Swimming in Utopia

Building Conservation and Ephemeral Textile Swimming-pool Superstructures

Emmanuelle Gallo - architect, architectural historian

emmanuellegallo@free.fr

153 rue de Belleville 75019 Paris 33 (0)1 42 41 23 39

The late 1960s saw the emergence of highly technological utopian visions which promoted new structures and materials. Constructions with ephemeral materials challenge conventional approaches to renovation.

The architect

After receiving his degree in architecture at the Ecole des Beaux Arts (1955), Roger Taillibert studied large scale tight textile membranes in the Institute for Lightweight Structures in Stuttgart from1962 to 1966 and in his own firm starting in 1963. The French national Department of Sports gave him the opportunity to develop sports facilities after the design of his first swimming pool in Deauville (1966) covered by thin concrete shell vaults. Our point of interest resulted from this period. The architect designed the Parc des Princes (Paris, 1972), the famous Olympic complex in Montréal (1976), the National Sport Institute (Paris, 1981-86). His projects also comprised other types of buildings: schools, nuclear power plants, offices, hotel complexes, in France but also in Africa, Asia and Middle Easten countries.

Roger Taillibert became a member of the Academy of architecture in 1974 and a member of the French Academy in 1985. More information is available at www.agencetaillibert.com/uk/.

The situation

The French National Department of Sports request came from a lack of Olympic-size pools in France during the sixties. This institution desired to encourage research for cheaper buildings. In that context, Roger Taillibert proposed an experimental solution with a textile roof considerably cheaper that traditional large span structures. This approach had also another huge benefit: the open-air pool could be covered in a few minutes. The architect used his previous experience of parasol-type structures, which can unfold and fold up, above an open-air theater in Cannes. The swimming pools he designed were destined to be used by general public and for the training of school children.

The building

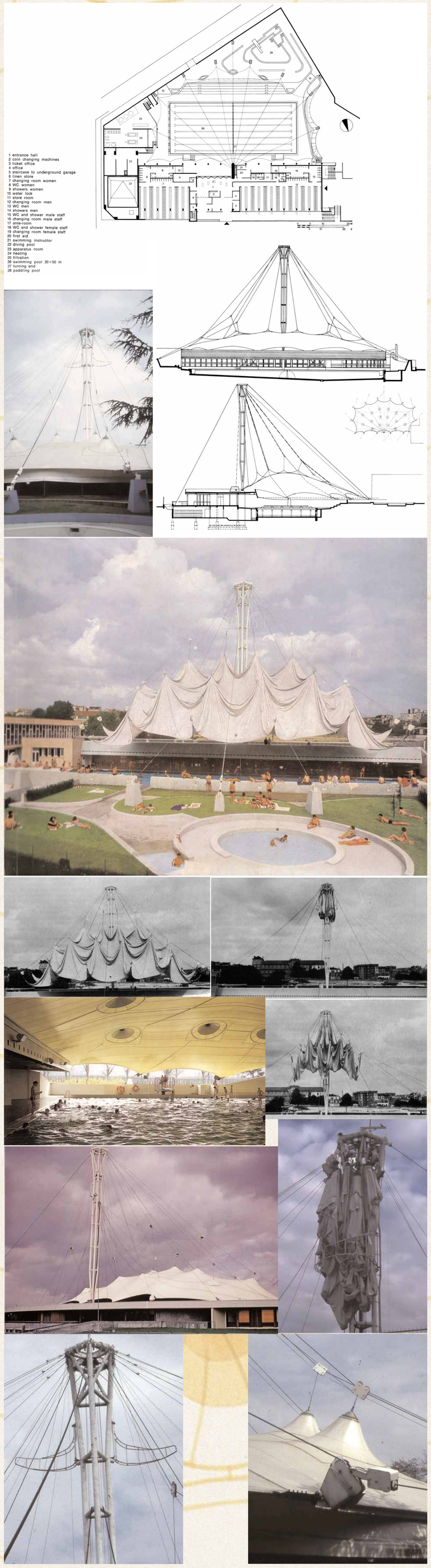
The first pool built by Taillibert was 15 x 50 meters and the next larger (20 x 50 m). The traditional part of the building built of concrete and masonry contained the pool, the cash desk, spaces for the swimming club, the locker-rooms and the water treatment equipment. The heating system, rather complex, combined radiant heating from the edges, warm air blown above the water and infrared heating for the swimmers.

A large terrace surrounded the pool, and still today a very attractive solarium in summertime. These different swimming pools combine the advantages and success of open-air equipment in summer with the traditional fonction of a covered pool during the other month of the year. The significant increase of income in summer offsets the additional heating and the replacement costs.

The successive projects

- Boulevard Carnot (Paris, 1967)
- Saint-Fons, Vénissieux (Lyon, 1970)
- Reims (1971)
- David d'Angers (Paris, 1972)

The first swimming pool built in Paris, Boulevard Carnot, was an opportunity for experiments that have been applied in the following ones.



The roof

The first swimming pool at the Boulevard Carnot needed to cover over 2,000 square meters. The 27-meter-high mast, made of three steel pipes, was located on the terrace of the reception building and maintained by three cables anchored in the ground. Mobile trucks disposed on eight carrying steel cables are used to raise the canvas roof. Made of Trevira coated with PVC, the fabric is totally water and rot-proof. It was first produced by Farbwerk Hœchst. Not stretchable, this fabric is perfectly for large-scale coverings and weights is 700 grams per square meter. Its strength is 300 kilos for 5 cm in two directions; the different pieces are sewn simultaneously five times. The mechanic strength of the roof is reached when the system is properly stretched tight.

There is a pair of tongs at the top of the mast to hold the canvas in place compactly when it is retracted.
The raising and the lowering of the roof required favorable weather with no wind. The electric connections necessary for the movement are located by the mast.

The replacement

The canvas has to be changed every fifteen years. It is also the opportunity to check or change the different cables, engines and trucks, and the electric system moving the system. The effects of wear were not uniform on the surface, but limited on the creases areas, or to areas mistreated by the movement or the storage around the mast. Mobility indeed increases the wear. Today, several firms produce textile roofs including Stromeyer, Versaidag, Ferrari. To replace the roof, the swimming pool had to be emptied but no external means of lifting are needed.

The differential age of the building

The differential durability of the distinct parts of these swimming pools leads to different ages in buildings. This heterogeneity is common in old or historic buildings, in this case, it was planned during the design phase. Renewing the roof modifies the global perception of the building, in a positive way. The differences in age of the various parts of the buildings raises issues concerning its restoration. Usually, buildings experience continuous deterioration and after several decades a restoration is envisaged (generally to late). In the case of these swimming pools the biggest part of the superstructure, is always "recent". The elements of this structure are verified or removed regularly. With these regular maintenance, the image of the building becomes dynamic, creating a more active attitude towards deteriorations in building as a whole.

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