

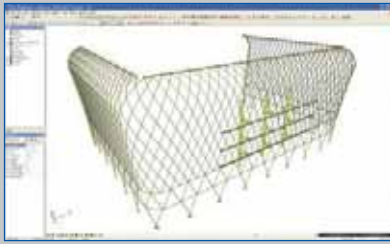
## Winners



<p><b>Winner Category 1:</b> CAE Constructive Elements</p>	<p><b>CSM nv</b> (BE) Vörösmarty Tér 1, multifunctional building, Budapest (HU)</p>		
<p><b>Winner Category 2:</b> CAE Housing &amp; Buildings</p>	<p><b>Ney &amp; Partners</b> (BE) Office Building 'Facelift Umicore', Hoboken (BE)</p>		
<p><b>Winner Category 3:</b> CAE Civil Works</p>	<p><b>Mott MacDonald s.r.o.</b> (CZ) Bridge over Vltava river in Prague-Troja (CZ)</p>		
<p><b>Winner Category 4:</b> CAE Industrial Buildings &amp; Plants</p>	<p><b>Iv-Consult</b> (NL) Hard-coal power station, Karlsruhe Rheinhafen (DE)</p>		
<p><b>Winner Category 5:</b> CAE Special Projects</p>	<p><b>BG Ingénieurs Conseils</b> (CH) Shells of the Rolex Learning Centre (CH)</p>		
<p><b>Winner Category 6:</b> CAD Engineering, Buildings</p>	<p><b>Vahanen Consulting Engineers</b> (FI) Helsinki Music Hall (FI)</p>		
<p><b>Winner Category 7:</b> CAD Engineering, Engineering work and special structures</p>	<p><b>Tauw</b> (NL) Extension and renovation 'Katwijk pumping station' (NL)</p>		
<p><b>Winner Prize of the Jury</b></p>	<p><b>BESIX</b> (UAE) The Tornado, Doha (QA)</p>		

**More information:**

**Winner Category 1:**  
CAE Constructive Elements



**Vörösmarty Tér 1, multifunctional building, Budapest (HU)**

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 situated 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 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.



**CSM nv**



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**Quote of the Jury**

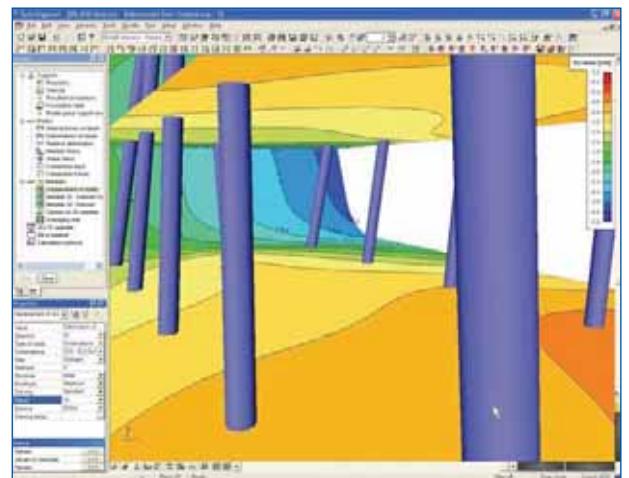
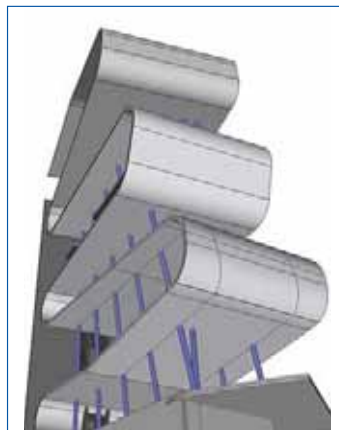
*"An imaginative concept that allows the concept of the building to be immediately recognized. The complex geometry resulted in difficult fabrication assisted by the availability of the full 3D model. Result is a spacious, eye-catching example of a modern multifunctional building."*

**Winner Category 2:**  
CAE Housing & Buildings



**Office Building 'Facelift Umicore', Hoboken (BE)**

A reinforced concrete shell that slowly 'climbs' to the roof of an existing building forms this spectacular office building. The three spaces that are enclosed by the shell, which has a thickness of only 30cm, are not aligned but slightly rotate one above another. The nine-storied building, with a footprint of only 15 m by 30 m, is structurally independent from the existing building and gets its stiffness from the co-operation of the shell, 11 inclined columns and an eccentrically placed core. The foundation of the building is made from 36 screw piles with an average length of 11 m which reach to a lower stiff clay layer but which also get their strength from the friction along the shaft of the piles.



**Ney & Partners**



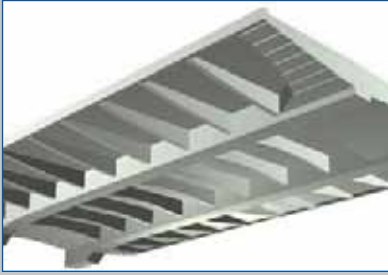
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**Quote of the Jury**

*"The originality and prestige of this project combined with the high technical complexity and the use of the software to the limit, attractively presented, made the jury decide to have this project as number one. Especially the complex material and structural model using a mix of curved shells, inclined columns and long term analysis of creep and deflection made it a very interesting project. On site measurement proved the accuracy of the calculation."*

**Winner Category 3:**  
CAE Civil Works



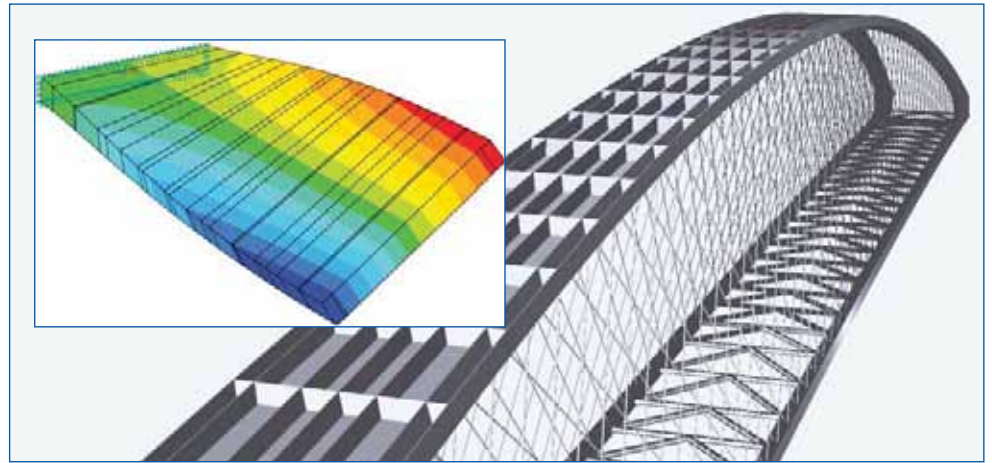
**Mott  
MacDonald s.r.o.**

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**Bridge over Vltava river in Prague-Troja (CZ)**

The project regards a new bridge across the river Vltava in the Troja district; it is a part of the new City Ring Road in Prague. The presented structural design is based on the winning architectural and constructional competition design worked out by Mott MacDonald in the Czech Republic and the architect's office Roman Koucky. Because of the innovative structure, the low arch rise, the structural slenderness and the geometrical non-linearity of the hangers it was necessary to make a detailed static and dynamic analysis, taking into account the difficult 3D behaviour. The structure was analyzed by complicated slab-deck element models but also by simplified mathematical models based on analytical solutions. The bridge was also tested for flutter stability, buffeting, galloping and vortex shedding.



**Quote of the Jury**

*"An unusual and imaginative concept for integrating road and rail traffic on a single bridge. The resulting structure posed significant analysis problems requiring extensive use of a range of Scia products. The result is an extremely attractive yet functional structure with an individual appearance."*

**Winner Category 4:**  
CAE Industrial Buildings  
& Plants



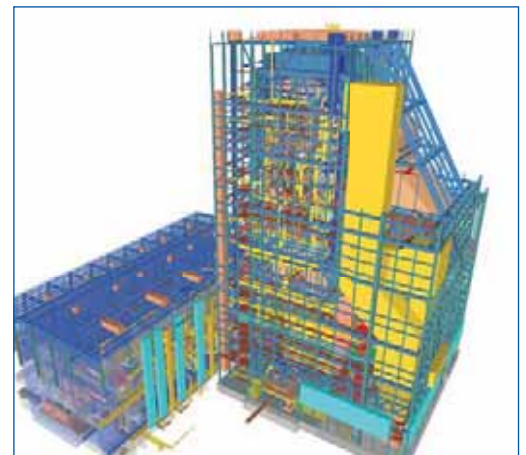
**Iv-Consult**

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**Hard-coal power station, Karlsruhe Rheinhafen (DE)**

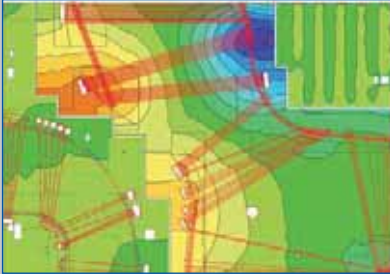
Iv-Consult is the engineering company for the structure of the boiler house of the Rheinhausen Dampfkraftwerke Unit 8 (RDK8) for Alstom Power Systems in Stuttgart - Germany. The RDK8 power plant will have a capacity of approx. 900 MW and will be constructed during 2008 up to 2011. The base of the RDK8 will be 68 by 68 meters and has a height of 120 meters. In total the structure will have more than fifty thousand calculated steel elements. Iv-Consult used Scia Engineer as the engineering program for both static and dynamic calculations and it proved to be a very useful tool for this large project.



**Quote of the Jury**

*"The high technical level of the structure, the updating of the 3D model including the pipelines and equipment make the project quite complex. The whole structure consists of in total 50.000 elements, 5000 loads, 70 combinations which have been calculated with different models. Also the utilization of Scia Engineer is quite impressive, especially their creative use of the Scia output files in order to obtain the appropriate data for their project."*

**Winner Category 5:**  
CAE Special Projects



**BG Ingénieurs  
Conseils**



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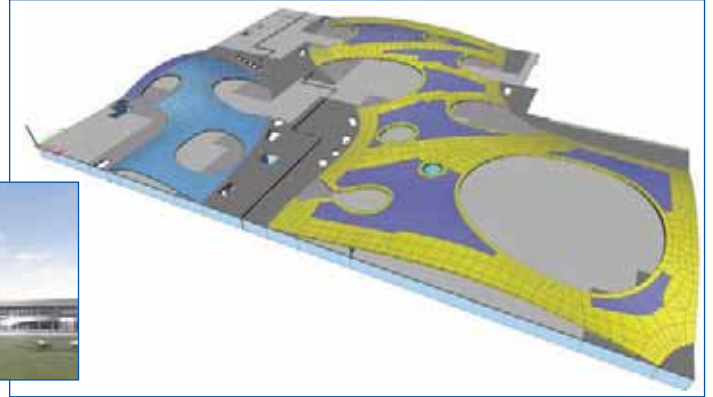
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**Shells of the Rolex Learning Centre (CH)**

This project regards the new prestigious building of the Swiss Federal Institute of Technology in Lausanne (EPFL), designed by the Japanese architect office SANAA.

The main characteristic of this structure of 160m x 120m is that the floor of the buildings follows the convex shape of the two shells of the project. It is aesthetically really breathtaking.

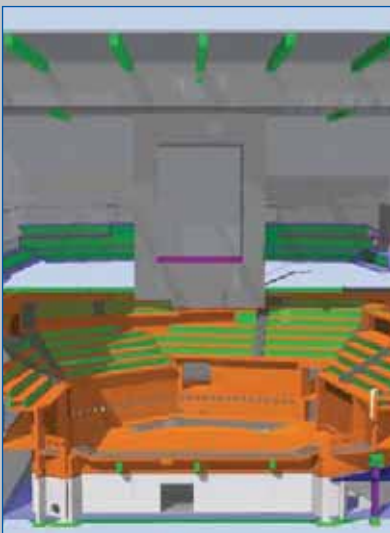
The main challenge of the project was the dimensioning of the extremely slender reinforced concrete shells. Their shape is very irregular, including many patios of large size. Many complex non-linear calculations were carried out with Scia Engineer using a full 3D model: large displacements and 2nd order effects, critical instability modes, construction stages, prestressing and time effects, dynamics and seismic analysis, and, last but not least, stripping by jacks.



**Quote of the Jury**

*"An assembly of complex thin concrete shells providing a visually impressive functional arrangement requiring careful analysis at all stages during the construction. Scia Engineer was used for non-linear and dynamic analysis as well as to simulate the removal of formwork studs. The result is a facility that blends into the landscape."*

**Winner Category 6:**  
CAD Engineering, Buildings



**Vahanen  
Consulting  
Engineers**



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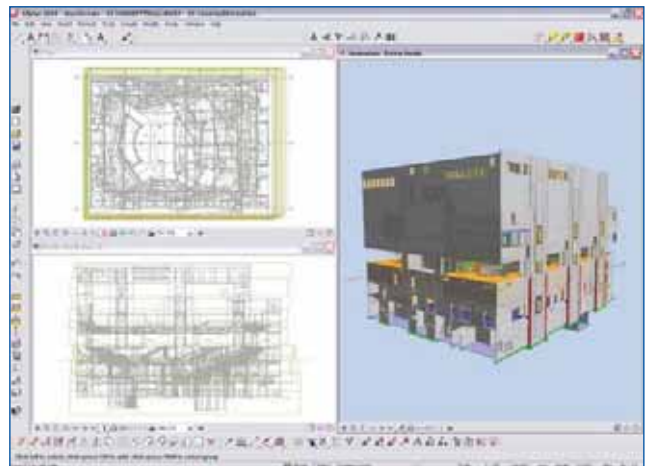
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**Helsinki Music Hall (FI)**

The project regards a music hall in the centre of Helsinki. The main concert hall will have seats for 1.700 listeners; there will also be smaller halls for concerts and rehearsals.

The acoustics and vibration isolation were the most important factors affecting the architectural and structural design. As the music hall is located near the Töölö Bay, a part of the Finnish gulf, there is a water pressure of 10 meters loading the underground structures which are made of large bore piles.

The roof structure was also an interesting engineering task as the span is 40 meters and the roof itself is quite heavy for acoustical reasons. Besides that, additional loading to the roof comes from the facade which is made of glass panels which are hanging from the roof.



**Quote of the Jury**

*"This project attracts high public interest. It is technically very demanding due to the complex geometry and the acoustic requirements. During the multidisciplinary design process the advantages of BIM have been explored very convincingly, especially for coping with ongoing design changes."*

**Winner Category 7:**  
CAD Engineering, Engineering  
work and special structures



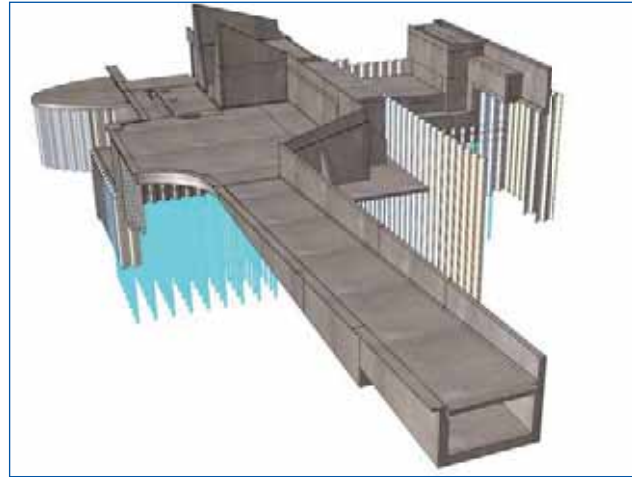
**Tauw**

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**Extension and renovation 'Katwijk pumping station' (NL)**

The Katwijk pumping station plays a crucial role in the water management of the Rijnland Water Board. In order to heighten the capacity, it was decided to build an extra pump unit and adapt at the same time the existing pumping station to present-day requirements and equip it with modern techniques. The fourth pump will be built next to the present pumping station, in this way the design and the superstructure of the storage pumping station, dating from 1954, will be preserved. In addition, the existing diesel engines will be replaced by electromotors and several renovation activities will take place. When the operations are finished (2011), there will be four, electromotor-driven, hydraulically identical, pump units.



**Quote of the Jury**

*"This project distinguishes itself by the complex geometry and the large scale of the structure. The software has been used in an ideal manner for the complete design process: from the initial 3d model to the fully detailed reinforcement drawings. The benefits of BIM are also strongly manifested in the project."*

**Winner Prize of the Jury**



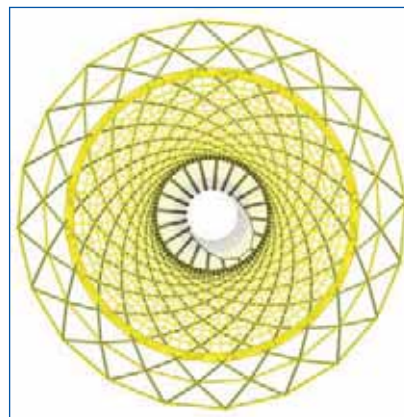
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**The Tornado, Doha (QA)**

The QIPCO Office Tower, also known as the Tornado is since December 2008 one of the major and striking landmarks that define the ever-expanding Doha. Situated in the heart of the City behind the Corniche, it has transformed, once and for all, the skyline through its unique shape and character. The client for this project is QIPCO Holding with Six Construct-Midmac JV appointed as General Contractor. The Tower has a height of 202 m and consists of 3 basements and 51 floors with a total office area of 83,148 m<sup>2</sup>. It comes with its own private helicopter platform at the very top on level 52. The building has a cylindrical shape with a variable radius which thins out at mid height (28.8 m / 19.3 m / 27.8 m). Its main feature is the outer diagrid arrangement of diagonal columns and beams which give the building a unique diamond shape pattern of the cladding.



**Quote of the Jury**

*"It is an impressive structure, well presented and with a lot of highly technical aspects. The steel and concrete connections were carefully designed. This project is a good example how interoperability with other software can be used. The seismic and dynamic analysis as well as accommodating the difference in settlements between the core and the adjacent structure was a great technical challenge."*