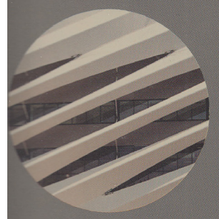
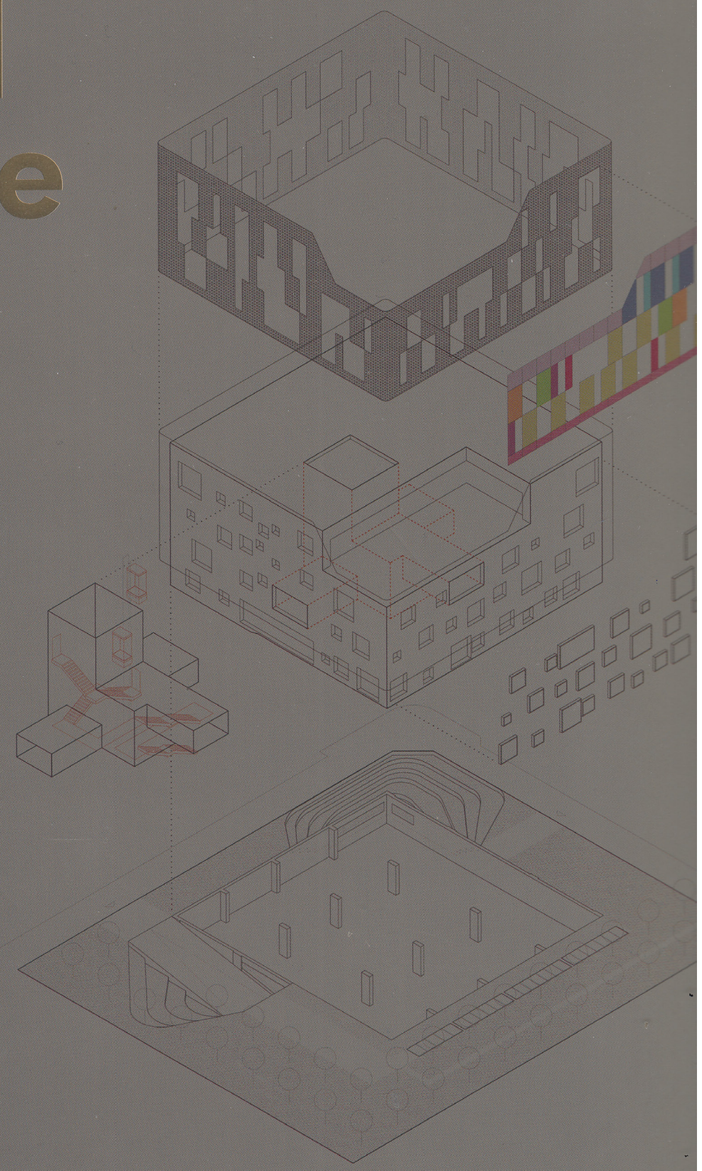
Architectural Material & Detail Structure

Eckhard Gerber





Advanced Materials

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Football Stadium of Nagyerdo

Location: Debrecen, Hungary
Architect: Peter Bordas/BORD Architectural Studio
Photos: Tamas Bujnovszky and Tibor Olah
Budget: $56 million
Key materials: Façade – white membrane, steel; Structure – steel

Overview

To encourage healthier life, the city decided to create new sport and recreational facilities in the forest and to refurbish the existing old football stadium in the heart of Nagyerdo that was built in the 1930s.

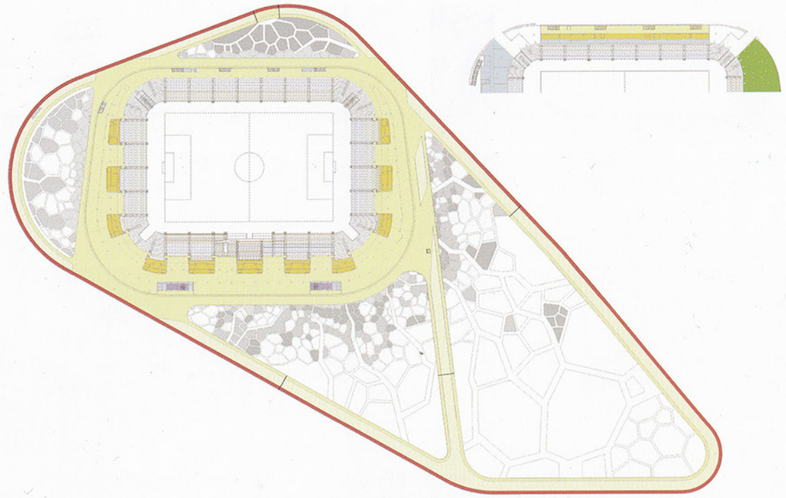
A Hungarian architect, Peter Bordas got the commission to design this new stadium with a 20,020-seat capacity, which has to meet the requirements of our modern life. The architect's first questions were: how to lead the crowd of spectators securely in a forest and how to set an industrial like building complex into the woods. To solve these problems, this stadium concept concentrates not only on the building itself, but on its wide context as well.

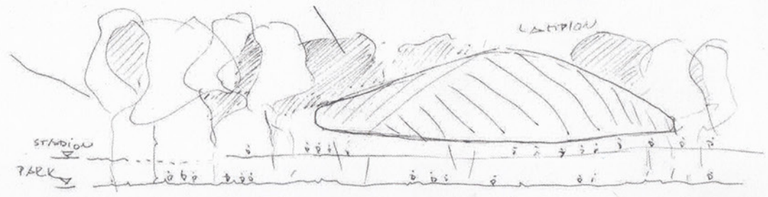
The access route for the spectators has to be clearly divided from the area of people having a rest on the park level. To achieve this, a promenade lifted to the level of the tree canopies encloses the mass of the stadium like a ribbon. This architectural element defines the border of the most frequently used part of the park thus creating a transition zone between the untouched nature and the artificial, manmade world. The up and down arched promenade serves as a running and cycling track and it joins to an open air event square and to other facilities in the park which are waiting for the citizens throughout the year even when there are no football matches in the stadium.

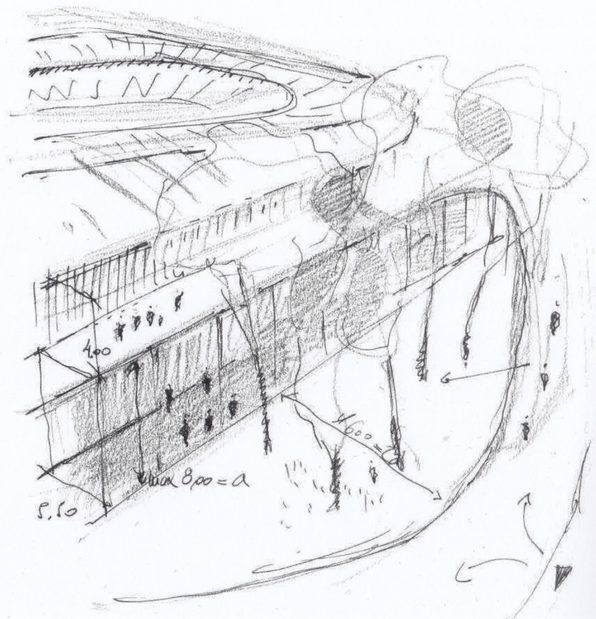
The aim of this project was to experience being together, not being alienated, to feel with each other and to become a responsible community. After 27-month hard work on the design, planning and construction procedure, the dreams came true and finally in 2014, the most modern stadium in Middle Europe, the new Football Stadium of Nagyerdo, introduced itself to the public.

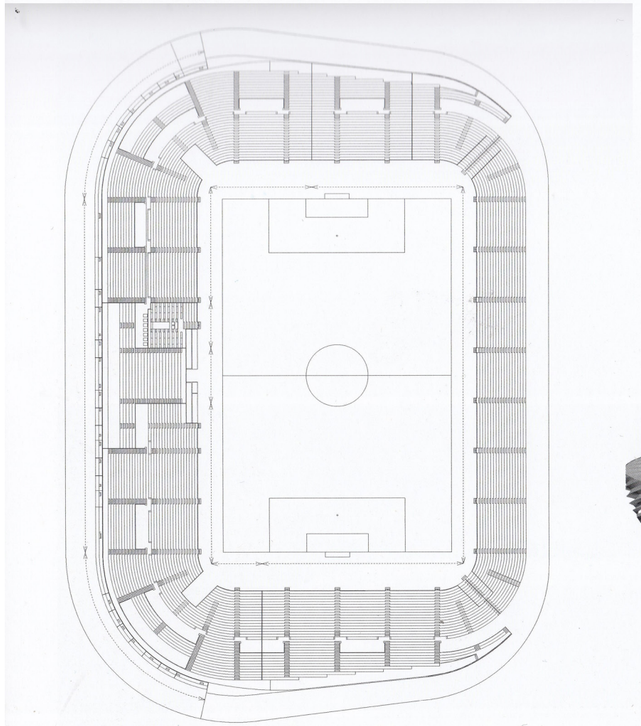
Detail and Materials

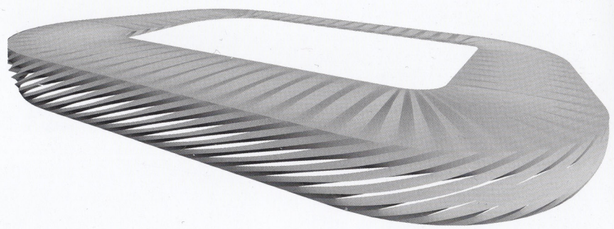
To provide the highest level of comfort and experience for the spectators, the stands are formed as a perfect bowl. The stadium abound with further innovations, as the unique steel skeleton of the roof structure inspired by the opera of "La mamma morta" from Andrea Chenier. White membrane sheeting is used for the skin of the double curvature roof, which provides a particularly energetic, flowing appearance for the stadium. At nights, when matches are played, the balloon is illuminated with the colours of the home team and the stadium comes to life and turns to a hellish cauldron.

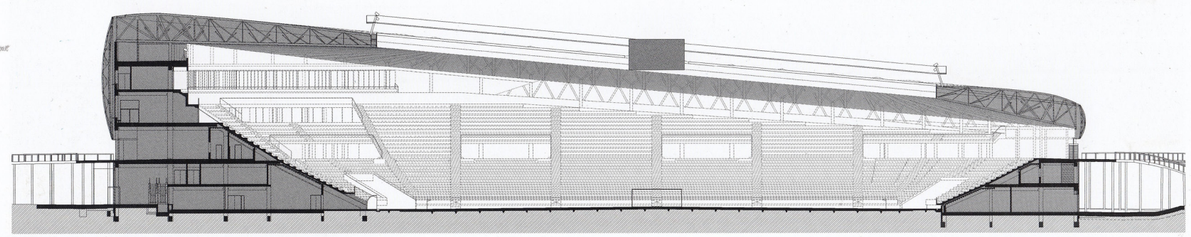






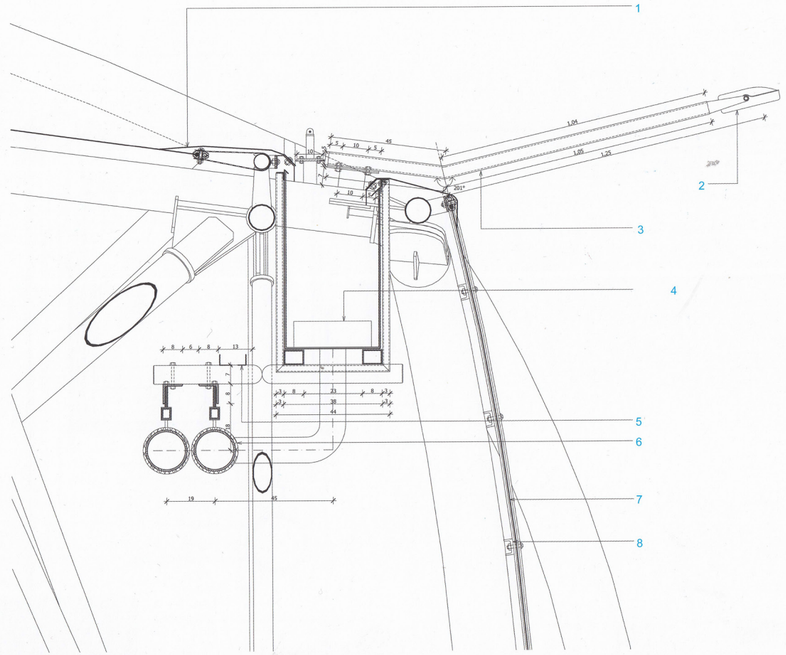


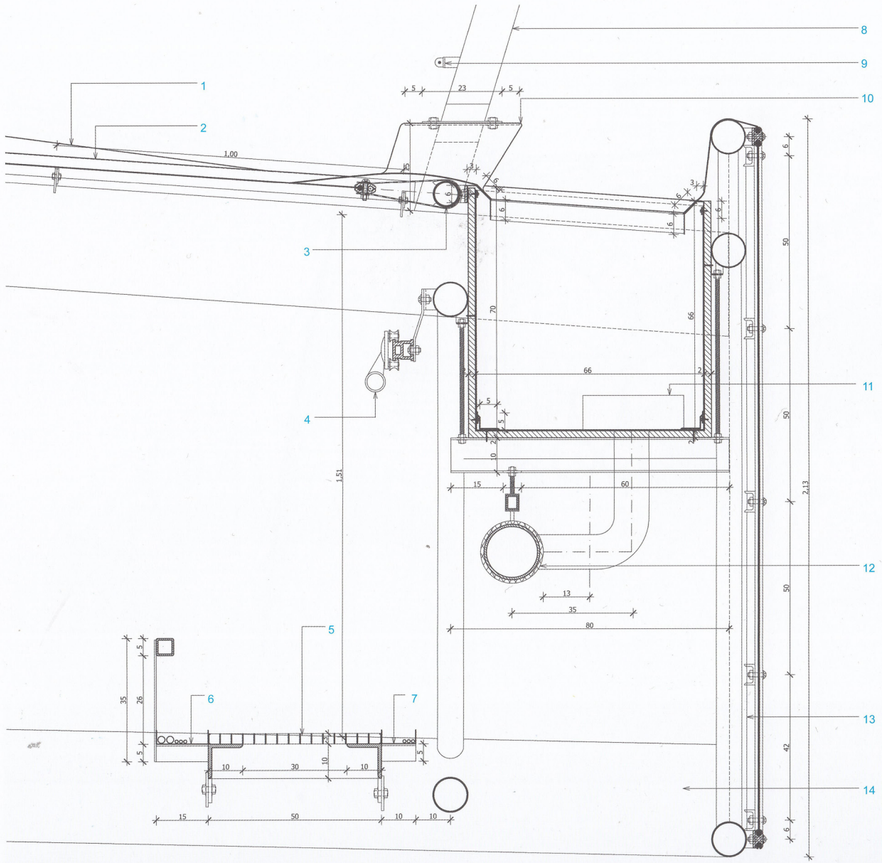




Roof detail 1

1. PTFE membrane roof cover
2. Façade lights RGB Flood MP Medium
3. Steel bracket for the façade illumination 50.50.4 mm
4. Water drainage
5. Steel tray (white) for electrical cords
6. Water drainage collecting pipe
7. PTFE membrane façade cover
8. Stainless steel membrane mount





Roof detail 2

1. PTFE membrane roof cover
2. Stainless steel membrane mount
3. Steel membrane mount
4. Steel rail for the fall-out protection system
5. Service-walk
6. Steel tray for electrical cords
7. Steel tray for electrical cords
8. Structure for the field illumination system
9. Seeds for the fall-out protection system
10. PTFE membrane topping
11. Water drainage
12. Water drainage collecting pipe
13. PTFE membrane cover
14. Steel roof structure white

Roof detail 3

1. Field illumination lamps adjusted according to illuminating plans
2. Seeds for the fall-out protection system
3. Service-walk
4. Steel tray for electrical cords
5. Seeds for the fall-out protection system
6. PTFE membrane topping
7. PTFE membrane roof
8. Stainless steel membrane mount
9. Steel rail for the fall-out protection system
10. Steel roof structure-white
11. Stainless steel membrane mount
12. PTFE membrane cover
13. Steel tray for electrical cords