

press release

Architectural steelwork in superb seele quality

The seele group designs and builds façades worldwide, and the experts at seele pilsen in the Czech Republic are responsible for the group's technologically challenging structural steelwork requirements. A workforce of more than 100 designs and fabricates unique structures with maximum precision for architectural milestones worldwide.

Plzeň, 18 June 2020. Why is it worthwhile sending steelwork made by seele pilsen all over the world? Structural steelwork is a crucial element in many building designs. Maximum precision and minimum tolerances form the basis for technically flawless façades and, as a result, pay for themselves in terms of both economics and timing. The seele plant in Plzeň was established back in 1996 and since then has been regarded as a pioneer and an innovative partner for architects and clients. All the steelwork designs produced comply fully with each project specification in terms of engineering and aesthetics. The high quality demands cover all phases of production. With a total production floor area of about 4,200sqm and a high degree of automation, even the largest projects with complex geometries can be handled efficiently. "Many things can be calculated, but what counts in the end is the experience of our employees and their precise handling of the steel," says Günter Hartl, managing director of seele pilsen.

From America to Asia – architectural landmarks with steelwork from seele

As a façades specialist, seele builds unique architectural icons around the world. For example, seele provided the spectacular entrance zone for the Gateway Arch Museum in St. Louis, USA. The roof comprises a total of 74 three-ply laminated panes in sizes of up to 2 x 5.5m which are supported on a steel structure weighing 85t in total. This is exactly where the skills of seele pilsen really count. The 38 stainless steel cantilever beams are made from milled solid stainless steel sections tensioned with tie bars. "The project at the famous Gateway Arch monument demonstrates our capabilities and especially our expertise when it comes to providing minimalistic steel structures," says Mr. Hartl.

An especially innovative solution in the realm of IT and software solutions was developed for the King Abdulaziz Center for World Culture in Dhahran, Saudi Arabia. In order to construct a building envelope with a free-form surface made up of bent stainless steel tubes, every one of the roughly 85,000 grade 1.462 duplex steel tubes (a total length of about 360 km) had to be bent to a unique shape. Every tube had to be coded and bent corresponding to its subsequent position on the structure and in some cases crimped as well using a technically complex method. Using the C# programming language, special software was developed for the measuring and

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bending machines so that they could communicate with and learn from each other, thus guaranteeing a high accuracy of fit for the tubes.

Free-forms in steel

seele pilsen's expertise is particularly in demand when it comes to shell structures. Thousands of nodes and connecting elements are assembled to form steel frames spanning enormous distances. For example, the Chadstone Shopping Centre in Australia required a 7,080sqm roof with 2,810 steel nodes. The steel-and-glass roof recently fabricated for the Moynihan Train Hall in New York consists of a shell structure with prestressed cables and welded steel T-sections, and connects to the steelwork of the existing building. Separate aluminium-and-glass elements were fitted into the shell structure. A total of 3,160 insulating glass units and 624t of steel were required for this project.

A current project in New York is really putting seele pilsen to the test: Machining free-form plates up to 70 mm thick, also some components with 400 mm thick plates! High-strength steel (S460) has been specified for this complex design with challenging geometry, chiefly because of the high loads. What that means for the seele workforce in Plzeň is maximum demands in terms of innovative production methods, quality and accuracy.

The Plzeň plant with its precision steelwork is one reason why façades specialist seele is regarded as a technology leader worldwide. seele pilsen ensures the successful realisation of steel-and-glass designs. Tight tolerances and uncompromising accuracy reflect the exceptional expertise.

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seele group

The seele group, with headquarters in Gersthofen in Bavaria, is one of the world's top companies specialising in the design and construction of façades and complex building envelopes made from glass, steel, aluminium, membranes and other high-tech materials. The technology leader in façade construction was founded in 1984 by master glazier Gerhard Seele and steelwork engineer Siegfried Gossner.

Based on a profound understanding of design and materials, seele provides everything necessary for ambitious one-off designs true to the original ideas of engineers and architects. The seele group offers its building sector and industrial customers a complete package of services ranging from R&D, individual advice and joint conceptual design right up to the planning, detailed design and construction of their projects. seele's own production plants for technologically challenging designs and the group's own erection crews on site provide a guarantee of the very highest quality "made by seele".

The 1,000 employees of the seele group worldwide together generate an annual turnover of about €250 million.

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visual material



Steelwork fabrication in Plzeň © HG Esch



High-precision steelwork fabrication carried out by experienced personnel © HG Esch

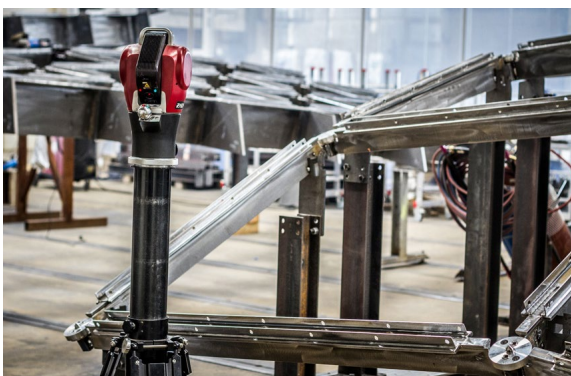
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Steelwork components dispatched for on-time deliveries © seele



3D tube-bending machine processing stainless steel tubes for the King Abdulaziz Center for World Culture © seele/René Müller



Highly accurate laser equipment for checking steelwork © seele

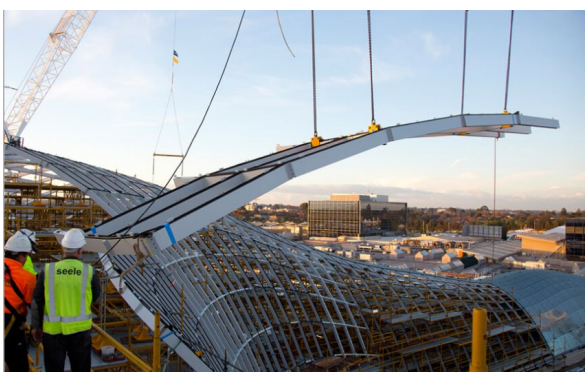
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King Abdulaziz Center for World Culture © seele



Museum entrance at the Gateway Arch monument © Nic Lehoux



Precision steelwork fabricated by seele pilsen being lifted into place with millimetre accuracy on the Chadstone Shopping Centre site © seele