

T Recycling Technology

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How Zato's pre-shredder and hammer mill drive production at Australia's Access Recycling

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10th
Edition!

Zato Recycling Solutions makes a real difference for Australia's Access Recycling

ON THE RIGHT TRACK

Nestled in the sparsely populated farmland of New South Wales, Access Recycling is one of that region's leading family run scrap metal businesses. It has taken second generation owner Adam Perry and his team a lot of hard work to get where they are today.

Access Recycling is dedicated to providing efficient and sustainable scrap processing solutions. With a strong regional focus, the company's operations are primarily based in rural New South Wales (NSW) with additional feeding yards in Canberra and Orange.

Access has grown thanks to Australia's mines and railways. 'Between 2005 and 2010 alone, the Australian Rail Track Corporation replaced more than three million wooden railway sleepers with concrete ones,' says company owner Adam Perry. 'We got involved in the removal and collection of a 500

km section of railway line, providing a huge boost to our business, as you can imagine.'

What's more, there are gold mines across the region, with many businesses built around servicing these mines. 'We are one of those businesses,' says Perry. 'Mind you, there is a lot of scrap coming from the mines: old ma-



Access Recycling's main facility at Barmedman.

chines, cables, pumps, drilling equipment, tools, you name it. For us, the mining sector is a major scrap supplier.'

Pub landlord

Perry is a second-generation owner of Access but that was not always on the cards. His father started the business in 1995 but his son initially chose another career. 'After my studies, I worked for a bank for two years. Then I ran a hotel – it was the smallest pub you've ever seen. I did that for four years and it was great fun.' But at the age of 23 Perry sold the hotel and bought himself into the family scrap business.

Some 30 years on, Access Recycling is among the leading family run metal recycling businesses in south-east Australia. The company's main yard is just outside of Barmedman, a small town of 200 people with a grocery store, a B&B, a bowling club and not much else, just miles and miles of 'some of the best farming land' in Australia.

Closer to the source

A big advantage of being in Barmedman, says Perry, is that they are now processing the scrap closer to the source. 'It's a long way from our site to the capital cities and the steel mills – 500 km to Sydney or 600 km to Melbourne. We think it's better we that we transport 100% product over that distance, rather than take it all the way to the city, with a large waste component, for processing there.'

Perry and his team began planning their current shredder plant in Barmedman in 2020. It is in a farming area but with many large mines, significant regional cities, railways and small factories nearby. Most importantly for Access, its large 250-acre site means it can operate without being seen or heard by the neighbours. 'We have a great relationship with our community, local council and the EPA (Australia's Environment Protection Authority) and we like to keep it that way,' says the entrepreneur. 'We are surrounded by cropping areas and there's a forest between us and the town. This is an important layout for us. The shredder has sound proofing panels and the air system has filters, reducing general noise and dust.'

Never change a winning team

Access and Italy's recycling equipment provider Zato have a strong relationship. Access had a 3 000 HP Zato shredder at its former yard in Adelaide. 'It was a more traditional machine, with a feeding belt, feeding rollers, but no pre-shredder,' says Perry.



Adam Perry: 'You never feel you are on your own with a supplier on the other side of world, as is often the case in Australia.'

Their shredding plant in Barmedman consists of a Zato GF4000 pre-shredder and 1 200 HP hammer mill, a separation plant and an eddy current plant. 'We worked closely with Zato to configure this shredder, flowing on from our experiences with the Adelaide plant. We looked at many manufacturers before settling on Zato. After that, while we did go to see some other brands, there was never any real doubt that our second machine would also be a Zato.'

Making steps forward

By incorporating the pre-shredder and a feeding hopper instead of a belt, Access gets similar rates of production with the 1 200 HP compared to what was achieved with the 3 000 HP in Adelaide. Perry: 'We don't need a worker as the shredder driver; it is a fully automated feeding system.'

One operator in a material handler feeds the pre-shredder and the shredder simultaneously. He has an iPad in the cabin to monitor the entire system through to the eddy current belts. From there, he can even adjust fan speeds on the air system.

Safer operations

Because the scrap has been 'prepared' in the pre-shredder, it only needs to be dumped in the shredder hopper, allowing ample time to feed both machines. At about 40 tonnes per hour infeed each, the machines are well matched. 'With prepared shredder feed, we don't have the risk of explosions, hard items or

blockages in the hammer mill. Gas bottles are opened slowly in the pre-shredder and hard items are rejected (removed before feeding the hammermill). The resulting material is very uniform and so shredding is optimised with a full box most of the time. The feeding pusher has an automated ratcheting sequence where it only goes back as far as necessary before forcing more into the rotor, so that we see a fairly even flow of material through the plant.'

Far away but always on standby

For Access, Zato's 'fantastic' support has been crucial. 'They are enormously helpful with advice on repair and maintenance processes,' says Perry. 'You never feel you are on your own with a supplier on the other side of world, as is often the case in Australia. We recently had an issue with one component for our five-year-old pre-shredder and within two days they flew a technician over here to help us change the part.'

Access also has a Zato Cayman mobile shear on a 25-tonne excavator. Perry: 'We've had that machine for about eight years. We keep maintaining it and it's still working great. It'll probably be due for a new excavator to carry it soon.'

www.accessrecycling.com.au
www.zatoshrdder.com

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 Photos: **Access Recycling**

How Zato has helped Access Recycling boost production results

Access Recycling has three machines from Zato: a Blue Devil pre-shredder, a Blue Shark hammer mill and a Blue Sorter for downstream processing.



Feeding the Zato pre-shredder.

BLUE DEVIL: GUARDIAN ANGEL FOR HAMMER MILLS

The Blue Devil is a robust twin-shaft shredder designed for high-torque, low-speed operation, featuring counter-rotating cutting shafts driven by four planetary gear-boxes. This configuration delivers powerful cutting action with minimal noise and dust, enabling the shredder to efficiently handle tough materials such as bales, whole cars and plate steel.

The pre-shredding process enhances the density and homogeneity of the scrap while effectively liberating the material. This preparation ensures the scrap is ideally conditioned for the next stage of processing.

When paired with the Blue Shark hammer mill, the Blue Devil pre-shredder plays a crucial role in enhancing overall performance. By pre-shredding the scrap, it prevents hazardous explosions from pressurised cylinders and filters out unshreddable items before they reach the mill. This approach boosts output by approximately 40% and reduces power consumption by 20%, while also extending the lifespan of expensive wear parts.

BLUE SHARK: COMPACT, SAFE, FULLY AUTOMATED

The Blue Shark hammer mill ensures a very high comminution of the pre-shredded scrap which allows for a high density of the finished product and an exceptional liberation of the non-ferrous components (Zorba, ICW, Zurik etc.) to be recovered in the downstream plant.

The compactness of the layout of the Blue Shark makes it suitable even for the yards with limited space and its fully integrated steel support frame eliminates expensive foundations and civil works. All you need is a standard concrete slab. Zato installs anti-vibration pads between the concrete ground and the frame, and between the frame and the shredder chamber, to control vibrations.

Zato shredders are assembled and tested in the company factory before shipment, ensuring everything fits and functions correctly.

The Blue Shark is equipped with the innovative feeding pusher, a fully automatic feeding system that ensures the machine's operating point is always close to the optimum characteristics of the main engine.

This feeding system ensures a steady and controlled flow of material, preventing the overfeeding and underfeeding that can compromise performance. This consistent feed allows the shredder to operate at its optimal capacity, maximising throughput and stabilising the motor load.

Unlike conventional hammer mills, which



Zato's non-ferrous Blue Sorter.

often face energy inefficiencies due to irregular feeding leading to higher power consumption and inconsistent material processing, the Blue Shark maintains a steady feed that optimises energy use and performance. Additionally, the automatic feeding system contributes to a safer operation by minimising manual intervention, thereby reducing the risk of accidents and operator errors.

Zato's hammer mills are built for durability and designed to withstand the harshest conditions. To protect the main engine, whether diesel or electric, the Blue Shark is equipped with a hydraulic coupling that ensures optimal transfer of drive torque while the viscous joint safeguards the engine from shock.

Every aspect of the design and construction is optimised to enhance shredding performance over time while minimising operating, maintenance, and energy costs.

BLUE SORTER: BOOSTING SCRAP VALUE

The downstream Blue Sorter plant refines the shredder's output, producing cleaner and more marketable ferrous and non-ferrous fractions. This separation process removes contaminants, ensuring the recycled materials meet industry standards and are suitable for resale.

By enhancing material quality, the plant not only makes the materials more attractive to buyers - securing better prices and contracts - but also contributes to environmental sustainability by ensuring that more resources are effectively recycled and reused, reduc-

ing overall waste and environmental impact.

Zato's downstream solutions are designed specifically based on the material processed by the yard and allow the maximum flexibility. The downstream plant installed at Access Recycling can work either online and offline thanks to a reversible conveyor and a reclaiming hopper. This guarantees a full and independent operability. The screening of the different size fractions, realised by a trommel screener, allows the two eddy current separators to work at their optimum conditions to reclaim a very pure Zorba in both fine and coarse fractions. A picking station installed on the residue conveyor allows the recovery of stainless steel and copper wires, enhancing the profitability and the sustainability of the whole process.

A STRONG RELATIONSHIP

The decision to continue partnering with Zato underscores the strong and effective relationship between Access Recycling and the Italian equipment provider. Access's commitment to leveraging advanced technology and innovative solutions ensures it remains at the forefront of the recycling industry, driving improvements in both performance and sustainability.