SCIA scientific software

NL FR EN DE CZ

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NEWS

- Customers can help each other. Join us making the **SCIA Forum** a real success! **Register today**
- SCIA values **your feedback**. Please use **this form** for sending us your remarks, ideas and suggestions which help us improve our services.
- **New Service Release**: SCIA.ESA PT 5.2.262 and ESA-Prima Win 3.70.263 available on our **secured download-section**

EVENTS

- On March 23rd, the '**Betonvereniging**' organises in Meervaart, Amsterdam (NL), a **study afternoon** in collaboration with **STUMICO**. The theme is "3D/4D CAD in practice: from Model to Construction' ... **more**

TRAINING

- SCIA organizes a course **'SCIA.ESA PT, EC3'** in Herk-de-Stad (B) on 16th and 17th February 2006. **Calendar & Subscription** ...
- Basic course: '**Allplan FT**' in Arnhem (NL) on 21st and 28th February 2006, **Calendar & Subscription** ...
- On 2nd March 2006, SCIA organizes a course '**non-lineair calculation**' in SCIA.ESA PT in Herk-de-Stad (B). **Calendar & Subscription**

JOBS

- SCIA is an **innovative company** in full expansion. We are constantly searching for new result-oriented co-workers looking for a **challenging career**. If interested, please fill out our **Online Application Form**, motivating your interest.

  SCIA also highly encourages **spontaneous applications**.

GALLERY

- **Allplan Architecture** used for the Fota Island Resort in Cork, Ireland.

Dear SCIA eNews reader,

The new year has been well set in. The month of January already lies behind us and it is highest time to present the eNews for February. We gladly want to thank everyone for the numerous New Year wishes and for the **various suggestions for new articles** we received.

Perhaps you see before very long your own project being published in our newsletter!

This month you can take some relaxation with various news and information from the construction world and about SCIA and its solutions.

Much reading pleasure with the following subjects:

» Corporate News: SCIA in acceleration
» Product News: Punching Shear Check in SCIA.ESA PT 5.2
» The Market: Project portal sites in the construction world
» Customer Project: Ellipsoid council room becomes eye-catcher of the new town hall of Koksijde (B)
» Tips & Tricks: Resultant Reaction in Nodal Support in SCIA.ESA PT 5.2

SCIA in acceleration

2005, SCIA booked a turnover increase of around 10% ; the strategy of project applications around core competence in CAE software (and the SCIA PT Open platform) provided excellent results. **Around the SCIA PT** - Professional Technology, **a new cooperation with GeoDelft (The Netherlands)**, specifically towards geotechnics and soilmechanics, **and with Echo (Belgium)** has been signed.

On the market of prefab floor elements, Echo is a very well known player. SCIA supports the innovation efforts of Echo at the realisation of research and design software; together **with Echo Engineering SCIA concentrates on floor producers**. For design software, logistical software as well as CAD software, SCIA provides a completion on the production automation of Echo.

Also in the field of **scaffolding construction** an opening was reached; with a consortium of Dutch scaffolding buildersa project has been started.

The Belgian press has discovered SCIA: "**Software that is pushing back the boundaries**", "Integrated design" and "**Steel, between Art and Design**" is merely a pick from the recent publications.

Please go to our '**SCIA in the Press**' section for more info.

Strategic partnership with Echo

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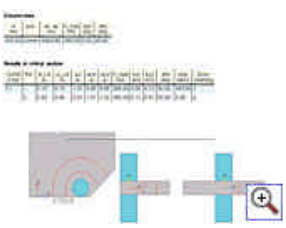
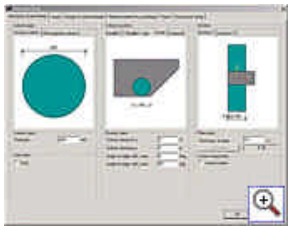
Punching Shear Check in SCIA.ESA PT 5.2

SCIA.ESA PT 5.2 contains modules to perform the **punching shear check according to a wide range of national standards** (CSN, STN, EC2, ÖNORM, NEN, BS, SIA and DIN).

The program automatically checks the resistance of the plate against punching in critical sections coming from the concentrated loads of columns or from supports perpendicular to the lower surface of the plate. It also calculates the necessary reinforcement areas in the critical sections and determines the shear stress in the critical section.

The analysis is done for circular and rectangular cross sections – any other cross section shape is automatically transformed to a rectangle.





Technological openings are taken into account in the calculation of the length of the critical section, and supports or columns can be located in a corner, along the edge and on the inside of the plate.

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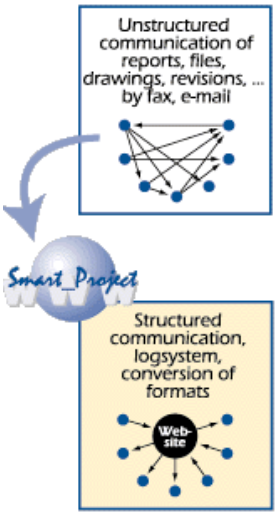
The market: Project portal sites in the construction world

Thanks to project portal sites, the construction sector can evolve from the era of exchange of information to the one of **sharing information**. The Belgian **W.T.C.B** (Scientific and Technical Centre

for the Construction Industry) **recently published a vast report containing the results of a research project that has been carried out in the period 2001 -2004**.

The design and implementation of a building project require the mediation of several partners and go by means of complex processes, divided in innumerable phases. The last years it can be noticed that the design and implementation periods become continuously shorter. To be able to cope these requirements, it is necessary to optimise 'management and circulation' of information between the several construction partners. Thanks to the current functionalities of computer networks, and of the Internet in particular, it is possible to thoroughly modify the communication methods and the exchange of information in building projects. The many possibilities that are offered today in the field of communication could be a motive for the building partners for reinforcing their cooperation in projects and at the construction sites. For that purpose, project portal sites are the ideal solution.



A project portal site is a protected common working space in which the project partners share documents and/or information with each other. Through a computer, which is linked to a network, for example the Internet, a project partner can put documents online for the other project partners or download and consult documents published by the other partners, independently of place and time.

The main purpose of a project portal site is sharing available information and knowledge. Although this collective project memory is the foundation for the communication, it is also the main cooperation factor between the partners.

The WTCB-report, available in Dutch and French, extendedly **treats the different aspects of project portal sites**. Starting from a clear definition, the following items are treated: the use during the different building phases, the role of the involved people, the technical implementation of it, the possible functionalities, the organisational and legal aspects, security…

The document has been composed in a very structured way and established in a clear language, it is a must for everyone who is involved in this matter. It can act as first familiarisation with project portal sites, but it also forms a guiding line for companies that consider an implementation of it.

Important to mention in this context is the fact that there is running, for some years now, a European ICT project, called "eTranet", in which the W.T.C.B. take part as `Belgian Knowledge Centre for the Construction Sector'.

As an important software developer for the construction sector, **SCIA offers a 'tailored' project portal site**. The SCIA solution is called **Smart_Project** and is discussed extendedly in the W.T.C.B. - report.

If you wish further information concerning project portal sites or about the above -mentioned report, you can always contact the 'publications' department of the W.T.C.B. +32 (0) 2/716.42.11.
You can also contact **Mr. Jan Reekmans** on +32 (0) 13/55.17.75.

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Ellipsoid council room becomes eye-catcher of the new town hall of Koksijde (B)

SCIA's customer **VK ENGINEERING** is a subsidiary company of the **VK Group**. It offers engineering in special techniques, infrastructure and stability, oriented to the commercial sector. The stability department **Ingénieurs Associés**, that is a part of VK and as a consequence also a SCIA customer, still reinforces this offer.

The new **town hall of Koksijde**, designed by the architects' firm **Storme-Van Ranst** is already in full progress. The project exists of two office wings with in the middle **an atrium of 25 by 25 meters** and an inner height of 20 meters. The largest eye catcher will be however the central 'Council room' where a pure ellipsoid structure is foreseen.

This **ellipsoid volume** rests, at an altitude of 6 meters above the ground, on four slantingly placed support columns. It has a length of 19.50 meters, a width of 14.50 meters and a height of 11.50 meters. From the main gangway, connecting the two office wings, a second gangway gives access to the council room.

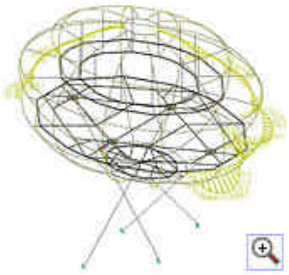
The volume contains 3 levels; a technical space which can be converted into an informal meeting space, the council room and a public part.

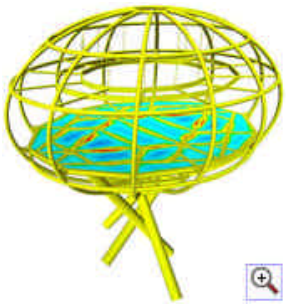
Structural set-up

After the design team had analysed the different implementation possibilities for the structure, was opted for a **solution in steel**. The most important motivation lied in the fact that the construction had to be carried out 7 meters above ground level.

The volume has been built up by means of 12 vertical ellipsoid frames, composed out of round steel tubular sections with a cross-section of hardly 244.5 mm. Connection rings, which are also built of round tubes with a diameter of 244.5 mm, have been foreseen in horizontal direction.

On the inside of the ellipsoid structure, two horizontal platforms of respectively 6.15 and 9.15 meters above ground level form a traction construction which prevents the frames from widening. The public platform, at 12.15 m. above ground level, will be hung onto the vertically bent frame construction, this to avoid bothersome support columns in the meeting room beneath. Between the steel constructions, concrete floors are foreseen.





The four slantingly placed metal columns (diameter 711 mm and wall thickness 25 mm) do not only support the ellipsoid structure, but also conduct all facilities for the technical installations in the council room.

VK ENGINEERING realised a **3D drawing model of the complete construction**. This served as a work basis for the architecture and as a basis for all further implementation drawings in the realisation. The complete construction was modelled in **ESA-Prima Win, the 3D finite element SCIA program**, taking into account all necessary freedom degrees of the construction.

After elaborate calculations, the most important distortion was determined in a horizontal rotation in a plan view resulting from the oblique placing of the columns. This distortion was important with regard to the positioning of the head gangway and the connection gangways, which provide access to the ellipsoid structure.

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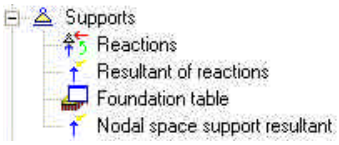
Tips & Tricks: Resultant Reaction in Nodal Support in SCIA.ESA PT 5.2

When calculating a structure, the reaction forces can be consulted for the three directions.

The latest version of SCIA.ESA PT has a new option called Nodal space support resultant which calculates the **resultant reaction** and the **horizontal component** of this resultant in a support.

The option can be found in the Results menu under Supports.



This option allows a quick check of the resultant reaction in a support and also gives a clear indication of the **slope** of the resultant.

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