euro inox
The European Stainless Steel Development Association

Public Spaces – Stainless Steel in the Urban Environment

Building Series, Vol. 16

Euro Inox

Euro Inox is the European market development association for stainless steel.
The members of Euro Inox include:

- European stainless steel producers
- National stainless steel development associations
- Development associations of the alloying element industries.

A prime objective of Euro Inox is to create awareness of the unique properties of stainless steels and to further their use in existing applications and in new markets. To assist this purpose, Euro Inox organises conferences and seminars, and issues guidance in printed form and electronic format, to enable architects, designers, specifiers, fabricators, and end users to become more familiar with the material. Euro Inox also supports technical and market research.

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Cover photos:
Hanns Joosten (top left); Martina Helzel (top right, bottom right);
Cesar San Millan (bottom left); Jordan Manufacturing Ltd. (bottom middle)

Introduction

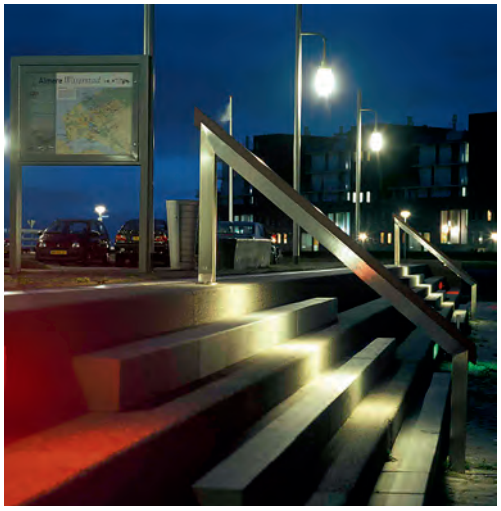
The quality of our lives is directly influenced by the quality of our environment – be it at home, work or in public spaces. Accordingly, even in times of tighter budgets, high priority is being given to the design of these spaces, and therefore also to enhancing the appeal of the cities and regions themselves.

Streets, town squares and parks are a backdrop for social interaction between people from a wide range of age groups, lifestyles, cultures and faiths. In this respect, they are important places for encounter, communication and integration.

In contrast to many cities overseas, the urban centres in Europe have been shaped by centuries of history and tradition. But whether old or new, all are subject to a process of constant change. Fluctuating populations, the closing down of industrial sites, increasing environmental impact and social conflicts – these challenges call for effective concepts which give due consideration to the wider significance of well-designed public spaces, for today and tomorrow.

Benches made of stainless steel as part of the street furniture.

The job of designing urban spaces is not about reproducing a ubiquitous, cosmopolitan look, but is instead based on a close analysis of the particular situation and environment in question. Any building measures then implemented should have a clearly defined purpose for that location and a specific, often very strong, visual expression, thereby



In the port of Almere stainless steel railings with wooden handrails accompany the steps leading down to the waterside. Lighting is built into the underside of the rails.

Photos: proiek (top), ipv Delft (bottom)

The 'Stadspodium', an events location on Grotekerkplein in Rotterdam, has brought new life to this long neglected square. The structure, its closed sides finished with stainless steel mesh, also neatly marks the junction between this part of town and the canal.
Client: Rotary Club Rotterdam North;
Architects: Atelier Kempe Thill, Rotterdam

Photos: SCHWARZ I ARCHITEKTURFOTOGRAFIE (top), Muffler Architekten (bottom)

making a positive and long-term contribution to enhancing the diversity and attractiveness of the urban landscape.

Once the right concept is found, successful implementation and long-term functionality then depend on choosing the right materials and design for the task. Because of its material properties, stainless steel performs extremely well in public spaces. Apart from the many aesthetic qualities of stainless steel, the key features that support its choice are corrosion-resistance, longevity, excellent hygienic properties, ease of maintenance, low lifecycle costs and resistance to damage and vandalism.

Coloured light, reflecting off polished stainless steel sheet on walls and ceiling, adds a whole new dimension to the experience of walking through this pedestrian underpass.
Client: City of Villingen-Schwenningen;
Architects: Muffler Architekten, Tuttlingen

Photos: Martina Helzel (top), SARRAGALA (bottom)

The 'Magic Mountain', with its broad slides of stainless steel, keeps children happy in a play area in Parc Diagonal Mar in Barcelona. Client: Diagonal Mar/ Hines; Architects: Miralles Tagliabue EMBT

Outdoor applications are subject to the effects of weather, air pollution and, in winter, de-icing salt. Under certain environmental conditions, even stainless steel can corrode, so it is important to choose the right grade of material.

For use in rural areas or towns where industrial emissions are low, standard austenitic grades such as EN 1.4301 and EN 1.4307 have proved themselves to be an excellent choice. In areas subject to greater air pollution from industrial emissions, molybdenum-alloy stainless steels such as EN 1.4401, EN 1.4404 and EN 1.4571 can be considered. However, where the environmental conditions are classed as aggressive, for example in coastal areas that also suffer from industrial air pollution, or where higher temperatures or humidity are a problem, higher-alloy steels are recommended.

In the structural design, too, it is important to avoid the possibility of corrosion. In particular, with components subject to weathering, seams should be fully welded to prevent dirt collecting in gaps and having a corrosive impact. When different metals are used, measures should be taken to avoid galvanic corrosion.

Precisely contoured stone, glass and stainless steel characterise this stylish water feature surrounding the entrance to an underground car park in Avignon. Client: Ville d'Avignon; Architect: D. Fanzutti/ STOA

For components of stainless steel many different surface finishes are available, from factory-finished hot- or cold-rolled to ground, brushed and polished, as well as patterned designs. All of these finishes have an invisible oxide layer, just a few atoms thick, on the surface of the stainless steel. Each time this passive layer, as it is known, is damaged, it reforms under the influence of oxygen in the air or in the water, which means there is no need to add any additional corrosion protection, such as surface coating. Further references on the types, surface finishes, processing and cleaning of stainless steel as well as its compatibility with other metals are to be found in the appendix.

The ideas and solutions presented in this brochure are intended as a contribution towards the further sustainable development of public spaces and as a source of inspiration on how to enhance our cities and promote a better quality of life within them.

This sculpture in duplex stainless steel (EN 1.4462) on the South Shore Promenade in Blackpool, England, revolves with the wind to give protection against the elements. Client: Blackpool Borough Council; Architect: Ian McChesney

A mobile kiosk which can be used singly or in groups at markets or other outdoor events. When in use, the stainless-steel-clad volume opens to reveal its colourful interior. Design: Brut Deluxe

Photos:
www.photo-genics.com/
www.m-tec.uk.com (top),
Miguel de Gusman (left)

Transport and Mobility

The infrastructure associated with public transport forms an integral part of the urban scene. Designed to serve our mobility needs, it must also offer shelter and protection. While functional criteria, quality and longevity are a key priority, these structures also present an opportunity for local authorities to enhance the visual identity of our towns.

Bus Stop in Amorebieta, Spain

Client:
Amorebieta Town Council
Design:
proiek, Artea

The modular system developed for bus stops in the town of Amorebieta lends itself to the creation of a series of different ‘spaces’. Single modules, such as the information panel, can also be used individually as part of the street furniture. The glazed back walls and the printed translucent roof of the bus stop afford protection while also injecting a lighter, transparent note to the robust structure.

Thanks to its modular design, this system can be adapted to different locations and for different requirements.

Photos: proiek

Sainte-Catherine Metro Station in Brussels, Belgium

Client:
STIB/MIVB Brussels
Architects:
NODE engineering
Structural engineers:
Ney & Partners, Brussels

Stainless steel has replaced solid masonry at the entrances to the Sainte-Catherine metro station in Brussels, to give a much lighter and airier feel. Two 32 m long, 3.5 m wide and 30 mm thick stainless steel panels (EN 1.4301) are raised to form a canopy over the steps and the lifts leading down to the underground station. They are supported on 45 mm diameter posts, seemingly randomly positioned and angled yet still properly bracing the slim construction. Because of the wear and tear to which these posts are subjected, including from de-icing salt, a higher alloy stainless steel was chosen – EN 1.4401.

Photos: Daylight/Jean-Luc Deru

Light and transparent is the impression created by the new entrance areas to this metro station. Four metres high, their stainless steel canopies seem to float above the ground.

The balustrade panels either side of the steps are made of 12 mm stainless steel, bent over in the top part to give added strength.

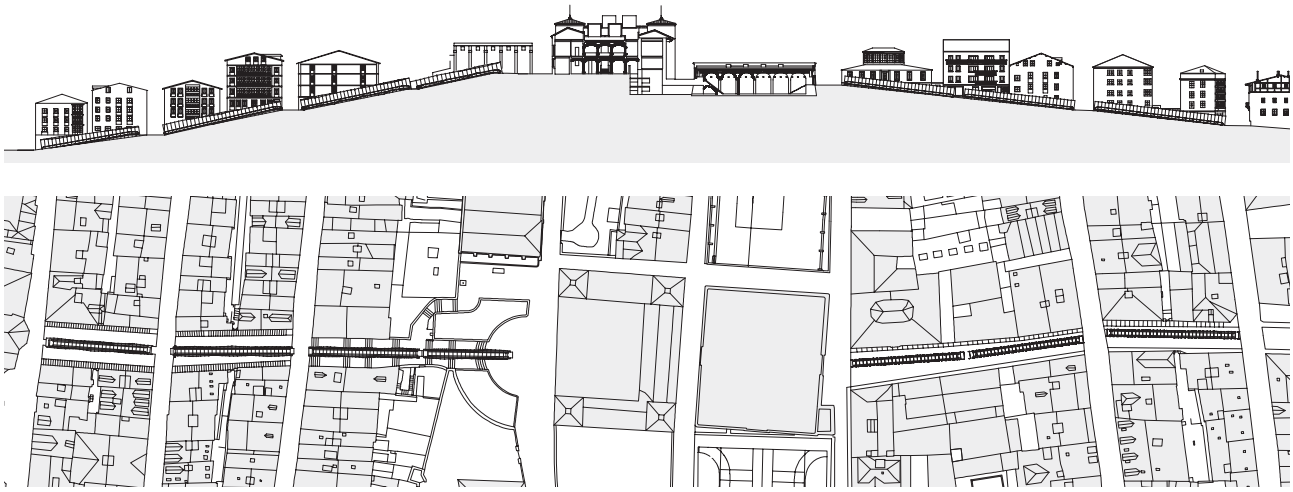
Photo: Cesar San Millan

An unusual sight in an urban street scene: a series of moving walkways, covered over with glass and stainless steel, transports pedestrians up to the higher part of the old town.

Moving Walkways in Vitoria-Gasteiz, Spain

Client:
City of Vitoria-Gasteiz
Architects:
Roberto Ercilla, Miguel Ángel Campo, Vitoria-Gasteiz
Structural engineer:
Eduardo Martín, Vitoria-Gasteiz

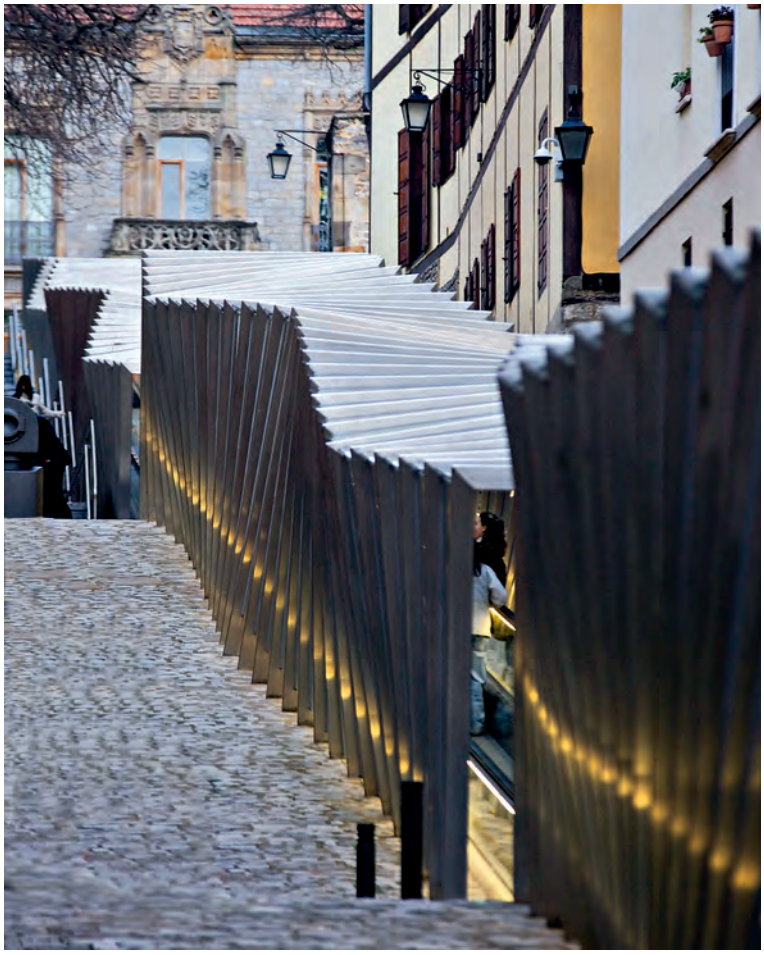
The historic town centre of Vitoria-Gasteiz, capital of the autonomous Basque region of Spain, was built on a hill. Rows of houses and the shopping streets are wrapped around the hill in concentric circles. Until recently, however, the pedestrian links between these circles were not particularly convenient. Now, the walk up to the Montehermoso arts centre on top of the hill has been made much easier thanks to a series of moving walkways.
On one side of the hill, the walkway is divided into four sections, on the other into three. To protect the walkway's mechanism and its users from the elements – rain but also snow and ice in this part of Spain – the entire length is covered with a canopy.



Site plan · Section, scale 1:2000

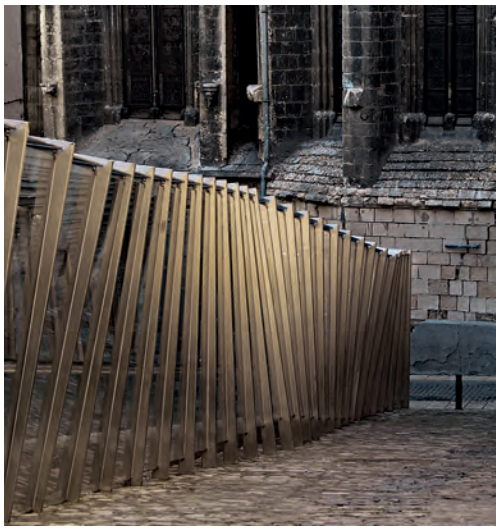
Rows of stainless steel frame elements supporting panels of laminated safety glass form the 2.5 m wide and 3 m high enclosure around the walkways. Along the length of the walkways, the frames are variously angled to give a sculpted, 3D effect that turns this primarily functional facility into an eye-catching art installation.

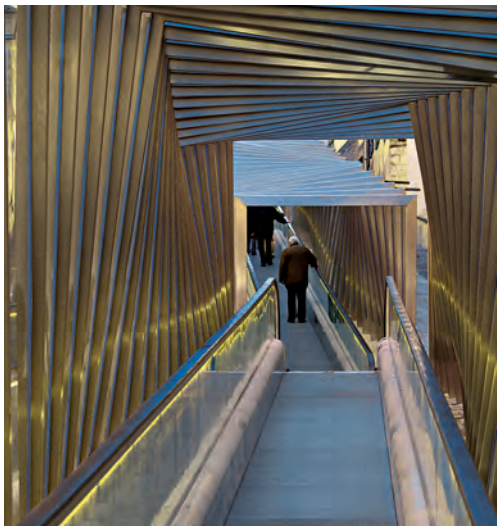
In total, 207 frame elements were constructed from rectangular-section profiles (50 × 150 mm) fixed at different angles at their base onto stainless steel rails. Two different grades of steel were used for the components, depending on position: EN 1.4401 near the ground and EN 1.4301 for less exposed areas.



The variously angled stainless steel frames give a distinctive and dynamic look to the moving walkways.

Photos: proiek (top), Cesar San Millan (bottom)





Light reflecting off the polished surfaces emphasises the additive quality of the design.

Technical Installations

Modern lighting technology and digital media are making inroads into our public spaces in a multiplicity of ways – from energy-saving lighting through to giant screens with moving images. But elegant solutions are also to be found in more prosaic applications in our urban infrastructure, such as in the design of ventilation shafts.

A shimmering, translucent stainless steel mesh envelops this façade, veiling the work going on behind and also providing a screen for projecting diverse messages.

Media Façade in Milan, Italy

Client:
Urban Screen, Milan
Design:
ag4 media facade, Cologne

Photos: GKD/ag4

Renovation work on the old town hall – Palazzo dell'Arengario – in the Piazza del Duomo in the centre of Milan, presented an opportunity to set up an unusual installation in this historic urban space. For safety reasons, in view of the large numbers of locals and tourists who frequent the square, all the scaffolding on the town hall had to be covered up. The upper part of the north façade, facing the Gothic cathedral, was fitted with eight strips of stainless steel mesh (EN 1.4404) 3.64 m wide and over 16 m long. LEDs integrated into these panels turn the surface into a giant animated screen projecting cultural and advertising messages in this historic, commercial centre.

Plaza del Torico in Teruel, Spain

Client:
Sociedad Municipal Urban Teruel
Architects:
Fermín Vázquez, b720 Arquitectos, Barcelona
Lighting design:
Artec3 Lighting

Around 1,200 LED light bars give a new night-time look to the Plaza del Torico.

Grand old town houses, complete with colonnades on the ground floor, line the triangular plaza in the small town of Teruel in Spain. At night, clever lighting enhances the street scene in the form of uplighting on the renovated façades and a pattern of built-in illumination on the surface of the square itself. The many LED 'bars' embedded in the square map out the route taken by rain water when it runs off the cobbles. Some of the bars even contour around obstacles, reforming on the other side, and others mark out the position of two mediaeval underground cisterns which were converted into exhibition spaces as part of the redesign of the square.

A casing of 2 mm stainless steel sheet (EN 1.4304) and a covering of laminated glass protect the lighting strips fitted flush into the basalt pavers on the square.

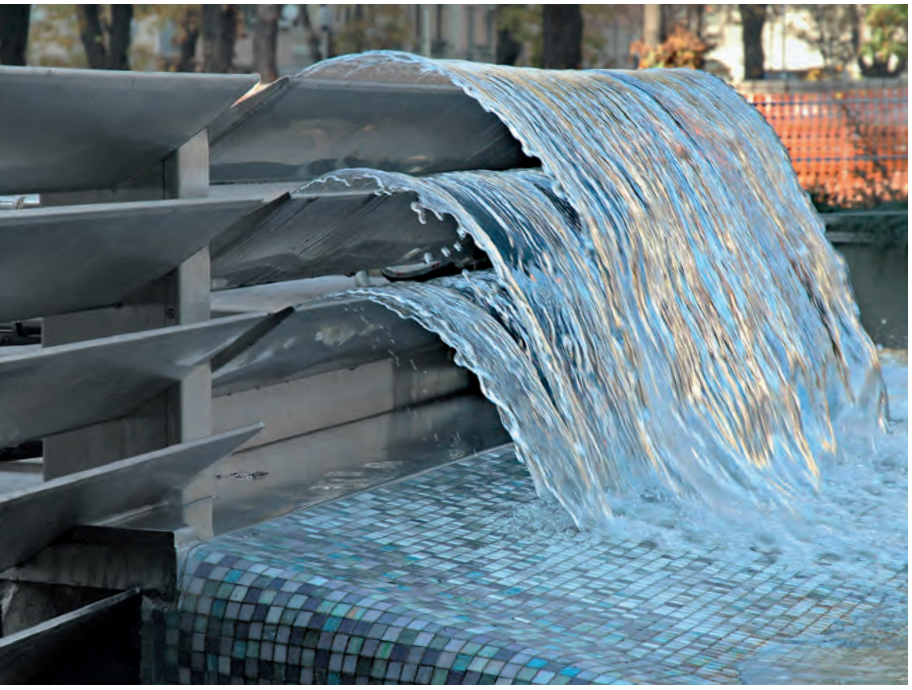
Photos: Duccio Malagamba (top, bottom right); Tomás da Silva (bottom left)

Photos: Della Cagnoletta S.r.l.

Fountain in Milan, Italy

Client:
Comune di Milano
Architect:
Studio Architettura D. Borgoglio Motta, Milan

The water-bearing louvres of the fountain take up the triangular cross section of the railing.



A new underground car park at Piazzale Dateo not only freed this square on one of Milan's ring roads from parked cars, it was also a chance to make the area significantly more attractive. The entrance to the car park is via a ramp around an oval ventilation opening. A stainless steel railing (EN 1.4301) of broad horizontal louvres of 2 mm thick steel and uprights of rectangular profiles encircles this opening.

Immediately next to the railing is a water basin which partly covers the entrance to the car park. The water flows in three cascades from the hollow interior of the louvres into the raised water basin. To avoid any deformation caused by high water pressure, the sheet thickness here was set at 2.5 mm. In addition, inside the tapering louvres are perforated, metal channels which ensure an even distribution of the water.

Ventilation Towers in London, England

Client:
Private
Artist:
Thomas Heatherwick, London

The curved sculptural shape looks different from every angle.

The design for this impressive, 11 m high sculpture on the newly designed Paternoster Square near St Paul's Cathedral emerged from experiments with folded paper. Although looking like a work of art, this installation actually has a very practical purpose as a ventilation shaft for an underground electricity substation.
The welded twin-spiral structure is made up of 63 identical isosceles triangles of 8 mm stainless steel sheet. Because of the folding, no additional reinforcement was necessary. The outgoing air is split between the two vents, and incoming air is drawn in through grilles at ground level. This solution has the advantage of a much smaller footprint than conventional solutions, thus avoiding any uncomfortable restriction of space in this thoroughfare.

Photos: Nicole Kinsman

Light and shade contrasts on this folded structure are heightened by the matt, bead-blasted finish of the stainless steel.

Connection

Busy roads, railway lines and even rivers can present almost insurmountable obstacles in many towns and cities. One way of linking different parts of a town and giving access for pedestrians and cyclists is via footbridges or underpasses. Too often, these important spaces have an unpleasant, even threatening air, but they can in fact be turned into real quality environments, as the following examples show.

Orange concrete floors and stainless steel cladding on the columns turn this motorway underpass into a bright and attractive thoroughfare.

A8ernA in Koog, Zaanstad, Netherlands

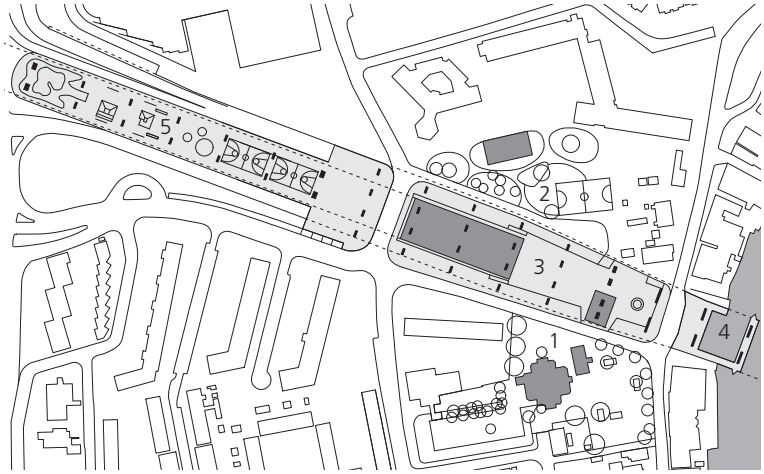
Client:
Zaanstad Local Authority
Architects:
NL Architects, Amsterdam
Artist:
Marc Ruygrok, Den Oever

For over 30 years Koog aan de Zaan was a 'divided' town. Running right through its heart is the A8 motorway, built in the 1970s; here the carriageway is raised on 7 m high concrete piers that support the extension of a bridge. The town's 17th-century church lies on one side, the historic town hall on the other. The space below the motorway used to be a kind of no-man's land, used only for parking, and even as a general dumping ground. An urban development project called 'A8ernA' has now turned this space into a new forum for urban life.

At night, the backlit letters illuminate the space between a supermarket and a fish shop.

Photos: Dennis Moet (top); Luuk Kramer (bottom)

The 10,000 m² space has now been harnessed for a variety of uses: a skate park, a play area for football or basketball, shopping facilities and even a small port on the banks of the Zaan. At the point where most pedestrians pass under the motorway, the four main supporting columns have been transformed into a work of art featuring stainless steel and light. The cladding around the concrete columns is 2.5 mm mirror-polished stainless steel sheet (EN 1.4301). And the lettering laser-cut into the metal spells out words from a poem by Arie van den Berg inspired by the town of Koog aan de Zaan.



Site plan, scale 1:4000

1 Church square
2 Park
3 Underpass with shops
4 Mini-marina
5 'Kids Zone' with graffiti wall, football/ basketball play area, and skate park

Photo: Jeroen Musch

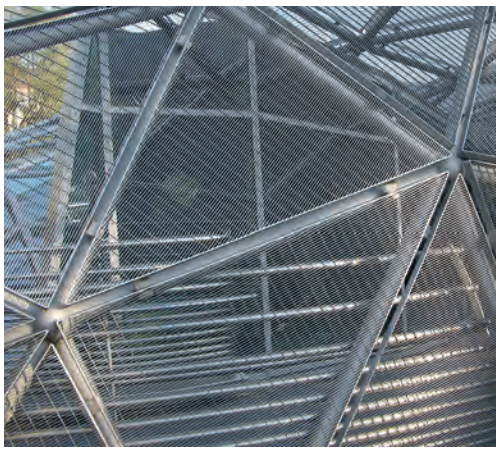
Island in the Mur, Graz, Austria

Client:
Graz 2003
Design:
Vito Acconci/Acconci Studio, New York
Robert Punkenhofer/Art & Idea, Vienna
Structural engineers:
Zenkner & Handel, Graz; Büro Dr. Kratzer

This 'floating island' steel construction, located in the middle of the river Mur in Graz, was built as a temporary installation for the city's tenure as European City of Culture in 2003. Initially greeted with scepticism by the local inhabitants, the 'island in the Mur' is now a well-established part of the urban scene. It also gave the city a brand new perspective on – and from – the river that divides it in two.

Part open, part covered, the island accommodates a café, a children's playground and an amphitheatre which can also be used as a sun terrace. The different zones, inside and out, and the different functions merge seamlessly into one another. There is space for around 300 visitors on this artificial platform, which measures 47 m in length and 17 m in width.

The triangular mesh panels of stainless steel have an open area of 75 percent, which gives good visibility into and out of the structure.



Photos: Martina Helzel

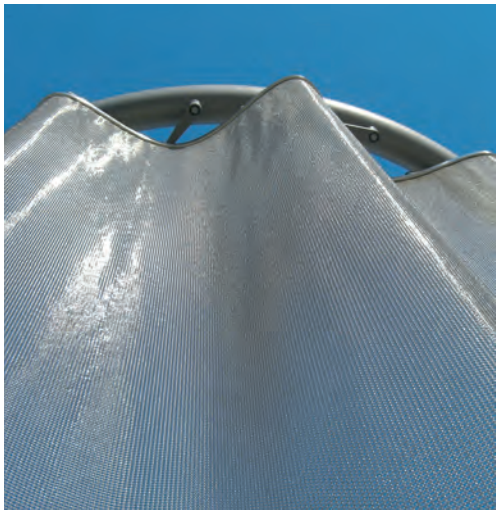
The flowing curves of the structure are shaped from stainless steel tubes joined at spherical intersections to form triangular panels. This primary frame is welded to a 171-tonne floating platform which itself is fixed via a suspension cable to a pile anchored in the riverbed. Tests on a model of the island had shown that the structure would remain safe at different river-flow speeds and could even cope with a variation in the height of the water of up to five metres.

In the café and play area, a suspended secondary construction supports the space-enclosing elements such as insulated glazing, panels and perforated sheet. The panel cladding in the open areas is of stainless steel mesh. These triangular mesh panels, each held in a flat profile frame, filter the sunlight and give a shimmering look to the shell-shaped island.

The island in the Mur is a great viewing point but also, via its two walkways, a useful additional crossing point over the river.

Division

A clear separation between public and private space, and between areas with different uses, creates order and gives a sense of security. A wide variety of surface textures and processing techniques open up all kinds of solutions that blur the borders between structural design, architecture and art.



Steel curtain in Wattens, Austria

Client:
D. Swarovski & Co., Wattens
Architects:
d e signstudio Regina Dahmen-Ingenhoven, Düsseldorf
Structural engineer:
Werner Sobek, Stuttgart

A 250 m long, 10 m high curtain of stainless steel mesh was installed as part of the re-design of the area in front of the Swarovski factory in Wattens near Innsbruck. This semi-transparent veil screens off the headquarters of this crystal-processing company from the public urban space. It also creates a suitably glittering entrance to the factory site.
Suspended from a curved steel purlin, the mesh is made up of over 26 million rings all linked together in 4.80 m wide panels connected on site to form a continuous screen.

The stainless steel rings (EN 1.4404) are 12 mm in diameter, with a wire diameter of just 1.1 mm. As a high-strength, corrosion-resistant material, stainless steel fulfils the structural requirements in terms of wind, ice and snow loads, and also meets aesthetic demands for transparency and elegance.
Daylight falling on the textile-like metal weave generates an ever-changing picture. At night, the metal veil is transformed into a projection surface for a multi-coloured light installation. Low cylindrical elements – used for seating, as bollards separating the pedestrian area from the road and, with a stainless steel insert, as waste bins – are a recurring feature linking the two parts of the square either side of the road.

Lettering in stainless steel glitters like crystal against the matt-grey concrete surface of the square.

The interplay of light and shade gives a special atmospheric quality to the square.

Photos: Martina Helzel

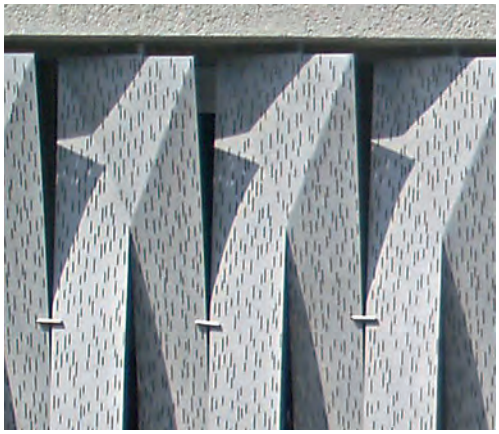
Police Station in Vienna, Austria

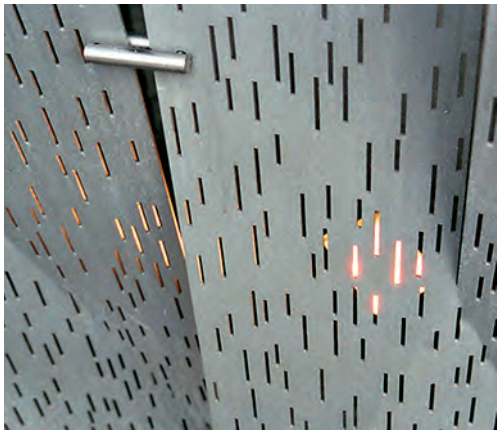
Client:
Wiener Linien, City of Vienna
Architects:
Arquitectos ZT KEG, Vienna
Structural engineers:
Monrath & Tratzber; Fröhlich & Locher

The construction of a new police station on Vienna's Karlsplatz, at a busy traffic intersection, presented an opportunity to restructure the area around the entrance to the underground railway and nearby Resselpark. Each day, around 220,000 people pass through this square and it is also popular with drug dealers. The stainless steel cladding on the lower ground floor of the police station provides the necessary security for the officers, without obscuring their view of the square. Like a fence along the edge of the square, this gently curving façade marks out the route pedestrians take from the direction of the underground onto the square.
The façade consists of 40 cm wide, curved and folded sheet (EN 1.4301) 3 mm thick and with a matt, bead-blasted surface finish. In combination, these panels look rather like a giant-sized strip of expanded metal.

The curved façade screens the police station from the public space and at the same time provides an attractive boundary.

Photo: Wolfgang Thaler



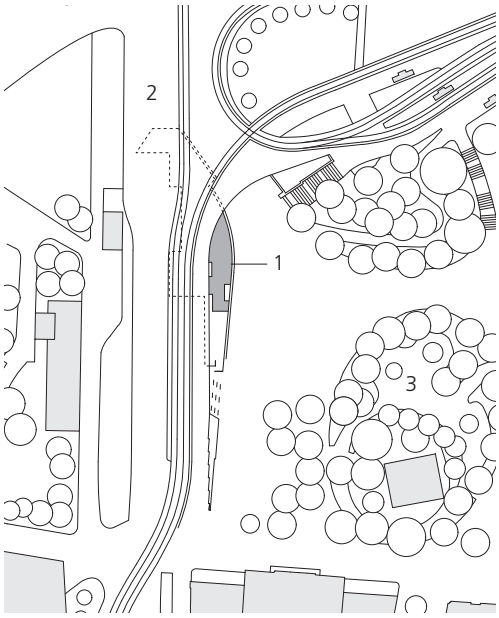


The slotted sheets are fixed top and bottom and braced horizontally via round bars.

Photos: Arquitectos (top left); Daniela Steidle (top right); Wolfgang Thaler (bottom)

Daylight enters the full-height windows of the offices through laser-cut slots which filter the light like a curtain. At the same time, the stainless steel elements offer a level of mechanical protection which obviates the need for unbreakable, bulletproof glass.

Depending on the angle of viewing, the façade appears either open or closed, thanks to the angle and position of the stainless steel strips.

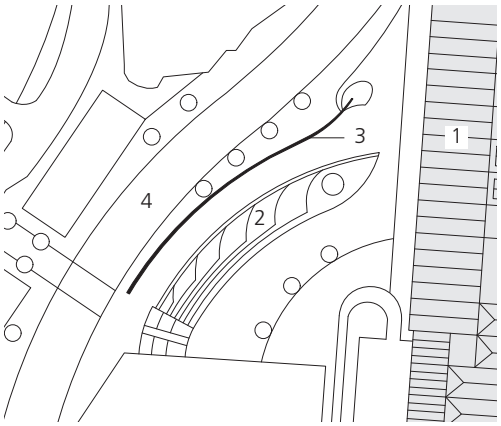


Site plan, scale 1:2000
1 Police station
2 Karlsplatz
3 Resselpark

'Cutting Edge' in Sheffield, England

Client:
Sheffield City Council
Design:
SI Applied, Sheffield
Structural engineers:
Price & Myers, London

Just outside Sheffield's railway station, an eye-catching installation in stainless steel greets passengers. Where once there was only a view of a car park and a dual carriageway, there is now an attractive pedestrian area linking the station to the city centre. Sweeping in an almost 90 m line down one side of this newly created urban space is the 'Cutting Edge', a distinctive mirror-polished stainless steel element, one of the longest sculptures in Europe. A large fountain adds to the dynamics of the space.



Site plan, scale 1:2000
1 Station
2 Fountain
3 'Cutting Edge'
4 Sheaf Street

The long sweeping curve of the stainless steel sculpture shields the pedestrian area and the cascading fountain from the street.

On this sloping site, the sculpture narrows from a round, 1 m high opening at one end to a 5.2 m high, eye-shaped slit at the other. This transformation accommodates the gradient and creates a horizontal edge for the water overflowing from the fountain. At the same time, the change in shape is a reminder of Sheffield's long tradition in manufacturing steel knives.

The sculpture is divided into eight sections, for ease of fabrication and transport. Its cladding of 4 mm stainless steel sheet (EN 1.4404) is fitted to a steel support frame. Narrow expansion joints avoid any buckling of the mirror-polished or brushed surfaces when subject to changing temperature.

Lighting built into the glazed ends of the sculpture and all along the lower edge illuminates the Cutting Edge at night. In the daytime, the urban surroundings and the people walking by are reflected in the surface of the stainless steel.

Coloured glass at both ends underlines the symbolism of the sculpture's shape: blue at the round end stands for the cold, unprocessed metal; red at the opposite end for the forged steel blade.

Photos:
Jordan Manufacturing Ltd.

Regeneration

Despite having a high development density, many of our towns and cities have open spaces that have been ignored or are no longer used. With proper design and spatial organisation, these can be turned into attractive inner-urban spaces where people can relax or meet up for cultural events.

The fountain divides Wouwsestraat, an important street linking the station and Grote Markt, from the quieter part of the square.

Gouvernementsplein in Bergen op Zoom, Netherlands

Client:
Bergen op Zoom Town Council
Landscape architects:
karres en brands, Hilversum

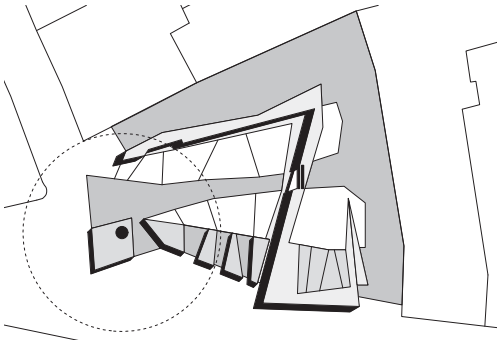
The urban structure of Bergen op Zoom, in the 16th century a thriving commercial port just outside Antwerp, has undergone many changes over the years to become the heterogeneous mixture of spaces and functions

Old town plans decorate the stainless steel slabs of the new fountain. Jets of water shoot up at irregular intervals from the steel, surprising passers-by.

Photos: karres en brands

that we see today. The Gouvernementsplein, built as a public square relatively recently in 1920, used to be part of the grounds of a hospital, then it was the site of the governor's residence and later still a military hospital. As part of a development programme to upgrade the old centre of Bergen op Zoom, this historic but previously unattractive square was given a facelift.

Instead of taking inspiration from previous development on the site, the design gives new spatial structure to the square by introducing a difference in levels along the façades. This also delineates the pedestrian route. Seating was installed in the square, and space left for street cafés, turning this neglected square into an inviting place in which to linger. The main feature catching the eye of passers-by, however, is the new fountain: jets of water shoot up out of raised slabs of stainless steel. Old maps of Bergen op Zoom are engraved into the slabs, reminding people of how much the town has changed in the course of its history.



Site plan, scale 1:1000

The space in the newly designed square is articulated by the stainless steel slabs of the fountain and the stone paving which divides the grass areas and forms the path leading up to the entrance to the government building.

The water features and a seating step turn this once unused space into an attractive place in which to linger.

The stage structure, clad in shimmering stainless steel, looks like a closed surface during the day. But at night, they light up from within.

Spielbudenplatz in Hamburg, Germany

Client:
Spielbudenplatz Betreibergesellschaft mbH
Architects:
ARGE Spielbude Hamburg Fahrbetrieb – Lützow 7 Landschaftsarchitekten, Berlin & Spengler – Wiescholek, Hamburg
Structural engineers:
CBP, Hamburg

Despite being centrally located on the Reeperbahn in St Pauli (Hamburg's famous entertainment and red-light district), the Spielbudenplatz was for a long time only used as a car park. As part of a public-private partnership, it has now been given back its original function as a public arena for amusement.

Echoing the traditional fairground booths that used to be set up here regularly in the past by travelling people, the new space now encompasses two moveable stages, on rails, at the short sides either end of the 300 m long square. By moving the stages, a variety of spatial situations can be created to suit different

The moveable stages offer flexibility of space for large-scale events in St Pauli.

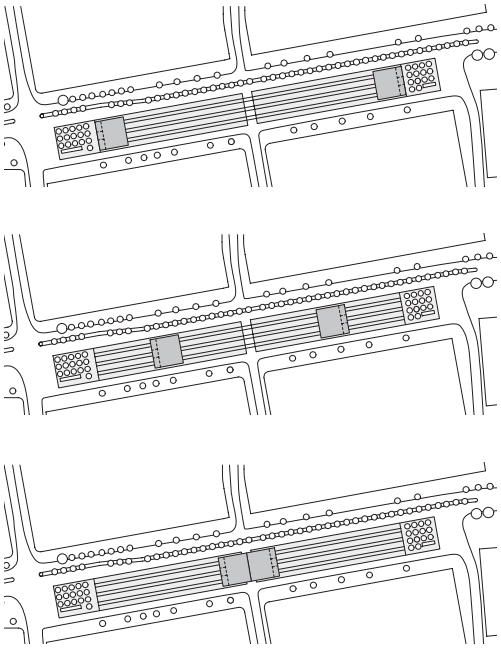
kinds of event. Positioned closely together, the event space opens to the sides only; set apart, the platforms open up and delineate the space for concerts, markets and public gatherings.

The cladding on the two 16 × 16 m and 10 m high steel trusses in the shape of recumbent 'U's is of broad-gauge stainless steel spiral mesh (EN 1.4404). Together with the safety glass behind, this robust material constitutes the weatherproof layer, protects the backstage area from vandalism and even resists disfiguration through graffiti.

Photos: GKD/Ralf Buscher

LED modules bathe the stages in an array of colours, turning them into ever-changing light sculptures.

The mesh scatters the reflections from the light installations behind and gives a glimpse of the inside of the structure.



Positioning options, scale 1:4000

Parks

Naturalistic, landscaped spaces in urban areas are islands of relaxation and places of encounter. Here, too, stainless steel has its place: it emits no harmful substances into the environment, is easy to maintain, resistant and durable. And it blends harmoniously with the natural surroundings.

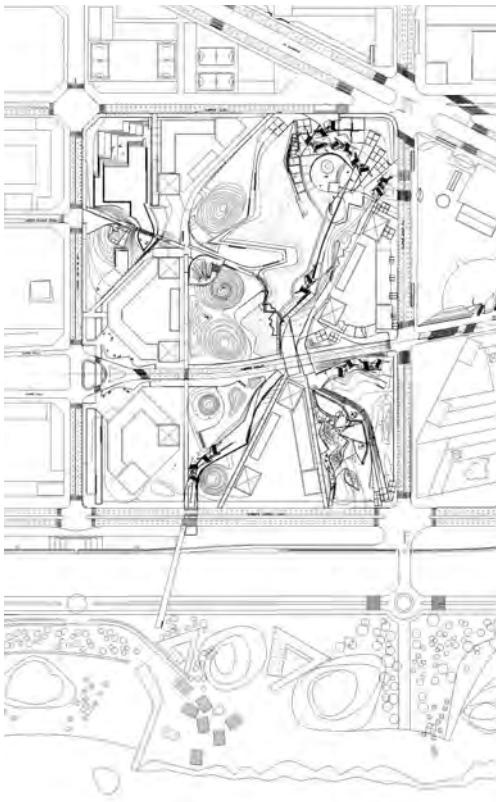
Giant plant pots, decorated with fragments of majolica tiles, are a reminder of the vernacular architectural tradition of Barcelona.

Parc Diagonal Mar in Barcelona, Spain

Client:
Diagonal Mar/Hines
Architects:
Miralles Tagliabue EMBT, Barcelona
Edaw, London

One of the last major projects in the initiative to revitalise the seafront area in Barcelona – which began ahead of the Olympic Games hosted in the city in 1992 – is 'Diagonal Mar'. At the heart of this new urban development, with its residential blocks, offices, shops and new convention centre, is the large (14-hectare) Parc Diagonal Mar.

Once an abandoned industrial wasteland separating the city from the sea, this area now boasts a brand new park linking residential areas with the beach.

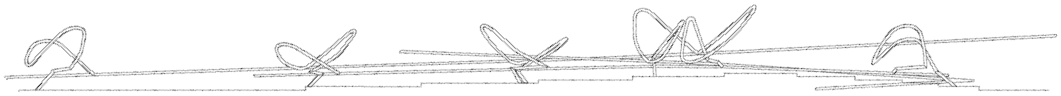


Photos:
Martina Helzel

Site plan, not to scale

Walkways and paths, spreading out like the branches of a tree, link up the various points within the park – small squares, water features (including a small waterfall) and children's playgrounds. Importantly, this network also provides pedestrian access to the beach from the area around one of Barcelona's main roads, the Avinguda Diagonal.

Dotted around the park are unusually shaped steel sculptures, almost poetic in their expression. Their swooping curves in tubular steel wind around giant planters, some of them suspended, and serve as a support frame for shade-giving climbing plants. Where the sculptures are exposed to water and spray – standing in the terraced pools – the material used is stainless steel. The water is kept clean by filtering it through the vegetation planted around these basins; this is one of the many eco systems that form part of the sustainability concept behind the Parc Diagonal Mar.



Because of the salty maritime air in this seafront location, the curved steel structures were made of grade EN 1.4404 stainless steel, which contains molybdenum.

Photo: Calderería Delgado

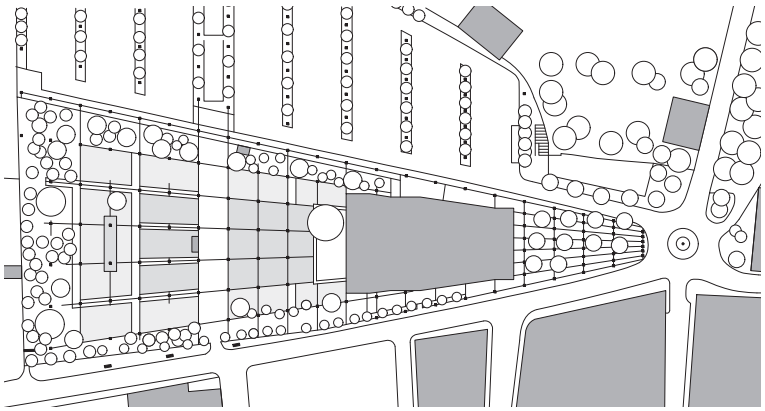
The strict geometrical character of this park, with its diversity of lines and grids, horizontals and verticals, is loosened up by the presence of mature trees dotted around the site.

Parc de la Cigalière, Sérignan, France

Client:
Ville de Sérignan
Architects:
Nathalie and Nicolas Guillot
Artist:
Daniel Buren

When a former old people's home in the southern French town of Sérignan was turned into an arts centre, the adjacent park was also given a new lease of life. Backing onto a public square on the edge of the town, the new complex spreads out like a fan in the direction of the river Orb and the surrounding landscape.
The layout of the park is based on a matrix of lines running in one direction from the park through the building to the forecourt in front, and in the other direction at right angles across the site. Square stelae mark out the intersections of these lines: towards the centre of town, their positional density increases, whereas further out into the park, the spacing becomes ever wider. Also, the height of these stelae increases, the further away they are from the arts centre.

Photos: Erick Saillet (top); D.B-ADAGP (bottom)



Site plan, scale 1:2500

At the edge of town, where the park opens out to the surrounding landscape, the spacing between the radiating lines and the stainless steel stelae becomes ever wider.

Photos: D.B-ADAGP (top); Erick Saillet (bottom)

The free-standing pillars, which reach a maximum of five metres in height, are made of expanded stainless steel (EN 1.4404). Because of the transparency of the material and the moiré effect produced by the mesh, these volumes have an air of intangibility. Apart from their artistic aspect, the 146 stelae also have a functional role: at night, they light up the park in a diverse array of colours.

The light inside the stelae accentuates the transparency of the material.

The stainless steel planters in the rose bed are angled sharply upwards, like thorns.

Circular Beds in Wolfsburg Castle Park, Germany

Client:
City of Wolfsburg
Landscape architects:
Topotek 1, Berlin
Structural engineers:
Leonhardt, Andrä und Partner, Berlin

The park at Wolfsburg Castle boasts three bright and shiny circular beds that juxtapose flowers and plants and stainless steel. Dedicated respectively to roses, woodland and desert plants, they inject a contemporary perspective to the historic park setting.
In the rose bed, the highly polished, sharply angled planters generate myriad reflections of the flowers. Portholes in the high stainless steel ring around the desert bed allow visitors to peek inside, while curved walls around the woodland bed present a distorted image of the green ferns and moss. The reflecting surfaces of the stainless steel (EN 1.4301) visually remove spatial borders and present ever-changing views to the visitors.

Photos: Hanns Joosten

Ever-changing reflections of the plants and the park bounce off the bright-annealed surfaces (2R) of the panels in the woodland bed (left) and the desert bed (right).

Further Reading

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