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Alicante's marine terminal

S. Guerra* and G. Capellán†

* Arenas & Asociados, Ingeniería de Diseño S.L.P.
Marqués de la Ensenada, nº 11 - 3ª planta, 39009 Santander, Spain
e-mail: sguerra@arenasing.com, web page: <http://www.arenasing.com>

† Arenas & Asociados, Ingeniería de Diseño S.L.P.
Marqués de la Ensenada, nº 11 - 3ª planta, 39009 Santander, Spain
e-mail: gcapellan@arenasing.com, web page: <http://www.arenasing.com>

ABSTRACT

Designing mast-supported structures is not a trivial matter. Structural knowledge and design experience is mandatory to achieve a placid and efficient design. Regarding this matter, Arenas & Asociados has developed many different references through the years. First of all, pedestrian and road bridges, our company's main activity, which let us prove, at a different scale, diverse mast aesthetics and structural configurations: Delicias Footbridge (Zaragoza), La Florida Bridge (Oviedo), Frank Gehry Bridge (Bilbao) or PCTCAN Bridge (Santander), are good examples.

This previous know-how, allows to address with security the design of lightweight and textile structures. Our work's best reference is the tensile canopy developed for Alicante's marine terminal.

At one end of the building, as a counterpoint to the hermeticism that characterizes its concrete structure, the main access appears framed by two overlapped textile structures. The structure is formed by a main structural steel mast, designed in a nautical way; and four secondary masts that, together with the retaining ties, fix the structures to the foundation. Between these masts, the anticlastic membranes of the tensile structure are developed: one of them following a hyperbolic paraboloid shape, and the other, a conoid. The two classical solutions of anticlasticity in tensile structures. The obvious analogy to the sails of a ship serves as a reference, linking the interior and exterior areas.

