

Ney & Partners

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Ney and Partners is a structural engineering consultancy, established in Brussels. Since its foundation in 1997, the office has worked with an active view on the art of engineering through the integration of the different civil works disciplines. This integration and optimisation of structural elements aims to overcome the classic hierarchic assembly of constructive solutions. Innovative passerelles, bridges, roof structures and works of art developed by our office, express most clearly this vision.

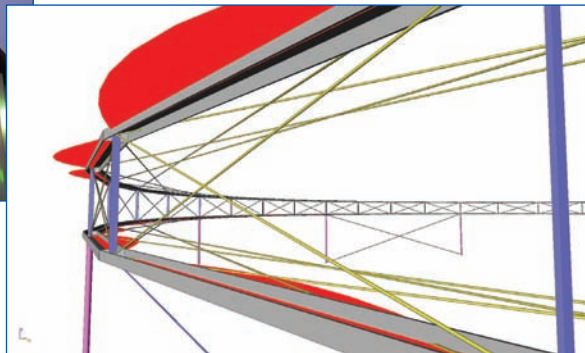
In our collaborations with architects, engineers or artists we aim at a full integration of architecture, structure and context.

The construction project quality lies in the synthesis of specific design constraints. The structural

aspect is of primary importance to this synthesis. From the very beginning of the design process, Ney & Partners conducts a constant research for advanced engineering integration. In doing so, our position as Engineering Consultancy overcomes the standardized dimensioning of predefined technical solutions.

An intense collaboration with the design team from an early stage on allows the development of innovative solutions, adapted to the context of the project.

Ney and Partners currently employs more than 40 civil engineers, architects, draughtsman, etc..



Short Description

Mehr Licht Temporary sculpture in Brussels, Belgium

Mehr Licht is a temporary light art installation designed by the German artists Any and Sibel Oztürk, with the help of the architect Michel Müller. The sculpture was presented on the Schuman roundabout in Brussels (Belgium), for the German Presidency of the EU in the first semester of 2007. The sculpture is a flying light ring interacting with its environment. Ney and Partners designed the bearing structure on basis of Müller's original idea.

Project Information

Owner: Goethe Institut
Architect: Anny and Sibel Oztürk and Michel Müller
General Contractor: Baeck & Jansen
Engineering Office: Ney and Partners

Construction Start: 01/01/2007
Construction End: 31/06/2007
Location: Brussels, Belgium



"Mehr Licht" is a temporary light art installation designed by the German artists Any and Sibel Oztürk, with the help of the architect Michel Müller. The sculpture was presented on the Schuman roundabout in Brussels (Belgium), for the German Presidency of the EU in the first semester of 2007. The sculpture is a flying light ring interacting with its environment. The circular sculpture has been placed 5 meters above ground level and is made up of vertical metal tubes, the colour of which changes to the rhythm of the traffic and other urban noise. For this reason, microphones have been placed at strategic points around the Schuman Roundabout in order to relay the sound of the city to the sculpture's noise-sensitive metal tubes. According to the artists, this allows for noise from car horns, police sirens, etc. to be transformed into something positive. The sculpture remained in the middle of the roundabout until the end of April 2007.

The object consists in a 43 m diameter ring. The ring is formed by 4 m long on 1 m high steel frames made of pre-bended UPN200 as upper and lower flanges and thin steel plate as diagonals. The structure is stiffened by horizontal tension rods with a diameter of 10 mm linking the different frames. The columns have a diameter of only 80 mm. The result is an elegant and slim, subtle and discrete structure which lets the light express itself.

The structure has been built and put in place by the Flemish company Baeck & Jansens. The ring has

been split in nine 13 m-long frames (arches) welded in the workshop and then bolted on site to make the full circle.

Ney and Partners designed the bearing structure on basis of Müller's original idea.

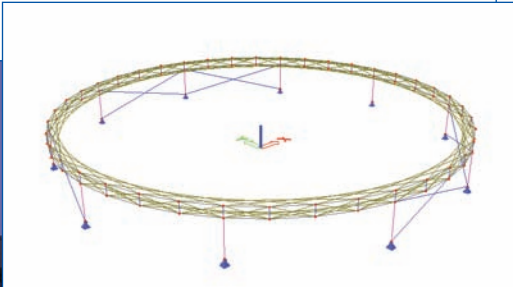
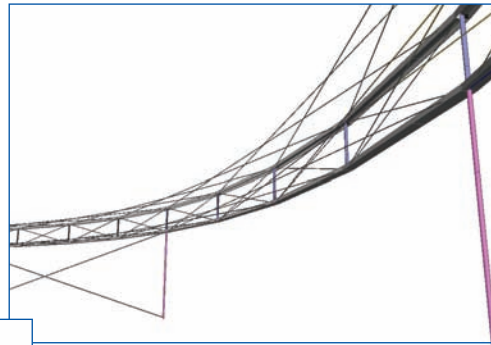
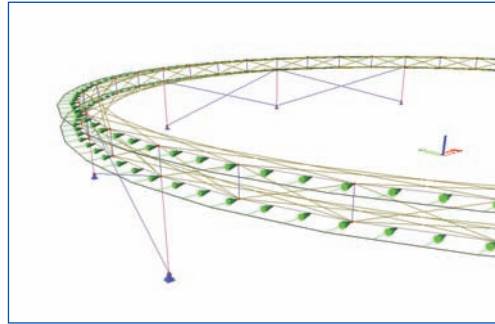
The ring forms a 3D truss beam giving resistance to the vertical weight loading and horizontal wind loading.

The structure acts globally as a rigid frame with pinned supports. This avoids to anchor the structure in the existing slab of the Schuman roundabout, under which the subway passes, as requested by the Administration de l'Équipement et des Déplacements (AED, now known as "Bruxelles Mobilité"), the responsible Brussels' administration. Therefore the foundations consist in precast concrete blocks placed on the existing slab of the Schuman roundabout. The size of each block has been designed to cope with the traction forces on the foundations due to wind loading. The horizontal forces are transmitted to the foundations through friction between the concrete block and the existing slab. The bracing cables (14 mm diameter) are placed in such a way that the paths to the square in the centre of the roundabout are left accessible.

The structure has been completely modelled with Scia Engineer with 3D beam and cable elements. This makes the model non-linear. Moreover the dynamic behaviour and the instability of the structure

have also been accessed. The loads are principally the self-weight of the structure and the light tubes and the horizontal wind loads in both directions. The wind loads were calculated according to the Eurocode ENV 1991-2-4:1995.

As we have tried in first instance to avoid the bracing cables, we have been using Scia Engineer to study various typologies and alternatives. Up to 7 full 3D-models were made in this software. The 3D-rendering capabilities were very useful to communicate easily with the architects and the artists. Automatic screenshots from the model were shown to the partners of the project to convince them of the lightness of the chosen design.



Mehr Licht - Temporary sculpture in Brussels, Belgium

