



# M.S.W. MECHANICAL TREATMENT PLANT IN CATANIA

The pre-selection plant of mixed waste is divided into four parallel lines, each of which comprises a pre-selection stage consisting of a coarse shredding, a primary screening, a separation of ferrous and non-ferrous metals and a pressing of the coarse material, and a refining step of the organic waste consisting of a secondary screening, with the production of an underscreen to be biologically stabilized and an overscreen to be processed with ballistic and infrared separation of recyclable materials. The system doesn't require the use of personnel for the sorting operations, which are conducted exclusively automatical and managed by an operator from the control room. From the undifferentiated M.S.W. the process allows the separation of the following: plastics to be recycled; iron and aluminum to be later in foundries; organic material to be stabilized for covering landfills or environmental remediation; material with high calorific value and pressed into bales for disposal in landfill or for recovery as fuel in incinerators. The factory shed is constantly kept under negative pressure in order to ensure the health of the workplace. The air treatment system is constituted by a scrubber (washing tower type) and a biofilter capable of returning the air in the atmosphere in accordance with the most stringent levels set forth by law. An implementation phase is also in place, which is aimed at the refining of the screening material coming from the primary and secondary screening and waste of the ballistic and optical separation; this material is the so-called RDF (Refuse Derived Fuel), a "product" that will be inserted in the chain of the fuels used in cement plants, power electrical stations, etc.



## DESIGN DATA

**Private client**  
SICULA TRASPORTI s.r.l.  
**Tasks assigned and carried out** Executive design and construction management  
**Cost** € 27.437.210,46  
**Location** Catania  
**UTM Coord. (Zone 33S)** 505,315 E - 4,137,580 N  
**Site area** 90.000 m<sup>2</sup>  
**Shed surface** 11.000 m<sup>2</sup>  
**Construction period** January 2009 - December 2010

Shed in prestressed concrete with shingle roofing in prestressed concrete

## TECHNICAL DATA

**Operations according to Encl. B and C referring to Part IV of Law Decree No. 152/06 (D.Lgs. 152/06) and further amendments** D9, D14, D15, R3, R4, R5, R13.  
**Maximum capacity:** 220 t/h  
**Treatment lines:** 4  
**Sections:**

- Primary shredding;
- Primary screening to 200 mm;
- Separation of ferrous and non-ferrous metals;
- Secondary screening at 80 mm;
- Ballistic and optical separation of plastics;
- Baling of plastics;
- Baling of the screened material to be sent to landfill;

**Rain water storage:** 100 m<sup>3</sup>  
**Leachate storage:** 270 m<sup>3</sup>

## ACCESSORY EQUIPMENT

**Air treatment:** 270.000 Nm<sup>3</sup>/h  
**Air treatment system:** wet scrubbers and biofilters  
**Biofilters surface:** 1.900 m<sup>2</sup>  
**Photovoltaic system on the roof:** 414 kWp consisting of 1.800 PV panels of 230 Wp each  
**Average annual electricity production:** 650 MWh