Ensuring safe and accessible environments
Lloyd Worrall Group (LWG) are a premier architectural solutions provider to the commercial, education, health, retail and leisure sectors of the construction industry through consultation, specification and end-user interaction.

LWG supply and specify architectural ironmongery, high performance commercial doorsets, access control and door automation and a range of modular handrail & balustrade solutions.

Lloyd Worrall Group is the architectural division of Macnaughton Blair Ltd, a member of Grafton Group plc - a major building material and services supplier operating in the UK and Ireland.

The architectural division incorporates 4 Lloyd Worrall branches together with Yannedis, Classic Hardware and MB Architectural.

Collectively Lloyd Worrall Group has been specifying and supplying the construction industry with its architectural hardware requirements since 1911.

**Lloyd Worrall** provides nationwide coverage in GB, operating extensively in both the commercial and public sector markets.

**Yannedis** serves the high-end commercial and public sector markets in London.

**Classic Hardware** is a nationwide specialist supplier to the housing and facilities management sectors.

**MB Architectural** operates extensively in both the commercial and public sector markets throughout Northern Ireland.

Each company works closely with architects, key specifiers and construction design teams offering a comprehensive service including performance specifications, scheduling services, quotations, full doorset packing and delivery services.

The specification is brand driven using carefully selected products that are both durable and fit for purpose, ensuring that all relevant performance standards are adhered to including BS8300 (ADM), BS EN, Certifire and CE Marking.

**BIM Ready**

LWG now boasts a library of Interspec Doorset COBie compliant BIM objects which can be downloaded from our website:

www.lloydworrall.co.uk/pages/bim

LWG BIM objects offer user selectable ironmongery sets based on the function of the space in which the door is to be used. 6 ironmongery variants are available, making them the only BIM objects currently in wide circulation to feature such a characteristic.
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### Sectors

- Health
- Transport
- Commercial
- Residential Care
- Accommodation
- Education
Accessible Handrail System Solutions

A handrail makes a large contribution to fall prevention. It helps to safeguard the movement of people with reduced sense of balance and provides reliable support. Handrails shaped for easy gripping enable secure gripping - round shapes are ideally suited to this.

Co-ordination and force transfer are improved by the handrail diameter, which are adapted to the users hand. As well as their support function, handrails also act as an orientation and guide system for people with reduced vision.

In terms of accessibility, our handrail and balustrading systems comply with the guidance in Approved Document M and BS8300.

Each system is acceptable for both new construction and for the refurbishment of buildings used by organisations whose activities are subject to The Equality Act 2010.


The LWG modular system is designed to help architects, engineers, specifiers, builders, and contractors ensure that all commercial and public buildings satisfy the requirements of the Equality Act 2010 and applicable Building Regulations.

The range is ideally suited to the key requirements of Doc M including:

- **Colour contrast:** the polyamide range is available in any one of 15 colours and with a 5mm thick nylon sleeve over a steel core the colour cannot be scratched away

- **Warm to touch:** both the timber and polyamide options have low thermal shock characteristics and are therefore ideal for applications in a public healthcare environment and other sectors such as care homes, schools and commercial projects.

- **Direction/floor indicators:** identification of the floor number is important for partially sighted users and tactile elements can be incorporated into the rail to provide this information

- **Closed end:** a requirement of Approved Document M is that a rail should end with a return to the wall and all our systems are designed with this in mind as well as BS6180, BS8300, BS5395, BS EN 12150 and Building Regulations.

The system also complies with the guidance in Approved Document K in relation to guarding.

The modular range consists of polyamide, stainless steel and timber designs and harmonious combinations of these materials. Balustrade infill options include glass, HPL (high pressure laminate) and perforated panels.

Choosing a modular system offers the following benefits to the specifier:

- Kit form.
- Flexibility.
- Made to measure German precision engineering.
- Weld free with concealed fixings and engineered with smooth sweeping bends.
- Robust, maintenance free with extensive longevity.
- Pre-determined constraints.
- Fully compliant.
- Minimum disruption on site.
- Quick lead times.
Total Supply and Fix Package

Our Handrail and Balustrade Division offers a total supply and fix package for handrails and balustrades from initial conception through to final installation.

The package includes:

1. Technical advice from our fully qualified staff during preliminary design stages.
2. The total package quotation can be produced from architects drawings, Bills of Quantities or by ourselves taking site dimensions.
3. Preparation of specifications and Bills of Quantities if required.
4. Schematic drawings for project in Autocad format.
5. Site measurements taken by our contract engineers.
6. CAD fabrication drawings produced for approval.
7. Site fixing programme agreed with contractor.
8. All materials are transported in stout packaging to provide protection during transportation to site.
9. Installation carried out nationally by our qualified installers, co-ordinated by our contracts division.
10. Designs and types of infill’s to clients choice (we recommend 10mm toughened glass).
11. Handover checklist signed by our installer and contractor on completion.

Our modular systems can be made individually to fit any site condition in relation to:

1. Proposals from architects and designers.
2. Building codes and safety requirements, static and dynamic load requirements.
3. Stair type and construction.
4. Dimensions of the stair.
5. Dimensions of HEWI components.

Flexible Requirements for Corridors and Stairs

The LWG modular system can be flexibly adjusted to a buildings requirements. Each handrail system is specifically designed and manufactured to individual site requirements. All elements are made to fit precisely. The standard diameter of 40mm enables the adult hand to obtain a secure grip. The polyamide system is available with a 33mm diameter for use in schools, so that a childs hand can securely grip it.

Continuous Fixing

All of our handrail systems are mounted on the wall by means of supports. As standard our installers will fix the brackets to the underside of the handrail, making it easy for the user to obtain a secure grip and minimising the potential risk of injury.

By applying curves and angle supports the LWG system can be modified to shadow the layout of the stairs so that the system is continuous. A continuous handrail makes the stairs safer to use. To minimise the risk of falling, stair handrails should be available on both sides of the stairs and extend 300mm horizontally beyond the start and end of the stairs.
Polyamide Colour System

• 5mm thick seamless nylon sleeve.
• Offers colour contrast.
• Corrosion resistant core used throughout.
• Not cold to touch - Polyamide has a thermal conductivity of 0.25 w/mk.
• Available in 15 colours allowing a comprehensive design scope.
• Non-porous and easy to clean.
• Homogeneous, consistent full colouring and exceptionally pleasant to touch.
• Careful selection of colours enables handrails and balustrades to provide orientation functionality.
• Well suited for use in heavily frequented public areas such as educational institutions, hospitals and residential care homes.
The HEWI polyamide colour system is offered in 15 colour options. Whether strong accentuation, elegant styling or a combination of various shades of grey, HEWI colour options enable the desired design to be achieved.

### HEWI Basic Colours:
- Buttercup Yellow (13)
- Orange (24)
- Ruby Red (33)
- Burgandy (30)
- Coffee Brown (80)
- Ultramarine Blue (53)
- Steel Blue (50)
- Apple Green (74)
- Meadow Green (73)

### HEWI Neutral Colours:
- Signal White (98)
- Pure White (99)
- Light Grey (97)
- Stone Grey (95)
- Antracte Grey (92)
- Jet Black (90)

Document Part M, Definition 0.29 states:

*When used to indicate the visual perception of one element of the building, or fitting within the building, against another means that there should be a difference in light reflectance value between the two surfaces.*

The contrast should be between all aspects of the built environment, walls, ceiling, architrave, doors and floor.

Many people who have limited vision still have the ability to see some shapes and colours.

Research carried out by Reading University and partly sponsored by HEWI, clearly identifies the light reflection values (LRV) which give adequate visual contrast between door furniture and the door.

A detailed report and a helpful colour contrast palette is available, free of charge, upon request.
Polyamide Colour System

Standards
Balustrades have been independently tested and satisfy the requirements of BS6180 and BS6399, as referred to in the Building Regulations Document K.

Handrails are fully compliant with Approved Document M 2004 and BS8300: 2010.

Fire Resistance - DIN 4102
Steel: non-flammable (Building Materials Class A2).
Polyamide: normal flammability (Building Materials Class B2).

Product Specifics
Handrails are made of 5mm thick solid high quality polyamide sleeves coloured throughout in 15 standard colours with corrosion resistant steel core and are available in both 40mm and 33mm diameter.

Balustrade uprights and top rails are 40mm diameter only.

Wall mounted handrails with rose fixings are available with optional designs for the handrail brackets as illustrated in page 26.

For all bracket types the maximum centres of the brackets are as follows:
1250mm for 33mm diameter
1500mm for 40mm diameter

Balustrades are available with 6 alternative fixing types for uprights to suite most common conditions on staircases. These are fully illustrated on pages 23 to 26.

Infill panels secured with clamp function panel holders are available in 10mm toughened glass to BS EN12150 Class A in clear or tinted options. We are also able to apply manifestations using acid etching or silk screen printing processes. Alternatively infill panels are available in both colour coated perforated metal or stainless steel.

Multi-rails in 40mm or 33mm diameter rail parallel to top rail may also be used in certain situations.

Upright distance maximum 1000mm, railing height 900, 1000mm or 1100mm.

Applications
Educational establishments. Hospitals. Residential Care Homes. Public Buildings with areas of high pedestrian traffic.

Case Study: London Overground Rail Operations Ltd
Lloyd Worrall Group (LWG) has recently supplied and installed to London Overground Rail Operations Ltd (LOROL) with a handrail and balustrade system.

LOROL required a modular system that was quick to install, easy to clean, simple and safe to use. The system also needed to be aesthetically pleasing, durable and be “warm touch” in accordance with their requirements of the Equality Act 2010.

LWG’s Polyamide colour system was selected for the project due to its high durability, warm touch and scratch resistant properties.

Nylon is the ideal material for this high traffic environment where products will require a high degree of resistance to physical abuse. The handrail comprises a corrosion resistant steel inner core, giving it excellent structural strength and flexibility. The 5mm thick polyamide sleeve has a thermal conductivity value of 0.25w/mk, making it warm to touch.

LWG offer a choice of 15 colours for the nylon sleeve, allowing LOROL to select an option that complimented its corporate colours – orange handrails and light grey uprights.
Polyamide Colour System

Handrail Options

Straight handrail with end caps
Bracket W3 (concealed fixing) or Bracket W23 (concealed fixing), 40mm dia or 33mm dia.

End bends without roses
Bracket W3 (concealed fixing) or Bracket W23 (concealed fixing), 40mm dia or 33mm dia.

End bends with rose fixing
Bracket W11 (bend bracket with concealed fixing) 40mm or 33mm dia.

Balustrade Options

Balustrade with colour coated perforated infill panel

Balustrade with toughened safety glass infill panel
Circum Stainless Steel System

- Stainless steel system.
- Available in Grade 304 and Grade 316L.
- Standard satin finish. Polished finish is available.
- Can be combined with the Polyamide or Lignum Systems.
- Fulfils the highest function and design standards.
- Flexible system offering aesthetically pleasing and long lasting visual appeal.
- Often used to complement the stainless steel finish of other elements within the building such as door furniture and lighting.
- Suitable for areas subject to high levels of use and abuse due to its high stability and durability.
The stainless steel Circum handrail and balustrade system effortlessly fulfils the highest function and design standards.

The optional handrail materials available are:
- Polished stainless steel.
- Hardwood.
- Polyamide.

Stainless steel balustrades are available with:
- Perforated stainless steel panels.
- Perforated powder coated stainless steel panels.
- Toughened safety glass.

*Other options are also available for the infills.*

Circum is a flexible system that provides the opportunity to create handrail and balustrade to staircase areas which are aesthetically pleasing and have lasting visual appeal.
Circum Stainless Steel System

Standards
Balustrades have been independently tested and satisfy the requirements of BS6180 and BS6399, as referred to in the Building Regulations Document K.

Handrails and top rails to balustrades are also available (as an option to stainless steel) in hardwood or coloured polyamide. These options are fully compliant with Approved Document M 2004 and BS8300: 2010.

Fire Resistance - DIN 4102
Stainless steel: non-flammable (Building Materials Class A2).

Technology
Handrails and balustrades are assembled from standard components in compliance with ISO 9001 therefore ensuring the highest quality is achieved in manufacture and providing easy installation on site.

Product Specifics
Circum handrails and balustrades are made from stainless steel with a high quality satin finish (240 grain) and concealed connections. This system is made of grade 304 (1.4301) stainless steel as standard, grade 316L (1.4571) is also available upon request.

All handrails are 40mm diameter. Wall fixed handrails, 40mm diameter are mounted on 90° brackets as illustrated on page 21. For all bracket types the maximum centres are 1700mm.

Balustrades have 40mm diameter top rails with 48.3mm diameter uprights mounted on 135mm diameter x 10mm thick platform or side fixing plates. Detailed fixing sections of the fixing plates are illustrated on pages 23 to 26.

Upright distance maximum 1000mm, railing height 900, 1000 or 1100mm.

Various options are available for infill panels to balustrades. Infill panels secured with clamp function panel holders are available in 10mm toughened glass to BS EN12150 Class A in clear or tinted options. We are also able to apply manifestations using acid etching or silk screen printing processes.

Multi-rails in 10mm diameter stainless steel rods running parallel to top rail may also be used in certain situations.

Applications

Case Study: Fishguard Primary School

At Fishguard Primary School LWG handrail and balustrade provided a safe environment for the children whilst blending aesthetically with the theme of the building.

For the external areas of the school the Circum stainless steel system in grade 316 was chosen for the access ramps and steps from the car park, together with the post-mounted handrails and perforated stainless steel infill.

Clear and 5 differing colours of safety glass were used on the balconies and matching perforated stainless steel infill panels were incorporated on the stairs.

Owing to its low maintenance and high durability properties alongside its contemporary appearance, Circum was the perfect choice for the external, high pedestrian traffic areas of the school.
Circum Stainless Steel System

Handrail Options

90° return end, open tube
Bracket W3 (concealed fixing).

Straight end, sealed tube, with impact cover (2mm convexed)
Bracket W3 (concealed fixing).

Balustrade Options

Standard Options

Balustrade with parallel steel rods and stainless steel top rail

Non-standard Options

Balustrade with toughened safety glass infill panel and polyamide top rail

Balustrade with toughened safety glass infill panel and stainless steel top rail

Balustrade with perforated stainless steel infill panel and stainless steel top rail
Lignum Timber System

• Wooden handrail and bracket system.

• Combined with Polyamide or Circum brackets and bends.

• Available in a range of hardwoods including bamboo.

• Special species available upon request.

• Lignum can be visually linked with other interior designed objects such as doors and furniture.

• Flexible system offering aesthetically pleasing and long lasting visual appeal.

• Lignum Protect is designed for use in highly frequented corridors due to a shockproof inlay strip of HPL, preventing damage but allowing a homely appearance.

• Lignum Multiplex, a glued laminated wood, gives an extraordinary, individual look and is stronger than solid wood.
Lignum Timber System

The Lignum handrail system is a modular system enabling the combination of various wooden handrails with brackets and bends made of polyamide and stainless steel.

The available wood types are: beech, oak, maple and steamed bamboo.

Special species available on request.

Lignum Protect
Lignum Protect was designed for use in highly-frequented corridors subjected to severe use. It is a solid wood handrail in which a shockproof strip made of HPL has been inlayed. This combines two advantages: it enables problem-free use of wood in this area to achieve a homely effect and the impact-protected product prevents damage.

Bends and corners made of polyamide or stainless steel also increase the impact resistance at the ends and corners of the handrails and create good options for combinations with other interior fit-out features within the building.

Lignum Multiplex
Lignum Multiplex, a glued laminated wood, continues to be a popular choice. The extraordinary and characteristic striped look is a design feature, which can create a visual link with other interior design objects such as furniture or doors.

Choose from beech, maple or birch Multiplex in combination with various stainless steel brackets. Due to the glue fraction, Multiplex has a comparatively higher strength than solid wood and is therefore more resistant against impact.

Bespoke System 100
The System 100 handrails can be used within private dwellings to individually equip corridors and staircase areas to your requirements.

Made from solid beech, System 100 is available in two finishes: natural beech and stained beech. Please contact us for details on this system.
Lignum Timber System

Standards

Fire Resistance - DIN 4102
Normal flammability (Building Materials Class B2).

Technology
Lignum is a high quality wall mounted handrail system made of 40mm diameter solid European hardwoods. Only A Grade steamed and kiln dried timber is used.

The surface of the handrail is twice sanded and finished with 2 coats of clear protective varnish. All butt joints in the length of the rail have a 2mm chamfer and are dowelled and glued to provide a strong connection.

All handrails are assembled from standard components in compliance with ISO 9001 therefore ensuring the highest quality is achieved in manufacture and providing easy installation on site.

Product Specifics
Lignum handrails are manufacturing using high-grade, quality timbers which are kiln-dried. A UV-cured, solvent free varnish is used for the surface seal. Lignum is available in beech, maple, oak and steamed bamboo as well as the Multiplex variation. Other species are available upon request.

The bends to the rail are available in matching timber, satin stainless steel or coloured polyamide with handrail brackets in various designs.

The different designs of rose fixings are shown on the opposite page. Detailed sections of the handrail brackets are illustrated on page 25. For all bracket types the maximum centre of brackets is 1250mm.

Lignum Protect is complete with an insert strip made of HPL with a black and white core 10.6mm deep, projecting from the face of the handrail to provide impact protection. Lignum Protect has the added advantage of providing a wall protection system combined with a handrail which is fully compliant with Document M of the Building Regulations.

Lignum Multiplex is a high quality handrail system produced in beech or birch (40mm dia). The surface finishes are sanded twice and coated twice with a clear protective varnish. Waxed finishes are available on request. Our proven connecting system comprising glued and screwed joints guarantees stable and visually perfect connections between bends, straight elements and supports.

Applications
Residential Care Homes. Commercial Buildings. Schools and Domestic Housing.

Case Study: Worsnop House
Worsnop House is a sheltered housing scheme in Colchester offering a range of modern and stylish 1 and 2 bedroom apartments.

400m of Lignum timber handrail and balustrade were supplied and installed to corridors and staircases throughout the building.

Great care was taken to ensure the handrail and balustrade system specified took in to consideration the abilities of the end-users. It is important that the accommodation is fully accessible in accordance with the Equality Act 2010 and balanced with the warm and homely feel users have been used to in their own homes.

The Lignum timber system gives a natural warmth together with a rich, modern appearance that is not cold to touch.
Handrail Options: Lignum

End bends and bends at change of direction made of wood.
Bracket W3 (concealed fixing) or Bracket W6 (visible fixing).

End with caps and bends at change of direction made of wood.
Bracket W3 (concealed fixing) or Bracket W6 (visible fixing).

Straight ends with chamfer and bends at change of direction made of wood.
Bracket W3 (concealed fixing) or Bracket W6 (visible fixing).

End bends at change of direction made of stainless steel.
Bracket W3 (concealed fixing) or Bracket W6 (visible fixing).

End bends and elbow bends made of polyamide.
Bracket W3 (concealed fixing) or Bracket W11 (visible fixing).

Handrail Options: Lignum Protect

End bends and bends at change of direction made of polyamide.
Bracket W3 (concealed fixing) or Bracket W6 (visible fixing).

Straight end with wooden cap, bends at change of direction made of polyamide or stainless steel.
Bracket W3 (concealed fixing) or Bracket W11 (visible fixing).

Handrail Options: Lignum Multiplex

End bends made of multiplex, bends at change of direction made of multiplex bend or stainless steel.
Bracket W3 (concealed fixing) or Bracket W6 (visible fixing).

Straight ends with chamfer, bends at change of direction made of multiplex bend or stainless steel.
Bracket W3 (concealed fixing) or Bracket W6 (visible fixing).
In addition to our standard range of modular handrail and balustrade systems, LWG offer a range of bespoke structural glass systems.

Structural glass systems are ideally suited to high-end architectural applications where the simplicity of the structure and where a “clear view” is required through the balustrade to a staircase or a balcony, either for the interior or exterior of a building.

Created without the use of vertical supports, the glass system includes toughened or laminated glass in a range of colours and thicknesses dependant on the application together with a stainless steel handrail.

Our structural glass systems are designed to meet all current UK Building Regulations and as they are designed with no gaps they limit the risk of small children becoming trapped between balustrade bars or being seriously injured from climbing on a balustrade.

The most important factors to take into account when deciding to use structural glass are:

1. What will hold the glass, and is it proved as structurally fit for purpose?
2. Can sufficient fixing grounds be proven?
3. Do the fixing grounds have sufficient strength to meet Building Regulations and British Standards?

The specifier should consider all of the above when appointing sub-contractors to fulfil a structural glass requirement.

At LWG we will provide you with either structural calculations to demonstrate these important factors have been met or provide manufacturers certification to demonstrate this.

Structural glass systems gives the specifier endless design possibilities with a vast range of glass options including clear, low-iron, tinted, manifestations, laminated and laminated with coloured vinyl, to create a truly bespoke solution.

Please contact us for details on the complete range.

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**Technical Detail**

Free-standing glass protective barrier requires 5 design loadings to be taken into consideration:

1. Line load (Horizontal UDL) kN/m.
2. UDL (Infill UDL) kN/m².
3. Concentrated load kN.
4. Impact Force BS EN 12150.
5. The glass should be designed to satisfy appropriate design criteria for glass which is the displacement of any point of the glass relative to its fixings should not exceed L/65, glass should be considered as L = 1300mm. Deflection no more than 20mm.
Balconies of all types are now enjoying a resurgence, both on new builds and as additions to existing properties.

Balconies can allow a seamless blend of external and internal living spaces, opening up rooms and bringing the outside in.

At LWG we work with developers, contractors and homeowners to provide the ideal balcony system, whether they are renovating a balcony or building a new one.

There are 3 main types of balcony:

2. Fully cantilevered balconies without any posts.
3. Balconies supported by two or more posts or brackets.

Whether you decide on a frameless glass balustrade with laminated glass or a galvanised steel structure with composite decking and a powder coated steel balustrade, each individual element will be unique to the project.

All of our balcony systems and structures can be installed throughout the UK by our own installation team, or by a builder of your choice.

We offer a range of standard size balcony and canopy systems which are available in a wide choice of materials and finishes.

We can also accommodate bespoke styles or designs made to specific customer requirements.

With vast experience in technical design we offer a full survey and design package including:

- Site survey.
- System design.
- Technical drawings.
- Manufacture.
- Delivery and Installation.

Please contact us for details on the complete range.
Accessories

Tactile and Braille Handrails

Available as part of the Lignum range, tactile aids can be integrated onto the handrail to help users with vision restrictions to find their way around the buildings, or help with orientation to enable independence and limit confusion.

The signs can be individually designed with Braille and profiled lettering to communicate information such as door numbers or floor level.

Manifestation on Glass

Glass Manifestation is designed to ensure users are aware of the presence of the glass and help stop people walking into the glass and possibly being injured.

Options of manifestations include company names, logos, bespoke images and designs and emblems.

Our manifestations are produced by either acid-etching, silk screen printing or weatherproof film.

Smartrailing

Intelligent LED illuminated stair handrails, which can be modified in colour and frequency according to customers requirement.

This new innovative system is ideal for signposting escape routes, acting as an orientation aid and as access authorisation codes for corridors, floors or conference rooms by assigning different coloured LED lighting to each area.

Smartrailing is ideal for use in large public buildings where segmenting different areas is required. The system has recently been installed in the British Museum in London.
LWG Wall Protection System

The LWG wall protection system is designed to protect walls against scratches or damage caused by impact in highly frequented areas - especially corridors - in hospitals, care and residential facilities, schools and hotels.

The Gard system is manufactured to DIN 4102 flame resistant (building materials Class B1), High Pressured Laminate (HPL) which is extremely durable, heat resistant and easy to clean.

Combined with other components from the handrail range together with corner edge protection the Gard system is an attractive way of providing protection and continuity of design throughout the building.

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**Gard System**

The solid wall protection has chamfered edges (2mm / 45°).
Made from 8mm thick HPL panels.
Fixed with a visible threaded connection.
Finishes: white, grey, beech, maple.

**Dimensions**
The panel blank is approx. 3m long.
Standard heights: 210mm/250mm/320mm/430mm.
Other dimensions available upon request.

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**Circum Corner Edge System**

Made of high quality stainless steel.
Invisibly fixing with glue.

**Dimensions**
Standard angle: 90°.
Other angles available upon request.
Side length: 60mm long, top and bottom rounded with 15mm radius.
Material thickness: 2mm.
Height: 250-1000mm.
Other heights available upon request.

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**Polyamide Corner Edge System**

Made of through-dyed and abrasion-resistant polyamide to match the handrail system.
Concealed screw fixing.

**Dimensions**
Angle: 90° or 135°.
Dia: 40mm.
End: optionally with flat caps or spherical caps.
Height: 250-1000mm.
Other heights available upon request.

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**Lignum Corner Edge System**

Made from solid timber (maple or beech).
Apart from wall-side edges, all other edges are rounded to minimise injury risk.
Visible screw fixing.

**Dimensions**
Standard angle: 90°.
Other angles available upon request.
Side length: inside 50mm, outside 68mm.
Total thickness: 18mm.
Height: 250-1000mm.
Other heights available upon request.
Handrail Brackets

Bracket W3
As illustrated with 12mm dia curved satin stainless steel stem mounted on 80mm dia zinc-plated steel inner fixing rose with 3 screw holes, complete with clip in stainless steel outer cover to conceal fixings.

Bracket W6
As illustrated in satin stainless steel comprising 16mm dia horizontal arm and 12mm vertical stem mounted on 80mm dia stainless steel rose with 2 holes for exposed screw fixings.

Bracket W11
As illustrated, seamless abrasion resistant polyamide, coloured throughout comprising of a 33mm dia bend mounted on 80mm dia zinc plated steel inner fixing rose with 11 screw holes, complete with clip on polyamide outer cover to conceal fixings. The projection is approximately 64mm with a 40mm dia handrail. The projection is approximately 56mm with a 33mm dia handrail.

Bracket G11
As illustrated, seamless abrasion resistant polyamide, coloured throughout comprising of a 33mm dia straight section mounted on 80mm dia zinc plated steel inner fixing rose with 11 screw holes, complete with clip on polyamide outer cover to conceal fixings. The projection is approximately 64mm with a 40mm dia handrail. The projection is approximately 56mm with a 33mm dia handrail.

90° - Angle Bracket W100
Bracket made of stainless steel 1.4301, 15x33mm (vertical) and 35x35mm (horizontal), concealed single-point fixing onto walls with the help of attachment bolts, visible satin stainless steel surfaces in grain 240, minimal wall distance approx. 50mm.

Straight Bracket G100
Bracket made of stainless steel 1.4301, 35x35mm, concealed single-point fixing onto walls with the help of attachment bolts, visible satin stainless steel surfaces in grain 240, minimal wall distance approx. 50mm.
Panel Holders Polyamide and Circum Systems

Panel Holder 40.1155 40.1156

Panel holder with removable polyamide cover and corrosion resistant steel insert, prepared to clamp 6, 8, 9.5, 10, 12 or 13mm thick infill panels. All infill panels require a torque of 12Nm per clamp screw. A 2.5mm gap between panel holder and infill panel should be allowed.

Panel Holder 40.1150 40.1151

Panel holder with removable polyamide cover and corrosion resistant steel insert, prepared to clamp 6, 8, 9.5, 10, 12 or 13mm thick infill panels. All infill panels require a torque of 12Nm per clamp screw. A 2.5mm gap between panel holder and infill panel should be allowed.

Panel Holder Circum

Panel holders to clamp infill panels of 8 or 10mm thickness, clamp screws require a torque of 12Nm to be applied to each screw. Panel holder made of zinc decasting, stainless steel finish, to clamp infill panels of 8 or 10mm thickness, like toughened glass or perforated stainless steel with large frame. The top clamp holders are fitted with a locking pin (6x18mm dia) to avoid slippage of panels. Therefore two holes (12mm dia) are required in the infill panels. A 2.5mm gap between panel holder and infill panel should be allowed.
Fixing Detail  Circum System

Circum Stainless Steel Platform Fixing Plate
(surface fastening)

135mm dia x 10mm thick surface mounting plate suitable for 48.3mm dia posts with a maximum rail height of 110mm.

Application: On treads, landings, upstand kerbs and ramps.

Concrete thickness: 130mm.

Minimum distance from edge of concrete to centre of post: 110mm.

Drilling: 2 holes for the appropriate 12mm anchors.

Distance between holes: 100mm.

Anchoring in concrete: 12mm dia bolts and chemical anchors.

Anchoring in steel: Bolts M12.

Circum Stainless Steel Side Fixing Plate

135mm dia x 10mm thick surface mounting plate suitable for 48.3mm dia posts with a maximum rail height of 110mm.

Application: Stair strings, landing edges, upstand, kerbs and walls.

Concrete thickness: 130mm.

Minimum distance from edge of concrete to centre of post: 105mm.

Minimum distance from edge of concrete to centre of plate: 60mm.

Drilling: 2 holes for the appropriate 12mm anchors.

Distance between holes: 100mm.

Anchoring in concrete: 12mm dia bolts and chemical anchors.

Anchoring in steel: Bolts M12.
HEWI Post Fastening (concrete anchor)

Continuous steel core with cross lug.
Rose to cover core drilled hole.
For 40mm dia posts with max. rail height of 1100mm.

**Application:** On treads, landings and curbs.

**Anchoring Material (floor construction):** Minimum concrete strength B25 (25N/mm²).

A reduction of the min. distance from edge of concrete to centre of post might be possible, but each individual situation must be approved by a qualified technician.

**Note:** Check if min. distance from the edge of the tread or landing reduces the min. required stair width applicable to Building Regulations.

**Filler:** Non-shrink grout.

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HEWI Post Fastening (surface fastening)

Surface mounting with dia 120mm x 10mm steel base plate with steel socket and polyamide outer cover.
Continuous steel core into steel socket secured with M12 screw and four M6 set screws to prevent vertical and horizontal movement.
For 40mm dia posts with max. rail height of 1100mm.

**Concrete thickness:** 130mm.

**Minimum distance from edge of concrete to centre of post:** 110mm.

**Drilling:** 3 holes to appropriate 10mm anchors.

**Distance between holes:** 78mm.

**Anchoring in concrete:** 10mm screws and anchors.

**Anchoring in steel:** Bolts M10.
Fixing Detail Polyamide System

HEWI Post Fastening (two point side mount)

Side mounting with two fastening points. Continuous steel core into lower fastening point, secured with M12 bolt and clamping plate to prevent vertical and horizontal movement.

**Application:** On stringers, landings and walls.

**Anchoring Foundation:** Concrete B25, steel, wood (bolt through).

**Concrete thickness:** 250mm.

**Minimum distance from edge of concrete to centre of post:** 80mm. A reduction of the min. distance might be possible, but each individual situation needs to be approved by a qualified technician.

**Note:** Standard dimension from wall to centre of post = 60mm.

Fastening points can be extended up to 50mm, therefore the maximum tread or landing overhang can be 85mm.

**Drilling:** 2 holes for the appropriate 12mm anchors.

**Distance between holes:** 90mm min.

**Anchoring in concrete:** Appropriate chemical anchor M12 (or expansion anchor M12).

**Anchoring in steel:** Appropriate bolts M12.

HEWI Post Fastening (four point side mount)

Side mounting with four fastening points. Continuous steel core into steel sleeve, secured with M12 bolt and M6 set screw to prevent vertical and horizontal movement. For 40mm dia posts max. rail height of 1100mm.

**Application:** On stringers, landings and walls.

**Anchoring Foundation:** Concrete B25, steel, wood.

**Concrete thickness:** 250mm.

**Minimum distance from edge of concrete to centre of post:** 70mm. A reduction of the min. distance might be possible, but each individual situation needs to be approved by a qualified technician.

**Note:** The max. overhang on treads and landings to be 20mm.

**Minimum distance between fastening points:** 110mm x 110mm.

**Drilling:** 4 holes for the appropriate 12mm anchors.

**Anchoring in concrete:** Chemical anchor M10.

**Anchoring in steel:** Appropriate bolts M10.
HEWI Post Fastening (welded fastening)

Surface mounting with welded steel socket. Continuous steel core into steel socket, secured with four M6 set screws to prevent vertical and horizontal movement.

For 40mm dia posts max. rail height of 1100mm.

**Application:** Steel stringers and plates.

**Minimum stringer/plate width:** 52mm.

**Weld requirements:** Multiple pass weld w/chipping to achieve required build up of weld.

Certified welder required to execute this joint.

Nylon must be protected by wet towels during welding.

Joint to be filled with petroleum jelly after welding.

HEWI Post Fastening (through bolt fastening)

Continuous steel core and two steel roses.

Rose to cover core drilled hole.

**Application:** On open tread stairs and landings with access to the underside.

**Anchoring material (floor construction):** Concrete, marble, hardwood and steel.

**Minimum distance from edge of concrete to centre of post:** 70mm.

A reduction of the min. distance might be possible, but each individual situation needs to be approved by a qualified technician.

Note: Check if min. distance from the edge of the tread or landing reduces the min. required stair width.

**Core drilling:** 30mm dia.
Compliance Guidance

Do You Have Responsibility for Compliance?

It is important to remember that if you are the person carrying out building work to which any requirement of the Building Regulations apply, you have a responsibility to ensure that the work complies with any such requirement. The building owner may also have a responsibility to ensure compliance with Building Regulations requirements and could be served with an enforcement notice in cases of non-compliance.

Tips for the Design and Specification of Handrails and Balustrades

A handrail should be provided on each side of a ramp or stair flight. Stairs and landings should be provided with protection against falling over the edge of a flight or landing. Any change of level of 600mm or more should be guarded to prevent falling under the handrail.

A handrail should be continuous throughout the length of the ramp or stair, including landings. In buildings where likely users include children less than 5 years of age, including all dwellings and common stairs in blocks of flats and most public buildings, guarding should be designed to prevent children from falling through it, and avoid entrapment of a child's head. (It can be advantageous to allow small children to see what is on the other side).

The top surface of a handrail should be between 900 and 1000mm from the surface of the ramp or pitch line of stairs and between 900 and 1100mm from the landing. Glass should be considered as L = 1300mm. Deflection no more than 20mm.

Balustrading/guarding to be 1100mm at landings, handrails may be separate from, but supported from the guarding. Additional handrails divide the flight into channels not less than 1m wide and not more than 2m wide where the overall unobstructed width is more than 2m.

All buildings used by the general public and buildings designed for children, a second handrail should be present at 600mm to its top surface from the ramp or pitch line. Minimum barrier heights for in and around a building please see Table 1 BS6180 In non-domestic buildings, manifestation could be applied to clear glass that reach the floor, at an appropriate height to make them visible to children whose eye level is below the top of the barrier.

Where necessary, structural guarding should be provided of sufficient height to prevent a child falling if they climb on the handrail. Height of guarding or barriers installed on top of low parapet walls should be measured from the top of the parapet and not at walk level.

Handrail diameter should be 32mm – 50mm. It protrudes no more than 100mm into the surface width of the ramped or stepped access where this would impinge on the stair width requirement of Part B1. For buildings other than dwellings, if the soffit beneath the stair is less than 2m above floor level, then protect the area beneath the stair with one of the following: guarding and a low level cane detection or a barrier giving the same degree of protection.

A handrail should be easy and comfortable to grip, with no sharp edges. Pedestrian guarding is provided in dwellings, which is capable of preventing people from falling more than the height of 600mm.

A handrail should be continuously graspable along the whole of its length. Pedestrian guarding is provided in other buildings, which is capable of preventing people from falling more than the height of 2 risers or 380mm, if not part of a stair. A handrail should be provided visual contrast with its surroundings. In the case of escape routes and stairs, handrails and strings which do not intrude more than 100mm into these widths may be ignored.

A handrail should provide visual contrast with its surroundings. Handrail should be attached to glass in such a manner that should a glass panel fail, the handrail; will remain in position/will not fail if the design load is applied across the resulting gap.

A handrail should terminate horizontally at least 300mm beyond the start and finish of a ramp or stair. Where the barrier protects a difference in level greater than 600mm, a handrail should always be used unless and finished by attaching to some adjacent structure/ floor, alternatively a laminated toughened glass construction is used that would remain in-situ if a panel fails.

A handrail should be terminated in a way that should reduce the risk of clothing being caught. The glass should be designed to satisfy appropriate design criteria for glass which is the displacement of any point of the glass relative to its fixings should not exceed L/65, glass should be considered as L = 1300mm. Deflection no more than 20mm.

There should be a clearance of between 50 and 75mm between a handrail and any adjacent wall surface, and any handrail support should meet the handrail, centrally, on its underside. For suggestions on the base fixing of free standing barriers consult BS 6180:2011 Figure B.2.

Clearance between the bottom of the rail and any cranked support should be at least 50mm to minimise the risk of the handrail supports interrupting the smooth running of a person's hand along the rail. This information is provided in good faith and without warranty and is LWG interpretations of: Approved Documents M, K, and B, BS8300, BS5395, BS6180 and BS EN 1991.
NBS Specification Guidance  HEWI Polyamide Colour

L30 STAIRS/WALKWAYS/BALUSTRADES

560 BALUSTRADES

REFER TO DRAWINGS:

MANUFACTURER AND REFERENCE: Hewi Polyamide Colour

LWG, Handrail & Balustrade Division, Springfield Ind. Est, Springfield Avenue, Bilston, Wolverhampton WV14 0QL
t: 0330 123 0191  e: handb@lloydworrall.co.uk  w: www.lloydworrall.co.uk  Contact: Roy Bradburn.

Balustrade - HEWI Balustrade design with a handrail comprising of a 40 o/d seamless nylon sleeve with a 5mm wall thickness over a corrosion resistant steel core 30mm dia x 4.5mm.

Posts - connected to uprights of 40mm o/d seamless nylon sleeve with a 5mm wall thickness over a 30mm dia solid steel corrosion resistant steel core.

Infill - Infill panels to be 10mm thick clear float glass toughened to BS EN 12150 with radius corners and flat polished edges.

Fixings - extended for 1.2 anchor fixing set into pockets with non-shrink grout, all fixings complete with nylon outer covers to conceal fixings. Pockets 160mm deep x 60mm diameter core drilled by main contractor on site to receive anchor fixing.

Or

Extended for 1.3 surface mounting plates with 120mm dia x 10mm steel base plate with steel socket and polyamide outer cover.

Or

Extended for 1.4 two point side mounting with two fastening points and polyamide outer covers.

Or

Extended for 1.5 four point side mounting plate with four fastening points and polyamide outer covers.

Or

Extended for 1.7 surface mounting with welded steel socket and polyamide outer cover.

Or

Extended for 2.2 through bolt fastening, continuous steel core and two steel roses with polyamide outer covers.

STANDARDS & REGS: ADM, ADK, ADB, BS5395, BS8300, BS6180, BS EN 12150, BS EN1991.

570 HANDRAILS

REFER TO DRAWINGS:

MANUFACTURER AND REFERENCE: Hewi Polyamide Colour.

LWG, Handrail & Balustrade Division, Springfield Ind. Est, Springfield Avenue, Bilston, Wolverhampton WV14 0QL
t: 0330 123 0191  e: handb@lloydworrall.co.uk  w: www.lloydworrall.co.uk  Contact: Roy Bradburn.

Handrail - Hewi Polyamide Colour Wall fixed handrail with a 40mm dia seamless nylon sleeve with a 5mm wall thickness over a corrosion resistant steel core 30mm diameter x 2mm mounted on handrail brackets type W11 plugged and screwed to walls via 80mm dia steel roses complete with nylon outer covers to conceal fixings.

All bends and connectors included as necessary, all steel will be corrosion resistant steel throughout.


CRITICAL REQUIREMENTS: Not cold to touch, consider LRV’s, scratch resistant & inert to bacteria.
NBS Specification Guidance HEWI Circum

**L30 STAIRS/WALKWAYS/BALUSTRADES**

**560 BALUSTRADES**

REFER TO DRAWINGS:

MANUFACTURER AND REFERENCE: Hewi Circum

LWG, Handrail & Balustrade Division, Springfield Ind. Est, Springfield Avenue, Bilston, Wolverhampton WV14 0QL

t: 0330 123 0191   e: handb@lloydworrall.co.uk   w: www.lloydworrall.co.uk   Contact: Roy Bradburn.

Balustrade - HEWI Circum balustrade design comprising of 40mm Satin Polished Grade 304 or 316 Stainless Steel Handrail System, connected to posts.

Posts - connected to 48.3 diameter satin stainless steel uprights @ maximum 1000mm c/c.

Infill - Infill panels to be 10mm thick clear float glass toughened to BS EN 12150 with radius corners and flat polished edges.

Fixings - extended for Circum Satin Stainless Steel anchor fixing set into pockets with non-shrink grout, all fixings complete with covers to conceal fixings. Pockets 160mm deep x 60mm dia core drilled by main contractor on site to receive anchor fixing.

Or

Extended for Circum Satin Stainless Steel platform fixing plate with 135mm dia x 10mm thick steel base plate.

Or

Extended for Circum Satin Stainless Steel side fixing plate with 135mm dia x 10mm thick surface mounting plate.


CRITICAL REQUIREMENTS: Mechanical fixings, no welded joints accepted.

**570 HANDRAILS**

REFER TO DRAWINGS:

MANUFACTURER AND REFERENCE: HEWI Circum

LWG, Handrail & Balustrade Division, Springfield Ind. Est, Springfield Avenue, Bilston, Wolverhampton WV14 0QL

t: 0330 123 0191   e: handb@lloydworrall.co.uk   w: www.lloydworrall.co.uk   Contact: Roy Bradburn.

Handrail - HEWI Circum wall mounted handrails design comprising 40 dia x 2mm satin stainless steel tube, mounted on satin stainless steel handrail brackets type W3 @ max 1700 c/c plugged and screwed to walls via 80mm dia steel roses with satin stainless steel outer covers to conceal fixings.

All bends and connectors included as necessary.


CRITICAL REQUIREMENTS: Mechanical fixings, no welded joints accepted.
NBS Specification Guidance HEWI Lignum

L30 STAIRS/WALKWAYS/BALUSTRADES

560 BALUSTRADES

REFER TO DRAWINGS:

MANUFACTURER AND REFERENCE: HEWI Lignum

LWG, Handrail & Balustrade Division, Springfield Ind. Est, Springfield Avenue, Bilston, Wolverhampton WV14 0QL
t: 0330 123 0191   e: handb@lloydworrall.co.uk   w: www.lloydworrall.co.uk   Contact: Roy Bradburn.

Balustrade - HEWI Lignum Balustrade design comprising of 40mm Satin Polished Grade 304 stainless steel system complete with Beech handrail internally, connected to posts. (Other species are available to choose from: Maple, Oak, Steamed Bamboo or Wenge stained beech, Walnut stained beech or Birch multiplex, Beech multiplex. Further types of timber on request).

HEWI Lignum Balustrade design comprising of 40mm Satin Polished Grade 304 Stainless Steel Handrail System, connected to posts.

Posts - connected to 48.3 diameter satin stainless steel uprights @ maximum 1000mm c/c.

Infill - Infill panels to be 10mm thick clear float glass toughened to BS EN 12150 with radius corners and flat polished edges.

Fixings - extended for Lignum Satin Stainless Steel anchor fixing set into pockets with non-shrink grout, all fixings complete with covers to conceal fixings. Pockets 160mm deep x 60mm dia core drilled by main contractor on site to receive anchor fixing.

Or

Extended for Lignum Satin Stainless Steel Platform fixing plate with 135mm dia x 10mm thick steel base plate.

Or

Extended for Lignum Satin Stainless Steel side fixing plate with 135mm dia x 10mm thick surface mounting plate.


CRITICAL REQUIREMENTS: Mechanical fixings, no welded joints accepted.

570 HANDRAILS

REFER TO DRAWINGS:

MANUFACTURER AND REFERENCE: HEWI - Lignum

LWG, Handrail & Balustrade Division, Springfield Ind. Est, Springfield Avenue, Bilston, Wolverhampton WV14 0QL
t: 0330 123 0191   e: handb@lloydworrall.co.uk   w: www.lloydworrall.co.uk   Contact: Roy Bradburn.

Handrail - HEWI Lignum 40mm dia Beech handrail factory finished with 2 coats of clear lacquer mounted on stainless steel handrail brackets type W3 @ max 1250 c/c plugged and screwed to walls via 80mm dia steel roses with stainless steel convex outer covers to conceal fixings. (Other species are available to choose from: Maple, Oak, Steamed Bamboo or Wenge stained beech, Walnut stained beech or Birch multiplex, Beech multiplex. Further types of timber on request). All bends at change of direction and ends in stainless steel (alternatively all bends at change of direction and ends available in timber).

All bends and connectors included as necessary.


CRITICAL REQUIREMENTS: Mechanical fixings, no welded joints accepted.
System Solutions for Schools

To complement our handrail and balustrade range, LWG can supply a range of innovative system solutions by HEWI based on accessibility for all. Whether a highly frequented public building, a relaxing private bathroom or compliant accessible fit-out, LWG can provide a HEWI system which will allow the specifier to plan and design inclusively.

The HEWI solutions for specifying for schools comprise of clear, functional designs based on basic geometric shapes. A large selection of colours and materials offer numerous design options. The products are designed so that they can be used intuitively, and so that children find them easy to use.

The range offers high-quality, long-lasting system solutions and enables consistent design throughout - from the entrance hall to the washroom.

Entrance Area
Cloakroom rails and benches provide plenty of storage capacity and create space for playing.
Different hook shapes and types are available.
The hooks are designed to minimise the risk of injuries.

Door, Window and Corridor
Lever handles and window handles are available to match the sanitary systems, so a continuous design is achieved throughout the building.
Thanks to their large radius they are easy for children’s hands to grip and minimise the risk of injuries.

Washroom
A variety of sanitary ranges are available: Polyamide, Stainless Steel and Chrome.
All ranges are characterised by functionality, robustness and ease of cleaning.
Concealed fixings limit the unauthorised removal of fittings and a large selection of colours also offers numerous design options.
Wall coat and hat rack

The hat rack is made of solid beech glulam timber panels. The cloud shaped shelf dividers are made of high quality polyamide and are available in pure white or ultramarine blue.

The wall mounted coat rack is made of high quality polyamide which is fitted with a triple hook which can be rotated, therefore providing plenty of space to stow away items.

Bench with shoe rack

The bench is made of beech glulam timber panels and has a shelf for shoes. The shoe shelf is made of steel mesh and can be easily cleaned.

Both the bench and the hat rack have rounded edges to reduce the risk of injuries.

Pictogram Sets

Please contact us for a comprehensive Solutions for Schools brochure.
Many organisations comment on their increased demands to provide care for people with different needs. The future proofing of your bathrooms will provide total flexibility which will support the independence of users, which in turn allows care staff resources to be used effectively elsewhere.

Lloyd Worrall Group can provide a range of high quality sanitary and accessible solutions from HEWI which are durable, aesthetically pleasing and stylish.

The range utilises an unobtrusive design principle to deliver the highest comfort, safety, hygiene and patient handling requirements which makes it easy for both users and carers to adapt the layout according to their specific requirements.

The detailed systems also capture the clever use of colour and mixture of product textures which can be incorporated across the entire range and is also very useful in the support of orientation and zone identification.

The sanitary solutions are defined by reduced design, a high degree of functionality and careful material selection.

Well considered product details enable intuitive use and facilitate cleaning. Due to the modular structure of the systems, tailor-made solutions are possible, based on the area of use and the needs of the user.

Also available are sanitary accessories, comfort and convenience elements, washbasins and mirrors for consistent sanitary fit-out throughout the building.

**Planning Service**

Working with HEWI, we can provide specific assistance for the planning and design of accessible buildings and spaces. As well as telephone advice, a free planning service is available and includes fixture and fittings plans which are prepared using floor plans and measurements of the connections.

Training can be provided on the subject of accessible equipment design and current British and European Standards through HEWI CPD seminars.
Accessibility Solutions

Our specialist accessibility solutions support people with limited mobility and meet the highest hygiene and safety requirements.

**Mobile Accessible Solutions**
Hinged support rails that are not permanently installed offer maximum flexibility. They can be installed quickly and easily wherever they are needed and at any particular time. Mobile hinged support rails also allow flexible planning as pre-fitting is only required once.

Mobile shower seats provide safety and comfort in the shower. The ergonomic design incorporates an innovative hanging system, stabiliser and integrated carry handle.

If required the shower seats are available in wall mounted, fixed versions.

**WARM TOUCH Solutions**
WARM TOUCH products combine the visual properties of high-gloss chrome surfaces and the tactile features of polyamide.

The range has been developed for professional use in the health sector.

- Due to the products warm touch properties, they are especially suited to users with increased sensitivity to cold, for example those with rheumatic conditions.
- A resistant material, with a high impact and scratch resistance.
- Unaffected by UV light, disinfectants and cleaning agents.
- Smooth, non-porous, hygienic surface facilitates cleaning.
- Innovative fixing concept facilitates and shortens installation time.
- Round tubular design enables symmetrical gripping.
- A comprehensive portfolio is available, including shower rails, grab rails, hinged support rails and grab bars.

Please contact us for a comprehensive Accessibility brochure.
CPD Architectural Handrail and Balustrade

Working with HEWI UK we can deliver an approved RIBA CPD seminar:

Architectural Handrails and Balustrades. Contemporary Design to meet Regulations.

The purpose of this seminar is to understand why compliance with regulations is critical and highlights requirements for the specification of safe and aesthetically pleasing handrails and balustrades.

This seminar will:

- Highlight various requirements within these documents with regard to handrails.
- Give a brief explanation/history of the Equality Act BS8300:2001 (with BS8300:2009 amendments) and Document M, where we are and how we got there.
- Consider design considerations and confirm the requirements within these documents regarding handrails.
- Discuss what is reasonable regarding Document M “Access to and use of buildings”.
- Light reflectance values (LRV) what is it and why?
- Disability Rights Commission (DRC), who they are and what they do?

To book a seminar, simply call the Handrail & Balustrade office direct on t: 0330 123 0191 or via email at e: handb@lloydworrall.co.uk.

Alternatively, contact your local Lloyd Worrall branch.

CORE CURRICULUM
- Being Safe
- Climate
- External Management
- Internal Management
- Compliance
- Procurement and Contracts
- Designing and Building It
- Where People Live
- Context
- Access For All. CPD03785 HEWI

DURATION
- 45 mins
CPD  Sanitary and Accessibility

Working with HEWI UK we can deliver an approved RIBA CPD seminar:

**Sanitary and Accessibility - Design and Function for All.**

This seminar highlights the current market for accessibility/sanitary products and illustrates how contemporary design can be used to comply with current regulations and requirements for people with disabilities.

This seminar will:

- Highlight the demographic changes and the subsequent impact on design demands.
- Highlight rules, regulations and appropriate solutions.
- Introduce Occupational Therapists support network.
- Offer planning templates to meet BS 8300.
- Summarise product.

To book a seminar, simply call the Handrail & Balustrade office direct on **t: 0330 123 0191** or via email at **e: handb@lloydworrall.co.uk**.

Alternatively, contact your local Lloyd Worrall branch.

**CORE CURRICULUM**

- Being Safe
- Climate
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- Internal Management
- Compliance
- Procurement and Contracts
- Designing and Building It
- Where People Live
- Context
- Access For All

**CPD03785 HEWI**

**DURATION**

- 45 mins
Lloyd Worrall Group...Providing Solutions

Commercial Doorsets
LWG offers a comprehensive design, scheduling and project management support service in delivering to our customers a single source and co-ordinated supply of a fully integrated package. Interspec Doorsets offers an extensive range of high performance doorsets including doors, frames, architrave, glazing, architectural ironmongery and access control.

Our library of Interspec Doorset COBie compliant BIM objects offer a unique feature of user selectable ironmongery sets.

Architectural Ironmongery
LWG has been specifying and supplying the construction industry with its architectural hardware requirements since 1907 and are ideally placed to offer advice and guidance on all aspects of ironmongery design and specification.

We offer a full scheduling service dedicated to architects, interior designers and building contractors for all products and ranges of architectural ironmongery.

LWG is committed to delivering continuity, convenience and security of hardware throughout the building, regardless of the size or location of the project.

Access Control and Door Automation
Our independent approach to designing, supplying and installing access control and door automation systems complements the one-stop solution doorsets package.

LWG are able to offer independent advice on a wide range of products that offer the building operator a user friendly, practical system which caters for their security requirements and also meets with their cost expectations, both for initial supply and also by keeping long term maintenance costs to a minimum.

We are able to offer a range of access control products for every application from simple stand-alone products, intelligent handle sets, to fully on-line systems with biometrics.

LWG can offer supply and installation of automatic swing, sliding and folding doors, all of which can be seamlessly integrated with access control utilising our own engineers, working to the recommendations of BS EN16005.

Modular Handrail and Balustrade Systems
LWG offers a total supply and fix package for modular handrails and balustrades from initial conception through to final installation.

To complement our handrail and balustrade range, LWG can supply a range of innovative system solutions based on accessibility for all.
Lloyd Worrall Group
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www.mbarchitectural.com

This brochure is not intended to be used for project specification. It offers an overview of the products and services available. However, if a product is specified from this brochure you are advised to contact us first to check if there have been any changes or alterations to the product specification.

The information contained in this brochure in both text and picture format is believed to be accurate and correct at time of going to press. However, due to circumstances beyond our control, and with a policy of continued product and service development, the information contained may be subject to change, and therefore reserves the right to alter or add to any details illustrated in this brochure without prior notice.

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