Treating South West Devon's Residual Waste

MVV has been awarded preferred bidder status by the South West Devon Waste Partnership (SWDWP) to manage the residual waste from Plymouth, Devon and Torbay. This is the waste from homes and businesses after various materials have been removed for recycling or composting which would otherwise go to landfill.

MVV is proposing to develop an Energy from Waste plant at a site in **North Yard, Devonport,** which is in the Weston Mill area of the Naval Base bordering Blackies Wood. The plant would treat 245,000 tonnes of residual waste a year and generate electricity and heat which will be used in the Dockyard.

All waste handling activities would be carried out inside a purpose-built structure. This will control noise, odour and dust.

MVV will be submitting a planning application to Plymouth City Council in the spring. This will be accompanied by a full Environmental Impact Assessment, and both sets of documents will be publicly available.

This exhibition is part of the pre-application consultation. It sets out our proposals and summarises the likely impact the development will have on its immediate surroundings as well as the environment.

We welcome your views and any comments and questions you may have.

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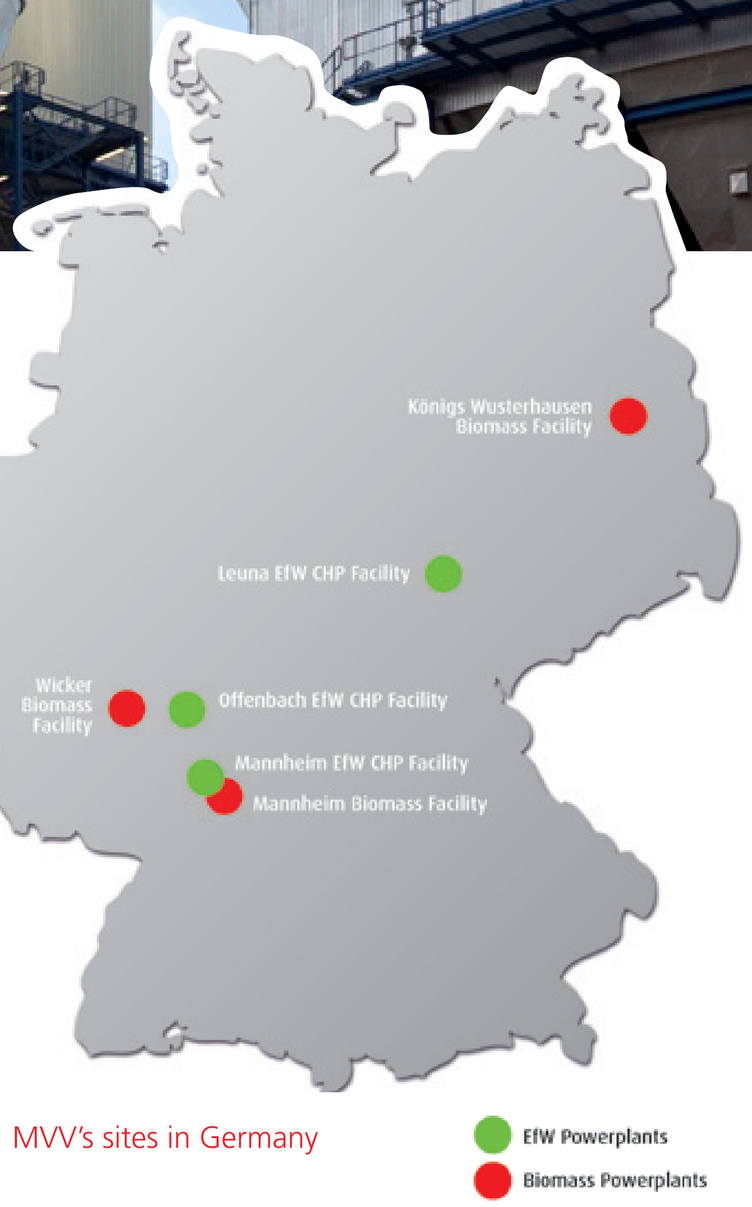
MVV - Who we are



MVV's sites in Germany

MVV Environment Devonport Ltd is a subsidiary of the German company MVV Umwelt, and both are members of the German utility company MVV Energie whose headquarters are in Mannheim.

MVV Energie employs more than 6,000 staff and has an annual turnover of €3.4 billion. The company is listed at the Frankfurt Stock Exchange, and the majority shareholder is the City of Mannheim.

MVV Umwelt has over 45 years' experience in building and operating waste management plants in Germany and is one of the top three companies in Germany in its field.

MVV Umwelt provides flexible solutions for waste disposal, producing environmentally sustainable energy. In Germany MVV operates six Energy from Waste and Biomass plants, managing 1.6 million tonnes of waste and waste wood a year.

The company is currently working with 22 local authorities in five federal states, to manage and dispose of the waste of more than 4.4 million people across the country.

MVV therefore brings a wealth of first-hand experience of operating high efficiency EfW facilities to the UK. Here, it has operated for the last three years through MVV Environment which has been set up to support all of MVV's local activities. It employs staff with wide experience in the UK waste management industry.

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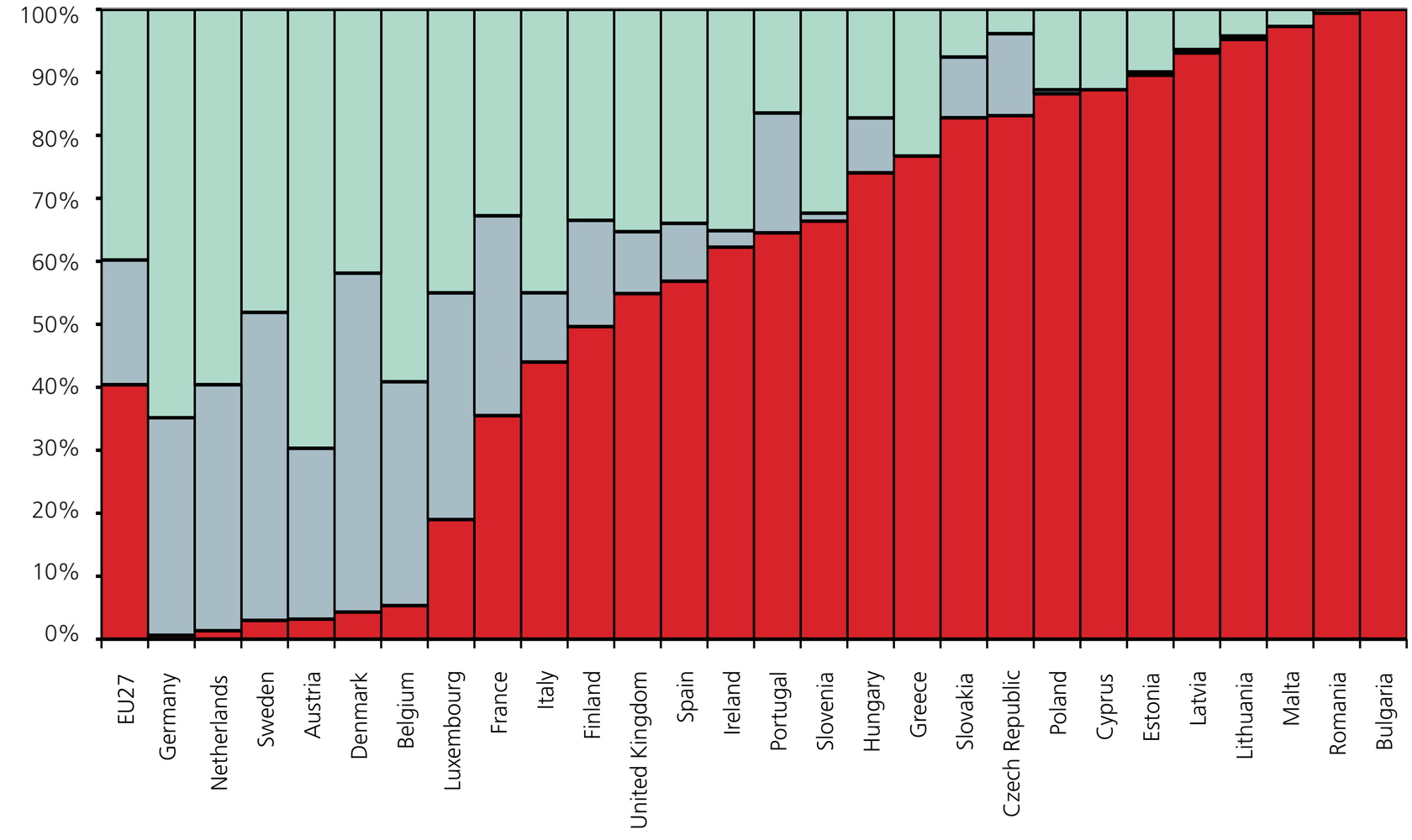
Why Energy from Waste?



Recycled / Composted
Energy from Waste
Landfilled

Treatment of household waste in the EU 27 in 2008

Source; Eurostat – provides EU statistical data

Waste that cannot be recycled is currently sent to landfill; this is not sustainable.

The United Kingdom has to find alternative waste disposal methods to landfill which produces greenhouse gases that contribute to global warming and liquid waste which could pollute water supplies. We must find a more environmentally beneficial way to dispose of this residual waste.

The move towards alternative waste treatment processes is being driven by the European Union Landfill Directive and Climate Change Policy. Councils which fail to meet stringent new targets will face financial penalties for waste which is landfilled.

Energy from Waste provides the best solution because:

- It is a modern, well proven and safe way of making good use of waste left over after recycling, which would otherwise go to landfill.
- Power and heat can be recovered from the waste and supplied to local clients, turning a waste product into a valuable resource.
- Nearly 400 Energy from Waste plants in Europe supply 12 million people with electricity and 11 million people with heat.
- It saves the burning of fossil fuels and the production of millions of tonnes of CO2.
- As experience both in the UK and abroad demonstrates, EfW complements recycling; it is not a substitute for it and is not intended to divert waste from recycling. In fact, both EfW and increased recycling will divert waste from unsustainable landfill.
- Countries in Europe with the highest recycling rates also use Energy from Waste extensively to make use of residual waste.

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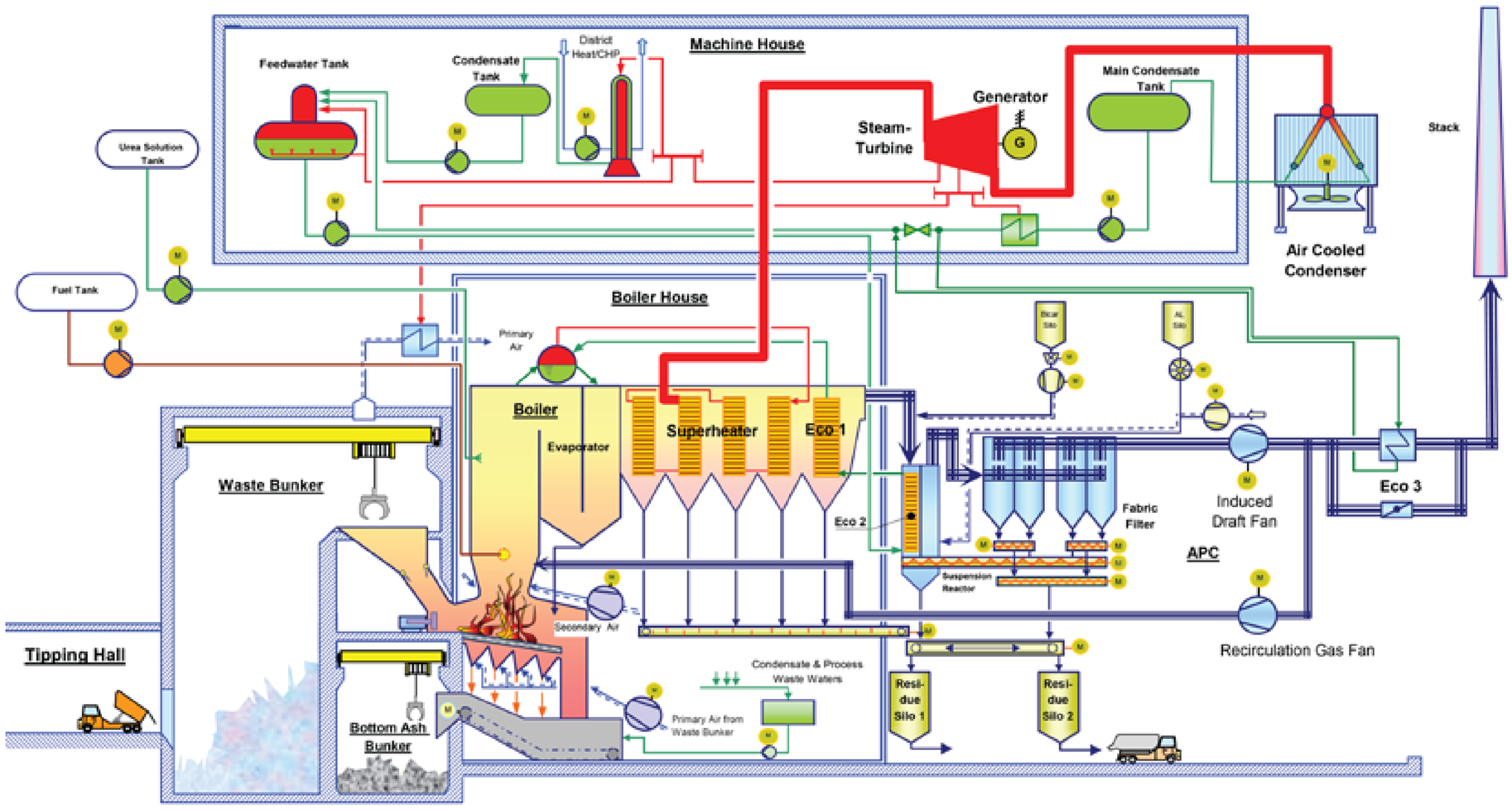
An Energy from Waste plant for South West Devon



A typical Energy from Waste process

Main features of the proposal:

- A high efficiency Energy from Waste plant, with enough capacity to treat 245,000 tonnes a year of SWDWP's residual waste and local Commercial and Industrial (C&I) waste (after recycling has taken place)
- The project will divert between 97 and 100 per cent of the Partnership area's residual waste that currently goes to landfill
- Around 70 percent of the waste will be household waste, the rest will be C&I waste
- MVV will not incinerate radioactive material within the plant and this is specified in the contract with SWDWP.
- The plant will generate up to 22.5 MW of electricity and up to 23.3 MW of heat, which will be used to heat the Dockyard and Naval Base, plus potentially in the future houses and offices in Plymouth
- The net efficiency of the plant will average 39 per cent, reaching a maximum of 49 per cent – compared with around 23 per cent for an EfW plant without Combined Heat and Power (CHP)
- The generation capacity is equivalent to the demand of electricity of more than 37,000 households and the heat demand of around 1,200 households.
- There will be dedicated vehicle access to the site, which will be outside the controlled Dockyard area
- The plant area will include public facilities, such as a community area for which MVV welcomes views on its use
- There is potential for community use of Blackies Wood
- Up to 300 jobs will be generated during construction as well as 33 permanent jobs during operation, with a further 70 indirect jobs, such as in contracted plant maintenance
- MVV will invest €250 million in the project

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Why we have chosen North Yard, Devonport

Aerial photograph of North Yard, Devonport showing the site where the EfW plant would be situated.

MVV is proposing to develop an Energy from Waste plant to meet South West Devon's need for a facility to treat its residual waste. The site we have chosen is in North Yard, Devonport, in the Weston Mill area of the Naval Base bordering Blackies Wood.

MVV believes North Yard, Devonport offers significant advantages as a waste management site because:

- An Energy from Waste plant in the Dockyard would provide much cheaper heat and electricity for HM Naval Base Devonport, which form a major part of its running costs.
- Heat could also potentially be provided to local businesses, and/or district heating for central Plymouth, pending a decision by Plymouth City Council.
- It is previously developed land and fits into the industrial setting of the Naval Base. It also has good access through Wolseley Road (A3064) and Weston Mill Drive (A3064) from the A38 and does not conflict with spatial planning objectives for the site.
- The site meets the criteria for other waste treatment locations set out in Plymouth City Council's Waste Development Plan and is consistent with relevant waste planning policies and objectives.
- The site has also been identified by MOD as an area with potential for future development.

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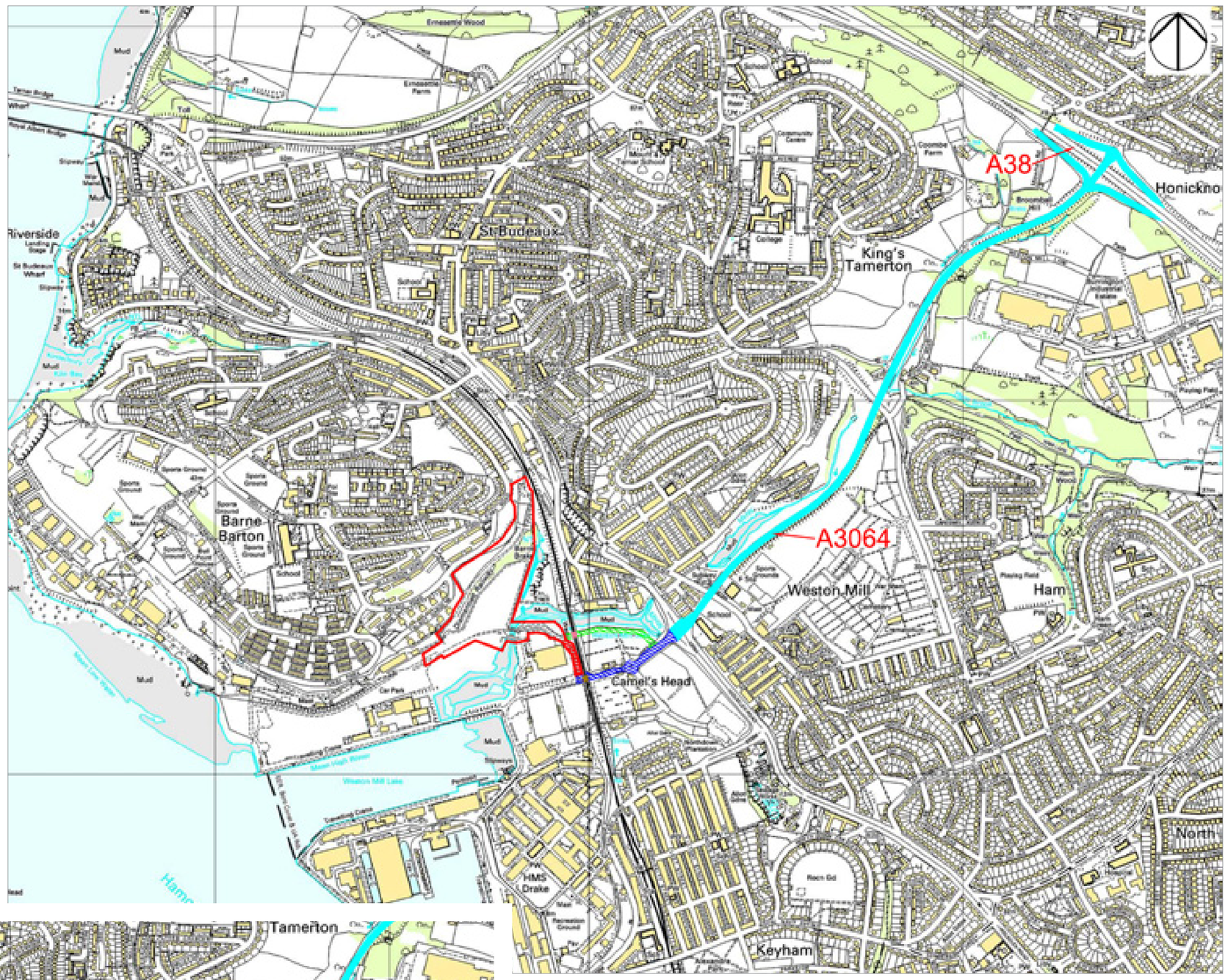
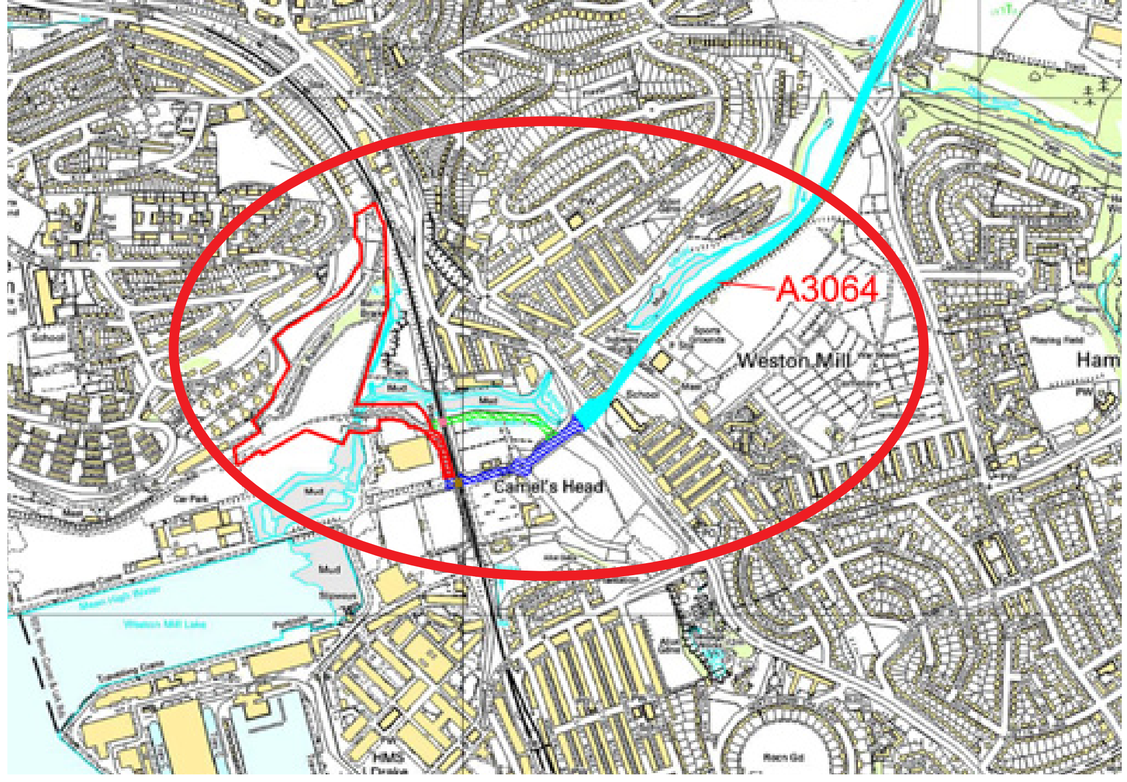
Where the plant would be sited



Location plan showing traffic routes into the site



Landscape drawing of the site

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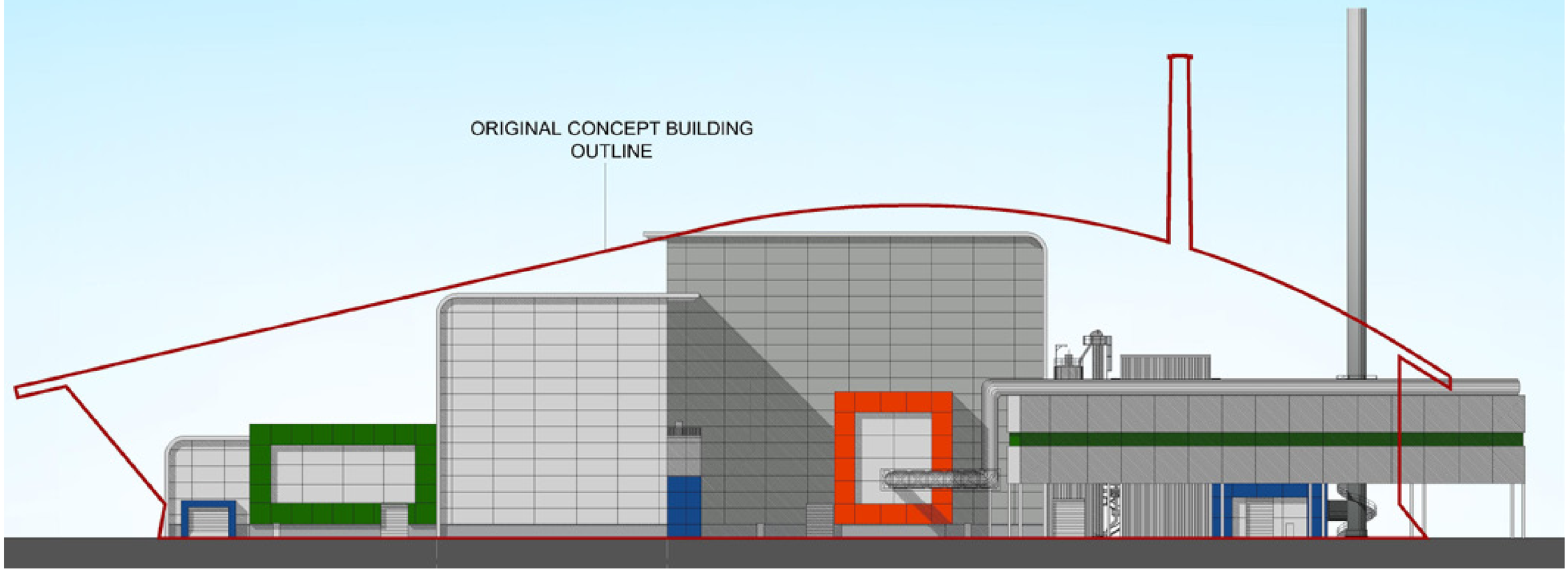
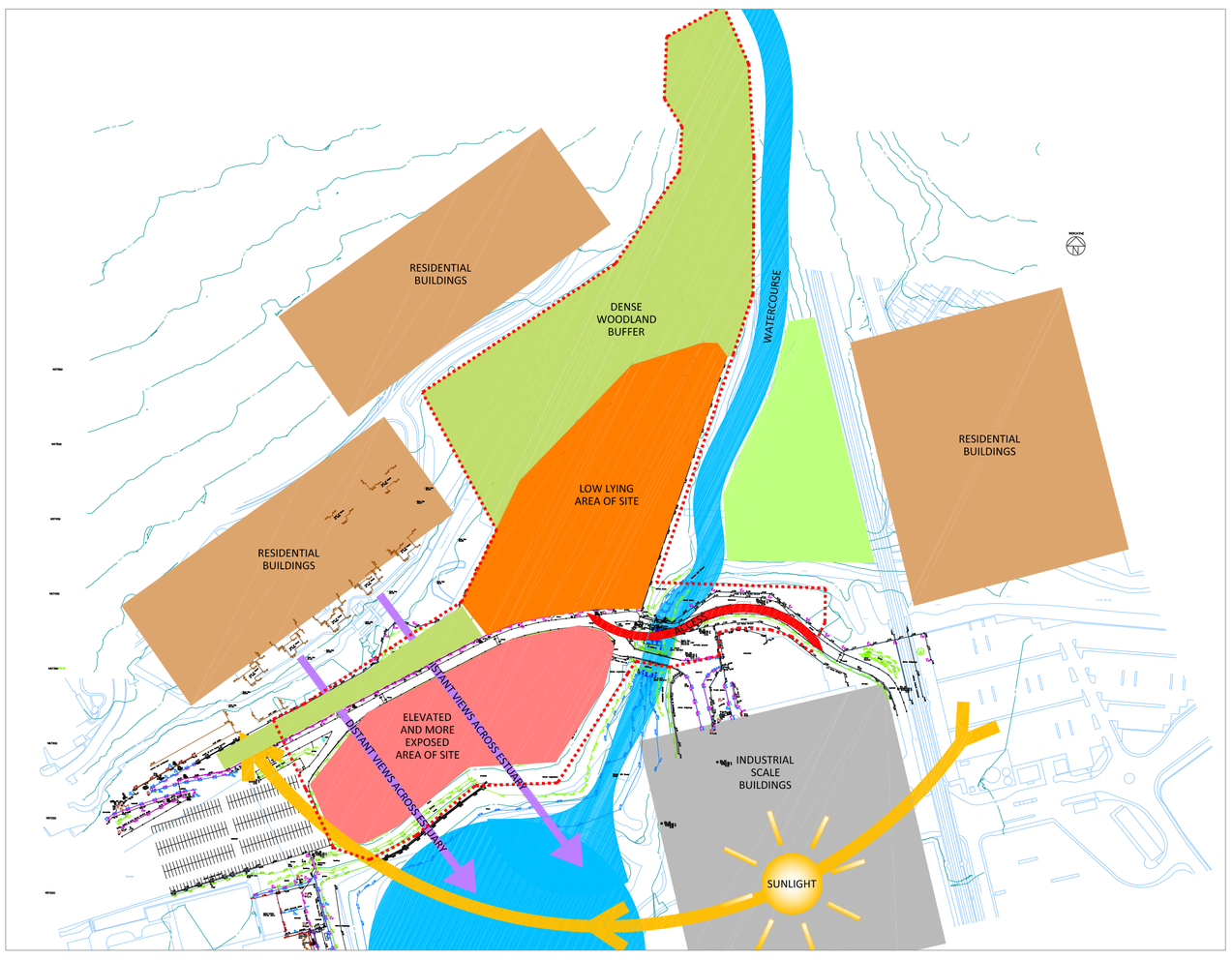
Evolution of the design

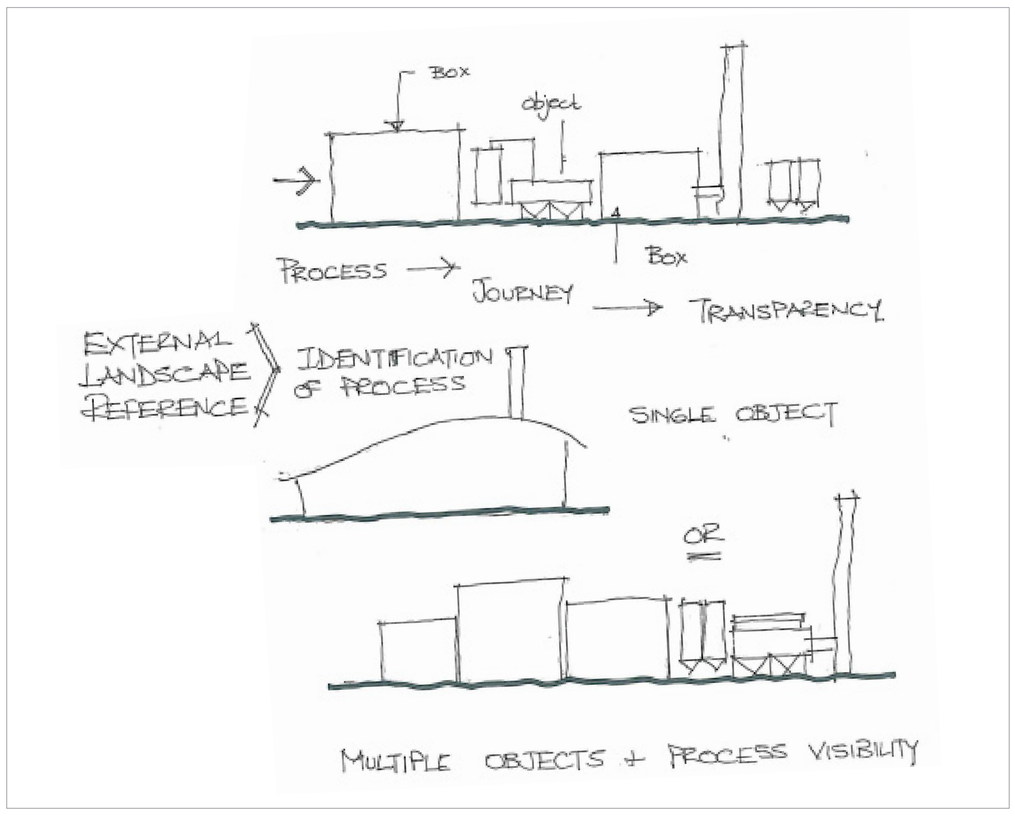


Elevation comparison
of old and new design

The preliminary design of the building was considered during the tender process which started in late 2008. Initially MVV considered a larger building which enveloped the internal process equipment.



Site analysis plan to evaluate best design



Early sketch to illustrate key elements of EfW plant.

Following consultation in 2010 and in order to reduce the volume of the building, it was decided to adopt a design where the building outline followed the shape of the equipment more precisely. The sketches above show how the design has evolved to the proposed design.

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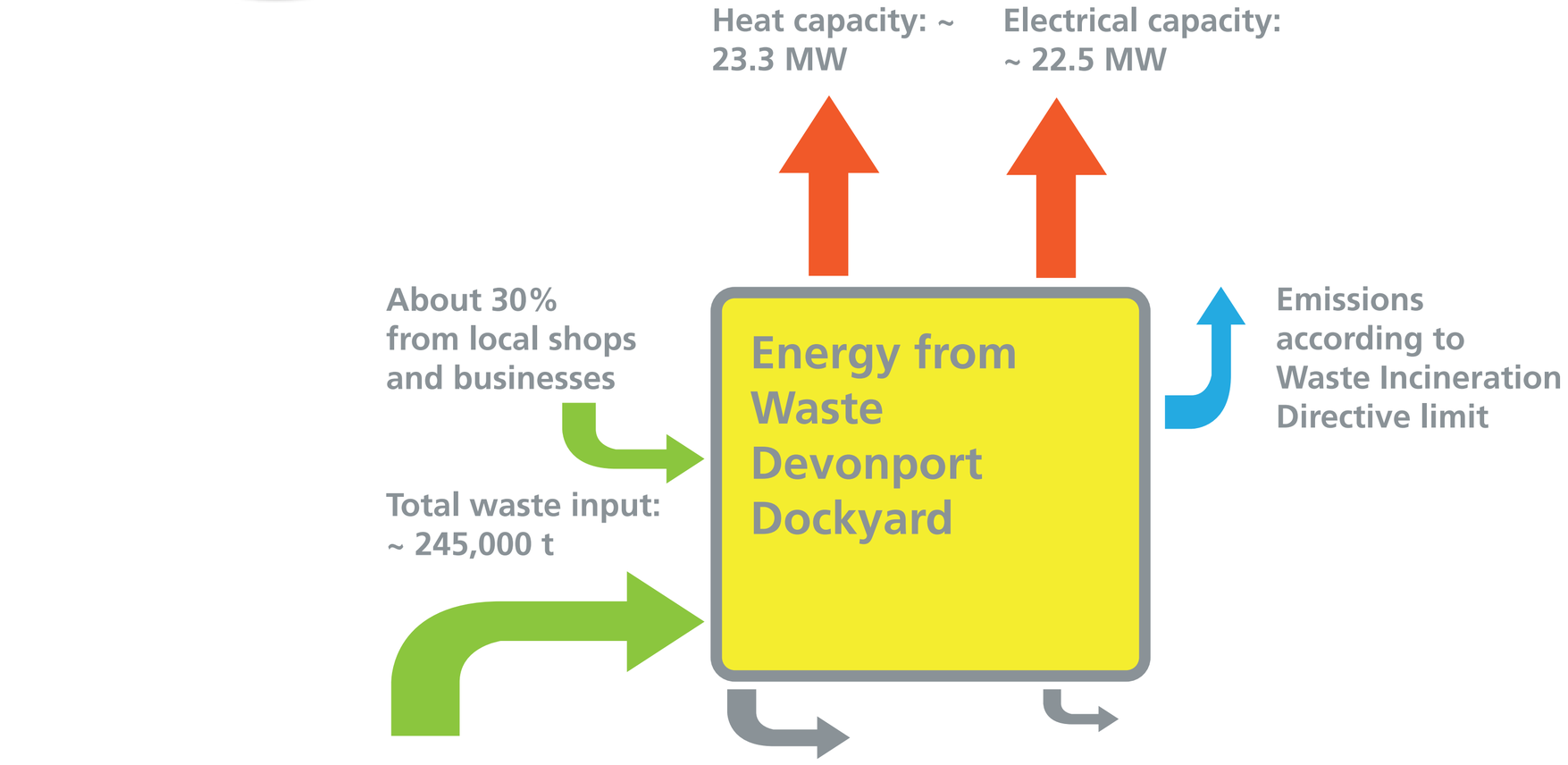
The Energy from Waste process in North Yard



Flow diagram of EfW plant showing main inputs and outputs

Schematic of the EfW process

The waste is deposited in the tipping hall inside the building and then moved by mechanical grabs to the combustion chamber where it is burned at high temperature.

The hot gases produced are fed through a water tube boiler, producing superheated steam to drive a turbine, which in turn produces electricity. In MVV's proposals, the steam will also be used to provide local heat to the Naval Base.

Air Pollution Control (APC)

The hot gases from the incineration process are treated in a highly efficient, multi-stage cleaning process. The residues from this process will be taken in sealed containers to a separate treatment plant in the north of England where they will be solidified and placed in a specially constructed sealed landfill. This will be strictly monitored by the Environment Agency.

The total amount of APC residues that would be landfilled each year would be about 5 per cent of the total waste going into the EfW plant, i.e. about 12,000 tonnes.

Incinerator Bottom Ash (IBA)

When waste is burned, bottom ash is left over. This is made up of things that do not burn such as rubble, glass and metals.

This ash will be sent off site for processing, when scrap metals can be recovered for recycling. The recycled ash can then be used as an aggregate substitute, for example in road-building. Alternatively, it can be used for quarry reclamation.

When the IBA is recycled, it amounts to about 23 per cent by weight of the waste delivered to the plant, ie about 57,000 tonnes per year.

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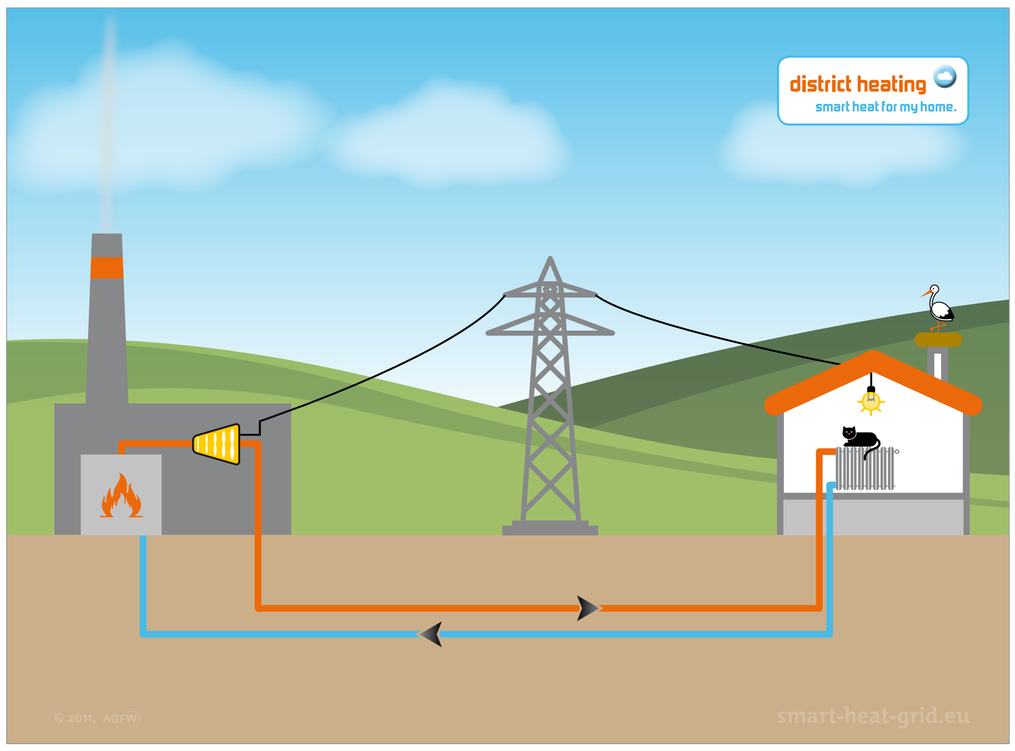
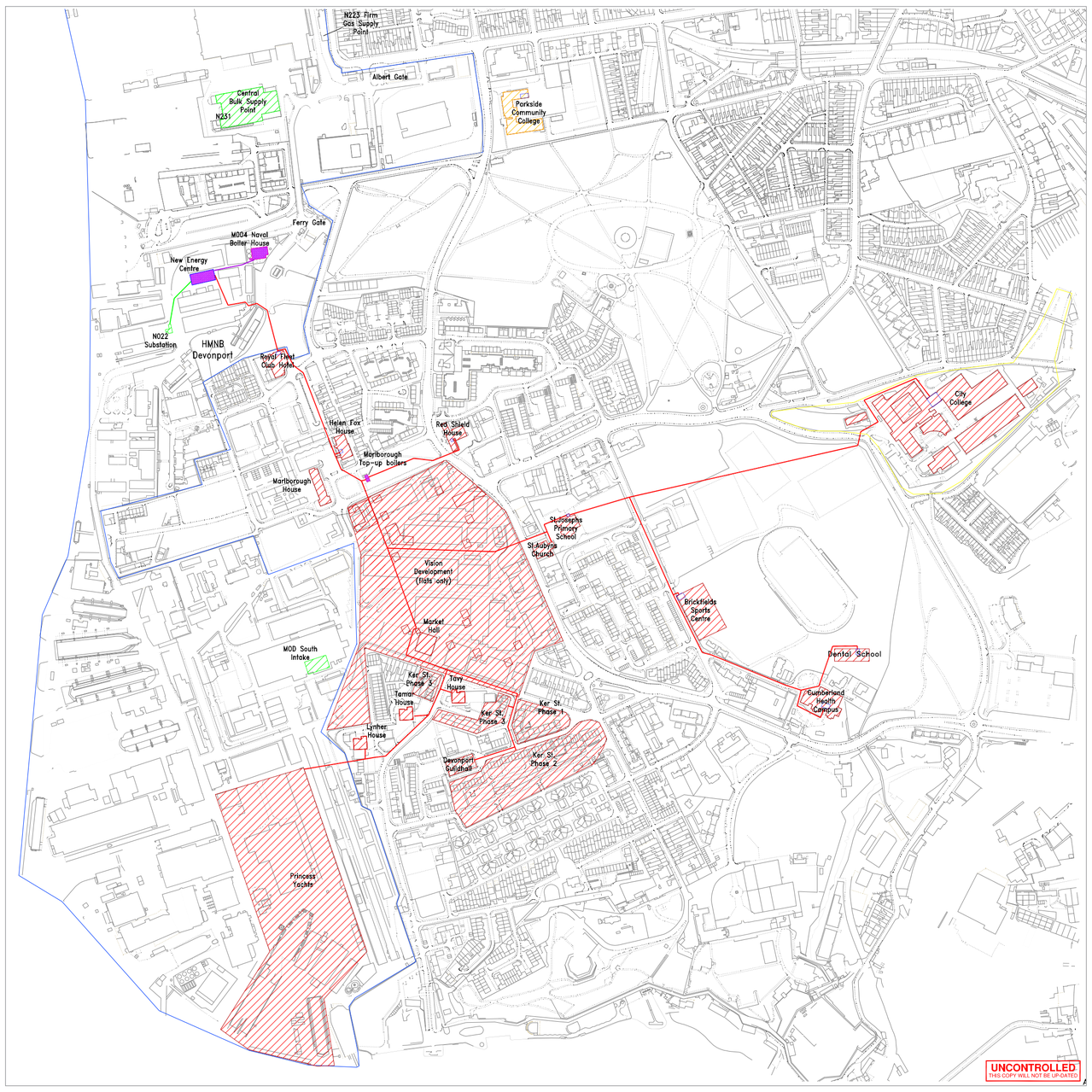
District Heating

MVV is one of Germany's leading owners and operators of District Heating systems

District heating involves laying specialised hot water pipes in the streets and connecting houses, blocks of flats and offices, and other large buildings to the system. These premises are then all heated from one external source such as an energy from waste plant. In Europe there are many examples of district heating and MVV is a leading operator in both Germany and the Czech Republic.





District Heating in Plymouth

There are few examples of district heating in the UK; Sheffield and Nottingham have systems which date from the 1990s and 1970s. Plymouth City Council has already embarked on a study of setting up a number of district heating systems in different part of the city, including the city centre and Devonport.

MVV is committed to working with the council to explore the potential for district heating in Plymouth. It is possible that in the future such a system could be built in a public-private partnership with some of the heat coming from the proposed Energy from Waste plant in North Yard.

This would further increase the sustainability of energy use in Plymouth.

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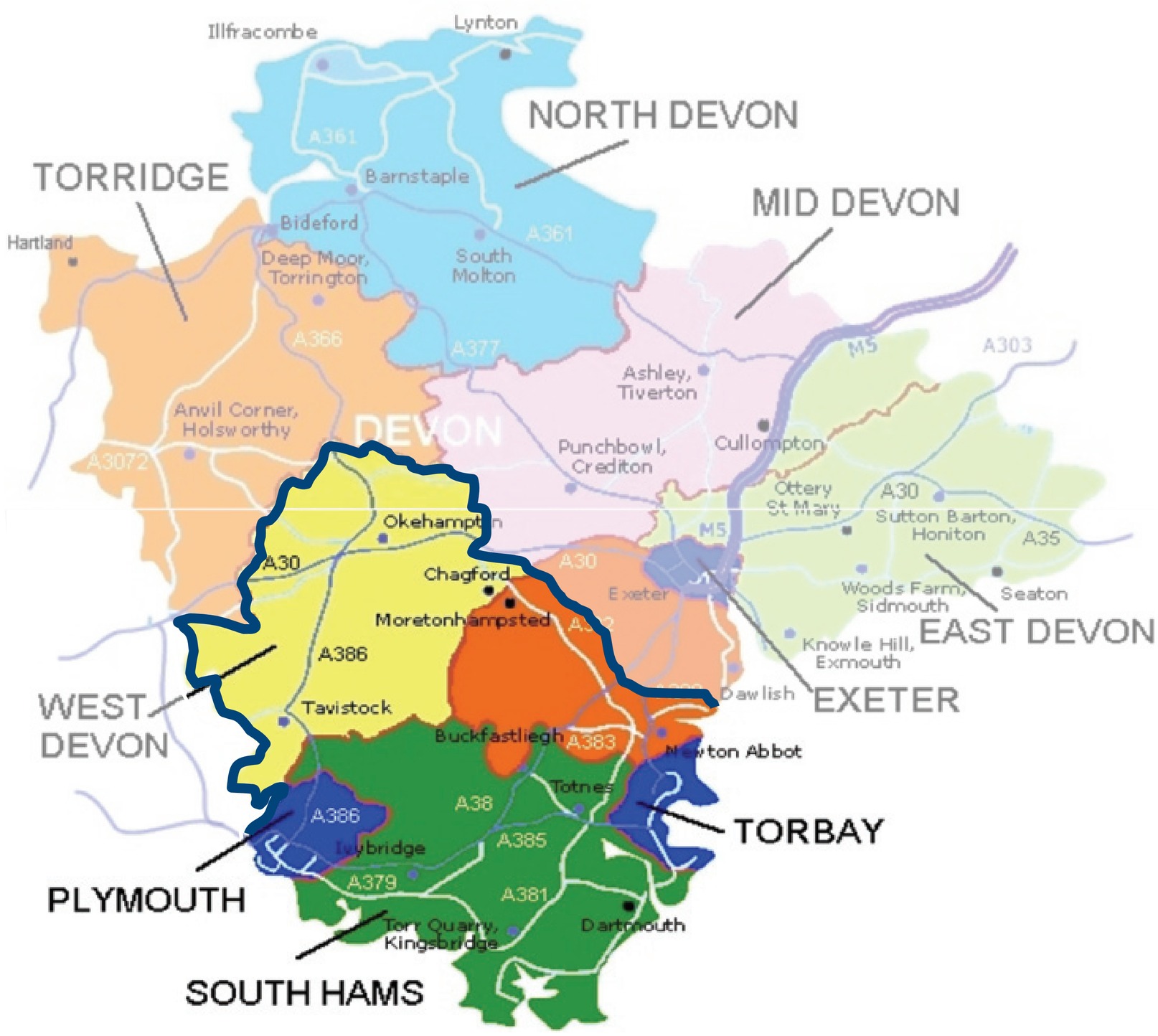
Where the waste comes from



Map of South West Devon Waste Partnership area

Waste will be delivered directly to the plant by refuse collection vehicles from Plymouth and part of South Hams District Council and in bulked up loads from West Devon District Council and Torbay Council.

There will be additional capacity for residual waste coming from shops, workshops and other businesses in the area.

This will enable MVV to ensure that the Energy from Waste plant provides a local solution to a local problem.

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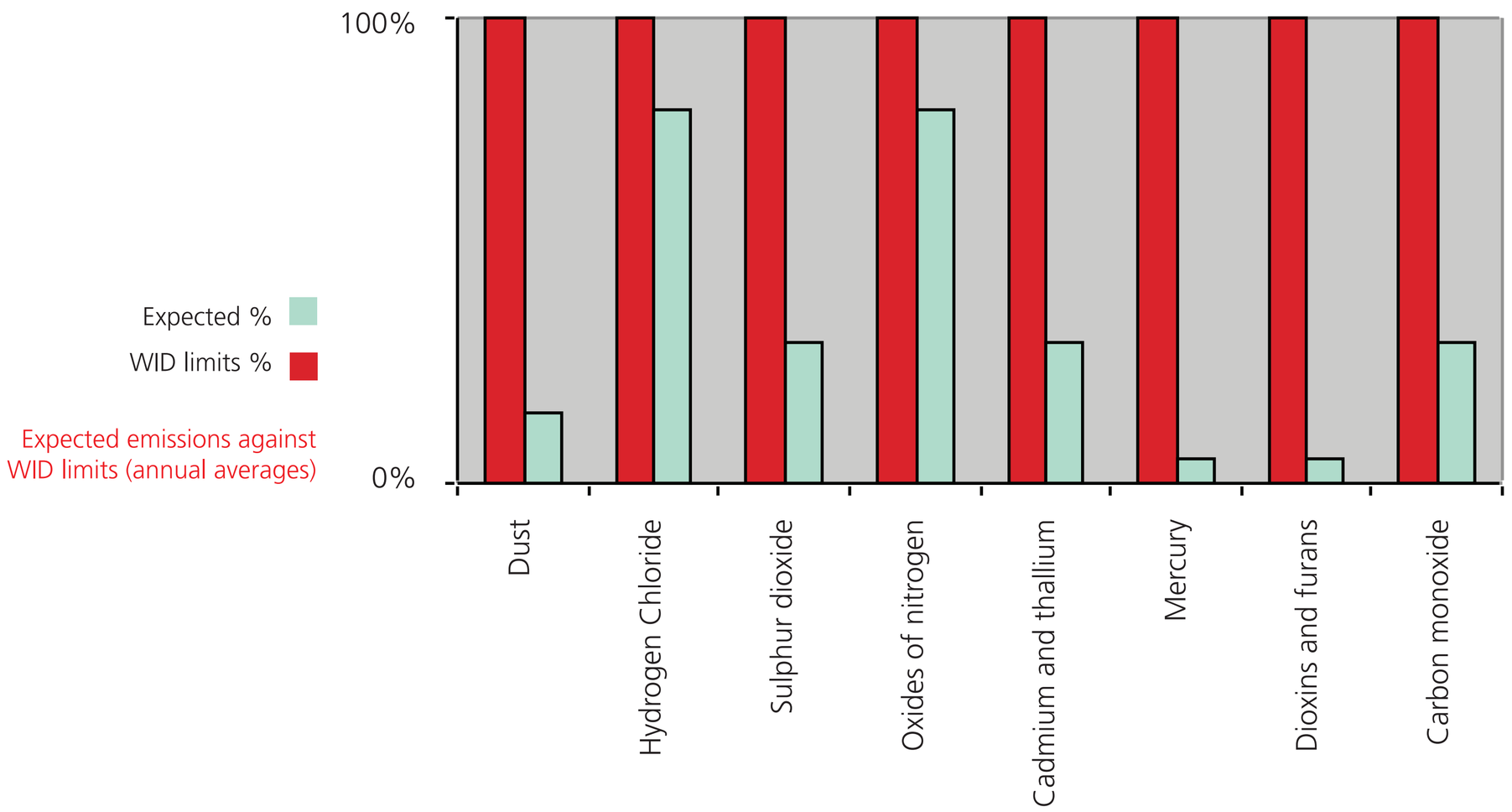
EfW and Health



Modern EfW facilities are strictly controlled and monitored by the Government watchdog, the Environment Agency, to ensure that there is no risk to public health from emissions.

Emissions generated through the combustion process go through a multi-stage clean-up process before being released to the atmosphere. The composition of the flue gas will be continually monitored and the results checked regularly by the Environment Agency, who will have to license the plant before it can be operated. The emissions will be lower than those imposed by the Waste Incineration Directive (see graph).

The disposal of the residues from the flue gas treatment will also be strictly controlled and monitored by the Environment Agency. MVV will publish emissions data weekly.

Health Protection Agency

European Union Directives aimed at minimising landfill are leading to an increased use of incineration, and research suggests that this will not cause any significant adverse health effects.

The Health Protection Agency has reviewed the latest scientific evidence on the health effects of modern municipal waste incinerators.

In September 2009, the Agency reported that any potential effect from modern, well run and regulated incinerators is likely to be so small that it would be undetectable ('The Impact on Health of Emissions to Air from Municipal Waste Incinerators. Health Protection Agency – RCE-13 - 2010')

Air pollution from incinerators makes up a fraction of one percent of the country's particulate emissions. Industry and traffic account for more than fifty per cent (Health Protection Agency, www.hpa.org.uk/NewsCentre/NationalPressReleases/2009PressReleases/090903Airpollution/).

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Visual impacts

The building will be 134 metres long, 30 metres wide to 82 metres at its widest point and from 15 metres high to 45 metres at its highest point.

The chimney will be 85 metres high. The stack height is determined following a series of complex calculations concerning dispersion of the air emissions from the facility. Further analysis is being carried out to finalise these parameters and full details will be included in the planning application.

The ground level of the site is 9 metres above sea level, and this would put the top of the stack at 94 metres above sea level, and the highest part of the building at 54 metres. Local high ground levels are around 60 metres above sea level.

The exterior of the facility has been carefully designed to fit with the existing industrial setting, and landscaping will be undertaken around the building to minimise the visual impact.

Environmental impact

A slow worm found at the site. Ecologists have carried out detailed surveys of the area

The Environmental Impact Assessment is a key part of the planning application. In 2010, MVV started to carry out various studies to make sure that any adverse impacts from the construction and operation of the Energy from Waste plant will be dealt with in a sound and responsible way.

MVV has employed experienced experts and scientists who are familiar with the area to carry out these studies. They cover a wide range of topics, under the headings opposite. Copies will be available for public inspection.

- Alternative technologies, sites and designs
- Ecology
- Landscape and visual
- Daylight, sunlight and overshadowing
- Cultural heritage
- Contamination - land and water quality
- Hydrology, hydrogeology and flood risk
- Traffic and transport
- Air quality
- Noise and vibration
- Construction waste

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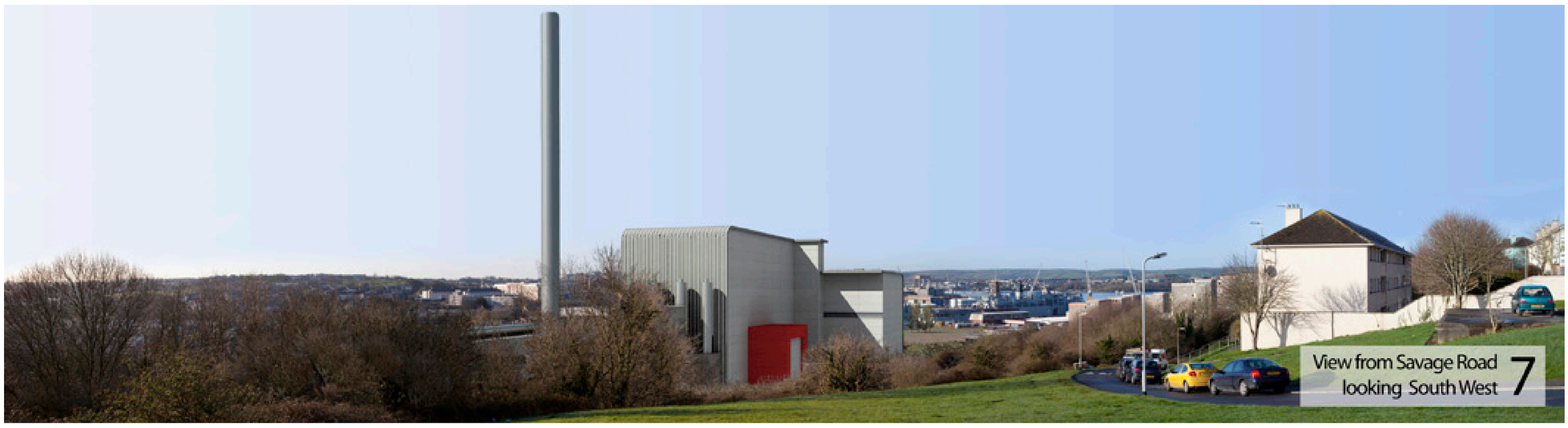
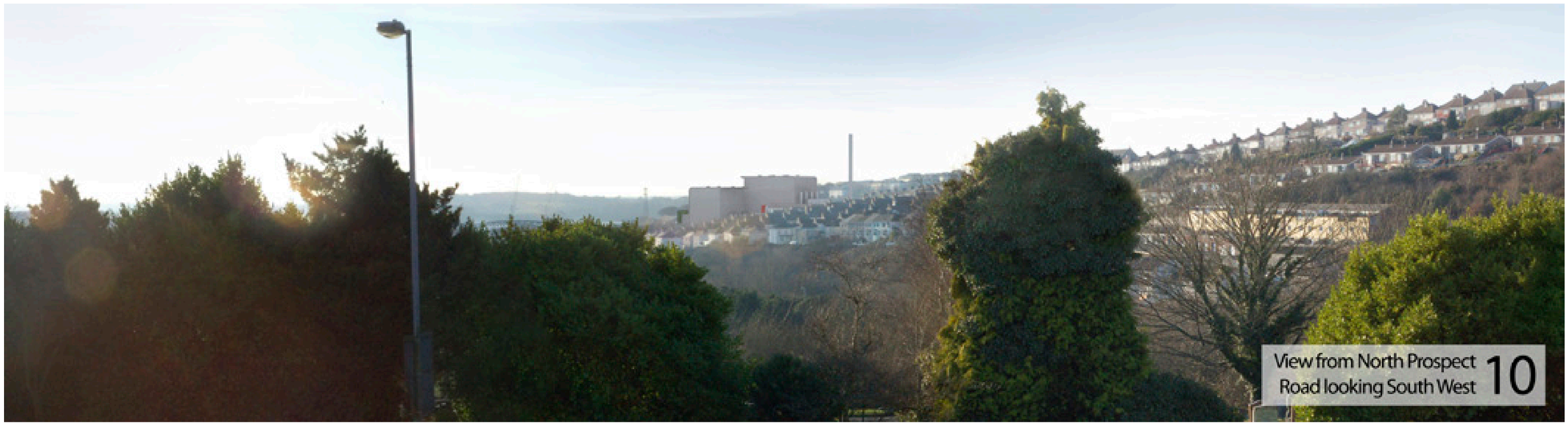
Photomontages





These photomontages show views of the plant from various key locations. They have been prepared using specialist techniques and software to ensure that the images are as accurate as possible. The viewpoints showing where the photomontages were taken can be seen on a separate map.

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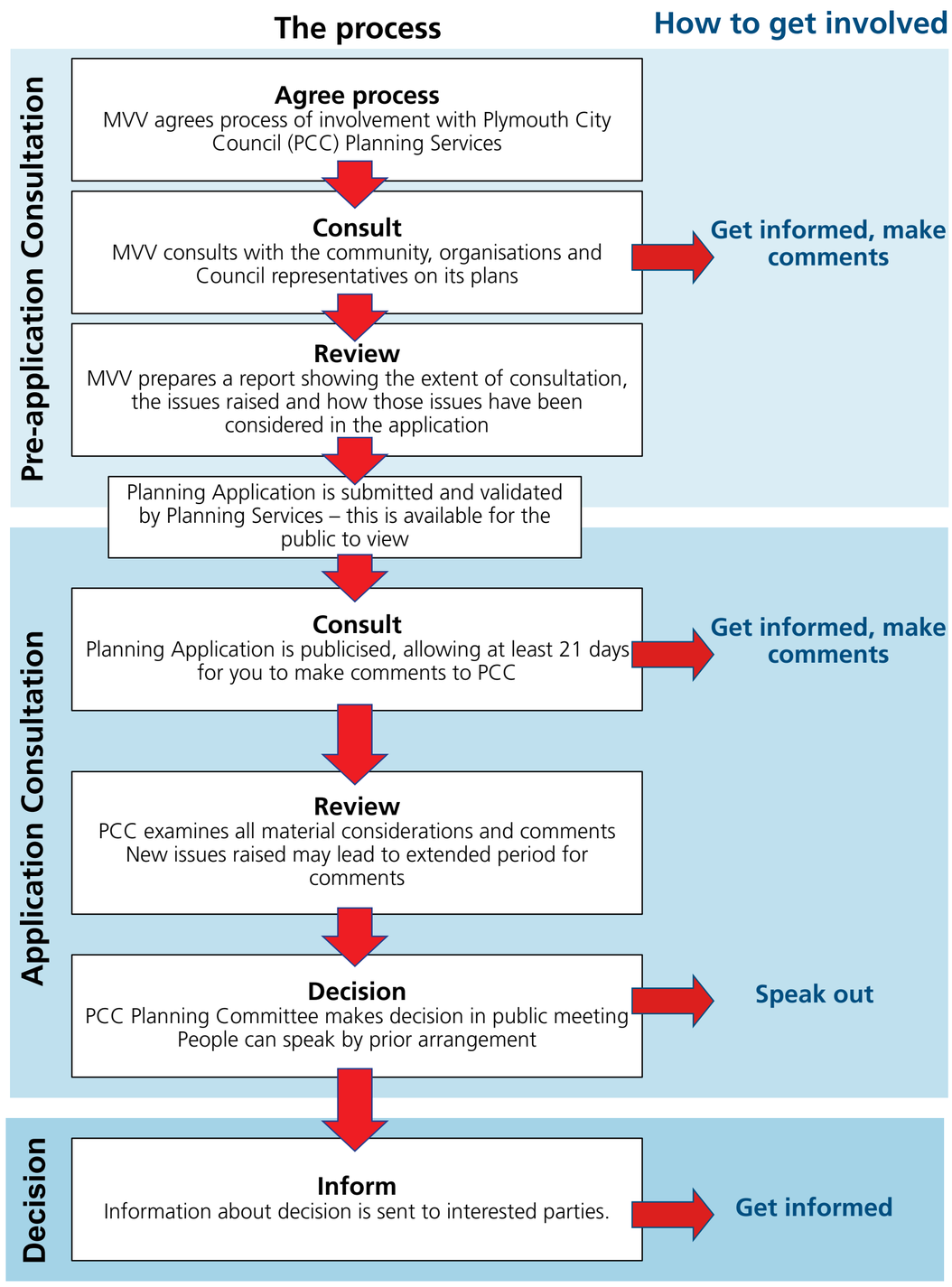
What happens next



Planning flow chart

MVV intends to submit a detailed planning application to Plymouth City Council in the Spring. This will be considered by the Council's Planning Committee, who are completely independent from SWDWP. As part of the application an Environmental Impact Assessment of the proposals has been prepared and a full Environmental Statement will accompany the application.

Local Liaison Committee

MVV is also setting up a Local Liaison Committee in association with the Partnership. The aim is to encourage discussion between representatives of the local community, MVV and the Partnership on issues relating to the design, construction and operation of the EfW facility.

MVV will also discuss with the local community what benefits could be provided as part of the scheme.

The LLC will contain a broad cross-section of representatives with a total membership of 20. These will be drawn from the local community with approximately 5 coming from MVV, the Waste Partnership and other bodies such as the Environment Agency.

If you are interested in joining the Local Liaison Committee please contact us.

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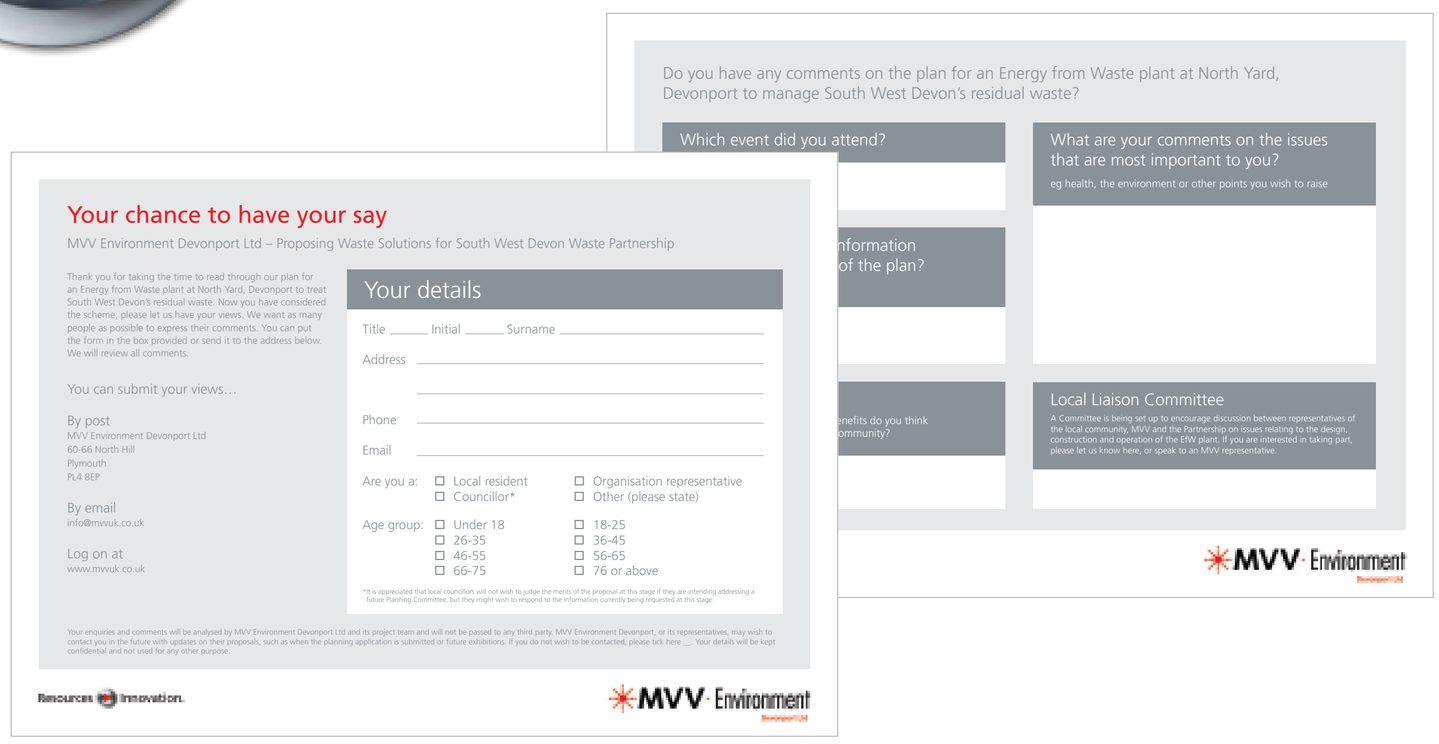
Previous and further consultation



Feedback from MVV's exhibitions in 2010

At the public exhibitions in 2010, most people did not support the site at Ernesettle. Views on North Yard were divided but there was some support for the site in preference to Ernesettle.

Main concerns raised about the North Yard site included the following:

- The site is too close to housing
- Emissions from the plant
- Traffic congestion from lorries

MVV addressed the concerns in the following way:

Proximity to housing

- MVV have now changed the design of the plant by turning it round so that it is further away from the closest housing in Barne Barton.
- MVV has moved the IBA recycling plant off the site.
- MVV has looked at the design of the building and the lighting of the site to reduce the impact on houses nearby.

Emissions

- EfW plants have to meet very strict limits on emissions. The plant will be designed to perform much better than the legal limits.
- MVV will also publish information weekly on emissions from the plant to ensure full transparency.

Traffic

- MVV has designed the plant so that traffic comes in on the side of the plant away from houses.
- MVV is also discussing a traffic plan so that lorries would avoid busy periods or school opening and closing hours.

What MVV would like your views on

Please give us your views on the plan for North Yard. Obviously, in such a major scheme there are restrictions to the extent of changes that MVV can make. However, MVV welcomes your views and would like to ask you for comments on:

- The landscaping and the appearance of building (colours, lighting, patterns, greenery, water, artwork)
- Tree-planting off the site
- Community benefits such as the use of the community area
- Use of Blackies Wood as a managed nature conservation area or playground for children
- Local employment opportunities, including apprenticeships, youth employment, internships
- What further information should MVV provide in order to give you more confidence in our plans?

Please use the feedback form to give us your comments. MVV will review all those comments and decide how to consider them in the future.

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Tell us what you think

We welcome questions and comments from local residents about our scheme. If you would like to comment you can let us know what you think by:

- Filling in the form provided.
- Email us at info@mvvuk.co.uk.
- Write to us: MVV Environment Devonport Ltd, 60-66 North Hill, Plymouth, Devon, PL4 8EP or
- Phone Harry Hudson on 0118 983 9455.

All comments will be reviewed by the project team. MVV will make a summary of all comments available as part of the planning application.

Copies of the exhibition boards will be available at www.mvvuk.co.uk with an online response form. The planning application will also be added to the website once submitted.

MVV also intends to open an office close to the site where these boards will be on display.

For further information on MVV Environment Devonport Ltd, please see www.mvvuk.co.uk. For further information on the South West Devon Waste Partnership, please see www.swdwp.co.uk.

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