SCIA scientific software

October 2006

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NEWS

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EVENTS

SCIA takes part in the **"Betondag 2006"** in "De Doelen" in Rotterdam on 16 November 2006. You can find us on **stand nr. 23**. Mr. **Herman Oogink (SCIA)** will give **a lecture on BIM** in the Van Capellenzaal ... **more**

SCIA participates in the **"Industrie & Projectbouw" fair** in Antwerp Expo **on 21 and 22 November 2006**. You can find us on **stand nr. 3512** ... **more**

UPDATES

Recently the following new software versions have been released:

- **SCIA•ESA PT 2006.0.166**
- **ESA-Prima Win 3.80.166**
- **Allplan 2006.1_2**

As a customer you have the possibility to download these in our **protected download section.**

TRAINING

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

- Basis course SCIA•ESA PT
- Basis course Allplan
- Non-lineair calculation
- Dynamics
- EC3 Theory en practice
- Tips & Tricks

...

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

JOBS

SCIA's customers are invited to **advertise** their **job vacancies free of charge** in the new '**SCIA Jobs Network**'.

Our website counts several thousands of visits of young engineers and draughts men

Dear SCIA eNews reader,

October ... summer is over and autumn comes along. But no worries, with SCIA you keep standing strong! Poetry is not our strongest point, making construction software however is our speciality.

In this eNews we will show you a **marvellous project**, designed and calculated by our **Swiss client Varitec**. They realised an innovative combination of glass and steel, indeed a masterly example of the possibilities of our software. Further you will find an item on our products and support, in this way we always keep you up-to-date.

SCIA on its way up

SCIA sees a sharp increase in net revenue during 2006. The technological advantage, built up through major development investments in the past years, has proven to be rewarding.

New clients were realized in the major market segments Civil Engineering,Infrastructure Works, Fabrication (Steel and Concrete) and Energy design companies. An excerpt: BHM Ingenieure (Au), H+W Ziviltechniker (Au), Infra Consult (NL), Link Project (Cz.R.), Kahn Scheepvaart (NL), Voorbij Groep (NL), Dokkum (NL), BTE Nederland (NL), MinistèreEquipement et Transport (B). New clients were also achieved on the international scene, goingfrom Finland (PTH-engineering oy) up to China (Wuxi Huaguang Boiler Co Ltd) and the close cooperation with themachine manufacturer Kaltenbach (Lörrach) resulted in new clients too.

SCIA has extended its development team in Chennai (India), and is increasing its staff in Prague (Cz. Rep.) with a team dedicated towards BIM software, as part of the development effort by Nemetschek Technology.

SCIA takes part in the Nemetschek Strategic Engineering Board to set out strategy & investments between the Nemetschek companies active in engineering software.

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SCIA•ESA PT 2007 will include the CAD shape of 2D members and ESA-ESA update

CAD shape of 2D members

Even though SCIA•ESA PT is primarily a state-of-the-art and sophisticated tool for static, dynamic, ..., calculations, **it can serve also as a powerful modeller, as it can recall two types of model**: **a structural model** (*called CAD model in the current versions of SCIA•ESA PT*) and **an analysis model** (*called calculation model in SCIA•ESA PT*).

Fig. 1

The former represents the real shape of the structure and is also used for imports from other CAD programs, **the latter contains certain simplifications and idealisations** enforced by the applied numerical method of solution.

So far, the structural model in SCIA•ESA PT was restricted to beam members only.

Now, this feature extends to plates, walls and shells as well. The user can take the full advantage of this fact and within one project define both the tuned analysis model that provides accurate results and fine-looking structural model reflecting the real configuration of the structure.

But this is not all! SCIA•ESA PT enables the user to import the model of the structure from a third-party software. Mostly a structural shape is imported (fig. 1). The user then faces the problem of transforming this structural model into a working analysis model – usually, there will be problems with contacts of adjacent members (fig. 2). SCIA•ESA PT comes with a handy solution. After a single click and a few simple operations with parameters (fig. 3) that control the whole process, SCIA•ESA PT can automatically convert the structural model into the analysis one. Should it happen that a conflict arises during this conversion, the user is immediately and graphically informed about it in the screen (fig. 4).

Once such conflicts are corrected manually, nothing prevents the user from defining the required boundary conditions, load cases, loads and other data needed for a successful calculation of the project.

every week. You and SCIA,

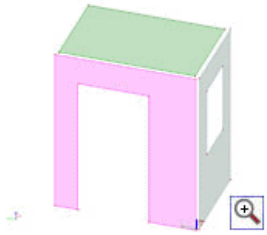
Fig. 2

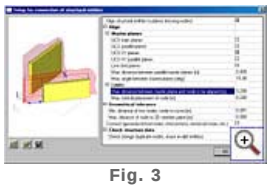
Fig. 3

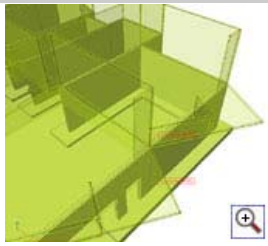
Fig. 4

ESA-ESA update

The second feature presented here belongs to the "roundtrip" family, i.e. into the group of functions supporting exchange of data between various programs with the possibility to get back without losing any data and at the same to reflect possible changes made in the other software.
The ESA-ESA update enables the user to exchange and share project data with colleagues who use SCIA•ESA PT as well. At the moment, it is possible to share basic geometric data such as beams, slabs and haunches as well as properties like material, cross-section and layer.

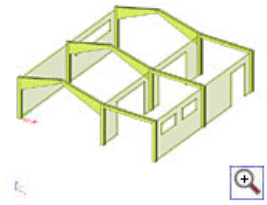
Fig. 5

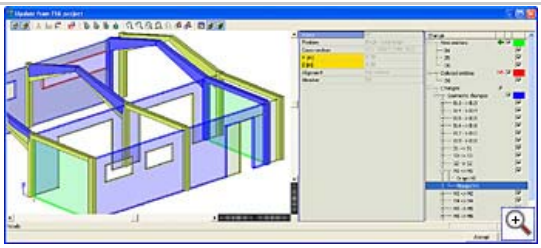
Fig. 6

The principle is simple. User A makes the first version (fig. 5) of the project and sends it to user B. User B continues with the project and then returns it back to user A. It is clear that user A may have made some changes during this period. Now it's the turn of SCIA•ESA PT and its ESA-ESA update function. The update function compares the two projects and finds added, deleted and modified entities. Everything is clearly summarised in a neat dialogue (fig. 6). It is now the user's turn to decide which variants are those to be kept for future work.

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Hochtief, preferential candidate for the construction of a motorway in Greece

The German leader of the BTP, Hochtief, announced that the consortium, that it carries out with Vinci, has been retained as preferential candidate for a project of a turnpike in Greece involving a total investment of approximately one billion euros.

"The Greek government aims at becoming the signature on the final contract by the end of the year", declares a spokesman of Hochtief. The project involves the construction and/or the modernization of a motorway stretch of 230 kilometres on the important road connecting Athens and Thessalonica. The consortium will then have a concession for thirty years, as specified by Hochtief in its official statement. This motorway is financed partly by European funds. It fits indeed in a project of the EU to develop the European transportation network. The remainder of the financing, a little more than two thirds, will come from long-term bank credits and capital provided by the companies of the consortium, which will then be refinanced thanks to the toll receipts.

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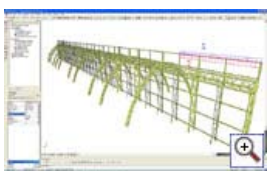
Framework-System for Glass Façade

Project: Lamda Shopping Mall – Athens (GR)
SCIA Customer: **Varitec (CH)**
Software used: SCIA•ESA PT

The newly built Lamda Shopping Mall has recently been inaugurated. The huge glass façade (99.5 m length and 9.8 m height) allows an unrestricted sight at the impressive buildings of the Olympic site in Athens. **This high-tech-project was realised by Varitec Engineering AG from Switzerland**.

The façade consists of a post and mullion construction, which is not rigidly connected to the roof. The horizontal forces are transmitted to the slab through a framework system that suspends from a lattice girder made of tubular sections. The height of the posts between the slab and the framework is 7.6 m. The posts have a filigree appearance and a framework made of chrome steel tension members, which limits the deflection.

Varitec Engineering AG has developed the design of the lattice girder made of tubular sections to match with the sight of the nearby Olympic stadium. The total thickness of the double-glazing of the façade is 32 mm and consists of 12 mm thick toughened and coated glass. The maximum size of the glass elements is 4.0 by 2.3 m. Eight glass automatic sliding doors are integrated into the façade.



Varitec Engineering AG has realized the complete high-tech-project: design, calculations, shop and erection drawings, supply of the glass and tension structure. Local companies under the supervision of Varitec realised the erection.

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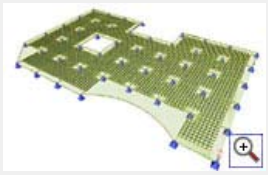
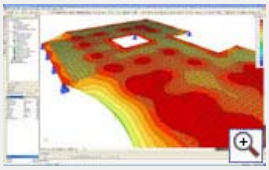
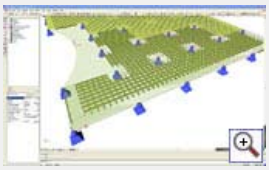
GALLERY

Screenshots of a Waffle Slab in **SCIA•ESA PT 2006**





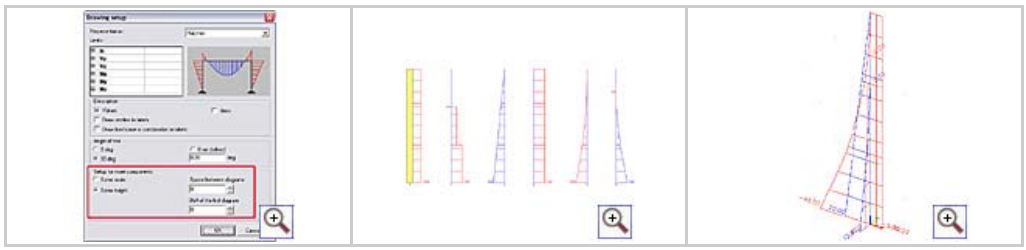


Tips & Tricks: Internal Forces, more Components in SCIA•ESA PT

When viewing Internal Forces on members, it is possible to select **More Components**.
'**More Components**' allows the user to view multiple internal forces simultaneously on the screen. The desired components can be checked and after 'Refreshing' they are shown:

Using **Drawing Setup** the distance between the different components can be altered:

When changing the option **Drawing** in the Properties window from **Screen** to **3D**, the components are shown in 3D on the member:



Viewing **More Components** provides a convenient way to view results simultaneously. For example to check **Steel Stresses** by displaying the normal force and both bending moments, or for a concrete theoretical reinforcement calculation by displaying the original bending moment and the recalculated bending moment.

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