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ENGINEERING

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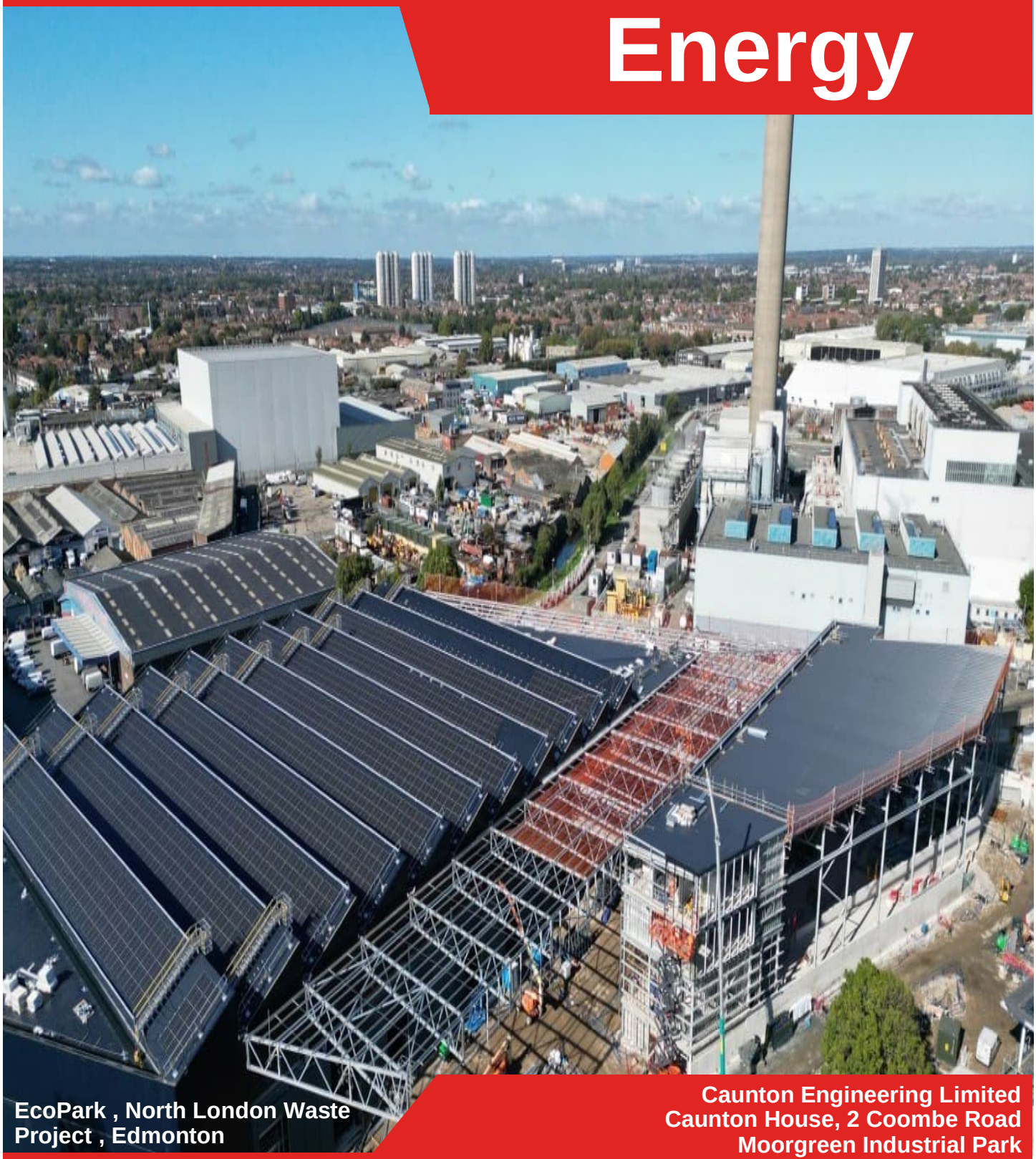
Steelwork for

Energy



EcoPark , North London Waste Project , Edmonton

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Caunton Engineering is one of the UK's leading steelwork contractors, fabricating in excess of 40,000 tonnes per annum with a turnover in the region of £100m. Supported with over 50 years' experience we specialise in the design, fabrication and erection of structural and secondary steelwork, operating across all sectors of the construction industry.

Caunton Engineering's reputation is for engineering excellence in the Design and Build sector and working with Consulting Engineers on major developments.
We pride ourselves on our ability to remain agile and, as a result, offer a personalised service to our clients. The company is a Gold Status holder within the Steel Construction Sustainability Charter and committed to delivering Net Zero by 2050.

Sleaford Renewable Energy Plant

Sustainable straw-burning power station

Client: Burmeister Wain Scandinavian Contractor A/S.
Main Contractor: North Midland Construction
Engineer: Ramboll
Tonnage: 1,300 tonnes

Caunton Engineering supplied the steelwork frame for a new renewable energy plant in Sleaford. This will be only the second power station in the UK to be fuelled by burning straw.

Caunton are contracted to North Midland Construction who will be undertaking the construction of the civils and building works for main contractor Burmeister Wain Scandinavian Contractor A/S.

The plant will comprise a pair of 3,000 sq. m straw barns, straw conveyor, straw feeder, wood chip import facility, combined turbine and boiler halls plus administration buildings. The steelwork requires over 1300te of fabrication and erection of the steelwork. Caunton are also Supplying and Installing all of the Miscellaneous / Secondary steelwork such as Steel Staircases, Hand Rails, Ladders and flooring to all buildings Interestingly surplus heat will be piped to Sleaford's public swimming baths and some other community facilities in the town. The plant is due to be operational in 2014.

On a sustainability note, the Sleaford Renewable Energy Plant will use straw, sourced mainly from local farms, to generate 38MW of recovered energy which is enough to provide power and heat for around 65,000 homes.

The plant will save around 250,000 tonnes of CO2 emissions every year. Ash from the plant will be recycled for use as fertiliser on farmland. The new Renewable Energy Plant is also expected to create 80 permanent jobs and will provide local straw contracts of up to £10m per year.

Caunton are delighted to have helped with such a beneficial project.

Energy from Waste Plant, Buckinghamshire

Will generate enough electricity to power 36,000 homes

Client: FCC Environment/ Buckinghamshire CC
Main Contractor: Sir Robert McAlpine
Engineer: URS Group
Tonnage: 2,000 tonnes

This plant at Greatmoor, will reduce reliance on landfill, increasing recycling and generate 22MW electricity – enough to power 36,000 homes.

Over 2000te of steelwork, all galvanized, for the major components of the power station. These comprise the Tipping Hall, Waste Bunker Hall, Boiler Hall, Flue Gas Treatment Area, Turbine Hall, Admin offices and a feature canopy. The resulting fabrication of the steelwork itself for this building, which is up to 52 metres in height, is of a varied nature. It comprises latticed roof trussed areas, latticed column areas, UB column and rafters areas, and multi-storey beam & column for the seven storeys of the Admin and Turbine areas. Three zones required crane beams.

EcoPark, North London Waste Project, Edmonton

Expects to cater for 700,000 tonnes of residue waste from the seven north London boroughs

Contractor : Taylor Woodrow
Architect : Grimshaw Architects
Engineer : Waterman Structures
Tonnage : 1,700 tonnes

A major Energy Recovery Facility for main contractor Taylor Woodrow Construction North London Waste Authority (NLW) are redeveloping the Edmonton EcoPark site in Enfield, London. The facility expects to cater for up to 700,000 tonnes of residual waste from the seven north London boroughs. Currently the central part of the site is an Energy from Waste plant which is nearing the end of its operational life. The North London Heat and Power Project (NLHPP) aims to replace this with a new and substantially more efficient Energy Recovery Facility which will generate up to 70 megawatts of electricity, enough to power around 127,000 homes as well as providing residual heat to a local heat network.

Engineered by Waterman Group the initial design had trusses at 8m centres, but after a value engineering exercise this was rationalised to fewer trusses spaced at 24m (see photograph above), and as well as cost and programme benefits this design enhancement contributed to towards a carbon reduction of approximately 720 tonnes in the frame.

Brigg Renewable Energy Centre

Steel is the most efficient way of designing this sort of energy centre

Main Contractor: BWSC
Engineer**:** Ramboll
Architect: Ramboll
Tonnage: 1,430 tonnes

Caunton supplied and erected over 1,430te of steelwork, all galvanized, for the major components of the power station. Overall the facility comprises a turbine building and attached office block and boiler hall, two straw barns and woodchip shed, All of these structures are steel-framed, as are a number of enclosed bridges linking the main buildings and housing conveyor belts. Caunton's Secondary Steelwork Division also provided the required Secondary Steelwork, cladding and doors.

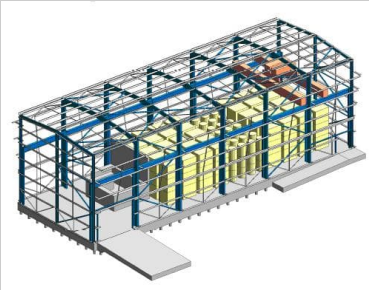
Steel is the most efficient way of designing this sort of energy centre as is allows flexibility to construct the tall buildings quickly and economically.

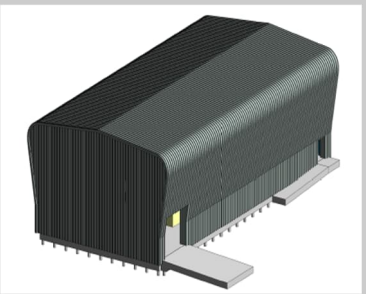
BWSC employs more than 450 staff globally, and the company is a world leader in construction, commissioning or Operation and Maintenance (O&M) of power plants. BWSC is owned by the Mitsui Group of companies. Caunton were very pleased to have helped BWSC with such a worthwhile venture.

Magnox

Interim Storage Facilities for Nuclear Waste - at Four Nuclear Power Stations

As part of Magnox's decommissioning programme, Interserve, the international support services and construction group, has been appointed as the sole Tier 2 contractor to design and build highly-engineered industrial grade interim storage facilities (ISF) to offer protection for Intermediate Level Waste (ILW) containers until the geological disposal facility is available. This involves the development of a scalable design for facilities to store intermediate-level waste held in ductile iron containers, and then the construction of four such facilities on separate sites with variable ground conditions. ISFs of varying sizes, but similar in design, will be built at Bradwell, Berkeley, Hinkley Point A and Chapelcross.





Client: Magnox.
Main Contractor: Interserve Construction
Architect / Engineer: Arup
Tonnage: 565 tonnes

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