

Node Steelwork: The Backbone of Modern Construction

25 April 2023

It is common for prestigious office developments and other steel buildings to install exposed external bracing steelwork to meet the requirements of architects and clients with exacting standards. The “Nodes” connecting these braces need a fabricator who can skilfully deliver massive, complex, labour-intensive fabrications with a high degree of quality control. ECS Engineering Services has a proven track record in meeting these criteria for a wide range of clients, having fabricated hundreds of nodes across many structures over the years.

Dimensional Precision

Node structures serve as the connection points for exposed external bracing steelwork. Typically, these structures are complex fabrications that require precisely cut, thick steel profiles to be assembled into unique structures with sophisticated welding requirements and high levels of aesthetic finish.

As a fabricator certified to BS EN 1090 Execution Class 4, and welding certified to BS EN 3834, ECS is perfectly placed and experienced to offer main steel contractors this service.

Handling the Weight

Manufacturing node structures is a labour-intensive process that requires a high level of skill and care from fabricators, as the physical size and weight of each structure necessitates careful handling and assembly. The welding required for these nodes is complex due to the intricate designs of architects and the demands placed on connection points. ECS's team of welders possess an expert level of competence and diligence to ensure that the welding is executed with the necessary accuracy.

Furthermore, the exacting tolerances and quality requirements of the thick profiles used to make the nodes create demands on procurement. ECS Engineering Services closely collaborates with specialist suppliers to ensure the finest quality materials are delivered to enhance its internal plate processing capacity.

Complex node structures are typically subjected to various pre-fabrication non-destructive testing (NDT), which includes ultrasonic lamination testing of the profiled plates to ensure the highest quality control. Final inspection will involve NDT and is usually a combination of magnetic particle inspection (MPI), ultrasonic and X-ray testing of the welds, as well as a detailed dimensional assessment of each node assembly. ECS combines in-house inspection skills with specialist inspection contractors to offer full conformance to the most demanding specifications.

Expertise on Display

Steve Crapper, Precontracts Director, commented: "Even with these challenges, our team have completed the manufacture of nodes for several flagship UK office developments over recent years. Each project has made clear our team's skill in

massive, challenging, highly specialised fabrications that require a high level of quality control.”

The use of non-destructive testing during pre-fabrication, final inspection, and dimensional inspection ensures that each node structure is constructed to the highest standard, meeting even the most rigorous building project criteria. ECS’s clients remain extremely satisfied with the quality of work delivered on recent projects, and the node structures are proudly on display as part of the exposed external bracing steelwork on some of the country’s flagship developments.

Image captions:



Images 1: ECS node structures



Images 2: Node Steelworks by ECS

The image(s) distributed with this press release are for Editorial use only and are subject to copyright. The image(s) may only be used to accompany the press release mentioned here, no other use is permitted.

About ECS Engineering Services

ECS Engineering Services has over 30 years experience in delivering high quality, reliable and cost effective engineering solutions, specialising in bespoke design and construction of water, energy and environmental processing and management projects.

In conjunction with key supply partners, ECS has the expertise and capacity to design and install a wide range of water control engineering projects. With in-house fabrication services, which have CE Marking approval to EXC4, well equipped and highly skilled engineers can also complete structural steelwork, bespoke fabrication work and access metalwork to the highest standard.

With a complete range of site services available, ECS offers a full turnkey project managed service for mechanical and electrical installations including managing civils contractors and supplying pipework, control and automation work to ensure that every installation is installed and commissioned to the highest standard. Existing clients include the majority of the UK Water Utility companies, Government Agencies and Internal Drainage Boards.

Press contact:

ECS Engineering

Steve Crapper, Precontract Director

Tel: +44 (0)1952 605849

Web: www.ecsengineeringservices.com

Email: scrapper@ecseng.co.uk

Editorial contact:

DMA Europa Ltd.

Jake Lacey-Watts

Tel: +44 (0)1905 917477

Web: news.dmaeuropa.com

Email: jake.lacey-watts@dmaeuropa.com