Dipl.-Ing. S.Ryklin STATIK
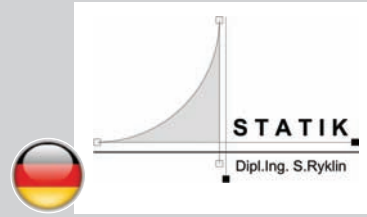
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STATIK.
Dipl.Ing. S.Ryklin

Personal Information

Sergej Ryklin
Born in 1963 Moscow

1981-1985: Diploma Study of Civil Engineering at the Automobile and –Road Institute, Moscow; speciality "Bridges & Tunnels".
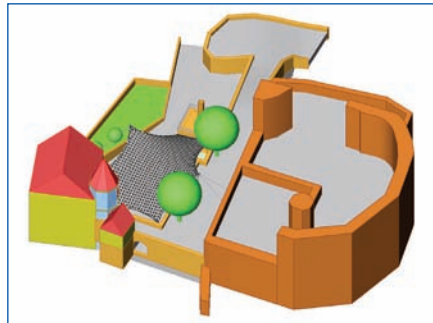
1985-1991: Repair and maintenance of automobile bridges in Moscow.

Since 1993: Structural designer and verifier by "Römhild & Hecker" Consulting Engineers in Landau, Germany.

Since 1997: Currently self-employed Structural designer.

Specialization

- Planning and optimisation of Steel-, Aluminium-, Solid-, Timber- and Membrane Structures;
- Project consultancy;
- Building physics calculations;
- Dynamics calculations.

Philosophy

Flexibility in planning due to an integrated 3D-Design and the ability to find feasible and low-cost solutions already in the draft stage.

Experience

About 800 different projects processed - a.o. residential- and industrial buildings, park decks, pedestrian bridges, swimming pools, silos, membranes…

References

Daimler AG, John Deere AG, SAP AG, DB AG, Siemens AG,
Henkel AG, Formel 1…

Equipment

2 Workstations, 2 Notebooks with following software: Scia Engineer, Nemetschek, Autocad, Dicad, Prosteel 3D, Kretz, LSS, Pcae, ForTen, Adobe.

Short Description

Dilsberg Castle - 6 membrane roofs

The Dilsberg Castle regularly hosts cultural events such as The Dilsberg's Arts and Crafts Market, Castle Concerts and Open Air performances "Rose of Dilsberg" and others.
To be independent of the weather conditions and to give the Open Air Place quick protection against rain the promoter has asked to develop a mobile roof solution.
A light mobile membrane structure was suggested.
The structure of the castle was built up in Scia Engineer with 3D-Free Form Modelling.
In combination with the software packages Forten and Professional Formfinder six different membrane roof structures with the corresponding supports have been designed and implemented in the Scia model.

Project Information

Owner: Dilsberg City
Architect: Dipl.-Eng. Sergej Ryklin
General Contractor: Fa. Planex Technik in Textil GmbH
Engineering Office: Dipl.-Eng. S.Ryklin STATIK

Construction Start: 2009
Construction End: 2009
Location: Dilsberg, Germany

Client

In the area of Dilsberg were already found remains of Roman settlements. Its conical shape and extensive view over the Neckar Valley and towards Kraichgau made it an obvious strategic choice.

The construction of the castle dates from 1150-1200. **The importance of the Neckar as a traffic route had** been recognised. In 1374 Dilsberg was granted the privilege of a town.

In the next 500 years it became an important mountain fortress, had different owners and in the 17th century it was among the most embattled fortications during the 30-Year War.

At some time it was also used as a prison and as a residence for Heidelberg students.

With its loss of military importance after 1822 Dilsberg reduced to poverty in the 19th century. The castle which had remained undamaged until then was released for demolition.

In 1990 was started with the development of the remains of the fortress to become a modern residential community and a tourist attraction.

Cultural highlights: the Dilsberg's Arts and Crafts Market, Castle Concerts and Open Air performances such as "Rose of Dilberg" and others.

Order

To be independent of the weather conditions and to give the Open Air Place quick protection against rain the promoter has asked to develop a mobile roof solution. The historical environment with its 1000 years' old structures has to be considered and it was forbidden to make any optical changes on the buildings, not even the required connection details.

The roof should have the ability to be mounted and dismounted in a short time and a small storage space was also required.
A light mobile membrane structure was suggested. It consists of a PVC-Plane, prestressed by light steel tension bars which are anchored to the existing structure and of masts with bracing.
All steel parts can be simply assembled

Software and model

To have an idea of how it could work and to give the client the opportunity to consider which form corresponded best with his concept, different solutions had to be presented. A 3D presentation was also required.
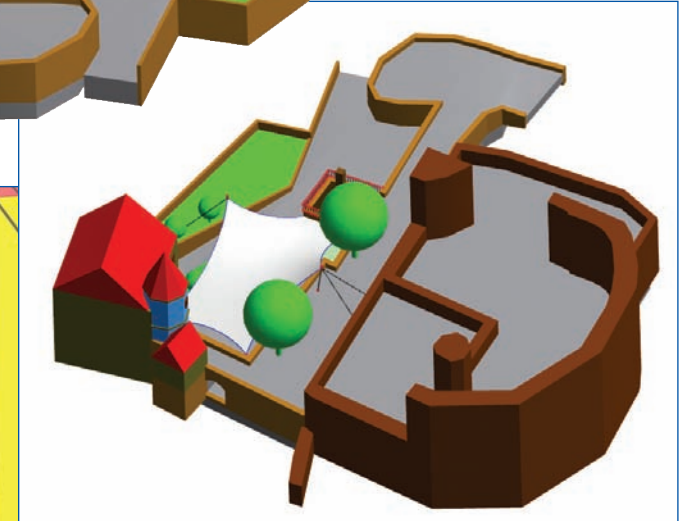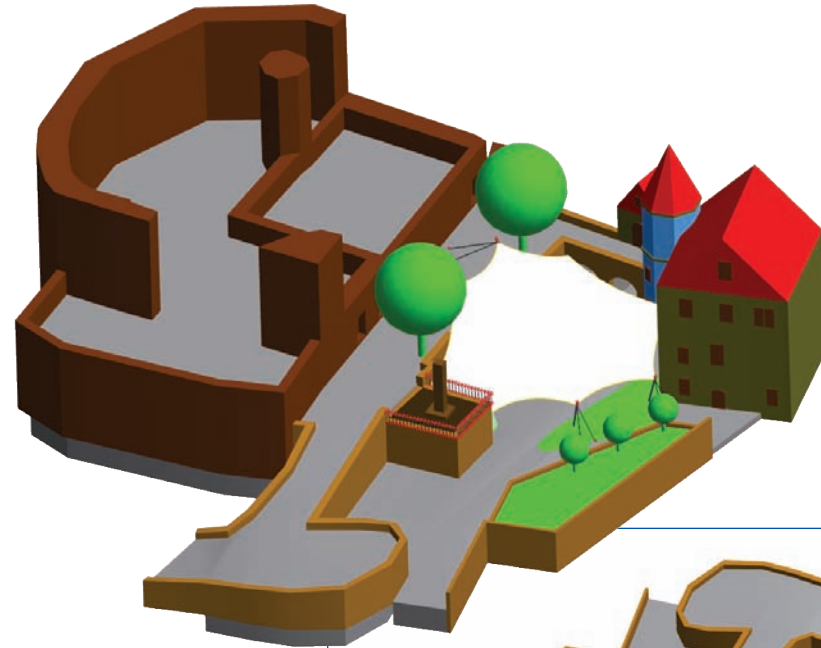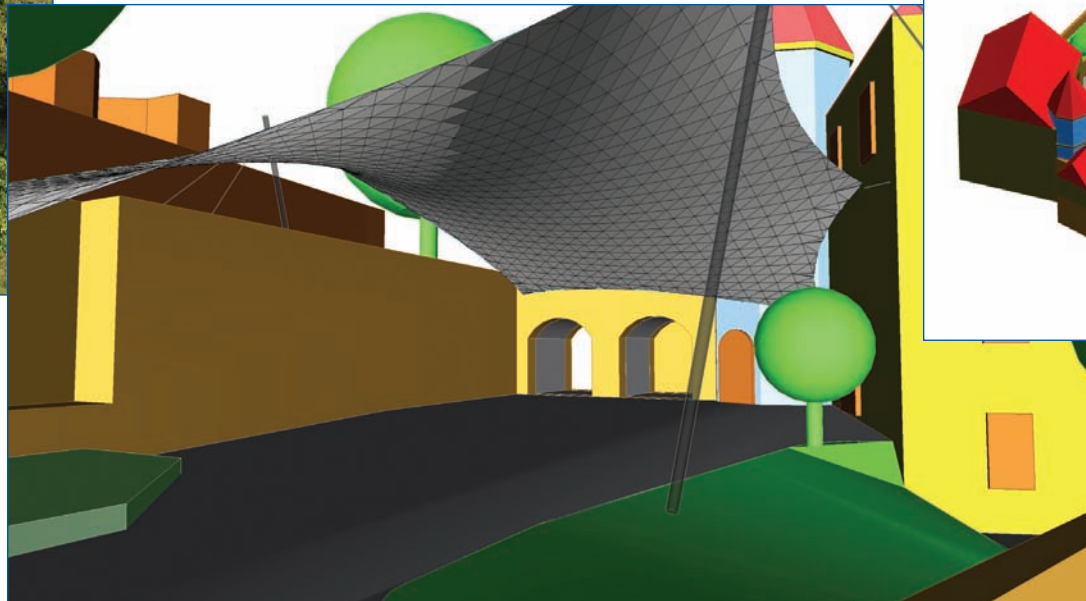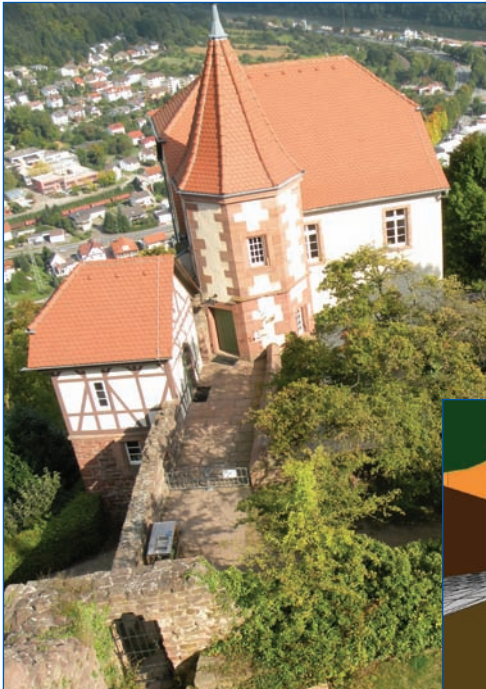Because there existed no plans of the Castle, surveying was also needed.
After the measurements had been taken, the structure of the Castle was built up in Scia Engineer

with 3D-Free Form Modelling. The location of the connection points for the tension bars and of the masts with the bracing was settled.

In combination with the software packages Forten and **Professional Formfinder six different membrane roof** structures with their supports have been designed and implemented in the Scia model .

Presentation

All six models were presented in 3D-PDF format. The realisation is planned for 2009.