HOWARTH TIMBER ENGINEERING

FOCUSING ON TIMBER ENGINEERING EXCELLENCE

With a dedicated team of timber engineering experts, the very latest manufacturing processes and a strong environmental policy, Howarth Timber Engineering prides itself on offering proven Timber Engineering Excellence.

Celebrating 170 years of quality and value
170
Established 1840

Timber Frame • I Beams • Metal Web Beams • Trussed Rafters • Spandrel Panels • Cladding

CONSULTATION
DESIGN
MANUFACTURE
DELIVERY
INSTALLATION

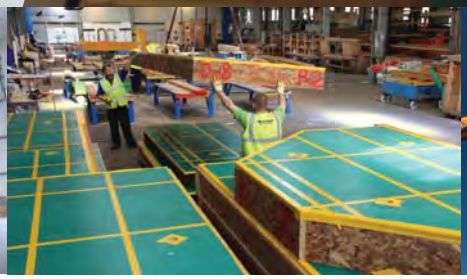
WELCOME TO HOWARTH TIMBER ENGINEERING...

...your dedicated timber engineering partner. Howarth Timber Engineering is a leading timber engineering specialist, located at four purpose-built sites strategically positioned across the UK. Renowned for its team of timber engineering experts, the very latest manufacturing processes, integrated supply chains and strong environmental credentials, Howarth Timber Engineering prides itself on always achieving timber engineering excellence.

Part of the Howarth Timber Group of companies, Howarth Timber Engineering provides the complete service, including consultation at the initial stages of a project through to design, manufacture, delivery to site and installation.

We operate an externally audited ISO 9001:2000 quality management system, as well as product conformity schemes for roof trusses and timber frame systems. Supporting our strong environmental focus, we are also Chain of Custody certified for all the major timber schemes.






HOWARTH TIMBER ENGINEERING
TIMBER ENGINEERING EXCELLENCE

FSC www.fsc.org FSC® C004478
The mark of responsible forest management

PEFC
PEFC/16-37-145

BM TRADA ISO 9001:2008
Bury St. Edmunds

A Member of UKTFA

TRUSSED RAFTER ASSOCIATION TRA

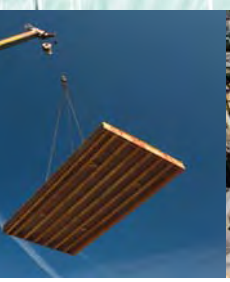
Member of the Timber Trade Federation

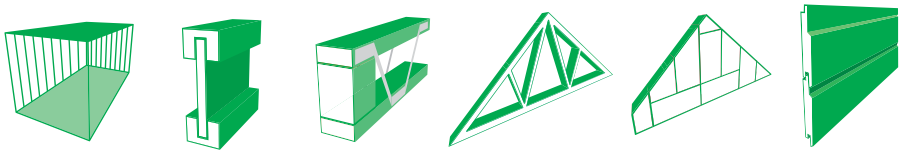
FORESTS FOREVER

BM TRADA Trussed Rafters BS 5268-3 BS EN 14250
Bury St. Edmunds Ashton

Timber Frame Scheme CERT NUMBER TF-011
BM TRADA
Bury St. Edmunds Huddersfield

CHAS Accredited Contractor





TAKING THE ENVIRONMENT SERIOUSLY

A strong and sustainable green focus lies is at the heart of Howarth Timber Engineering. We understand our responsibility to reduce the impact our business has on the environment.

As a Chain of Custody holder, we are committed to using timber certified by the Programme for the Endorsement of Forest Certification scheme (PEFC) or the Forest Stewardship Council (FSC).

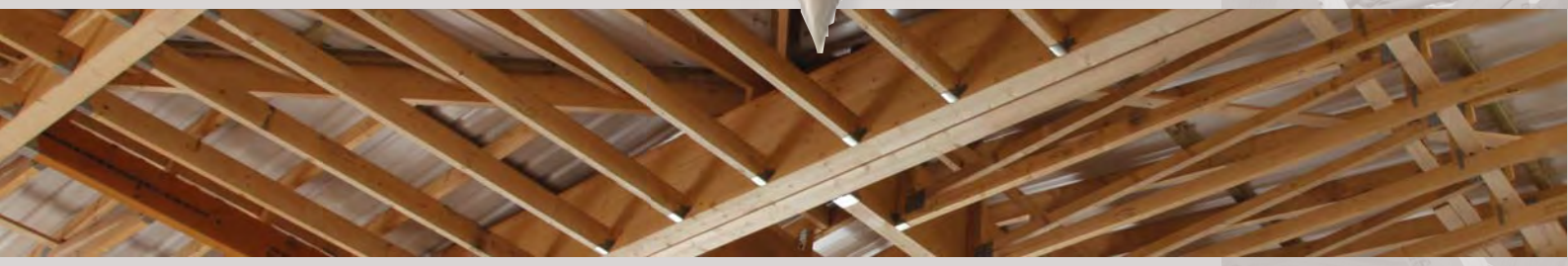
This is an assurance to our customers that we are procuring from environmentally responsible suppliers. At all points in the process, from source and shipping to production and delivery, Howarth Timber Engineering can provide full Chain of Custody certification covering the entire product range, thereby achieving complete traceability.

Alongside our Chain of Custody accreditation, Howarth Timber Engineering supports responsible sourcing through the major timber certification schemes. We comply with government specifications for legal and sustainable sources and can satisfy the requirements of third party audit organisations used within the construction industry. We operate certification under the PEFC, FSC, CSA and SFI schemes.

The mark of responsible forest management

PEFC/16-37-145

TECHNICAL EXCELLENCE



As timber specialists, Howarth Timber Engineering offers first class design, production and installation services across the whole of the UK. We are proud of our reputation for quality and reliability in our partnerships with some of the very top names in house building, specification, structural engineering and the public sector.

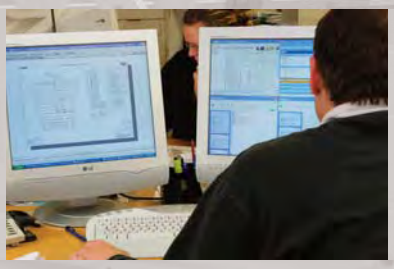
Our integrated management systems – doing things right, first time, every time - make sound business sense, both for us and for our clients and partners. Our externally audited standards demonstrate not only a commitment to being at the leading edge in management systems but, more importantly, they reinforce our corporate policy to provide added value and an attitude of continuous improvement of processes.

Design. Using the UK's most advanced software, Howarth Timber Engineering's team of specialist designers undergo rigorous in-house training to ensure that efficient solutions are generated for your project. From simple domestic structures to the most complex configurations, Howarth can help you make the most of roof space, create engineered timber floors for predictable performance or provide a complete timber structure. The service includes full manufacturing specifications and feasibility studies. All timber designs comply with BS5268.

Manufacturing. Our manufacturing sites provide national coverage, and our skilled engineers offer a personal service that is second to none. Computer controlled manufacturing conforms to the requirements of ISO 9001:2000 Quality Assurance Standard to ensure code compliance, and is subject to third party audits by BM-TRADA.

Installation. On a project-by-project basis, our experienced contracts managers and erecting teams will work closely with your construction staff to assess risks, prepare method statements and complete the installation process.

Warranties. We can provide client collateral warranties underwritten by appropriate professional indemnity insurance.



Bury St. Edmunds Ashton

Bury St. Edmunds

Timber Frame Scheme CERT NUMBER TF-011

Bury St. Edmunds Huddersfield

Member of the Timber Trade Federation

A Member of UKTFA

TRUSSED RAFTER ASSOCIATION

Accredited Contractor

PERFORMANCE THAT MAKES A DIFFERENCE

During recent years, increased levels of environmental awareness have led to an improvement in the energy efficiency requirements of buildings. Howarth Timber Engineering offers solutions to meet, and often surpass, the latest legislative requirements.

Energy efficiency. Timber engineering, and timber frame construction in particular, provides the ideal platform for introducing a highly insulated building envelope. A high performance timber frame specification is capable of making a significant, cost-effective contribution towards the whole building energy performance rating. In addition to energy savings, building in timber frame also reduces CO_2.

Durability. Modern day production techniques generate a highly engineered solution. Timber retains its natural, dynamic and durable qualities, the result of detailed design and quality controlled manufacturing processes. As with all organic materials, wood requires protection from the elements, and a well designed and protected timber frame structure will have a service life at least equal to its masonry equivalent.

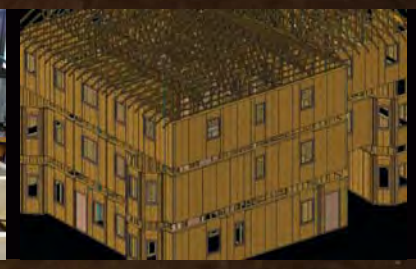
Fire aspects. When properly designed and constructed in accordance with building regulatory requirements, a timber frame construction presents no more of a fire risk than other forms of construction.

Moisture resistance. By its very nature, wood is sensitive to exposure to moisture. However, with effective detailing and an attention to detailing on site, this risk is effectively eliminated. In the case of flooding, once waters have subsided the inundated building can be quickly reinstated. Unlike masonry structures, which may require several months' drying before internal linings are reinstated, timber framed structures regain their integrity normally within a few weeks once the damaged internal linings (plasterboard) and moisture sensitive insulation have been removed and the low level timbers allowed to dry.


SmartPly

TIMBER FRAME

LEADING THE WAY IN TIMBER FRAME TECHNOLOGY



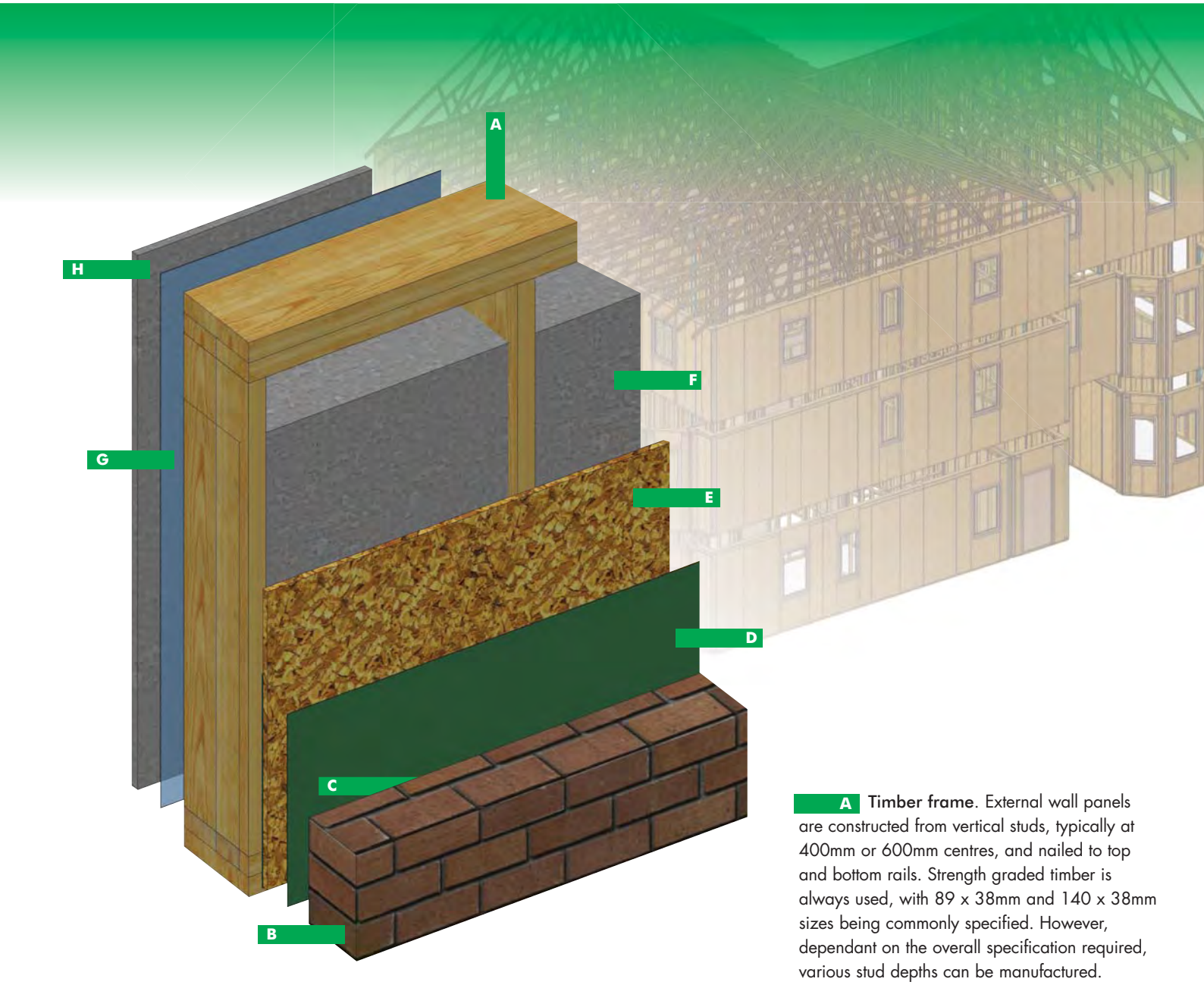
Timber frame construction comprises lightweight, horizontal and vertical structural members, to which the internal lining and an external sheathing are attached. The system remains one of the most environmentally focused methods of construction, whilst also meeting all legislative requirements covering energy efficiency, durability, fire and moisture resistance.

The structural timber framing transmits all roof, floor and wall loading safely and effectively to the ground-bearing components or foundations. The consequent void, formed by the framing, is typically fully filled with thermal insulation, although additional layers of insulation can also be applied. The internal lining is usually formed by plasterboard; however, a range of other boarded systems can be attached at the point of fabrication and, once the frame has been erected on site, wet applied systems can provide the specified finish.

Prefabricated timber framed panels can be designed to almost any configuration and, due to their relatively light weight, are readily transported to site and subsequently installed using conventional construction plant. In addition, timber frame is not restricted to low rise single or two-storey applications. Building Regulations and third party accreditation bodies recognise that timber frame can be specified for medium rise multi-storey structures.

This structural form and method of erection provides a high degree of weatherproofing during the construction phase, allowing internal services and fabrication to be progressed at the same time as external cladding and tiling of roofs.

LEADING THE WAY IN
TIMBER FRAME TECHNOLOGY
COMPONENTS



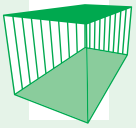
A Timber frame. External wall panels are constructed from vertical studs, typically at 400mm or 600mm centres, and nailed to top and bottom rails. Strength graded timber is always used, with 89 x 38mm and 140 x 38mm sizes being commonly specified. However, dependant on the overall specification required, various stud depths can be manufactured.

B External cladding. This provides weather resistance and the required appearance, typically rendered or facing masonry (usually 100 mm thick). However, boarded, sheeted, tiled or proprietary rendered systems can be specified.

The external finish to a timber frame system is designed on the 'rainscreen' principle - a drained and ventilated cavity is required directly behind the cladding system to reduce the risk of condensation or penetrating rainwater from reaching the inner timber framing.

C Cavity. Typically 50mm wide, the external cavity is designed to drain and ventilate any penetrating moisture safely to the outside. Fire barriers should be installed at required centres and around openings or penetrations to reduce the risk of vertical and horizontal spread of hot flames and gases.

D Breather paper. A vapour-permeable membrane allows water vapour to diffuse safely to the outside but restricts the transfer of liquid water to the inside. The sheathing membrane provides weather protection to the timber framing during transportation and in the construction phase. A membrane may be unnecessary with some treated board materials.



LEADING THE WAY IN TIMBER FRAME TECHNOLOGY
THE PROCESS

E **Sheathing**. Typically, a sheeted timber product (sheathing) provides the primary stiffness and racking resistance for the timber frame. In addition, sheathing restrains the insulation enclosed within the framing and helps reduce air leakage through the fabric. In some hybrid timber frame systems, rigid board thermal insulation can be utilised to provide both racking resistance and additional thermal resistance.

F **Thermal insulation**. Thermal insulation reduces heat losses through the building fabric and often fills fully the enclosed void formed by the timber frame. Most types of board and quilt insulation can be utilised. Timber frame systems offer the opportunity to enclose considerably greater thicknesses of insulation than alternative forms of construction.

G **Vapour control layer**. This is a membrane having an extremely high resistance to water vapour installed on the warm side of the construction, usually directly behind the internal lining. The vapour control layer reduces the risk of water vapour diffusing through into the timber framing where it may condense impairing thermal performance and wet the timber framing. All penetrations, openings and laps in the inner lining must be sealed effectively and any tears, rips or punctures must be repaired to ensure the integrity of the vapour control layer. Howarth Timber Engineering can guarantee the quality and effectiveness of their off-site produced panels – this is not something which can always be achieved with conventional on-site fabrication.

H **Internal lining**. Typically plasterboard, however this could also include any board material which can provide the necessary fire protection, mechanical strength and finish.

The use of timber frame facilities a quick and efficient construction process. The principal components are fabricated within a quality-controlled manufacturing facility, unaffected by the weather and the vagaries of site conditions. Through the use of co-ordinated CAD design, the manufacture and programming of individual components is strictly managed and controlled to ensure that, once on site, erection is simple, fast and 'right first time'. Howarth Timber Engineering guides each of its clients down a clearly defined and quality assured process:

1 **Project inception and concept design**. Timber frame provides a highly effective technical solution for a comprehensive range of construction projects, including private or social housing or flats, hotels, offices, schools or hospitals. As the primary point of contact, Howarth Timber Engineering will take full responsibility for the design of all structural elements and secondary components, ensuring the accuracy and quality of manufactured elements and for supervising all works on site. Whether you are a single dwelling builder, developer, client or contractor, Howarth Timber Engineering provides the 'one stop' solution.

Howarth offers a range of constructional options and we pride ourselves in our collaborative approach to the process, including:

- Building and maintaining a relationship based on openness, honesty and trust.
- Responding to your requests, suggestions and concerns within agreed timescales.
- Offering a range of design solutions to meet your individual requirements
- Providing a total quality service from start to finish.
- Keeping you informed, from initial enquiry to completion.
- Monitoring, reviewing and improving our customer care as a direct result of your feedback.

Contact us early in your feasibility process and we will assure you of clear, concise and balanced guidance and assistance in developing your solution. Early involvement of key suppliers can lead to real economies in costs and in build times. We will be able to provide accurate time and cost plans much sooner than alternative construction techniques.

2 **Preliminary design and project planning**. With full control of the design process, supply chain and on-site fabrication, Howarth Timber Engineering can provide extremely accurate timeframe and milestone schedules for the manufacture and production of components through to assembly and construction on site. We will ensure that all timber frame components are made in accordance with the appropriate standards and codes; that all statutory and regulatory approvals are submitted in a timely fashion; that all health and safety aspects are covered; and that all suppliers and sub-contractors conform to our rigid quality standards.

As our client, you will be kept informed and involved in the process and although the design will require to be fixed early in the process, minor changes can be managed at the preliminary stage when necessary.

3 **Detailed design, manufacture and site assembly.** In finalising the design we will ensure your requirements are fully met; and that suppliers, production teams and erection crews are fully briefed and committed to the programme. On larger projects we will stage deliveries to ensure efficient deployment of site labour and plant, and to ensure materials are not stored inappropriately on site.

Howarth Timber Engineering will appoint a project manager who will supervise site operations to ensure completion as programmed and liaise with erection crews to ensure construction work fully conforms to the agreed health and safety plan.

4 **Handover and aftercare**. On completion to the agreed level, and on finalisation of our quality assured completion paperwork, we will formally hand over the project, typically during a dedicated 'walk round' meeting.

We don't expect snags; our experience, attention to detail and our commitment to getting it right first time ensures that we rarely have to undertake re-working. We will ensure completion and aftercare to your satisfaction – we want to work with you again.

This proven collaborative, open and comprehensive approach to timber engineering has enhanced our reputation in the industry and allows us to meet and surpass our customers' expectations, time after time.

SPEED AND EFFICIENCY

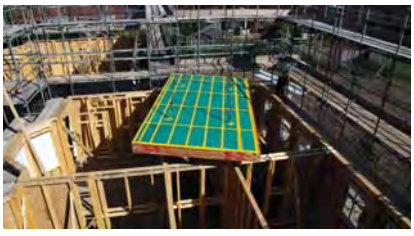
I BEAM MANUFACTURE

Howarth Timber Engineering understands that in an ever changing industry, where regulation, legislation and technology impact to create confusion and uncertainty, there is a need for innovation and simplification of the construction process. As one of the first businesses to introduce engineered timber products into the UK, we are extremely proud of the design and engineering that has gone into our I beam.

The I beam is a professionally engineered composite timber product manufactured within a quality assured process. As with all Howarth Timber Engineering's products, the supply chain is managed to ensure consistent quality and sustainability credentials. The result is that the frequency of naturally occurring defects, which can impair the performance of solid timber products, is reduced.

The structural timber I beam can be produced in a range of depths and spans to suit domestic and commercial applications. As an engineered composite, the beam dimensions are not restricted by the available dimensions of natural sawn timber. The high-strength to low-weight ratio of the I beam enables larger beams to be readily transported and handled on site.

Although the I beam can be incorporated in a range of fabricated assemblies, it is also sufficiently lightweight and can be readily cut and installed using conventional construction techniques, making it a highly flexible and adaptable product.




HOWARTH
TIMBER ENGINEERING

SAVING YOU TIME & MONEY

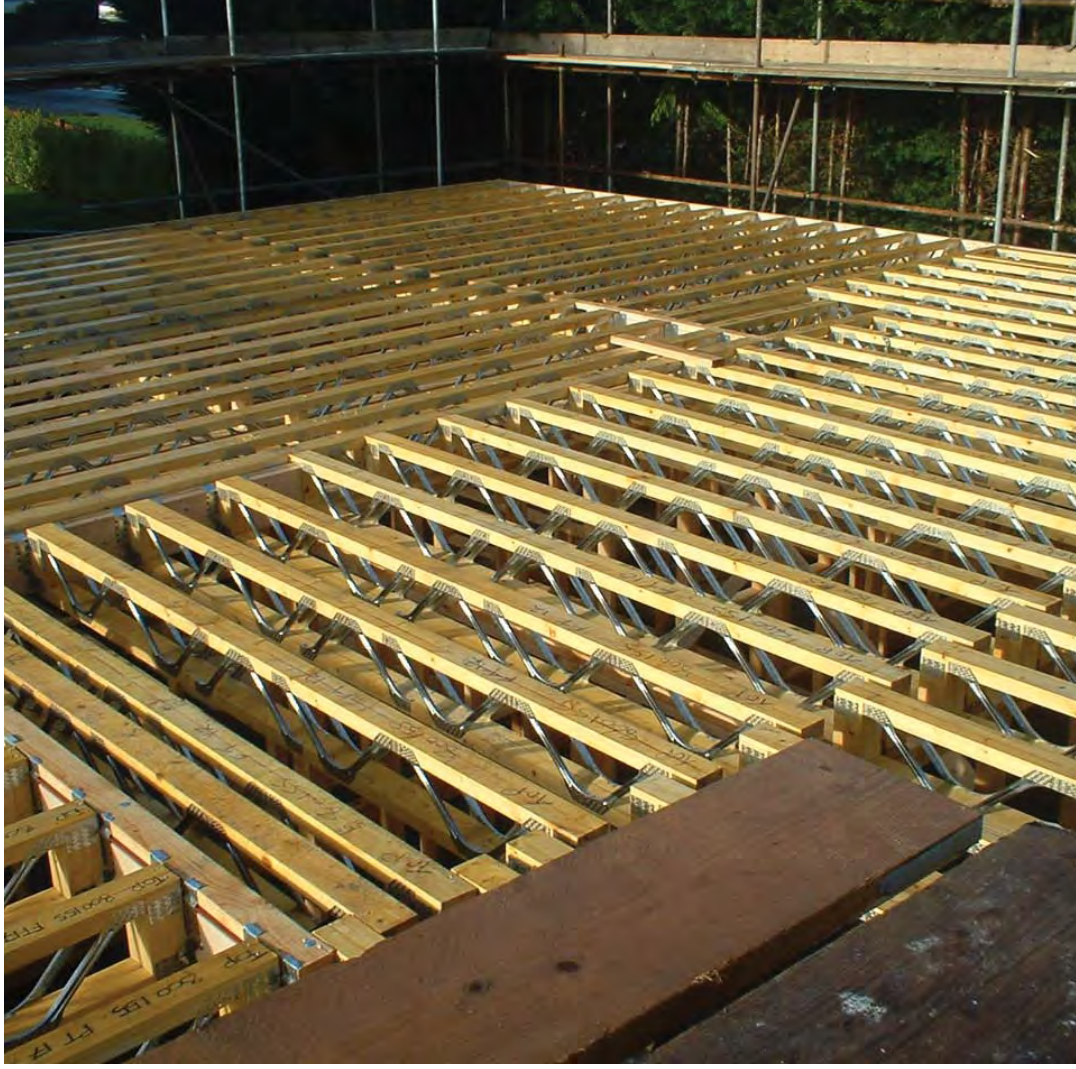
METAL WEB BEAMS

Metal web beams combine structural softwood chords with high strength steel webs to form a lightweight, structural beam for use in a range of floor or wall applications. As a fully engineered solution, metal web beams are simple to set out and install and, crucially, allow for services to run virtually unimpeded.

Metal web beams can span greater distances than solid or fabricated timber alternatives and, given that they provide an economic alternative to steel or concrete beams, considerable savings can be made in the use of raw materials. The open web design makes for simpler and faster installation on site, thereby reducing labour costs. The higher structural integrity of the beam reduces the need for additional intermediate supports, further reducing design and overall construction costs.

The POSI beam is available in a range of depths from 202 to 421mm, offering a diverse range of structural options for the floors and walls of domestic and light commercial constructions. Howarth Timber Engineering provides a comprehensive design service where we, in collaboration with the building designer, will evaluate the feasibility and subsequently develop an appropriate design solution. In recognition of the considerable time savings that can be achieved with off-site fabrication and assembly, Howarth Timber Engineering can also supply components ready assembled in cassette form.

Particularly useful for larger project or developments, all POSI beam products are location-coded and bundled specifically for plot or project delivery. We can provide details and guidance on load weights and dimensions for organising and managing site lifting and installation.



QUALITY YOU CAN RELY ON
TRUSSED RAFTERS

Now considered part of traditional constructional technology, Howarth Timber Engineering has been manufacturing trussed rafters for more than 30 years. Engineered trussed rafters still offer the most cost effective and flexible design solution to simple and complex pitched roof constructions.

Howarth's team will formulate a practical design solution based on the supplied architectural outlines or details. This can be undertaken as a single commissioned solution or in collaboration with the primary design team. Howarth Timber Engineering provides technical advice, design guidance and installation information for each project.

HTE offer two design options:

1. **Complete roof design - we undertake full design responsibility for the complete roof which includes the design and supply of all structural elements, i.e. roof trusses, infill timber, wind bracing and any associated structural metalwork.**

2. **Component only design – we undertake design responsibility for the roof trusses and any associated bracing.**

Regardless of whichever option is selected, each project is designed for specific loading and service class in accordance with BS 5268 PT3. Howarth Timber Engineering can provide the appropriate design warranty and we are able to fully certify our supply chain in accordance with recognised industry standards. In addition, Howarth will evaluate health and safety risks in accordance with CDM Regulations and provide advice so that a full and accurate risk assessment and method statement for site operations can be prepared.

Our design and production process is fully integrated. This generates the necessary geometric profiles, the appropriate timber grade and section, and type and size of connector plate. An automated manufacturing process establishes the truss profile by positioning within a range of jigs and press types, which are selected to reflect the complexity and size of the truss. Where required, timber can also be preservative treated.

All Howarth Timber Engineering trussed rafters are loaded vertically onto a customised trailer and delivered to site at pre-arranged dates and times. Deliveries will require some form of mechanical off-loading and Howarth Timber Engineering can provide guidance on load weights and dimensions.

A TRUSTED SOLUTION

SPANDREL PANELS

Spandrel panels are pre-assembled structural pieces used as separating walls or external gables, typically supplied as part of a structural roof package. Howarth Timber Engineering's spandrel panels are specifically designed and fabricated to complement our range of engineered products and to replace the need for conventional masonry, which is expensive and time consuming to build in-situ. As the composition of Howarth's spandrel panels is based on current robust standards there is no requirement for pre-completion testing.

As with all Howarth Timber Engineering's products, each roof structure incorporating spandrel panels is designed in accordance with the Robust Details certification scheme. Howarth can provide the appropriate design warranty and we are able to fully certify our supply chain in accordance with recognised industry standards.

Howarth Timber Engineering's spandrel panels are loaded vertically or horizontally, as size and configurations allow, onto customised trailers, and delivered to site at pre-arranged dates and times. Once on site the panels will require some form of mechanical off-loading and must be stored vertically. Appropriate lifting and temporary support must be provided at high level to facilitate installation, and Howarth Timber Engineering can provide guidance on load weights and dimensions.

COMPLETING THE PICTURE

CLADDING SOLUTIONS

With customers ranging from local builders and renovators to major contractors and national house builders, Howarth Timber Engineering is uniquely qualified to meet your timber cladding requirements. Increasingly, timber cladding is being specified by local authorities, architects and developers for its environmental credentials and for its ease of working, natural beauty, performance and competitive price. Please contact us for more information.

HOWARTH TIMBER ENGINEERING / CASE STUDY

KENTMERE PRIMARY SCHOOL, ROCHDALE

A range of sustainable engineered timber products was specified and installed in the construction of a new planetary-themed central hall and classrooms at Kentmere Primary School in Rochdale.

The contractor asked Howarth Timber Engineering to consider the financial and environmental benefits of completely rebuilding it around a timber frame, using existing groundworks. Having proved the case for this approach, Howarth was commissioned to supply the framing for the two-storey design, along with timber roof structures and more than 250, 140mm fully insulated spandrel timber wall panels. Products were assembled offsite and delivered in stages to ensure efficient integration with all parts of the construction process.

The contractor also specified an exposed Glulam laminated roof feature to span the main hall, which was designed, supplied and pre-assembled by Howarth Timber Engineering before being hoisted into final position.

CASE STUDY

HOWARTH TIMBER ENGINEERING / CASE STUDY

NOMAD HOMES BUILT WITH ENGINEERED TIMBER SOLUTIONS

A range of sustainable timber products was supplied and installed in the construction of 13 new social housing bungalows in North Shields.

The homes were specified with soffits and fascia boards, insulated structural spandrel wall panels and engineered timber joists supplied and installed by Howarth Timber Engineering.

A very demanding timeframe of 28 weeks to clear the site and construct the new homes placed pressure on all suppliers to the project, and Howarth rose to the challenge by condensing its lead time by four weeks in order to help the contractor meet its obligations.

Access and egress to the site presented further challenges but, through careful management and co-ordination throughout the construction process, the project was completed successfully and ahead of schedule.

Total build costs for the project was £1.13m and the homes are now occupied.

HOWARTH TIMBER ENGINEERING / CASE STUDY

FORMER MILL SPANNED WITH HOWARTH'S ENGINEERED ROOF TRUSSES

Howarth Timber Engineering manufactured and delivered to site around 90 bespoke timber trusses, each 16.7m metres long, to span the roof void of a refurbished mill, now converted into 30 high quality apartments.

Howarth Timber Engineering manufactured and delivered to site around 90 bespoke timber trusses, each 16.7m metres long, to span the roof void of a refurbished mill, now converted into 30 high quality apartments.

The building, known as The Spinning House, is widely regarded as one of Batley's finest former textile houses, and has been sympathetically converted into desirable accommodation. Howarth was appointed to design and manufacture the roof trusses, bracing and associated metalwork, based on its successful track record in major projects.

The inner shell of the 19th century building presented many challenges to the design of the roof trusses. Several existing structural steel beams had to be accommodated in the fit, along with an irregular layout of internal walls. Furthermore, the roof space was designed to accommodate two attic apartments and a hallway in each truss.

Specialist vehicles were hired to transport the trusses to site, which is located in a built-up and highly populated area of the West Yorkshire town.

Boise Cascade
Engineered Wood Products

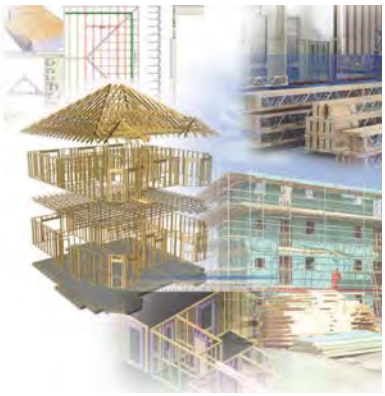
Boise Cascade is one of the world's leading producers of engineered wood products. Sustainably manufactured in state-of-the-art facilities, BCI® Joists, VERSA-LAM® beams and VERSA-STRAND® rimboards enable the company to provide our customers with high quality and cost competitive floor and roof solutions from stock.

HOWARTH
TIMBER ENGINEERING
TIMBER ENGINEERING EXCELLE

working wit

MiTek®

MiTek is the world's leading supplier of connectors, software, technical services and machinery to the timber engineering industry. MiTek is proud to supply Howarth Timber Engineering with its requirements for the design and manufacture of trussed rafters, Posi-Joist metal web and timber frame.



SIMPSON
Strong-Tie®

Simpson Strong-Tie designs and manufacturers the widest range of connectors available for engineered timber construction. These include restraint straps and joist hangers for timber or masonry, as well as a host of truss clips and roofing connectors. CE approved solutions reduce house building time and cost.

Swish®
BUILDING PRODUCTS

Swish Cellular PVC works well as a sustainable, weatherproof roofline system, protecting timber roof trusses from the elements without the need for maintenance. Swish offers the most sustainable PVC roofline package, with a rainwater system containing 84% recycled material that creates 70% less carbon during manufacture. PVC is 100% recyclable.

VIDA

Swedish timber producing group Vida is proud to be a supplier of CLS and TR26 products to Howarth Timber Engineering. Vida Wood UK is committed to providing a fast and efficient service from terminals in Chatham and Rochester for the supply of timber to Howarth's timber frame and roof truss manufacturing plants. The Vida group supplies PEFC or FSC certified timber products that are graded to European Standards.

Howarth Timber Engineering is proud to offer innovative solutions. Reinforcing this is a comprehensive network of leading supply chain partners, many of which are innovators in their own particular field of expertise. Howarth Timber Engineering values the strong working relationships it enjoys with its supply chain, and the benefits to our own customers are numerous.

th leading supply partners...

EGGER

EGGER (UK) Ltd has supplied Howarth Timber Engineering with premium tongue and groove flooring boards for many years, cementing a strong working relationship. These value-added P5 grade products include EGGER Protect and EGGER Peel Clean Xtra, giving an innovative edge to Howarth Timber Engineering's extensive stock range.

ITW Industry

software | components | fasteners | equipment

ITW Industry is proud to be long standing suppliers to Howarth Timber Engineering. Our Cullen timber engineering connector range is used for Howarth's roof truss, timber frame and I-Joist construction, whilst our Paslode, Duo-Fast, Haubold and SPIT powered fastening systems are used to assemble off-site manufactured components.

Howarth Timber Engineering

The complete timber engineering solution providing national coverage with a local focus

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Email: **huddersfield@howarth-te.com**

Celebrating 170 years of quality and value
170
Established 1840

For further information email:
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Visit our comprehensive website:
www.howarth-timber.co.uk/timber-engineering

HOWARTH TIMBER ENGINEERING

05/10