

ESCALA YACHT CLUB

L'Escala, Girona - Spain

Multi-functional building

Restaurants, multi-functional room and offices Hydronic System

Anno 2010



Located in the middle of the complex, the Escala Yacht Club multi-functional building includes many services both for its members and for its guests. This is the location where all types of meetings and events in the nautical and marine sector take place .

The challenge

The different activities inside the building are differentiated, according to the thermal need and mainly for the time and working conditions.

Beside the daytime activity of the offices, the pubs and restaurants are open all day long plus the multi-functional area are occasionally used.

This is why the cooling system should be flexible and quick response times should be offered to different requests coming from every area.

Furthermore, the Customer stated his ecological engagement to choose a solution with a low environmental impact obtained mainly by eliminating the wastes and by reducing energy costs necessary to keep the comfort.

Clearly the whole installation cost would be an other important factor to take the final decision.



Escala Yacht Club – Aerial view and one sight of the Restaurant
www.nauticescala.com - www.blueflag.org

About the Escala Yacht Club

Escala Yacht Club is placed in an enviable position in the middle of Costa Brava, the perfect place for tourists, to practise sailing and sportive fishing. It is a private structure extremely developed, including 957 moorings with the relevant services and it is the seat of a prestigious Sailing School. Escala Yacht Club works with a careful ecological policy and this is the reason why it has gained the Blue Flag. This important environmental prize distinguishes the most virtuous beaches and marines of 44 Countries all over the world .

The building

- Two levels building

Dimensions

- Restaurant, pub, multi-functional room, offices
- Total surface 1.300 m²

The team

- Contractor Imir
- Supplier of the HVAC systems Comercial Eléctrica Grup

The solution

To grant the highest functional autonomy, two installations have been supplied, both hydronic type with air to water reversible heat pumps, two pipes terminals and fresh air units with active thermodynamic heat recovery.

The heat pump for the pub and restaurant installation includes Scroll R410A compressor, Ice Protection System device to protect the external exchanger during winter and water circulator integrated with variable speed, a standard solution also for the external fan.

The cassette type terminals include a centrifugal type condensate discharge pump and the integrated distribution of the air through the four ways with adjustable wings.

The same solution for the multi-functional room, where the terminals are of vertical type, placed at the end of the room to directly supply the air.

The air renewal on both installations is made by direct expansion monobloc units with active thermodynamic recovery, with direct supply with variable flow diffusers.

They are equipped with the Extrapower additional exchanger fed with chilled or hot water, both to increase the dehumidification capacity during summer operation, being very close to the sea, and also in winter in case of the requirement of thermal integration.

The results

Each one of the two functional areas is completely independent from the other one both for comfort needs and operating times.

Thanks to their compactness, all external units have been placed on the roof, becoming therefore invisible for passers-by and users.

The air renewal units with active thermodynamic recovery, equipped of their own high efficiency cooling circuit, have reduced the necessary capacity on the hydronic heat pumps and therefore have allowed the purchase of models of a lower size.

Consequently also the distribution hydraulic circuit has been reduced, with an economic advantage in making the installation and energy saving to run it.

The design estimation has highlighted total primary energy consumption 30% lower than a conventional solution.

If you need further information on Clivet systems

www.clivet.com



Escala Yacht Club – Heat pumps start up on the roof and cassette type terminals

The System

- 6 air-water heat pumps Clivet ELFOEnergy Compact
- 3 air renewal units Zephir² and ELFOFresh Large by Clivet,, including the active thermodynamic recovery
- 2 hydronic terminal vertical units Clivet ELFODuct CF-V
- 10 hydronic terminal unit Clivet ELFOSpace Box2

Concerning air renewal with active thermodynamic recovery

Zephir² by Clivet uses the exhaust air as thermal source for its reversible direct expansion circuit. It uses the thermal or cooling power produced with high efficiency, to eliminate the fresh air load and to supply further thermal or cooling power to the served area, according to the request and proper conditions. The whole efficiency is higher if compared to passive heat recovery, both cross flow and heat wheel, thanks also to the fact that the internal pressure drop is reduced. Besides, supplying more energy in the served areas, Zephir² allows an important reduction for the ventilation costs for all the life cycle of the installation.