The Origins and Evolution of Tallibert's Architectural Style

By Soraya Bassil

Athletic Facility Architecture

Born in 1926, unconventional architect Roger Taillibert didn't end up designing numerous athletic facilities in France and abroad by chance alone. It was his experience working for the French Government as the architect in charge of athletic equipment and facilities, as well as his theories on how to optimally orient the layout of aquatic complexes that opened the way for him (1).

Taillibert believes that athletics (which are so intrinsically linked with the concept of performance and thus excellence) call for the creation of works of architecture that have fresh innovative lines and shapes and make use of singularly unique materials (2).

Very early on, Tallibert adopted several guiding principles, which required that he successfully create a blend of just the right architectural lines and the best building methods, while keeping costs low and using time in the most efficient manner (3).

Thus, in order to meet his requirements, many of Tallibert's projects would combine detailed drawings, unique building methods (movable textile membranes, fine webbing and self-supporting structures of pre-stressed concrete), as well as planning methodology that took into account means available, site requirements and the various limitations on time (4).

1 Marc Emery (1976). *Roger Taillibert, architecte | Roger Taillibert, architect*. [Montréal] : Editions 1976, p. 4.

2 Roger Taillibert (1977). *Construire l'avenir*. Paris : Presses de la Cité, p. 13.

3 Claude Parent, « Roger Taillibert ou la forme subjuguée » dans Alain Orlandini (2005). *Roger Taillibert.* Paris : XXX, volume 1, p.8-9.

4 Marc Emery, op cit.

Curved Lines Opposing Curved Lines

The seemingly malleable, unusual, creative and innovative expressivity of Tallibert's architecture (5) is both the result of complex mathematical calculations and the visually poetic architectural shapes; some of which seem to take their inspiration from marine biology (trilobites, shells, etc), while others seem to be athletically-themed metaphors (the Olympic ring, the bicycle helmet, etc). However, one thing is certain: the dynamically expressive shapes used by Tallibert to design the architecture of the athletic facilities he built are above all else intended to meet the specific architectural requirements of the project, as well as to move away from the cubic motif so fundamental to Functionalist Architecture.

Taillibert wasn't however the only architect to design his works in this manner. Several architects from the second half of the 20th century brought forth fresh new organic-style architectural lines and shapes (such as the egg, shell, snail, spiral and lentil), whose clearly Baroque-like shapes were in obvious opposition to the straight line. In a way, it signalled the arrival of architecture-sculpture and the retaliation of lyricism (6).

The main reason Taillibert's architecture is so interesting is that his use of space is so tightly linked with that of structure (7). In 1966, during the planning phase of the Deauville swimming pool, Taillibert follows these so very space-conscious principles, when he devises a set of singularly unique architectural elements in which the curved line is clearly the main theme. It is this challenge of opposing curved line against curved line that enables him to express spaciousness through not only the stress and tension between the architectural components, but also the balance and harmony established between the architectural lines and shapes (8).

Although, at this point, Taillibert's style has not completely freed itself from the straight line—which is yet visible in the architectural style of the French National Centre for Altitude Training at Font-Romeu (built in 1968 before the Olympic Stadium)—a clear disassociation will be clearly evident in his work thereafter.

5 *Galerie jardin des arts*, mars 1976, n° 155, p. 80.

6 Michel Ragon (1978). *Histoire mondiale de* l'*architecture et l'urbanisme moderne*. Paris : Casterman, p. 273-275.

7 Claude Parent, « Interview Taillibert », *Architecture française*, n° 401, février 1977-I, p. 37.

8 Luc Noppen, « Le Stade olympique », *Continuité*, n° 53, printemps 1992, p. 32.

Prefabrication and Pre-stressed Concrete

Following in the footsteps of architects such as Eugène Freyssinet, Auguste Perret, François Hennebique (otherwise known as Le Corbusier), Roger Taillibert turns towards designing concrete buildings because of the material's wide and varied potential as a malleable and structural architectural medium. It is the Sculptural Architecture of Félix Candela (9) and Oscar Niemeyer, in which building technology is at the service of architectural form (10) that serves to inspire his own experiments.

The lightness of the curved line drawn by Taillibert must find its expression through freeing a naturally heavy building material from its usual constraints. For the architect and his research partner, engineer Louis Billotey (11), the techniques used to build with pre-stressed concrete developed by Fressinet are discovered to be the means to achieve the suppleness required by Taillibert's unique architectural lines (12), all the while increasing the lightness, structural stability and improving building times.

The sculptural shape of the design (which is the result of the unique tensioned framework) is precisely what enables Taillibert to free the structure from the usual linear restraints (13). The astonishing malleability of the resulting structure can be considered to be a technical feat in and of itself. Some of Taillibert's projects, such as the Deauville swimming pool or the Velodrome resulted in him receiving honourable mentions from major institutions such as the New York Museum of Modern Art and the International Congress of Precast Concrete Industry held in London (14).

The first pre-stressed concrete building system developed by Taillibert consists of large-scale self-supporting concrete shells, whose variable shape makes it possible for the weight of the arches to be born by single or shared bearing supports (abutments). The shells are lit from the top by skylights or lentil-shaped slits and from the sides by glassed-in curtain walls. The buildings constructed (entirely or partially) using this method are (among others) the Deauville swimming pool (1965), the Chamonix athletic complex (1975), the Montreal Velodrome and Olympic Swim Centre (1976), the Kirchberg swimming pool and the National Athletic and Cultural Centre (both in Luxembourg, 1984).

The second system uses a bearing framework that is the result of assembling a series of prefabricated components, which are sometimes underlying an exterior shell built of regular cladding units (Font Romeu,1968), while others support an elliptical ring made up of self-stabilising cantilevered (overhanging) consoles (Parc des Prince de Paris, 1972, Montreal Olympic Stadium, 1976). According to some, this kind of structure "inspires a feeling similar to that stirred by major works of art: they are easily understood, their design is visibly apparent, with a quality of grandeur that is not pretentious" (15).

9 Alain Orlandini (2005). *Roger Taillibert : réalisations.* Paris : Somogy – Éditions d'art, p. 17.

10 Luc Noppen, op. cit., p. 33.

11 Guillaume Gillet (1983). « Discours prononcé le 7 décembre 1983 par M. Guillaume Gillet, Président de l'Académie des Beaux- arts de l'Institut de France, lors de la réception de M. Taillibert, élu membre de la section Architecture », *agence Roger Taillibert,* document en ligne.

12 Luc Noppen, op. cit., p. 33.
13 Idem.
14 Marc Emery, op. cit.; Orlandini, op. cit.
15 G. C., « Le parc des Princes, Paris » *Architecture d'Aujourd'hui*, n° 156, juin-juillet 1971, p. xi-xii.

16 Michel Ragon, op. cit.

17 Idem.

18 Idem.

19 ---, « Une architecture française des loisirs est née », *Galerie des Arts*, n° 47, octobre 1967, p. 26.

Lightness, Buoyancy and Mobility

Taillibert's work also involved reintroducing textiles into architecture (16).

After the Second World War, building methods using pre-tensioned (pre-stretched) webbing would gradually begin to bring considerable changes to the lines of new architectural compositions (17). Some architects, such as Matthew Nowicki, Ph. Maximilien Bruggmann, Marc J. Saugey, Florian Vischer, Heinz Hossdorf and Frei Otto began to create

gracefully light, movable architectural structures using variety of colours or an open transparency. It is intended to be a reference to nomadic tents or circus marquees, the outer shell of a building is considered to be like a protective covering (18).

The architectural elements Taillibert is able to express through textiles enables him to come up with fresh new lines and forms that require no inner bearing walls or abutments (19). And in 1964, in collaboration with architectural engineer Frei Otto (20), he constructs a first experimental movable parasol-type structure of textile that was able to fold-up and unfold rapidly to cover the Théâtre de Verdure in Cannes' Palm Beach district.

Then, in 1967, in order to cover the main pool and pool deck at the Rue Carnot Pool in Paris (built as a part of the French swimming program development policy), Taillibert designed and patented a very light cover system that involved suspending webbing from a mast using a series of fixed tensioned cables, over which the cover can slide to cover a surface area of 4,000 square metres [43,056 square feet] in a matter of minutes (21). Additional swimming pools in Angers, Lyon and Reims (1970-71) would be covered in a similar manner (22).

Thus, with the 1976 "umbrella" design of the Montreal Olympic Stadium (which was not completed until 1987 by the *Régie des Installations Olympiques* (RIO)), once again Taillibert successfully accomplished another feat of architecture, this time covering more than 18,000 square metres [193,750.4 square feet], with no inner bearing walls or abutments—that is four times the area of his first swimming pool cover!

20 Idem.
21 Marc Emery, op. cit., p.36.
22 Marc Emery, op. cit., p.42-44; *Galerie des Arts*, n° 47, op. cit.

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