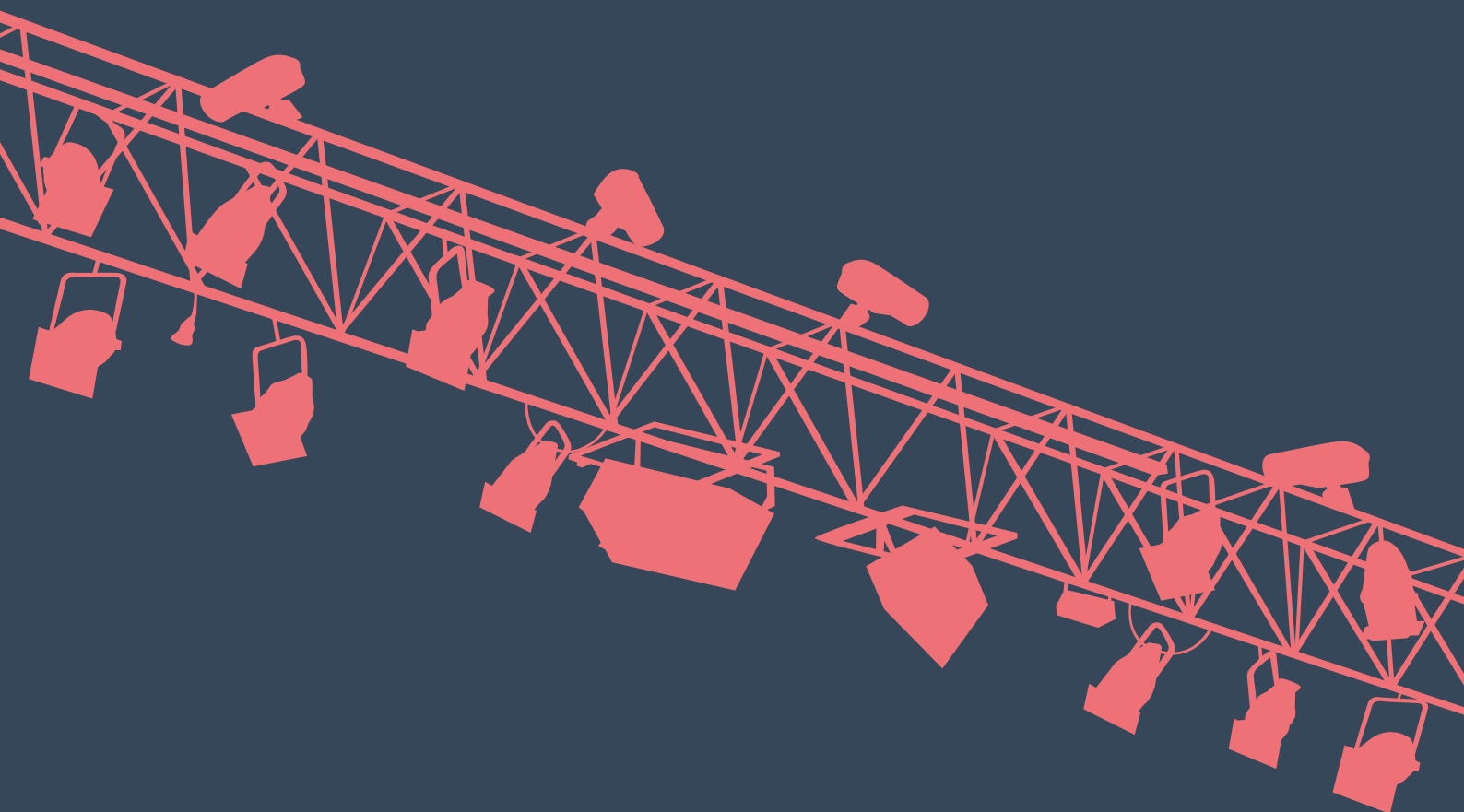


Arts & Entertainment

**lindapter**<sup>®</sup>

Technical Innovation in  
Steelwork Connections



# Welcome

## **lindapter**<sup>®</sup>

### Safely securing steelwork for over 80 years

Lindapter products are used extensively around the world for permanent and temporary connections in a wide variety of applications in the Arts & Entertainment industry.

Whether it is securing structural steel sections, pulley systems, walkways or suspending a large exhibit, Lindapter has a proven, accredited connection solution.

Established in 1934, Lindapter International is the world's innovator of steelwork clamping systems that eliminate the need to drill or weld steel. In comparison to these traditional methods, Lindapter products do not require hot work permits, allowing for a safer, faster installation and less work at height while significantly reducing costs.



*Steel-to-steel connections*

### Why use Lindapter connections?

#### LOWER LABOUR COSTS



Faster installation

#### NO STEELWORK DAMAGE



No drilling or welding

#### EASY TO INSTALL



Adjustable positioning

#### DURABLE



High strength connections

#### HASSLE-FREE SOLUTIONS



Free connection design

#### RELIABLE



Independently approved

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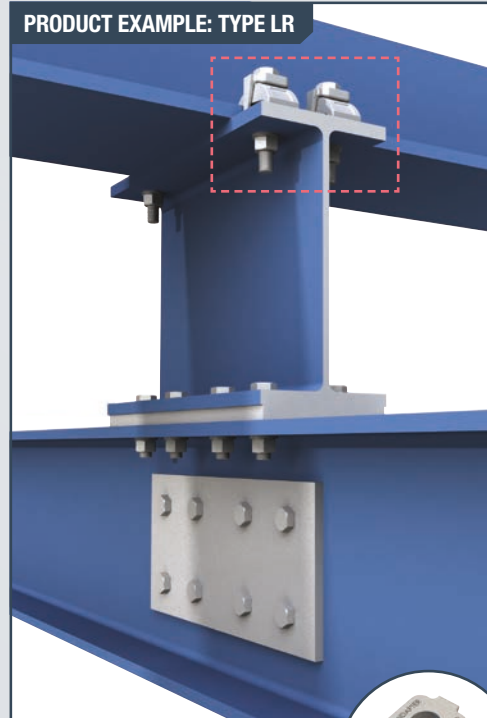
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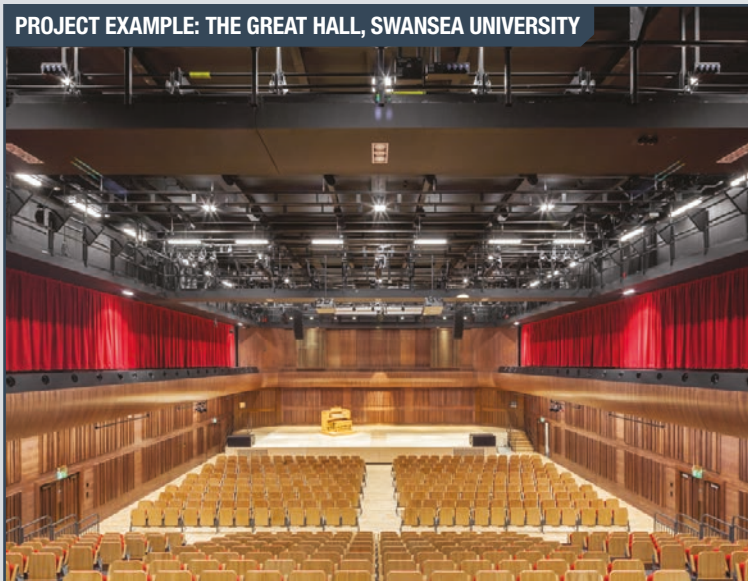
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#### PRODUCT EXAMPLE: TYPE LR



A versatile self-adjusting clamp designed to suit a range of flange thicknesses.

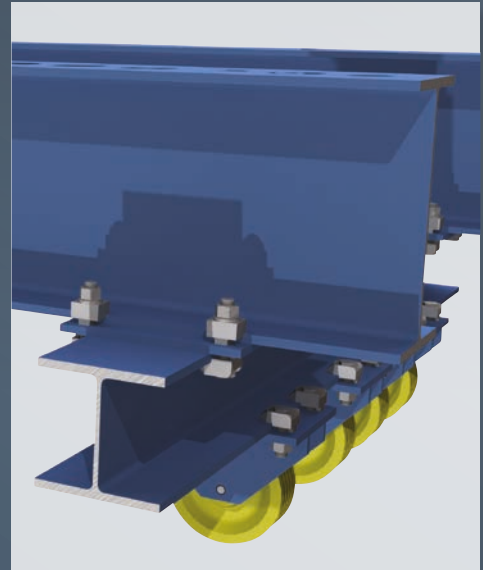
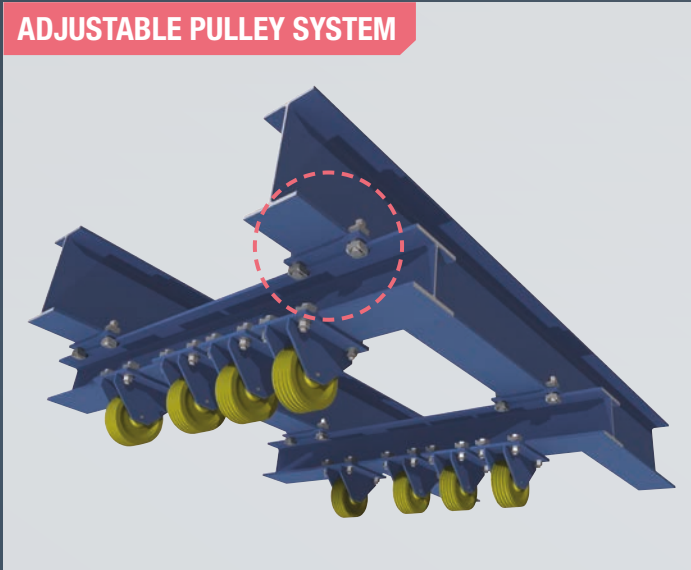
#### PROJECT EXAMPLE: THE GREAT HALL, SWANSEA UNIVERSITY



Lindapter Type LRs secured a secondary steel frame to the structural beams. Read more on page 10.

# Typical Applications

## ADJUSTABLE PULLEY SYSTEM



Lindapter Type A and Type B Girder Clamps are used in theatres to connect steel sections together in order to create the support framework for pulleys. The pulleys are then clamped onto the beams to help control the stage curtains, scenery and props. Girder Clamps are incredibly easy to install and provide adjustability which allows for quick reconfiguration at a later date.

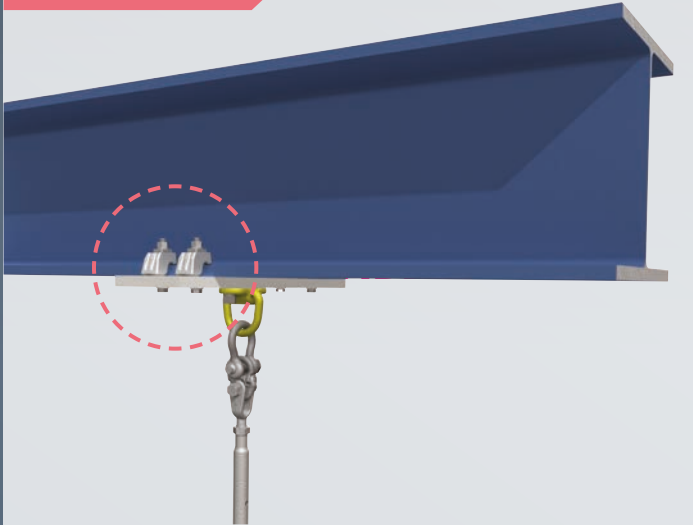
## FALL ARRESTS



Performers, installers and maintenance teams can be suspended, transported and lifted while attached to a secondary safety device that is securely fastened to the building with Lindapter's range of high slip resistance clamps. These fixings are suitable for tensile, slip and combined loads, therefore providing an ideal solution for sloped or curved structures.



## RIGGING EXHIBITS



Display exhibits and historic artefacts are safely secured in museums and galleries using Lindapter Lifting Points. The Type ALP is perfectly suited to such applications as it adjusts to suit various beam sizes, resulting in a quick and precise installation with just standard hand tools. This allows displays to be changed or adjusted quickly and crucially, without damaging the exhibit or steelwork.

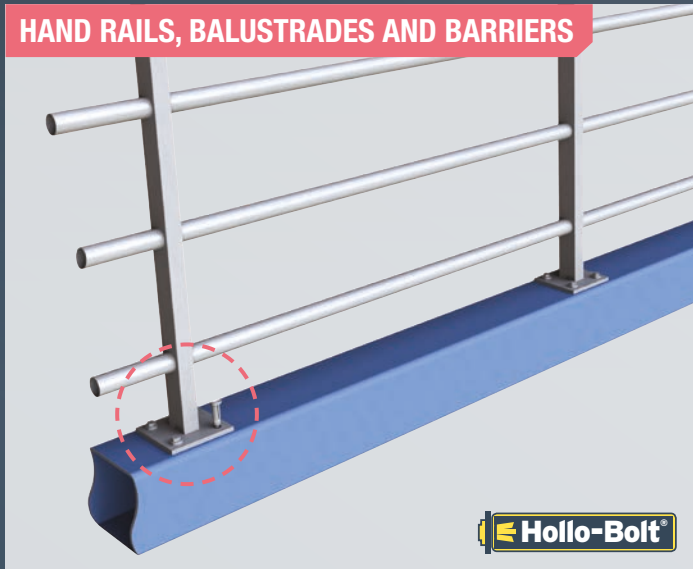
## PRIMARY AND SECONDARY FRAMEWORK CONNECTIONS



Lindapter connections are suitable for both primary and secondary steelwork applications. For example, Holo-Bolts are expansion bolts ideal for structural steel hollow sections and can be installed rapidly from one side only. For further information please contact Lindapter or visit [www.Holo-Bolt.com](http://www.Holo-Bolt.com) to watch the installation video and download the Holo-Bolt brochure.

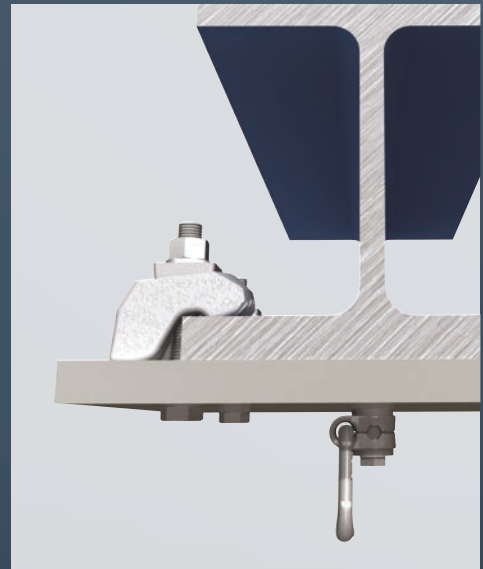
# Typical Applications

## HAND RAILS, BALUSTRADES AND BARRIERS



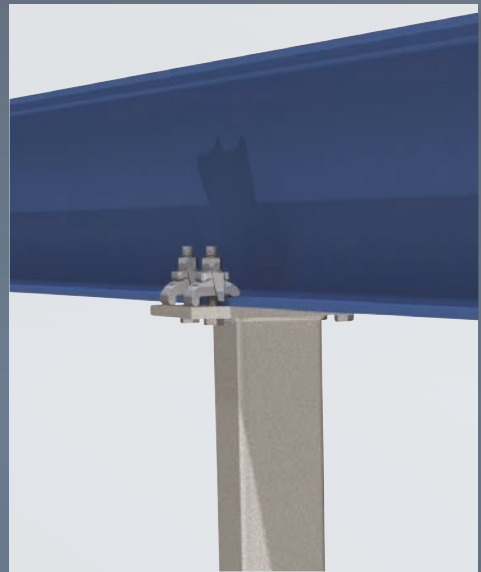
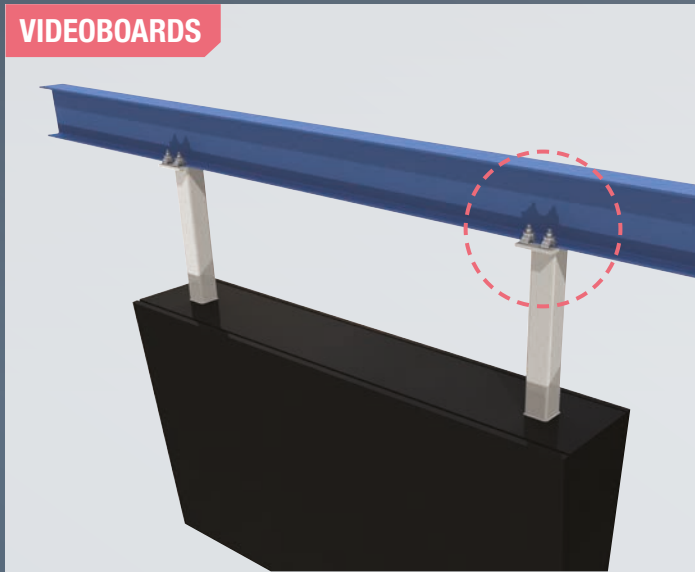
Hollo-Bolts by Lindapter are commonly used to connect handrails, balustrades and barriers to steel hollow section because they provide a safe and permanent connection solution that is quick to install using simple hand tools. Hollo-Bolt is available in a range of architectural styles for a discreet finish. Please contact Lindapter for the full range of sizes, finishes and head types or download the Hollo-Bolt brochure.

## RIGGING SYSTEMS FOR AV EQUIPMENT



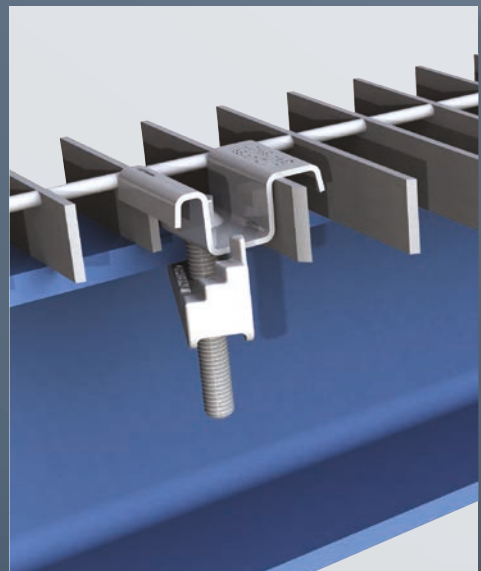
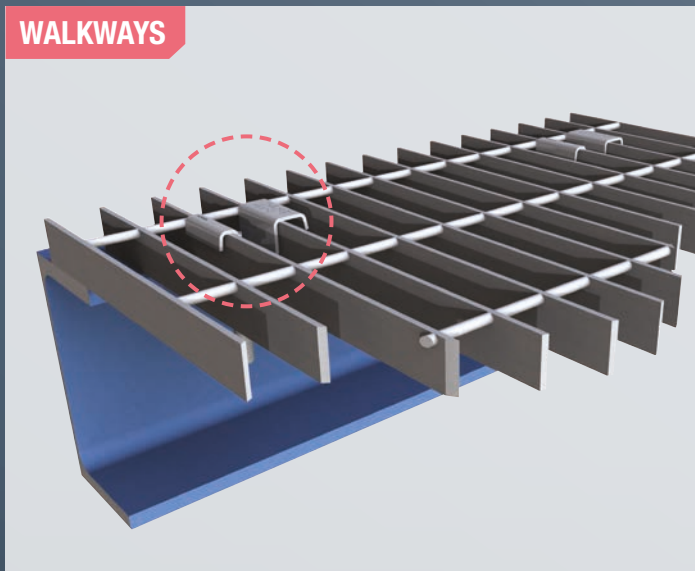
Lindapter's Lifting Points have been used to secure large rigging grids without drilling or welding. The Type ALP, Lindapter's standard Lifting Point, adjusts to suit various beam widths and thicknesses and is often chosen to attach such systems to sloped beams as it provides resistance to tensile, frictional and combined loading. Lindapter can design and manufacture bespoke Lifting Points to suit your specific application, please see page 15.

## VIDEOBOARDS



Adjustable clamping systems allow videoboard support brackets to be securely connected back to the supporting steelwork without drilling or welding. Using standard hand tools means that there is no requirement for a hot work permit, skilled labour or area closures. This allows a faster and more convenient installation process compared to conventional methods.

## WALKWAYS

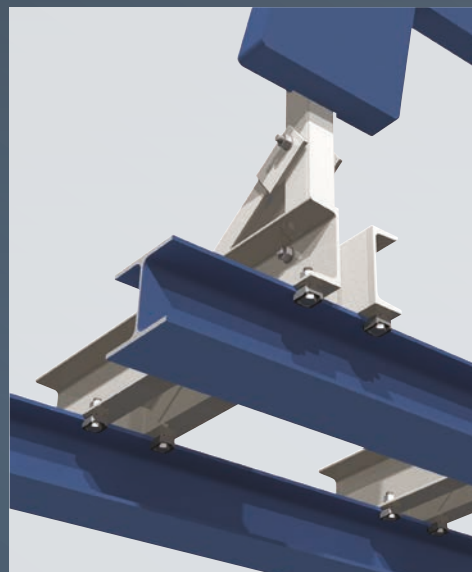
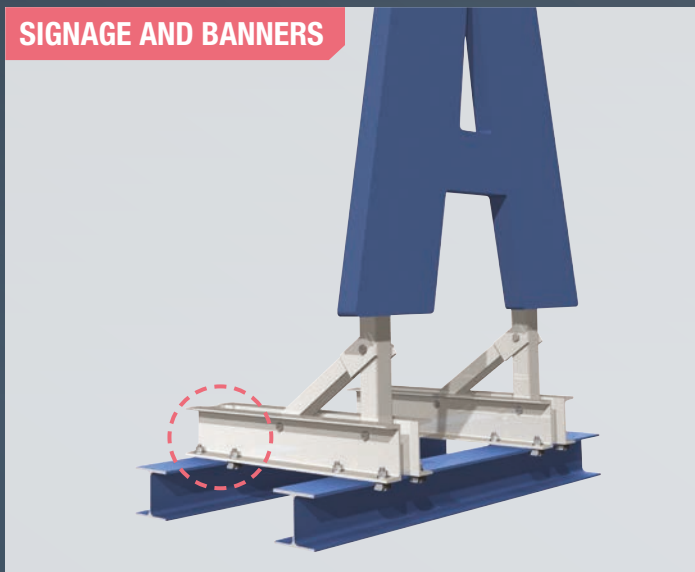


Open bar grating and chequer plate flooring is quickly and safely secured to walkway frames using Lindapter floor fixings. This clamping method can be carried out by just one person from above, removing the need for power tools or costly scaffolding and reducing installation time and cost. Products for securing steel walkway frames are also available, please contact Lindapter for more information.



# Typical Applications

## SIGNAGE AND BANNERS



Suspended signs and banners are most commonly found on bridges, billboards and exhibition halls where a fast turnaround between displays is required. Lindapter fixings provide the ideal solution as they comfortably keep the sign secured in place for the duration of the publicised event and can then be quickly taken down once it has finished, ready for the next display without damaging the steelwork.

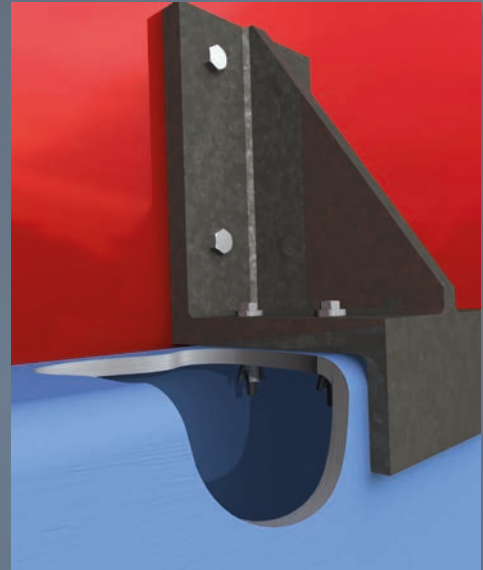
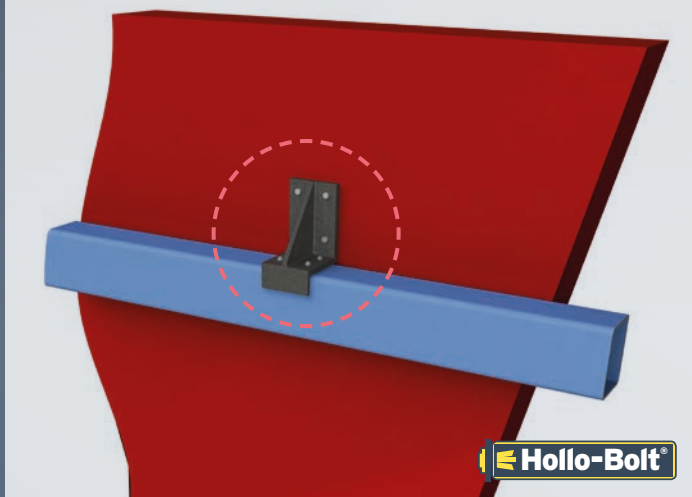
## TEMPORARY SEATING



When increasing the capacity of a venue or transforming open space into an auditorium, Lindapter Hollo-Bolts can be used to secure additional temporary seating to the supporting steel structure. Hollo-Bolts are very simple to install and can be removed between events. Please visit [www.Lindapter.com](http://www.Lindapter.com) to watch Lindapter's collection of installation videos.

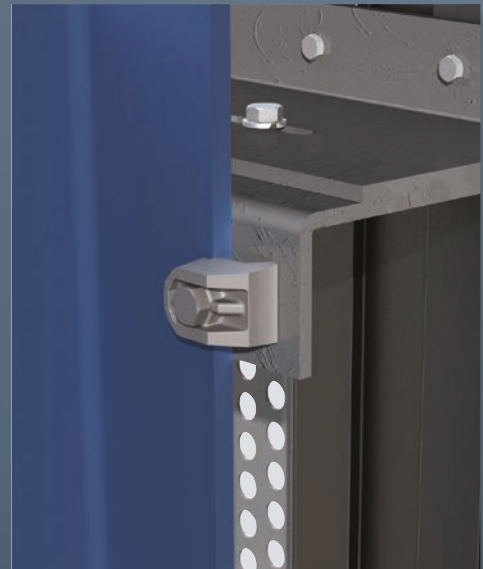
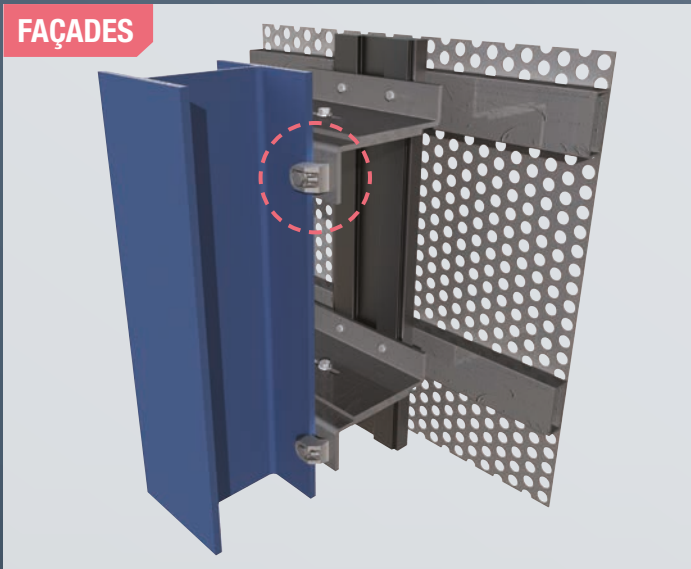


## SCULPTURES



Sculptures are often mounted to steel frames using Lindapter fixings, which can also be used to connect individual components of steel sculptures in elevated positions or areas prone to strong winds and even earthquakes. The Hollo-Bolt by Lindapter is an aesthetically-pleasing high strength SHS connection that performs exceptionally well in adverse weather conditions and has full seismic approval from the North American approval body ICC-ES.

## FAÇADES



Lindapter has a range of High Slip Resistance Clamps that are specifically developed for securing elements to vertical steel columns. These high strength clamping systems are ideal for connecting façade panels back to the structural steelwork due to the vertical and lateral adjustability which provides a quick and precise alignment of the panels during installation.

# Project Experience

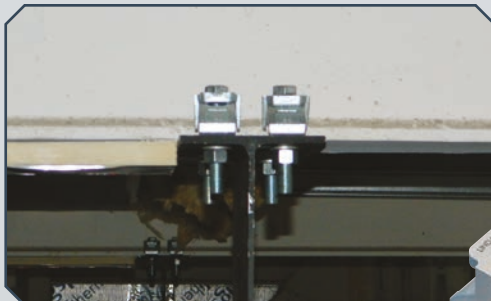


**THE GREAT HALL**  
Swansea, United Kingdom

**Type LR clamps secured the main support beams back to the structural steelwork in order to suspend the audio-visual kit in the £32m building at Swansea University.**

The Type LR clamp was chosen as it allows for on-site lateral adjustability which allowed the contractors to quickly slide the beams into position and then tighten with simple hand tools.

For further convenience, the clamp self-adjusts to suit various flange thicknesses, which helped the installer to rapidly secure the sections without drilling or welding. Lindapter connections also secured the suspended walkways around the perimeter of the room to allow sound and lighting technicians to access the equipment.

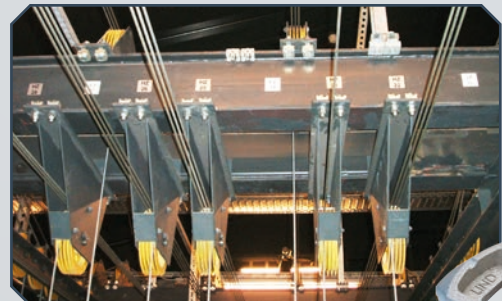


**BERLIN MUSICAL THEATRE**  
Berlin, Germany

**Girder Clamp assemblies connected the adjustable support system and pulley guides backstage at Berlin Musical Theatre.**

The steel beams were connected together using the Type A Girder Clamps to create the supporting framework. Pulley guides were then secured onto the beams, which are used to control the curtains and props.

The easy-to-install Girder Clamps provide lateral adjustability which allows a quick reconfiguration at a later stage by simply loosening and sliding the beams into position, before retightening with standard hand tools. Using the Lindapter clamping method saves time and money and avoids damage to the steelwork or coatings.



For more Project Experience examples please visit [www.Lindapter.com](http://www.Lindapter.com)





### OLYMPIA NATIONAL HALL London, United Kingdom

**Type AF high friction clamps secured a fall arrest system to the original riveted beams of the hall to allow maintenance work to be carried out in difficult areas.**

A bespoke assembly secured the wire cable to the listed structure's arched trusses, allowing the wire to span from the side of the building, up and across to the centre of the dome roof. An anchor point was held in place by four Type AFs, providing strength whilst preserving the steelwork integrity.

Type AF is a high strength clamp for friction, tension and combined load applications, supporting safe working frictional loads up to 70kN and up to 250kN tensile (size M24 Type AF clamps with four grade 10.9 bolts).

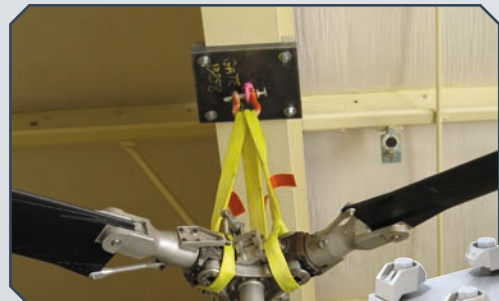


### AMERICAN HELICOPTER MUSEUM Philadelphia, USA

**Lindapter steelwork fixings were supplied to the American Helicopter Museum for the suspension of an Enstrom F28A Helicopter. Installers used one Lindapter Lifting Point fitted with an eye bolt.**

The helicopter weighed in at over 700kgs, which is well within the 3000kg capability of Lindapter's standard Lifting Point. The configuration includes four M12 Type AAF clamps that helped installers to quickly and easily attach the Lifting Point because the clamps self-adjust to suit flange thicknesses.

They also benefitted from the slotted holes on the location plate which suit 70mm to 210mm beam widths. The versatility means that the Lifting Point can be reused for other exhibits at a later stage.



For more Project Experience examples please visit [www.Lindapter.com](http://www.Lindapter.com)



# Project Experience



© Story Bridge Adventure Climb

## STORY BRIDGE ADVENTURE CLIMB Brisbane, Australia

The guided tour starts beneath the bridge on a suspended walkway which leads up to the top of Story Bridge where visitors can enjoy the stunning panoramic views, 80 metres above sea level.

Type AF fixings were used to connect a secondary structural frame to the existing steelwork in order to support the walkways. The clamps provided lateral adjustability during installation, allowing contractors to quickly and conveniently connect the structure, minimising work at height.

Grate-Fast® fixings were used to secure the metal grate flooring on the walkways and viewing platform and Type A clamps were also used to secure the lighting throughout.



© John Wernick

## 'FATA MORGANA' SCULPTURE New York City, USA

Over 1000 Type AF clamps were specified to connect the steel framework of artist Teresita Fernandez's intricate 500ft long foliage patterned canopy 'Fata Morgana'.

The high slip resistant clamps allow a quick and convenient installation process without on-site drilling or welding. This eliminated the need for hot work permits and site closures, which is essential in a park that attracts 50,000 people a day.

Type AF provides lateral adjustability and allows contractors to easily slide the beams into position before tightening the clamps with hand tools. The procedure was then reversed when dismantling without damaging the artwork or its coatings.



For more Project Experience examples please visit [www.Lindapter.com](http://www.Lindapter.com)

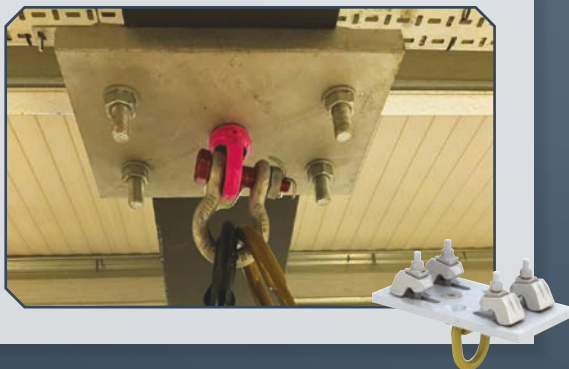


### LONGLEAT SAFARI & ADVENTURE PARK Wiltshire, United Kingdom

**Installation Engineers from Zeal Live used Lindapter Lifting Points to install AV equipment onto the roof beams for an event at the Adventure Park.**

After evaluating several options, Lindapter's Type LPs were used as they consist of an adjustable load ring and Type AF clamps which offer high load capacities in tensile, slip and combined load applications, ideal for sloping roof beams.

The products lateral adjustability helped the contractors to quickly and precisely position the sound and lighting rigs before securing with simple hand tools. Avoiding the need for drilling and welding ensured there was no damage to the beams or their coatings.

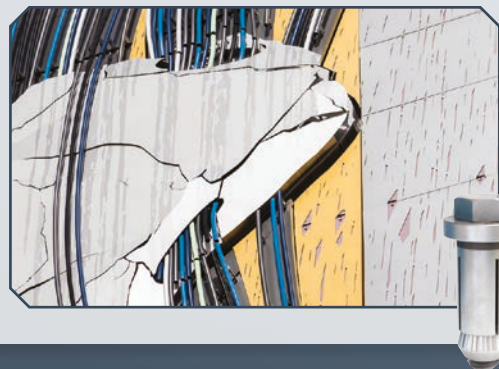


### 'FLOWS TWO WAYS' SCULPTURE New York City, USA

**Lindapter Hollo-Bolts were used to attach the artistic components of Stephen Glassman's sculptural façade to a steel grid on the wall of Helena 57 WEST.**

Hollo-Bolts secured 35 interlocking panels and 400 aluminium tubes onto a stainless steel mounting matrix. It was specified because it is approved by ICC-ES for use in all seismic design categories (A-F) for resisting wind loads and seismic loads.

The use of Hollo-Bolts resulted in a discreet architectural finish, which complemented the design of the sculpture and provided a durable, high strength connection.



For more Project Experience examples please visit [www.Lindapter.com](http://www.Lindapter.com)



# Accreditation & Service

## Independent Product Approvals

Lindapter has manufactured to the highest standard for over 80 years, earning a multitude of independent approvals and a reputation synonymous with safety and reliability. Current accreditations include:

**CE Marking** For Lindapter products in compliance with the provisions of the EC Construction Product Regulation visit [www.Lindapter.com/About/CE](http://www.Lindapter.com/About/CE)



**ICC-ES** Lindapter's Holo-Bolt has been approved for use in all Seismic Design Categories (A to F) by North America's leading evaluation service.



**Deutsches Institut für Bautechnik** is a body that approves construction products for use in structural and civil engineering industries in Germany.



**Factory Mutual**, an American insurance organisation, offers an approval which is recognised by the fire protection industry worldwide.



**Lloyd's Register Type Approved** products have been subjected to tensile, frictional, vibration and shock tests, witnessed and verified by Lloyd's Register.



**Verband der Schadenversicherer** is a leading German independent testing institutions for products used in fire protection applications.



**TÜV NORD** is the certifying authority for safety, quality and environmental protection in Germany.



**Loss Prevention Certification Board (LPCB)** is a renowned International Certification body in the field of security and fire protection.



## Quality and Environment

Accredited to **ISO 9001** since 1986, Lindapter strictly enforces a quality management system that includes vigorous product testing to ensure consistently high manufacturing standards.



Lindapter also operates an **ISO 14001** certified environmental management system and constantly monitors and improves aspects of the business that may have an impact on the environment, including the use of natural resources, the handling and treatment of waste and energy consumption.



## Associations

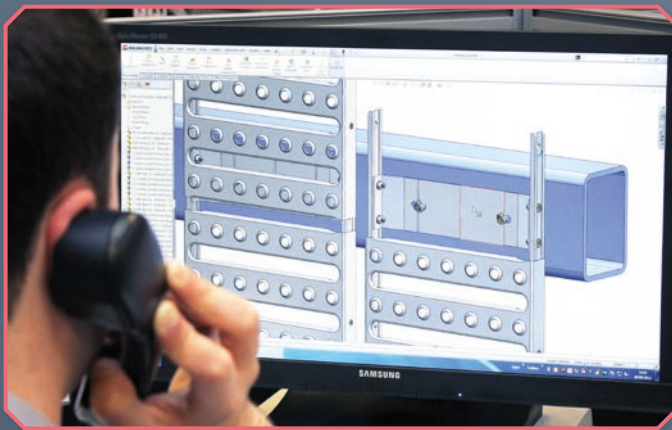
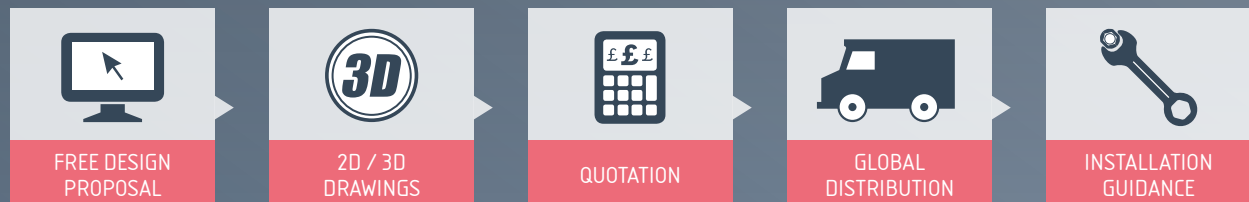
Lindapter is a member of the following organisations: British Constructional Steelwork Association, The Steel Construction Institute, American Institute of Steel Construction and Southern African Institute of Steel Construction.





## The Lindapter Service

Experienced Engineers offer an unrivalled support service, including free design and bespoke product development. Lindapter's philosophy is to deliver the highest quality at every stage of the service, from initial design through to installation guidance, see below:



### You will receive...

- ✓ Specialist advice from experienced Engineers
- ✓ Free connection design based upon your requirements
- ✓ Bespoke drawings delivered in 2D and interactive 3D formats
- ✓ CAD files that can be imported into all major software applications
- ✓ Contractor training and on-site visits (where required)

## Engineered Solutions

Lindapter's Research & Development facility and unique expertise facilitates a bespoke product development service, referred to as 'Engineered Solutions'.

Supported by the latest technology including 3D printing, rapid prototyping with the aid of two in-house 1000kN hydraulic test machines (pictured right) and finite element analysis, Lindapter's Engineers can develop solutions that satisfy your connection demands.



Ask Lindapter to design a solution to your requirements. Call **+44 (0) 1274 521444** or email **support@Lindapter.com**



**Disclaimer** Lindapter International supplies components in good faith, on the assumption that customers fully understand the loadings, safety factors and physical parameters of the products involved. Customers or users who are unaware or unsure of any details should refer to Lindapter International before use. Responsibility for loss, damage, or other consequences of misuse cannot be accepted. Lindapter makes every effort to ensure that technical specifications and other product descriptions are correct. 'Specification' shall mean the specification (relating to the use of the materials) set out in the quotation given by the Seller to the Buyer. Responsibility for errors or omissions cannot be accepted. All dimensions stated are subject to production tolerances - if in doubt please check with Lindapter. In the interests of improving the quality and performance of Lindapter products, we reserve the right to make specification changes without prior notice.

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Ask Lindapter to design a solution  
to your connection requirements:

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**Fax:** +44 (0) 1274 521 130

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**Technical Support:** [support@Lindapter.com](mailto:support@Lindapter.com)

