**NEMETSCHEK Scia**

eNews

**May 2011**

## Latest News & Events

► **Open BIM** for **Managers** (Dutch - French)

► Nemetschek Scia will be present at **Project Qatar exhibition** - 2 till 5 May 2011

► **Free Technical sessions** on hot topics are being organised in the Benelux (Dutch - French)

► **Nemetschek Scia** will be present at the **Kaltenbach IPS exhibition** in Lörrach (D)

► Visit our **Webshop** and take advantage of our **special offers**!

► All you need to know on the Eurocodes... Visit www.eurocodes-online.com

► Join our **new IQ Platform** and contribute to the **future evolution** of **Scia Engineer**!

► Scia invites you to participate in the survey: "**Users of Software for Design and Engineering**"

► Are you a **student or professor**? Download Scia Engineer for free...

## Software Updates

► Customers can download the **latest service packs** from our **secured download section**.

• Scia Engineer 2010.1.690
• Scia Steel 2010 SP3
• Allplan 2011 HF4
• Allplan Precast 2010.1-1

► Get an **automatic notify** through RSS when a **new Scia Engineer Service Pack** is available.

## Training & Support

► **Free** interactive **eLearning**.

**Scia Engineer eLearning**

► Group trainings for **Scia Engineer**, **M Series**, **Allplan**... Consult our **training agenda** and **register online**...

**Nemetschek Scia Training Centre**

► Interested in an individual customized training at your offices? Please contact Mrs. K. Verhille.

► Any questions? Put it on the **Scia Forum**! Register...

## Software Gallery

► **Scia Engineer**: Formula 1 - Bridgestone Flying Stand Thanks to our client: Dipl.Ing. S.Ryklin STATIK.

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**Dear eNews reader, we are happy to bring you the following topics:**

● Company information: Latest news on Eurocodes & Nemetschek Scia outside Europe
● High rise building - Vodotika (Bratislava, Slovakia)
● Tips & Tricks Scia Engineer: How can the cross-section of a 1D member be rotated?

### Company information: Latest news on Eurocodes & Nemetschek Scia outside Europe

More countries in Europe have released their national annexes as part of the shift from national codes to the Eurocodes; we refer to the dedicated microsite www.eurocodes-online.com to follow the latest evolutions of this topic. On this website the reader can find **43 benchmark projects illustrating the practical use of the Eurocodes within Scia Engineer** for basic structural parts (beam, column) under various conditions (earthquake, fire, stability, combined compression/bending...).

Around Europe interest is raising for the Eurocodes; countries from the C.I.S. (Commonwealth Independent States), Eastern Europe and Middle East have decided to adopt the Eurocodes. We mention: the Baltic States (Estonia, Latvia, and Lithuania), Belarus, and Kazakhstan.

In April **Nemetschek do Brasil Software Ltda** was formally constituted and is representing Scia in this vast land. This branch, under the management of José Teixeira, is focusing on the engineering and construction market in Brasil, with a special attention to steel fabricators and precast factories. Several larger implementations of Scia software have been successfully achieved. (see also www.nemetschek.com/brasil)

Nemetschek Scia has signed a partner agreement with "**IN RE**" **UAB** in Vilnius to address the Baltic States and Belarus; a first well-attended seminar was held at the end of March. "IN RE" is a professional company (staff 20) well-established in this region and managed by Dr. Vladimir Popov.

Further East, Nemetschek Scia has signed an agreement with **BasisSoft Inc** from Seoul (South Korea) to distribute Scia Engineer to its large engineering market. With Allplan Engineering and Scia Engineer BasisSoft, managed by James Soo-Heon Lee, has a unique integrated BIM offer for the Korean construction industry.

In the early part of last month an **economic mission to Russia** – headed by HRH Prince Philippe of Belgium – was attended by the Nemetschek Scia management; Scia is happy to pre-announce its start of operations in Russia with a new company in Moscow, run by Mr Vasily Rozhdestvenskiy; direct sales of Scia Design and Fabrication software is planned, as well as forming partnerships with business partners around the vast country of Russia.

And finally… watch your mailbox: **the Nemetschek Engineering Contest winners will be officially proclaimed on the 26th of May…**

Economic mission Russia
HRH Prince Philippe (BE)

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### High rise building - Vodotika (Bratislava, Slovakia)

**VODOTIKA akciová spoločnosť**
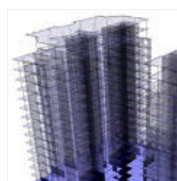
**About the company**
Vodotika was established in 1990. Currently they employ 20 employees. The main activities are divided into two parts covering all design stages:

● Water and environmental structures (hydropower stations, dams, powerhouses)
● Buildings (apartment blocks, multifunctional buildings, domestic dwellings)

Vodotika obtained its EN ISO 9001:2000 certificate in 2003.

**About the project**
The project "High rise building – VODOTIKA" has been finished in November 2010 in Bratislava-Petržalka. It is a multifunctional building with flats, offices and retail units. It includes two 20-storey towers, which are connected up to the 7th floor and 3 underground storeys. Because of the underground water conditions, the building was designed as a dilatation unit. The floor plan dimensions of the building are 60 m x 40 m with a height of 63.5 m.
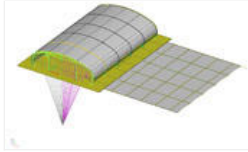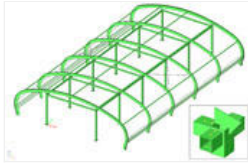
**Load bearing system**
The main bearing system is a combination of reinforced concrete walls, columns, 4 communication cores and floor slabs. The 3 underground storeys are a reinforced concrete box with a foundation raft. The walls have thicknesses from 200 to 400 mm. There are used various dimension types of columns. The floor slabs are 200 mm thick. Two types of concrete were used: C30/37 (for the walls and columns of the first and second floors) and C25/30 (for the rest of the structure).

**Structural design**
The calculation consists of a static analysis of the vertical and wind load and of a dynamic analysis of the combination of vertical and

seismic loads. For the static and dynamic (seismic) design, a 3D model was created in Scia Engineer using the finite element method. The loads were calculated according to the Slovak standards. At first the footwall was calculated "elastic" with relevant "cz" values of a spring and compared with the results from Scia's Soilin module with real properties of the foundation's soil. The seismic load was considered to be a standard designed spectrum of seismic response according to Slovak standards. The seismic response of the structure was calculated using a modal analysis which consists of an eigen vectors solution, followed by an internal forces solution for each load case. For each slab a proper model was created and the internal forces and deflections including creep were calculated.

### Tips & Tricks Scia Engineer: How can the cross-section of a 1D member be rotated?

**Definition**
Both 'Alpha' and 'LCS Rotation' are properties of a 1D member which allow the input of an angle in [deg] to define a rotation of the 1D member's cross-section around itself (around its local x-axis).

- **'Alpha [deg]'** is available in a 2D as well as in a 3D environment. Entering a value here has the following result: the **cross-section** is **rotated** around the local x-axis of the 1D member, but the LCS is not. So the direction of the local y- and z-axes does not change.

- **'LCS Rotation [deg]'** is only available in a 3D environment (Frame XYZ or General XYZ). Entering a value here has the following result: the **cross-section** as well as the **LCS** is **rotated** around the local x-axis of the 1D member.
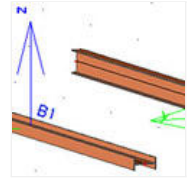
*Remark: LCS stands for Local Co-ordinate System.*

**Example**
The example consists of 3 beams with the same cross-section. Their LCS is shown by activating the View Parameters.

- Beam B2 (in the middle) is the original one, with Alpha and LCS Rotation both = 0 deg.

- For Beam B1 (at the left) Alpha = 90 deg, while for Beam B3 (at the right) LCS Rotation = 90 deg.

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