

C&D Success

With the 2016 Sustainability & Resource Awards fast approaching, we turn our attention to the winner of last year's Most Sustainable Construction and Demolition Project, R Collard Limited, and how the achievement has given it the confidence to enhance its environmental performance

The Sustainability & Resource Awards are almost upon us again. It hardly seems a year since Robert Collard, founder of R Collard Limited, was amongst those on stage accepting their awards in his case for Most Sustainable Construction and Demolition (C&D) Project.

The project in question was the demolition of the former manufacturing facility of Thales in Gatwick, where flight simulators had been constructed. The structures involved were steel-framed industrial buildings clad with asbestos cement or metal profile sheeting and masonry external walls; and two and three-storey office buildings constructed of both steel and concrete frames with flat roofs.

On the basis of statistics alone, this was an impressive project: the waste recovery rate (materials reused or recycled) of 99.02 percent surpassed typical environmental performance in the construction industry. The latest figures released by Defra reveal that more than 86.5 percent of non-hazardous C&D wastes are recovered in the UK.

Over 36,000 tonnes of concrete and hardcore was pre-processed, then crushed in-situ and tested to 6F2 standard using the WRAP protocol for use on-site. Approximately 1,600 tonnes of non-ferrous metals, timber, plastics, plasterboard, green and mixed construction wastes were segregated on site into separate skips and removed to R Collard's own recycling facilities. The only wastes that were landfilled were 388 tonnes of asbestos removed from floor coverings, gaskets and cladding to walls and roofs and 38 tonnes of soils and ash from a hydrocarbon-contaminated hotspot in the ground.

However, it was the innovative



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reuse, rather than recycling, which must have really caught the judges' eyes. During the planning stage, R Collard's team had identified that the size and length of some of the structural steelwork could be suitable for reuse in the construction of its new materials recycling centre in Eversley. Consequently, 800 tonnes of 25 metre-length steel beams were carefully dismantled by hand, supported by mechanical means and sent to a local steelwork pre-fabrication supplier,

Scorpion Engineering Construction. They were then cleaned, cut to the specification supplied by the MRF's installers, new baseplates fitted, repainted and transported to the Eversley site to provide structural steelwork for the roof of the MRF building.

"This was the first demolition project where a significant quantity by weight was reused [two percent]," explained Robert Collard. "Usually ferrous metals are collected on site and transported directly to a metal scrap merchant, who will provide us with a consignment note and their own recycling statistics. This was the first time R Collard obtained a complete

chain of custody from demolition to reuse in the construction process."

Reusing metals is a particularly sustainable waste management process. Using the Building Research Establishment (BRE)

lifecycle analysis environmental profiling technique, to evaluate the environmental impact of a building product or component when comparing reclaimed with virgin materials, shows an environmental impact reduction of 96 percent when using reclaimed steel, compared to new. The reuse of reclaimed steel sections saves all the reprocessing energy and so has a 96 percent lower overall environmental impact.

"As far as we were aware, this was the first time reclaimed materials have been used in such an operation, which made the project unique," continued Robert, who wasted no time in making full use of the PR benefits of the award. "The very next day our marketing agency issued a press release to the construction, civil engineering and local trade media, a series of tweets and a news story on our website, which

was also featured in our next monthly e-newsletter."

The winner's logo has adorned the company's email footer to remind contacts of the achievement ever since, and the award itself takes pride of place in the boardroom. Scooping the CIWM award has also given the company more confidence in its commitment to more sustainable waste management.

"While the construction and civil engineering sectors both have targets for recycling and obligations to divert waste from landfill, most demolition and waste management contracts are still won and lost on price.

"However, by maintaining commercial competitiveness we are able to influence tender decisions in our favour by demonstrating our ability to go the extra environmental mile, as well as by providing the data enabling clients to gain credits for sustainability ratings such as BREEAM and LEED."

The company uses the hierarchy of waste to inform and guide its planning for demolition and waste management projects. With recycling rates in the construction industry comfortably exceeding the targets set by the Government, Robert has turned his attention to recovery and reuse.

Two initiatives have enabled the company to reduce the volume of waste going to landfill, which now accounts for less than two percent of the total wastes managed by the company, down from 4.8 percent.

"We have developed a process and partner network to divert MRF residues from landfill to energy recovery," said Robert. "Our new state-of-the-art wash plant, installed in July 2015, includes a number of technical enhancements that allow significantly more inert waste to be recycled, which would previously have found their way to landfill."

Despite being above recycling in the waste hierarchy, and therefore by definition being a more environmentally desirable option, the reuse of construction wastes is still rarely reported separately. There is some confusion in the



Opposite page: Robert Collard is on-site and the team receive the CIWM award from Nick Hewer. Above: the MRF structure uses waste metal. Below: the wash plant in action

industry over the distinction between the two. While recycling involves some processing, such as shredding, melting etc, and reconstitution of the waste stream, reuse requires little or no treatment. A reused waste material will often be employed in its original application, avoiding the sometimes considerable energy to reprocess it, hence the environmental advantage.

As well as metals, there are a number of other construction wastes that lend themselves to reuse. Undamaged bricks will typically be treated manually to carefully remove loose mortar or other items and there is an established market for salvaged bricks, which can be exploited to add commercial as well as environmental value to a demolition project.

Other examples of reusable construction wastes include: furniture, floor and ceiling tiles, M&E plant, electrical/electronic equipment, architectural items, cobbles, slates, flagstones and railway sleepers. A network of organisations has developed that will find good homes for reusable M&E equipment and furniture from strip-out projects.

"Donations to organisations such as Lighthouse Furniture, the Furniture Re-Use Network or one of the many local authority initiatives, which can match the items to a user often a

community programme can help all of those involved in the process to demonstrate good practice in corporate social responsibility, which is often a key element of the tendering process," said Robert.

The company's new MRF at Eversley, complete with its reused steel roof, has been in operation for over two years now and its recycling rates are proving to be beyond its original expectations. The facility incorporates a 50mm trommel with a picking station and overband magnets to create an integrated system for sorting mixed C&D wastes into their constituent materials ready for recycling.

As Robert sums up: "We have created our own circular economy, where our demolition waste is a main feeder into the MRF creating materials ready to be used in new construction sites."

Applications for this year's Sustainability and Resource Awards have now closed, but you can still book to attend or sponsor one of the 2016 awards by visiting www.ciwmawards.com

