The Materials Recycling Facility (MRF) welcomes visitors and, as well as school classes, also encourages adults to book on one of its regular tours.

The MRF

Before construction of the main MRF building itself could start, preparation works were carried out to the river wall and a containment barrier was installed along the eastern boundary of the Household Waste and Recycling site to prevent any slightly polluted water (from the site’s historic use as a Gasworks) under the main body of the site from draining into the Thames.

The MRF has a design capacity of 84,000 tonnes per annum and has been designed to process co-mingled materials, delivered loose or in plastic bags, consisting of a mix of one or more of the following dry recyclables: paper, cardboard, glass bottles and jars, clear and coloured PET plastic (e.g. drink bottles), clear and coloured HDPE plastic (e.g. laundry and washing-up liquid bottles) steel and aluminium cans and polystyrene (e.g. Tetra Pak).

The facility has allowed the Authority to be predominantly self-sufficient in relation to the sorting of collected co-mingled recyclable materials, complying with the proximity principle and reducing vehicle movements associated with this activity. The MRF building incorporates an interactive Education Room providing improved facilities for educational activities in relation to recycling which is of particular benefit to school children and students from colleges in the four boroughs, as well as visitors from the local community and further afield. The facility has allowed the Authority to be predominantly self-sufficient in relation to the sorting of collected co-mingled recyclable materials, complying with the proximity principle and reducing vehicle movements associated with this activity. The MRF building incorporates an interactive Education Room providing improved facilities for educational activities in relation to recycling which is of particular benefit to school children and students from colleges in the four boroughs, as well as visitors from the local community and further afield.

The MRF initially sorts the recyclable materials mechanically based on their specific size and shape properties.

The recycling sacks and bags are loaded onto a conveyor belt and travel through a ‘bag splitter’ which uses small blades to rip open the bag, releasing the materials. The loose materials then pass through a sorting cabin where empty recycling sacks and contaminant materials are removed from the conveyor belt.

The rest of the materials travel up onto a set of screens. A screen comprises a set of rotating shafts with steel star-shaped discs spread out over a specific distance and inclined.

On the first screen sheets of cardboard “surf” up and over the screens, whilst the rest of the materials fall through the gaps. All the products leave the site by road (as the destinations are many and varied) with newspapers, pamphlets and glass going loose in bulkers and with the other materials being baled and transported by curtain-sided vehicles.

The glass goes through a large rotating drum with holes called a ‘trommel’ (that looks a bit like a washing machine drum), and it separates the smaller items that should not be with the glass. All the products leave the site by road (as the destinations are many and varied) with newspapers, pamphlets and glass going loose in bulkers and with the other materials being baled and transported by curtain-sided vehicles.

The material from each screen then goes past an optical sorter that removes any reject material that has incorrectly “surf ed” up a screen (rogue recyclable material is returned to go around the process again). The cardboard and paper products then go through further optical sorters which can sort the material into different chemical types and colours. The glass goes through a large rotating drum with holes called a ‘trommel’ (that looks a bit like a washing machine drum) and it separates the smaller items that should not be with the glass. All the products leave the site by road (as the destinations are many and varied) with newspapers, pamphlets and glass going loose in bulkers and with the other materials being baled and transported by curtain-sided vehicles.

The cans are removed by magnetic and eddy current separators and the plastic bottles, pots, tubs and trays go through further optical sorters which can sort the material into different chemical types and colours. The glass goes through a large rotating drum with holes called a ‘trommel’ (that looks a bit like a washing machine drum), and it separates the smaller items that should not be with the glass. All the products leave the site by road (as the destinations are many and varied) with newspapers, pamphlets and glass going loose in bulkers and with the other materials being baled and transported by curtain-sided vehicles.

The Authority recycles a whole range of materials at its Household Waste and Recycling Centres and a full list can be found on our website at www.wrwa.gov.uk.

The following sections describe what happens to some of the larger recycling streams.

Co-mingled ‘recycling sack and bank’ scheme

Cory began the construction of an 84,000 tonne per annum Materials Recycling Facility (MRF) at the Authority’s Smugglers Way Transfer Station in November 2008. This facility is processing co-mingled recyclate delivered by the Authority’s constituent councils from their “Recycling Sack and Bank” schemes.
Waste reuse, recycling and energy recovery in your area – our way forward

Materials Recycling Facility Fibre Recovery Process

- **Main In Feed**
- **Drum Conveyor**
- **Bag Splitter**
- **Pre Sort Cabin**
- **Clear Sacks Suction Vent**
- **Plastics Suction Vent**
- **Plastics Tetra Pak Cans**
- **Plastic Perforator**
- **Eddy Current Separation**
- **Drum Magnet**
- **Air Classifier** (Removes light material)
- **Air Separator**
- **Ballistic Separator**
- **Fines Screen**
- **Optical Sorter**

**Key**
- Quality Control
- Air Separator
- Ballistic Separator
- Fines Screen
- Optical Sorter
- Trommeln (Separates glass from contaminants)
- Air Classifier (Removes light material)

Western Riverside Waste Authority
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