete topping.

The first structure to be erected was Unit 7, which is a single-span warehouse measuring 68m-long × 28m-wide. Creating the open-plan column-free interior, the roof beams were brought to site in 14m lengths, which were assembled on-site into complete sections, before being lifted into place by a single mobile crane.

Units 1 and 2 are both larger twin-span structures, measuring 63m × 57m and 99m × 44.6m respectively. Both have a central column line dividing the building, and each of the two spans was installed using a series of spliced beams, in a similar procedure to Unit 7.

Four of the Trade City units (3, 4, 5 and 6) are accommodated in one 128m-long × 43.5m-wide structure. Further highlighting steelwork's flexibility and ability to form open-plan spaces, the building is a single-span structure with no internal columns.

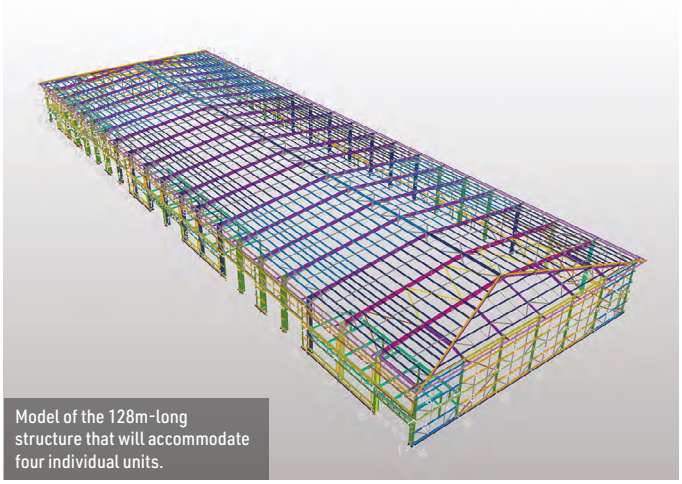
Each of the 32m-wide units will accommodate a single-storey office area and will be served by their own dedicated loading doors.

The other two Trade City structures consist of two identical buildings, positioned next to each other, close to the development's entrance.

Each measuring 26m × 21m, the single-span structures will be divided down the middle and house units 8 and 9, and 10 and 11 respectively.

The Trade City and Logistics City development will be complete by August 2026. ■

Site plan, highlighting the six structures and their 11 units.



Model of the 128m-long structure that will accommodate four individual units.

Each structure is supported by pad foundations.

Retain and rebuild

Preserving a historic streetscape, a modern steel-framed commercial development in central London will incorporate the previous building's reinstated Portland stone façade.

Within sight of the Palace of Westminster and Big Ben, a stone-clad building, built in two phases between 1915 and 1929, is being redeveloped to create an environmentally sustainable structure with modern, adaptable workspaces.

Named The Smith (a nod to Smith Square, which is to the rear of the development), the project involves the demolition of the existing building, and the construction of a new nine-storey steel-framed structure.

Aiming to achieve the environmental standards of BREEAM 'Outstanding', WELL Platinum and NABERS Design for Performance 5* accreditations, the project's design has sustainability at its core.

One initiative has seen the Portland stone that clad much of the original building carefully dismantled and safely stored for reuse. Once the new steel frame is fully erected, the stone will be returned to site and reinstalled, helping the neighbourhood maintain its historic character.

The process of rebuilding the Portland stone façade will enable the team to repair the pervasive structural damage caused by corrosion from the embedded steelwork of the building's original frame. The work also provides an embodied carbon saving of 16% and a reduced construction programme, compared to the alternative façade retention option.

The Portland stone will be re-installed to the new building's two main elevations along Millbank and Dean Stanley Street (where the main entrance will be). Meanwhile, the rear (Smith Square) façade will have new red brickwork cladding and reinstated Portland stone, similar to the elevation's original design and also matching the surrounding premises.

Following the stonework removal, the demolition of the old building was begun during the summer of 2024. The preliminary works also included enlarging the existing single-level basement into a two-storey substructure.

The subterranean levels are partially formed with concrete encased steelwork (installed by the concrete contractor), creating a column grid, which is then replicated by the connected main steel frame.

From the ground floor upwards, subcontractor William Hare is fabricating, supplying and erecting 1,600t of steelwork for the project.

The initial steelwork erection sequence for the main steel frame would have ordinarily entailed the superstructure's steelwork contractor (William Hare) splicing onto the basement columns. In order to make this work more efficient, a connection was devised that meant the encased steel columns were installed with a base plate that was left flush with the completed ground floor slab. This allowed William Hare's erection team to reset the tolerances and setting out, and then begin their steel installation.

The original structure at 7 Millbank was one of the capital's early examples of steel construction and using the same framing solution for the new build was the obvious choice.

"A steel frame is lighter than other solutions and meant we were able to minimise excavation, install fewer new foundations, and reduce the concrete volume," says Skanska Project Director Neil Keogh. "The use of steelwork also allowed the design to have minimal internal columns and spans of up to 13m-long, creating the desired modern and flexible office floorplates."

The sourcing of the steelwork was an important criteria for the client, allowing the design to achieve the desired sustainability credentials. Consequently, by using a blended mix of low-carbon steel sections and metal decking, a significant carbon saving on the project has been made.

"The total carbon saving against a standard steel-framed building with metal decked floors is circa 2,000t CO_2e, when considering UK average

The scheme is located on a prominent site on Millbank, Westminster.

The completed building will have various finishes, including a reinstated Portland stone façade (right of picture).

FACT FILE
The Smith, 7 Millbank, London
Developer: **Old Park Lane Management**
Architect: **Make Architects**
Main contractor: **Skanska**
Structural engineer: **Waterman Structures**
Steelwork contractor: **William Hare**
Steel tonnage: **1,600t**

A specially designed rig, allowed the steelwork to be erected beneath the ongoing concrete works for the core.

"A steel frame is lighter than other solutions and meant we were able to minimise excavation, install fewer new foundations, and reduce the concrete volume."

consumption rates," adds Mr Keogh.

The nine-storey steel frame includes a ground floor with a 5.3m-high floor-to-ceiling soffit height (the upper office floors are 3.8m high) and terraces and a roof garden on the uppermost three levels, providing tenants with outdoor breakout spaces.

Allowing plenty of natural daylight into the floorplates, the new building also features a centrally-positioned full-height atrium that accommodates a feature steel staircase.

All of the floors above ground level are formed with long-span cellular beams, used to accommodate building services within their depth. The beams are designed compositely, supporting metal decking and a concrete topping.

The internal beams and services will be partially concealed by ceiling rafts in the completed building, creating a modern industrial-looking interior.

The floor beams connect back to the building's main core, which is offset and positioned alongside the plot's solitary party wall that separates the new building from its neighbour (4 Millbank).

Together with the diaphragm action of the completed floors, the slip-formed core provides stability to the steel frame.

Making use of the site's two tower cranes, the steel erection programme started in the third quarter of 2025. During the design stages, a lot of work went into ensuring each beam and column would be delivered in sections that were within the capacity of the cranes.

To this end, the heaviest steel element is a 13t box girder, positioned on level eight on the south elevation of the atrium.

Acting as a transfer beam, it was designed so that it could be installed without splicing, while remaining within the limits of the tower crane capacity.

For the most part, the steel erection has been following on behind the construction of the jump-formed core. With two major parts of the construction programme onsite at the same time, coordination between the two teams has been a key factor in the project's success.

One of the most challenging aspects has been how to erect the beams that connect to the core, while the jump-formed concrete core construction is progressing above.

Positioning MEWPs directly underneath the core, while it was being constructed was not possible and so during the pre-construction phase, the installation methodology was coordinated with the jump-form rig design.

The team made adaptations to the rig that allowed William Hare to use a lifting beam (held by crane straps that straddled the core) to position the steelwork.

Erecting the steel floors inside the core, presented another logistical challenge. The tower cranes could not reach into the core, while the upper parts were being constructed and so small lifting equipment, that can be placed inside the jump-formed structure are being used.

The Smith is due to complete in May 2027. ■

To match the nearby houses, the rear of the building will have a red brick façade.

School design is future-proofed

Two schools creating an education campus for a new Cambridgeshire community have maximised the benefits that steel construction can offer.

The sports hall was the first of the two structures to be fully erected.

FACT FILE
Alconbury Weald Church Academy, Cambridgeshire
Main client: **Cambridgeshire County Council**
Architect: **R H Partnership Architects**
Main contractor: **Morgan Sindall Construction**
Structural engineer: **Sweco**
Steelwork contractor: **AC Bacon Engineering**
Steel tonnage: **450t**

With plans for the construction of more than 6,000 homes, a new community is taking off from the site of RAF Alconbury in Cambridgeshire.

Known as Alconbury Weald, the new town is being developed by Urban&Civic, who purchased the former MOD land, including the runway, in 2009. Outside of the development, a parcel of land remains as the military base, used by the US Air Force for non-flying operations.

As well as housing, Alconbury Weald will also have schools, industrial and office spaces, community and leisure facilities, shops and a health centre. Included within the infrastructure being built to serve the scheme, there is also a reserved plot for a possible railway station.

Set in the heart of the growing development and complementing the current primary school provision, two steel-framed schools will form the education campus: Prestley Wood Academy SEND School and Alconbury Weald Church Academy Secondary School.

The SEND school was completed in 2024 by Morgan Sindall Construction (with AC Bacon Engineering fabricating and erecting the steelwork) and now the two companies are working together again on the secondary school.

Cambridgeshire County Council is delivering the school in line with its aspirations for sustainability, energy efficiency and best practice design in order to reduce the inherent energy demand and associated CO_2 emissions of the building.

In response to this, the school incorporates effective passive design measures through the adoption of a fabric-first approach, followed by the use of low-carbon energy sources in the form of air source heat pumps. Energy demand is then further reduced using zero carbon energy generators in the form of solar photovoltaic (PV) panels located at roof level.

The efficient design includes a steel frame that supports precast flooring planks, a solution chosen for its speed, structural and thermal mass qualities and associated lower emissions, according to Morgan Sindall Senior Project Manager Gareth Harris.

"The underside of the planks and M&E services will remain exposed in areas of the completed building, allowing the floors to absorb heat during the day and dissipate it at night, in line with the MEP design strategy for the scheme."

Consisting of a three-storey teaching block and a separate sports hall, Alconbury Weald Church Academy will initially cater for 600 pupils as a 4 Form of Entry (4FE) secondary school. However, there is flexibility with the project's design to facilitate a potential future expansion to an 8FE/1,200 pupil school, when required.

The building is T-shaped on plan, with the horizontal wing accommodating a triple-height dining hall and a kitchen. The future expansion of the school would see this wing extended to provide additional accommodation.

To facilitate the extension, there is no bracing positioned in this gable end, meaning once the cladding had been removed, a new steel frame would be connected to the existing columns.

Aside from its flexibility, another benefit of using the steel-framed option has been its speed of construction. The 450t of steelwork that forms the main block and sports hall were erected in a seven-week programme.

Given the site is a former airfield, with few trees and little shelter, the construction is open to the elements and in particular the wind.

"We had a few periods when our lifting operations had to stop, due to wind, but otherwise we've had no challenges with the erection. We had the site pretty much to ourselves, which gave us plenty of space for materials to be stored," says AC Bacon Engineering Project Manager Martin Whitehead.

Prior to the steelwork erection starting, the school's brownfield plot underwent a remediation programme, followed by the installation of vibro-stone columns and pad foundations for the main block and sports hall.

Using its own mobile cranes, AC Bacon erected the steel frame of the main block in four phases. Once each phase was complete, the area was handed over to the concrete contractor, who installed the precast planks, stairs and lift shaft.

Alconbury Weald Church Academy takes shape on a site adjacent to the completed SEND school.

"As well as its thermal mass attributes, the precast flooring solution was also used as it efficiently formed the required spans and allowed the classrooms and other facilities to be column-free," says Sweco Senior Engineer Filipe Henriques.

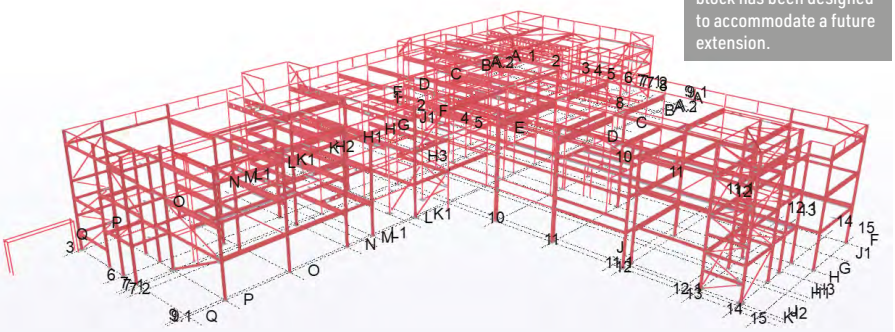
Much of the main block features columns spaced at 7.2m centres, with internal members positioned within a central corridor that separates the building's two rows of classrooms.

The exception to this column spacing is the aforementioned dining hall that has 9m-long spans and a double-height main hall/drama studio, which is formed with a series of 15m-long Westok beams.

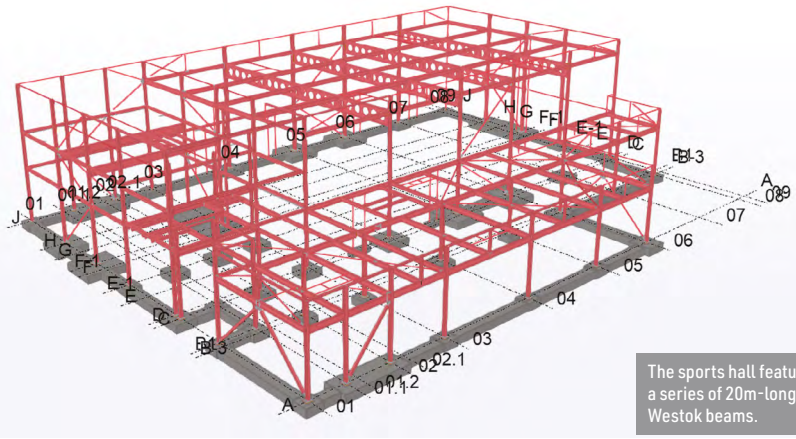
The main block's frame derives its stability from bracing, which is predominantly located around the stairwells and the lift shaft. With no cross-bracing within internal walls, further flexibility has been designed into the steel frame, whereby classrooms could be enlarged, if required, with the removal of partitions.

The adjacent sports hall adopts a similar design approach, with cross bracing located around the perimeter walls to provide stability. This structure has two parts: a double-height four-court sports hall, formed with a series of 20m-long Westok beams and a lower section that wraps around two elevations.

The lower part of the building will accommodate changing rooms, a multi-use activity studio and plant spaces. Both the sports hall and ▸ 20



The T-shaped teaching block has been designed to accommodate a future extension.



The sports hall features a series of 20m-long Westok beams.

"The underside of the planks and M&E services will remain exposed in areas of the completed building, allowing the floors to absorb heat during the day and dissipate it at night, in line with the MEP design strategy for the scheme."

The steelwork contractor made use of its own craneage for the erection programme.


Steelwork supports precast planks to form the upper floors.

▸19 main block have areas of roof formed with metal decking, which was installed as part of AC Bacon's package.

Summing up, Councillor Bryony Goodliffe, Chair of the Children and Young People Committee at Cambridgeshire County Council, says: "The Alconbury Weald Education Campus is an important investment for the County Council, supported by funding from Urban&Civic, and the new secondary school is central to that.

"We want to ensure all children and young people in Cambridgeshire have opportunities to thrive. I'm delighted that the Academy is set to provide those opportunities to the current and future residents of the new community."

Alconbury Weald Church Academy is due to open in September 2027. ■

Mind the wind

The Alconbury Weald Church Academy project references the challenges of erecting steelwork in windy conditions. Max Cooper of the SCI offers some thoughts on what the structural engineer may need to consider on this topic, and where guidance can be found.

While the steelwork contractor generally manages site safety and develops the detailed erection method, the design engineer plays an important role in ensuring the stability of the part-erected structure. BCSA Publication 35/09 *Guide to Steel Erection in Windy Conditions* provides an excellent resource for the designer unsure of where their responsibilities begin and end.

As a general rule, the designer should have considered at least one way for the structure to be erected and must communicate their assumptions to the steelwork contractor. If specific temporary supports or reduced wind speeds are assumed in the design, these must be stated clearly in the design erection sequence.

Wind speeds during erection may safely be assumed to be lower than the wind speeds used to design the structure in the permanent condition. However, the manner in which stability is maintained in the temporary condition may differ significantly from that of the permanent condition, which therefore requires separate justification. The BCSA guide distinguishes between two temporary conditions which may be considered: transient and working.

For transient conditions (such as a partly erected frame left overnight), reduced design wind speeds may be calculated using the return periods in Table 3.1 of BS EN 1991-1-6. Users may be surprised at how small the reduction is for short-term temporary conditions (up to 3 days), where the return period should not be less than two years. Daytime "working" wind speeds may be assumed to be much lower, but require site personnel to be actively monitoring the weather and to be able to cease operations if conditions deteriorate.

During erection, column base connections of unbraced columns will be required to resist a base moment due to wind actions. More often than not, the column base has not yet been grouted and therefore normal moment-resisting base design procedures do not apply. In this state, the moment resistance of the connection relies on holding-down bolts acting in combination with steel packs or wedges. An upcoming joint SCI/BCSA publication on the design of column bases will explicitly cover this temporary design condition and include a worked example of such a case.

Designers must pay particular attention to tall, slender columns which are defined in the BCSA guide as columns taller than 10m with a height to width ratio exceeding 50. Tall, free-standing structures are susceptible to dynamic effects such as vortex shedding, which can occur at wind speeds well below the design limit. The designer should explicitly identify these conditions on the erection drawings and the overturning moments used for design should be increased by a dynamic factor of 1.20. Alternatively, the design erection sequence must stipulate that these columns are not to be left free-standing; they require immediate lateral support, such as guys or struts, before being released from the crane. ■

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The Severus pedestrian bridge was manoeuvred into position using SPMTs.

One in, one to go

The first of two steel bridges, set to serve the large York Central mixed-use development, has been lifted into place with the second due to be installed soon.

FACT FILE
York Central bridges
Main client: **Homes England**
Main contractor: **John Sisk & Son**
Structural engineer: **Tony Gee & Partners**
Steelwork contractor: **Severfield**
Steel tonnage: **1,000t**

"Steel was chosen for the two bridges as it offers a practicable method of delivery, considering they span major railway lines that can only be closed for minimal amounts of time."

Working during an overnight rail possession, the Severus Footbridge was recently lifted into place across multiple railway tracks including the East Coast Main Line, marking a significant milestone for the wider York Central development.

One of the largest city centre brownfield site developments in the UK, York Central is expected to deliver 2,500 homes, more than 120,000m² of commercial, leisure and retail space, extensive parkland and public realm, as well as major improvements to the National Railway Museum.

Located on a former railway goods yard to the west of York's main station, the large site is set to create a new neighbourhood for the historic Yorkshire city.

As it is surrounded by railway lines, access to the site is restricted and so two new steel bridges are being constructed as part of the initial works for the development.

Both spanning the main railway lines that serve the city, the Severus Footbridge and the East Coast Main Line (ECML) Road Bridge will provide the York Central site with the necessary pedestrian, cycle and vehicular access that will spur the development forward.

The Severus Footbridge sits beside an existing road bridge, which currently accommodates pedestrians and cyclists. The new structure will give walkers and non-motorised traffic their own dedicated crossing, keeping them away from vehicles.

The 4m-wide footbridge has a total length of 75.5m, with a 52m-long central span situated between two supporting concrete piers. Brought to site in numerous transportable pieces, the entire structure was welded together, during a three-month programme, in a compound close to its final location.

"Steel was chosen for the two bridges as it offers a practicable method of delivery, considering they span major railway lines that can only be closed for minimal amounts of time," says Tony Gee & Partners' Executive Director Karen Hoad.

"The bridges are also fabricated from weathering steel, which requires minimal maintenance, while there is also a safety aspect as the material is less reflective, causing minimal glare to passing train drivers."

Steelwork for the footbridge consists of two main outer girders, measuring 2.3m-deep and 800mm-deep respectively, which were fabricated and delivered to site in three sections.

The deeper box girder is connected to 37 cantilever beams that provide maintenance access between the new footbridge and existing road bridge. The shallower girder contains a weathering steel handrail that will support a glass panel guardrail, which will provide views looking east towards York Minster.

Connecting the two outer box girders together and supporting the 38 × 6mm-thick steel deck plates, are a total of 37 cross bracings, with 50mm-thick flanges and 40mm-thick webs.

The installation of the fully assembled footbridge took place over the weekend of 18 and 19 October. Using two 600t-capacity mobile cranes, positioned either side of the tracks, the steel structure was lifted into place after being transported to the middle of the existing Water End road bridge.

The procedure commenced with some preparatory works on Friday night, before two self-propelled modular transporters (SPMTs) moved the structure from its assembly compound and onto the nearby Water End (which leads to the existing road bridge) on the Saturday morning.

The steel structure was then moved along the road and onto the road bridge and readied for the final lifting operation.

"Once it was out of the compound and on the

How the completed arched ECML bridge will look.

road, one of the SPMTs had to be replaced with another unit," explains Severfield Projects Associate Director Gareth Day.

"An SPMT with more axles was needed to distribute the steelwork's weight more evenly, as the existing road bridge wouldn't have coped with the axle loads from the larger SPMT used to transport the bridge out of the compound."

Network Rail's possession of the tracks lasted from 2am to 6.30am on Sunday morning. During that time, the footbridge, which weighed 320t, was successfully lifted into its final position, while the project team continually checked and surveyed the bridge bearings and made sure the structure fitted perfectly.

Work is continuing on Severus Footbridge and its surrounding infrastructure. It is due to open in early 2027.

Second bridge

Meanwhile, a few hundred metres away, the second steel bridge of the York Central scheme is being constructed.

The 86m-long East Coast Main Line (ECML) Bridge will act as a major gateway to York Central. Its 17m-wide deck will accommodate a two-lane road, segregated paths for pedestrians and cyclists on the eastern pavement and a dedicated pedestrian route on the western side.

It consists of seven box girders, which are being fabricated and delivered to site in transportable sections, and then fully welded into the required lengths.

The five central girders are assembled from six separate pieces. The two outer girders have eight sections, as they include a pair of additional pieces to form the bridge arches.

Delivered to site separately, the arch's hangers are also being welded into place, during the initial assembly, while the outer girder's fascia panels are bolted into place.

Due to commence this spring, the weathering steel structure will be lifted into place over the railway lines using a single 1,250t-capacity crane. One girder will be installed at a time, during a series of rail possessions. ■

A video of the project is available on the NSC website

A pair of 600t-capacity cranes were used to install the footbridge.

Visualisation of the completed Severus Footbridge.

Analysis of composite slabs

Liam Dougherty of the SCI looks at some of the different approaches that can be used to analyse composite slabs, focusing on the advantages and disadvantages of each approach, particularly in the context of specifications that more and more frequently seem to demand high levels of imposed load.

In the UK, composite slabs are usually analysed as simply supported members in the normal condition (the analysis of the steel sheeting during the construction stage is different), with no account taken of the continuity offered by any reinforced concrete that is continuous over the supports. However, as the concrete of a composite slab floor is typically continuous over the supporting beams, they may be analysed as continuous. Eurocode 4 allows a number of different approaches to analysing a composite slab.

The analysis of composite slabs is outlined in clause 9.4.2 of BS EN 1994-1-1 which remains unchanged in the second generation of BS EN 1994-1-1.

In this technical article, three cases are considered:

1. Simply supported.
2. Continuous elastic analysis with redistribution of moments.
3. Continuous plastic analysis.

Simply supported

Continuous composite slabs can be analysed as simply supported. This approach is outlined in subclause 9.4.2(5) and is acceptable only when nominal reinforcement is provided over intermediate supports.

For typical composite slab span lengths, the slab will normally fail to achieve the bending resistance predicted by assuming full shear connection (i.e. the sheeting will not yield). The shear bond, which is a function of the contact area between steel and concrete, is likely to be the critical failure mechanism. The bond between the steel and the concrete usually reaches its maximum value at mid-span, as the concrete slips relative to the steel sheeting. The mechanical and frictional interlock that forms the shear connection between the steel and the concrete may be enhanced by end anchorage, such as shear studs on supporting beams, as these also resist slip. Additionally, the bending resistance can be increased by adding reinforcement bars in the troughs irrespective of whether partial shear connection exists.

Determining the bending moment applied to a simply supported composite slab with a uniformly distributed load is straightforward. Movable concentrated loads, for example from MEWPs, would need to be positioned to cause the worst-case bending moment and shear force.

Continuous elastic analysis

Composite slabs can be analysed as continuous using elastic analysis with up to 30% redistribution of hogging moments in accordance with subclause 9.4.2(3). Unlike plastic analysis, the rotational capacity of the composite slab over the supports does not need to be verified provided this limit is respected, as there is a correlation between rotation and redistribution. Reinforcement that is placed over the supports can be used to resist the hogging moment. However, for an efficient design the sagging and hogging resistances should be approximately equal to one another to make full use of the sagging resistance. This would mean adding more reinforcing bars over the supports as the sagging resistance of a typical composite slab in the UK is substantially greater than its hogging resistance with nominal mesh reinforcement. For typical loading conditions, the additional area of reinforcement required to resist the hogging moment would be greater than if the slab was analysed as simply supported as the sagging resistance would not be fully utilised in the continuous case.

It is worth adding that the analysis of continuous composite slabs is more complex than that for simply supported slabs because numerous loading patterns need to be considered to cause the maximum design sagging and hogging moments as shown in Figure 1.

▸26

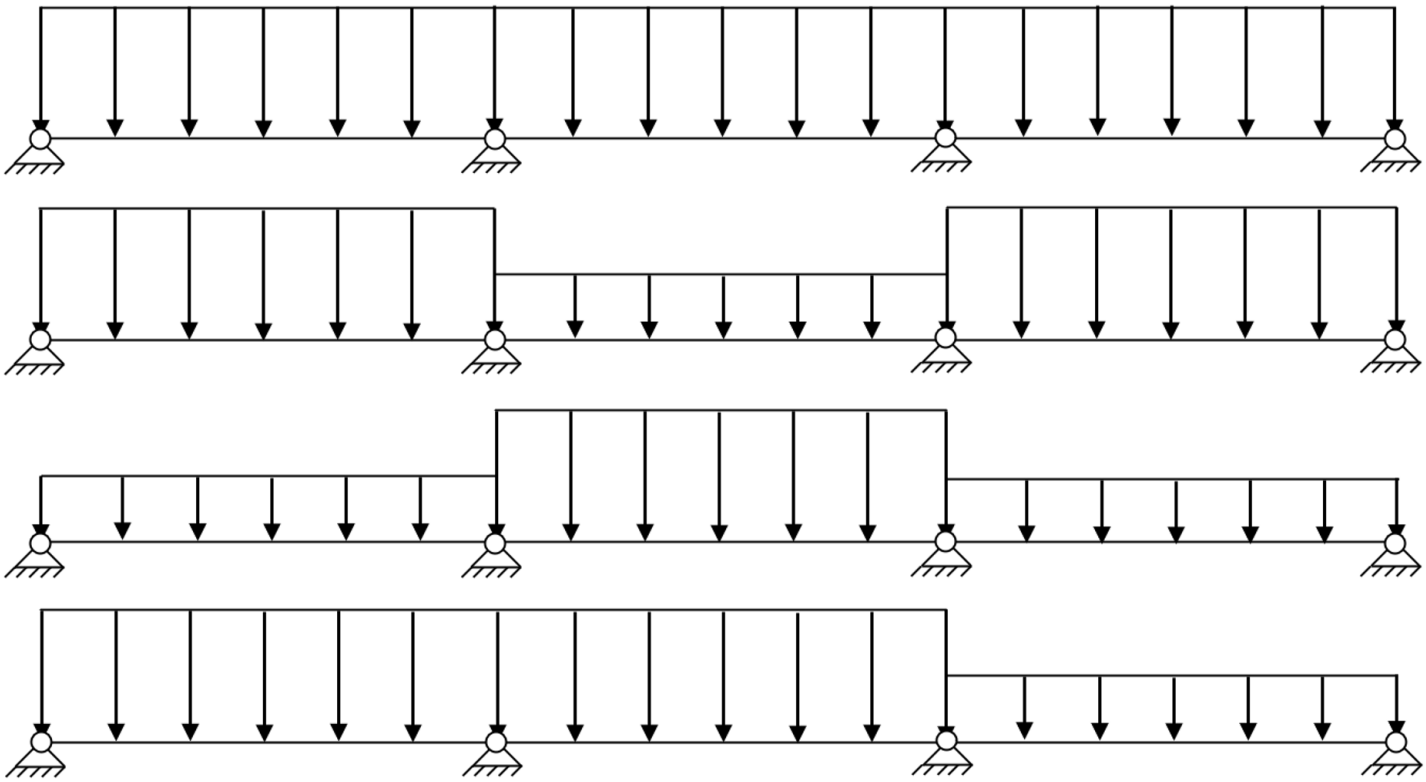

Figure 1: Typical continuous span composite slab loading patterns.

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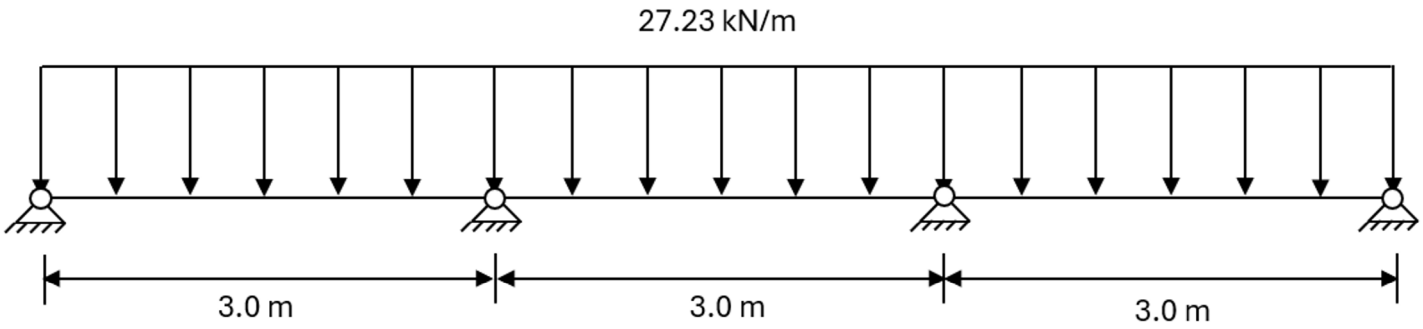

Figure 2: Three span continuous composite slab with a uniformly distributed load.

The addition of movable concentrated loads is also more complicated in the simply supported condition.

Continuous plastic analysis

Composite slabs can be analysed as continuous using rigid plastic global analysis where all cross-sections at plastic hinge locations have sufficient rotation capacity. Plastic design is potentially the most efficient approach to maximise the resistance of the composite slab without adding excessive reinforcement over the support.

As with continuous elastic analysis, because of potential interaction between spans the loading may be more complicated than in the simply supported condition and numerous loading patterns may need to be considered.

In plastic analysis, failure occurs when the limiting rotation at a plastic hinge is reached or when sufficient hinges form to render the structure into a mechanism. Considering an internal span of a composite slab, the capacity can be determined by applying load until the maximum hogging moment at the internal supports is equal to the hogging resistance. Additional loading is then applied until the rotation at the supports reaches the rotational capacity or the bending moment in the span reaches its moment capacity as moment is redistributed into the span from the supports.

The difficulty with this approach is checking that the rotation capacity at the internal supports is sufficient to meet the rotation required. No guidance is given in BS EN 1994-1-1. Although guidance on checking the rotational adequacy is given in clause 5.6.3 of BS EN 1992-1-1, it should only be used for composite slabs with care and justification. In particular, the rules for justifying the rotation capacity based on stress block depth and reinforcement ductility may not be applicable to composite slabs.

Subclause 9.4.2(4) of BS EN 1994-1-1 allows plastic analysis without any check on rotation capacity for continuous composite slabs with spans up to 3.0m using Class C reinforcing steel. This relatively short span limit would suggest that for many typical composite slabs rotation adequacy could well be an issue.

Serviceability

In the UK when calculating deflections composite slabs are typically analysed as simply supported using elastic analysis.

In accordance with subclause 9.8.2(5), when determining the deflection of a composite slabs for the serviceability limit state, when the slab is either 'end' or 'internal' the continuity at one or both ends respectively may be taken into account by using an average of the cracked and uncracked second moments of area.

In the 2012 edition of 'Designers' guide to Eurocode 4' it says that generally, it appears that the redistribution of moments should be avoided in analyses for serviceability limit states.

Therefore, when determining the deflection of continuous composite slabs that are designed with elastic analysis with moment redistribution or with plastic analysis the deflections should be determined using elastic analysis with no moment redistribution.

Fire stage

Although the free bending moment in the fire condition is equal to the moment that would be calculated assuming simply supported conditions, fire design for composite slabs is based on the combined hogging and sagging plastic resistances of the slab, allowing for continuity over the supports in accordance with clause 4.3.1 of BS EN 1994-1-2. Therefore, the bending resistance of a composite slab in fire will not increase if the designer adopts a continuous approach at ambient.

Example

A worked example is now given to illustrate the different approaches. A three-span continuous slab of equal spans of 3.0m. The slab depth is 130mm with trapezoidal steel sheeting with a thickness of 0.9mm and an A252 mesh. As the spans are 3.0m, no check on rotational capacity is required if Class C reinforcement is used. The slab has a uniformly distributed load of 27.23 kN/m as shown in Figure 2. The load is composed of a permanent load of 3.5 kN/m and a variable load of 15.0 kN/m using the combination of actions given in expression 6.10 of BS EN 1990 for simplicity.

No end anchorage was considered.

Simply supported

The bending moment is shown in Figure 3.

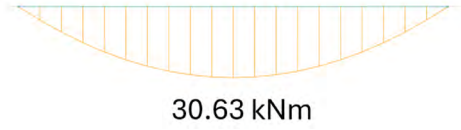

Figure 3: Bending moment diagram of the simply supported composite slab with a uniformly distributed load.

The maximum sagging bending moment occurs at 1.5m.
The sagging resistance with partial shear connection at 1.5m is:
M_{Rd} = 29.55 kNm
The sagging resistance with an additional Ø 8mm bar in each trough is:
M_{Rd} = 33.97 kNm

$$\text{Utilisation} = \frac{30.63}{33.97} \times 100 = 90\%$$

Total deflection = 7.0mm
Allowable deflection = 12.0mm

$$\text{Utilisation} = \frac{7.0}{12.0} \times 100 = 58\%$$

Elastic continuous analysis with 30% redistribution:

The elastic bending moment is shown in Figure 4.

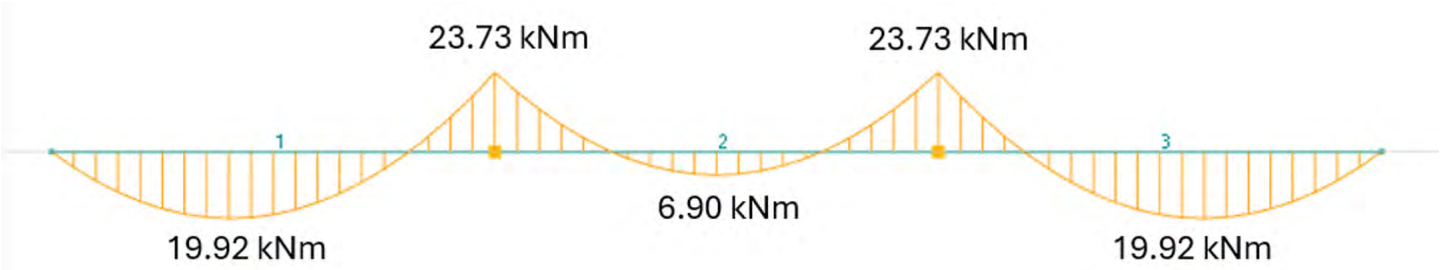

Figure 4: Bending moment diagram of a three span continuous composite slab with a uniformly distributed load.

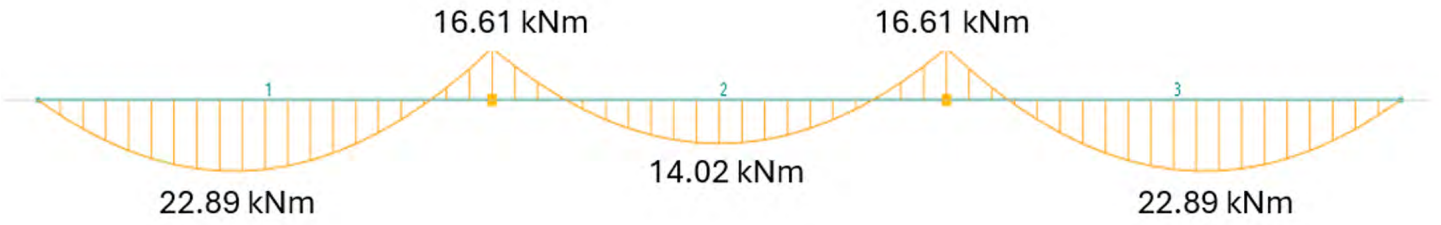

Figure 5: Bending moment diagram with 30% redistribution of the hogging moment.

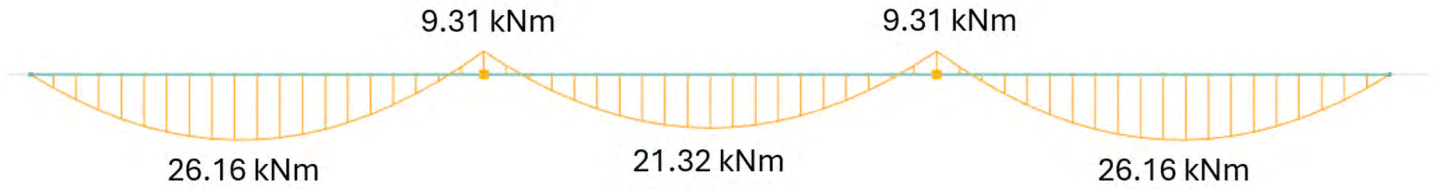

Figure 6: Bending moment diagram of a three span continuous composite slab with plastic hinges at the internal supports.

The elastic bending moment with 30% redistribution is shown in Figure 5.
The hogging resistance with A252 mesh (Ø 8 mm bar at 200mm spacing) is:
M_{Rd} = 9.31 kNm
As the hogging resistance with an A252 mesh is insufficient, the mesh is replaced with Ø 8mm bars spaced at 100mm spacing.
The hogging resistance with Ø 8mm bar at 100mm spacing is:
M_{Rd} = 17.05 kNm

$$\text{Utilisation} = \frac{16.61}{17.05} \times 100 = 97\%$$

The maximum sagging bending moment is at 1.3m.
The sagging resistance with partial shear connection at 1.3m:
M_{Rd} = 27.35 kNm

$$\text{Utilisation} = \frac{22.89}{27.35} \times 100 = 84\%$$

Total deflection = 3.7mm
Allowable deflection = 12.0mm

$$\text{Utilisation} = \frac{3.7}{12.0} \times 100 = 31\%$$

Plastic continuous analysis:

The plastic bending moment is shown in Figure 6.
The hogging resistance with A252 mesh (Ø 8 mm bar at 200mm spacing) is:
M_{Rd} = 9.31 kNm

$$\text{Utilisation} = \frac{9.31}{9.31} \times 100 = 100\%$$

Maximum sagging bending moment is at 1.4m.
Sagging resistance with partial shear connection at 1.4m:
M_{Rd} = 28.46 kNm

$$\text{Utilisation} = \frac{26.16}{28.41} \times 100 = 92\%$$

Note that limiting the spans to 3.0m and using Class C reinforcement (BS EN 1994-1-1, .4.2(4)) avoids the need for a check on rotation adequacy.

Conclusions

The simply supported analysis is the easiest approach in terms of design.

For typical loading conditions, continuous elastic analysis requires more reinforcement overall than in the simply supported condition, as well as more design effort.

The deflection of continuous composite slabs are less than in the simply supported condition.

Whilst plastic analysis could be the most economical approach in terms of material, unless the spans are not greater than 3.0m and Class C reinforcement is used, the rotation capacity must be checked and there is no robust guidance on how to do this. The example has shown that for typical composite slabs, the rotation adequacy could be an issue. ■

AD 552:
Errata in P362 - Steel building design; concise Eurocodes

Expressions 6.61 and 6.62 of BS EN 1993-1-1 are used when verifying a member subject to combined biaxial bending moments and axial force. SCI publication P362 provides a table to determine the k interaction factors used in expressions 6.61 and 6.62 that are based on the section type and cross-section classification using Annex B. Unfortunately, there are some typographical mistakes in the table. The corrected table is given here:

Contact: **Liam Dougherty**
Telephone: **01344 636555**
Email: **advisory@steel-sci.com**

Table D.1: Interaction factors for combined axial compression and bending

Interaction factors	Criteria	Section type	Section class		C factor
			1 and 2	3	
k_{yy}	-	All	Figure D.1	Figure D.2	C_{my}
k_{yz}	-	All	0.6 k_{zz}	k_{zz}	-
k_{zz}	Member not susceptible to torsional deformation	RHS sections	Figure D.6	Figure D.7	C_{mz}
	Member susceptible to torsional deformation	I sections	Figure D.5	Figure D.7	C_{mz}
k_{zy}	Member not susceptible to torsional deformation	All	0.6 k_{yy}	0.8 k_{yy}	-
	Member susceptible to torsional deformation	All	Figure D.3	Figure D.4	C_{mLT}

[1] C factors may be obtained from Table D.2
[2] In Figure D.3 and Figure D.4, k_{zy} is based on the conservative assumption that $C_{mLT} = 1.0$.

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- Craft a clear description: Write a concise and compelling description for each project element to help judges quickly grasp its essence.
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The Structural Steel Design Awards 2026

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Foyle Bridge, Londonderry, Northern Ireland

For The Department of the Environment for Northern Ireland

AWARD

Structural Engineers:
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Steelwork Contractors:
RDL-Graham Joint Venture
Steelwork Fabricators:
Harland & Wolff plc

Judges' Comments:
This is an excellent example of the use of steel to produce an aesthetically pleasing, light yet robust major steel bridge. It has benefited greatly fro he cross fertilisation between bridge and ship building, both in detail and construction.

Foyle Bridge was constructed under a 'design & build' contract and was the second major bridge in the United Kingdom to be built thus in recent years. The design brief, issued by the client to prequalified contractors, was not unduly restrictive but the navigational clearances required and the presence of geological faulting dictated a main river span of such length that steel was the preferred medium. The brief cited aesthetic quality and low vulnerability to damage as two factors to which importance was attached.

The bridge carries dual two-lane carriageways and footways across the River Foyle about 2km north of Londonderry in Northern Ireland. With its concrete approach viaduct the bridge has a total length of 866m, of which the three steel spans over the river account for 522m. The main span is 234m long and is flanked by two side spans of 144m. The steel spans have an orthotropic deck carried on twin box girders of varying depth. For security reasons the bridge is divided along the median into two separate structures. The steelwork is shop welded and site bolted wherever possible. The exception is the deck plate itself which had to be site jointed by welding as the asphalt surfacing could not provide sufficient cover to bolt heads.

The design of the steelwork complies with the Merrison Interim Design and Workmanship Rules and consequent on the completion of BS.5400 (Steel, concrete and composite bridges) Foyle Bridge is probably the last bridge to be designed to those Rules.

The orthotropic steel deck plate, between 13mm and 16mm thick, is stiffened with cold-rolled Vtroughs 8mm thick: fabricated cross girders are at 3.6m centres. The 10mm thick web plates are stiffened with horizontal bulb-flats and angles and with vertical T-stiffeners. The heavy bottom flange plates are stiffened with universal flat plate stiffeners. The steel spans are designed so that in the full dead-load condition there is a theoretical zero bending moment at the centre of the main span. The two girders are anchored laterally and longitudinally to the west abutment, fixed by pin bearings to the two main piers and free to move longitudinally on roller bearings on top of Pier 3 at the interface with the concrete viaduct. The main pier-shafts are designed to bend with thermal and live load movements of the steel girders. Changes in the overall length of the steel spans and the western half of the viaduct are taken up at the main expansion joint above Pier 3.

The design process was closely related to the erection scheme simultaneously being developed by the contractor, an obvious advantage of 'design and construct' procedures. The contractor decided to have the steelwork fabricated in very large sections, weighing about 950 tonnes, in Belfast and to tow these to the site on sea-going barges thus drastically reducing assembly work at the site. The method had a pronounced effect on the stresses generated in the structure and led to the development of predesigned jacking procedures to modify the moments and shears.

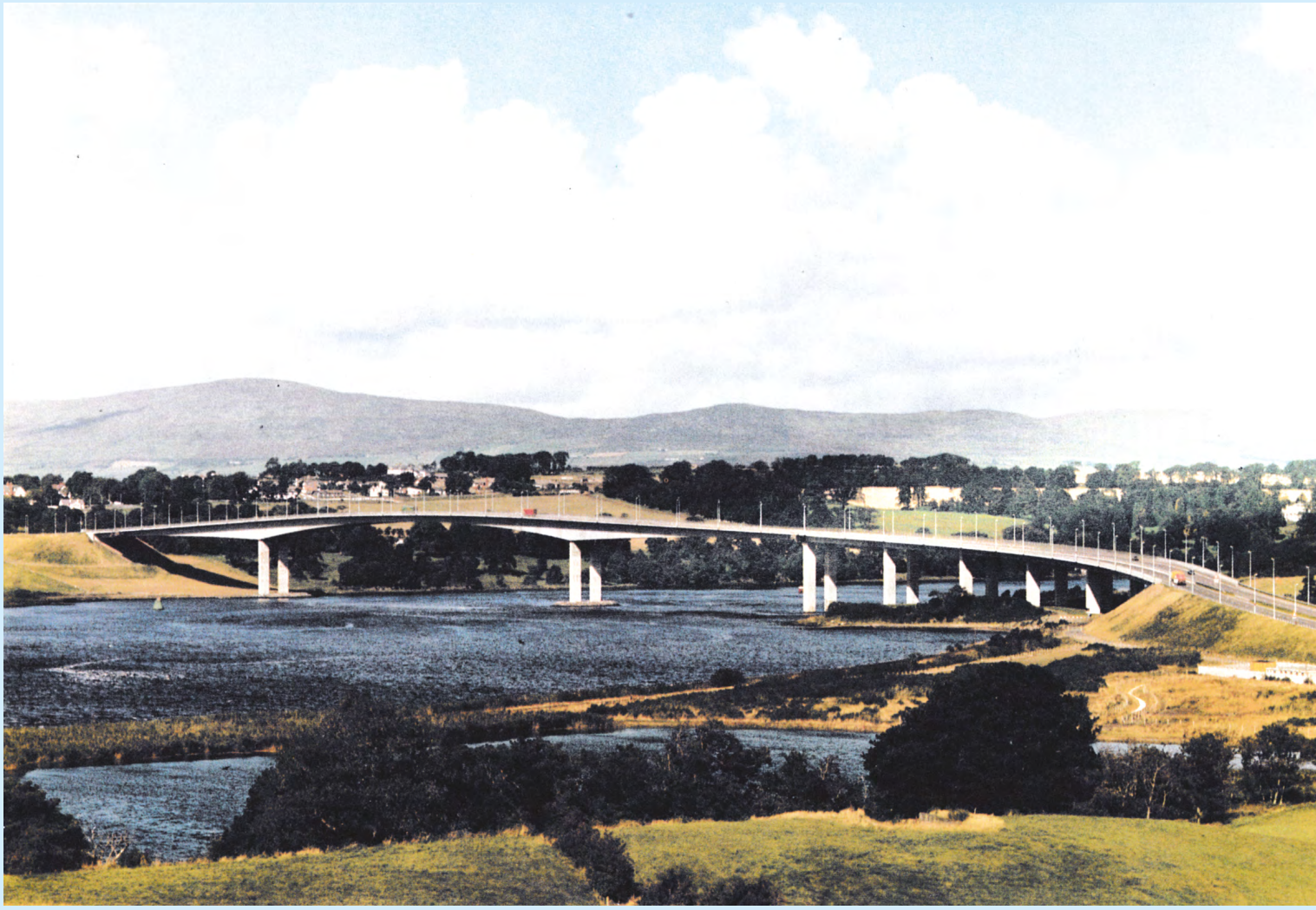
Use of the big-lift scheme meant that erection work was reduced to a simple sequence of major events in taking the six girder units from Belfast to site, placing each one in position, and splicing the three units in each girder to the required shape and condition. The sequence was as follows:

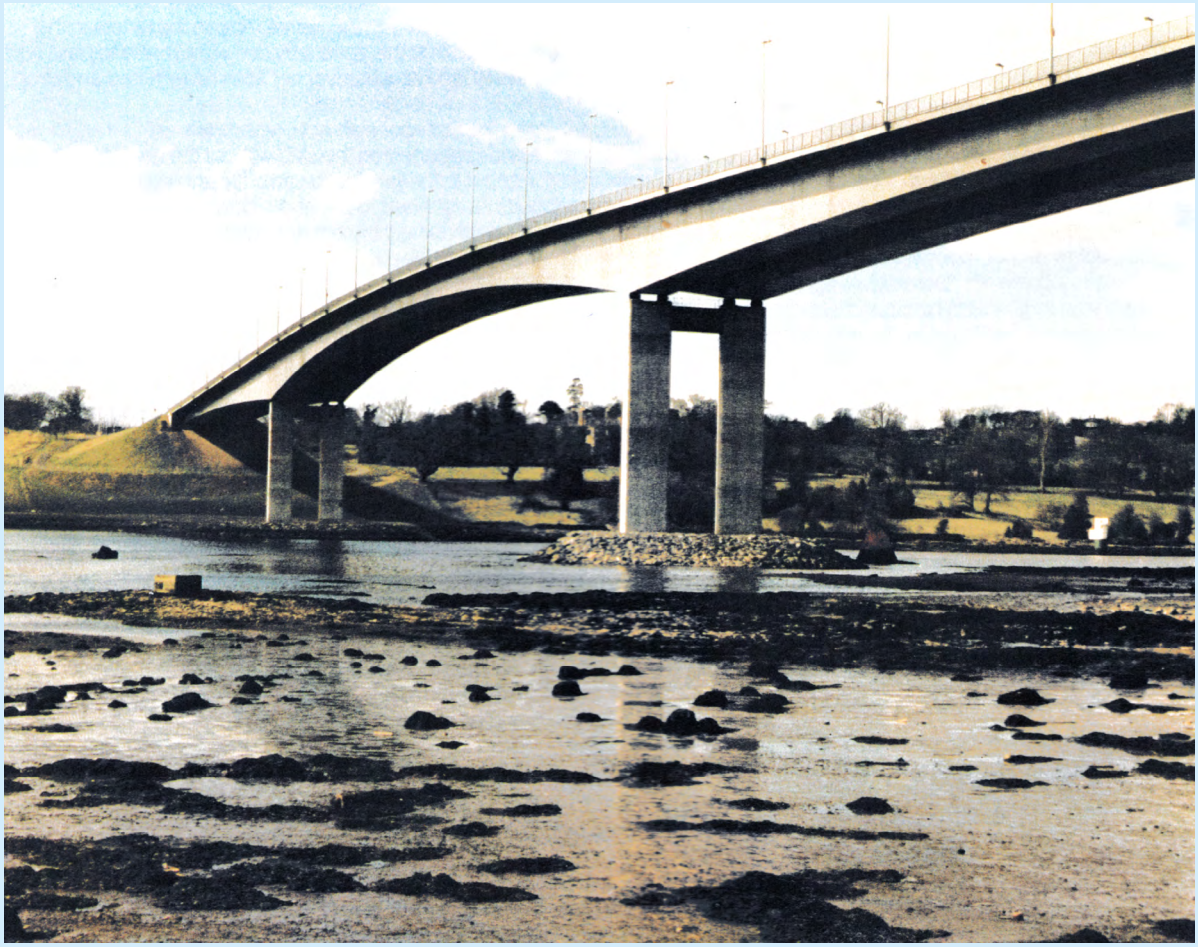
- Transport to site and off load each of four side span units.
- Lift and traverse each side span unit to its correct position
- In preparation for lift of centre span units raise the extreme ends of all four side span units 6.5m above bearing level.
- Transport two centre span units to site and lift off barge into position between side span units.
- Complete four field splices and lower extreme ends of girders on to bearings establishing designed bending moment distribution in each completed girder.

The protective treatment was required to provide a minimum of 12 years durability and the principal systems used were zinc metal spray for the deck plate, 5 coats of chlorinated rubber for the external surfaces and 3 coats zinc phosphate epoxy ester for internal surfaces.

Much attention was given, at tender stage and in detailing, to produce a bridge which would harmonise with the site and this has been effectively realised.

The design for submission by the consortium to the client commenced in 1978, work starting on site in December 1980. The 5,200t of steel were delivered to site and erected in less than 12 months and both carriageways were open to traffic by July 1984. The total cost of the scheme was £22 million.





Originally published in BCSA NEWS, February 1986

RQSC The Register of Qualified Steelwork Contractors Scheme **Buildings**

Steelwork contractors for buildings

BCSA

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- **J** Tubular steelwork where tubular construction forms a major part of the structure
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FPC Factory Production Control certification to BS EN 1090-1
1 – Execution Class 1 2 – Execution Class 2
3 – Execution Class 3 4 – Execution Class 4

BIM BIM Level 2 assessed

QM Quality management certification to ISO 9001

SCM Steel Construction Sustainability Charter
● = Gold ● = Silver, ● = Bronze, ● = Certificate

Notes
(1) Contracts which are primarily steelwork but which may include associated works. The steelwork contract value for which a company is pre-qualified under the Scheme is intended to give guidance on the size of steelwork contract that can be undertaken; where a project lasts longer than a year, the value is the proportion of the steelwork contract to be undertaken within a 12 month period.

Where an asterisk (*) appears against any company's classification number, this indicates that the assets required for this classification level are those of the parent company.

BCSA steelwork contractor member	Tel	C	D	E	F	G	H	J	K	L	M	N	Q	R	S	QM	FPC	BIM	SCM	Guide Contract Value (1)
A C Bacon Engineering Ltd	01953 850611			●	●	●	●				●			●		✔	2			Up to £6,500,000
Adey Steel Ltd	01509 556677			●	●	●	●	●	●	●	●		●		●	✔	3		●	Up to £5,000,000
Adstone Construction Ltd	01905 794561			●	●	●	●	●								✔	2	✔	●	Up to £3,400,000
AJ Engineering & Construction Services Ltd	01309 671919			●	●		●		●	●	●			●	●	✔	4		●	Up to £3,400,000
Angle Ring Company Ltd	0121 557 7241												●			✔	4			Up to £1,200,000
Arminhall Engineering Ltd	01799 524510	●			●	●		●		●	●			●	●	✔	2		●	Up to £2,400,000
Arromax Structures Ltd	01623 747466			●	●	●	●	●	●	●	●				●		2			Up to £1,200,000
ASD Westok Ltd	0113 205 5270	●	●	●	●	●	●			●	●	●	●		●	✔	4		●	Up to £6,500,000
ASME Engineering Ltd	020 8966 7150	●		●	●	●		●	●	●	●		●	●	●	✔	4		●	Up to £5,000,000
Atlasco Constructional Engineers Ltd	01782 564711			●	●	●	●			●	●			●	●	✔	2			Up to £1,200,000
BD Structures Ltd	01942 817770			●	●	●	●				●	●		●	●	✔	3	✔	●	Up to £2,400,000
Barnshaw Section Benders Ltd	0121 557 8261												●			✔	4			Up to £1,200,000
BHC Ltd	01555 840006	●	●	●	●	●	●	●	●	●	●	●		●	●	✔	4	✔	●	Above £10,000,000
Billington Structures Ltd	01226 340666		●	●	●	●	●	●		●		●	●	●		✔	4	✔	●	Above £10,000,000
Bourne Group Ltd	01202 746666		●	●	●	●	●	●	●	●	●	●	●	●	●	✔	4	✔	●	Above £10,000,000
Briton Fabricators Ltd	0115 963 2901	●		●	●	●	●	●	●	●	●		●	●	●	✔	4		●	Up to £6,500,000
Cairnhill Structures Ltd	01236 449393	●			●	●	●	●	●						●	✔	4		●	Up to £6,500,000
Caunton Engineering Ltd	01773 531111	●	●	●	●	●	●	●		●	●	●		●	●	✔	4	✔	●	Above £10,000,000
Cementation Fabrications	0300 105 0135	●	●	●	●	●	●	●	●	●	●	●	●	●	●	✔	3		●	Up to £10,000,000
CMF Ltd	020 8844 0940				●		●	●		●	●				●	✔	4			Up to £6,500,000
Coventry Construction Ltd	024 7646 4484	●	●	●	●	●	●	●	●	●	●		●	●	●	✔	4			Up to £2,400,000
D H Structures Ltd	01785 246269			●	●		●				●						2			Up to £600,000
Duggan Steel	00 353 29 70072		●	●	●	●	●	●			●					✔	4			Above £10,000,000
D Hughes Welding & Fabrication Ltd	01248 421104				●	●	●	●	●	●	●		●	●	●	✔	4			Up to £600,000
ECS Engineering Services Ltd	01773 860001	●		●	●	●	●	●	●	●	●			●	●	✔	4		●	Up to £5,000,000
Elland Steel Structures Ltd	01422 380262		●	●	●	●	●	●	●	●	●	●		●	●	✔	4	✔	●	Up to £10,000,000
Embrace Steel Group Ltd	01748 810598	●	●	●	●	●	●			●	●	●	●	●	●	✔	4			Up to £10,000,000
EvadX Ltd	01745 336413		●	●	●	●	●	●		●	●	●			●	✔	3		●	Up to £5,000,000
Four-Tees Engineers Ltd	01489 885899	●		●	●		●	●	●	●	●		●	●	●	✔	3		●	Up to £3,400,000
Fullpen Fabrications Ltd	0203 6335586	●		●	●	●	●			●	●				●		3			Up to £500,000
BCSA steelwork contractor member	**Tel**	**C**	**D**	**E**	**F**	**G**	**H**	**J**	**K**	**L**	**M**	**N**	**Q**	**R**	**S**	**QM**	**FPC**	**BIM**	**SCM**	**Guide Contract Value (1)**

BCSA steelwork contractor member	Tel	C	D	E	F	G	H	J	K	L	M	N	Q	R	S	QM	FPC	BIM	SCM	Guide Contract Value (1)
G & L Environmental Ltd	01634 252288									●	●			●	●	✔	3			Up to £500,000
G.R. Carr (Essex) Ltd	01286 535501	●		●	●			●			●			●	●	✔	4			Up to £1,200,000
Gorge Fabrications Ltd	0121 522 5770				●	●	●	●		●	●			●	●	✔	3			Up to £1,200,000
H Young Structures Ltd	01953 601881			●	●	●	●	●			●			●	●	✔	4	✔	●	Up to £3,400,000
Had Fab Ltd	01875 611711	●			●		●	●	●	●	●		●	●	●	✔	4			Up to £6,500,000
HBE Services Ltd	01525 854110				●	●				●				●	●	✔	2			Up to £1,200,000
Hescott Engineering Company Ltd	01324 556610			●	●	●	●	●		●					●	✔	2			Up to £3,400,000
Hillcrest Structural Steel Ltd	023 8064 1373			●	●	●	●	●		●	●			●	●	✔	3		●	Up to £3,400,000*
Integrated Water Services Ltd	01282 777739									●	●			●	●	✔	2			Up to £600,000
Intersteels Ltd	01322 337766	●			●	●	●	●	●				●	●	●	✔	3	✔		Up to £5,000,000
Jamestown Manufacturing Ltd	00 353 45 434 288		●	●	●	●	●	●	●	●		●	●			✔	4			Up to £10,000,000
Kiernan Structural Steel Ltd	00 353 43 334 1445		●	●	●	●	●	●		●	●	●	●	●	●	✔	4	✔	●	Above £10,000,000
Leach Structural Steelwork Ltd	01995 642000			●	●	●	●	●			●					✔	3		●	Up to £6,500,000
Legge Steel (Fabrications) Ltd	01592 205320			●	●					●	●			●	●		2			Up to £600,000
Littleton Steel Ltd	01934 311670			●	●	●	●	●		●	●			●	●	✔	3			Up to £1,200,000
Loaninghill Fabrication Company Ltd	01506 858466				●			●	●	●	●			●	●		3			Up to £600,000
M Hasson & Sons Ltd	028 2957 1281			●	●	●	●	●	●	●	●			●	●	✔	4		●	Up to £1,400,000
M.J. Patch Engineering Ltd	01275472279				●					●	●			●	●	✔	3			Up to £600,000
M&S Engineering Ltd	01461 40111				●		●		●	●	●		●		●	✔	3			Up to £2,400,000
Mackay Steelwork & Cladding Ltd	01862 843910			●	●		●			●	●			●	●	✔	4		●	Up to £2,400,000
Midland Structures Limited	01384 411201			●	●	●	●	●	●	●	●		●	●	●	✔	3			Up to £5,000,000
Murphy International Ltd	00 353 45 431384	●		●	●	●	●	●	●	●	●			●	●	✔	4		●	Up to £6,500,000
Nationwide Structures Ltd	01924365883			●	●	●	●				●			●		✔	4			Up to £10,000,000
Newbridge Engineering Ltd	01429 866722	●	●	●	●	●	●	●			●	●				✔	4		●	Up to £2,400,000
North Lincs Structures	01724 855512			●	●					●					●	✔	2			Up to £600,000
Painter Brothers Ltd	01432 374400				●				●	●	●			●	●		3			Up to £5,000,000*
Peter Marshall (Steel Stairs) Ltd	0113 307 6730				●	●				●	●				●	✔	3			Up to £2,400,000*
PMS Fabrications Ltd	01228 599090			●	●	●	●		●	●	●			●	●		3			Up to £3,400,000
REIDsteel	01202 483333			●	●	●	●	●	●	●	●	●	●		●	✔	4		●	Above £10,000,000
SAH Luton Ltd	01582 805741			●	●	●				●				●	●		2			Up to £600,000
Severfield plc	01845 577896	●	●	●	●	●	●	●	●	●	●	●	●	●	●	✔	4	✔	●	Above £10,000,000
Shaun Hodgson Engineering Ltd	01553 766499	●		●	●		●			●	●			●	●	✔	3			Up to £1,200,000
Shipley Structures Ltd	01400 251480		●	●	●	●	●		●	●	●			●	●	✔	3			Up to £2,400,000
Snashall Steel Fabrications Co Ltd	01300 345588			●	●	●	●	●			●			●	●	✔	3	✔	●	Up to £3,400,000
Southern Fabrications (Sussex) Ltd	01243 649000				●	●				●	●			●	●	✔	2			Up to £1,200,000
Stage One Creative Services Ltd	01423 358001				●		●	●	●	●	●		●			✔	2			Up to £6,500,000
Steel & Roofing Systems	00 353 56 444 1855	●		●	●	●	●	●	●	●	●	●		●	●	✔	4			Up to £10,000.000
TSI Structures Ltd	01603 720031			●	●	●	●	●			●			●			2	✔		Up to £3,400,000
W I G Engineering Ltd	01869 320515				●					●	●			●	●	✔	2		●	Up to £600,000
Walter Watson Ltd	028 4377 8711			●	●	●	●	●				●				✔	4		●	Above £10,000,000
Westbury Park Engineering Ltd	01373 825500	●		●	●	●	●	●	●	●	●				●	✔	4		●	Up to £1,200,000
William Haley Engineering Ltd	01278 760591			●	●	●	●				●		●			✔	4			Up to £6,500,000
William Hare Ltd	0161 609 0000	●	●	●	●	●	●	●	●	●	●	●	●	●	●	✔	4	✔	●	Above £10,000,000

Non BCSA member	Tel	C	D	E	F	G	H	J	K	L	M	N	Q	R	S	QM	FPC	BIM	SCM	Guide Contract Value (1)
Eden Fabrications	02825 821000			●	●	●	●	●		●	●		●		●	✔	3			Up to £1,200,000

Non BCSA member	Tel	C	D	E	F	G	H	J	K	L	M	N	Q	R	S	QM	FPC	BIM	SCM	Guide Contract Value (1)

RQSC | The Register of Qualified Steelwork Contractors Scheme **Bridgeworks**

Steelwork contractors for bridgeworks

The Register of Qualified Steelwork Contractors Scheme for Bridgeworks (RQSC – Bridgeworks) is open to any Steelwork Contractor who has a fabrication facility within the UK or European Union.

BCSA

Applicants may be registered in one or more category to undertake the fabrication and the responsibility for any design and erection of:

- **FB** Footbridges
- **CF** Complex footbridges
- **SG** Sign gantries
- **PG** Bridges made principally from plate girders
- **TW** Bridges made principally from trusswork
- **BA** Bridges with stiffened complex platework (eg in decks, box girders or arch boxes)
- **CM** Cable-supported bridges (eg cable-stayed or suspension) and other major structures (eg 100 metre span)
- **MB** Moving bridges
- **SRF** Site-based bridge refurbishment
- **FRF** Factory-based bridge refurbishment
- **AS** Ancilliary structures in steel associated with bridges, footbridges or sign gantries (eg grillages, purpose-made temporary works)
- **QM** Quality management certification to ISO 9001
- **FPC** Factory Production Control certification to BS EN 1090-1
  1 – Execution Class 1 2 – Execution Class 2
  3 – Execution Class 3 4 – Execution Class 4
- **BIM** BIM Level 2 compliant
- **SCM** Steel Construction Sustainability Charter
  ● = Gold ● = Silver ● = Bronze ● = Certificate

Notes

(1) Contracts which are primarily steelwork but which may include associated works. The steelwork contract value for which a company is pre-qualified under the Scheme is intended to give guidance on the size of steelwork contract that can be undertaken; where a project lasts longer than a year, the value is the proportion of the steelwork contract to be undertaken within a 12 month period.

Where an asterisk (*) appears against any company's classification number, this indicates that the assets required for this classification level are those of the parent company.

BCSA steelwork contractor member	Tel	FB	CF	SG	PG	TW	BA	CM	MB	SRF	FRF	AS	QM	FPC	BIM	NHSS 19A	NHSS 20	SCM	Guide Contract Value (1)
Adey Steel Ltd	01509 556677	●	●	●	●	●	●			●	●	●	✓	3			✓	●	Up to £3,400,000
AJ Engineering & Construction Services Ltd	01309 671919	●		●	●	●	●	●	●	●	●	●	✓	4				●	Up to £3,400,000
ASD Westok Ltd	0113 205 5270	●		●	●							●	✓	4				●	Up to £6,500,000
Beaver Bridges Ltd	01204 668773	●	●	●	●	●	●	●	●	●	●	●	✓	4			✓		Up to £6,500,000
BHC Ltd	01555 840006	●	●	●	●	●	●	●	●			●	✓	4	✓			●	Up to £3,400,000
Billington Structures Ltd	01226 340666	●		●	●	●	●	●	●			●	✓	4	✓	✓	✓	●	Above £10,000,000
Bourne Group Ltd	01202 746666	●		●	●	●				●		●	✓	4	✓		✓	●	Above £10,000,000
Briton Fabricators Ltd	0115 963 2901	●	●	●	●	●	●	●	●	●	●	●	✓	4			✓	●	Up to £10,000,000
Cairnhill Structures Ltd	01236 449393	●	●	●	●	●	●	●		●	●	●	✓	4			✓	●	Up to £6,500,000
Cementation Fabrications	0300 105 0135	●	●	●	●	●	●	●	●	●	●	●	✓	3			✓	●	Up to £10,000,000
D Hughes Welding & Fabrication Ltd	01248 421104	●		●		●			●	●	●	●	✓	4			✓		Up to £600,000
Four-Tees Engineers Ltd	01489 885899	●	●	●	●	●	●		●	●	●	●	✓	3			✓	●	Up to £3,400,000
Fullpen Fabrications	0203 6335586	●	●	●	●	●	●					●	✓	3			✓		Up to £600,000
Jamestown Manufacturing Ltd	00 353 45 434 288	●	●	●	●	●	●					●	✓	4			✓		Up to £10,000,000
Kiernan Structural Steel Ltd	00 353 43 334 1445	●		●	●	●			●			●	✓	4	✓		✓	●	Up to £1,200,000
M&S Engineering Ltd	01461 40111	●		●		●	●	●		●	●	●	✓	3					Up to £2,400,000
M Hasson & Sons Ltd	028 2957 1281	●	●	●	●	●	●	●	●	●	●	●	✓	4			✓	●	Up to £2,400,000
Millar Callaghan Engineering Services Ltd	01294 217711	●	●	●	●	●	●	●	●	●	●	●	✓	4			✓		Up to £2,400,000
Murphy International Ltd	00 353 45 431384	●	●	●	●	●	●			●	●	●	✓	4			✓	●	Up to £6,500,000
Nusteel Structures Ltd	01303 268112	●	●	●	●	●	●	●	●	●	●	●	✓	4		✓	✓	●	Up to £6,500,000
REIDsteel	01202 483333	●			●	●	●		●			●	✓	4				●	Up to £10,000,000
Severfield plc	01845 577896	●	●	●	●	●	●	●	●	●	●	●	✓	4	✓	✓	✓	●	Above £10,000,000
William Hare Ltd	0161 609 0000	●	●	●	●	●	●	●	●	●	●	●	✓	4	✓	✓	✓	●	Above £10,000,000
Non-BCSA member																			
Allerton Steel Ltd	01609 774471	●	●	●	●	●	●	●				●	✓	4	✓		✓	●	Up to £5,000,000
AMCO Giffen	01226 243413	●	●	●	●	●	●		●	●	●	●	✓	4			✓		Up to £1,200,000
Carver Engineering Services Ltd	01302 751900	●		●	●	●	●		●	●	●	●	✓	4			✓		Up to £5,000,000
Centregreat Engineering Ltd	02920 226088	●	●	●	●	●	●	●	●	●	●	●	✓	4		✓			Up to £3,400,000
Cimolai SpA	01223 836299	●	●	●	●	●	●	●	●	●	●	●	✓	4		✓	✓	●	Above £10,000,000
CTS Bridges Ltd	01484 606416	●	●	●	●	●	●	●	●		●	●	✓	4			✓		Up to 1,200,000
Donyal Engineering Ltd	01207 270909	●		●						●	●	●	✓	3		✓	✓		Up to £2,400,000
Eiffage Metal	07511 177815	●	●		●	●	●	●	●	●	●	●	✓	4			✓		Above £10,000,000
Harrisons Engineering (Lancashire) Ltd	01254 823993	●	●	●	●	●	●	●	●	●	●	●	✓	3		✓	✓		Up to £3,400,000
Hollandia Infra BV	+31 (0) 180 519956	●	●	●	●	●	●	●	●	●	●	●	✓	4					Above £10,000,000
HS Carlsteel Engineering Ltd	020 8312 1879									●	●	●	✓	3			✓		Up to £2,400,000
In-Spec Manufacturing Ltd	01642 210716			●						●	●	●	✓	4		✓	✓		Up to £2,400,000
J&D Pierce Contracts Ltd	01505 683724	●	●		●	●	●	●	●			●	✓	4		✓	✓		Above £10,000,000
Kelly's Welders & Blacksmiths Ltd	01383 512 517											●	✓	2			✓		Up to £350,000
Lanarkshire Welding	01698 264271	●	●	●	●	●	●	●	●	●	●	●	✓	4		✓	✓	●	Up to £5,000,000
Taziker Industrial Ltd	01204 468080	●	●	●	●	●	●	●	●	●	●	●	✓	3		✓	✓	●	Above £10,000,000
Total Steelwork & Fabrication Ltd	01925 234320	●		●		●				●	●	●	✓	4			✓		Up to £5,000,000
Victor Buyck Steel Construction	00 32 9 376 2211	●	●	●	●	●	●	●	●	●	●	●	✓	4		✓	✓	●	Above £10,000,000

BCSA

Stakeholder Members

Stakeholder Members are clients, professional offices, educational establishments etc which support the development of national specifications, quality, fabrication and erection techniques, overall industry efficiency and good practice.

Company name	Tel
Griffiths & Armour	0151 236 5656
Highways England Company Ltd	0300 123 5000
Keiths Welding Limited	07791 432 078
Magna Inspections Ltd	01377 229632

Company name	Tel
MMCEngineer Ltd	01423 855939
Paul Hulme Engineering Ltd	07801 216858
Sandberg LLP	020 7565 7000
Solent Commercial Management Limited	07852 309104

Company name	Tel
Structural & Weld Testing Services Ltd	01795 420264
SUM ADR Ltd	07960 775772
Thames Welding Ltd	07912 691704

Industry Members

Industry Members are those principal companies involved in the direct supply to all or some Steelwork Contractor Members of components, materials or products. Industry member companies must have a registered office within the United Kingdom or Republic of Ireland.

QM Quality management certification to ISO 9001

FPC Factory Production Control certification to BS EN 1090-1
1 Execution class 1 2 Execution class 2
3 Execution class 3 4 Execution class 4

NHSS National Highway Sector Scheme

CA Conformity Assessment
UKCA and/or CE Marking compliant, where relevant:
M manufacturer (products UKCA and/or CE Marked)
D/I distributor/importer (systems comply with the CPR)
N/A CPR not applicable

SCM Steel Construction Sustainability Charter
● = Gold ● = Silver
● = Bronze ● = Certificate

SfL Steel for Life Sponsor

Steel for Life sponsors

Level	Company name	Sector	Tel	QM	CA	FPC	NHSS	SCM	Website	Email
Headline	Barrett Steel Limited	Steel producers and stockholders	01274 474314	✓	M	4	3B		https://www.barrettsteel.com	sales@barrettconstructional.com
Gold	Cleveland Steel & Tubes Ltd	Steel producers and stockholders	01845 577789	✓	M	3	3B		https://www.cleveland-steel.com	sales@cleveland-steel.com
Gold	National Tube Stockholders Ltd	Steel producers and stockholders	01845 577440	✓	D/I	4	3B		https://nationaltube.co.uk	sales@nationaltube.co.uk
Gold	voestalpine Metsec plc	Manufacturing and structural services	0121 601 6000	✓	M	4		●	https://www.metsec.com	metsec.plc@voestalpine.com
Gold	Wedge Group Galvanizing Ltd	Protective Coatings	01902 601944	✓	N/A				https://www.wedge-galv.co.uk	info@wedg-galv.co.uk
Silver	Barnshaw Section Benders	RQSC Buildings	0121 557 8261	✓	N/A	4		●	https://www.barnshaws.com	sectionbending@barnshaws.com
Silver	Behringer Ltd (Vernet Behringer)	Manufacturing and structural services	01296 668259		N/A				https://www.behringerltd.co.uk	info@behringerltd.co.uk
Silver	FICEP UK Ltd	Manufacturing and structural services	01924 223530		N/A				https://www.ficep.co.uk	info@ficep.co.uk
Silver	Hempel	Protective Coatings	01633 874024	✓	N/A				https://www.hempel.com	sales.uk@hempel.com
Silver	Joseph Ash Galvanizing	Protective Coatings	01246 854650	✓	N/A				https://www.josephash.co.uk	sales@josephash.co.uk
Silver	Sherwin Williams Ltd	Protective Coatings	01204 521771	✓	N/A				http://www.sherwin-williams.com	enquiries@sherwin.com
Silver	Voortman UK Ltd	Manufacturing and structural services	+31 (0)548 536 373		N/A				https://www.voortman.net/en	info@voortman.net

Manufacturing and Structural Services

Company name	Tel	QM	CA	FPC	NHSS	SCM	SfL
Albion Sections Ltd	0121 553 1877	✓	M	4			
Behringer Ltd (Vernet Behringer)	01296 668259		N/A				
Cast Connex UK Ltd	01416 806 3521	✓	M				
Cellbeam Ltd	01937 840600	✓	M	4	20		
Construction Metal Forming Ltd	01495 761080	✓	M	3			
Duggan Profiles & Steel Service Centre Ltd	00 353 567722485	✓	M	4			
FICEP UK Ltd	01924 223530		N/A				
Farrat Isolevel	0161 924 1600	✓	N/A				
Hadley Industries Plc	0121 555 1342	✓	M	4		●	
Hi-Span Ltd	01953 603081	✓	M	4		●	
Kaltenbach Ltd	01234 213201		N/A				
Kingspan Structural Products	01944 712000	✓	M	4		●	
Lincoln Electric (UK) Ltd	0114 287 2401	✓	N/A				
Peddinghaus Corporation UK Ltd	01952 200377		N/A				
Tata Steel – ComFlor	01244 892199	✓	M	4			
Voestalpine Metsec	0121 601 6000	✓	M			●	✓
Voortman UK Ltd	+31 (0)548 536 373		N/A				✓

Software

Company name	Tel	QM	CA	FPC	NHSS	SCM	SfL
Autodesk Ltd	01252456600		N/A				
Fabsec Ltd	01937 840641		N/A				
IDEA StatiCa UK Ltd	02035 799397		N/A				✓
StruMIS Ltd	01332 545800		N/A				
Trimble UK Limited	0113 887 9790		N/A				

Site services and installation

Company name	Tel	QM	CA	FPC	NHSS	SCM	SfL
Composite Profiles UK Ltd	01202 659237		D/I				
Deconstruct UK Ltd	02035 799397	✓	N/A				
Easi-Edge Ltd	01777 870901	✓	N/A				
Keltbray Holdings Ltd	0207 643 1000	✓	N/A				
MSW UK Ltd	0115 946 2316	✓	D/I				
Prodeck-Fixing Ltd	01278 780586	✓	D/I				
Structural Metal Decks Ltd	01202 718898	✓	M	4			
Stud-Deck Services Ltd	01335 390069		D/I				

Structural fasteners

Company name	Tel	QM	CA	FPC	NHSS	SCM	SfL
Advanced Bolting Solutions Limited	0116 251 2251	✓					
BAPP Group Ltd	01226 383824	✓	M		3		
Cooper & Turner Ltd	0114 256 0057	✓	M		3		
Howmet Fastening Systems Ltd	01952 290011	✓	M				
Lindapter International	01274 521444	✓	M				
Tension Control Bolts Ltd	01978 661122	✓	M		3		

Steel producers and stockholders

Company name	Tel	QM	CA	FPC	NHSS	SCM	SfL
AJN Steelstock Ltd	01638 555500	✓	M	4			
Arcelor Mittal Distribution - Scunthorpe	01724 810810	✓	D/I	4	3B		✓
ASD Metals UK	0113 254 0711	✓	D/I	4	3B	●	
Barrett Steel Limited	01274 474314	✓	M	4	3B		✓
British Steel Ltd	01724 404040	✓	M		3B		
Cleveland Steel & Tube Limited	01845 577789	✓	M	3	3B		✓
Daver Steels Ltd	0114 261 1999	✓	M	3	3B		
Dent Steel Services (Yorkshire) Ltd	01274 607070	✓	M	4	3B		
Murray Plate Group Ltd	0161 866 0266	✓	D/I	4	3B		
National Tube Stockholders Ltd	01845 577440	✓	D/I	4	3B		✓
Rainham Steel Co Ltd	01708 522311	✓	D/I	4	3B		
Tata Steel – Tubes	01536 402121	✓	M		3B		
The Alternative Steel Co Ltd	01942 826677	✓	D/I				

Protective coatings

Company name	Tel	QM	CA	FPC	NHSS	SCM	SfL
Forward Protective Coatings Ltd	01623 748323	✓	N/A				
Hempel	01633 874024	✓	N/A				✓
Highland Metals Ltd	01343 548855	✓	N/A				
International Paint Ltd	0191 469 6111	✓	N/A				
Jack Tighe Ltd	01302 880360	✓	N/A		19A	●	
Joseph Ash Galvanizing	01246 854650	✓	N/A				✓
PPG Architectural Coatings UK & Ireland	01924 354233	✓	N/A				
Sherwin-Williams UK Ltd	01204 521771	✓	N/A				✓
Vale Protective Coatings Ltd	01949 869784		N/A				
Wedge Group Galvanizing Ltd	01902 601944	✓	N/A				✓

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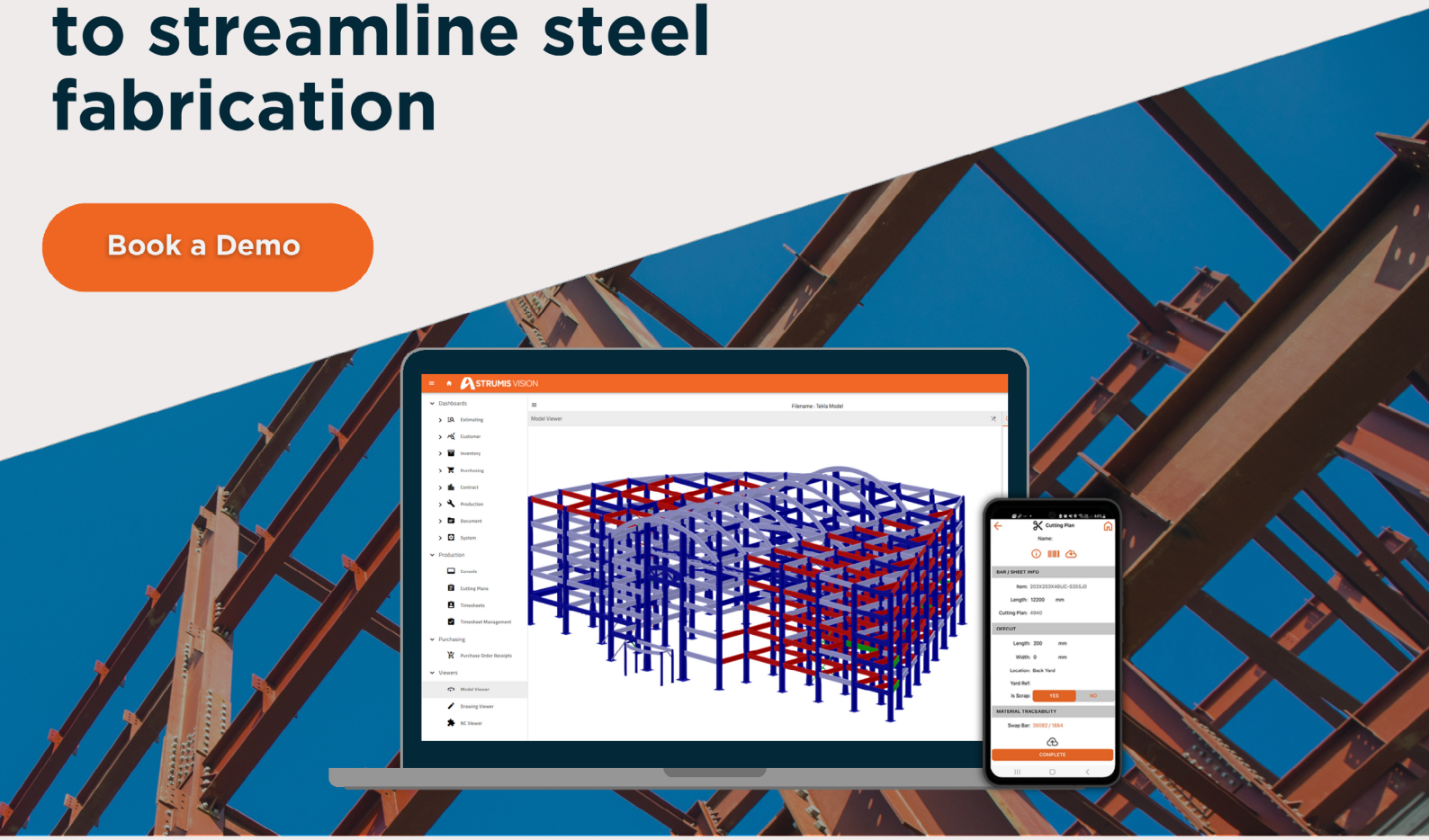

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