

## NEWS

[<printable version>](#)

### Dear eNews reader,

The User Contest 2007 has been completely finished up; the book is already at the printer's and will be available this month. **If you would like to receive one copy free of charge, it can be applied for via our website.**

Actually in this eNews you can read more about the **impressive winning project of category 5**, realised by our internationally operating customer **Stageco**. Further on the usual latest news and tips and tricks from the SCIA front. By the way, this is the last eNews before the summer holidays, enjoy this reading and have a well-deserved holiday.

We will meet again next September.

- » **Corporate News:** More to the projects of the SCIA User Contest 2007
- » **Product News:** The complete 3D-model on 1 layer without loss of intelligence in Allplan
- » **The Market:** The future of houses with a steel structure
- » **The Winning Project:** Robbie Williams 'Close Encounters' – Stageco (B)
- » **Tips & Tricks:** Break narrow tables to strips in SCIA•ESA PT

### More to the projects of the SCIA User Contest 2007

Last month the winners of the contest were announced and a **digital preview of the 99 projects** was published. **This month the User Contest book will come available in printed form.** Upon reading the comments of the participants with regard to their honoured projects, we discovered the following trends:

- **design is 3D:** it supports the designer's creativity and gives the precision to address the project complexity. As side effects: drawings, images, bill of materials are generated
- **engineering design** is more than assuring the structural stability; engineers address the difficulties of execution and the measures on maintenance
- **light-weight structures** (be it bridges, roofs, buildings) are thoroughly checked for large displacements and dynamic behaviour
- **curves are hot!** Rigid lines no longer characterize bridges, roofs and buildings. Calatrava has many disciples ...
- **soil-structure interaction** is in many projects carefully modelled
- the first proofs of concept on **parametric modelling** and **roundtrip-engineering** are reported, showing the breakthrough efficiency



For the SCIA staff members it is a pleasure to read the positive remarks on user friendliness, speed of operations, advantages over competitive software and also suggestions for improving the software.

**The projects came from users out of 11 countries;** we are sure that our next edition in 2009 will continue this trend of globalisation of design work by engineers.

Thank you very much for participating to the SCIA User Contest!



▲ top

### The complete 3D-model on 1 layer without loss of intelligence in Allplan



**Within Allplan you can use reference planes to provide architectural elements of a relative height. This allows building a 3D-model, which is very flexible, also in the case of alterations.**

These reference planes mostly differ from layer to layer. If one wants to look at the full model, it is obvious that more floors (layers) have to be put on active.

The use of 3D Xrefs allows the user to keep on modelling in a traditional way; on an additional layer, you recapture the different floors/layers in the form of an Xref.

The big advantage of these 3D-Xrefs is that they observe the reference planes of the layer, to which they refer.

That's why all structural elements keep their mutual relative positions. In this way you can visualize the whole model with one single layer, without losing the intelligence of the different floors/layers.



### How do you use the Xrefs within Allplan?

In the menu "add" you can find 2 functions: **XRef** and **NDW-XRef**. The function XRef allows picking up the project-related layers. NDW-XRef does the



The new **SCIA•ESA PT 2007 catalogues** have been launched. **Download** it today from our **free downloads** section or ask your local **sales representative** for a hard copy.

Have a look at all **winning and nominated projects** as well as the prize-giving of the SCIA User Contest 2007 **more ...**

**Euler, the inventor of engineering mechanics**, was born 300 years ago! A tribute by SCIA. - Dr. Dipl. Ing. E. Hobst **more ...**

## EVENTS

SCIA invites you to the **SCIA•Steel 2007 releaseday** in Breda (NL) on 22nd of June 2007. **more ...**

SCIA organizes **'a free initiation day'** on 5th June 2007 in Gent (B) **more ...**

## UPDATES

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

- » **SCIA•ESA PT 2007.0.192**
- » **ESA-Prima Win 3.90.192**

Recently the following new software version has been released:

- » **Allplan 2006.2**  
Customers can download it in our **protected download section**.

## 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
- » Dynamics
- » Non-linear calculation
- ...

### Allplan Engineering

- » Formwork shell and reinforcement functions (21 & 26 June 2007)

### Allplan Architecture

- » Basis course (19 & 20 June 2007)

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**

- This is amazing: thanks to **Adobe Acrobat 3D**, Allplan projects can easily be **animated and visualised in 3D** with a standard PDF viewer.

Try this out !



same, but with the project-independent layers (NDW-files).

During the placement of an Xref, **following parameters are important: insertion point, layer number** (or NDW), **positioning method** (at random position, with retaining of co-ordinates or coinciding with Xrefs that have already been placed), **the scaling of the Xref, the bending angle and the type of positioning** (normal or extended).



This technique can also be used to "pull apart" the different floors without changing the physical model.

This can be interesting if you have to pass on the different surface plans as DWG-files to other building partners. The advantage of this method is also that alterations have to be done on only 1 place and are forwarded to the concerning Xrefs. This remains possible, even after export under DWG-size.

[▲ top](#)

## **The future of houses with a steel structure**

**Facing the environmental challenges, many people turn to prefabricated steel for the construction of their houses.**

The type of houses constructed with metal frames is in full progress, and the sector is still growing. A steel structure connected to high tech materials, isolation and heating techniques in a contemporary house shows however unrivalled advantages with regard to the environmental challenges of today. A steel structure doesn't only mean the presence of a metal frame; it is in fact the whole structure of the house that is built that way.

More specific **advantages with regard to steel are: architectural flexibility, earthquake-resistant building, exterior coating in steel** (anti-burglary barrier and isolating plaster), **metal cabinet work with cold bridge rupture** (anti-burglary and isolation) and **contemporary interior design**.

The way of heating and the production of domestic hot water is also one of the key points of the house. Provided with solar panels, a heat and electricity pump in case of extreme coldness, such a house is ready to be introduced in all climates! **It also allows a considerable economy: the objective of all these installations is to get more than 70% of free energy. The return on investment will be reached in less than 10 years.**



### **Five advantages of the house**

In short, we can define the five big advantages of the house:

- respect for the environment (the recycling aspect of the used material and use of renewable energy),
- hygiene (management of the ambient air quality),
- optimal comfort (isolation summer/winter and stable temperature, brightness, etc.),
- a money-saving construction,
- its safety.

### **The cost**

Today a metal construction is not more expensive than one in masonry.

Moreover, it will have a decline in price in the next few years because the cost will be less thanks to the large industrialisation possibilities. Finally, we must associate the construction price of the house with its final performance on the energetic plan, this will realise a profit in the course of time.

[▲ top](#)

## **The Winning Project: Robbie Williams 'Close Encounters' – Stageco (B)**



### **About Stageco**

Stageco, based in Tildonk (B), is an internationally organized staging company, which originated in 1984 from the renowned Rock Werchter Festival in Belgium. In spite of its long and rich tradition, Stageco remains a pioneer 'pur sang' and a trendsetter. They took important steps during recent years to provide their expertise to the international touring market with customers like the Rolling Stones, U2, Bon Jovi, Bruce Springsteen and numerous other artists.



### **About the Winning Project in Category 5: CAE Special Projects**

Participant: Tom Frederickx (engineering steel structure)

Height: ± 22 m - Overhang: ± 13 m with a capacity of ± 9 tons

Global capacity complete stage: ± 65 tons and ± 24 tons use load on work platforms

Mass: ± 300 tons (14 trailers) / set (2 complete sets are built)

Location: mobile structure; trucked, shipped and flown around the world.

Building sequence: 2 days building up, production day, show day, 12 hours take down and loading, 1 or 2 travel days ...

The challenge was to design, fabricate and operate a portable structure to host one of the most popular artists of the moment: **Robbie Williams**. The planning for this world tour '**Close Encounters**' started early 2005.

The first sketches were made in December 2005 and the delivery date for both identical structures was beginning of May 2006. Very early in the design process, a calculation model was created to assess the influence of the overhang, use loads and wind loads on the overall stability and to determine which profiles would have to be used. Specific

constraints to the structure were that it should be possible to build it within 24 working hours and to dismantle it and load it on its 14 trucks in 12 hours. This very tight schedule was needed to assure a good flow of all the different concerts. Basically, while one of the stages is in use, its twin brother will be either on the road or being built or dismantled. To allow a swift installation of decoration, lights and video screens, the two structures are absolutely identical and always built identically.



The tour started June 2006 and travelled to 19 different cities in Europe where Robbie performed 40 shows for a total audience of **2.000.000 people**. Mid September all the equipment, that had been designed to fit 40ft sea containers, was shipped to Australia, where the tour will end with another 9 shows in 5 cities.

#### Used SCIA Software

The structure was modelled with **ESA-Prima Win**. The scorpio itself was drawn in AutoCAD and imported in ESA-Prima Win as a DXF-file. The difficulties by calculating the scorpio were the huge eccentricities. Firstly because the bottom part of the scorpio needed to be open to hide production items (cables, engines ...). Secondly because the scorpio had to be designed in several smaller parts to make building and transportation easier. Of course the structure had to be light but rigid, while it was going to be on the road for quite some time and would be built a lot of times. As in all our projects, transportation cost was a major issue.


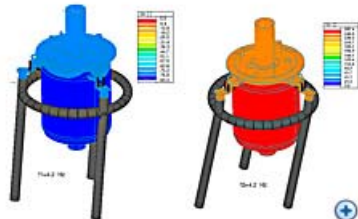

The standard Stageco Elements weren't modelled in detail while, with this number of elements, the file size would increase significantly. That's why these standard frameworks (towers and trusses) were modelled as one line with the characteristics of these typical elements. To check these elements the inner forces were used and checked in a specific spreadsheet.

The following ESA modules were used: 3D-FRAME - Non-linearity (tension only) - Steel Code Check EC3

#### Quote of the Jury

*"An excellent example of a Design-to-Operate project, where not only the original design of the structure, but also the erection and dismantling phases needed to be simulated using CAE software."*

#### Other nominated projects in the Category 5 'CAE Special Projects':

		
Ing. Adolf Godík River City Prague	Ing. Daniel Bukov OK TEAM Vessel for dangerous liquid waste treatment	VK ENGINEERING Roofs of the Courthouse Antwerp

Please **download** or **order one copy** of the SCIA User Contest Book 2007 today.

[▲ top](#)

#### Break narrow tables to strips in SCIA•ESA PT

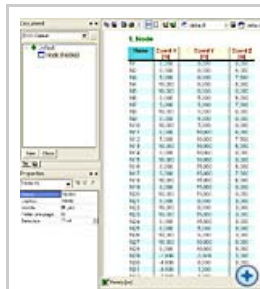
The document in SCIA•ESA PT may contain up to **1999 pages**. Within this document, the user can input all kinds of data, pictures and results. This causes however a huge capture of the PC's memory and it is not practical to have pages full of long tables.

For this reason, the development of the configuration of the tables was indispensable.

With a right button click, the user can go to the table composer. Under the item **'Layout'**, one can see the option **'Break narrow tables to strips'**. Let's consider the possibility **'Break table to strips whenever possible'**.

Now, we obtain a clear and practical output:





#### 1. Node

Name	Coord X [m]	Coord Y [m]	Coord Z [m]	Name	Coord X [m]	Coord Y [m]	Coord Z [m]
N1	0.000	0.000	0.000	N19	0.000	15.000	0.000
N2	0.000	0.000	6.000	N20	10.000	15.000	0.000
N3	5.000	0.000	7.500	N21	0.000	0.000	3.000
N4	10.000	0.000	6.000	N22	10.000	0.000	3.000
N5	15.000	0.000	0.000	N23	10.000	15.000	3.000
N6	0.000	5.000	6.000	N24	0.000	15.000	3.000
N7	5.000	5.000	7.500	N25	0.000	5.000	3.000
N8	10.000	5.000	6.000	N26	10.000	5.000	3.000
N9	0.000	5.000	0.000	N27	10.000	10.000	3.000
N10	10.000	5.000	0.000	N28	0.000	10.000	3.000
N11	0.000	10.000	6.000	N29	-1.000	-3.000	3.000
N12	5.000	10.000	7.500	N30	-4.000	0.000	3.000
N13	10.000	10.000	6.000	N31	-3.000	1.000	3.000
N14	0.000	10.000	0.000	N32	-2.000	1.000	3.000
N15	10.000	10.000	0.000	N33	-4.000	4.000	3.000
N16	0.000	15.000	6.000	N34	-6.000	3.000	3.000
N17	5.000	15.000	7.500	N35	-6.000	5.000	3.000
N18	10.000	15.000	6.000	N36	-5.000	6.000	3.000

### Archive Tips & Tricks

[top](#)

#### About this SCIA eNews

- » We would like to encourage you to give us your current e-mail address, if the one we used for this message, would not be correct or if you want us to send it to another address.
- » If you would like to **unsubscribe** from this **eNews**, just send us an e-mail with '**unsubscribe**' as the subject followed by the e-mail address to be deleted.
- » Please let us know if there are any topics in which you are interested. We would also like to hear any suggestions or ideas you may have on improving this eNews. **You can respond here ...**

[top](#)

SCIA Group nv - Industrieweg 1007 - B-3540 Herk-de-Stad  
Tel: +32 13 55 17 75 - Fax: +32 13 55 41 75

Copyright © 2007 - [info@scia-online.com](mailto:info@scia-online.com)  
SCIA International is member of the

Nemetschek Group  
**N** NEMETSCHKE