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SCIA

Software that is pushing back the boundaries

SCIA, WHICH HAS ITS HEADQUARTERS IN HERK-DE-STAD IN THE PROVINCE of Limburg, has seen successful international expansion of its business over the past thirty years. The company develops software for Computer-Aided Engineering (CAE), hence the name SCIA, which is an acronym for Scientific Applications. SCIA's software is aimed at the top end of the construction market. Engineers and architects typically use CAE products to design complex engineering structures – such as office buildings, bridges and tunnels – or to thoroughly analyze their designs to ensure that the structures are robust and stable in all possible circumstances.

A 142-metre high office building in *La Défense* in Paris, the *Sazka Arena* in Prague, the Olympic football stadium in Crete, an airport in Saudi Arabia – these are just a few examples of international projects where the designers have used SCIA software. The need for new buildings and infrastructure keeps on growing world-wide, and not only in Asian growth hotspots. Closer to home, demand shows no sign of slackening off either. Yet there are currently just a handful of CAE software vendors around the globe. Barely half of these have developed the international side of their business. SCIA is one of them. These days SCIA has offices in Belgium, France, the Netherlands, the Czech Republic, the Slovak Republic, Germany, Austria, Switzerland and India. Here, SCIA is one of the top companies in the CAE market and is market leader in the Benelux

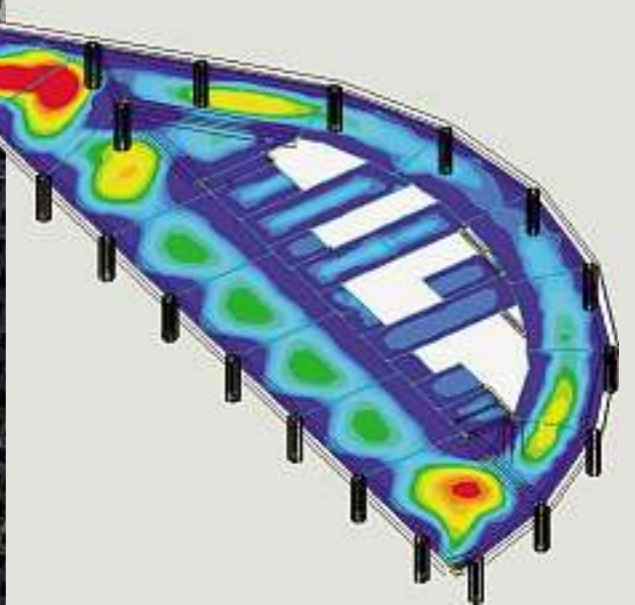
and in the Czech and Slovak Republics. With 90 employees, the company achieved a turnover of 6.5 million euros in 2004, representing a 13% increase over the previous year.

From Wang to Windows

In the early days SCIA developed CAE software for the Wang operating system, but the arrival of the first IBM PC in 1981 trig-



↑ [A growth area for SCIA is the pre-fabrication market. A construction project will be completed all the more quickly if the main contractor uses pre-fabricated columns, floors and other components.]



↑ [**CBX Tower in Paris (FR) – client: Besix (B)**
The CBX Tower is a 142-metre high office building situated at the Grande Arche, in the heart of the Parisian business district of La Défense. The tower block has 44,000 m² of office space, with 32 above-ground floors and four basement levels. Construction required 36,000 tonnes of concrete and 3,400 tonnes of steel reinforcement. The office block is at the intersection of several large underground networks that affect the geometry of the building. This called for complex foundations.]

gered a veritable revolution in the computer market. For SCIA this meant that the company could now concentrate on developing portable software products. It could also easily supply its software to users abroad. The customer base – which up until then had mainly comprised Belgian and Dutch users – quick-

ly expanded to take in Germany. Ten years later it was the graphics-based Windows that brought a new wind of change to the market. The fall of the Iron Curtain prompted SCIA to shift a large part of its software programming work to the Czech Republic, while keeping product management in the other SCIA offices.

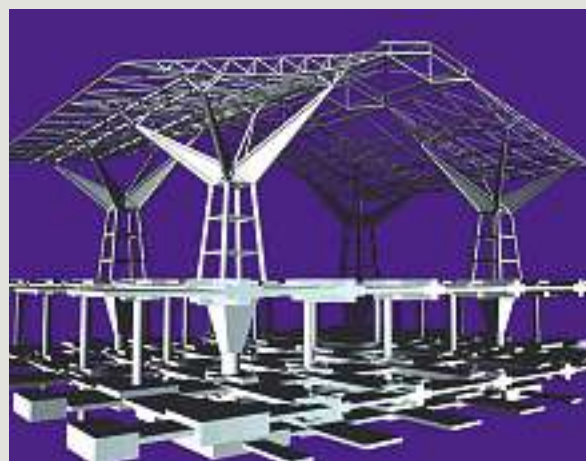
Link with Eastern Europe

This link with Eastern Europe has always been a strong one for SCIA. “We already had customers in Eastern Europe prior to 1989,” explains Jean-Pierre Rammant, SCIA's CEO. “We made sure that young Eastern Europeans could come and do a



↑ [Sazka Arena in Prague (CZ) – client : Excon (CZ)

The Sazka Arena in Prague is Europe's most modern multi-purpose venue for sporting, cultural, social and corporate events. The arena is equipped with the latest technology, such as movable seating stands and circular and movable bridges in the roof space. This means that the Arena is a very versatile space that can quickly be transformed for different kinds of events. The built-up area is 35,000 m², enclosing 990,000 m³. The capacity of the Arena ranges from 11,000 to 18,000 seats (depending on the layout), spread over six floors. The roof above the Arena has a spherical cap spanning 135 metres, with a rise of 9 metres.]



↑ [King Abdulaziz International Airport (SA) – client : abt (NL)

The substantial increase in air traffic meant that Saudi Arabia's international airport was in drastic need of expansion. The project involved building two new passenger terminals (departure and arrival halls) and a new concourse connecting the different gates (1,370 metres long and 40 metres wide).]

work placement with us. They were usually very highly trained, but they didn't have much feeling for the commercial side of the business. Later on all that changed quickly of course." Five years ago SCIA acquired two companies in the Czech Republic, and there is now a SCIA office in the Slovak Republic as well.

International yet local

In order to compete in the international market, SCIA had to ensure that its software met international standards. That can be a real disincentive for many vendors because it is a hugely complex task. Since Belgium does not have its own standards, SCIA has always used the Euro-codes in developing its products. The company's skill in negotiating its way around different standardization systems has given it a significant competitive edge over the years. In the Netherlands and Germany, for example, software has to comply with specific local standards. SCIA deals with that by using local expertise centres. The company has employees in fifteen countries – either in its own offices or working via agencies – and their task is to support the local market. SCIA always ensures that its software is available in the user's mother tongue. English may be the international language of IT, but users still prefer to work in their own language. Nowadays SCIA offers its products in eight languages.

Opening up the market

SCIA has also always sought to place its products in a wider context. "Working with other companies can have a synergy effect, in terms of both development of software products and commercial support," explains Jean-Pierre Rammant. One example of this kind of useful interaction is the relationship with the German company Kaltenbach, which makes machines that operate using SCIA software for the steel construction industry. SCIA has also developed a similar alliance with the Dutch company GeoDelft, which specializes in soil mechanics. "This has opened up market sectors that at first sight seemed to offer us little in the way of opportunities," adds Rammant.

Pre-fabrication

Another growth area for SCIA is the pre-fabrication market. A construction project will be completed all the more quickly if the main contractor uses pre-fabricated columns, floors and other components. SCIA software takes this into account even during the preliminary design phase, making it much easier to calculate how much a project will cost and how long construction will take.

Electronic verification

SCIA software also facilitates the exchange of technical drawings and intelligent models. Whereas in the past someone used to have



↑ [Pagkri Stadium in Crete (GR) – client: Varitec Engineering (CH)

The Olympic football stadium in Iraklio, which was built for the 2004 Olympic Games, has seating for more than 33,000 spectators. The 182-metre long complex has a steel roof structure that weighs more than 700 tonnes and comprises 6,470 elements. The 1,600 steel spherical node connectors with nine different diameters generated a total of 340 different configurations. Since this area is in an earthquake zone, a seismic analysis of the structure was carried out.]

to go through the plans manually and check the data, nowadays the software automatically looks at the parameters used. Incidentally, in Singapore construction firms can now only submit their plans and models electronically, specifically to simplify the verification process. Other countries are expected to go down the same road.

Blind opportunism is not the way

In the next few years technology will continue to be the main driving force for SCIA. But technology is not an end in itself. SCIA looks on it as a challenge – even after thirty years in business – to bring technology to the construction industry. It will continue to invest in people, quality and creativity. "At the end of the day, of course, you have to be prepared to take the plunge," concludes Jean-Pierre

Rammant. "You have to have the nerve to say: 'Come on, let's try something in Switzerland or Spain'. Sales figures are important, but you can't be motivated purely by blind opportunism. It's all about gauging and following up results in a professional way." +

For further information, visit
www.scia.be (English, French, German, Dutch, Czech and Slovak)