IASO® Better Outside

TEXTILE
ARCHITECTURE

LOYOLA UNIVERSITY CAMPUS

PROJECT DESCRIPTION

This project consists of PHASE I of the new Loyola University Campus in Dos Hermanas (Sevilla). This phase includes a main building for 2.500 students, a library, a sports building and a chapel, surrounded by urbanised areas. Textile elements are located in the main building, where the library and sports venue can be found. These textile elements include a 5m wide cantilever around the entire perimeter and on all levels.

The textile covering is made of i-tensing panels and tensioned membranes covering a surface area of 7.500m² and 1.145m² respectively. In order to provide solar protection to the classrooms, the tensioned membranes are positioned differently for each façade. However, with the i-tensing panels situated on the false ceiling, the aim is to achieve an aesthetic finish with straight lines that cover the ironwork of the tensioned membranes and those of the panel.

LEED

The new campus of the University of Loyola aims to achieve the LEED GOLD environmental certification. For this, it is necessary to take into account the characteristics of the most important materials in the project and the construction action protocols, how waste monitoring will be carried out and the use of auxiliary resources which are less polluting.

CHARACTERISTICS

Material	PES/PVC
Application	Infrastructure and equipment
Surface	Panels: 7.503,17m² Membrane: 1.145,46m²
Measures	Panels: 1.95 x 4.6m Membrane: 2.5 x 3.5m
Location	Sevilla
Architect	Luis Vidal + Arquitectos
Year	2019

TECHNICAL DATA

The textile panels situated on the false ceiling - an IASO I-TENSING system which can be applied in a semi-horizontal position - are formed of an aluminium frame over which the membrane is stretched. The Flexlight Perform 502 S2 membrane is used, in translucent white with a single pattern, therefore preventing visible welding throughout the project. The frame is secured using anchoring hooks at the back, leaving only the membrane visible. In order to fix it in place, a space of only 5cm is given between panels, into which the hooks of the adjoining panels are inserted. These hooks are fixed to a Halfen-type channel which forms part of the anchorage substructure. In terms of geometry, fixation axes are established perpendicular to the façade, every 2m, leaving a panel

width of 1.95m. The length of the panel, in a tilted position, covers the entire cantilever, which is 4.6m, leaving the ends for the sheet metal finishes.

The tensioned membranes are produced as a single piece, and they are made of steel cables that tense the slate coloured Frontside View 381 textile membrane. The steel cables are in a perimeter bag and fixed to the anchor plates which are embedded into the concrete through corner plates.

Each membrane is made up of 4 stainless steel cables with independent edges, contained in a bag made of the same membrane. These are fixed at the edges to corner plates through screw terminals, each membrane has 4 stainless steel plates with a polished finish. These make it possible to keep the membranes perfectly tensioned. Each of these plates has a custom-made U-bolt and a stainless clevis to secure the lugs.

The upper anchor plates protrude between the panel joints, defining fixation axes every 2m. In this case, the membranes are positioned according to the façade, tilting to the east and west, and perpendicular to the façade on the north side. There are no membranes on the south side.