## CSM nv

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# **WINNER**



CSM nv is an engineering, fabricating, industrial painting and erecting company who provides a complete range of structural steelwork within Europe and in various parts of the world. CSM nv was founded in 1964 by Constant Schuurmans, who also gave the company its name: "Constant Schuurmans Metaalwerken", short CSM.

The first part of the plant in Achel, inaugurated in 1970, has been extended over the years with more and more new compartments (still recognizable by the range of roof constructions and colours) and with the first offices. In 1982 the first two lower parts of Hamont were built. The assembling, weld and paint activities were more and more moved from Achel to Hamont.

In 1988 the tall hall was built in Hamont. This extension was necessary for fabricating and blasting/painting heavier construction parts, and to make complex pre-assembling possible. In 1992 the offices in Achel have been enlarged and embellished.

Finally, in 1998, the second tall hall was built in Hamont, to specialize even more in roller coaster constructions. As in the beginning the scale of products was limited to the fabrication of fences, stairs and platforms in steel, the change into the design of industrial buildings and turnkey projects was quickly made.

In 1980 CSM went abroad with beautiful projects in Germany, the Netherlands and even in Colombia, Cameroon, the United Arabian Emirates...

In 1991 the first bridges were built for Belgium, Germany and Great Britain. From 1994, the fabrication of tracks for roller coasters, giant wheels, Mad Houses... was started. The machinery park has been continually adapted and modernised to the modified scale of products. Even on the domain of quality and quality control it went fast.

In 1983 the first welders had been approved to realise the first project for the Ministry of Public Works. At that time CSM also received the "Grosser Eignungsnachweis" according to DIN18800 with qualified welders according to DIN8560. This certification is necessary in Germany to fabricate and erect welded constructions.

From 1990 quality reports of several projects have been made and stored. In 1991 the "Eignungsnachweis" has been extended with DIN 18809 for road bridges. The next extension took place in 1994 with DIN 15018 for Cranes and DS804 for railroad bridges. In the meantime, all the welders were qualified to EN 287-1 or EN 1418

In 1995, CSM got its qualification to build bridges in Belgium with the welding processes submerged arc welding and flux cored arc welding. CSM is one of the only five companies in Belgium with this qualification. Also in this year all the welders are recognised according to the European Standards (EN). In 1999 the Security, Health and Environment Assurance System in accordance with VCA\*\* is obtained for the Transport- and Erection Department.

Finally, in 2001, the Quality Management System in accordance with EN ISO 9001: 2000 was implemented and certified.

At this moment CSM works with more than 140 employees and creates a yearly turn-over of almost 25 mio Euros.

## Vörösmarty Tér 1, multifunctional building, Budapest

ING Real Estate has developed a multifunctional block of buildings in the old centre of Budapest. Vörösmarty no. 1 is situated in the heart of Budapest, at the city's most famous square, Váci utca. The square regularly hosts cultural events and fairs, several international hotel chains are present and Duna Korzó, the pedestrian walkway along the Danube, is within walking distance. The listed monument building of the Vigadó opera House is adjacent to the building. Public transport access as well as easy car access is excellent. The façade is a multilayered structure, where the exterior skin is a decorative structure wrapping the functionally different internal layers into one homogenous building appearance. The geometrical system composed of triangular elements makes the outlook of the building's façade unique, modern and fresh. This structure is constructed from steel pipes of varying cross section climbing around the building in a triangular shape covered with clear glass. A three storey high internal atrium, starting from the 2nd floor, enhances the

#### **Project Information**

**Short Description** 

Owner: ING Real Estate

Construction Start: 21/08/2006

Architect: Fazakas György Architects Itd

General Contractor: Scheldebouw by

Construction End: 27/04/2007

Location: Budapest, Hungary

Engineering Office: CSM nv

exclusivity of the building.



#### **Quote of the Jury**

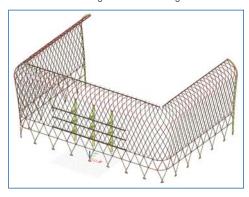
"An imaginative concept that allows the concept of the building to be immediately recognized.

The complex geometry resulted in difficult fabrication assisted by the availability of the full 3D model. Result is a spacious, eye-catching example of a modern multifunctional building."

ING Real Estate has developed a multifunctional block of buildings in the old centre of Budapest. Vörösmarty no. 1 is situated in the heart of Budapest, at the city's most famous square, which is the gateway to the main pedestrian shopping street - Váci utca. The square regularly hosts cultural events and fairs. while several international hotel chains and Duna Korzó, the pedestrian walkway along the Danube is within walking distance. The listed monument building of the Vigadó opera House is adjacent to the building. Public transport access is excellent, with Deak Sq. with the only intersection of all three Metro lines, being a few minutes' walk. There is also easy car access. On this place, an A-location near the Donau, a multifunctional building for shops, offices and apartments, with three parking levels underneath, is built. The building consists of seven levels on top of the parking levels, which are: two for shops, three for offices and two for apartments. This Vörösmarty building is named after the public square "Vörösmarty Tér" in front of the building.

In the middle of the building a five storey high atrium rises, with balcony gardens. The offices on level two, three and four, surround the atrium space in a U-shape. Double glazed façade units with glass that has a fade-away pattern up to 1100 mm. The atrium is closed at the top with a glass roof on a steel structure.

The main façades, north, east and west of the outside of the building are also double glazed units



**Used software: Scia Engineer** 

which have an outside sunblind, silver coloured and perforated, on the offices levels. The ground floor façade is vertical, from the first floor up the façade is sloping from 93 degrees, 1 degree per floor, up to 96 degrees.

In front of the main façade a steel structure, connected to the façade and floors with steel walkways, is built, which kind off wraps the building up. To the outside of the steel structure, triangular shaped glass panes are connected with spider profiles.

So the façade is a multilayered structure, where the exterior skin is a decorative structure wrapping the functionally different internal layers into one homogenous building appearance. The geometrical system composed of triangular elements makes the outlook of the building's façade unique, modern and fresh. This structure is constructed from steel pipes

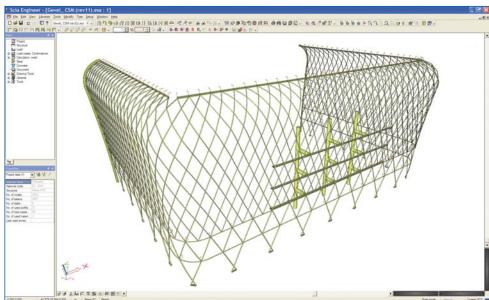
of varying cross section climbing around the building in a triangular shape covered with clear glass. A three storey high internal atrium, starting from the 2nd floor, enhances the exclusivity of the building.

This prestigious project is an example of public-private partnership between the Hungarian Foundation for Art and Free Education and ING Real Estate.

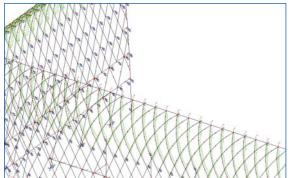
Because of the different curves in the structure, it was necessary to calculate the structure as a 3D structure. In order to obtain the curved structure, we imported a 3D wire model from Autocad into Scia Engineer. The Nemetschek Scia programs were extremely useful, having the possibility of import and 3D calculation.

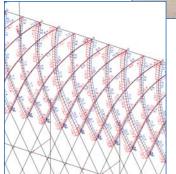
The internal forces and reactions obtained from Scia Engineer were used to calculate the connections (steel-steel and steel-concrete).

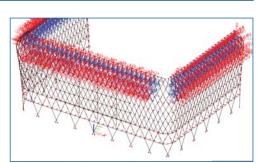
# Vörösmarty Tér 1, multifunctional building, Budapest













Nemetschek Engineering User Contest 2009 • Category 1: CAE Constructive Elements