

# Building The Future – Now

Design

Fabrication

& Erection

of Structural

Steelwork

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# Building The Future – Now



JSW Steel Ltd and Severfield-Rowen Plc have joined forces to form India's leading Steelwork Contracting Group





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JSW Severfield Structures Ltd (JSSL) offers the highest quality steel structures enabling Indian clients to access world class expertise and to build the future now.



JSSL factory, Bellary

### **About JSSL**

JSW Severfield Structures Ltd is a joint venture between JSW Steel Ltd and Severfield-Rowen Plc of the UK.

The core operation of JSSL is based adjacent to JSW Steel's plant at Vidyanagar in Bellary District, Karnataka.

Severfield-Rowen is the largest specialist structural steelwork group of companies in the UK, with a reputation for performance and value. The JSSL facilities mirror those of the Severfield-Rowen UK based operations.



Project: The Oval Location: London, UK Tonnes: 1.900

### We offer

- Design services
- World class manufactured products
- Precision and quality
- Integrated erection services
- Customer focus
- **FABSEC** and **IND**

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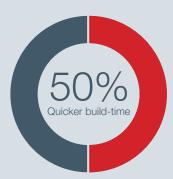
Project: Birmingham Hospital Location: Birmingham, UK Tonnes: 10,000

### The Benefits of Using Steel

No other construction material offers as much value throughout the supply chain as steel. The major benefits that flow from the decision to use steel are enjoyed throughout a building's life, and more are delivered even when a building's useful life ends as virtually all structural steel is recycled.

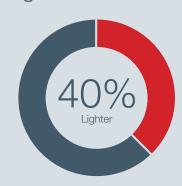
- Shorter build-time quicker return on investment
- Lighter buildings
- · Larger clear spans fewer columns
- Reusability higher salvage value
- Environment friendly green buildings
- Multi-sector presence
- PABSEC Beams / PREBEAM / INDISEC product range
- Sustainability
- Integrated services
- Flexibility and aesthetically pleasing architectural buildings





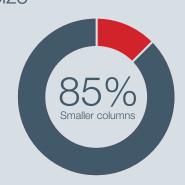
NB Compared to conventional concrete buildings

### Weight



NB Than equivalent reinforced concrete (RC)

### Size



NB Smaller than equivalent RC columns

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### The JSSL Advantage

- Factory and site efficiencies
- Scale and competitive cost base
- Product and service range
- Integrated services
- · People and skills
- · Operational and financial strength



Project: Heron Tower Location: London, UK 12,500 tonnes fabricated steelwork 58 weeks programme – 47 storeys

### Market Sectors Include

- · Commercial Offices
- Industrial & Processing Plants
- City Centre & Retail
- Transport & Airports
- Power & Energy
- Hospitals
- Warehouses & Distribution Centres
- Bridges
- Stadiums & Leisure
- Car Parks
- Residential
- Education



Project: More London Plots 3 & 4 Location: London, UK 4,400 tonnes

2,700 tonnes of **Descr** bespoke beams for integrated services Incorporating 60 minutes' fire protection coating

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# Commercial Offices





Montevetro Location: Dublin, Ireland Tonnes: 2,20



Project: Ropemaker Place Location: London, UK Tonnes: 5,800

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Project: St. Botolphs Location: London, UK Tonnes: 7,200

New products, processes and methods are now available to enhance the performance and competence of structural steel contracting in this sector.

roject: The Shard .<mark>ocation: London, UK Tonnes: 12,70</mark>0

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ot: Staythorpe Power Station Location: Newark, UK Tonnes: 5,000



Project: ESB Power Station – West Offaly Location: Dublin, Ireland Tonnes: 2,700

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Project: West Burton Power Station Location: Retford, UK Tonnes: 5,000

Project: Lakeside Energy Waste Plant



Project: Power Station

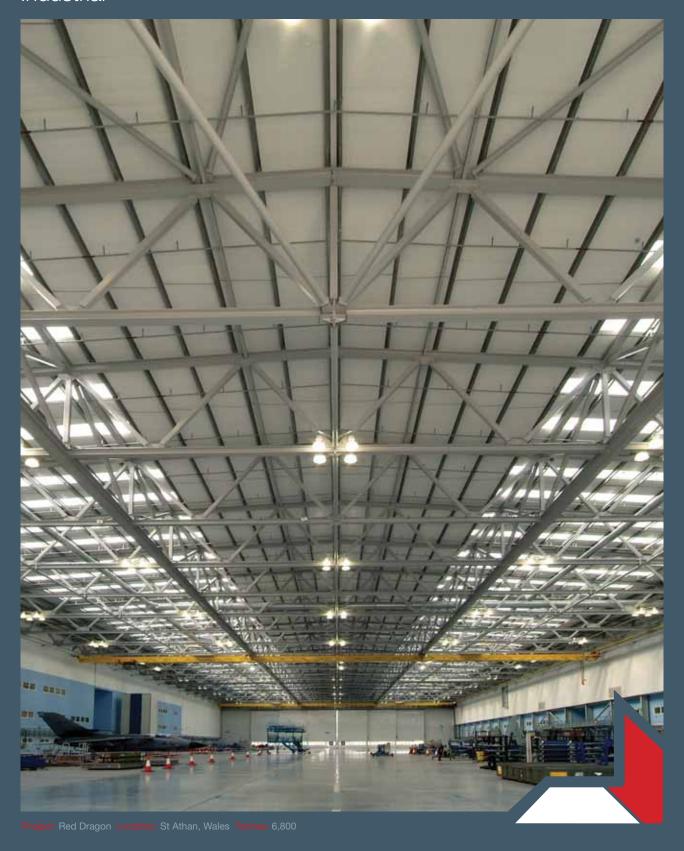


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10. JSW Severfield Structures Ltd brochure – Industrial

# Industrial



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Many industrial related projects require specialist experience in the design and fabrication of platework, tubular framed structures and specialist pipework.

### Sector includes

- Steel Plants
- Car Plants
- Port Developments
- Industrial Factories



Project: British Gypsum



Project: News International



Project: Vosper Thornycroft



Project: OPF Project
Location: Sakhalin, Russia Tonnes: 5,300

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12. JSW Severfield Structures Ltd brochure – Retail and Car Parks

## Retail and Car Parks



Project: Westfield Shopping Centre Location: Stratford, UK Tonnes: 40.000



Project: Westfield Shopping Centre Location: London, UK Tonnes: 25,000

28260 SEV Corporate Brochure v1812 12 11/11/10 11:42:25

Major re-development in cities and out-of-town shopping facilities are challenging projects in their own right, requiring different skills and service solutions.

Westfield White City Shopping Centre, London is a 2010 Olympics legacy and is the largest shopping centre in Europe.



Project: Bullring Shopping Centre
Location: Birmingham, UK Tonnes: 13.800



Project: Croydon Centrale Shopping Centre MSCF Location: Croydon, UK Tonnes: 1,200

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# Transport



Project: St Pancras International Railway Station Location: London, UK Tonnes: 2.600



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Transport and related facilities benefit from the speed with which steel is constructed enabling services to continue unhindered.



Project: Gatwick Airport Link Bridge Location: Crawley, UK Tonnes: 2,000



roject: Terminal 2 Dublin Airport

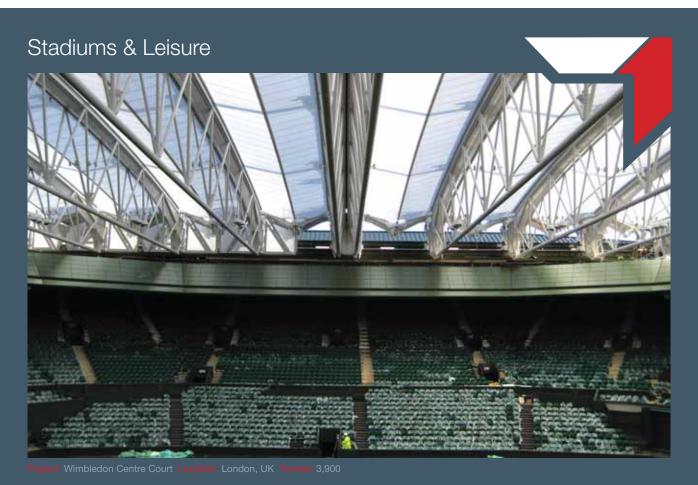


Project: Heathrow Control Tower Location: London, UK Tonnes: 1,000

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16. JSW Severfield Structures Ltd brochure – Stadiums & Leisure





Project: O2 Arena Roof Location: London, UK Tonnes: 3,200

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The Oval Cricket Ground and the Emirates (Arsenal Football Club) Stadium are notable examples of the versatility of steelwork for these complex projects.



Project: 2012 Olympic Stadium Location: Stratford, UK Tonnes: 10,600



Project: Emirates Stadium Location: London, UK Tonnes: 5,300



Project: The Oval Togetion: London TIK Tonnes: 1 900

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JSW Severfield Structures Ltd brochure – Design

We have highly skilled and motivated professional Structural and Civil Engineers with key specialist knowledge of structural steelwork design.

### Design Value

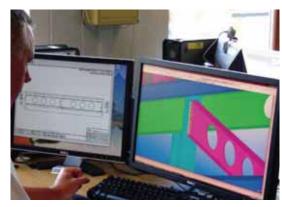
- · Lighter weight
- Space optimisation
- Connection design
- Incorporated architectural features
- · Surface and fire protection guidance
- Practical design programme advantages

### Design and Engineering

Our design services offer clients alternative concepts and solutions.

By working closely with the consulting engineers at the early stages of the project and with the latest state-of-the-art computer software for 2D and 3D modelling, we are able to offer clients 'value engineering' for the most effective and efficient solutions.

Advice on material choices, fabrication, fire protection, surface treatment and erection techniques can often lead to significant project savings.



CAD engineer working in our design facility



Project: Riverside Transport Museum Location: Glasgow, Scotland Tonnes: 2,600

28260 SEV Corporate Brochure v1818 18 11/11/10 11:43:51

Plant investment has been significant with many of Severfield-Rowen's innovative features being incorporated into the JSSL plant.

### **Fabrication**

Modern, state-of-the-art processing equipment has been installed throughout the new factories.

The plant is operated by skilled and experienced employees who benefit from unparalleled space, layout and logistics.

Steelwork is fabricated in load and build sequence and is stored in our finished goods stockyard, ready for timely despatch to sites.



Flame Cutting



Bellary - Saw & Drill Line

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**Musec** beams showing span capabilities



Project: Bullring Shopping Centre



Project: More London Plot 7 Location: London, UK Tonnes: 5,200

# Key Benefits of

# IND[SEC

- Optimum size of beams
- Weight savings
- **PABSEC** products
- Bespoke service openings
- Long span solutions
- Integrated fire protection

## IND SEC

is now the unrivalled market leader in the design, fabrication and supply of long span cellular and bespoke plated beams.

Its innovative product range and design software enables clients and their professional teams to achieve enhanced project economy, swifter construction and optimised design.

JSSL has a manufacturing capacity for IND products in excess of 30,000 tonnes per annum.

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Project: Addenbrooke's Hospital Car Park Location: Cambridge LIK Tonnes: 1 500

### **Erection Services**

Site erection is the most publicly visible process and is vital to the efficient and safe completion of a contract.



Steelcraft working on The Shard at London Bridge

# Key Benefits

- Detailed planning
- Latest plant and equipment
- Highly trained workforce
- Experienced management
- Health and Safety

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## Metal Decking

#### Profiles to suit your design specification

We offer a range of profiles in gauges varying from 0.9mm to 1.2mm; all profiles are manufactured from galvanised steel strip to BS EN 10143 and BS EN 10346 with guaranteed minimum yield strengths of 350 and 450 N/mm² and a minimum coating mass of 275g/m².

The differing advantages of each profile gives the flexibility to meet specific projects requirements.

The **TR60** profile gives high span capabilities at a competitive price. Due to its 666mm cover width, this profile can be installed quickly making it a popular choice for many design engineers. A typical 1-hour fire rating can be achieved with a 130mm slab.

**TR80** ≠ provides the greatest spanning capability in our range. The narrower cover width of this trapezoidal profile ensures large spans and hence long sheets can be installed, whilst ensuring sheet weights are within manual handling industry guidance.

The TR80 + profile has a concrete volume up to 25% less than other profiles. The typical 1-hour fire rating can be achieved with a 140mm slab.



Project: Regent's Place Location: London, UK

Project: 1 New Change Location: London, UK



### **TR60**<sup>10</sup>

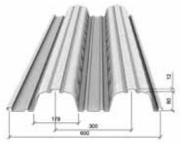


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TR60+ Sectional detail

### **TR80**<sup>2</sup>





TR80+ Sectional detail

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### Key Benefits of Metal Decking

#### Speed of Construction

Using this process craneage time can be kept to a minimum; on average a vehicle can deliver up to 1,000m² per load and the decking can be fixed at approx 400m² per day. The fixed decking can then be used as a working platform for other trades. Minimal reinforcement is required in the slab, in some instances fibre reinforcement can be used with large areas of slabs being poured quickly.

#### Saving in Weight

Composite construction is considerably stiffer and stronger than many other flooring/roofing systems, therefore the weight and size of the primary structure can be reduced with foundation sizes also being reduced.

#### Structural Stability

The decking can act as an effective lateral restraint for the steel beams provided that the deck fixings have been designed to carry the necessary loads. The decking may also be designed to act as a large floor diaphragm to redistribute wind loads in the construction stage and the composite slab can act as a diaphragm in the completed structure. The floor construction is robust due to the continuity achieved between the decking reinforcement, concrete and primary structure.

#### Shallower Construction

The stiffness and bending resistance of composite beams means that shallower floors can be achieved than in most non-composite construction. This may lead to smaller storey heights, more room to accommodate services in a limited ceiling to floor zone, or more storeys for the same overall project height.

#### Services

JSW structural metal decking profiles have the benefit of providing a service fixing facility within the decking profile which eliminates the need for drilling.

All of the profiles in the range are acoustically robust solutions with a fire resistance of up to 4 hours.







Project: The Shard Location: London, UK

## Applications of Metal Decking

- Commercial
- Retail Developments
- Airport Projects
- Hospitals
- Sports Stadiums
- Schools
- Leisure
- Residential

28260 SEV Corporate Brochure v1823 23 11/11/10 11:44:50



### Sustainability of Steel

The sustainable qualities of steel are built in to the material. Simply choosing steel as a building material enables specifiers to deliver unrivalled sustainability performance.

Manufactured from the most abundant element on earth, iron, steel can be recycled or reused endlessly without detriment to its properties. Its superior strength-to-weight ratio means a little steel goes a long way, giving architects complete flexibility to achieve their most ambitious designs. Manufactured in a controlled factory environment, pre-engineered steel components are delivered to site ready for rapid assembly, with minimal waste.

#### Multicycling

Steel can be reused repeatedly without ever losing its qualities as a building material. This unique characteristic gives all steel a high value at all stages of its life cycle. The recovery infrastructure for steel recycling is highly developed and highly efficient, and has been in place for decades. Current recovery rates from demolition sites in the UK are 99% for structural steelwork and 94% for all steel construction products – figures that far exceed those for any other construction material.

#### Adaptable

Significant environmental damage can be caused at the end of a building's life when it has to be demolished and its materials scrapped. Steel-framed buildings, however, do not decay, and are easily adaptable if the configuration of the building needs to change. The ability of steel to bridge long spans means that steel buildings contain large open-plan spaces which are easily reconfigured with partition walls.

#### Reusable

Because steel frames are essentially a kit of parts, they can easily be dismantled and reused. Bolted connections allow components to be removed in prime condition and easily reused either individually or en masse as entire structures. It means that steel components are perpetually reused in a continuous loop, and rarely sent to landfill.



Project: G Park Blue Planet Location: Newcastle-under-Lyme, UK Tonnes: 2,000

# Off-site construction the sustainable choice

The nature of the steel construction process is the source of numerous sustainable benefits. All of the fabrication, testing and certification takes place in a safe, carefully controlled and monitored factory environment. Here, consistently high quality standards can be maintained and assured, with each component manufactured to the exact specifications of each project. This leads to quicker, safer and more predictable on-site operations. Off-site construction has clear environmental benefits, with on-site waste virtually eliminated and fewer deliveries to site, cutting carbon emissions associated with transport.

### Waste



When you specify steel for a building, you can rest assured that it is unlikely ever to become waste. Steel always has a value and is only ever sent to landfill as a last resort. Waste generation is one of the least sustainable aspects of construction. Choosing a steel-framed building is the simplest and most effective way to reduce waste.

28260 SEV Corporate Brochure v1824 24 11/11/10 11:44:53

### Inspection and Quality

The Company's Quality Policy is initiated and led through 'top down' management commitment and is operated throughout by highly qualified and experienced personnel.



Magnetic particle testing



Fillet weld size check



Paint thickness analysis

JSW Severfield will improve existing quality standards in India. The process based Quality Management System will be certified to the International Quality Standard BS EN ISO 9001:2000. Continual improvement is a management objective and encompasses the development of modern systems and techniques to assist in the attainment of continued customer satisfaction.



BSI is a global provider of management systems assessment, certification and training services, with more than 60,000 certified locations and clients in over 100 countries.

ISO 9001 is by far the world's most established quality framework, currently being used by over 750,000 organisations in 161 countries, and sets the standard not only for quality management systems, but management systems in general.

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The Directors of JSSL, through the implementation of our Safety, Health and Environmental philosophy, encourage each employee and subcontractor to strive constantly to achieve the best practices.



Project: 30 Crown Place Location: London, UK Tonnes: 2,000

Project: Regent's Place Location: London, UK Tonnes: 5,300



### Our Health and Safety Initiatives

#### Off-Site

The off-site fabrication, carried out with modern equipment in a controlled environment ensures that risks to the workforce are minimised. All operatives are permanently employed by the company and have a high level of training.

#### On-Site

The site operations require just 20% of the labour for a concrete frame. The erection is planned in great detail to a predetermined sequence and all materials are delivered on 'a just in time' basis. This means that the health and safety risks on sites are much reduced.

The operatives engaged in steel frame erection are also highly skilled and well trained and most are permanent employees. There are proportionally fewer accidents with steelwork than with concrete frames.

The following values support our health and safety policy and establish the areas which are essential to achieving the inspirations of the policy.

#### Leadership

People at all levels of JSSL have responsibilities for their own health and safety and should set an example for others. Our management is accountable for health and safety and will demonstrate leadership through personal example.

#### Hazard, risks and control measures

We identify the hazards and risks associated within our business activities and introduce appropriate control measures, challenging them in the changing environment, aiming for continuous improvement.

#### Health and well-being

We will promote and improve the health and well-being of all JSSL employees.

#### Competence and behaviour

We ensure our employees are trained so they are skilled and qualified for their occupation and therefore can contribute to an improved health and safety performance.

#### Incident analyses and prevention

We will ensure work related accidents and near misses are reported, investigated and analysed to prevent reoccurrence. The investigations will focus on root cause and recommendations shared across the business.

#### Safety in design

Our designers and our erection management focus on the design aspect of the structure with the objective to erect the structure safer and more efficiently.

#### Monitoring, audit and review

We will conduct regular internal audits to an audit programme on our management systems in order to achieve our objectives and targets to drive the health and safety culture of our business forward.

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INDISEC is a new and innovative family of structural steel plated products of optimum efficiency for the steel construction sector in India.

The range includes:



- b. Heavy bespoke plate girders
- Substitute beams and columns of the Indian and British Standard size ranges

The product range includes long span **JABSEC** cellullar beams and **JIREBEAM** which are supported by an industry leading design software package called **\*\*DBEAM\*** For fire conditions **\*\*DIREBEAM\*** can be designed with intumescent paint application.

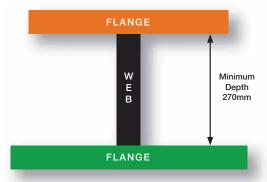


- Cold and hot applications
- Parallel and asymmetric options
- Circular, rectangular and oval apertures
- New state-of-the-art manufacturing and fabrication
- Part of JSW Severfield Structures Ltd
- Optimised products
- Licensed manufacturers in India for **JABSEC**



#### Size range:

- Web 6mm to 50mm
- Flanges 8mm to 100mm
- Minimum depth 270mm inside flanges
- Maximum depth 2,200mm
- Maximum length 21 metres
- Up to 2,000 kg/m
- Flanges up to 800mm wide









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### Head Office

ffice No. 302

Naman Centre, 3rd Floor Plot No. C-31, G – Block Bandra Kurla Complex

Bharat Nagar, Bandra (East) Mumbai 400 – 051 **Tel:** 022-6731 7000

Fax: 022-2651 2685 Email: info@jssl.in

#### Vidyanagar Works

Near 10 MT Ga Besides JSW Cement Plant Post Vidyanagar Toranagallu

Dist: Bellary 583275 Karnataka

Tel: 08395-250120 to 30 Fax: 08395-250138/250665 Email: info@jssl.in

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