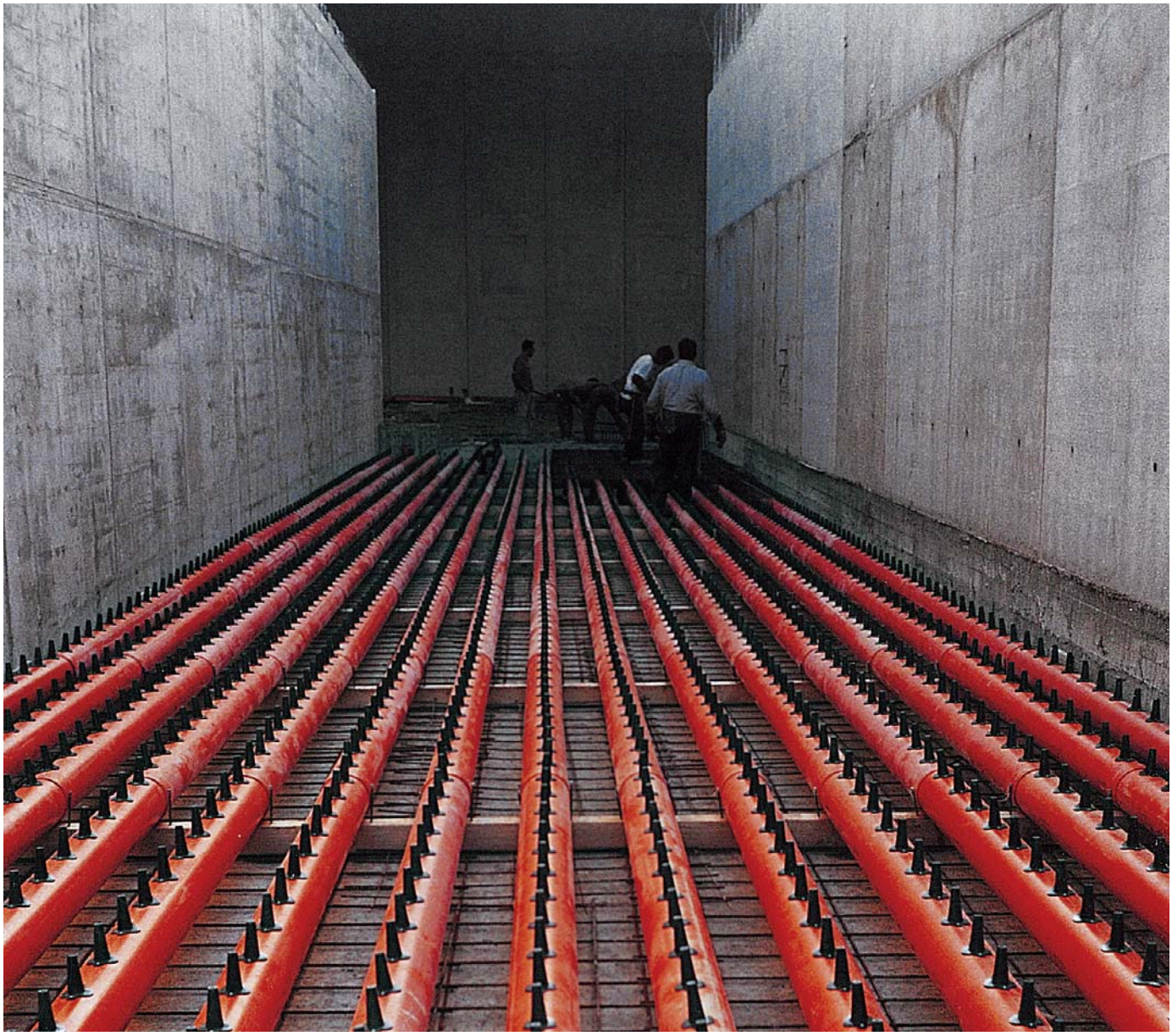
16 CAVALLINO (LE) ITALY

Year	2000
Client	AMBIENTE & SVILUPPO Scrl
Operator	AMBIENTE & SVILUPPO Scrl
System description	Tunnel composting
Waste processed	Compostable waste
Plant capacity	1,200 cubic metres

Tunnel composting technology is used to process organics from mixed municipal waste. The biological process takes place inside closed reactors, consisting of tunnels made of reinforced concrete with an aeration system integrated into the floor.



The plant uses tunnel composting technology developed by Ecomaster for treating organic waste biologically in order to hygienize and stabilize it. The process takes place in modular, closed reactors consisting of reinforced concrete tunnels equipped with a ventilation system integrated in the floor.

The main advantages of this technology are high control of the biological process and reduction of waste air volume to be treated for odour control.

The air blown into the material through the floor is in part re-circulated inside the tunnel and in part sent to the odour control system. Air coming from waste-sorting areas is used as fresh process air in the tunnels, so the total volume of waste air is reduced without negativ-ely affecting the buildings' ventilation.

A sophisticated collection and treatment system for leachates ensures correct tunnel drainage and allows the liquid to be re-used for moisturizing the processed material by means of nozzles set up under the ceiling of each tunnel.

Once the tunnel has been loaded using the wheel loader, the special door is closed and the process starts. It is programmed to go through various steps including heating, hygienization, stabilization and cooling of the material. At the end of the treatment the tunnel is emptied and a new cycle begins.

A computerized control system, including visualization on PC with colour graphics, monitors the process and keeps its parameters in the preset ranges, which are different for every stage of the process.

Many process parameters are measured by sensors set up in various parts of the system. For instance, material temperature, air temperature, oxygen content in the air, air pressure and air flow are continuously monitored and recorded.

To control odours, the air exhausted from the tunnels, mixed with the air flow coming from the areas where waste is mechanically processed, is treated in a large biofilter. Biofiltration controls odours very efficiently because malodorous gases, absorbed by the superficial moisture of the filter media, are quickly digested through a biological process.

The centralized control system also surveys the bio-filtration process, which takes place after the air flow has gone through a scrubber.

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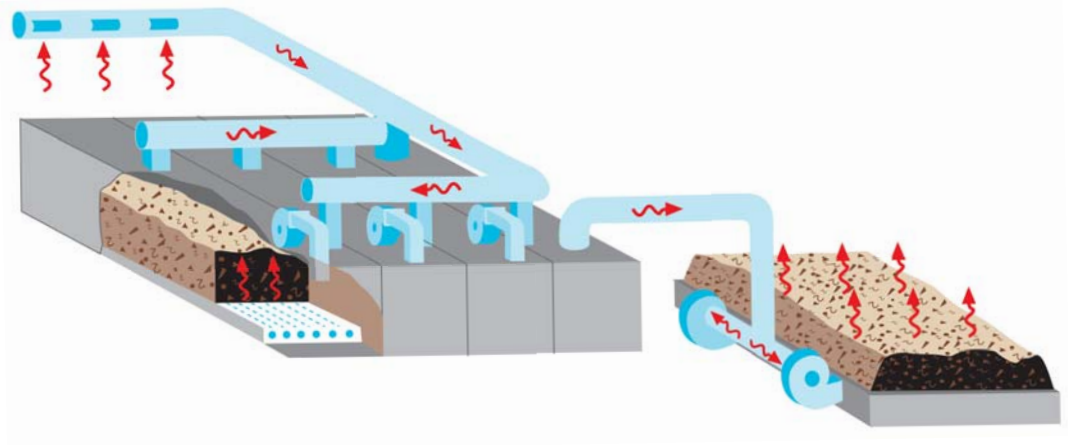

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