

# — LANGFULTON —



## Steel Fencing Systems

### Italia & Delta Louvred Fences & Screening







# Our History & Services

Lang+Fulton is one of the oldest companies in Scotland; its history as iron merchants in Greenock dates back to 1781. From those early days it developed into an important supplier of steel to the UK shipbuilding industry, often carrying steel from the mills in its own ships.

The business has progressively evolved from this background in steel stockholding, fabrication and shipping, and today operates as a supplier of fencing, gratings and louvres, employing a young team from design, engineering and surveying backgrounds.

Our main sales and technical office is based in Edinburgh, with a presence and stockholding facility in the West Midlands to best serve our primary market in the South.

## Fencing

Lang+Fulton's louvred fencing systems combine practicality with a sharp contemporary appearance. They offer a low cost alternative to a solid wall with the advantages of quick and easy installation. Standard width panels are supplied with custom-sized closing panels to suit site measurements and RHS posts in appropriate lengths for either ground or wall fixing; non-standard heights and widths are available to order. Any height of fence can be achieved using a combination of panels, neatly fitted together.

## Security & Durability

The rigid steel panels offer the benefits of low maintenance and a long-lasting finish while providing a high degree of perimeter protection, with direct fixing between panel and post for the strongest possible connection. The angled louvres provide effective anti-climb properties for security applications.

## Bin Stores

Lang+Fulton will design and supply bespoke installations but can also propose a modular system specifically designed for wheelie bins, which incorporates the most economical use of standard panel sizes. Bin stores can be made with or without a roof.

## Compounds & Bike Stores

Secure enclosures or partitioned areas for bicycle or general storage are individually designed. The choice of material will determine the through-visibility of the structure and the corresponding amount of natural daylight; a semi-transparent structure is often considered to provide a safer environment.

## Plant Housing

Ground-level or roof-top housings for the safe protection of mechanical plant, such as air conditioning, heating systems or power-supply equipment, are made from bespoke panels. Different louvres will provide alternative percentages of free area for ventilation.

## Screening

The visual screening properties of the louvred panels make them an appropriate material for projects such as balconies, balustrading and external stairs.

## Technical Assistance and Design

Our Technical Team can draw upon a wealth of experience to propose the exact product that will deliver the desired aesthetic and the most cost-effective, code-compliant solution for a particular project. A full design service is available for panels, posts and gates with consultant engineering services for non-standard loadings and detailed CAD drawings for layout and installation.

## Supply

Products are supplied fully finished for site installation throughout the UK, Channel Islands, Ireland and worldwide destinations.



*The Custom House Quay, Greenock 1820  
Robert Salmon (1775-1845)*



While all reasonable care is taken to ensure that published and website information is accurate and regularly updated, Lang+Fulton cannot guarantee its accuracy and information may change at any time without notice.

# Our Products

Lang+Fulton offers the widest choice of louvred fencing products to the UK and worldwide markets.

The mild steel construction is more economical than aluminium and has a much greater intrinsic strength.

This is particularly important as the linear nature of any louvred material will highlight any defect or irregularity. There are many street-front sites or compounds which may be subjected to hard knocks and potential damage. Where aluminium will dent and distort, steel will maintain the uniformity of its line.

**Italia** louvres have a continuous lateral appearance. There are two alternative products within the range.

- **Italia-100** with overlapping louvres
- **Italia-80** with a 9mm louvre gap

The panels which are framed on both sides are made from profiled steel louvres which are fused to round transverse bars. During the fusion process high voltage electricity combines with pressure to totally amalgamate the component parts at each intersection.

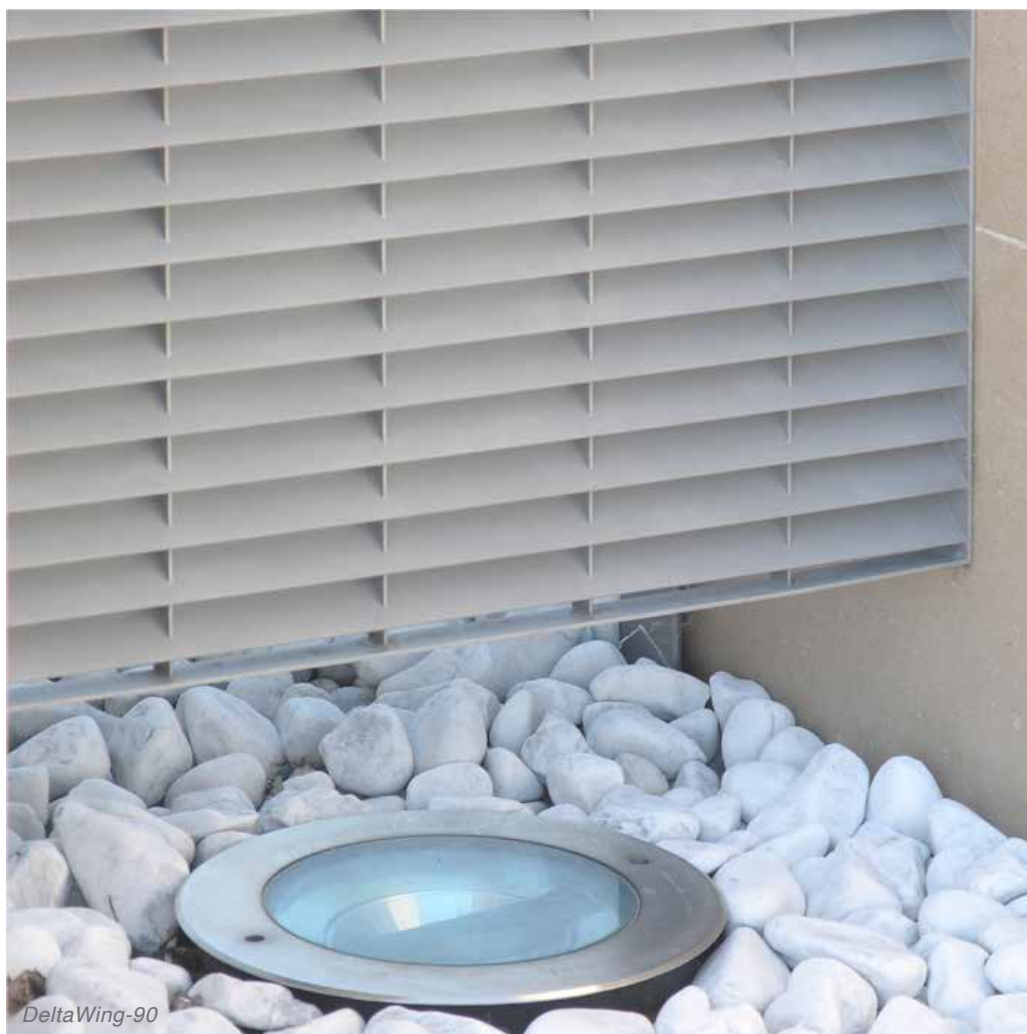
**Delta** louvres have a crisp aesthetic; three different styles offer a choice of linear, geometric or gently profiled form.

The panels are made from inclined steel flat bars which are pressure locked to vertical transverse bars. This process creates perfectly formed intersections.

The inclined louvre can be spaced at any increment of 11mm to provide either total screening or any degree of partial screening with a corresponding free area.

Delta products are particularly robust with a 40x2mm louvre and 20x2 or 30x2mm vertical bars.

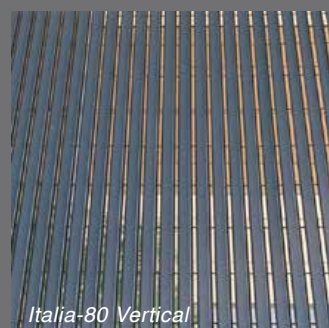
- **DeltaWing**  
The vertical bar is recessed to achieve a more linear appearance.
- **DeltaBox**  
The vertical bar is in line to achieve a more geometric appearance.
- **DeltaFoil**  
The angled bar is profiled to achieve a more organic appearance.



DeltaWing-90



Italia-80



Italia-80 Vertical



Italia-100



DeltaWing-90



DeltaWing-45



DeltaWing-100



DeltaBox-70



DeltaBox-90



DeltaFoil-70





## Italia-80



| PANEL        |              |              | RHS POST      | POST CENTRES | GROUND FIXING          | WALL FIXING            | BOLTS          |
|--------------|--------------|--------------|---------------|--------------|------------------------|------------------------|----------------|
| HEIGHT<br>mm | WIDTH†<br>mm | WEIGHT<br>kg | SECTION<br>mm | mm           | LENGTH/ANCHORAGE<br>mm | LENGTH/ANCHORAGE<br>mm | NO<br>per post |
| 1596         | 1721         | 46           | 60x40         | 1761         | 2300/600               | 1900/200               | 2              |
| 1733         | 1721         | 50           | 60x40         | 1761         | 2500/700               | 2100/300               | 2              |
| 1963         | 1721         | 56           | 80x40         | 1761         | 2800/700               | 2400/300               | 2              |
| 2423*        | 1721         | 56+13        | 80x40         | 1761         | 3200/700               | 2800/300               | 4              |
| 2607*        | 1721         | 56+18        | 80x40         | 1761         | 3400/700               | 3000/300               | 4              |
| 2929*        | 1721         | 56+28        | 100x50        | 1771         | 3700/700               | 3300/300               | 4              |

**ITALIA-80 Vertical:** panels are made with vertical louvres available in heights up to maximum 2500x1992mm and supplied with 100x55mm I-posts centred at 2000mm

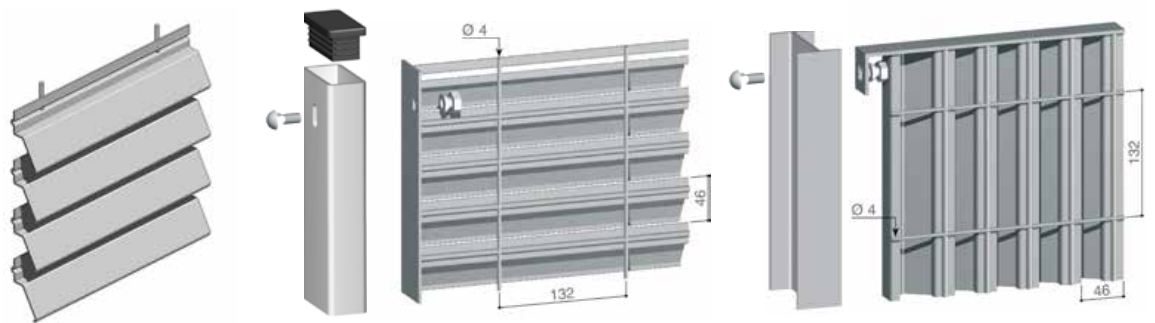
\* heights provided by 2 panels

†custom widths made to order

|                    | VISUAL SCREENING<br>% | FREE AREA<br>% | CLEAR SPACE<br>mm | LOUVRE CENTRES<br>mm | LOUVRE PROFILE<br>SECTION mm |
|--------------------|-----------------------|----------------|-------------------|----------------------|------------------------------|
| Italia-80          | 80                    | 36             | 9                 | 46                   | 50x1.5                       |
| Italia-80 Vertical | variable              | 36             | 9                 | 46                   | 50x1.5                       |



## Italia-100



| PANEL        |                          |              | RHS POST      | POST CENTRES | GROUND FIXING          | WALL FIXING            | BOLTS          |
|--------------|--------------------------|--------------|---------------|--------------|------------------------|------------------------|----------------|
| HEIGHT<br>mm | WIDTH <sup>†</sup><br>mm | WEIGHT<br>kg | SECTION<br>mm | mm           | LENGTH/ANCHORAGE<br>mm | LENGTH/ANCHORAGE<br>mm | NO<br>per post |
| 1608         | 1721                     | 59           | 60x40         | 1761         | 2300/600               | 1900/200               | 2              |
| 1745         | 1721                     | 64           | 60x40         | 1761         | 2500/700               | 2100/300               | 2              |
| 1975         | 1721                     | 72           | 80x40         | 1761         | 2800/700               | 2400/300               | 2              |
| 2479*        | 1721                     | 72+18        | 80x40         | 1761         | 3200/700               | 2800/300               | 4              |
| 2616*        | 1721                     | 72+23        | 80x40         | 1761         | 3400/700               | 3000/300               | 4              |
| 2937*        | 1721                     | 72+35        | 100x50        | 1771         | 3700/700               | 3300/300               | 4              |

**ITALIA-100 Vertical:** panels are made with vertical louvres available in heights up to maximum 2500x1992mm and supplied with 100x55mm I-posts centred at 2000mm

\* heights provided by 2 panels

<sup>†</sup> custom widths made to order

|                     | VISUAL SCREENING<br>% | FREE AREA<br>% | CLEAR SPACE<br>mm | LOUVRE CENTRES<br>mm | LOUVRE PROFILE<br>SECTION mm |
|---------------------|-----------------------|----------------|-------------------|----------------------|------------------------------|
| Italia-100          | 100                   | 29             | 0                 | 46                   | 69x1.5                       |
| Italia-100 Vertical | variable              | 29             | 0                 | 46                   | 69x1.5                       |





### Case Study Italia-80

661 London Road is a new-build in Hounslow. The stylish landscaping by Philip Cave Associates included 250 linear metres of Italia-80 balustrading around the roof-top gardens to provide shelter and security. Separate ventilation plant and service areas were enclosed, with gated access for maintenance.



### Case Study Italia-100

The Sports Centre at Chelmsford is a major venue for athletics and Chelmsford City FC. A 1600mm high Italia-100 fence fulfilled the architect's brief for a durable, cost-effective, screening solution so that fans would be unable to watch matches without purchasing tickets. The fencing was mounted on a 850mm brick wall.







DeltaWing-70



DeltaWing-90



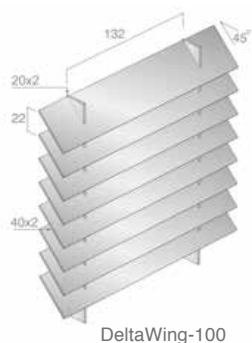
DeltaWing-100



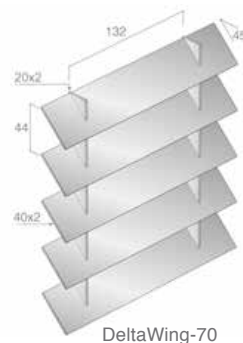
DeltaWing-90

## DeltaWing

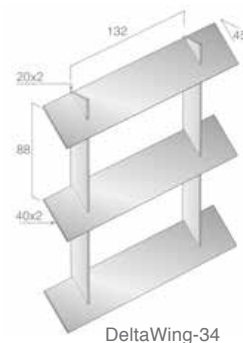
Additional DeltaWing products are available with louvres centred at any increment of 11mm



DeltaWing-100



DeltaWing-70



DeltaWing-34

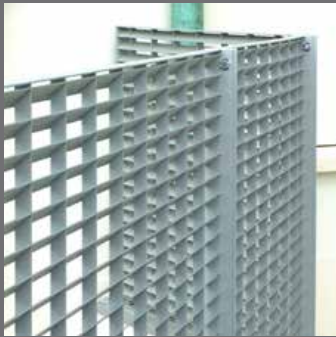
| PANEL        |               | RHS POST      | POST CENTRES | GROUND FIXING          | WALL FIXING            | BOLTS          |
|--------------|---------------|---------------|--------------|------------------------|------------------------|----------------|
| HEIGHT<br>mm | WIDTH †<br>mm | SECTION<br>mm | mm           | LENGTH/ANCHORAGE<br>mm | LENGTH/ANCHORAGE<br>mm | NO<br>per post |
| 1270         | 1720          | 60x40         | 1760         | 1900/600               | 1500/200               | 2              |
| 1534         | 1720          | 60x40         | 1760         | 2200/600               | 1800/200               | 2              |
| 1720         | 1720          | 60x40         | 1760         | 2500/700               | 2100/300               | 2              |
| 2028*        | 1720          | 80x40         | 1760         | 2800/700               | 2400/300               | 2              |
| 2160*        | 1720          | 80x40         | 1760         | 2900/700               | 2500/300               | 4              |
| 2424*        | 1720          | 80x40         | 1760         | 3200/700               | 2800/300               | 4              |
| 2688*        | 1720          | 100x50        | 1770         | 3400/700               | 3000/300               | 4              |
| 2952*        | 1720          | 100x50        | 1770         | 3700/700               | 3300/300               | 4              |

\* heights provided by 2 panels

† custom widths made to order

|               | VISUAL SCREENING (%) | FREE AREA (%) | LOUVRE CENTRES (mm) | CLEAR SPACE (mm) | LOUVRE SECTION (mm) |
|---------------|----------------------|---------------|---------------------|------------------|---------------------|
| DeltaWing-100 | 100                  | 60            | 22                  | 0                | 40x2                |
| DeltaWing-90  | 90                   | 63            | 33                  | 3                | 40x2                |
| DeltaWing-70  | 70                   | 65            | 44                  | 14               | 40x2                |
| DeltaWing-45  | 45                   | 67            | 66                  | 36               | 40x2                |





### Case Study DeltaWing-70

DeltaWing-70 was used as a fencing balustrade to enclose the front courtyards of a residential development. The fencing was mounted on a dwarf wall with the louvred panels providing privacy without significantly reducing the level of natural daylight.



### Case Study DeltaWing-90

DeltaWing-90 provided the appropriate amount of security and visual screening for the prestigious out-of-town business premises of a leading technology company. The project included feature panels mixed with polished sandstone as part of an imposing entrance.





DeltaBox-70



DeltaBox-70



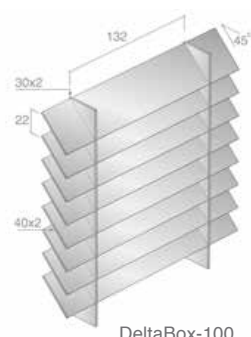
DeltaBox-70



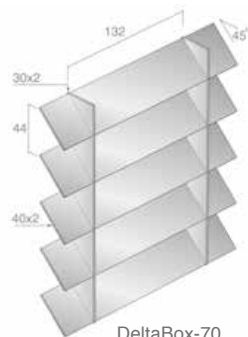
DeltaBox-90

## DeltaBox

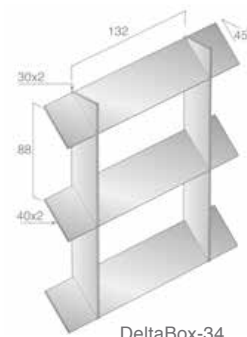
Additional DeltaBox products are available with louvres centred at any increment of 11mm



DeltaBox-100



DeltaBox-70



DeltaBox-34

| PANEL        |              | RHS POST      | POST CENTRES | GROUND FIXING          | WALL FIXING            | BOLTS          |
|--------------|--------------|---------------|--------------|------------------------|------------------------|----------------|
| HEIGHT<br>mm | WIDTH*<br>mm | SECTION<br>mm | mm           | LENGTH/ANCHORAGE<br>mm | LENGTH/ANCHORAGE<br>mm | NO<br>per post |
| 1270         | 1720         | 60x40         | 1760         | 1900/600               | 1500/200               | 2              |
| 1534         | 1720         | 60x40         | 1760         | 2200/600               | 1800/200               | 2              |
| 1720         | 1720         | 60x40         | 1760         | 2500/700               | 2100/300               | 2              |
| 2028*        | 1720         | 80x40         | 1760         | 2800/700               | 2400/300               | 2              |
| 2160*        | 1720         | 80x40         | 1760         | 2900/700               | 2500/300               | 4              |
| 2424*        | 1720         | 80x40         | 1760         | 3200/700               | 2800/300               | 4              |
| 2688*        | 1720         | 100x50        | 1770         | 3400/700               | 3000/300               | 4              |
| 2952*        | 1720         | 100x50        | 1770         | 3700/700               | 3300/300               | 4              |

\* heights provided by 2 panels

† custom widths made to order

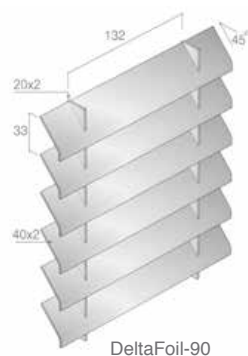
|              | VISUAL SCREENING (%) | FREE AREA (%) | LOUVRE CENTRES (mm) | CLEAR SPACE (mm) | LOUVRE SECTION (mm) |
|--------------|----------------------|---------------|---------------------|------------------|---------------------|
| DeltaBox-100 | 100                  | 60            | 22                  | 0                | 40x2                |
| DeltaBox-90  | 90                   | 63            | 33                  | 3                | 40x2                |
| DeltaBox-70  | 70                   | 65            | 44                  | 14               | 40x2                |
| DeltaBox-45  | 45                   | 67            | 66                  | 36               | 40x2                |





## DeltaFoil

Additional DeltaFoil products are available with louvres centred at any increment of 11mm



DeltaFoil-90

| PANEL        |               | RHS POST      | POST CENTRES | GROUND FIXING          | WALL FIXING            | BOLTS          |
|--------------|---------------|---------------|--------------|------------------------|------------------------|----------------|
| HEIGHT<br>mm | WIDTH †<br>mm | SECTION<br>mm | mm           | LENGTH/ANCHORAGE<br>mm | LENGTH/ANCHORAGE<br>mm | NO<br>per post |
| 1534         | 1720          | 60x40         | 1760         | 2200/600               | 1800/200               | 2              |
| 1720         | 1720          | 60x40         | 1760         | 2500/700               | 2100/300               | 2              |
| 2028*        | 1720          | 80x40         | 1760         | 2800/700               | 2400/300               | 2              |
| 2160*        | 1720          | 80x40         | 1760         | 2900/700               | 2500/300               | 4              |
| 2424*        | 1720          | 80x40         | 1760         | 3200/700               | 2800/300               | 4              |
| 2688*        | 1720          | 100x50        | 1770         | 3400/700               | 3000/300               | 4              |
| 2952*        | 1720          | 100x50        | 1770         | 3700/700               | 3300/300               | 4              |

\* heights provided by 2 panels

† custom widths made to order

|               | VISUAL SCREENING (%) | FREE AREA (%) | LOUVRE CENTRES (mm) | CLEAR SPACE (mm) | LOUVRE SECTION (mm) |
|---------------|----------------------|---------------|---------------------|------------------|---------------------|
| DeltaFoil-100 | 100                  | 31            | 22                  | 0                | 40x2                |
| DeltaFoil-90  | 90                   | 41            | 33                  | 3                | 40x2                |
| DeltaFoil-70  | 70                   | 44            | 44                  | 14               | 40x2                |
| DeltaFoil-45  | 45                   | 50            | 66                  | 36               | 40x2                |



# Wheelie Bin Stores

The quantity of UK domestic waste is increasing at a rate of about 3% per year and Local Authorities are issuing guidelines for storage and collection. External bin enclosures should be:

- of durable construction
- well ventilated
- secure

Lang+Fulton's bin stores are supplied in a tough hot-dip galvanized finish complete with all accessories and drawings for installation. They are individually designed from a practical system of modular steel louvred panels and doors with or without roofing. They can also be made DDA compliant.

The solid steel construction is extremely robust and can incorporate optional bump rails for wheeled 1100 litre Eurobins.

A choice of flat bar or RHS posts together with SHS corner posts are supplied in appropriate lengths for ground foundation or fitted with base plates for bolting to a concrete slab for speedy installation.

Alternative heights:  
1600, 1800, 2000, 2500, 2650, 3000mm

## Gates and Doors:

single leaf or double leaf with high quality euro-profile locks.



## Case Study Italia-80 Bin Stores

### J-Coss Secondary School, Barnet, North London

Three separate fully enclosed wheelie-bin stores were specified for the disposal and recycling of both general and kitchen waste; one double, one triple and one quadruple. These were supplied complete with box profile roof sheeting and support steelwork with base plates for ground bolting.

Finish: hot-dip galvanized

Architect: RHWL Architects  
Main Contractor: Mace Group







## Compounds & Security Screening

Louvred compounds provide the security and visual screening which may be needed for industrial gas storage tanks, for mechanical or electrical plant, or for vehicle, bike or equipment stores.

For the highest security requirements, such as electricity sub-stations, a security or bird mesh can also be fitted to the back of the louvres.

Each compound is custom designed with support steelwork and posts. Posts are supplied either for ground foundation or with base plates for fixing to a concrete slab.

Compounds can be supplied with a roof for additional security or for keeping out birds. The roofing is made from a choice of materials:

- single skin profiled steel with Plastisol coloured finish with or without rain-water gutters
- a matching louvre
- an open mesh grating.

Single or double leaf doors can be fitted with self-closing devices, mechanical code locks, magnetic locks, mortice locks or a simple sliding latch for padlock.



### Case Study Italia-100 Compounds

North Kent Police HQ, Northfleet

The aesthetics of this award winning building were complemented by Italia-100. The robust panels which were mounted on a dwarf crash-barrier wall offered the high level of security and visual screening appropriate for a custody facility. A 3 metre high enclosure separately housed the emergency generator plant, supplied as a complete package with ancillary steelwork and posts with base plates for slab foundation fixing.

Finish: galvanized and ppc RAL7024

Architect: Glenn Howells Architects



# Doors & Gates

All gates are manufactured to custom sizes. Louvred infill panels are generally welded but can be bolted to RHS frames and supplied with SHS posts appropriate to the overall size and weight of the gate.

Gates are designed for manual operation but can also be automated for installation by specialist engineers.

**Swing Gates:** single-leaf, double-leaf or bi-folding gates are designed to conform to BS1722 Parts 9 or 12.

- Full height blanking/slam plates at hinges
- Eurocylinder Locinox mortice locks, sliding latch for padlocks or Maglocks
- Optional Locinox electric strikes for remote opening with provision for intercom units in gate post or adjacent panel
- Adjustable hinges for ease of installation or self-closing hinges.

**Sliding Gates:** ground fixed rail, overhead rail or cantilevered gates can be supplied.

**Pivot Gates:** made up to 2.4m high and 2.0m wide and mounted on a single RHS post and positioned to provide equal or unequal openings.

Automated gates must carry the CE mark certifying manufacture and testing in compliance with EU health, safety and environmental requirements EN13241-1, EN12604, EN12605 and EN12424.



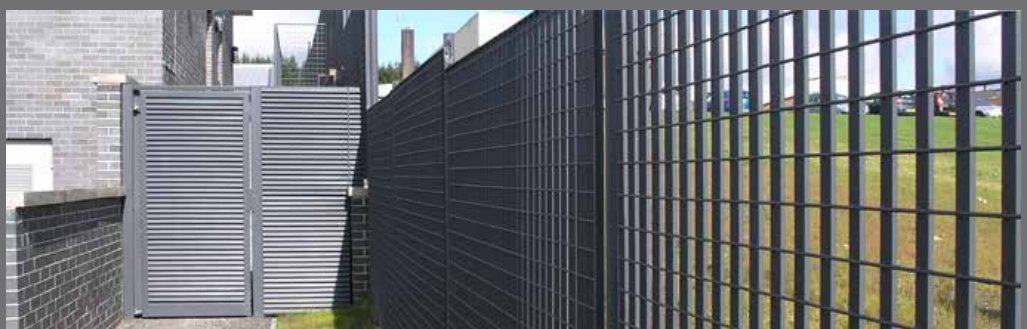
## Case Study Italia-100 Gates

### Fauldhouse Partnership Centre Bathgate, West Lothian

Three different styles of louvered gates formed part of a perimeter fencing contract for a £7.2 million Health and Community Leisure Campus. A rear courtyard and side entrance were screened with double gates with emergency exit bars. The main entrance had a matching double-leaf gate with a Locinox mortice lock and drop bolt. The Palermo Grating Fence was also supplied by Lang+Fulton

Finish: galvanized and ppc RAL7024

Architect: Cooper Cromar







## Finishing

### Galvanizing

All products are supplied hot-dip galvanized to BS EN ISO 1461 for long term durability and a low-cost life cycle.

Galvanized products may randomly exhibit a rough surface texture as well as dissimilar colour characteristics and will oxidise when exposed to the elements.

### Polyester Powder Coating

Subsequent to galvanizing, a multi-stage process applies thermo-setting resins producing a significantly superior finish to painting. Polyester powder coating is available in any RAL or BS colour in full accordance with BS EN 13438.

In order to meet this standard and receive certification, the complete process has to be continuous and applied at the same location.

Polyester powder coating provides a smoother finish which attracts less dust and dirt. It is generally recommended for schools or residential projects.



### Material

Mild Steel S235JR BSEN10025.

### Orientation

Italia panels can be designed with the louvres running either horizontally or vertically. When used vertically, the degree of visual screening will vary, depending on the angle of view. Panels with vertical louvres can be rolled to a radius.

### Installation

**Fastenings:** M10 stainless steel bolts with domed heads and snap-off security nuts, all stainless steel grade AISI 303

**Groundworks:** posts holes not less than 300mm square in plan, depth not less than 500mm, completely filled to minimum 50mm below ground level, concrete mix C20.

**Height from ground:** panels to sit maximum 100mm off ground

**Changes in level:** fence panels stepped to a maximum of 150mm on standard length post. Post centres to be reduced for steeper gradients (between 1:20 and 1:7)

**Changes in direction:** 80mm or 100mm RSA or SHS for 90° corner post. Composite flat bar posts for other angles.

### Ventilation

Free area information is stated as core area based on 1m<sup>2</sup> of louver and excludes posts or ancillary steelwork.

### Wind Loads

Louvres reduce wind load with a consequential reduction to the groundwork element of any project.

### Rainscreen

Italia-100 provides an effective rainscreen with a vertical upstand which limits the formation of a capillary action.





# LANG+FULTON

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