

Extra processing

Providing structural solutions for international fabricators and service centres



Make an impressive start

The competitive edge

Construction projects are time critical. Extra Processing ensures projects take the fast track.

Offices for Mcann Erickson, Bonis Hall, CheshireArchitect: **Bowker Sadler Partnership Limited**Steelwork contractor: **Caunton Engineering Ltd**Steel Supplier: **Corus Construction & Industrial**Main Contractor: **Bowmer & Kirkland Limited**Completion date: **September 2003**

To structural fabricators and service centres, we're a highly experienced part of their team – providing expertise and real value by processing a full range of sections, hollow sections and plates for a diverse range of markets:

- construction and civil engineering
- shipbuilding
- offshore
- general engineering

When you need international capability

Extra Processing has significant international experience in supporting structural steel fabricators throughout the world. Some recent projects we've been involved in include:

- milled sections to the USA
- cutting and cambering sections for Tanzania
- processing of crane rails for Vietnam
- shot blasted and painted bulb flats to Finland, Germany and Spain
- cut, drilled and galvanised sections to Norway
- processing of cathode bar for the aluminium industry in Iceland and Germany
- supply of split tees to Brazil

Buying you time

Facing a project with a tight deadline? Save time and cost by ordering sections which are fully processed and delivered either directly to site, ready for you to fabricate, or to your own production facilities.

Sections are processed quickly and efficiently in the workshop at the end of the Teesside beam mill; however Corus also has a number of workshops at different sites, which also offer local processing with short lead times and reduced transport costs.

Overcoming bottlenecks

The world's largest columns, with a mass in excess of one tonne per metre, are rolled at Teesside beam mill. Extra Processing are experts in handling and processing these and other complex sections, including asymmetric beams and plate girders.

Flexibility is crucial

Fully automated CNC machines using Beamdrill and other advanced manufacturing systems are used to give a flexible and responsive service, taking information from your data files to meet your precise requirements.

Co-ordinating complex projects

As well as providing you with fully processed material ready for you to fabricate, we also can co-ordinate the supply from a range of other sources, offering you a full project management service.

Quality assurance

Corus' manufacturing plants are assured to ISO 9001, undertaken by Lloyds Register of Quality Assurance. In addition we hold approvals from a range of national certifying authorities.



Arnotts department store, Dublin

Architect: **Keane Murphy Duff**

Steelwork contractor: **Thompson Engineering Ltd/Fisher Engineering**

Steel Supplier: **Corus Construction & Industrial**

Main Contractor: **G & T Crampton Ltd**

Completion date: **1997**

Arnotts department store, Dublin

Asymmetric beams give you a competitive advantage.

Forward-looking designers are increasingly turning to Corus' innovative range of asymmetric beams in view of the flexibility they allow in design and construction.

Extra Processing can handle the full range of asymmetric sizes, which are rolled with a depth of between 280 and 300mm, and with a mass ranging from 74kg/m to 249k/m.

Asymmetric beams can also be shot blasted and painted in accordance with the Slimdek design guide, which involves painting the bottom flange.

A special 'admiralty diamond' pattern on the top flange of the asymmetric beam binds with the surrounding concrete, saving the expense and time of welding shear stud connectors to the top of the beam.

Extra Processing has considerable experience in accurately processing asymmetric beams. Cold sawing to an accuracy of +/- 2mm as standard, hole drilling and coping with notches, flange thins and service holes are available.

Asymmetric beams are rolled with a top flange width of 190mm and a bottom flange width of 300mm. By having this wider bottom flange, it removes the need to weld a steel shelf plate to the underside of the beam.

Dundrum shopping centre, Dublin

Multi-use structures require a multi-discipline approach.

Extra Processing responds to customers' needs by providing a package of work that allows the material to be delivered to their works in a state ready for fabrication.

The new Dundrum Town Centre in South Dublin is a good example. It is an exciting and innovative urban regeneration project scheduled to open in 2005. The state of the art facilities include supermarket and retail development stores, restaurants, approximately 100 shops, a 12 screen cinema, leisure, office and residential accommodation, medical, day care, crèche facilities, theatre, education, urban spaces and other community facilities.

Almost 1000 tonnes of material was cambered, curved and delivered on a load-by-load basis by Extra Processing, without any bottleneck occurring.

Cambering, splitting to tees, plate forming and bending, cutting and drilling and end milling are just a number of processes that are offered within Corus workshops or on a sub-contract basis, with the material arriving at the stated delivery address on time.

In Ireland, North and South, Extra Processing has long had a reputation for delivering packages of work enabling projects to run smoothly.

Dundrum shopping centre, Dublin

Architect: **Burke-Kennedy Doyle Architects**

Steelwork contractor: **Fisher Engineering Ltd**

Steel Supplier: **Corus Construction & Industrial**

Main Contractor: **John Sisk and Son**

Completion date: **2005**





One Churchill Place, Canary Wharf, London

Architect: **HOK International**

Steelwork contractor: **Victor Buyck**

Steel Supplier: **Corus Construction & Industrial**

Main Contractor: **Canary Wharf Contractors**

Completion date: **2004**

One Churchill Place, Canary Wharf, London

Good preparation provides the perfect finish.

Churchill Place, one of the five districts that make up Canary Wharf, consists of four major buildings. One Churchill Place, a 33 storey 156m high building, will house the world headquarters of Barclays Bank. Here's two ways that Extra Processing helped with this prestigious project.

Jumbo sections from Corus' Teesside beam mill form the vertical columns that give this building its robustness. Extra Processing cut the columns to an exact length and milled the ends to provide full load bearing contact, giving a very fine mirror finish – so they were square and precisely parallel.

Prepared to the tolerance of depth of section/1000, the columns were delivered ready for use - saving considerable time in the fabrication process.

Most conventional lifts are installed after the building shell has been completed, which means that the lift engineers have to compete for access with other trades working to complete the building. The Schindler elevator system has a unique construction method – it is built at the same time as the building around it and is pieced together floor by floor as the structure goes up.

In view of the huge size of the One Churchill Place contract, Schindler turned to Corus for help. Schindler provided the specifications and Extra Processing took charge – ensuring that every beam was cut, drilled, shot blasted, painted and delivered precisely in line with Schindler's requirements for constructing each shaft.

7 World Trade Centre, New York

Built on a powerful platform.

Corus has substantial experience in the manufacture and application of jumbo sections and the Extra Processing team can handle the full range of jumbo section sizes. Quality manufacturing and performance is matched by delivery precision and working with customers to smooth the flow of materials through the supply chain. The more that can be done at the mill where the sections are rolled, the less time customers need to spend transforming them into useable components. Corus has been involved in a number of major developments around the world – including the rebuilding of the 7 World Trade Centre.

The 7 World Trade Centre, across the street from the main trade centre site was the third building to collapse – several

hours after the twin towers were destroyed, in the September 11th attack.

The new building consists of fifty storeys above ground and two sub levels: these will house the electrical transformers for Consolidated Edison – the company that supplies power to most of Lower Manhattan, including the future trade buildings. Hence the quick construction of building 7 is key to the development of the whole site.

Close coordination across the different functions in Corus is vital when supplying prestigious projects. Taking part in this project confirms Corus' proud heritage of supplying steel used in the world's most important and inspiring structures.

7 World Trade Centre, New York

Architect: **Skidmore, Owings & Merrill**

Steelwork contractor: **Helmark Steel Company**

Steel Supplier: **Corus Construction & Industrial**

Main Contractor: **Tishman Construction**

Completion date: **2005**





Ikea Store, Cardiff

Contractor: **Aren Building Concepts**

Structural fabricator: **James Killelea & Co Ltd**

Steel Supplier: **Corus Construction & Industrial**

Completion date: **2004**

Ikea Store, Cardiff

Extra processing supplied speed and precision.

“We simply call off the material and it's delivered directly to us ready for fabrication.” Here's how, in the words of leading fabricator James Killelea & Co Ltd, extra processing can streamline your supply chain.

Nearly 2000 tonnes of structural steel are used in a modern Ikea store and the challenge facing every steel fabricator is to complete the intricate design as quickly as possible and to the highest standards.

“We just had to weld end plates to the beams and they were immediately ready for construction,” cite Killelea, who significantly speeded up their internal processes by ordering the heavy weight beams cut to an accuracy of 2mm by Extra Processing.

By overcoming processes that are time consuming and can slow down the overall project, Extra Processing provides real value through supplying material ready for use. This allows our customers to concentrate on the fabricated components when they arrive in a value added state.

Increasingly customers require delivery at a specific time, directly to their production lines. The manufacturing and logistical systems used by Extra Processing help to give our customers a real advantage.

Moor House, London

Inner strength.

Moor House is a nineteen storey, office and retail development occupying a key location in London and will act as a gateway to the City. The curved building has become a striking addition to the London skyline.

Corus supplied over 2000 tonnes of sections, of which more than 400 tonnes were cut, drilled, milled and shot blasted in the Extra Processing workshops.

Corus workshops, including Extra Processing, have been involved in a number of other high profile projects in recent years, including:

- 7 World Trade Center in New York
- Petronas Towers in Malaysia
- Extension of Manchester United's Old Trafford Stadium
- Rail link for Gardermoen Airport to Oslo City Centre
- Supply of processed steel for bridges in Tanzania

Our capability is to supply processed steelwork for export customers whilst also complimenting the needs of UK fabricators to cover areas of bottleneck in production.

Extra Processing provides a competitively priced one-stop workshop service, reducing lead time and transport costs through the supply chain, which provides further benefits to Corus customers.

Moor House, London

Architect: **Foster & Partners**

Steelwork contractor: **William Hare**

Steel Supplier: **Corus Construction & Industrial**








Main Contractor: **Skanska UK**

Completion date: **2004**



At a glance

Services to help you fulfil the most demanding projects.

	<p>Cutting</p>	<ul style="list-style-type: none"> • Finished length +/- 2mm • Cutting up to 27m • Mitre and skew cut
	<p>Drilling and Countersinking</p>	<ul style="list-style-type: none"> • Tolerances +/- 1mm • Auto depth control for Csk • Drilling of plate
	<p>Shotblasting and painting</p>	<ul style="list-style-type: none"> • All weldable primer • 75 microns finish • 2/3 coat systems
	<p>Asymmetric beams and Slimdek</p>	<ul style="list-style-type: none"> • Cut on CNC line • Holes in top flange • Notches
	<p>End milling</p>	<ul style="list-style-type: none"> • 100% contact • Full load bearing UC/Bearing Piles • Side and face milling
	<p>Cambering</p>	<ul style="list-style-type: none"> • Pre-camber • Curving • Press braking
	<p>Coping</p>	<ul style="list-style-type: none"> • Notches • Flange thins • Service holes

	Split to tees and straightening	<ul style="list-style-type: none"> • Split to tees up to UB1016 and UC356 x 406 • Also HE, IPE and ASTM
	Offline inspection	<ul style="list-style-type: none"> • 100% surface inspection/NDT • Stencilling/colour coding • Hard stamping/varnishing
	Galvanising	<ul style="list-style-type: none"> • 50mm to 21m length • 85 microns nominal • Shot blasting for 140 microns
	Shot blast only	<ul style="list-style-type: none"> • Sa 2.5 or Sa 3 • Up to 27m lengths • Up to 2.7m wide
	Plate forming and bending	<ul style="list-style-type: none"> • Press braking • Can rolling • Weld preparation
	CNC machining	<ul style="list-style-type: none"> • CNC vertical bores • Elga mill 4.3m x 6m table • 24 hour cover/60t craneage
	Other processes	<ul style="list-style-type: none"> • Other processes available • Nodes

Services

Cutting

Fully automatic cold sawing facilities are available for the exact cutting length of all long products produced by Corus, to the square, mitre or skew.

Tolerances

Length

Standard tolerance +/- 2mm

Examples achieved:

- Square Cutting
 - From 1 to 5 Metres Plus/Minus 0.5mm
 - From 5 to 10 Metres Plus/Minus 0.85mm
 - From 10 to 15 Metres Plus/Minus 1.10mm
- 45 Degree Mitre.
- Examples of tolerances achieved:
 - Up to 5 Metres Plus/Minus 1.00mm
 - From 5 to 10 Metres Plus/Minus 1.35mm
 - From 10 to 15 Metres Plus/Minus 1.60mm

Squareness

- Tolerances achieved: Depth of section/300

Mitre angle

- Tolerances achieved: Plus/Minus 0.5 of a Degree

Mitre capability

Section width	+ Direction	- Direction
200	55	-45
250	55	-45
300	55	-45
450	55	-45
500	55	-45
550	55	-45
600	55	-45
650	55	-45
700	47	-42
900	32	-32
1000	24	-27

Drilling to a high degree of accuracy

- Peddinghaus BDM 1250 Drill produces holes from 10mm to 50mm in diameter
- Fully Automatic
- Nine Spindles (Three to each axis)
- Totally Integrated with CAD/CAM Systems

Tolerances

Length tolerance +/-2mm, examples of hole position tolerances achieved:

- From 1 to 10 Metres Plus/Minus 1.0mm
- From 10 to 20 Metres Plus/Minus 1.5mm
- From 20 to 27 Metres Plus/Minus 2.0mm

Cross centres

Plus/Minus 0.5mm

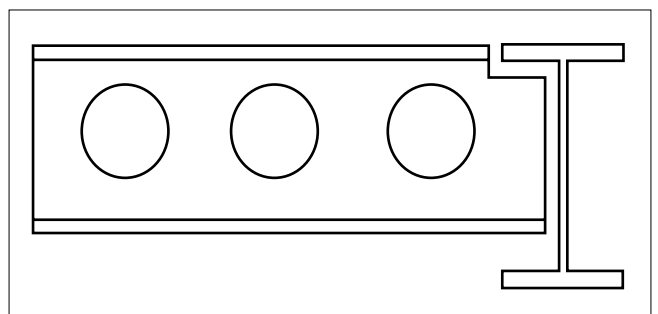
Hole size

Plus 0.25mm/Minus 0.0mm

CNC Coping

Automatic coping of materials with notches, flange thins and service holes

- Peddinghaus ABC coping machine
- Fully Automatic
- Three Burning Heads
- Totally Integrated with CAD/CAM Systems
- Full Catalogue of Copes
 - Notches
 - Flange Thins
 - Service Holes – Large Diameter & Complex shapes
 - Weld Preparations
 - Custom Copes



Asymmetric beams and Slimdek

Extra Processing can accurately process asymmetric beams and Slimdek material. Accurate production, to the same level and speed as for any other section is assured by using special equipment, which places the bars in the correct H orientation for cutting, drilling and coping.

End milling of universal beams and bearing piles for full load bearing applications

Extra Processing can machine both ends of the material to squareness of depth of section/1000. If required, one end can be machined and the other cut to exact length.

To ensure complete accuracy of operation:

- 1 The material is placed against two pegs approximately one metre in from each end of the bar. These pegs are at exactly ninety degrees to the axis of the milling head.
- 2 One end of the material is then machined flat.
- 3 The material is then turned through 180 degrees and the opposite end is then machined flat.

This procedure not only ensures that the opposing ends of the bar are square to the 'line', but also dictates that the ends are exactly parallel.

Cambering

Cambering of structural section and hollow sections is undertaken in accordance with Section 7 of the National Structural Steelwork Specification 4th edition May 2002, or as required by the customer.

Shotblast and painting

Extra processing can shotblast and prime sections, both processed and plain material - including automatic 'one flange free' applications.

The service can be provided up to and including Sa3 to BS 7079: Part 1A: 1989 (ISO 8501-1-1988), but normally Sa2.5 is requested as a standard.

Paint spraying facilities can apply various primers to pre-blasted material, with the facility to leave one flange free of paint for material such as floor beams. The paint's dry film thickness is constantly monitored to ISO 2808:1997 standard.

Coatings up to 30 microns (+/-5 microns) are applied to EN 10238 and thickness is controlled using calibrated shims to ISO 2808. Coatings over 30 microns can also be accommodated.

Split to tees

Extra processing supply a full range of tees cut from universal beams, columns and joists.

Offline inspection services

- surface inspection and dimensional tolerance checks
- hard stamping to meet offshore requirements
- stencilling and colour coding
- ultrasonic testing
- product analysis
- independent inspection
- certification

Galvanising

Extra processing is able to galvanise a wide range of Corus products. All galvanising is to EN1461 standard to 85 microns or 140 microns. Material to 140 microns needs to be shotblasted to Sa 2.5 prior to galvanising.

Other processes

Machining facilities

- CNC and conventional machining
- Weld reclamation
- Forming and bending
- 100 tonne craneage

Steel can rolling

Capability to roll a range of steel cans using a set of 5000t vertical rolls and a set of 1450 tonne horizontal rolls.



Services

Technical advice

We are always pleased to give technical advice and assistance on design, specification and use of Corus' range of construction products, including those available through Extra Processing.

Advice is given by our team of qualified engineers who have extensive experience in the design and construction of buildings, bridges and foundations. Specialist advice on fire engineering is also available. Our regional network of engineers covers the whole of the UK and Ireland and is supported by a dedicated design team based in Scunthorpe.

For technical advice please contact:

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The next step

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