

# Dealing with South Yorkshire's Waste

The UK has to find alternative ways of dealing with waste. Councils can no longer keep on just burying waste in holes in the ground. All local authorities face Government targets to increase recycling and reduce waste going to landfill.



The cost of using landfill sites is likely to double over the next decade because of a shortage of suitable sites and Government policy to increase landfill tax to use them. These costs may have to be passed on to council taxpayers.

Landfill produces methane which is 21 times more damaging as a greenhouse gas than carbon dioxide. Once waste is buried, it is not possible to recover any value from it by recycling or composting.

Barnsley, Doncaster and Rotherham Councils together formed the BDR Waste Partnership over ten years ago to plan for the disposal of residual household waste after kerbside recycling has taken place. This residual waste is what is left over after householders take out materials that can be reused or recycled before leaving their wheeled bins or bin bags for collection by council Refuse Collection Vehicles (RCVs).

In April 2011, BDR chose 3SE to become the preferred bidder for the contract to treat their residual waste for 25 years.

The BDR Partnership has secured £77.4 million of Private Finance Initiative funding from central government towards the cost of the scheme.

3SE is a partnership between Shanks Group plc (a specialist waste contractor) and Scottish & Southern Energy plc.

**The companies put forward a proposal to use three sites:**

- Bolton Road waste treatment centre, Manvers in Rotherham (new)
- Grange Lane transfer station in Barnsley
- Ferrybridge Power Station in West Yorkshire

This exhibition is intended to give local residents the opportunity to find out more about the plans for the Bolton Road site, to discuss the proposals with members of the project team and to provide feedback.



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# What is being proposed?

3SE is proposing a three-stage solution to dealing with BDR's left-over waste. This will involve the construction of a new facility with two treatment processes in Rotherham.

This will deal with up to 265,000 tonnes per year of residual household, council commercial waste (for example, from council facilities such as markets and from restaurants) from the three councils and a small amount of other similar waste from other authorities or waste management companies.

The site is on Bolton Road, Manvers adjacent to the Next distribution centre. It is a brownfield site which was part of the former Manvers colliery and coke works and is currently owned by Rotherham Borough Council. 3SE will be submitting a planning application for the construction of a new waste treatment centre with two main processes at the site.

## The two processes are:

### Mechanical Biological Treatment Plant

A Mechanical Biological Treatment (MBT) plant which deals with residual household waste as well as commercial waste.

### Anaerobic Digestion Plant

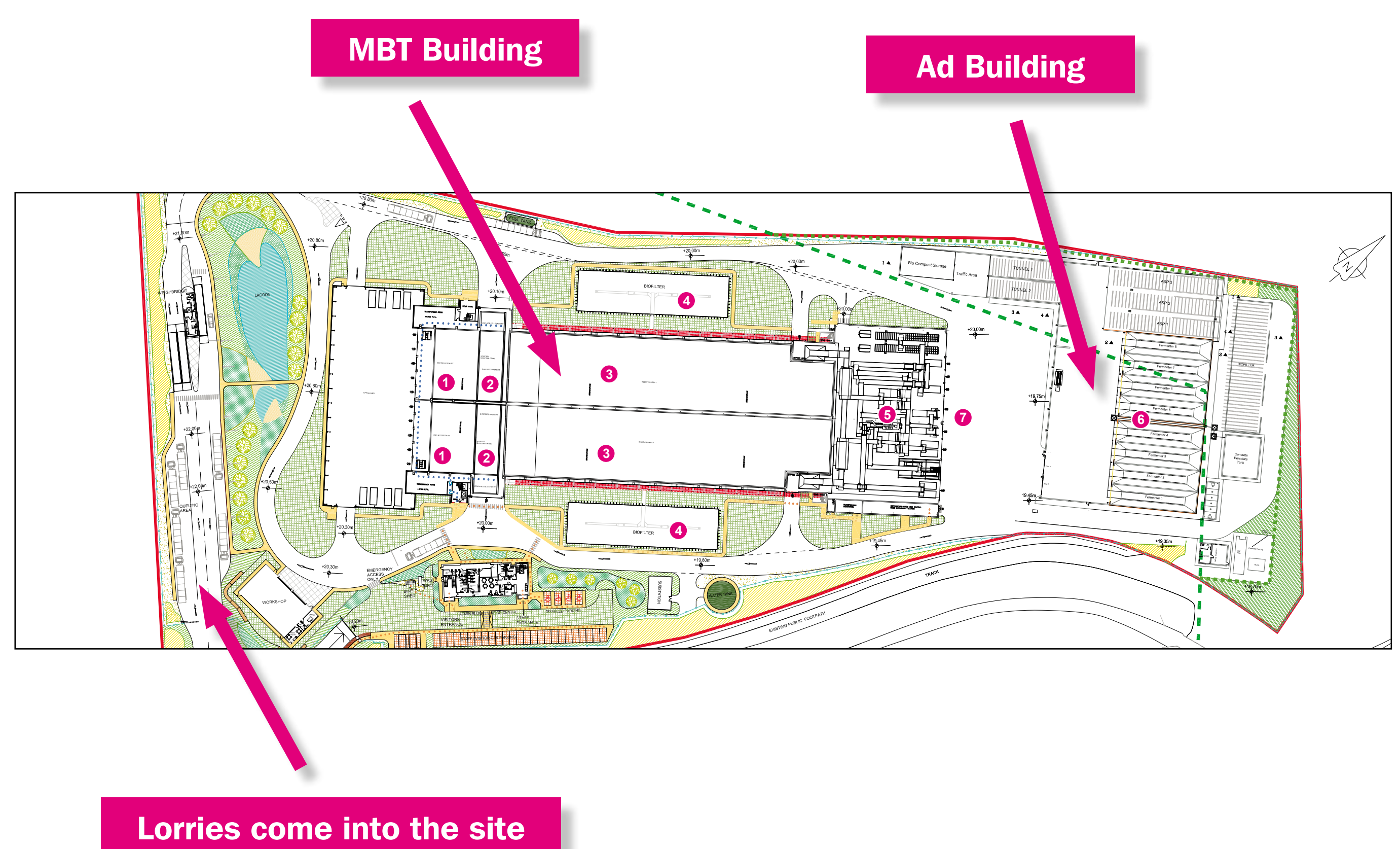
An Anaerobic Digestion (AD) plant which has a two-stage process of fermenting and composting – the organic 'fines' produced by the MBT plant.

There will also be an administration block and visitor centre, a workshop, a gatehouse, weighbridges and a car and bike park.

The site will be landscaped and fenced.

### Operations

- Fully enclosed - all activities take place inside
- Negative pressure means air is sucked in
- Bio filters extract odour from air emitted
- All lighting shielded



No nuisance-causing dust, noise or smells beyond the site boundary



# How an MBT Plant works

An MBT plant combines a form of biological composting treatment with mechanical sorting of waste.



Solid Recoverable Fuel from the MBT process

An MBT plant combines a form of biological composting treatment with mechanical sorting of waste. Waste will be delivered by lorry which will enter the building via a tipping shed.

The waste is unloaded into a reception pit and then moved by a grab crane to a shredding machine which ensures that the waste is chopped into pieces of similar size (about 20-30 cms). The shredded waste is then transferred by a crane to the drying hall where air is sucked through the waste and taken away through vents in the floor.

The waste is dried using natural processes and the biodegradable materials break down over a period of 12-15 days. This biodrying process takes place under negative pressure to minimise the risk of dust and smells escaping to the atmosphere. All the air captured is cleaned by discharging it through a natural biological air filter.

As the waste breaks down it generates heat which is used to dry and sanitise the waste, making it easier to process. This reduces the volume of the waste by around 27.5 per cent and produces a material that is stable, clean and practically odourless.



A computer-generated image of the facility with the MBT building in the foreground

The next stage involves mechanical sorting. The waste material is automatically transported to the recycling and recovery area where it is passed through a trommel – a large drum which sorts the material by size. The smallest fraction is called ‘fines’. This is sent to the AD plant (see next board).

The larger material such as glass and stones is removed. The remaining light material goes through further sorting processes to take out metals that can be reused or recycled, such as steel and aluminium, and plastic bottles. These materials are of value and not suitable for use as fuel.

The material that is left is then compacted to produce an end-product which is called Solid Recovered Fuel (SRF).

This will be transported to Scottish & Southern Energy’s new multi-fuel plant at Ferrybridge where it will be used to generate electricity for the National Grid - providing sufficient power for 36,000 homes and saving the burning of fossil fuels.

## What is produced from the waste by the MBT process

### Used to generate electricity

SRF – 48.6 per cent

Fines – 8.4 per cent

### Recycled

Glass and stones – 6.4 per cent

Ferrous metals – 2.1 per cent

Non-ferrous metals – 0.4 per cent

Plastics – 5.5 per cent

### Sent to landfill

Residuals – 1.1 per cent

Moisture removed from the waste – 27.5 per cent.

### Hours of operation

The processes within the plants will operate 24 hours a day.



# How an Anaerobic Digestion Plant works

The smallest product produced from the MBT process is called ‘fines’. This material is the dried vegetable matter produced from the drying of the household waste. This ‘fine’ material will be transferred via covered containers to the AD building next to the MBT plant.

AD is a waste treatment process which produces a biogas from renewable energy sources. Micro-organisms break down biodegradable material – in a similar way to composting – in the absence of oxygen. This fermenting process takes place in a warm, sealed airless container for a period of four weeks. Whilst this is taking place, methane gas is produced.

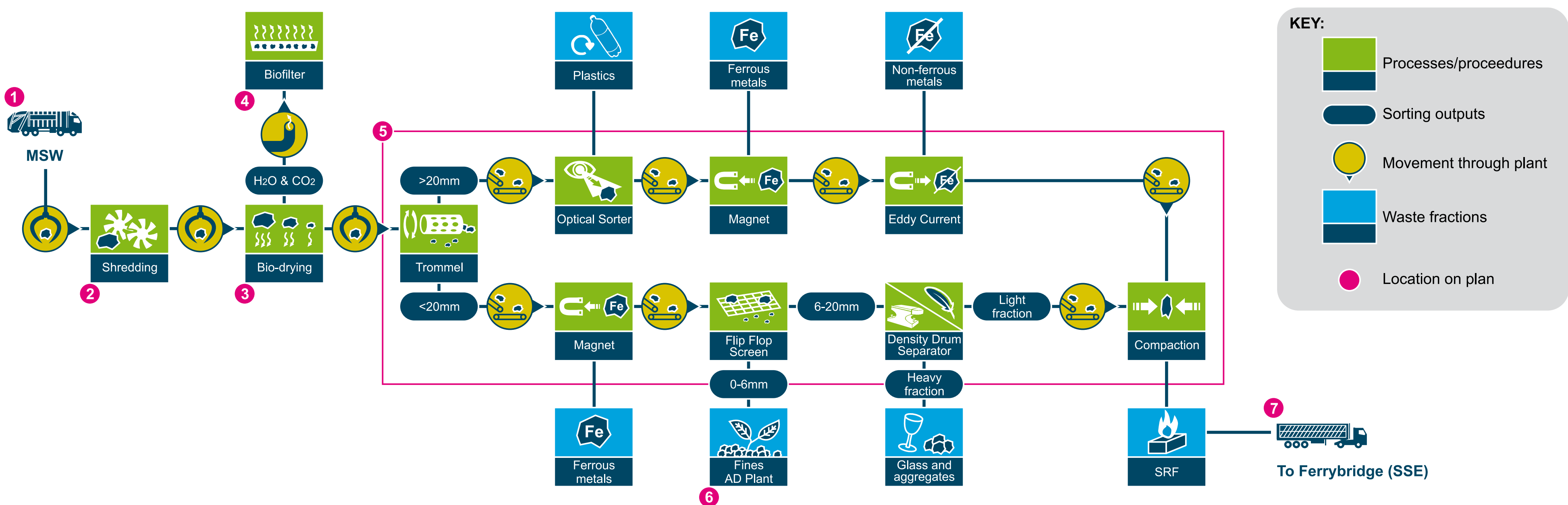


A computer-generated image of the facility with the AD building in the foreground

The methane will be used to power a gas engine on site, generating electricity which will be used to power the Bolton Road site, with any surplus being sold to the National Grid. The digested material left over can be used as a soil nutrient to help restore land.

The MBT and AD buildings will be equipped with biofilters to reduce smells and a bag filter to remove dust.

## The MBT and AD process





# What will the plants look like?

3SE has designed the facility carefully to minimise the height and bulk of each building.



South West view from Bolton Road



View on site

The MBT building will be 16 metres high and the AD building will be 12.4 metres high at their highest points. There will also be stacks rising 3 metres above both buildings - ie to heights of 19 and 15.4 metres in total.

Two stacks on the MBT building will vent air after it has passed through bag filters to remove dust. The third stack on the AD building will vent air from the AD treatment process, which will be released to the atmosphere after passing through the biofilters. Monitoring of both the stacks and the biofilter will be undertaken by 3SE throughout the life of the facility, with all results passed on to the Environment Agency for assessment.

There will also be a two-storey administration building (30m by 12m) and a workshop (26m by 14m). The adjacent Next warehouse is around 20 metres high.

## Materials used in the buildings will be chosen for their:

- visual quality
- durability
- sustainability

Timber cladding will be incorporated to visually soften the overall look of the buildings and highlight accommodation areas. We will also use ecologically friendly materials wherever possible. Materials will be selected on their sustainable credentials as well as their quality and robustness.



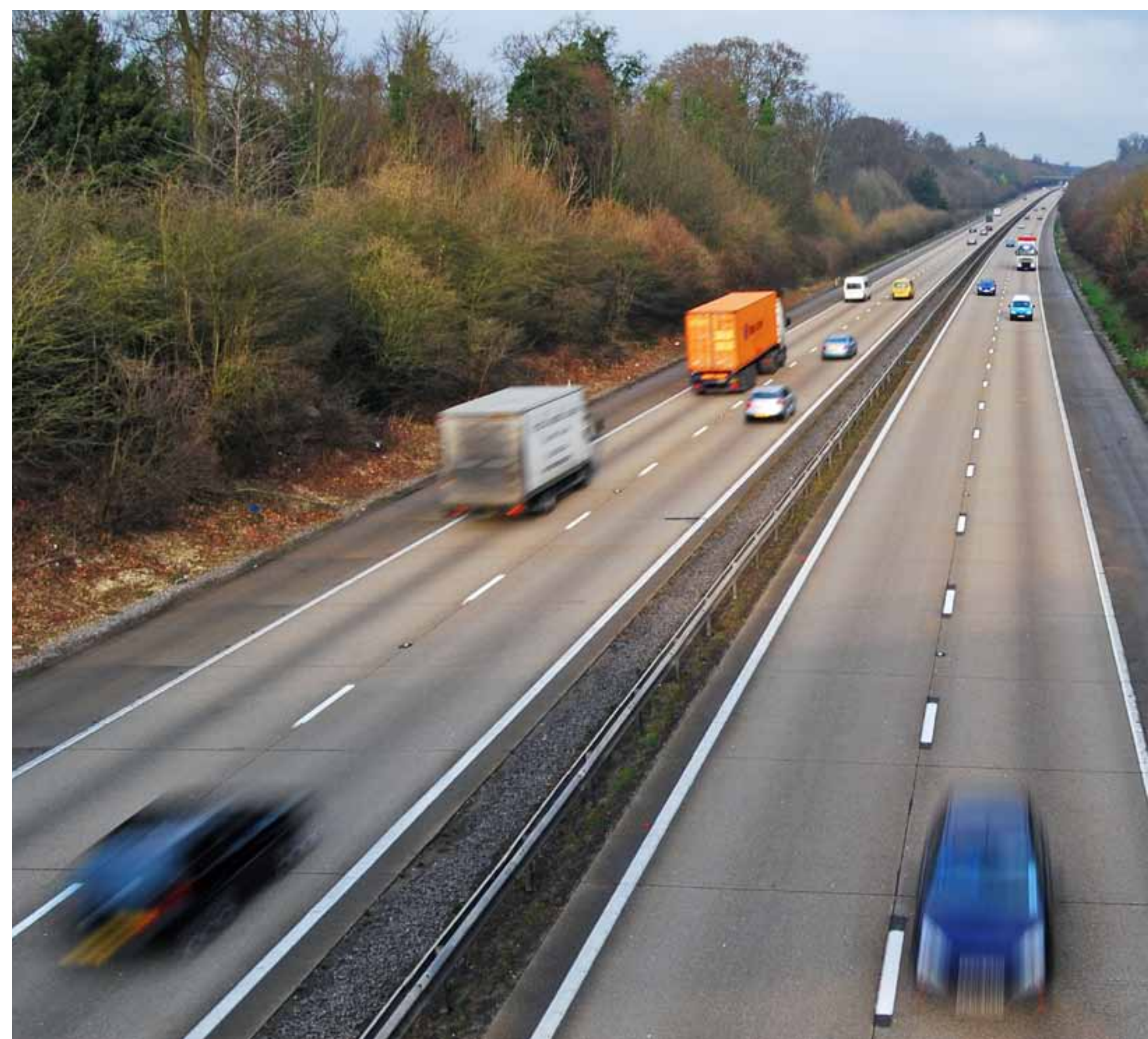
# Highways

Once it is fully operational, the new facility will generate up to 150 two-way HGV movements per day. This represents a tiny fraction of overall vehicle movements in the area. Care is being taken to ensure that as few of these as possible are routed through populated areas.

**For example, there will be an average of 14 HGV journeys through Bolton-upon-Deerne every week and these are from RCVs collecting residual waste from households in the area.**

Access to the site will be via a new junction connecting the south eastern corner of the site to Bolton Road. Lorries will enter from the north and south, and staff cars could also enter from either north or south.

Local RCVs from Doncaster and Rotherham will travel direct to the plant after collecting kerbside waste as will a few from Barnsley. Most of Barnsley's RCVs will deposit their loads at Grange Lane Transfer Station. Here the waste will be bulked up before being taken to the MBT plant in larger HGVs. This considerably reduces the number of lorry journeys and the impact on the environment.



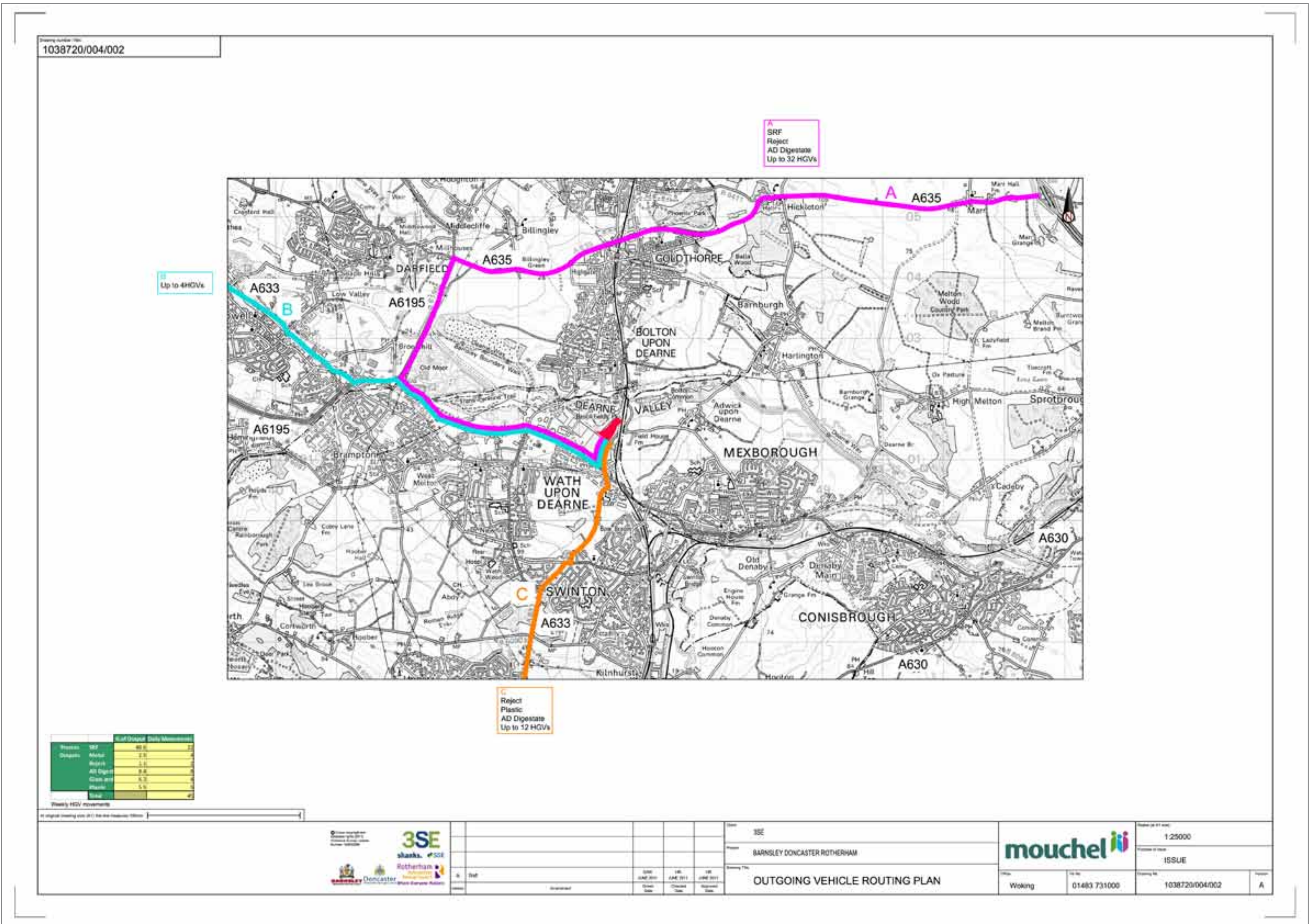
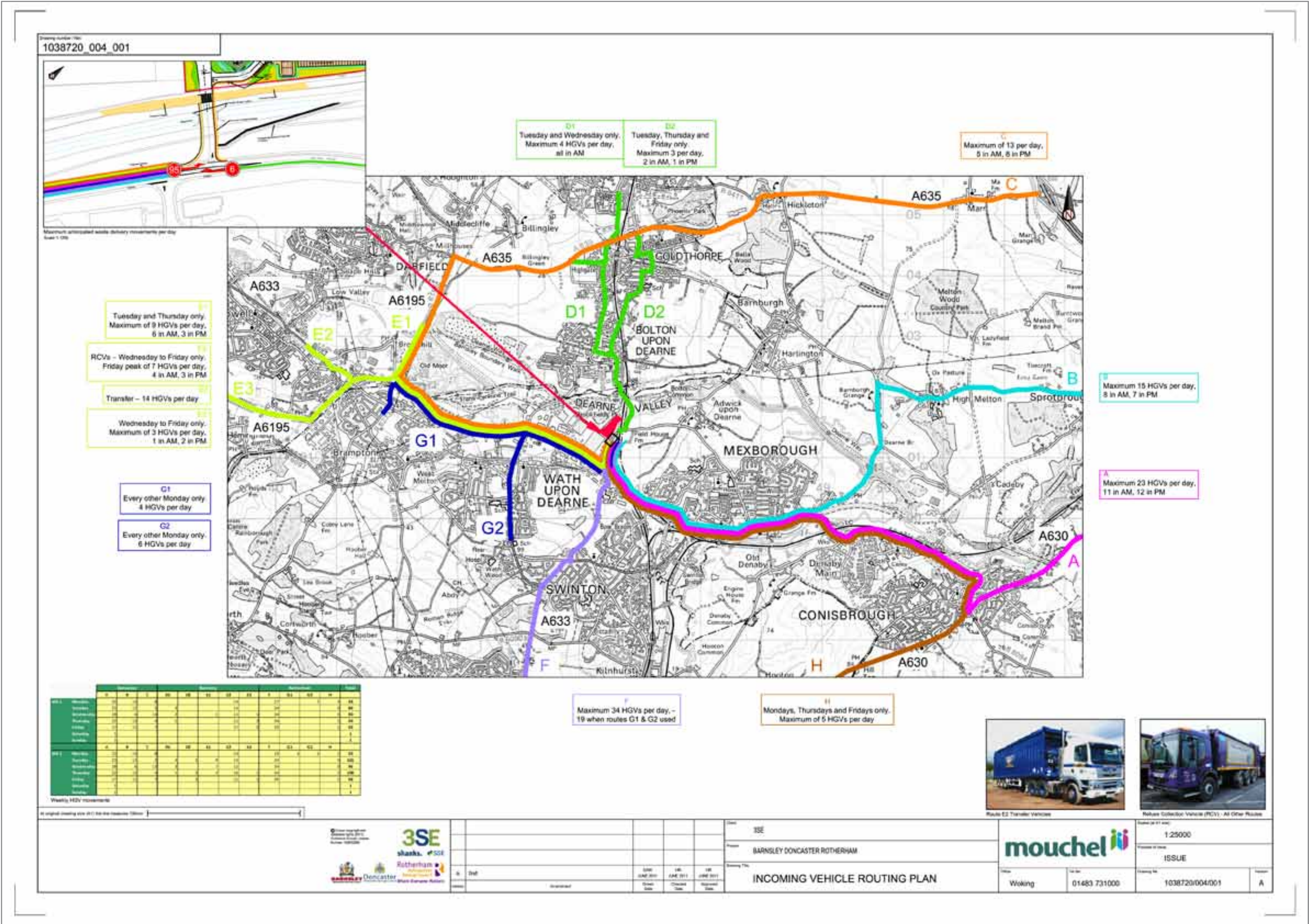
As part of the planning application process a detailed Transport Assessment, which is independently verified by the local highways authority, will be submitted by 3SE. We are keen to have local residents' comments on traffic issues so we can incorporate them into this process where possible.



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# Highways - Incoming and outgoing movements





# Next Steps

## Planning Application

Before we can start work on the construction of the treatment plant we have to obtain planning permission from Rotherham Council. 3SE intends to submit a detailed planning application to the Council in autumn 2011. This will be accompanied by an Environmental Statement, which will contain a full Environmental Impact Assessment (EIA) of the proposal. This will cover an assessment of any potential environmental impacts of the proposed development, including air quality; cultural heritage; ecology; geology; soils and contaminated land; landscape and visual effects; noise and vibration; water environment.

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## Timescales

This will then be considered by the Council's Planning Board, which is an independent committee separate from the Waste Partnership. Subject to receiving planning permission, the construction phase would take about 28 months, with both the MBT and AD plants completed by the winter of 2014. The plant would then undergo a six-month commissioning phase before the whole facility becomes operational by the spring of 2015.

## Please tell us what you think!

Before we submit a planning application, we want to know what you think so that we can incorporate your comments into our proposals before they are submitted to Rotherham Council. All comments will be reviewed by the project team.

We intend to submit our planning application in the autumn so please let us have your comments by 1st August so that we can consider them over the summer. We will then summarise these comments and produce a report which will be sent to the Council as part of the planning application.

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Either fill in the form provided and leave it in the box; or email us at **[bdr@greenissuescommunique.com](mailto:bdr@greenissuescommunique.com)**.

You can also find about more about the project or leave comments online via the BDR website: **[www.bdronline.co.uk](http://www.bdronline.co.uk)**

Once the planning application has been submitted and validated, the Council will carry out its own consultation. At this time, you will be able to send comments directly to the Council.

Thank you for taking the time to view our proposals.

We welcome questions and comments on the scheme.

