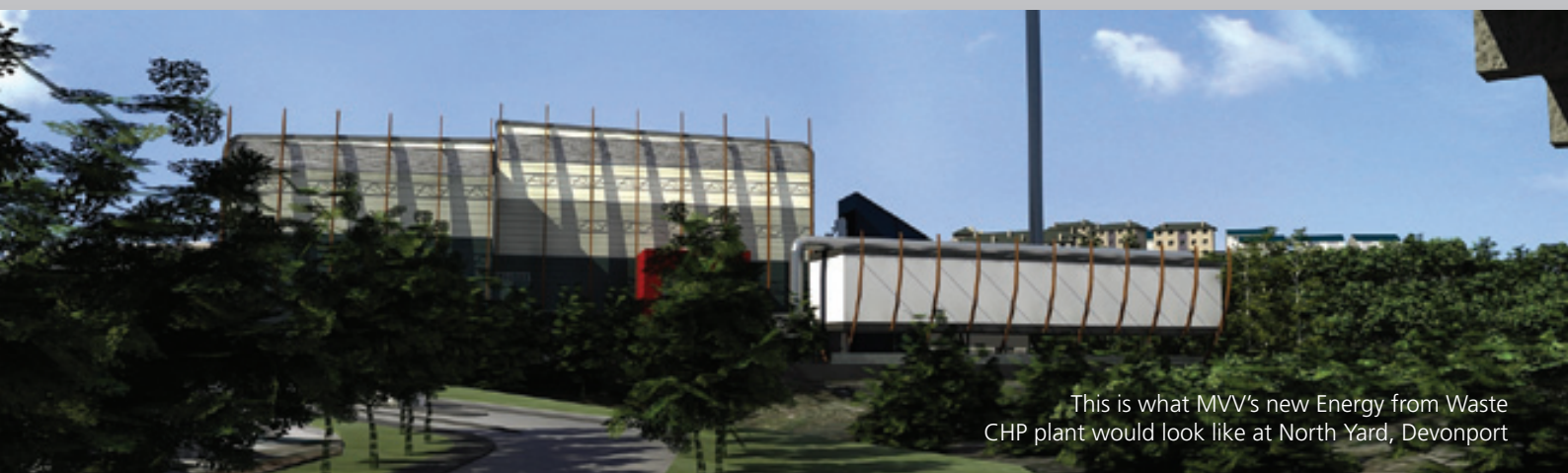




# MVV Devonport Update



This is what MVV's new Energy from Waste CHP plant would look like at North Yard, Devonport



## Dealing with South West Devon's waste

This leaflet tells you how **MVV Environment Devonport Ltd** is planning to deal with household rubbish produced in South West Devon over the next 25 years.

MVV has been chosen jointly by Plymouth, Devon and Torbay councils to deal with residual household rubbish in the area that is not recycled or turned into compost. This is what you put in your black bin bags.



**MVV's Office in Plymouth,  
Paul Carey, Uwe Zickert and  
Amanda Booth**

These councils have formed the South West Devon Waste Partnership or SWDWP for short. At the moment, this rubbish is buried in the ground, which causes serious harm to the world we live in and costs millions of pounds.

Instead of burying it, MVV will burn the rubbish and use the heat it produces to make electricity. This will supply power to the Devonport Naval Dockyard who will buy the energy. The heat will also make steam to heat the naval base. Most of the ash produced after burning rubbish can be recycled to make road building material. This means that the waste is put to the best possible use.

Making electricity and heat from burning rubbish is called Energy from Waste (or EfW) and MVV plans to build an EfW plant with combined heat and power at North Yard, Devonport, which is in the Weston Mill area of the Naval Base next to Blackies Wood.

To make sure local people get the best value for money for this service, SWDWP have agreed to share the one EfW CHP plant between the three councils.

The plant would burn around 245,000 tonnes of rubbish every year. Burning produces gases and these will be carefully treated by special filters, like catalytic converters on cars, to take out any harmful material before going up the chimney.

Before MVV can build the plant it must get permission from Plymouth City Council's Planning Department. MVV also needs permission from the Environment Agency, the government's environmental watchdog, before it can start operating the plant.

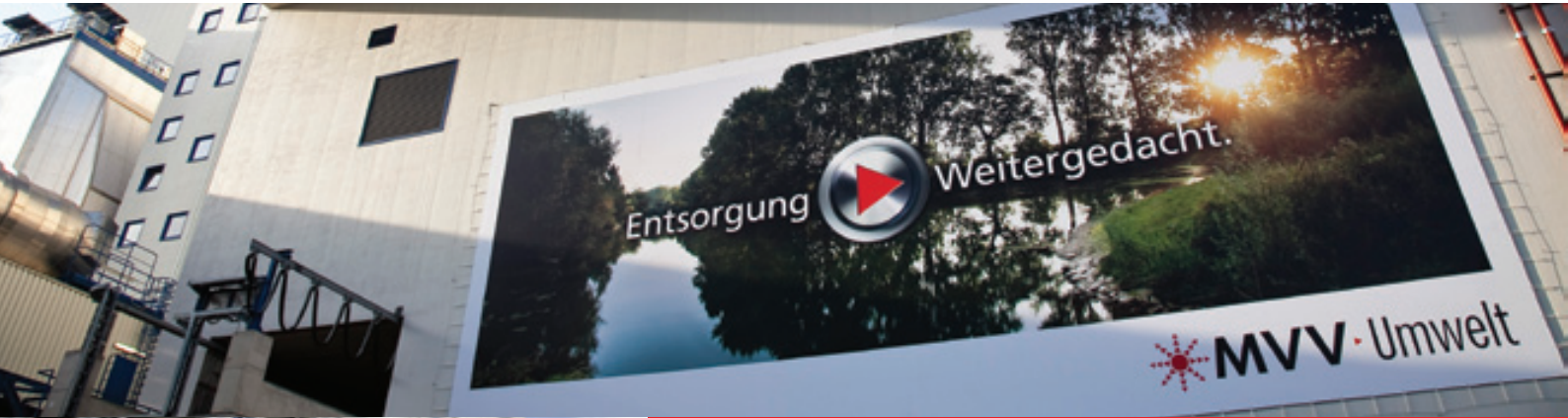
MVV has made a planning application to Plymouth City Council which sets out full details of the scheme. It has also prepared a report, called an Environmental Statement, which shows how the proposal may affect local people and wildlife.

You can look at the Environmental Statement and the planning application on Plymouth City Council's website, at the Council's offices or on MVV's website ([www.mvvuk.co.uk](http://www.mvvuk.co.uk)).

# Who are MVV?

- MVV Environment Devonport Ltd is part of a German waste management company called MVV Umwelt
- Both companies belong to a larger utility company called MVV Energie, which is based in Mannheim, Germany
- More than 6,000 people work for MVV Energie and the company turns over 3.4 billion Euros a year

- MVV Umwelt has run Energy from Waste plants for 45 years and currently deals with the waste produced by 4.4 million people in Germany
- MVV Umwelt runs three Energy from Waste plants in Germany as well as three biomass power plants, which create power using renewable energy sources like wood
- MVV Environment Ltd has been operating in the UK for the past three years and employs staff with wide experience in the UK waste management industry.



## There are a number of other ways of dealing with rubbish

- Mechanical biological treatment (MBT) attempts to separate out some materials to be recycled. The waste is dried which reduces the weight, or cooked with steam (autoclaving) to produce a "fibre". However, the waste which cannot be separated out has to be dealt with; typically it is buried or it can be burned as a fuel in energy from waste plants or coal power stations.
- Anaerobic digestion (AD) can be used for kitchen waste such as left-over food. It works like a compost heap with bacteria. It does not work well on MBT residues.
- Plasma gasification is a way of heating rubbish up so that it turns into gas and slag. This way of treating rubbish is still being developed and is very expensive.

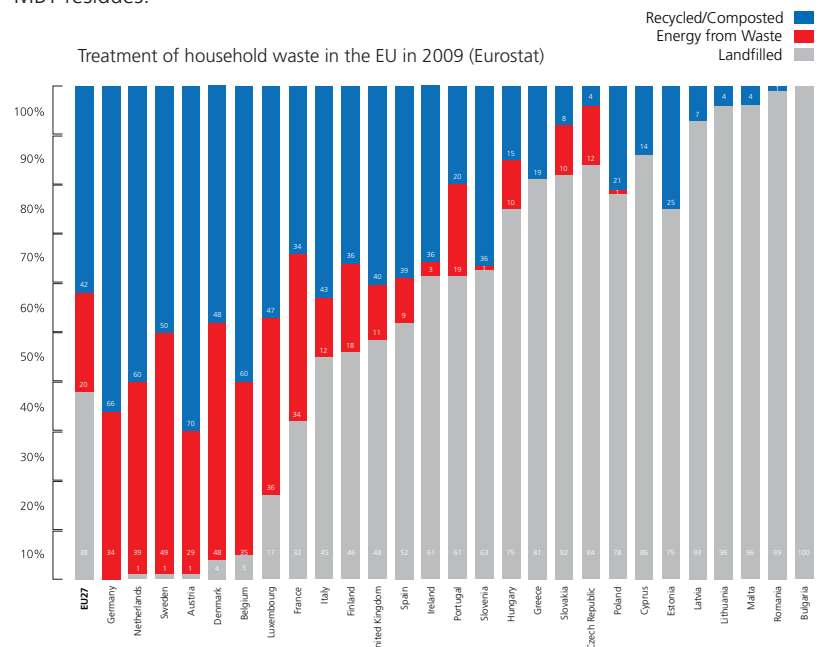
None of these ways of dealing with rubbish could cope with all the household rubbish remaining after recycling that SWDWP needs to get rid of. SWDWP decided that Energy from Waste is tried and tested and would be the best solution on grounds of value for money, low emissions and efficiency in dealing with waste.

### Hansjörg Roll and Michael Class, joint Managing Directors of MVV Umwelt

Energy from Waste has a long history in the UK and mainland Europe and is widely accepted as a sustainable way of treating residual waste. Since 2005, councils and businesses in Germany are no longer allowed to landfill their waste. Since then, around 66% of municipal waste is recycled or composted while the rest is burned in EfW plants to produce energy.

The UK also has to update and improve its waste management practices but large amounts of waste are still being sent to landfill. MVV will use its experience to help Plymouth, Devon and Torbay to take a big step towards a more environmentally friendly way of treating their waste.

Treatment of household waste in the EU in 2009 (Eurostat)





# How was MVV chosen?

The three councils involved in the SWDWP joined together in 2007 to find a way of getting rid of the rubbish which is not recycled or used again without having to bury it.

New Government and European laws are making it very expensive to bury rubbish. The amount that can be buried by councils will get smaller every year from now on. Councils will have to pay huge taxes, and possibly fines, for every tonne of rubbish that goes into the ground. The money to pay the fines will come from local tax payers.

Even after SWDWP has convinced local people to recycle a lot more than they are at the moment, there will still be around 200,000 tonnes of rubbish that would need to be disposed of every year from the local area by 2039.

Burying this rubbish is expensive but it is also harmful and bad for the environment because organic rubbish releases harmful gases and liquids as it rots.

So, to keep costs down and help the environment, SWDWP accepted MVV's proposal that burning the rubbish to produce power in an Energy from Waste CHP plant would be the best way to deal with waste that hasn't been recycled and cannot be used again.

The politicians in national Government also agree with this plan and will give SWDWP £177million over 25 years to help pay for the plant that MVV will initially pay for, then build and operate.

There are many companies that help councils get rid of their rubbish and a competition was held to help SWDWP decide which future waste treatment solution was most appropriate for the local area.

The companies trying to win the business had to convince SWDWP that they would give tax payers the best value for money without harming the local environment. SWDWP chose MVV because they met the requirements very well.

SWDWP has signed a contract with MVV to get rid of their black bag rubbish every year for the next 25 years, when it has built the EfW CHP plant.

To get rid of the rubbish, MVV wants to build its EfW CHP plant at North Yard in Devonport but it must first get permission from Plymouth City Council's planning committee.

MVV will only get permission if local councillors and planning officers are sure that the plant will not harm the local environment.

MVV wants to be a good neighbour and to listen to people's views. It has held a number of public exhibitions to show local people the plans and listen to any comments or concerns they might have.



MVV has also made changes to its original plans after listening to what local people have said. Another series of exhibitions to show people the final version of the plans will be held on the following dates:

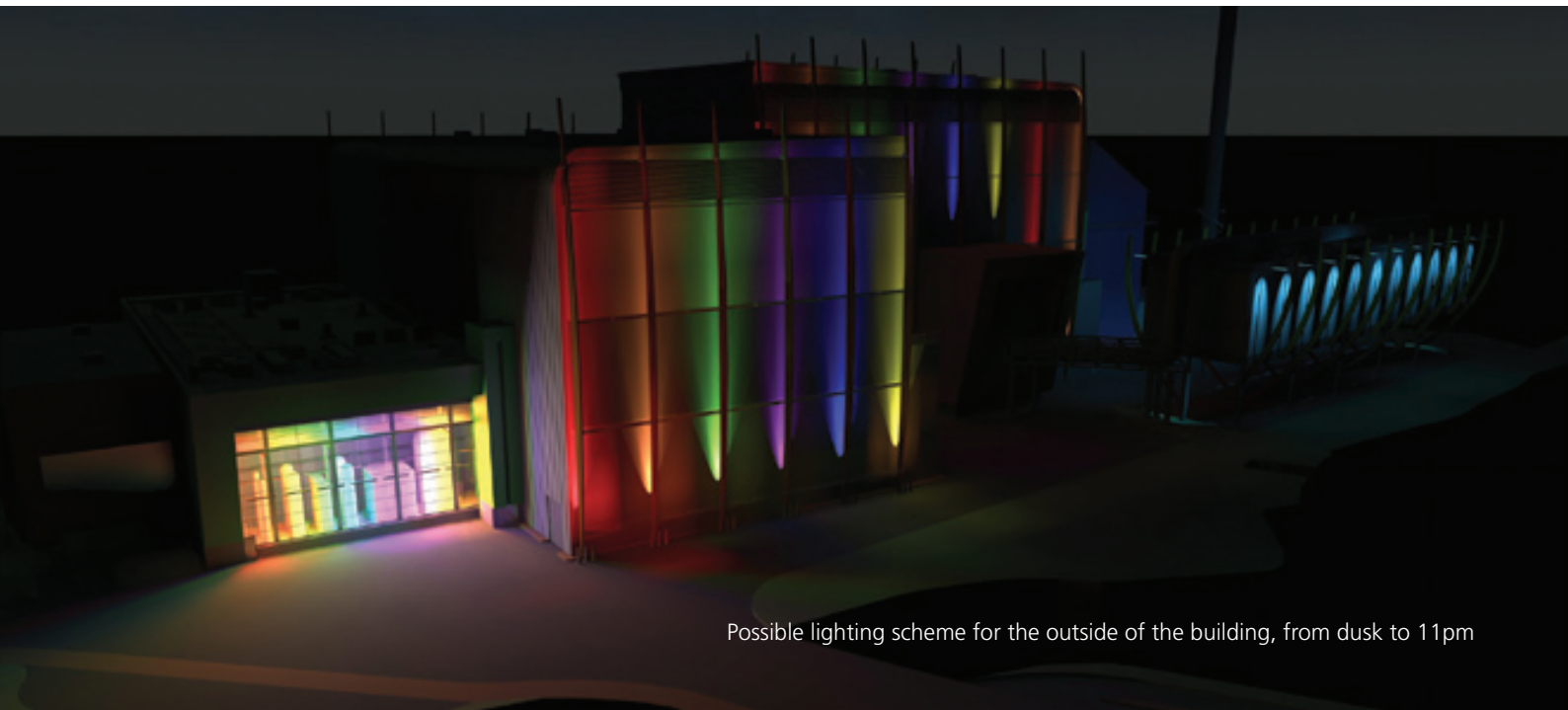
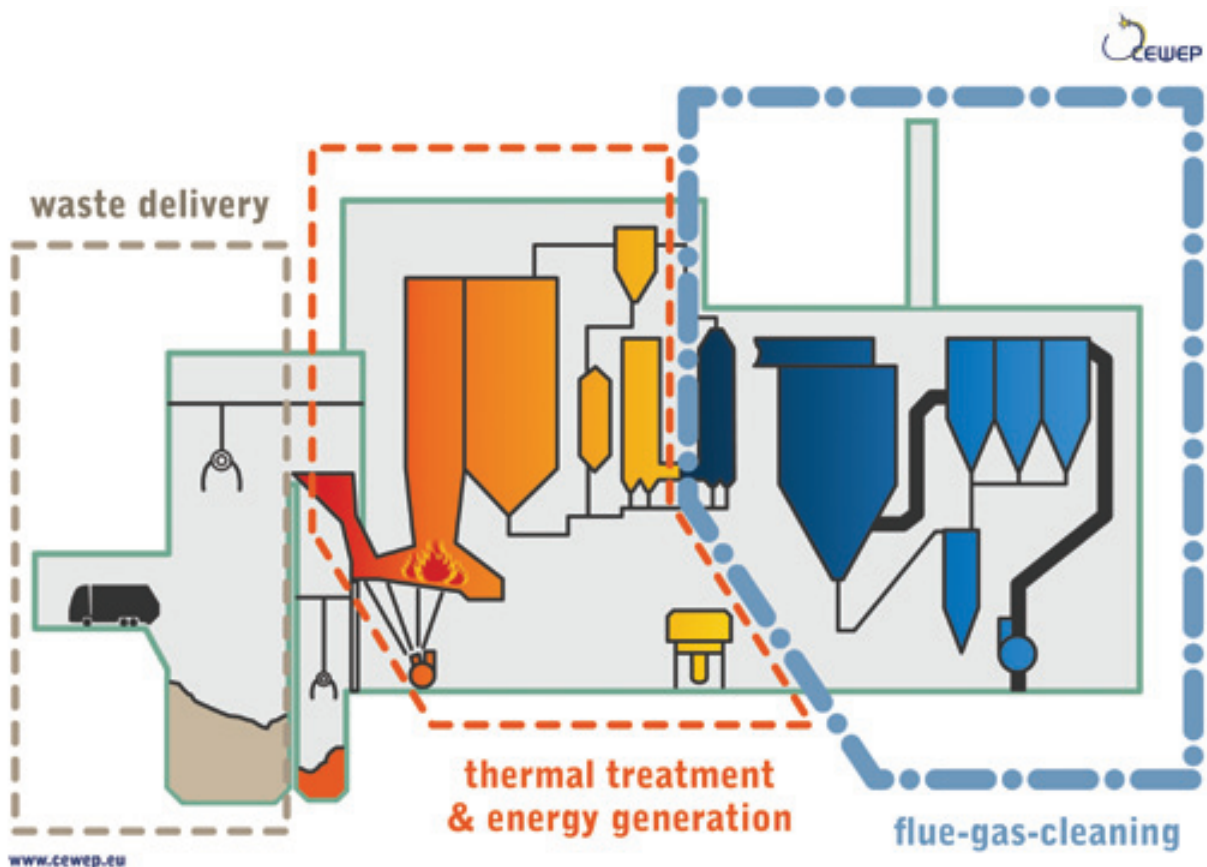
## Exhibition locations and dates

7 June	Weston Mill Primary School	4.30 - 7.30
8 June	Watermark, Ivybridge	4.30 - 7.30
9 June	Gaynor Hall, Keyham	4.30 - 7.30
10 June	Buckfastleigh Town Hall	3.00 - 7.30
11 June	Plymouth Guildhall	10.30 - 1.30
13 June	Tamar View Community Centre, Barne Barton	2.30 - 6.30
14 June	St Budeaux Community Centre	2.30 - 6.30
15 June	Torpoint Town Hall	4.30 - 7.30
16 June	Saltash Guildhall	4.30 - 7.30



# How will MVV turn rubbish into energy?

Although it looks complicated, the process is very simple. This drawing shows how MVV will turn your rubbish into electricity and heat.



Possible lighting scheme for the outside of the building, from dusk to 11pm





View from Cardinal Avenue looking south west

## Stage One

- The process starts with you. Once you have separated the rubbish from the material that can be recycled or used again, your council will collect your black bag in a bin lorry and take it to the EfW CHP plant at Devonport.
- If you live in or close to Plymouth, the local bin lorries will drive your rubbish straight to the plant when they are full. If you live in other parts of South West Devon, your rubbish may be taken to council waste depots. There the rubbish will be packed together into bigger loads and then driven to the EfW CHP plant in larger lorries. This means that fewer lorry journeys will be needed.
- As well as household rubbish, the plant will also burn some waste from businesses and shops. This will be similar to household rubbish. It will NEVER burn radioactive waste.
- All the rubbish will be tipped out of the lorries inside the building to make sure noise and smells do not disturb people nearby.
- The EfW CHP plant will stop more than 97% of the rubbish from your black bin from being buried in holes in the ground.

## Stage Two

- The rubbish is grabbed by a crane and moved into a chamber where it is burned. The heat produced by the fire heats water in a boiler like a giant kettle and this makes steam which is put under pressure and made even hotter.
- The gases from the fire go through lots of special filters that take out the harmful bits.
- Once the gases have gone through these filters, the gases that go out of the chimney are similar to a car's exhaust but much cleaner.

## Stage Three

- The superheated pressurised steam turns a turbine which is connected to a generator that turns the movement of the turbine into electricity.
- It makes enough electricity for up to 37,000 houses.
- Some of the steam is also taken out through a pipe which connects to the naval base's heating network. This is used like the hot water in the central heating system in your house.
- The steam is sent through pipes to heat radiators in the naval base. These could also be connected to other local homes and businesses in the future if they are built with the pipes in place.
- It makes enough hot water to heat 1,200 houses, or more if connected to a district heating system.

## Stage Four

- Ash is left after the rubbish has been burned. It will be mixed with water to stop dust. MVV plans to collect it and take it to Buckfastleigh. Here it can be turned into building material for roads or to make concrete for blocks which might be used to build houses.
- The materials that are caught in the special filters will be carefully collected and taken away in sealed containers to be buried in a special site in the north of England.
- This is called 'Air Pollution Control residue'. It is hazardous, like cement, because it can burn the skin. The Environment Agency regulates this process to make sure it is safe. This is the only part of the whole process that still needs to be buried. It does not produce harmful greenhouse gases like buried household rubbish.







# Tell me more about what happens to the ash

Just like a bonfire, when rubbish is burned in the EfW CHP plant not all of it is turned into gas or heat. Some ash is left at the bottom.

Also, some things in rubbish like rubble, glass and metals won't burn.

The ash is called Incinerator Bottom Ash, or IBA for short. It comes out wet so it does not make dust. It can be used to build roads or in housebuilding materials, so there is no need to bury it.

However, it must be cleaned and sorted into pieces of the same size before it can be used.

To do this, MVV plans to take the ash by lorry from the EfW plant to a plant at Whitecleave Quarry in Buckfastleigh. The ash will be sprayed with water if it dries out to stop dust.

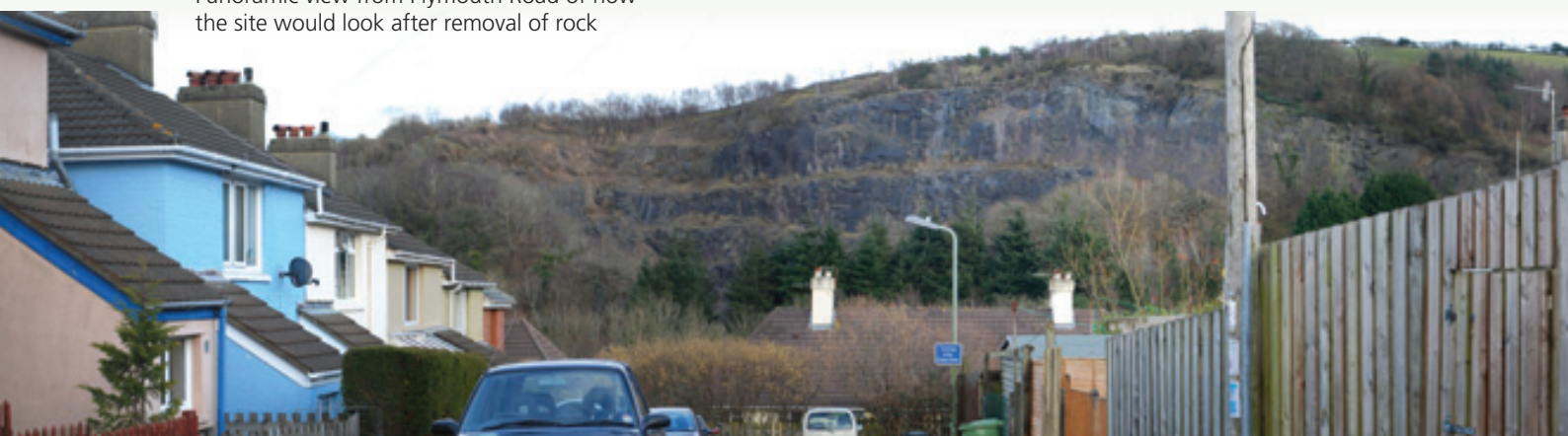
At the plant, any metal left in the ash that wouldn't burn in the EfW plant is taken out and recycled. The ash then goes through different screens to sort it into different sizes. It will then be sold and taken away for use in different construction projects.

As there is not enough room next to the EfW site MVV decided it would be better to locate the IBA plant outside the Devonport site.

MVV will apply for planning permission through Devon County Council to build the ash processing plant at Whitecleave Quarry. Sam Gilpin Demolition Ltd runs a business recycling demolition waste at the quarry.

MVV has already held one public exhibition of its plans in Buckfastleigh and local people have been asked if they want to start a 'liaison committee' which will give them a chance to speak to staff from MVV and the operator of the site, Gilpin.

Panoramic view from Plymouth Road of how the site would look after removal of rock



# MVV and the environment

## How safe is all this?

Well, to put it simply, the answer is 'very safe'.

The gases coming out of the chimney have been through a thorough filtering process to remove particles or other harmful gases in them that people could breathe in and make them ill.

The chimney is tall enough to make sure that the gases are spread out very high in the air and well diluted so they are perfectly safe.

A Government agency called the Health Protection Agency is in charge of making sure that your health is not affected by what we are proposing to do.

In 2009 they wrote a report which said that modern new EfW plants like the one MVV wants to build make only a small contribution to local concentrations of air pollutants. 'It is possible that such small additions could have an impact on health but such effects, if they exist, are likely to be very small and not detectable.'

People in Great Britain in places such as Coventry and Sheffield live close to EfW plants, and in mainland Europe there are many such plants in towns and cities.

Everything that goes on at the EfW plant is also closely checked by the Environment Agency which makes sure that it does not cause harm in any way. The Environment Agency can close it down if it is not working safely.

## Where can I check this for myself?

Specialist consultants working for MVV have written a detailed report called an Environmental Statement or ES. Plymouth City Council planners are looking at this as part of MVV's planning application.

This report tells Plymouth City Council what MVV will do to make sure that the impact on the local environment is as small as possible and well within safe allowable limits.

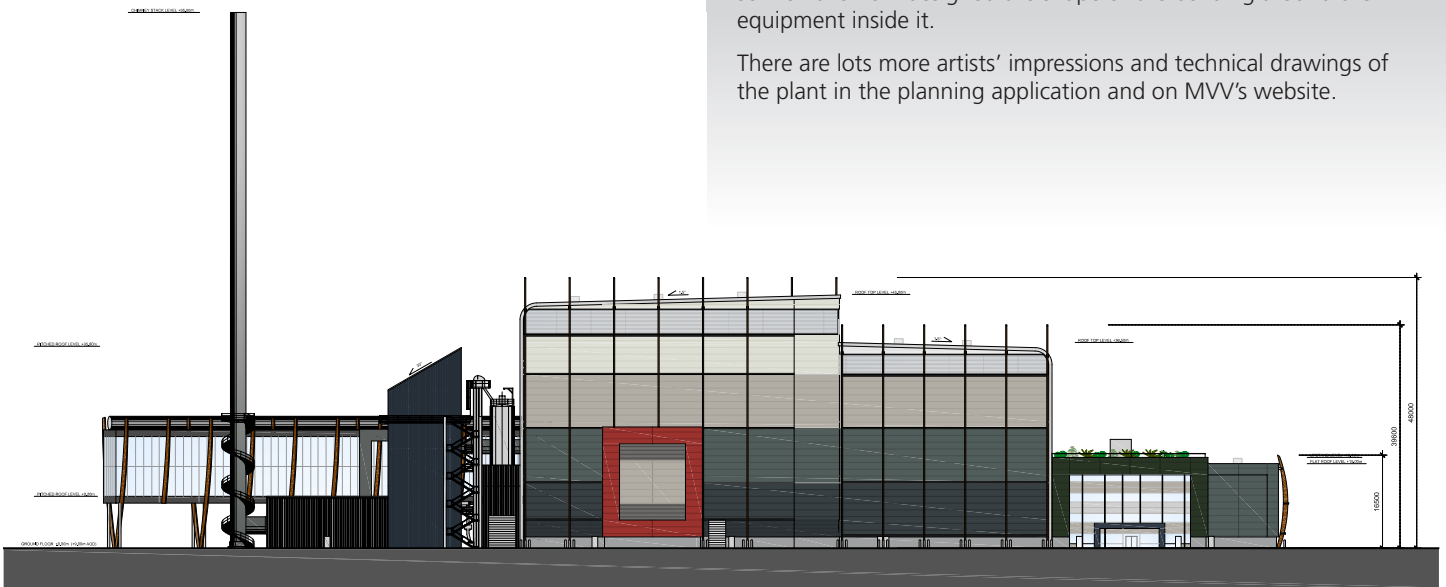
You can see this report on Plymouth City Council's website or at the Council offices or libraries. It is also on MVV's website. MVV will also publish on its website information on measurements taken in the chimney of what comes out of the plant.

## What will the plant look like?

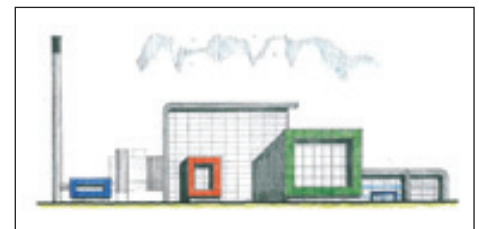
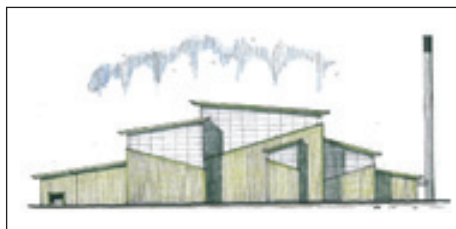
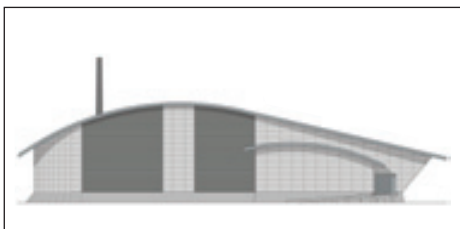
- The building will be 134 metres long, 81 metres wide at its widest part and 45 metres at its highest point.
- The chimney is 95 metres high. It needs to be this tall to make sure that the hot gases coming out of it are spread high into the air.

When we first designed the building in 2008, we hid all of the internal workings in a larger curved building. But local people told us that it was important to make the building as small as possible, so we have now designed the shape of the building around the equipment inside it.

There are lots more artists' impressions and technical drawings of the plant in the planning application and on MVV's website.



An artist's impression of how the plant will look



Some of the early designs



## What has happened so far?

Projects this complex often take a long time to go through the planning process because they have to be checked very thoroughly.

MVV wanted to make sure that local people had the chance to have their say on the proposals and suggest changes before we submitted a planning application to Plymouth City Council.



## Timeline

- **October 2008:** The SWDWP Councils started their competitive tendering process to find a new solution to manage their waste and MVV were invited to bid along with five other international companies
- **July 2009:** SWDWP publicly announced that the site at North Yard was being proposed by MVV along with other sites offered by other companies
- **February 2010:** MVV held a public exhibition of its plans for North Yard and an alternative site in Ernesettle. Later in February, MVV dropped Ernesettle because it would have been difficult to use the steam for heating the Dockyard from that site.
- **January 2011:** The three SWDWP Councils chose MVV as their 'preferred bidder'. This means that MVV was chosen to do the work, but still has to get planning permission to build the EfW CHP plant.
- **February 2011:** MVV held 10 public exhibitions in Plymouth and Devon to show details of its plans. More than 1,200 people came to the exhibitions.
- **19th May 2011:** First meeting of Devonport Local Liaison Committee
- **End of May 2011:** The planning application for the EfW plant was registered

## What happens next?

- More exhibitions on MVV's proposals from 7th to 16th June
- Second meeting of the Devonport Local Liaison Committee on 23rd June
- First meeting of the Buckfastleigh Local Liaison Committee in July 2011
- People can comment on the planning application to Plymouth City Council for the foreseeable future
- Local Liaison Committees will meet on a regular basis from now on; minutes of the meetings will be available on MVV's website
- Planning Committee decides on planning application, possibly later this year

## What can I influence?

There are some areas where you could suggest changes, eg to the colour of the buildings or the way in which MVV will help the local community or improve the local environment – the planning application has some ideas but MVV welcomes more.

Things like the location and shape of the building cannot be changed because it has to be a certain size to house all the equipment needed to make it work.

## How can I get involved or find out more?

If you would like to speak to someone face-to-face and find out more about what we're doing, we'd be delighted to meet you at our office at:

MVV, Unit 10, Scott Business Park, Beacon Park Road, Plymouth PL2 2PQ. The office is open on Tuesday, Wednesday and Thursday, from 10am to 3pm.

Alternatively, you can speak to us on the phone by calling Amanda Booth on 01752 565412.

If you have access to the internet, you can find out more by visiting:

[www.mvvuk.co.uk](http://www.mvvuk.co.uk) for more information on MVV and for copies of reports and documents

[www.swdwp.co.uk](http://www.swdwp.co.uk) for more information on the Councils' Waste Partnership and the competitive tendering process

Or, you can write to us at the above address or send us an email to [info@mvvuk.co.uk](mailto:info@mvvuk.co.uk)

## Resources Innovation.