

New Wastewater Treatment Plant in Arenzano (Ge)

General information

- ✓ Years: 2013
- ✓ Customer: Genova Acque SpA
- ✓ Value of work: € 5,000,000

Architectural and structural executive design

Characteristics of the project

The new Arenzano and Cogoleto wastewater treatment plant will be located in the area of the former Lupara quarry, at the natural inlet along via Aurelia known as Fosso Lupara, in an underdeveloped stretch of coastline in a clear state of decay. The excavated faces of the former quarry have extremely unstable rock walls, both due to the geomechanical features of the rock and incorrect use of the quarry. The choice of the location for the building in relation to the context had to take account of the plant layout, in compliance with distances from existing buildings and boundaries, and the imposing presence of the rock wall behind. Incorporating the vertical scan of the tree-lined strips allowed us to make the size of the plant less conspicuous and the height differences of the terracing were exploited to make it as "underground" as possible; the remaining parts, which could not be screened due to reasons of height,

were

treated like a greenhouse, as can often be seen along the west coast of the Liguria as production equipment in nurseries. The building which will house the water purification plant, strictly for plant engineering needs, must have a regular form of 65x39 metres, with a main decking level at 21.60 metres above sea level and at a height of 5 m along the longest main face; below the decking a number of tanks will reach 14.10 m above sea level, a level made necessary due to hydraulic and processing needs.

Other facilities will be placed at + 14.50 m above sea level to allow the construction to visually recede with the construction of retaining walls with elevated gardens above them. In order to ensure the overall stability of the slope and to minimize the volume of excavation, containing pile walls should be placed at an average height of 9 m.; the rocky edge of the quarry will be stabilised with appropriate consolidation works.



Watercolour sketch of the project

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Construction materials

The need to treat visible faces like a greenhouse and, at the same time, to not allow the inside of the wastewater treatment plant to be seen, guided us in choosing a modular construction system that recalled the typical scan of a greenhouse and which, due to its surface colour, was as close as possible to the sheets in real greenhouses that are normally whitewashed with lime generally to avoid the penetration of excessive solar radiation.

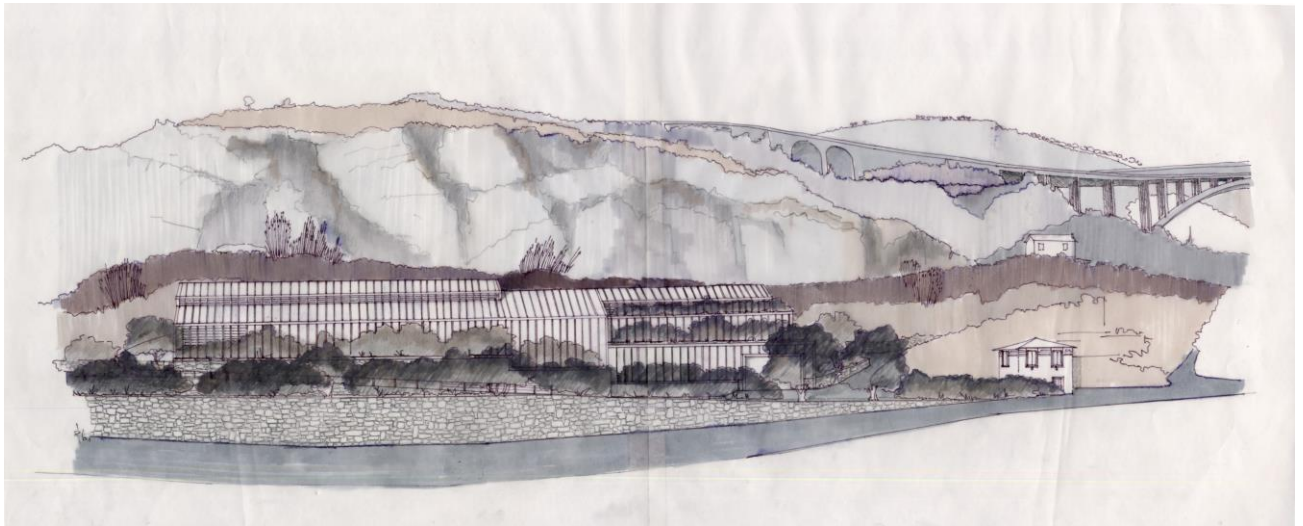
The material that most responded to our needs and gave a good quality-price-ratio proved to be silver pre-painted aluminium.

All the perimeter and containing walls will be made in concrete with visible stone cladding recalling as closely as possible the type of perimeter wall used locally.

The paving of yards and access ramps will be done in exposed gravel architectural concrete.

Greenery

To further integrate the water purification building within the environmental context in which it is inserted, it was decided to treat all external areas not as a garden or a park, but as a natural vegetation area, adopting typical Mediterranean plant varieties and following the typical features of the surrounding plant landscape.



Sketch of the project elevation



Photo from the sea of the Cava Lupara site