Oscar Niemeyer International Cultural Center

Avilés, Asturias, Spain / 2010

Structural type	grid construction, solid slab and steel structure
Characteristics	reinforced concrete shell
Owner	Principado de Asturias
Client	Constructora Promotora Sedes
Scope	detailed design and construction support
Architect	Oscar Niemeyer

The Oscar Niemeyer International Cultural Center is the only work that the centenarian Brazilian architect has in Spain and is the most important of those fulfilled in Europe. It is situated on the Isla de la Innovación on the Ría de Avilés in Asturias and consists of five buildings: the Auditorium, the Museum, the Tower-Observation Deck, the Car Park and the multi-use Building, all of which are connected by a marquee or canopy.

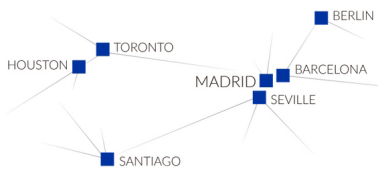
The Car Park is in the central square and has a single floor below grade with a capacity for 276 vehicles. The square has been executed with grid slabs and has floor dimensions of 90.0m x 95.0m without joints which follows the philosophy advocated by FHECOR to eliminate aforementioned expansion joints in building if and when possible.

There is a Marquee above this square which acts as a connection between the Auditorium and the Museum, offering protection to the visitors against the rain and the sun. It has a winding geometry on plan, with spans of around 25.0m and a total length close to 140.0m. It has been constructed employing a reinforced concrete slab lightened with porexpan.

The multiuse building is destined to house a cinema, rehearsal, meeting and conference rooms. The roof, which is 100.0m long and 20.0m wide is expansion joint free, and employed a waffle slab done with porexpan 50+10 coffers which compensated a 5.0m cantilever along the whole length of the roof.

In the Museum, the Works fulfilled by Flector were based on the intermediate floor. Said floor is a round slab within the dome of the museum, which has a large internal opening which creates an open space of extremely large dimensions.

Structurally it has been solved with a grid of 27 radial beams. Despite the distinct beam configurations, some bi-supported with spans of up to 13.0m and others with decompensated cantilevers of up to 9.5m, it has been achieved that all beams have a common 0.30m x 0.85m cross-section with a 15cm upper reinforced concrete solid slab. All were executed in reinforced concrete except those which had a cantilever greater than 9.0m which were post-tensioned with multi-strand cables. It was necessary to post-tension 8 beams in all.



FHECOR

C/ Barquillo 23, 2º | 28004 Madrid | España
T. (+34) 917 014 460 | F. (+34) 915 327 864
www.fhecor.com | fhecor@fhecor.es