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ENGINEERING

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Steelwork for

Transport



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Caunton is one of the UK's leading steelwork contractors, offering a one stop construction solution. Specialising in the design, fabrication and erection of structural steelwork Caunton Engineering can give a first class service every step of the way.

We are a family owned company, established in 1969 and we have since proven to be a progressive pioneer of fully automated manufacture, information technology and innovation.

Our Nottingham based production facility employs some of the most up to date computer numerically controlled machinery within our 110,000 sq foot plant on a 42 acre site.

Road Transport

Stop 24 Motorway Service Area - Folkestone, Kent

An innovative catering concept demanded sophisticated fabricated steelwork

Caunton Engineering completed the erection of over 450te of structural steelwork for the new Stop 24 Motorway Service Station at J11 on the M20 near Folkestone. Stop 24, a £9.2m project, is designed as a new concept in motorway service areas (MSA's). The area will be concentrating on catering for the cross channel traveller. The aim is for Stop 24's amenity building to provide an exciting retail and food offer for those looking to make their first or last stop in the UK. This will include a number of operators more commonly found in airports, the high street or in shopping centres. The high class development draws on the concept of the scheme providing a 'departure lounge' for cross-channel travellers to Continental Europe. As part of this concept, developer Henry Boot Developments is holding discussions with cross-channel operators with a view to providing real time information on arrivals and departures of the various services.

Caunton's steelwork for the 50,000 square feet Reception Area comprises a Mixed Portal Frame design. The lower level portal comprises a traditional

rafter and the second higher level is manufactured from feature tapered girder rafters and columns. This in turn forms the roof construction for the arrivals area.

Client: Henry Boot Developments
Main Contractor: Crispin & Borst - A Vinci Plc Company
Engineer: Waterman Structures
Architect: Collado Collins
Tonnage: 450 tonnes



Manchester Transport Interchange

State of the art design including "boomerang" aerofoil canopy

Caunton supplied and erected structural steelwork for what is increasingly becoming a new Manchester landmark – the new Transport Interchange. Client GMPTE and architect Jefferson Sheard worked closely to realise their aspirations of producing a state-of-the-art Interchange which is clad with an innovative system of glass and profiled steel fins.

Very visible and most impressive is the steelwork for the aerofoil canopy. This 8m high x 6m wide x 100m long boomerang-shaped structure is supported by six feature columns.



Client: Greater Manchester Transport Executive
Main Contractor: Costain
Engineer: Faber Maunsell
Architect: Jefferson Sheard
Tonnage: 350 tonnes

The frame incorporates the fin supporting steelwork for the glass-topped roof – fabricated from CHS and RHS sections plus stainless steel tie rods.

Caunton worked alongside contractor Costain Construction and engineer Faber Maunsell to create what will be a lasting and striking feature complimenting Manchester's renowned transport system.

Western Pier Project - East Midlands Airport

16te Link Bridge erected during night possession

Caunton's erection department secured a night-time possession to erect a link bridge at East Midlands Airport – see photograph. Working over night meant the intrusion and inconvenience to passengers was minimal. The footbridge weighing over 16 tonnes required two mobile cranes –one 80te and one 65te capacity - and the whole operation starting at 7.30pm was complete by 4am next morning.

The bridge structure was in fact fabricated in two pieces and spliced on site prior to final erection. The bridge links

Client: East Midlands Airport
Main Contractor: B&K Building Services
Engineer: Norder Design Associates
Tonnage: 180 tonnes

the new International Departure Lounge and a new Western Terminal, thereby enhancing this thriving and expanding airport. Both these facilities, the Lounge and the Terminal, are being constructed simultaneously with the link bridge, and also employing Caunton's steelwork. In all nearly 200 tonnes of structural steelwork is being erected.



Aircraft Hangar Luton Airport

85 meter span trusses span area housing six 737's

Caunton completed the construction of a new Hangar Facility at London Luton Airport for main contractor, Marriott Construction. The total steelwork content was over 600te. The new structure is capable of housing up to six Boeing 737 airliners. The Hangar has a clear span of 85 metres and accommodates the main hangar door 80 metres in width by 13.6 metres high top hung and weighing over 24 tonnes.

The hangar is constructed with latticed trusses to follow a curved profile. The 85 m. span trusses were themselves laid out in faceted form and were each fabricated in five sections. Lateral stability of the hangar was introduced by means of a substantial wind girder in the roof plane, with loads

transferred to the base via a minimum of vertical bracing.

A major technical problem to overcome was the provision of accuracy required for support of the door mechanism. The door support beam had in fact to be re-levelled after installation of the roof cladding and the application of the door loads.



In addition to the supply of the hangar, a three storey steel framed office block has been constructed adjacent to one elevation.

Client: Signature Flight Support
Main Contractor: Kier Marriott Construction
Engineer: Roscoe Capita
Architect: Architects Co-Partnership
Quantity Surveyor: Peter Bushnell Associates
Tonnage: 600 tonnes

Baggage Hall at Birmingham International Airport

Storey height lattice girder erected in tight time slot



Client: Birmingham International Airport
Main Contractor: Carillion formerly Alfred McAlpine Capital Projects
Engineer: Mott Macdonald & Webb Yates
Architect: De-novo Architecture Ltd
Tonnage: 1,200 tonnes

Caunton worked at Birmingham International Airport on the extension to Terminal One's Baggage Handling facility. The extension abuts the existing baggage hall and conveyor housing and the airport's requirements for a column free zone adjacent to this meant the need for a large span storey height lattice girder, supporting first floor and roof – see photograph. The girder had to

be erected in a tight time slot and therefore, to ensure no problems occurred, the workshop carried out trial assembly

before sending it to site. The girder weighed some 11 tonnes and spanned 14.5m. Because of this, everything went like clockwork on site and the truss was erected on programme.

Birmingham is the fifth largest airport in the UK in terms of passenger throughput and Terminal 1 handles two million passengers per year. The project includes the provision of a new sortation carousel, expanded storage areas and a dedicated loading facility for recycled waste.

Blackpool Tramway - Starr Gate Depot

New depot to house twenty new 'supertrams'

Caunton are working on a new £20million depot to house twenty new Supertrams for Blackpool after the tramway's upgrade.

The building comprises four high level and four low level roof units. Each high level unit alternates with a low level one - working down the building. A high level unit in plan is 66 metre span and 12 metre wide. The low level units are the same. The photograph shows the half way stage for the steelwork ahead of the sheeting and cladding operations.

The overall roof is supported by rafters

which in the main are curved in elevation; comprising two distinct curves in two opposite directions to create the appearance of a flowing wave effect imaginatively designed in order to reflect the proximity of the sea.

The rafters, for both high and low level units, span directly between similar columns. The high level rafter comprises a single universal beam (albeit spliced) - the profile is a concave curve meeting a convex one. The low level comprises also a single universal beam (similarly spliced) - but the profile in this case comprises in the first place a straight section, before meeting first a concave profile and finally a convex. (Numerically - the radii of curvature for high level

are 100 metres and 115 metres and the low level 200m and 75 m).

Manufacture of the rafters required highly sophisticated modelling, engineering and fabrication techniques. These Caunton Engineering have developed most successfully over the years.



Client: Blackpool Transport Services
Main Contractor: VolkerFitzpatrick Contractors
Engineer: RPS Burks Green
Tonnage: 405 tonnes

Siemens Train-care Facility - Southampton

Three buildings erected at times only 3 metres from "live" rail line

Caunton constructed the steelwork for the Northam Traincare Facility. This was to be the Service and Maintenance Depot for the new Siemens fleet for SouthWest Trains, built near Southampton.

buildings were constructed only three metres from the "live" main line. Exacting rail possessions had to be secured, to enable Caunton to comply with the rigorous demands of client Railtrack and their safe working practices.

The depot itself features three main buildings - the core maintenance facility (at 233mx23m the largest building), the wheel lathe building and the train-wash building. In total, these structures comprise over 800 tonnes of structural steelwork. The maintenance facility & train-wash



Main Contractor: VolkerFitzpatrick Contractors
Engineer: RPS Burks Green
Architect: RPS Burks Green
Tonnage: 800 tonnes

Train-care Maintenance Depot for The East London Line

Olympics-linked infrastructure improvements

Caunton supplied the structural steelwork for the new Train Maintenance Depot at New Cross for the Balfour Beatty-Carillion consortium.

The depot is a component of a massive £363m main works contract awarded by Transport for London, TfL, to the consortium. As a result a new railway for East London moves a step closer. This major investment is one of the cornerstones of TfL's £10bn Investment Programme and will deliver a key Olympic transport commitment - the construction of a new railway line between West Croydon, Crystal Palace and Dalston Junction, incorporating the existing

East London Line.

Caunton were delighted to be sharing in the task of ensuring the spectators travel to the London Olympics both on time and in comfort.



Client: Transport for London
Main Contractor: Balfour Beatty - Carillion JV
Engineer: Tony Gee & Partners
Architect: Acanthus LW Architects
Tonnage: 650 tonnes

