

Eco Park Surrey



ARTIST'S IMPRESSION

Welcome to our drop-in session

SITA Surrey is building an Eco Park at Charlton Lane, Shepperton on behalf of Surrey County Council.

Work is getting underway on Surrey County Council's innovative, new Eco Park development. We are here today to provide you with information about the development and to explain the work that will take place at the site over the next two years as we build the facilities that will together make up the Eco Park.

Members of our team are on hand to answer your questions and there will be a form to complete if you would like to receive updates on the Eco Park.



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The background

Each year, Surrey households produce over 500,000 tonnes of waste.

Just over half of this is sent for recycling and the rest needs to be disposed of – either at energy recovery facilities or landfill, which is the least favourable disposal option from a cost and environmental perspective.

Currently, there are no energy recovery facilities within Surrey and the waste is transported outside of Surrey, and in some cases outside of the UK, for treatment.

Developing treatment facilities at the Eco Park gives the county council long-term control over the treatment of around a third of the county's waste and the costs associated with this.



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The team

Surrey County Council is responsible for providing facilities to treat and dispose of the county's household waste and aims to do so in the most efficient, economic and sustainable way possible.

As the waste disposal authority, the county council has two key roles. Firstly, it provides facilities to receive and treat and dispose of municipal waste. Secondly, it provides community recycling centres for residents to recycle and dispose of items that are unsuitable for kerbside collection.

SITA Surrey, a wholly-owned subsidiary of SUEZ environnement, recycling and waste recovery UK (formerly SITA UK), manages 15 community recycling centres and five waste transfer and bulking facilities on behalf of Surrey County Council. It also works with the county council to develop new facilities to manage residual waste, including the Eco Park.

M+W Group is the lead contractor responsible for designing and building the Eco Park, working with specialist sub-contractors – Outotec, who will supply the gasification technology and Monsal, who will supply the anaerobic digestion technology.

Outotec installed its first gasification unit over 30 years ago and has a wealth of technical expertise and experience in designing and operating gasification facilities. It currently has three gasification facilities that use the technology planned for the Eco Park in operation, with another in commissioning and a further four in design or construction.

Monsal specialises in the design and delivery of anaerobic digestion facilities. It has a number of facilities in the UK that operate using food waste in Cambridgeshire, Scotland, Somerset and South Gloucestershire.

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An overview

The Eco Park is a collection of facilities designed to manage waste from Surrey households, with any remaining capacity treating waste collected from businesses. It will treat this waste as a resource that can either be reused, recycled to create new products, used as a fuel to generate energy or a fertiliser for use in farming.

IT WILL COMPRISE

- A gasification facility with pre-treatment to process up to 55,000 tonnes of mainly household waste per year.
- An anaerobic digestion facility to process 40,000 tonnes of food waste per year.
- A recyclables bulking facility.
- Improvements to the existing community recycling centre.
- A visitor and education centre, which will aim to inspire and motivate Surrey residents to change the way they think about their waste.



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Gasification

Gasification is an innovative technology that will be used to convert residual waste into energy.

PRE-TREATMENT

Prior to gasification, waste will be mechanically sorted and shredded to create a refuse derived fuel.

Metals and aggregates which are unsuitable for the gasification process will be separated and the metals sent for recycling.

Bulky items unsuitable for the gasification process will be removed.

The remaining waste will be shredded into pieces of a similar size, creating refuse derived fuel.

GASIFICATION

This fuel will be fed into a chamber with reduced oxygen levels, where it will be suspended in a bed of hot sand and heated to temperatures above 700 degrees – but not set on fire – to produce a syngas.

This will rise towards the upper part of the chamber, where air will be added and the syngas burnt at high temperatures.

ENERGY GENERATION

The heat created by burning the gas will be used to heat water to produce steam.

The steam drives a turbine and electrical generator, generating energy. Some of this will be used to power the Eco Park, but most of it will be supplied to the National Grid.

GAS CLEAN UP

The gases from the combustion of the syngas go through a multi-stage clean-up process to ensure they meet the strict standards in the Eco Park's Environmental Permit before being released into the air through a chimney.

Dust is removed. Carbon and lime are added to absorb metals and acid gases.

Bag filters then collect fine dust particles and the added carbon and lime with the materials they have absorbed from the gas.

RESIDUES

Ashes from the process will be recycled if a suitable outlet is available or disposed of at an appropriately licensed landfill.

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Anaerobic digestion

The anaerobic digestion process will use micro-organisms to process food waste in an enclosed system.

The food waste will go through a pre-treatment process to remove items unsuitable for the process and shred it into pieces of a similar size.

Water will be added and the mixture will pass through a series of tanks.

The food waste will be broken down by micro-organisms in the absence of oxygen to produce:

- Biogas, a methane rich gas, which will be converted into electricity in a gas engine and generator.
- Digestate; excess water will be removed from this to create a compost like material that can be used on land to replace artificial fertilisers.



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Bulky waste and recycling

Some of the recyclable materials collected from homes and community recycling centres in northern Surrey will be brought to the Eco Park's bulking facility:

- Inside the facility will be a series of bays for different materials – such as paper, glass, wood and metal.
- The recyclables will be tipped into the appropriate bay and stored here for a short time.
- They will then be bulked into larger loads and taken to specialist processing facilities.

The existing community recycling centre will be improved with two new buildings:

- A reuse centre, where residents can bring items that could be refurbished and reused – such as furniture, sports equipment and electrical items.
- An office with facilities for site staff.



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Regulating the Eco Park

Like all thermal treatment facilities within Europe, the gasification and anaerobic digestion processing facilities at the Eco Park will have to comply with emissions standards set by European Union directives for the protection of health and the environment.

Specific limits for emissions from the Eco Park are set out in its environmental permit and in certain instances these are more stringent than required by the European Union, to account for current air quality levels in Spelthorne.

Emissions from the Eco Park's gasification facility will be monitored and the data reviewed by the Environment Agency to ensure that it complies with the environmental permit.



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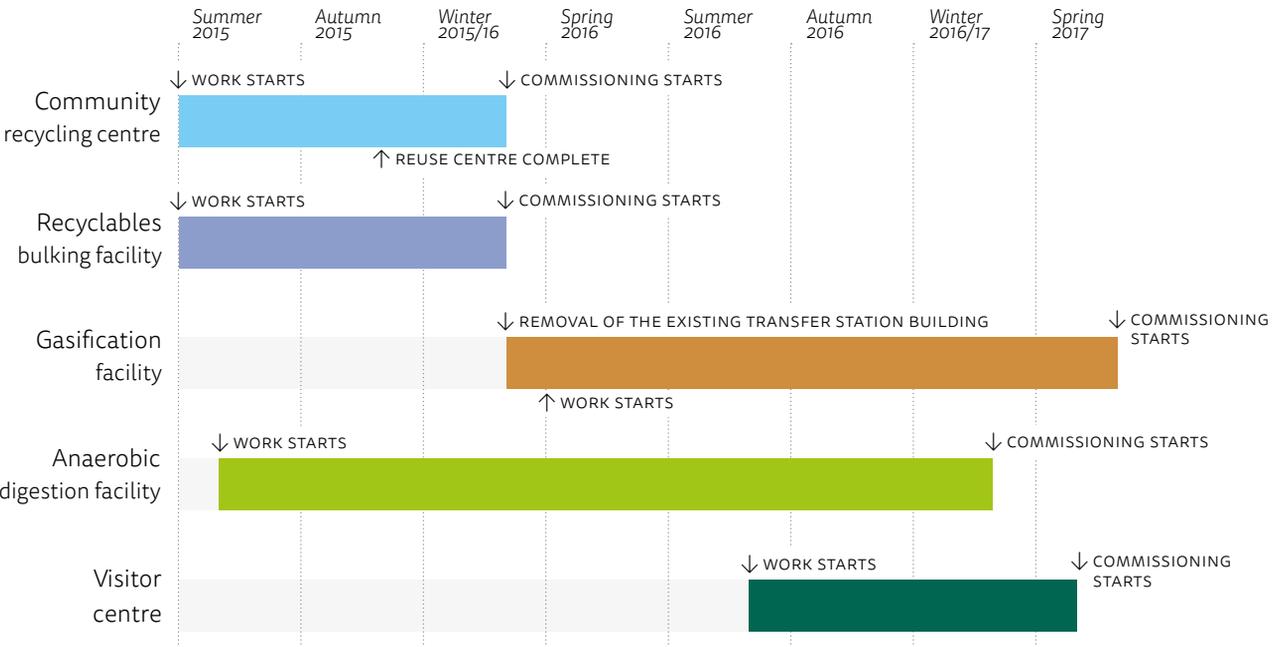


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Building the Eco Park

Building work is underway and expected to take around two years.

As each facility is completed, it will go through commissioning to ensure it is working safely and efficiently. Once this process is complete, the contractors will hand over the facility to SITA Surrey to begin operating it.



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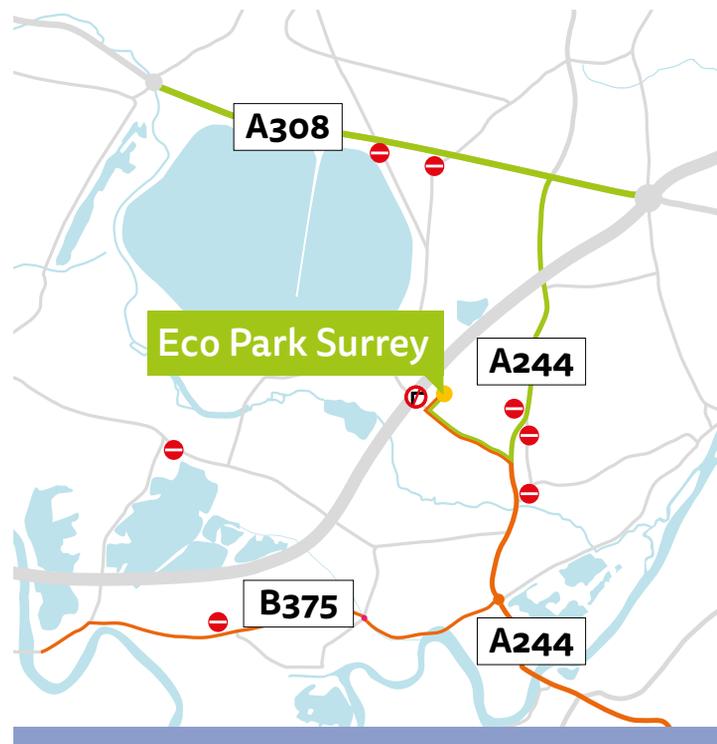
Local community information

Building work will take place between 7.30am and 5.30pm on weekdays. Some Saturday working will be needed and this will be between 7.30am and 1.30pm.

Construction traffic should travel to and from the site using the A244 Upper Halliford bypass and should not travel through Charlton village.

The community recycling centre will remain open during the works, but parts of the facility will be unavailable when the reuse centre and recycling centre office building are being built, and when building work is taking place adjacent to the recycling centre. This means we will need to change the layout of the containers and waiting times may be affected.

To minimise disruption to your visit, extra staff will be on hand to advise you of any changes to the layout of the containers. We are also extending the opening time to 6pm Monday to Saturday.



APPROVED ROUTES FOR ENTRY AND EXIT

-  HGV route from the north
-  HGV route from the south
-  No right turn out of the site
-  No entry to HGVs except RCV access to properties



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Keeping in touch

For the latest information on the Eco Park and to sign up for electronic updates, visit www.ecoparksurrey.uk

Residents with any queries about the building works can email enquiries@ecoparksurrey.uk or call [01932 766 905](tel:01932766905).



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