SCIA scientific software

October 2007

<printable version>

NEWS

We kindly invite you to read our new White Paper "**Parametric Modelling**, a basic B.I.M. property implemented in SCIA•ESA PT 3D Modeller". **more ...**

You can reach our Support Department directly by phone:

SCIA•ESA PT (CAE) Support
+32 13 35 03 10

Allplan Support
+32 13 35 03 15

SCIA•Steel (CIM) Support
+32 13 35 03 20

'**Online Projects nv**', member of the SCIA group is looking for a **Consultant / Trainer** **more ...**

You can make use of the **SCIA Quick Poll** to send comments on what our website is missing. **more ...**

Visualize all SCIA•ESA PT projects at the client site with the **Nemetschek IFC Viewer**. **Try it now !**

EVENTS

SCIA will be present on the upcoming International Symposium on '**Integrated Design Solutions**' in Brussels (B) on October 3th. **more ...**

SCIA organizes **'a free initiation day Allplan Engineering'** on 31st October 2007 in Arnhem (NL) **more ...**

SCIA participates at **"Batimat 2007"** in Paris (F) from the 5th to the 10th November 2007. You can find us on **stand nr. 5.1 C 9** **more ...**

UPDATES

Customers can download the following **new service packs** in our free **download section.**

» **SCIA•ESA PT 2007.1.078**
» **ESA-Prima Win 3.100.078**
» **Allplan 2006.2_3**

Important: If you are a CADS software user, please contact your supplier for obtaining the latest service pack compatible with your release at **support@cads.co.uk**

TRAINING

In the following months a lot of **trainings** are organised in our offices of **Herk-de-Stad** and **Arnhem** with, among others, the following topics:

SCIA•ESA PT
» Basis course

Dear eNews reader,

Again we have a lot of news to tell this month. With pride we let you know that the **SCIA Management has been appointed to lead the entire 'Nemetschek Engineering Group'** and that SCIA is now for **100% a part of the Nemetschek family**. A really big challenge to which we are going to dedicate ourselves for 200%!

Further in this eNews you will see a beautiful example of what can be realised with our software; an impressive construction of our customer and SCIA User Contest winner **'Excon'** from the Czech Republic is presented.

Also our support department reports on some very useful SCIA•ESA PT information about 'predefined shapes'.

We wish you a lot of reading pleasure!

Corporate News: The Nemetschek Engineering Group

In August 2007 Nemetschek AG and the minority shareholders of SCIA agreed on a share exchange:
SCIA is now a 100% Nemetschek company, and the former SCIA shareholders are now holding shares in Nemetschek AG (listed on Frankfurt stock market DE0006452907).

In Nemetschek the engineering companies are assembled under an umbrella structure, named **Nemetschek Engineering Group**. The participating companies are: **Nemetschek Technology** *(author of Allplan)*, **Nemetschek Engineering Precast** *(author of Allplan Precast)*, **Friedrich & Lochner** *(CAE software)*, **Glaser** *(ISB CAD)* and **SCIA Group International**. The product portfolio covers solutions for engineering analysis & design, CAD modelling, precast automation and steel fabrication.

Nemetschek Engineering Group

The Engineering Group has 190 employees, distributed over 12 offices in 8 countries. The consolidated revenue is approximately 25 million EURO, **forming the worldwide largest software company for engineering in construction**, and representing 25% of the total revenue of Nemetschek AG.
The Nemetschek Engineering Group is mainly **active in Europe** but also in the **Middle East** and through partners in **some countries in Asia**. Its challenge is to expand worldwide by bringing state-of-the-art solutions, both integrated in the Building Information Modelling technological concept and well independent high valued products to address specific market needs.

The individual companies of the Engineering Group have open standard links to the main software products outside the Group, not enforcing their clients to be bound to Nemetschek solutions only. At the same time a maximum synergy is pursued to achieve breakthrough information technologies, from design to fabrication.

The SCIA management has the responsibility to lead the Nemetschek Engineering Group.
This new challenge is taken up with gratitude and careful attention to the requests of the ten thousands of the Nemetschek Engineering Group clients.

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Round-trip engineering by using SCIA•ESA PT and Autodesk® Revit® Structure

The SCIA•ESA PT platform now offers full interoperability with Autodesk® Revit® Structure.

This is how the **R2E exchange toolbar** in Revit® looks like:

It enables an automatic **one-to-one exchange of (structural) model information** between the two applications, thus reducing duplication efforts and errors to a minimum during the structural engineering process.

Via a direct link a model created in Revit® Structure is transferred i.e. exported automatically to SCIA•ESA PT where a check and update of the analytical model can be performed, the mesh of finite elements is generated and the analysis, design and optimization is performed.

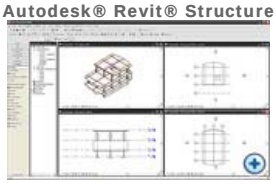
After analysis in SCIA•ESA PT the model is transferred (imported back) to Revit® Structure. Changes and modifications to the structural model including member deletion, member relocation and member addition applied in SCIA•ESA PT are updated and traceable in the Revit® Structure model.

It is also possible to convert models originally created in SCIA•ESA PT into a Revit® Structure model.

The exchanged structural model, with all or preferred selected items,

R2E exchange dialogue in Revit®

Autodesk® Revit® Structure



SCIA•ESA PT

Allplan Engineering
» Formwork shell and reinforcement functions
(23 & 26 October 2007)
(25 & 30 October 2007)

Allplan Architecture
» Basis course
(15 & 16 October 2007)
(17 & 18 October 2007)

Geodelft training:
» Geotechnical risk management of construction projects
(9 - 11/10/2007) **more ...**

Here you find **all training dates with a programme overview** and you can register online.

JOBS

SCIA's customers are invited to add their **job vacancies free of charge** in our '**SCIA Jobs Network**'.

Please also check **SCIA's Job Openings**. Good luck!

GALLERY

The winner of the **summer beach ball contest** that took place in the Benelux is revealed. We warmly congratulate **Mrs. Chantal Deleu of Plakabeton**, who won a **dream weekend** for two.

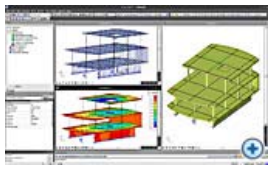
Winning Picture

All participating pictures can be admired in **SCIA's web gallery**

SCIA USER CONTEST

includes:

- Geometry;
- Structural components - plates, walls and shells, including openings, (curved) beams, columns and bracing sections;
- Component properties and material properties;
- Supports;
- Loads, load-cases and load-case combinations.



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Brussels reveals its polar station

The Belgian prince Filip has presented the « Princess Elisabeth » polar station in Brussels. It is the first scientific structure with "zero emission". **The goal of this polar base**, which will be moved to the South Pole, is **to study the effects of the climate change**.

It is a unique enterprise... The polar base, Princess Elisabeth, which has been on exhibition and accessible to the general public in the port station **'Tour & Taxis' in Brussels**, is a unique construction with regard to durable development.

Indeed, it will be the first station located on the South Pole that works only by renewable energy.
The base will be equipped with 8 windmills and solar panels that cover the roof and the exterior walls of the structure; also a water recycling installation is provided. The station will be warmed using a system that combines passive solar heating and cogeneration that is recycling the heat rays that have been emitted by the energetic core, computers, light and even the human presence of the base. Concerning the isolation of the walls, the base avoids any heat loss and maintains the ambient temperature between 18 and 20°C. Moreover, the energetic efficiency of the concept, the energetic control system and the use of energy-saving equipment turns the station into a real "bio"construction prototype.

Research for microbiology, geophysics, ...
The building will be disassembled and its parts will be transported in containers through a large ship in the direction of Nunatak Utsteinen in the east of the South Pole. The station will be assembled during the austral summer; this is from November 2007 to March 2008. Many scientific projects will be launched. The program includes research for meteorology, microbiology, geophysics, seismology, terrestrial magnetism and glaciology.

A project of 11.5 millions of euros
This comprehensive project is a result of the collaboration between the public and the private sector as the "Princess Elisabeth" station is realized by the International Polar Foundation (IPF). This foundation is operable thanks to the contribution of various technical partners and the sponsorship of private companies and individual sponsors; the Belgian state assures the funding of the maintenance and the scientific research. In total, the cost of this project is estimated at 11.5 millions of euros.

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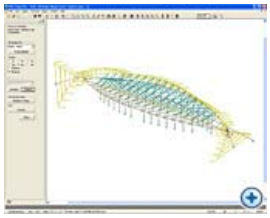
The Winning Project: Primary steel structure – Metro station Strizkov - Prague (CZ)

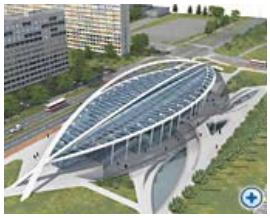
EXCON, a.s. started 1990 as a design studio focusing on structural analysis and dynamics of steel structures. Its initial development related to the boom in the telecommunication sector. In 1995, the company extended its business activities by engineering and contracting activities. At the end of 2002, they acquired a facility in 'Hradec Králové' producing steel structures (former ZVU Chemie, today EXCON Steel, a.s.). 2003, EXCON, a.s. entered the market as a residential developer and continues to look for new business opportunities.

About the project
The new underground station **'Strizkov'** in Prague is a very special structure of a high esthetical level.

It is the first station of about 50 Prague 'fully glassed-in' metro stations.
The hall structure is about 160 m long, 42 m wide and 20 m high. The weight of the structure is about 950 ton.

The roof structure is suspended on the main arches by two systems of prestrained bars. The first system of short bars has an important static function. Special springs for reducing the tension (with a press capacity of 180 kN) were used in a second system of long bars. The roof structure consists of horizontal arches, middle beams, trusses and purlins. The geometry of all parts was extremely challenging with regard to design, manufacturing and erection, as most edges are circumflex.





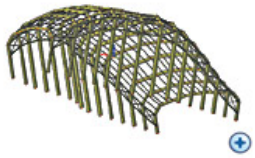
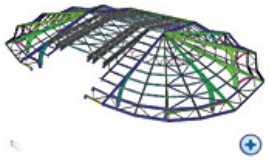
Static analysis
The 3D linear module of **ESA-Prima Win** *(Nexis)* was used for the first step of the internal forces calculation. For the

structure design more than 20 load cases and more than 700 combinations were considered. The structural model has more than 800 nodes and 1000 members and includes 40 different profiles. For extreme combinations internal forces were calculated by the software's nonlinear module (prestressed rods without press). Extreme internal forces (results of linear and nonlinear calculations) were used for the detailed profile design and are of a welded box type category 4 by EN 1993 (with local buckling for compression members or compression flanges of bent members). SCIA software was also used for calculating the buckling lengths of the members during the stability design.

We invite you to read the complete story with all technical details in the SCIA User Contest book 2007 at page 108 and 109. **You can still order a hard copy of this book**.

Quote of the jury
"The design and erection of this prestigious and eye-catching structure would not have been feasible without extensive and clever use of the software".

Other nominated projects in the Category 4 'CAE Buildings':

		
SETEC Bâtiment Recycling plant Flamoval	**TAPPY BORNAND MICHAUD SA** Wellnes Centre, Nestle Vevey	**VK Engineering** The Roof Structure - Indoor Stadium

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Predefined shapes in SCIA•ESA PT

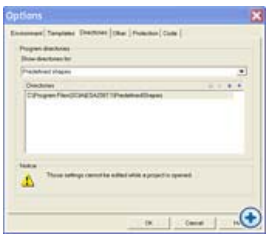
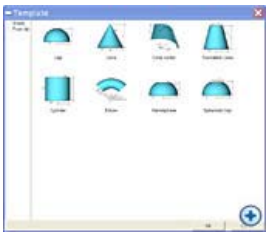
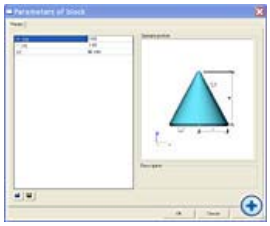
You deal with shells in SCIA•ESA PT and it is not always entirely clear for you how to input them? In the version 2007.1 a solution is presented!

In the previous versions, the user disposed of his self-defined templates. Bearing this in mind a number of frequently occurring shells have been created.

During the installation, these projects are placed in the folder of 2007.1.
You can find the directory under 'Setup > Options > Directories'. *(See picture 1)*

On which location in the program can you ask for these elements?
If you go to the **structure menu**, you have from now on also the option **Predefined shapes**, with the following possibilities. *(See picture 2)*

Suppose that the cone is selected, then a dialogue box appears in which the parameters of this element can be edited if desired. *(See picture 3)*

		
Picture 1	**Picture 2**	**Picture 3**

Archive Tips & Tricks
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