POLYTECHNIC OF TORINO
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Degree in Architecture
Honors theses

Hypotesys of coverage facade side east hospital st. Giovanni Babtist of Turin

by Mario Sparacca and Federica Toschino
Tutor: Giacomo Donato

The study of this thesis allows to create an unreal perspective made of visual feelings got by an emergent structure, almost floating. The use of also immaterial elements as the lightness, the vibration of the light and the forms, transform themselves in integral part of the composition, realizing a project of facade on which a second skin is inserted. A curvilinear structure has been conceived, put down with care at an extremity, to the exiting building and at the other one at the park. A construction where the vegetation penetrates from the outside and merges with the same structure, giving a pleasant view between building and nature. So you create a strong connection between the existing park,the river and the constituent idea, studied through a careful report between structure and function. The materials for the realization of the structure are glass and steel. The same form and the utilized cantilevers declare with frankness the modular structure of the project. The terminal portion, that is inserted with more strength within the hospital borders, is the only one to break such characteristic to change itself in a soft and smoothed structure.

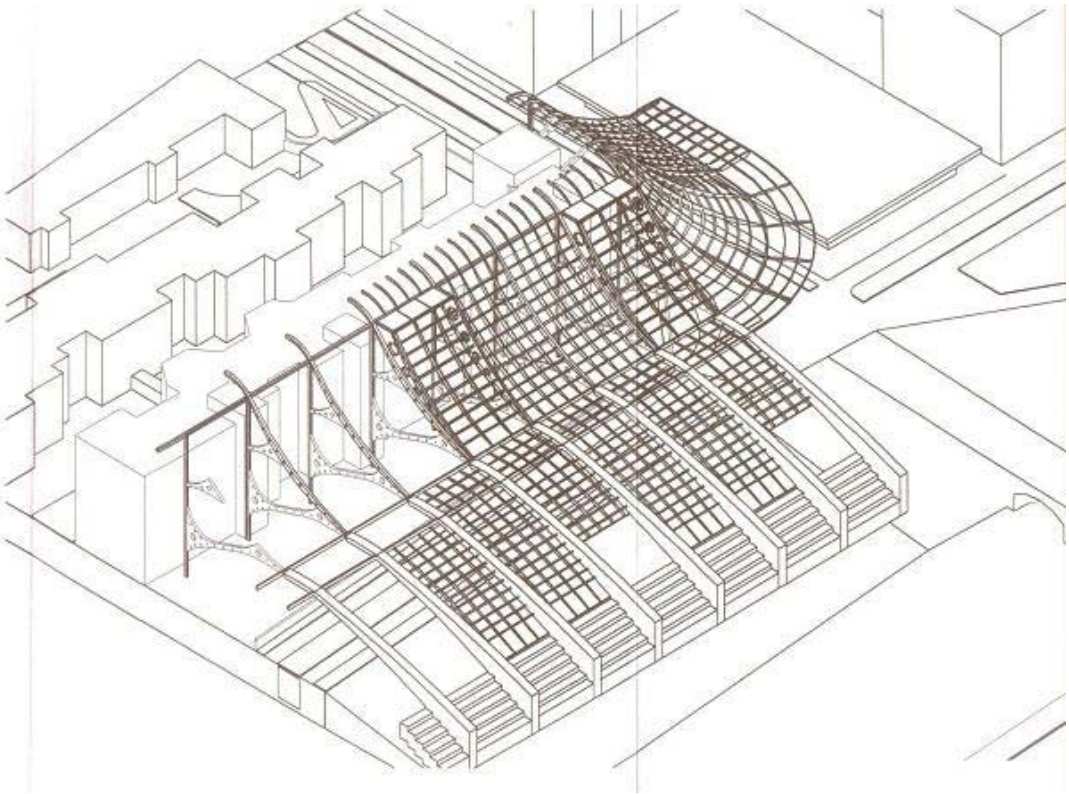
Frontal view

The coverage has been conceived by the structural point of view as the union of two carrying structures, constituted by steel elements and reinforced concrete connected between them by a gerber beam.A modular network has then been thought about , formed by principal beams with S course and rectilinear secondary beams. To optimize the use of the steel they analyzed the possibility of making use of a metallic profile perforated to variable section and of a curvilinear element at variable section too in reinforced concrete.The metallic beams, thought not only as he union of the carrying elements but also as stiffening of the whole structure, are at circular, constant section,rectilinear and empty inside.
The vertical carrying structure is constituted by the union, by welding at continuous thread, of two steel profiles, type HE600B. The double T beam,that represents the principal support of the coverage network carries out the function of support of the vertical loads.

The union between the vertical carrying structure and the cantilevers, in perforated steel of variable section too, have been planned at continuous welding with the purpose to get a tie of joint among the various elements.

Assonometric view

The coverage has been thought in glass panels cut perfectly to realize a continuous facade. The final dimension of the whole coverage are 316.31 ms with a network formed by n. 14 forms 17.5 ms wide, a form of angular link with a ray of 41.35 ms and by a terminal part, that measures in its maximum extension 73.13 ms.
The steel carrying elements are present in n. 16, with dimensions of the single of 30x60 cms for a total section equal to 60x60 cms, plced at a minimum distance of 50 cms from the exiting structure, and with a wheelbase of 16.81 ms. The cantilever is present with n. 32 elements. The carrying elements in reinforced concrete are in n. 13 put at an equal distance to that one of steel profiles.



Vertical section

The gerber beams are 3 and measure in variable way from 8x2 ms to 15 x 2 ms. The secondary beams measure variable diameters between 0.38 and 1.52 ms. The base of the steel columns provides a plinth of foundation of 3x3 ms. The cor-ten steel selected for the elevated limit of enervation to traction makes it particularly suited to realize light structures also with strong loads,guaranteeing a good degree of weldability and a very good resistance to the corrosion. Its surface, exposed to the atmospheric agents protects itself forming a layer of oxide that gives to the metal a particular chromatic effect, that can valorize the work.

For further information:
Mario Sparacca, e-mail : mariosparacca@inwind.it
Federica Toschino, e-mail fedetosch@libero.it