

Case Study

Sand reuse yields significant savings for foundry

Organisations involved: Hanson PLC, MJ Allen Group of Companies

The Challenge

MJ Allen provides ferrous and non ferrous castings in the UK and abroad. As for many cast metal producers, MJ Allen were incurring significant disposal costs for spent foundry sand from the metal casting process. While sand is recycled on site as far as possible, it eventually loses the properties required for moulds. NISP was contacted by MJ Allen's site in Kent to look for alternative solutions for nearly 500 tonnes of sand being sent to landfill every year.

After suggesting several NISP members that could use the sand, it transpired that one, Hanson Aggregates were supplying virgin sand to the foundry. Hanson is one of the UK's largest suppliers of construction materials, and often use recycled materials, so discussions began to investigate a take-back solution for the site.



Above: Waste sand silo with new collection pipes at the foundry

The Solution

The NISP team have facilitated foundry sand re-use in the construction industry with several members, nationwide and in the South East region. The waste sand is often suitable for use in asphalt, cement, bricks and pipe bedding. By facilitating discussions between MJ Allen and Hanson it became clear that by collecting the sand for use as a recycled aggregate, Hanson could make good use of a resource otherwise destined for landfill. Meanwhile, the arrangement would save MJ Allen over £30,000 a year and help them improve their environmental performance.

In order to enable sand collections, new pipework was required (see image), and the foundry were happy to invest the time and money in this infrastructure. Regular collections are now being made by Hanson who stockpile the material and process it for use in asphalt products. While there are many examples of foundry sand reuse in construction materials, the potential has not yet been fully realised in foundries across the South East region - and NISP are keen to spread the word!

The Results

- **Businesses Assisted: 2**
- **CO2 Reduction: 49 tonnes/yr**
- **Cost Savings: £36,546.00/yr**
- **Landfill Diverted: 480 tonnes/yr**
- **Private Investment: £3,000**
- **Virgin Materials: 498 tonnes/yr**
- **Water: 18 tonnes equiv/yr**



I would like to take this opportunity to thank NISP for all the help and assistance in finding a source to recycle this waste product, making us more environmentally friendly whilst also saving money.



Phil Carter
Health & Safety Manager
MJ Allen Group of Companies

About NISP

Connecting Industry, Creating Opportunity

NISP is a business opportunity programme which develops mutually profitable links between companies from all industrial sectors so that under used resources such as energy and water, and/or materials from one company can be recovered, reprocessed and re-used by others.

The programme uses actual business opportunity as the mechanism for encouraging resource efficiency and its holistic approach sees it actively dealing with ALL resources including water, energy, materials, logistics, assets and expertise.

NISP is the world's only national industrial symbiosis programme, and its success here in the UK demonstrates that industrial symbiosis has the potential to significantly reduce industrial and commercial waste and comprehensively lessen the adverse environmental impacts of business.

Driven by Business

NISP is unique in that it is a business-led programme, responding directly to the needs of business, whatever sector that may be. It is delivered via 12 regional offices throughout the UK, each of which works with a business advisory group comprised of key industry representatives. This group assists the regional offices to ensure the strategic direction of the programme is right for each respective region.

Free Membership

NISP is funded in England by Defra as part of its package to help businesses to improve resource efficiency and reduce waste. The programme is also funded by the Scottish Government, Welsh Assembly and Invest Northern Ireland. Due to the way NISP is funded, membership of NISP is FREE for all UK businesses, regardless of size, turnover or sector.

Over 12,000 companies are already working with the programme. These include companies such as Shell UK and Lafarge Cement, as well as entrepreneurs and SMEs (which make up over 80% of NISP's membership).

Our Results

In its first four years (April 2005–March 2009) NISP helped its members achieve significant economic and environmental results, including:

Generating £151 million additional sales in industry

Saving businesses over £131 million

Attracting £116 million in private investment

Diverting 5.2 million tonnes of business waste from landfill

Reducing CO2 emission by 5.2 million tones

Creating and safeguarding over 2216 jobs

Reducing industrial water use by 9.4 million tonnes