



Innovation of the Year

For the second time, a component of the Tannery of the Year programme for 2014 was the Innovation Award. As in previous editions of the competition all of the finalists have displayed serious commitment to innovation. Two examples of this inventiveness was chosen from each of the nine finalists and a special panel was invited to choose the most outstanding example of all.



Couro Azul's chief executive, Pedro Carvalho (right), receives the prize for Innovation of the Year from World Leather Publishing CEO, Simon Yarwood.

Tannery of the Year finalists all demonstrate a broad range of qualities. They care about the environment, look after their workforces, they hold their heads up in society and take seriously their responsibilities for sharing resources with people, old and young, in their communities. They meet their obligations and pay their way. They are open and honest, happy to let the *World Leather* team and, by extension, the whole industry see behind the scenes in their operations and share their stories with a global audience. They are good corporate citizens, all the while continuing to make beautiful leather.

However, tanners could not produce leather today without a strong commitment to research and development, investment in

new technology and global support networks of supplier organisations. Underpinning all of this is a wider spirit of innovation. Tanners are creative, imaginative people who like to try new things and come up with new ideas when facing up to the challenges that their work presents them with all the time.

As our team has moved round the world, it has seen at first hand examples of this commitment to innovation from each of the finalist tanneries; these are not simply the use of off-the-shelf products or equipment, but reflect carefully considered solutions to problems. They are not limited to any single part of production. There are applications in areas of product development, machine amendment, environmental applications and

management systems.

Nor is the innovation restricted to any particular size of organisation. In some cases considerable investment has taken place by relatively small companies, whereas companies of considerable size have sometimes introduced concepts that were stunning in their simplicity. Some are unique to a single tannery, while other applications may be found in different forms in several tanneries.

Many of the ideas are joint efforts involving the tanners, supplier companies and research bodies. Some are big, some are small. Some are completely new, some less so. We love them all and decided once again this year that we would give formal recognition to this phenomenon.



Innovation Award 2014 Winner

Nine tanneries opened their doors for in-depth study as part of Tannery of the Year Awards 2014. An eight-page profile has been published on each tannery following these visits. Two examples of innovation in practice have been selected from each of these tanneries, where various issues have been addressed in novel and useful ways.

These 18 examples cover many aspects

of manufacture - from making best use of resources, handling materials, control, health and safety, and environmental matters. None of these methods have simply been "purchased off the shelf", and all can be attributed to the ingenuity of tanners. These examples are sometimes unique to a single organisation and may involve significant cost, but often the measures are low-cost and basic.

Nevertheless, this is innovation that could be applied to many other situations.

The Award for Innovation 2014 was presented to Couro Azul, Alcanena, Portugal, for developing a method using a light-box arrangement to detect damage in limed splits and assist trimming. This and the other examples of innovation are set out in the following pages.



Exposing defects: Couro Azul, Alcanena, Portugal

After lime splitting, the flesh splits are delivered flat for trimming onto a semi-transparent table set behind the splitting machine and illuminated from below. This "light box" arrangement reveals all cuts and gouges in the coupons as part of the split trimming operation.



Design and flower power: Bojos Tanning, Santiago, Dominican Republic

The effluent treatment plant installed at Bojos Tanning has been softened by its location among trees and the creation of surrounding flower beds and shrubs. What is unusual is that this greening appearance was part of the original design. This is illustrated in the image where a flower bed has been created within the concrete base supporting the flotation tanks.



Easy handling: Bojos Tanning, Santiago, Dominican Republic

Leathers awaiting toggling are stacked behind the operative to the left, and placed onto the horizontal frames from this side. Dried leathers on release are moved across the frames by the operatives on the right and stacked to the right. This simple technique has both improved the leather transfer and handling, and the speed and efficiency of this part of the operation.



Tannery of the Year 2014: Results



Avoiding dust contamination: Couro Azul, Alcanena, Portugal

The space between both roller coating and spray units and the drying tunnels are enclosed using clear acrylic sheeting to avoid contamination of the wet finish coat from any dust that might be in the air. Hinged sections that can be raised have been built into the construction to enable inspection of the wet finish and for the removal of samples used for measuring the weight of finish applied.



Simple and easy: Dire Tannery, Addis Ababa, Ethiopia

After tannage, sheepskins are discharged onto the floor, then loaded into a number of recycled blue barrels. The floor is sloped, and the loaded barrels can be easily slid to an area in front of the drums before unloading and stacking the pieces onto pallets for draining and ageing. The movement of goods is fast and continuous, just subdivided into parts of a full load.



Working to the clock: Dire Tannery, Addis Ababa, Ethiopia

The tannery has a single drainage gully: for three hours sulfide containing washings and drainings only are discharged for screening and then separation for oxidation. The whole production is managed so that the end of this period coincides with the time for discharges from other processes (soaking, deliming, and neutralisation/retanning/dyeing) for screening, then offer to primary equalisation and balancing. (Chrome containing wastewaters are separated at source).



Recycling used splitting blades: Henan Prosper, Mengzhou, Henan Province, China

There are two rows of 20 tables placed over a conveyor belt used for trimming salted sheepskins. Each table requires two operatives for trimming, and the knives used for this and other trimming operations are all made from used band-knife splitting blades.



Recycling combined tanning/fatliquoring floats: Henan Prosper, Mengzhou, Henan Province, China

The floats from the paddle-based wool skin combination tanning/fatliquoring system are screened on discharge and held for recycling. This operation is managed in groups of four paddles (drainage as shown), and the recovered solutions are made up to strength before reuse. With high float requirements, this creates significant savings in chemicals, water and effluent load.



Keeping shape and area: JBS Couros, Itumbiara, Goias, Brazil

After shaving, the centre part of the hump area typical of Zebu-type cattle is trimmed from the hide, and then the two cut edges are flattened and sown together. If a hole has developed, a piece of off-cut is stitched into place to create a complete flat hide. This creates greater uniformity in the dyeing/retanning processes, and shape and area retention in drying operations. This stitching is trimmed away before conventional staking.



Irrigation of grasslands: JBS Couros, Itumbiara, Goias, Brazil

Instead of full biological treatment of effluent, and then discharge from site, the effluent after chemical dosing is used for land irrigation. Rich in nutrients that would be removed in biological treatment, four areas of grassland adjacent the tannery totalling 128 hectares are sprayed from rotating irrigation lines.



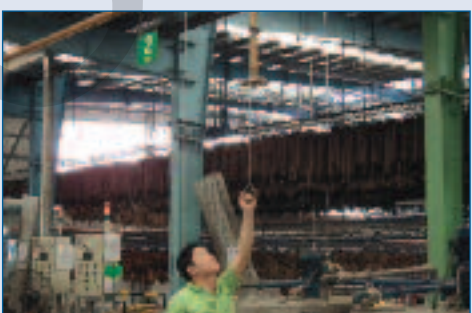
Mobile servicing platform: Packer Leather, Narangba, Queensland, Australia

Hide processors are used within the processing of kangaroo and sheepskins, and a service platform is needed for the addition of chemicals and monitoring purposes. The tannery engineering staff have built a mobile platform, then mounted it on a rail track so that it can be readily moved for either servicing these vessels or to allow clear forklift access for loading and unloading purposes.



Rainwater for leather making: Packer Leather, Narangba, Queensland, Australia

All of the rainwater falling on the tannery roof, parking stands and other hard areas is collected and held in three reservoirs. This is drawn upon throughout the year for processing. Together with treated effluent following polishing, this provides 50% of the tannery's water requirements in manufacture.



Safety within chemical handling: Saigon Tan Tec, Binh Duong Province, Vietnam

Aware of the dangers when manually adding chemicals to feed-containers in the dyeing department – especially diluted acids used for fixation – easily operated overhead showers are fitted over each of the 14 feed-containers in the dyeing/retanning department and weighing area for drenching the operative in the event of splashing or contamination.



Tannery of the Year 2014: Results



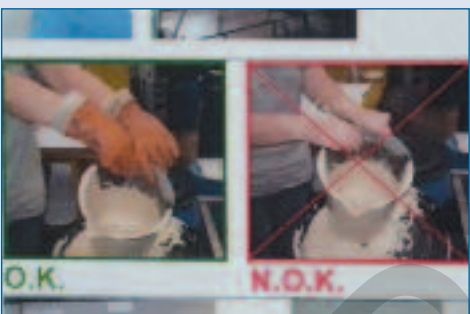
Recycling neutralising and retanning/dyeing floats: Saigon Tan Tec, Binh Duong Province, Vietnam

Each drum has an option to segregate used neutralising, retannage/black dyeing, and fatliquoring baths before screening and then holding in individual sumps. The recovered neutralising liquors are recycled in following loads for washing before neutralising, and the recovered black dye/retan liquors recycled for retannage and black dyeing. This creates a saving of approximately 10% on materials consumed at these stages of process, and a lowering of the load on the effluent treatment plant.



Face protection: Wollsdorf Leather, Wollsdorf, Austria

After lime splitting the flesh splits are hand trimmed to remove bellies and necks to provide uniform croupions for split manufacture. Particular attention paid by the company to safety requires full face protection against possible knife cuts. This is provided by wire mesh face visors as widely used within agriculture and the construction industry.



Communications: Wollsdorf Leather, Wollsdorf, Austria

A major managerial challenge for Wollsdorf Leder is that German is the mother language for only 20% of the workforce, and that the workforce encompasses 40 nationalities under one roof. The problems that arise within both training and health and safety have been addressed by the extensive use of display panels and operational manuals that make use of visual aids. Specifically, these provide visual examples of correct and unacceptable practice with captions stating OK and NOK (Not OK), and are used at every opportunity throughout the tannery.



Improving appearances: Zhejiang Mingxin Automotive Leather Co., Jiaxing, Zhejiang Province, China

To soften the appearance of the entrance to the effluent treatment plant, the raised concrete section around the sumps that receive the tannery effluent have been covered in a matting of green plastic flowers.



Solar power within effluent treatment: Zhejiang Mingxin Automotive Leather Co., Jiaxing, Zhejiang Province, China

Within the effluent treatment plant, primary and secondary effluent treatment containers are enclosed under a roof to reduce odour. This is common practice but, however, these roofs are also fully covered with solar panels through which the effluent is circulated. This raises the temperature of the effluent by 10°C, and thus improves the efficiency of the biological treatment. ☺