It's only three months since the official opening of Fortress Recycling and Resource Management's new £5m facility in Warwick. But already the team has successfully processed 6250 tonnes of 'waste', thanks to an UNTHA XR3000C shredder at the front-end of a sophisticated processing line.

And now, all eyes are on 'what's next' for the system, as the ambitious organisation prepares for 2018 and beyond.

The Dry Mixed Recyclables plant – designed and supplied by Blue Southern – hit the headlines in October, when it was revealed that significant investment and some clever thinking had brought this site to life.

Constructed in a building measuring just 730sqm and 6.5m high at the eaves, the facility had some challenging objectives to meet from the outset, if it was to effectively tackle the paper, cardboard, glass, plastics and aluminium cans passing through.

But the selection and configuration of best-in-class technologies from the start to the finish of the plant, means 2018 could be a very exciting year for Fortress, believes managing director David Pass.

"Whilst we set ourselves a relatively tight project plan once funding for the site was secured and a tender put out for the build, our industry research actually began some time ago. We knew a shredder would sit at the front end of the solution, for example, so talks with UNTHA began in the summer of 2016. In fact, we actually trialled the mobile version of the XR3000C when it embarked on its UK roadshow later that year, before placing an order in January 2017."

Currently configured to process 9 tonnes of DMR an hour, 10 hours per day, 5 days a week, the XR is in fact capable of achieving a 30 tph capacity, with the flexibility to shred different input materials ranging from MSW to C&I and other bulky wastes.

At present, the XR reduces the fraction to a homogenous 300mm particle size, but a simple cutting reconfiguration could achieve an output specification as low as 30mm.

“Most modern business investments are made with at least one eye on ‘what’s next’,” continues David. “So, the knowledge that we are futureproofed with this shredder – thanks to its ability to produce a refined RDF or even high quality SRF should we want to – offers important peace of mind at this crucial expansion point for our firm.”

Once shredded, the liberated material is fed via conveyor into an 80m^3 dosing bunker, before being passed into a Hartner Ballistic Separator which segregates 2D and 3D material, as well as <50mm files. Ferrous metals are extracted at this stage and deposited in one of the seven moving floor bunkers in the plant.

An overband magnet and eddy current separator then gets to work on the ferrous and non-ferrous 3D materials, before an integrated TOMRA optical sorter extracts PET bottles to leave an RDF specification output. Representing around 21% of the input waste, this gives Fortress an equivalent cost saving of £30 per tonne when compared with landfill charges alone.

Meanwhile, 2D materials move directly to a patented DiscSpreader distribution system made by German manufacturer Wisteria, which ensures efficient particle distribution across a 2800mm wide acceleration belt for further optical sorting. A 98% paper and card purity rate is achieved as a result, and the remaining materials pass through a second optical sorter to separate the film from the remaining residual fraction.

“With the help of Blue Machinery and the technology partners involved, we really have maximised every inch of the site with this state-of-the-art, highly-automated plant,” elaborates David. “As a result, we’ve already reduced our waste costs by £70,000 in only two months, and generated a sizeable income stream via recovered materials. Our target payback period for the

plant is therefore very encouraging.

“That’s before we think about the flexibility that the UNTHA shredder offers us in terms of throughput capabilities and application diversity.”

The UNTHA XR3000C has been supplied inclusive of a service and maintenance package, meaning Fortress will receive ongoing plant optimisation support long after the initial purchase of the shredding technology.