

## The Le Albere district of Trento

**Trento. A whole newly built district on the edge of the town, designed to accommodate a variety of functions, from residential to services, and a series of additional features including a museum, a multi-purpose centre and a hotel, all according to criteria of eco-compatibility.**

Situated alongside the River Adige and served by the adjacent railway, the new Le Albere district, designed by **RPBW – Renzo Piano Building Workshop**, appears to be one of the most ambitious projects in the Italian architectural overview.

Developed on an **area measuring 11 hectares**, the district includes approximately 300 flats, 30,000 square metres of office space and shops plus squares, streets, pedestrian and bicycle paths, a network of canals and 5 hectares of public parks, plus a multi-purpose centre and the MUSE, a new Trento Natural Science Museum. The project site is *“Inside a former industrial estate, occupied until the late nineteen-nineties by the Michelin factory”*, explained **Walter Boller of Wlure Agency**. *“The area was purchased by a group of local entrepreneurs who transferred it to the so-called Clesio real-estate fund managed by Castello Sgr of Milan.*

*The project was entrusted to the architect Renzo Piano in 2002, and right from the earliest on-site inspections in September of the same year, the architect saw the potential of this area, situated between the River Adige and, to the east, the railway. It is a district belonging to a complex town and which has, necessarily, to include a number of functions. Thus, several typologies are present: residences, offices, shops and some cultural activities including the museum (to the north) and a multi-purpose centre with a hotel (to the south)”*.

The project is characterised by its eco-sustainability, eco-compatibility and energy-saving features. The whole area is served by a trigeneration plant developed for the company Dolomiti Energia, which supplies the whole complex with hot and cold fluids. All the residential and services buildings are designed as “passive” buildings, with low energy consumption, and are certified for compliance with CasaClima standards. The museum and the future congress centre, on the other hand, will be classed according to LEED Gold standards.

The special roofing will accommodate the particular photovoltaic panels made of zinc alloy and the museum will be able to count on a district heating system, photovoltaic panels and, in addition, a system of geothermal probes.

Implementation of the project for the new Le Albere district should be completed by the end of 2013 – mid-2014. As **Filippo Tealdi, of the Milan-based company Castello Sgr** explained, *“80% of the activity has been completed. The congress centre, the hotel and the multi-purpose centre are not ready yet.*

*The project covers an area of about 116,000 m<sup>2</sup> and calls for 100,000 m<sup>2</sup> of construction above ground plus about 300,000 m<sup>3</sup> for the two underground floors, about 7 m below the water table of the River Adige. The importance of the underground part is due to the intention to create a district in which a combination of functions able to keep it lively “from dawn to dusk” is present. From the more entertaining part of the museum and congress centre to the management and services functions ....”*

The core of the whole project, which will enable a high level of comfort to be maintained in the interiors, is the newly built trigeneration system erected in the area owned by Dolomiti Reti of Trento and the complex operation of which was explained to us by Roberto Bronzato–Atzwanger. “The 12 user sub-stations situated under each building are fed from a network of underground pipes for hot and cold fluids that exploit the fact that they are positioned under a pedestrian bridge that crosses the River Adige to reach the buildings of the district. The call for bids was published by Dolomiti Reti in 2009 and our company acquired the contract as the lead contractor of a group of enterprises involved in the turn-key construction of the whole system.

The plant is split up into three macro-areas in terms of users: the heating plant producing heat for a total installed output of about 14.8 MW, split up into three heat generators of which two with outputs of 5 MW and one with an output of 3 MW plus 1.8 MW of heat recovered from the internal circuits of the co-generator and from the heat-recovery boiler; another macro-area is the co-generation area, where a co-generator for producing 1.8 MW of electricity and 1.8 MW of recovered heat energy is installed. The co-generator feeds an absorber for the production of refrigerating energy for the district-cooling network; lastly there is the macro-area for the production of cooling power, situated on the roof of the power plant, where the five **Climaveneta** air-condensation cooling systems with an output of 1175 kW each are installed.