

HADLEY





HADLEY BENEFITS

Comprehensive BIM project management approach, working with structural and technical experts

4

SECTOR EXPERTISE

Extensive understanding of the specific complexities of working in every construction sector

10

STEEL FRAMING SYSTEM

On-site, rapid construction, steel framing solutions

18

HadleyFRAME

Off-site, cost-effective, pre-fabricated standalone structures

34

BUILDING INFORMATION MODELLING

Working to the latest industry standards

46

A GLOBAL GROUP

The ability to design, manufacture and supply locally on a worldwide basis

50

WORKING WITH HADLEY STEEL FRAMING

Architects, specifiers and contractors trust Hadley Steel Framing to deliver industry standard and bespoke construction solutions on a world stage.

Expert technical, structural and design ability allied to international cold rollform manufacturing capability ensures that Hadley Steel Framing can provide a single solution from concept to completion on building projects in all sectors, both on and off site.

Specialist in-house technical development is also able to develop new products, prototype them in short runs for rapid testing and refinements and then volume manufacture to order.

BIM experience and compliance

Working in a BIM (Building Information Modelling) environment, our project design team and qualified structural engineers can work in collaboration with all stakeholders including architects, engineers, main contractors and specialist installers to create better buildings, with improved efficiencies, greater sustainability and less wastage.

Hadley Steel Framing utilises market leading design applications, which enable any alterations or revisions made by any party to be automatically updated, in real-time. The result is an accurate, digital representation of the structure. This progressive approach helps project teams attain consistency and minimise errors throughout every stage of the project lifecycle.

Our technical sales team may be consulted at any point during the project's lifespan. Technical advice will also be provided on wall build up regarding fixings, fire, thermal and acoustic performance.

High volume manufacturing

All designs are covered by Professional Indemnity insurance

and our products are BBA certified with insurance backed warranties for total peace of mind. Hot rolled system components including posts, cleats and brackets are manufactured with designs supported by full warranties.

Hadley Steel Framing products are manufactured from recyclable steel. Bolted and mechanical connections enable environmentally friendly construction, simplifying and assisting life cycle analysis (LCA) targets for building design.

We roll to the tightest tolerances and cut to bespoke lengths and accommodate short, dedicated delivery times no matter how demanding your programme.



JLR Engine Plant

WORKING WITH BRITISH GYPSUM

Hadley Steel Framing works closely with British Gypsum to develop drywall construction methods that meet all of the latest regulations, including fire, thermal and acoustic requirements.

British Gypsum is a major authority in the UK construction industry. They are the country's leading manufacturer and supplier of gypsum based plastering and drylining solutions. Using over a century of expertise British Gypsum has developed the UK's leading range of wall, wall lining, floor, ceiling and encasement systems for the residential, commercial and RMI (refurbishment, maintenance and improvement) sectors of the construction industry.

With a long history of providing innovative, cost effective and reliable products that meet the demands of the construction industry, the company is renowned for its pioneering work in training, as well as its forward-thinking strategy on innovation and product development.



www.british-gypsum.com
+44 (0) 844 800 1991
bgtechnical.enquiries@bpb.com



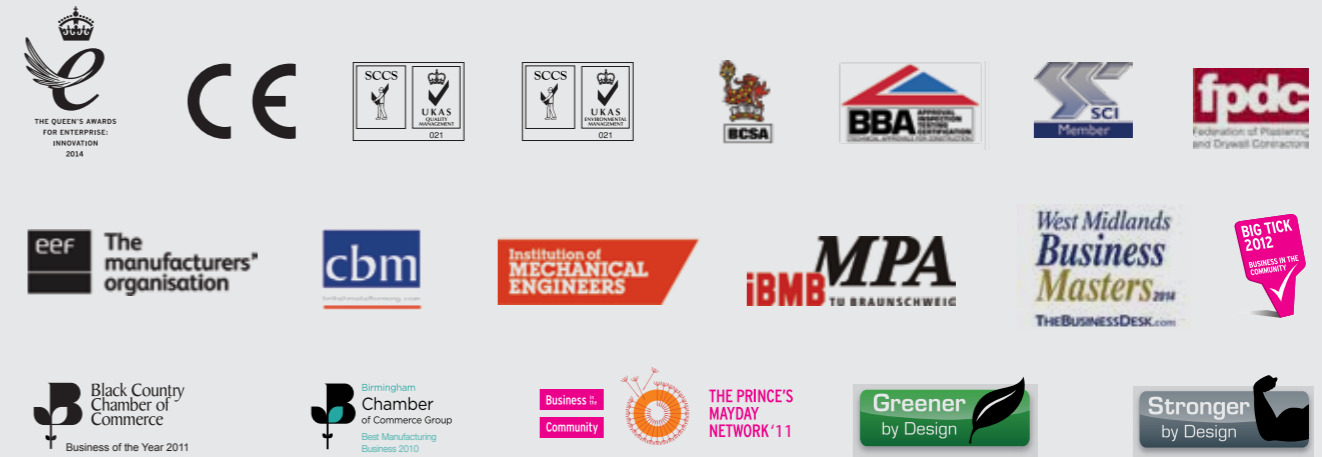
INTEGRITY IN EVERYTHING WE DO

Quality Assurance

Rigorous quality standards of design and manufacturing processes are central to our work. Our systems are quality accredited to BS EN ISO 9001:2004 and all cold rollformed section is manufactured from pre-galvanised 'structural grade' steel in compliance to BS EN 10326:2004.

Hadley continues to invest heavily in integrating advanced research and development into what is the UK's largest

rollforming academy. We have also pioneered our own rolling machines and maintain our place at the forefront of rollformed technology. Optimum design efficiency, shorter lead times and greater value for money stem from our revolutionary UltraPRO design and UltraCAM detailing software which minimise the time required for product specification, whilst ensuring technical accuracy.



Endike Primary School



“

Hadley's innovative and complex steel framework enabled us to rapidly deliver eye catching architecture that simply would not have been possible using traditional, concrete construction methods.

”

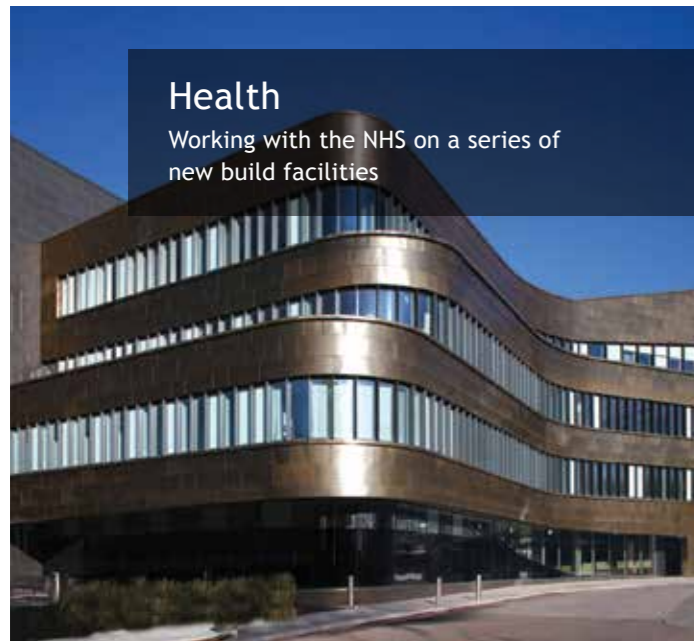
Sewell Group

SECTOR EXPERTISE

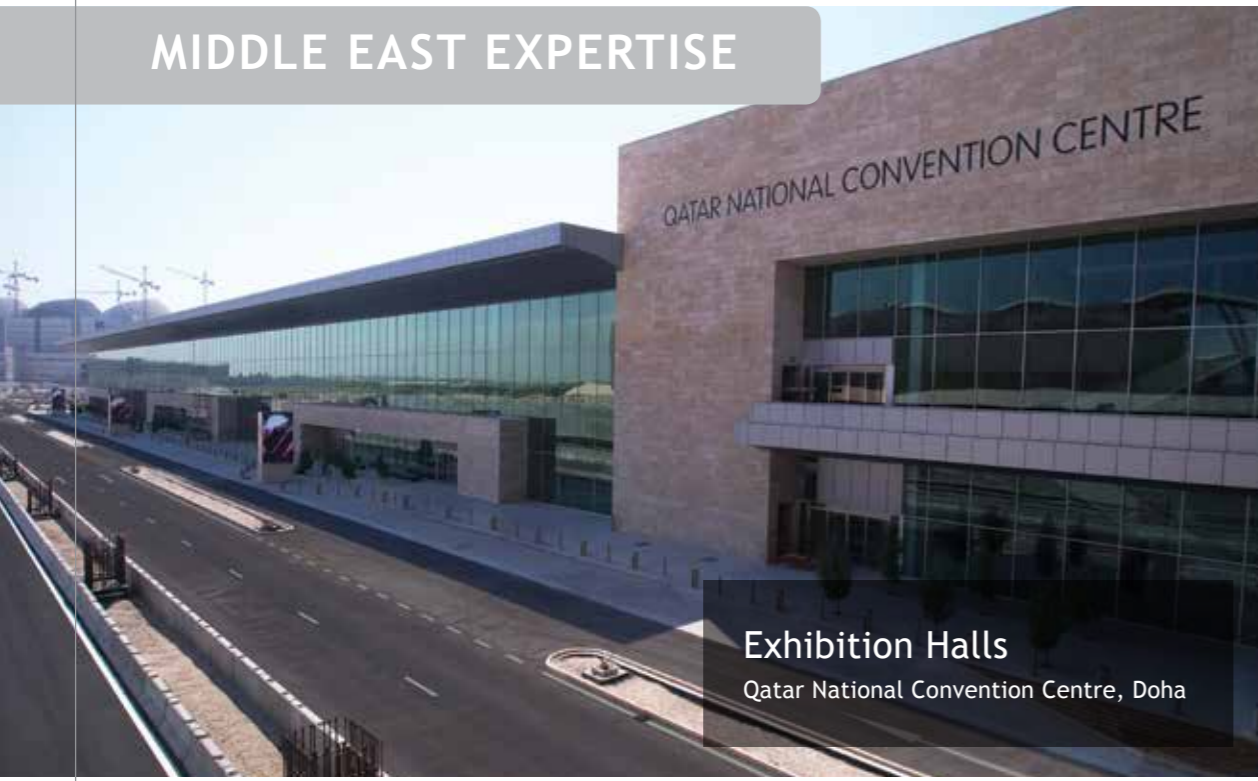
As the supplier of choice for a number of installers, contractors and designers Hadley Steel Framing provide solutions for the most progressive architecture, serving every market sector.

Whilst ensuring best practice in meeting all structural engineering requirements, we fulfil architectural innovation and are proud to provide the steel framing backbone behind many iconic buildings and developments.

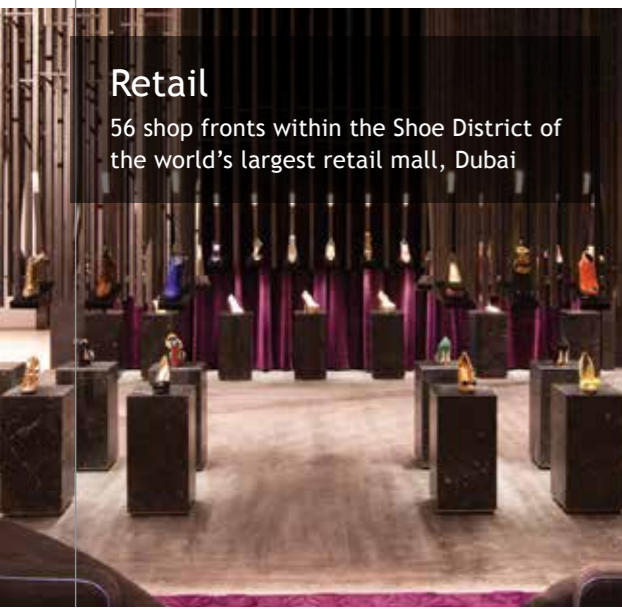
- Health
- Education
- Residential
- Leisure
- Commercial
- Retail



MIDDLE EAST EXPERTISE



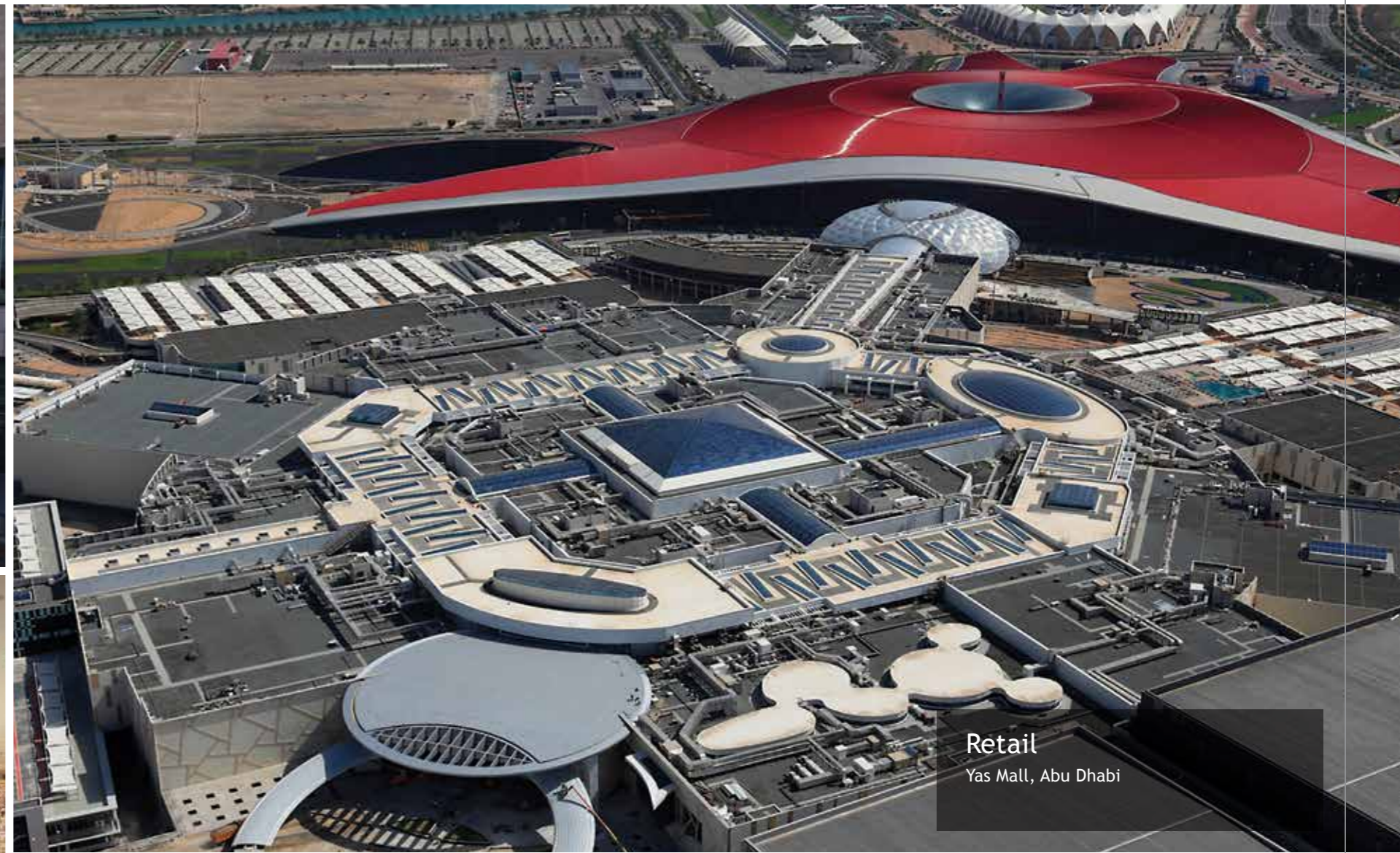
Exhibition Halls
Qatar National Convention Centre, Doha



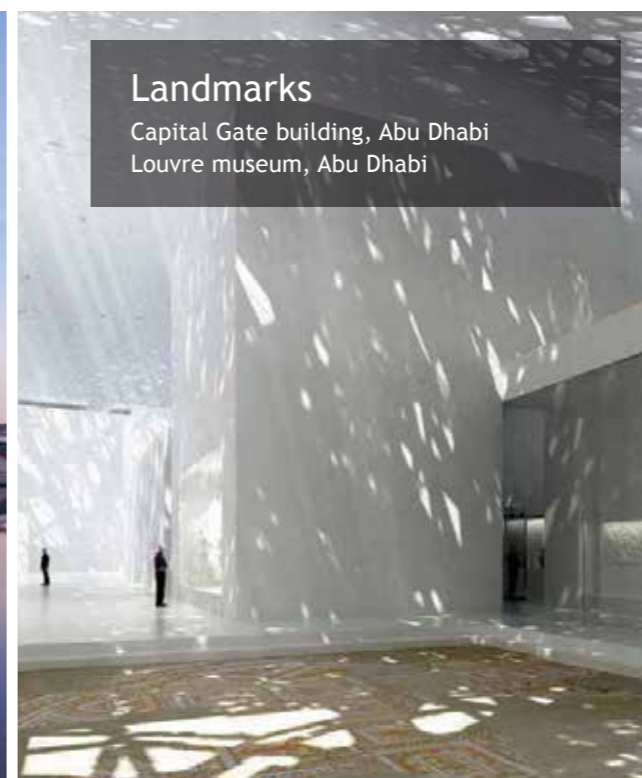
Retail
56 shop fronts within the Shoe District of the world's largest retail mall, Dubai



Stadia Seating Support
Leisure and education



Retail
Yas Mall, Abu Dhabi

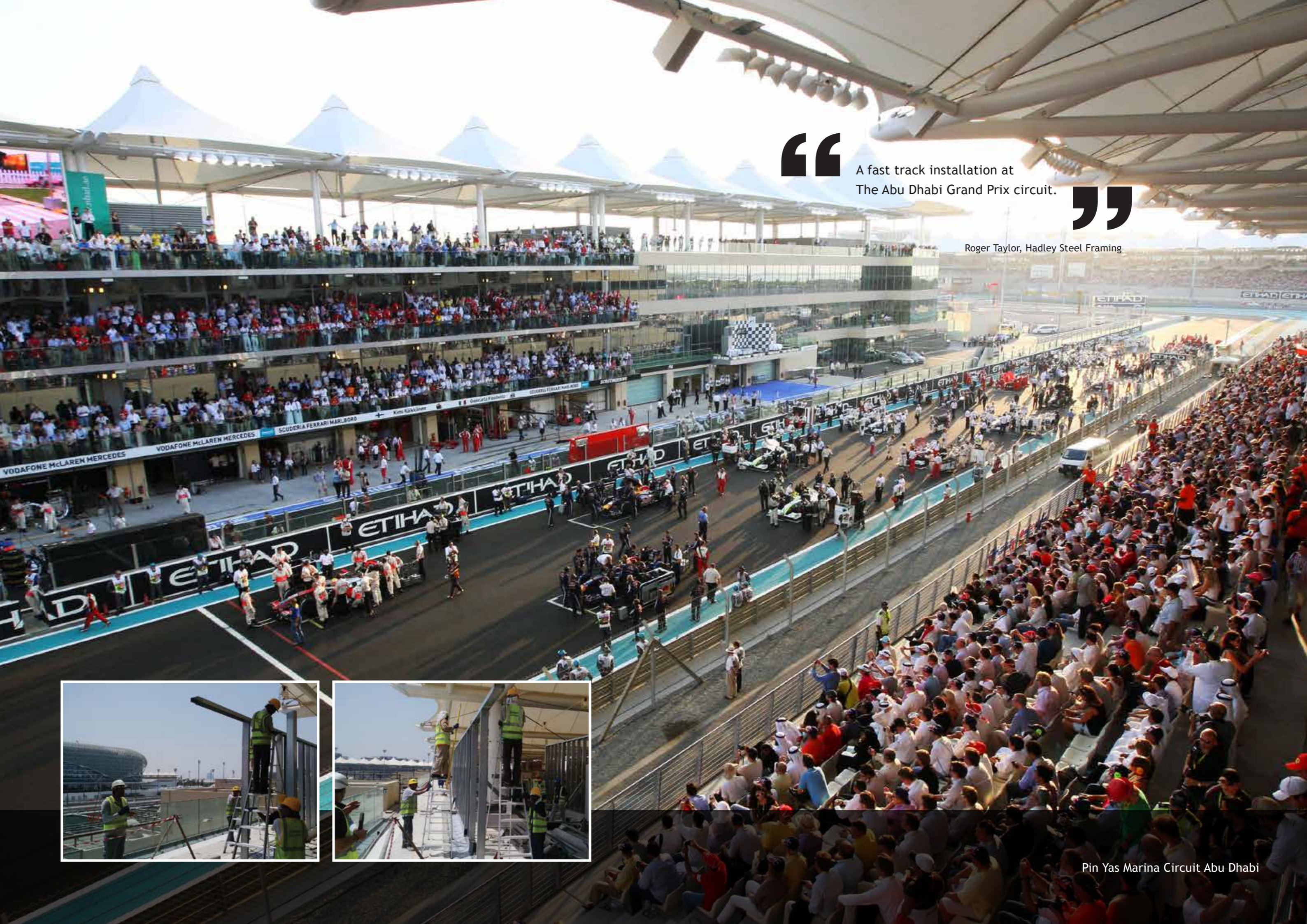


Landmarks
Capital Gate building, Abu Dhabi
Louvre museum, Abu Dhabi



Masdar
CITY
ACCREDITED SUPPLIER

A selection of Hadley Steel Framing profiles have been selected by the development team for use in the world's first zero carbon city enterprise - Masdar City in Abu Dhabi.



“ A fast track installation at
The Abu Dhabi Grand Prix circuit. ”

Roger Taylor, Hadley Steel Framing





“

People at Hadley Steel Framing consistently demonstrate determination to provide both the best technical and most cost-effective solution. We trust their expertise and ability to deliver.

”

Alan Liddell, 3E Consulting Engineers.
Archbishop Sentamu Academy, Hull

HADLEY STEEL FRAMING SYSTEM

Hadley Steel Framing reduces the overall build programme by providing a weathered envelope at an early stage of the project.

This is achieved by bespoke design and detailing as well as sections manufactured to length and delivered to site for quick installation, ready to receive external finishes.

Hadley Steel Framing's light gauge sections also provide column free interior space and deliver flexibility when it comes to layout requirements.

The Hadley Steel Framing System is used in external wall infill, continuous walling panels, high bay walls or for lightweight, standalone and roof top structures.

Our light gauge galvanised steel structural sections are typically supplied as individual components, manufactured

to meet specific sizing requirements or cut to length and screwed together on-site with self drilling fixings to ensure absolute precision and accommodate tolerances in the structure's primary frame. In-situ assembly is particularly useful for sites with limited access or crane restrictions.

Dry wall linings and insulation are subsequently fixed to the system in order to achieve thermal, acoustic and fire resistance performance.

With accurate profiles, delivered to meet challenging build schedules, you can expect installation to be fast and generate less waste. Shorter build times reduce costs and accelerate cash flow.



External Wall Infill



Continuous Walling



Standalone Structures



High Bay Walls

HADLEY STEEL FRAMING APPLICATIONS

EXTERNAL WALL INFILL

External wall infill forms a secondary, lightweight structure, fixed onto the primary super-structure.

Typically positioned at the slab edge, Hadley Steel Framing provides support for insulation and external finishes creating a weathered envelope at an early stage helping to reduce the overall build timeline.

Full height stud sections are located and screw fixed to the flanges to floor track section, itself fixed to the floor slab with fixings at intervals determined by structural calculations.

The deep track slotted head section is similarly fixed to the underside of the upper floor slab in order to accommodate any deflection within the main frame.

- Fixes to the primary frame
- Provides secondary support for insulation and external wall finishes
- Provides a weathered envelope early on in the build
- Reduces the overall build programme, saving material weight, construction time and labour requirements
- Cill, lintel and jamb configurations are available to ensure the most economical design



“

Public sector construction projects require attention to detail, high quality standards and efficient team work. All three are qualities that Hadley Steel Framing possess.

”

Meir NHS, Stoke On Trent





One Tower Bridge, London (Berkeley Homes)

HADLEY STEEL FRAMING APPLICATIONS

CONTINUOUS WALLING

Continuous Walling System (oversail) is built outside the primary structural frame and is ideal for projects where movement joints in external cladding are limited and where floor area needs to be maximised.

Where the base track cannot sit on the concrete slab an additional support member is designed and fixed to the slab edge. Cleats, specially designed to accommodate vertical movement or deflection in the primary structure, fix the studs to the intermediate slab edges.

A track caps off each lift of studs, providing a fixing and support for the base track and the lift above. Continuous walling vertical sections are supplied in full height lengths up to a maximum of 16 metres.

Consideration should be given to site access, handling and erection of long lengths of vertical sections. Where splicing of sections is necessary, please consult our technical experts for advice.

- Fitted outside the primary frame
- Studs are built multiple storeys tall
- Restrained with specialist cleats - designed and supplied by Hadley Steel Framing to accommodate deflection



HEAD TRACK

Screw fixed to all studs.

Custom designed Hadley Steel Framing cleats to accommodate deflection in the main frame anchored to slab edges and screwed to studs.

STUDS

The height, gauge and size of studs are determined by inhouse bespoke Hadley Steel Framing design.



ANGLE CLEATS

Custom designed Hadley Steel Framing cleats to accommodate deflection in the main frame anchored to slab edges and screwed to studs.



WINDOW LINTEL TRACK

WINDOW CILL TRACK

INTERMEDIATE
BASE/HEAD TRACK DETAIL

Back and head track of each lift screw fixed back to back

BASE TRACK

Screwed in place to support member.

SUPPORT MEMBER

Anchored to the slab edge.



first direct arena

First Direct Arena, Leeds

HADLEY STEEL FRAMING APPLICATIONS

LOAD BEARING STAND ALONE STRUCTURES

Hadley Steel Framing design, detail, manufacture and supply a complete load-bearing system suitable for stand alone, low or medium rise structures.

Components are designed, detailed and manufactured, then delivered to site where they are screwed together in accordance with the drawings, making this method ideal for sites with limited space or access.

Lightweight, robust and fast-track, the system also suits projects where the building programme is short.

From advice on floor and wall build ups, to a complete detailing service, our expert technical team is here to ensure each stand alone structure offers optimal performance, according to your specifications.

- A fast track, lightweight construction system for low to medium rise buildings
- Suits stick built or pre-panelised construction
- Ideal when space is limited on site or build turnaround times are tight

ROOFS

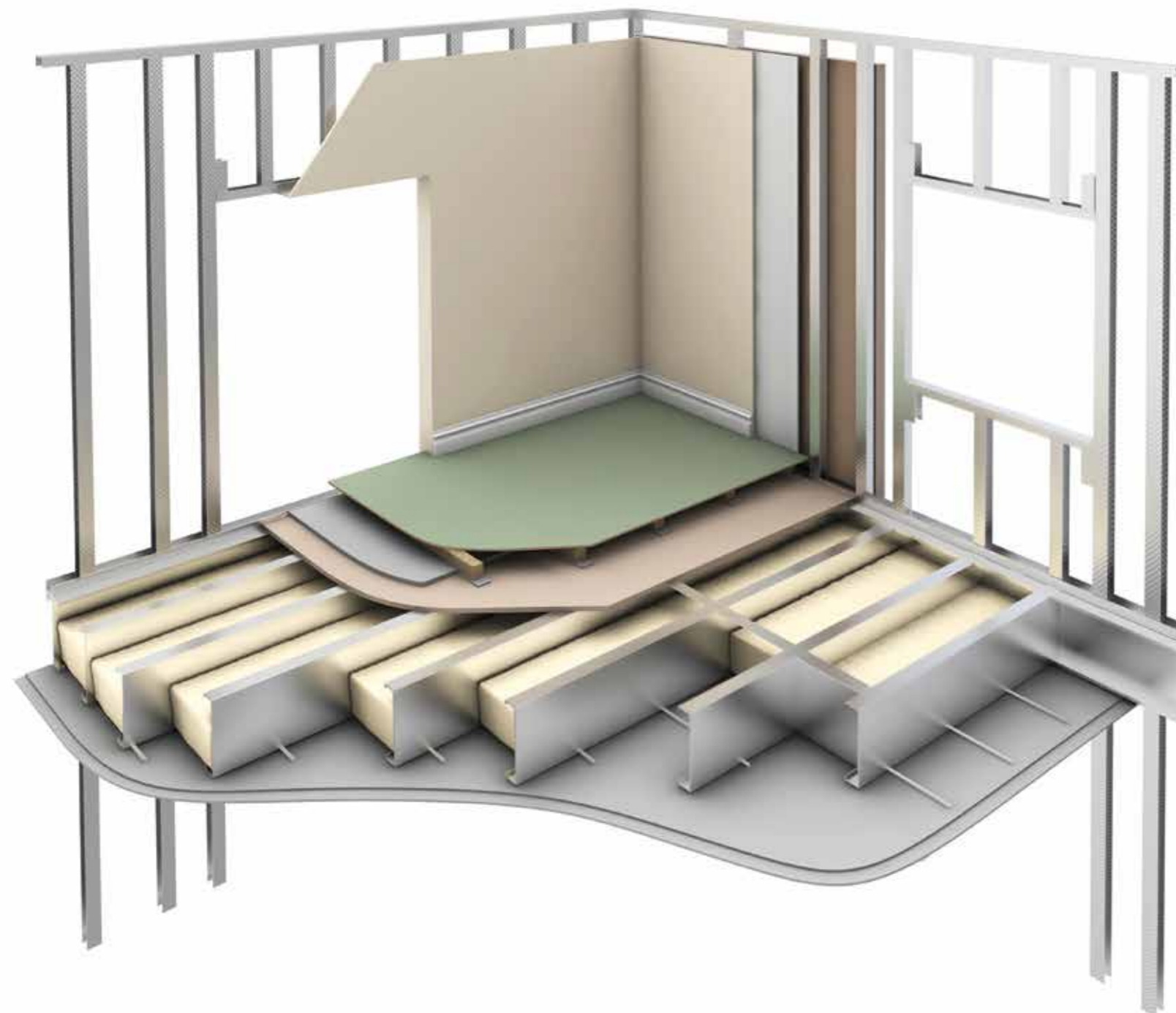
Joists to size, gauge and spacing as Hadley Steel Framing design, laid flat as to a face as required, trimmed to accommodate roof lights etc. End tracks are screw fixed to joists which in turn are located and screw fixed to stud walls.

WALLS

Wall studs to size, gauge and spacing as Hadley Steel Framing design, typically storey height with screw fixed track sections at base and head. All wall panels detailed to accommodate dimensions and openings shown on architects' drawings.

BRACING

All structures braced in accordance with Hadley Steel Framing design including diagonal flat strap bracing to walls.



DOOR AND WINDOW OPENINGS

Positioned in accordance with architects plans, with lintel and jamb design to suit opening configuration. Each opening to Hadley Steel Framing design and detail, with cill and head located and screw fixed into place.

EXTERNAL FINISHES

As specified by the architect, Hadley Steel Framing stand alone structures provide restraint to most cladding applications including brickwork.

FLOORS

Hadley Steel Framing joists to size, gauge and centres designed to suit span and loading screw fixed to end track screwed to wall studs. Floor and ceiling finishes to suit acoustic requirements (floating floor and resilient bars shown in detail).

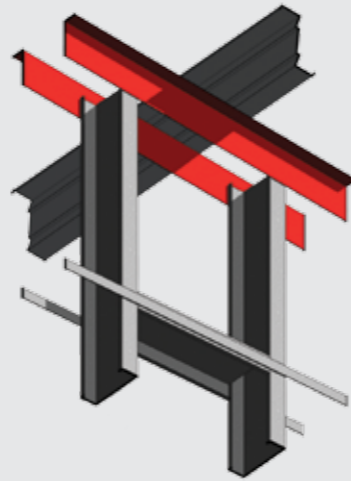
HADLEY STEEL FRAMING APPLICATIONS

HIGH BAY PARTITION WALLING

Hadley Steel Framing high bay walling provides a single span separating stud wall, where lighter gauge drywall systems are not able to achieve the requisite height, or accommodate lateral loads.

We use a variety of stud sizes and gauges to ensure the most economical design and uniformly distributed lightweight loading, which typically negates the need for strengthening floors or foundations. While this brings obvious cost benefits, it also helps reduce the installation time.

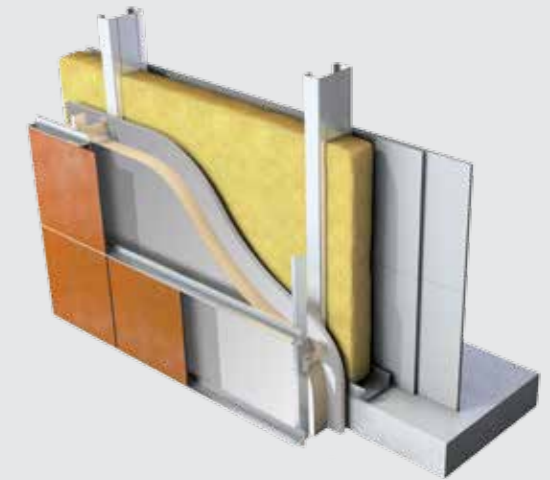
- Variety of stud sizes and gauges ensures most economical design
- Uniformly distributed loads - no floor or foundation strengthening required



EXTERNAL FINISHES

CLADDING

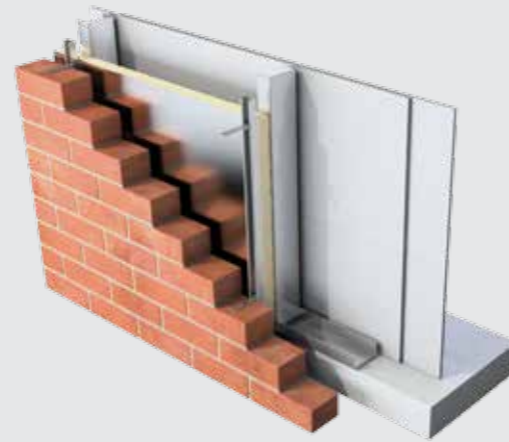
Working from the exterior in, cladding is fixed to a proprietary rail support system; itself fixed through foil faced ridged insulation board to a sheathing board with helping hand brackets. Additional insulation is fixed between the studs and two layers of plasterboard including a vapour barrier are fixed to the inside face.



EXTERNAL FINISHES

BRICKWORK

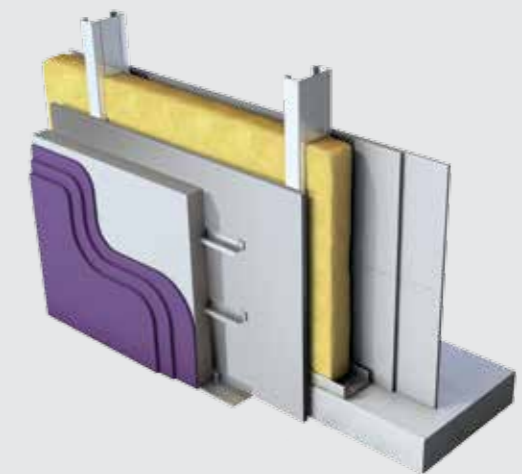
As part of the Hadley Steel Framing system continuous brick tie channels are fixed back to vertical studs through foil faced rigid insulation board using stand-off screws. Additional studs are installed at all openings for brick tie channel support. Twist in ties are then built into brickwork. Movement joints can also be accommodated with the use of additional studs. Two layers of plasterboard are fixed to the inside face.



EXTERNAL FINISHES

INSULATED RENDER

The render finished insulation board and rail system, allowing for drainage, is attached to a sheathing board, itself screw fixed to studs typically at 600mm centres. Additional insulation is fixed between the studs and two layers of plasterboard including a vapour barrier are fixed to the inside face.



HadleyFRAME

Providing a lighter, easier to erect alternative to steel or concrete primary frames, HadleyFRAME is a complete, pre-panelised standalone steel frame structure, ideal for medium rise buildings across all commercial and residential sectors.

Robust Engineered Structure

- Pre-engineered components providing accurate structure.
- Ability to incorporate joisted or concrete floors.
- Flexibility to support most external cladding systems.

Genuine Fast Track Structure

- Off site fabrication of wall panels.
- Erection rarely hampered by weather.
- Lift and stair cores also formed from HadleyFRAME Structure.
- Stairs provided as construction progresses to provide access to upper levels.
- Early weather tightness allows cladding to be removed from critical path.
- Windows are supported directly from HadleyFRAME Structure, allowing window installation to follow one floor below structural frame progress.
- Inert material ensures no short or long term settlement of frame.

Early Commencement of Following Trades

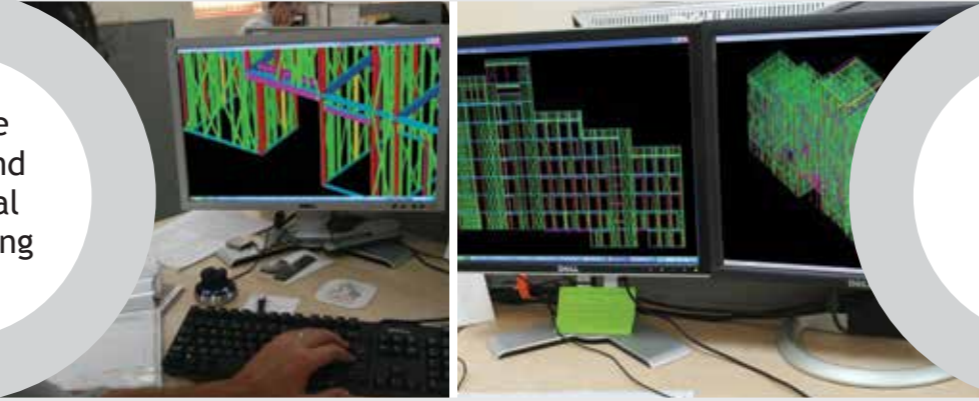
- Initial fire protection and ceiling grid installation can commence 2 weeks after floor installation.
- First Fix M and E services can follow ceiling grid installation.
- Roof coverings will follow tight behind roof structure, allowing immediate commencement of dry lining and internal non load bearing partitions.



THE TIME SAVING JOURNEY

Our single, turnkey solution begins with our expert design and technical team

In-house design and structural engineering



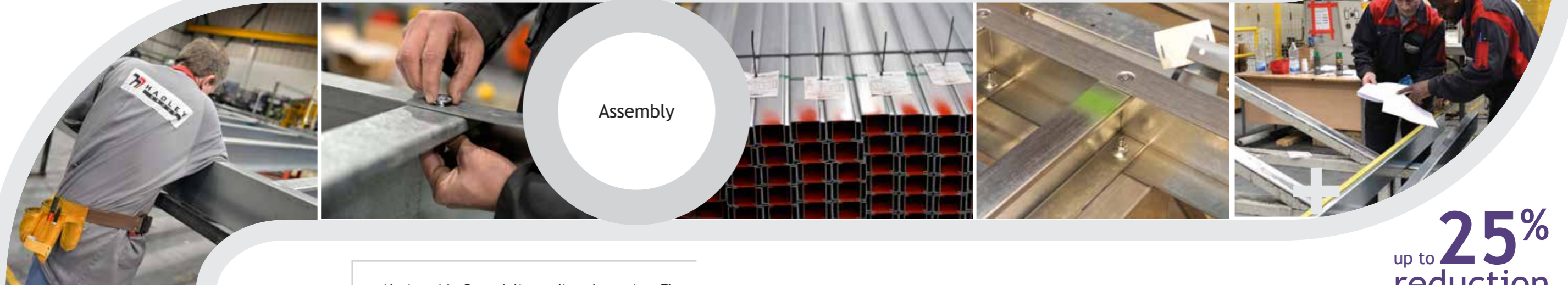
Extensive manufacturing capability rapidly produces accurate sections

Rollform Process



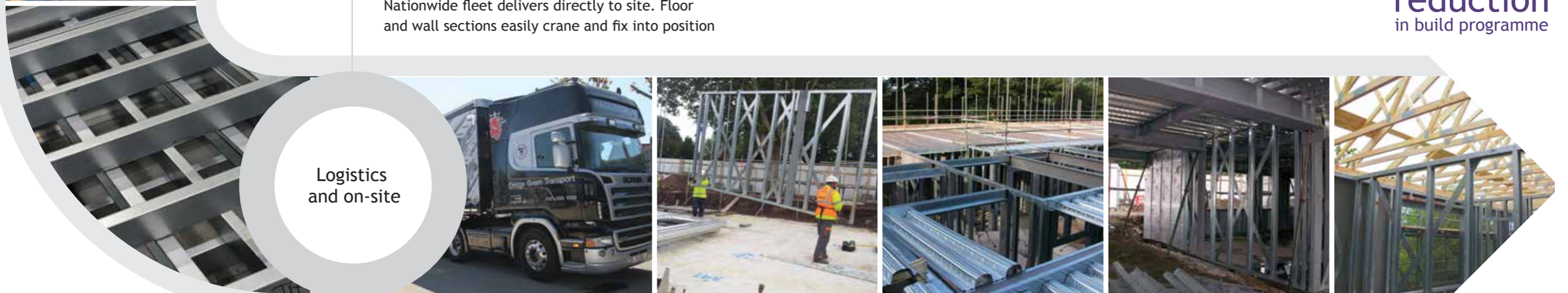
Hand assembly immediately after the rollforming process

Assembly



Nationwide fleet delivers directly to site. Floor and wall sections easily crane and fix into position

Logistics and on-site



up to **25%** reduction in build programme

CARMARTHEN

CASE STUDY

Carmarthenshire County Council (CCC) commissioned the build of two flexible care developments providing a range of extra care and dementia facilities to promote active, quality of life and wellbeing for the local community.

50 self contained apartments will cater for people with needs ranging from minimal care to people requiring extra care living.



Off-site production of pre-panelised walls and floors is a useful way of ensuring local communities rapidly enjoy the benefits of new facilities, without the disturbance of intense on-site building over an extended period of time.

It is also easier to schedule and meet deadlines as off-site production is not weather dependent.



Matt Aston, Director, Hadley Steel Framing

Brief

Standard apartments which can be configured to be able to receive extra care services as and when the need arises, plus its immediate support and ancillary accommodation.

- Dementia care apartments plus support accommodation
- Communal support and leisure facilities, which could be located in a 'village square', creating a social hub for the development
- Care support and staff facilities
- Day centre facilities
- Ancillary accommodation, such as laundry and kitchen facilities
- Landscaped courtyards, gardens, car parking and service areas

Solution

To create four storey buildings which provide a feel of good quality hotel accommodation that is warm and inviting, not institutional, with the provision for ample sunlight into habitable rooms. HadleyFRAME ensured that a variety of render, brick and tile finishes could easily be applied to the facade to complete a bold and striking visual appeal in keeping with the surrounding environment.

Advantages

Rapid construction, with off-site panels ensuring minimal local disturbance on site and rapid progression to the weathered envelope. Cost effective and compatible with a variety of external finishes and timber trussed roofing.





NORWICH STUDENT ACCOMMODATION

CASE STUDY

The £10m student accommodation complex has been commissioned for the centre of Norwich city. Delivered for the Norwich University of Arts, the nine-storey building is a new build but the project also involves refurbishment and renovation of listed buildings.

“

A nine storey building utilising lightweight cold rolled load bearing HadleyFRAME. The first of its kind to be completed in Tekla structures with a number of design challenges including off-set windows throughout.

”

Brief

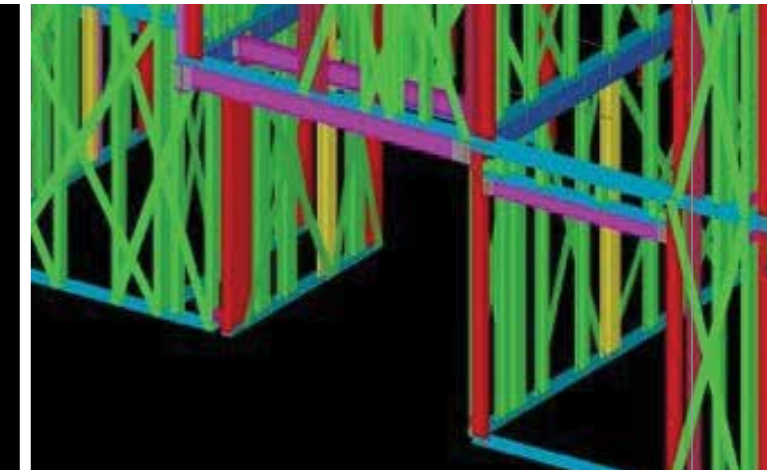
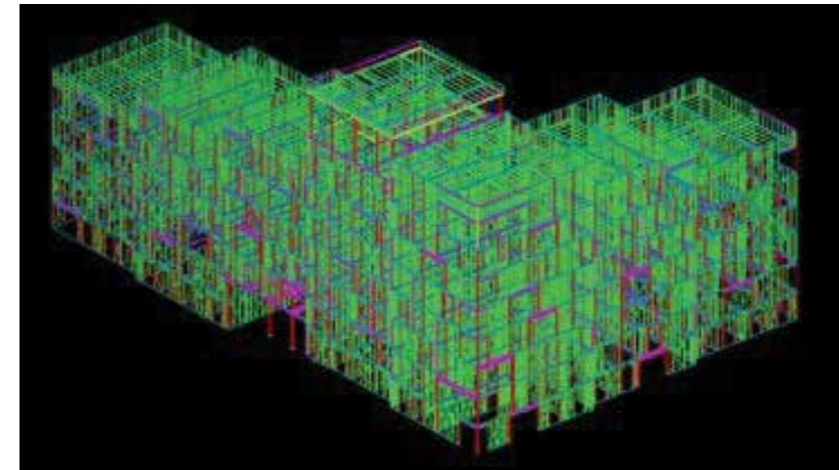
A development of 228 bedroom accommodation blocks, largely self-contained clusters with a ‘pocket park’ included to have a positive impact on the city as a whole. The complex will be built to BREEAM Excellent standard and will be open by September 2016.

The works are being undertaken partly to provide a much needed accommodation block to meet the additional demand as popularity of the university grows. Additionally, the project aims to be a catalyst for the regeneration of St Stephen’s area of the city with a new city square and public gardens that will be open to everybody.

There are two existing buildings on the site that will be demolished to make way for the new public space planned. All Saints Norwich is the name of the new build element of the project - this is a nine storey building that will contain student accommodation predominantly, including clusters of apartments and self-contained studios. 50 All Saints Green is a Grade II listed building that will be refurbished and renovated as part of the project.

Solution

Working closely with Tekla UK and TDS Midlands. The nine floor accommodation structure was modelled and detailed to Hadley’s own lightweight cold rolled load bearing design using Tekla software.





Lichfield Friary Outer

BIM IN ACTION

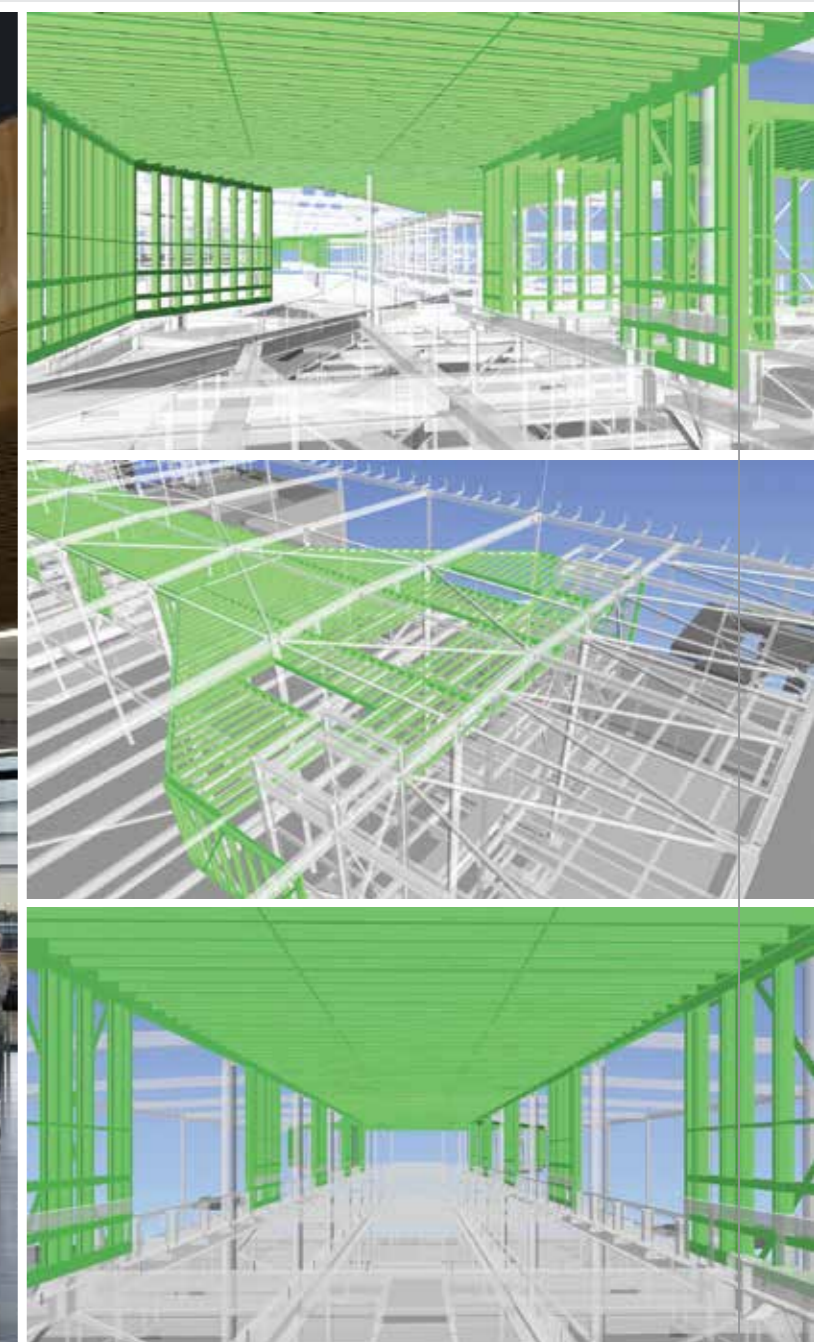
CASE STUDY - HEATHROW TERMINAL 2B

A Hadley Framing internal loadbearing SFS system has recently been installed at Heathrow Airport on the new Terminal 2B arrivals corridor as part of a multi-million pound investment programme.

Balfour Beatty and the client BAA wanted to create the look and feel of a floating corridor that was both light and airy but also welcoming to passengers. This unique structure is 250m long with a width of 7m. Hadley Framing was sat on top of a concrete platform and every stud was individually located using 3D modelling software to co-ordinate with the main steel frame that was already in place in order to avoid any clashes with the setting out of the buggy rails.

“Using 3D modelling is nothing new to us at Hadley, in fact it is something we have been using for nearly a decade, therefore as a company we were already very well prepared for the introduction of BIM and recognised the benefits of being able to offer our clients a better co-ordinated and faster design service through its utilisation.”
Matt Aston, Director, Hadley Steel Framing.

Deliveries and access to site were restricted so it was critical that all aspects of the design and supply were co-ordinated by our sales support team, which led to all sections being cut to length and clearly identified with on-line ink jet marking for ease of handling and erection on site. Additional fabricated steels were also fully designed, warranted and manufactured in-house to create a concave roof solution that added to the light and airy feel of the corridor.



BIM IN ACTION

CASE STUDY - FELIXSTOWE ACADEMY

Hadley framing is being used as the sustainable 'skeleton' within the new £20 million Felixstowe Academy.

Due to open in 2014 the educational centre will provide 'state of the art' new facilities for up to 1,800 students and has been hailed by Stephen Chamberlain, Executive Principal of the academy as, "A twenty first century

learning environment to ensure a truly world class education for the young people of Felixstowe and the local community."

Designed by architects Jestico and being constructed by Balfour Beatty, the eco-friendly building will be heated by a combination of a biomass boiler and solar panels, while the use of Hadley framing greatly accelerates the build programme. The finished building will create a central core of large spaces, including the dining hall, theatre

and sports hall. An activity studio will provide specialist facilities for dance and gymnastics. Two extended wings of general teaching classrooms will accommodate design and technology, ICT, music and a science 'super lab'.

The entire building has been 3D modelled both for construction purposes and for students who have already been able to take an interactive tour of the facility before it is completed.

Providing cost effective and ecologically sound buildings using Building Information Modelling is essential to public sector works both during the construction process and for the assessment of the total lifecycle costs of any building. Hadley Steel Framing has the expertise and experience to ensure compliance with the latest industry regulations and collaborative working practices.



HADLEY GROUP

SHAPING THE FUTURE IN METAL

Global

Hadley Group is the UK's largest manufacturer of cold rolled metal profiles with a global reach spanning five continents. Today, with seven manufacturing centres serving contracts and licence agreements on five continents and in 36 countries, we are firmly 'on the map' - a truly international business, in every way with an unerring focus on practical ingenuity.

Innovative

Taking a 'partnership' approach, we have the skills and capabilities to take new product ideas and develop them until we arrive at the best performing and most cost-effective solution ready for market. Computer simulation tools developed in-house enable us to determine the strain, forming angle, spring back, shear and geodesic movement during the cold rollforming process. Such research tooling enables our designers to optimise the number of stations within the cold rollforming process; reducing design and manufacturing time.

Sustainable

Environmentally, we are committed to ensuring the most efficient use of resources possible, reducing our carbon footprint as well as manufacturing sustainable solutions. Economically, we are dedicated to growing the business in a responsible manner, operating with fairness and integrity. Socially, we are proactive about making a difference within the communities in which we work and those that we influence, through interaction, support, the raising of aspirations and the creation of new opportunities for future generations.

UltraSTEEL®

The product of 30 years' advanced in-house research and development, **UltraSTEEL®** was launched in 1982 and awarded the Queen's Award for Enterprise Innovation in 2006. Today it continues to shape the use of cold rolled metals throughout a wide range of sectors and across a multitude of applications.



Hadley Steel Framing

123 West Bromwich Street
Oldbury, West Midlands
B69 3AZ

Tel: +44 (0) 121 555 1385

Email: sales@hadleysteelframing.com

Hadley Steel Framing FZCO

PO Box 61322
Jebel Ali, Dubai
United Arab Emirates

Tel: +971 (4) 883 3811

Email: hi@hadleygroup.ae

Hadley Industries plc (UK Headquarters)

Downing Street
Smethwick, West Midlands
B66 2PA

Tel: +44 (0) 121 555 1300

Email: ask.hadley@hadleygroup.com

Hadley Thailand Limited

38/10 Moo 5
Laem Chabang Industrial Estate
Tungsukla, Sriracha
Chonburi 20230
Thailand

Tel: +66 (0) 38 495076-7

Email: sales@hadleythailand.co.th

Hadley Profiltechnik GmbH

Buenerhelfstrasse 9
D-44379 Dortmund
Germany

Tel: +49 (0) 231 967 8620

Email: info@hadleygroup.de



Hadley Steel Framing

Working with

