




The Global Galvanizing Awards 2018








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Welcome

The Global Galvanizing Awards 2018

The Global Galvanizing Awards recognise the innovative use of galvanized steel by architects, engineers and steel constructors. These awards have been held in conjunction with the industry's global forum – Intergalva 2018.

36 projects were entered through the national and regional galvanizers associations across the world. The projects have been reviewed in two separate judging processes:

'Judges' Award' that has been judged by a panel from the world of architecture and design.

'Industry Award' that has been voted by the global galvanizing industry through the participating associations.

Projects were evaluated for their effective and innovative use of galvanizing in architecture and civil engineering, as well as the functionality and aesthetics of the structure. Special attention was also given to demonstration of the contribution of galvanizing to sustainable construction. The entrant's approach towards galvanizing and its incorporation in the design stages was also considered important.

In addition, the judges have identified two **Highly Commended** and the highest placed projects from each participating association have been identified as **Shortlisted** projects and are included in this booklet.

They are excellent examples of the growing use of galvanizing in architecture and civil engineering across the world. We hope that they will serve as an inspiration to others.

For more information on the Global Galvanizing Awards, visit www.intergalva.com/awards

Judges

Bernhard Hauke

Director, bauforumstahl e.V

Bernhard Hauke is the director of bauforumstahl – the organisation that promotes steel construction in Germany and is also a forum for architecture, resource-efficient planning and design with steel. The organisation offers independent advice and knowledge about planning and building with steel. He will soon take up a position as Editor-in-Chief of the journal Steel Construction, published by Ernst & Sohn.

Bernhard is a structural engineer with wide experience in project management, technical marketing, sustainability design, BIM and architecture. After his studies in Germany, he gained a PhD in Civil Engineering from the University of Tokyo.

Burkhard Fröhlich

Chief Editor, DBZ Deutsche BauZeitschrift

Burkhard Fröhlich is Chief Editor of the Deutsche BauZeitschrift (DBZ) - a journal founded in 1953 for architects and planning structural engineers. The journal's editorial is based on the tasks and the activities of an architect's everyday work and has a clear practical orientation. Readers include architects, planning or civil engineers, lighting designers and architecture students.

The DBZ includes presentations of architectural projects to illustrate their architectural intent, urban integration, functionality, constructional aspects, efficiency and energy considerations.

Matthew Wells

Techniker

Matthew founded Techniker in 1993, he has over 30 years experience in the design of building structures and bridges. His particular area of interest is in developing the interface between structural design and architecture. As creative director Matthew maintains an overview of the conceptual content of all the projects in the company.

He has served on the Architectural Association Council and CABE Olympic review panel. He is a visiting professor at the Arhus School of Architecture.

Congratulations to all the entrants in the Global Galvanizers Awards 2018

The Silo

Copenhagen, Denmark

Architect
COBE

The Silo is part of the transformation of Copenhagen's North Harbour – a vast post-industrial development, currently being transformed into a new city district. Designed by Danish architects COBE with clients Klaus Kastbjerg and NRE Denmark, a 17-storey former grain silo and the largest industrial building in the area has been transformed into "The Silo", housing residential apartments and public functions.

To bring The Silo's industrial concrete facade up to current standards, the exterior was reclad, while the interior has been preserved as raw and untouched as possible. An angular faceted exterior facade made of galvanized steel has been installed to serve as a climate shield. This has allowed the building's characteristic slender tall shape to be maintained.

Dan Stubbergaard, Founder and Creative Director of COBE, says: *"We wanted to retain the spirit of The Silo as much as possible – both in terms of its monolithic exterior and majestic concrete interior, by simply draping it with a new overcoat. The aim was to transform it from the inside out in such a way that its new inhabitants and the surrounding urban life would highlight the structure's identity and heritage. Hence, the use of galvanized steel for the facade, which patinates in a raw way and retains the original harbour character and material feel, lending a roughness and raw beauty to the area, as in its industrial past."*

Photo credit: Rasmus Hjortshøj – COAST

Arts West Building

University of Melbourne, Melbourne, Australia

Architect
ARM Architecture
[Joint Venture with Architectus]

ARM and Architectus worked with the University of Melbourne, Faculty of Arts to tailor the building for object-based learning. The learning spaces are customised for exhibiting items from the University's cultural collections.

Arts West's distinctive façade involves ground-breaking and extremely innovative use of steel. The façade features images of selected objects from the University's 23 cultural collections. Hence, the façade is both a passive solar-control element and an architectural manifestation of the Faculty of Arts' pedagogical aspirations.

Galvanizing for the steel frames on the outer skin of the façade was chosen for a variety of reasons. The fins on the façade serve two purposes - to provide sun shading to the all glass curtain wall behind and to house images of objects from the Cultural Collections. The images are 'pressed' into the façade and reveal themselves to viewers at different times of the day and from different viewpoints. The architects say – *'Galvanizing is of course a wonderful way to protect steelwork, but we also liked mottled and crystalline effects that galvanizing provides. It will change over time, from a bright reflective material to a dull grey. Galvanizing provided the façade with the kind of raw surface that we were after. We liked the inconsistencies that batch galvanizing of 8mm steel gave us.'*

The Green House

Utrecht, The Netherlands

Architect
Architectenbureau Cepezed

Construction
Pieters Bouwtechniek Delft

The Green House houses a restaurant with its own urban farm and a conference centre. True to the principles of the circular economy, the entire building can be disassembled. Owing to their high degree of precision, steel components are easy to take apart and put together again. A special feature of the steel frame of The Green House is its square grid, with which multiple building configurations are possible with one-and-the-same construction kit.

In fifteen years, it can be taken apart and rebuilt at another site. Re-use also played an important part in the choice of materials for the project.

The pavilion was designed as a generic construction kit with a disassemblable steel frame comprised of hot dip galvanized steel sections. Galvanizing was also used for trellis trusses for the façade, the roof (including roof construction for a small greenhouse), balustrades and the staircase within the pavilion.

The hot dip galvanized steel perfectly underscores the bold character of The Green House and the urban-farming greenhouse. The architects also recognised that hot dip galvanizing lends itself perfectly to disassembly and reassembly - as the coating will not be damaged in that procedure.

Photo credit: Pictures by cepezed | Lucas van der Wee


THE GREEN HOUSE
eat.meet.relax.enjoy

The Saar-Polygon

Ensdorf, Germany

Architects
Pfeiffer Sachse Architekten UG

Construction
Claus Queck GmbH

In 2012, coal mining in the Saar ended after more than 250 years. To create a monument for the Saar Mining region and the miners, but also to look towards the future, the Saar-Polygon has been created at Ensdorf.

The finished sculpture combines the past, the period of change and the future to create a reminder of an essential historical part of the region: its coal mining. The Saar-Polygon is already one of the striking sights in Saarlouis and it allows an impressive view even to France and Luxembourg.

The 30m-high hot dip galvanized steel structure forms a walk-in monument consisting of two slanting towers connected by a bridge. Depending on which direction you look at the monument from, it changes shape, assuming the form of a rectangular arch, an inverted triangle, an inverted V, an hour glass-like structure and finally like the letter T falling onto its side. The shape of 'The Polygon' itself vaguely resembles the supporting structures that have been used in underground mining.

Photo credit: Jan Siefke

Bike Pavilion

Hindenburger Platz, Mainz, Germany

Architect
SYRA Schoyerer Architekten BDA

The German city of Mainz has recently developed a trend towards being a more 'bike-friendly' city. But the city faced a problem of a shortage of suitable parking spaces for privately-owned bicycles.

Against this backdrop, SYRA Schoyerer Architekten developed a prototype for a bicycle pavilion for the city. True to their philosophy of rewriting the everyday, the design for the pavilion was based exclusively on industrially prefabricated mass-produced products. Only one small concession to special construction was made - the flat steel facade bars have a 90-degree twist, creating a slightly more open facade than a series of flat bars would offer.

With the help of a simple design and standardized elements, a sturdy pavilion has been conceived with concise, yet restrained, architecture that protects a carousel for up to twelve bicycles from the weather, vandalism and theft.

The entire hot dip galvanized steel pavilion was completely assembled in the factory and transported to site as a finished structure. This prototype has provided a new vision for the city that will act as a spur for its use as well as inspiration for similar structures.

Photo credit: SYRA Schoyerer Architekten

Refuse Collection Point

The Hague, Netherlands

Architect
Wessel van Geffen Architecten (in cooperation with Superuse Studios and Ingenieursbureau Den Haag)

Structural design
Adviesbureau Tielemans

Architectural detailing advice, installation engineering and fire safety
ABT

Execution
Van Boekel Zeeland

(New) steel structures
GS Staalwerken

Re-use of steel construction components is gaining more and more attention in the construction sector. The new refuse collection point commissioned by the Municipality of The Hague is the result of the re-use of existing construction components without forfeiting spatial functionality, acoustic isolation or ease of maintenance. One of the Municipality's prime requirements was for the structure to be energy-neutral and to maximise use of re-used materials. This turned the conventional design process inside out: it was not form which served as the architect's starting point, but the materials available.

The building's exterior is clad with precoated hot-dip galvanized steel sheets from scrap cars. With their varying perforations, the panels yield a different facade effect depending on the observer's position. The re-used steel plates also underscore the building's function as a place to bring bulky waste.

The contour plates are mounted on steel piles which are also re-used and give the building a more vertical articulation. Where the facade needs to block out noise, galvanized steel sandwich panels with glass strips were added behind the contour plates. These panels also come from demolished buildings. Only the batch hot dip galvanized steel main load-bearing structure is new. Galvanizing was a key part of the design to achieve the required lifespan of fifty years.

Photo credit: Daria Scagliola


AFVALBRENGSTATION

Comenius Bridge

Jaroměř, Czech Republic

Architect
Baum & Baroš Architekten

Construction
EXCON, a.s.

The original Comenius Bridge across the river Elbe, built in 1886, was destroyed by flooding in 2013. A new footbridge of span 61.5m and width 4.5m was designed with an original concept as a space prestressed beam-string structure. The structure has a cross-section in the shape of an isosceles triangle consisting of a central compressed tube, three prestressed tendons connected to the ends of 8 trident cross-beams and fixed to welded end sections.

A precise prestressing procedure ensured favourable redistribution of internal forces and true shape of the structure. The structure was designed as a set of hot dip galvanized sections that are bolted together without any welding or additional painting and without any maintenance needed for more than 50 years. The structure is supported by newly refurbished historical abutments as a simple beam. The bridge is a positive example of a modern, sophisticated and sustainable structure appropriately connected to historical centre of the town of Jaroměř.

Photo credit: © Tomáš Vojtíšek

Hôtel des Communes

Les Herbiers, France

Architect
Atelier du Pont

Associate architect
Michel Joyau

Structural engineering
Arest

Steel constructor
Briand

Sustainable engineering
Plan02

The new Hôtel des Communes (Community of Municipalities offices) is an extension of Herbiers City Hall, a mid-19th century mansion situated in a public park. Its contemporary architecture reconciles landscape, architectural heritage, and modernity. It is an expression of the region's territorial influence and the high level of local cooperation.

This spectacular building capitalizes on the strengths of its site – the public park, trees, and the current city hall – to insert itself gently into the landscape. The visible sides, which are proportionate to the surrounding buildings, blend into the urban landscape, while its curves and texture make the building a singular event in the town.

The offices are grouped into clusters to create greater work synergies. The curved and counter-curved circulations allow people to walk through the building, or enter the existing city hall, with a sense of continuity - whilst remaining immersed in the surrounding greenery.

According to the architects, galvanized steel was used because it is sustainable and economically efficient. Galvanized elements include the glazed façade posts, gangways along the façade and an external staircase that contributes to the architectural presence of the project - providing visual continuity, colour and light reflection.

Photo credit: Takuji Shimmura

Low Carbon Energy Centre

Greenwich, London, United Kingdom

Architect
C.F. Møller Architects

Landscape architect
C.F. Møller Landscape

Artist
Conrad Shawcross

Engineering
Environmental: Buro Happold,
Infrastructure: Ove Arup &Partners,
Structural: Price & Myers

To realize a vision of decentralized energy generation, the Greenwich Peninsula Low Carbon Energy Centre houses advanced boilers and CHP that provide heat as part of the area's Sustainability Strategy. It is the largest new build residential heat network in Europe, saving over 20,000t of carbon per year.

The cladding of the 49m high tower unites sophisticated engineering and complex optic research to create an impressive sculptural concept. The structure is 20m wide and 3m deep and is constructed from five interconnected steel ladder frames that are clad with perforated aluminum panels, each the size of a London bus. These triangular panels fold across the surface of the tower, forming intricate geometric patterns.

Steel was an obvious design choice as it enabled the creation of a strong, but slim, and highly perforated structure. In addition to its structural properties, the industrial aesthetic of steel lent itself to the historical context of Greenwich Peninsula. Further benefits include the ability to accurately fabricate the frame in sections off-site followed by a quick installation on-site.

Due to the nature of the flue tower's perforated cladding, the steelwork is exposed to the elements – so all of the steelwork has been galvanized to guarantee a rust-resistant finish and avoid maintenance.

Photo credit: Mark Hadden

Hospital Art

Kasukabe Medical Center, Kasukabe, Japan

Architect
Professor Takayuki Ootsuki, Nihon University College of Art

Construction
Kowa Kogyo-Sho Co., LTD

The Kasukabe Medical Center is the core of the regional medical center. The overall concept of this medical center is “Sunny place in Spring”. That concept is that the medical center provides the patients and their family with not only functionality of medical treatment but also lets them feel relieved and at peace of mind. Against this background, a lot of works of art are placed in the hospital.

This monument is titled “Gate of Wind” and is located in the entrance square of the hospital. It catches people’s eyes just as they arrive at the hospital. It was created by Takayuki Otsuki, Professor of Nihon University College of Art. He says that he created this monument with the intention that people not only look at its appearance - but also go through it and imagine and feel the shape of the wind.

As the monument is located in a hospital, it must have long life without any deterioration as well as the desired appearance. The technology used for this purpose is a zinc alloy coating with subsequent phosphate treatment. This combination ensures an appearance with uniformity and calm texture that is not faded by ultraviolet rays.

Photo credit: Mr. Nobuhiko Tanaka, Kowa Kogyo-Sho Co., LTD

Magazzino Automatico Verticale

Ceramica Sant'Agostino, Ferrara, Italy

Project Executive
Consortium Seismic Engineering Association - Ing. Gianluca Loffredo

Structural design
Prof. Ing. Walter Salvatore

Testing
Ing. Mauro Cuoghi

Construction
Stahlbau Pichler srl

Works direction
Archliving srl

In the earthquake that struck Emilia-Romagna and Lombardy in 2012, a company specializing in the production of porcelain stoneware wall tiles and floors suffered serious damage. It was necessary to rebuild the production area with a new vertical automatic warehouse ('MAV'). The design was for a highly innovative structure, made entirely with structural steel, that was the first construction of this type designed according to new technical standards for the response of buildings to seismic actions.

The building stands on the previous site and has a footprint of about 134m x 26m with a height of 18m. The storage elements are developed for 16m in height and are of a single-seat and two-seat type. The five frames with double-seat cells are arranged in the centre of the building, while the two shoulders with single-seat cells are on the sides of the warehouse. The load levels are supported by 64 metal frames with a total capacity of 18,852 pallets on 13 levels.

The steel braced gratings that form the frames are made up of uprights in tubular profiles 140 x 70 mm with thicknesses varying from 8 to 10 mm. The diagonals are in corner profiles while the crosspieces in U-shaped sections. The entire steel structure is of S355JR steel class and hot dip galvanized for corrosion protection.

Photo credit: © Alex Filz - Stahlbau Pichler

ÖAMTC Headquarters

Vienna, Austria

Architect
Pichler & Traupmann Architekten

Structural design and services
FCP Fritsch, Chiari & Partner ZT GmbH

Steel construction
Unger Stahlbau Ges.m.b.H.

The new ÖAMTC Headquarters is an architectural highlight along the Vienna's southeast freeway. The new so-called 'mobility centre' boasts nine levels of offices, conference spaces and training facilities, with a gross floor area of 27 000 m^2. This new and innovative workplace environment consolidates five former local branches of Austria's automobile, motorcycle and touring club.

The plan view of the building equals a rim of a wheel where each building wing represents one of five spokes. The ring facade, with a length of 230m and a height of almost 17m represents the architectural highlight of the building and connects the spokes. The ring facade is both a noise barrier and a main escape path. Due to the external location, there is only one internal escape stair, hence allowing an optimized floor layout.

The prominent hot dip galvanized steel and glass ring structure of the building was designed using and consequent practicing BIM (Building Information Modelling) by the architects, the engineers and the executing companies.

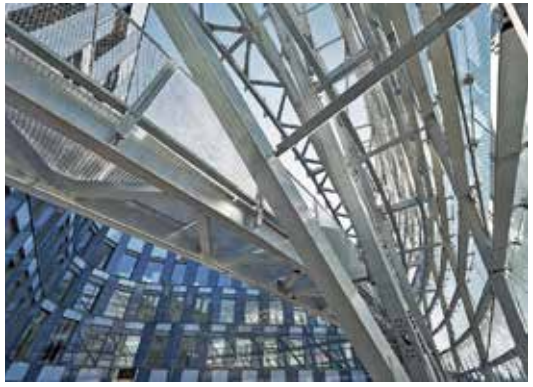

Photo credit: Toni Rappersberger

Magicone Water Slide

Land of Legends Aqua Park, Antalya, Turkey

Architecture, design and construction
Polin Waterparks

Magicone Water Slide has been built at the Land of Legends Aqua Park in one of the most popular vacation locations on Turkey's Mediterranean coast.

In water park industry, the main goal of new projects is to ensure high quality and long life. For this reason, features have to be designed correctly and materials must be selected with great care. Steel is a perfect material for these type of project as it gives the architect freedom in design process – allowing more creative designs that mean a more exciting and fun experience for customers.

To achieve a long project life, the effects of water and water mists, chlorine in the pool water and possible micro-biotic corrosion when the park is closed have to be considered. In this project, the proximity to the sea was also important. Polin Water Parks therefore preferred a hot dip galvanized coating for the steelwork - to ensure reliability of the feature and to make it maintenance-free without any interruption for repairs. The support structure is all hot dip galvanized. For example, the conical part of the slide (dish) is 21m in height; 20m in length and has a width of 25m and is supported by 58 tonnes of hot dip galvanized steel.

Pyramid Residential Building

New York, United States of America

Architect
Bjarke Ingels Group

Fabricator
Orange County Iron Works

In the heart of New York City, along the Hudson River, gleams this very visible monument to hot-dip galvanizing. The 750-unit building, located in Hell's Kitchen, resembles a pyramid with a steeply sloped façade rising 467 feet toward the Northeast. The building features angular balconies and an impressive green plaza and is built to provide great views with little traffic noise.

The VIA 57WEST is a dramatic, gateway to the Manhattan skyline and really incorporates both European and New York influences. Bjarke Ingles Group, which originates in Denmark, worked with the local steel fabricator and galvanizer to achieve the goal of building something that stands out. Hot-dip galvanizing was chosen for the building structure thanks to its maintenance-free longevity, while also being a nod to BIG's European influences, where hot dip galvanizing is used much more prominently in buildings than in North America.

BIG accomplished their mission of standing out in a city where so many iconic structures already stand. On a sunny day the pyramid can be seen from most spots in Manhattan and Brooklyn. The beautifully designed building is an amazing addition to the famous skyline and, thanks to hot dip galvanized steel, VIA 57WEST will impact that skyline beautifully for many generations to come.

Photo credit: American Galvanizers Association

UNISANTA Pool Roof

Santos, Brazil

Architect
Plasmont Structures

The existing roof of this high performance aquatics training facility in the seaside town of Santos, near Sao Paulo, had deteriorated and needed replacement. A new retractable roof was needed to integrate durability, safety and modernity to cover a 60m long pool with a roof coverage with an area of approximately 1800 m^2.

The entire structure was designed to be hot dip galvanized – with a bolted design and avoiding welding on site. This design was able to satisfy the objective of a life of 40-years in a highly corrosive environment near the sea and with a heated pool.

The choice of hot dip galvanizing also provided a reduction in maintenance costs and greater safety for pool users with a reported cost of galvanizing that was less than 5% of the construction costs.

Acknowledgements

The following galvanizing industry associations have made the 2018 Global Galvanizing Awards possible:

American Galvanizers Association
Associazione Italiana Zincatura
Czech and Slovak Galvanizers Association
European General Galvanizers Association
Fachverband Metalltechnische Industrie
GALDER
Galvanizers Association
Galvanizers Association of Australia
Galvazinc Association
ICZ - Instituto de Metais Não Ferrosos
Industrieverband Feuerverzinken eV
Japan Galvanizers Association Inc.
Nordic Galvanizers
Zinc Info Benelux

The 2018 Global Galvanizing Awards have been sponsored by the International Zinc Association

The Awards Presentation

The Global Galvanizing Awards were presented on 19 June 2018, during Intergalva 2018, at the Estrel Hotel, Berlin. Delegates were enthralled by presentations of each of the winning and highly commended projects.

Pictured below, right to left, are Matthew Wells (Techniker, UK, representing the judges) and the successful architects - Aaron Poupard (ARM Architects, Australia); Caroline Nagel (COBE Architects, Denmark); Katja Pfeiffer and Oliver Sachse (Pfeiffer-Sachse Architekten, Germany) and Rueben Molendijk (Cepezed, Netherlands).

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