

WORLD LEATHER

THE WORLD'S NO.1 MAGAZINE FOR THE LEATHER INDUSTRY

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Leather leaders: Fabrizio Nuti
Nothing To Hide homes in on chrome
A fair COP for leather
Busy year for Rolls-Royce Motor Cars

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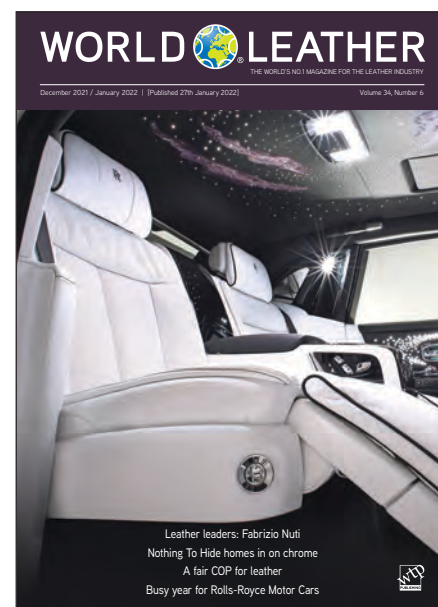
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The World Leather team has been publishing a new series of original, dynamic podcasts since 2019. The whole series is available on Anchor, Spotify, Apple Podcasts, Google Podcasts, Pocket Casts, Overcast and other podcasting platforms. Just search for the World Leather Podcast on the platform you prefer.



Cover image: A bespoke Rolls-Royce Phantom Tempus, which shows to good effect the huge range of skills and services on offer in the automotive company's busy leather workshop. CREDIT: ROLLS-ROYCE MOTOR CARS



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FRANCE The Conseil National du Cuir (CNC) has published the results of a study it commissioned recently to examine attitudes to leather among consumers in France. While 87% of respondents aged 55 or over acknowledged leather as a natural material, that figure fell to 54% among consumers aged between 18 and 24. CNC said the leather industry was increasing its efforts to convey accurate information about leather and raise awareness of its qualities, especially among younger consumers.

SPAIN The Barcelona Leather Cluster is offering an online leather course with internships at member tanneries in and around Igualada as part of the European Skills4Smart Textiles, Clothing, Leather and Footwear (TCLF) Industries 2030 project. Skills4Smart TCLF is a four-year project that aims, with funding from Europe's Erasmus+ programme, to "upskill and reskill" people working in the TCLF sectors in many European countries.

SWITZERLAND A new partnership between two Swiss companies, mechanical watchmaker Oris and deerskin brand Cervo Volante, has resulted in a selection of three luxury Big Crown Pointer Date watches with straps made from the hides of wild Swiss red deer. Cervo Volante was founded in 2017 on the principle that hides from the 15,000 wild red deer which Switzerland culls annually could be used to manufacture sustainable leathers.

BULGARIA Bulgaria-based footwear and accessories brand By Far recently popped up in an exclusive retail space on the ground floor of the Galeries Lafayette Haussmann department store in the French capital. A curated selection of leathergoods, including handbags and belts, were presented within an area specially designed by Paris-based, Cameroonian artist Enfant Précoce.

TURKEY A team from Turkish leather chemicals developer Sintan Kimya recently completed a series of workshops at Ege University, near Izmir. Sintan Kimya's technicians engaged with students at the university's leather engineering department on a range of topics covering beamhouse and retanning processes. They said afterwards that they had drawn inspiration from working with the students, whom they referred to as future leaders in the leather industry.

ZIMBABWE Zambezi Tanners is set to expand, building a new facility and buying new equipment, with help from a Zimbabwean government funding programme. Bulawayo-based Zambezi Tanners exports 90% of its products, and has recently increased its monthly output from 90 metric tonnes to 150 metric tonnes. The country's minister of state for presidential affairs, Dr Joram Gumbo, following a tour of the tannery, said it was impressive that Bulawayo was regaining its industrial hub status.

TANZANIA A new leather footwear factory in Zanzibar, that will make shoes for the army will cut by half the bill to taxpayers, as the shoes have been imported until now. Vice-president, Philip Mpango, praised the initiative, saying it would create business for other industries, such as agriculture and chemicals.

MAURITIUS Minister of industrial development, SMEs and cooperatives in the island state, Soomilduth Bholah, has suggested the leather sector could become one of the "pillars of the economy" if more companies were set up and joint ventures with overseas companies established. He praised a group of three leather-focused companies during a visit to Filao Group in Leather Land, in Riche Terre, on the northwest coast. The companies - Filao Limitée, Cover Tech International and Longchamp Mauritius - employ 700 and export to countries including the US, Switzerland and Hong Kong.

CHINA Guangdong province's footwear exports to Japan are set to benefit from tariff reductions if they are able to achieve approved exporter status under a new trade agreement. The Regional Comprehensive Economic Partnership (RCEP) free trade agreement entered into force on January 1, signed by 15 nations in Asia. Japan is one of the main importers of Guangdong-made products. Initial estimates suggest that Guangdong's footwear, leather and textile exports to Japan could benefit to the tune of more than \$7 million per year in reduced tariffs.

- Travel restrictions imposed by covid-19 have led to a big increase in Chinese consumers' domestic purchase of luxury goods. According to a new report by specialist consultancy firm Bain & Co, domestic sales of personal luxury goods increased by 48% in China in 2020 and by a further 36% in 2021. Bain puts China's total domestic spend on luxury goods for 2021 at almost \$75 billion and says this represents "a near doubling in just two years". It said leathergoods was the fastest growing category last year, with a growth rate of about 60%.

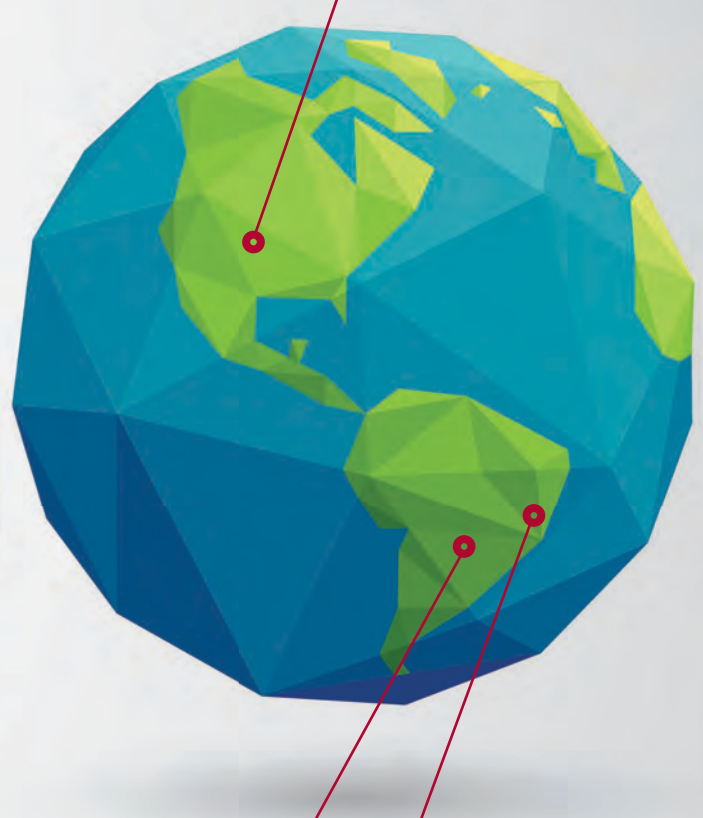
US More than 100 exhibitors travelled to the Big Apple for the January 2022 edition of Lineapelle New York. This was the first time the event had taken place following a two-year absence enforced by covid-19. It ran on January 26 and 27 with the Metropolitan Pavilion in Manhattan as the venue. Leather producers from Germany, the UK, Turkey, Pakistan, Spain, France, the Netherlands, Brazil, Mexico and the US joined many exhibitors from Italy at the event.



AFGHANISTAN Designer Gabriela Hearst strengthened her commitment to the charity Save the Children by tying her namesake label's net proceeds from handbags and ready-to-wear between December 1 and 25 to its fundraising efforts on behalf of Afghan children. Ms Hearst has served as a member of the charity's board since September 2018.

SOUTH KOREA Automotive groups Renault and Geely are to work together to manufacture cars in South Korea. They will develop a range of hybrid electric vehicles and conventional internal combustion engine cars and build the vehicles at an existing Renault factory in Busan. Production is likely to begin in 2024. These models will initially be for the South Korean market, but future export sales are also a possibility, the partners said.

INDIA The country's Trade Promotion Organisation has announced that it will not be able to go ahead with plans to run the India International Leather Fair (IILF) in Chennai in February. The event was scheduled to run from February 1-3 and, as recently as mid-November, the organiser said it had received assurances from the local authorities in Chennai that it could go ahead. However, it has now said it will postpone the exhibition until the month of May. It said it would confirm the exact dates after consultation with leather industry players and other stakeholders.



BRAZIL Packer industry organisation Abrafrigo has reported a figure of 1.8 million tonnes for Brazil's beef export volume in 2021. This represents a fall of 7% compared to the figure for 2020. However, as a result of higher prices, export revenues reached a record level of \$9.2 billion, an increase in value of 9% year on year. Brazil's meat export association, Abiec, said it expects record export revenues again in 2022, predicting that the total would go above \$10 billion for the first time.

ARGENTINA The government of Argentina has announced a two-year ban on exports of a number of beef cuts. The ban began on January 1 and will remain in place until December 31, 2023. Cuts affected by the export ban are whole cattle, half cattle, and hind and fore quarters. The ban applies to fresh, chilled and frozen meat. On announcing the measures, the government said its aim was to establish a better balance between the domestic meat market and exports.



Leather skills challenge

A total of 118 organisations have signed a new Pact for Skills that Europe's main representative bodies for textiles, clothing, leather and footwear have drawn up.

As part of an initiative promoted by the European Commission and by the umbrella organisations for textiles, clothing, leather and footwear in Europe, the pact calls for recognition of a "skills challenge" in these industries, and for a commitment to address this.

Industry bodies involved (COTANCE for leather, CEC for footwear and EURATEX for textiles and clothing) want companies throughout Europe to address the issue by investing in reskilling and upskilling workers, integrating green and digital skills and improving the attractiveness of their industries to potential new employees.

Employers, social partners, national and regional authorities, plus education and training providers will all be involved in fulfilling these ambitions. Benefits that signatories to the pact will receive include networking, guidance and resources offered by the European Commission; this assistance should be available from the early part of 2022.

Call for papers for 2022 Leather Days

The Freiberg Leather Days conference will take place for the tenth time this year. The conference will go ahead on May 11 and 12 in Chemnitz.

Organisers have issued a call for papers for the event, which will take place in person in the Chemnitz Congress Centre and, at the same time, be available online for those unable or not allowed to travel.

Germany's leather technicians and chemists association (VGCT) and research organisation FILK are co-organisers of the event. They have invited experts, researchers and other specialists from the global leather industry to "play an active part in shaping the technical content".

Specifically, they said they hope to receive submissions for prospective presentations on subjects including new technologies for leather production, advances in analytics, the use of sustainable raw materials, automation, new trends in finished leather products and Industry 4.0. Those who would like to speak at the event need to submit their ideas by March 28.

JLIA to relaunch leather courses in Osaka and Tokyo

Japan's leather and leathersgoods industry association (JLIA) is to relaunch a series of courses aimed at helping



No place for deforestation

The International Council of Tanners (ICT) has released a statement on deforestation. On behalf of its members, who represent the leather industry in 34 countries and at least half of overall global leather production, ICT recognised that this is a significant issue. It said it was "greatly concerned" about the presence in the leather supply chain of raw materials sourced from illegally deforested regions.

"Leather manufacturers and their customers are increasingly demanding greater visibility of their supply chains and reassurance that their products are ethically sourced," the statement said. But it pointed out that these concerns have already given rise to industry action to improve transparency and traceability.

These actions have included steps to ensure, as far as possible, that the leather supply chain does not contain hides sourced from illegally deforested areas and to provide confidence to customers and consumers that the products they buy make no contribution to deforestation.

fashion professionals increase their understanding and appreciation of leather.

JLIA ran a trial of the course in Tokyo in 2019 and had planned to roll it out more widely. However, the covid-19 pandemic prevented this from happening. The organisation has said it intends to run the course in Osaka on March 12 and in Tokyo on April 20. It plans a second date in Osaka in June.

Participants will hear talks explaining some of the basic science behind leather production, JLIA explained, as well as having the opportunity to take part in practical sessions.

Performance leather for garments

Leather and footwear group Ecco has launched a leather collection for the sportswear and fashion sectors in response to demand for performance materials.

The Motion 2.0 collection has been designed as garment leathers as they are strong, breathable and flexible. Some of the materials can also work for gloves.

Ecco Group CEO Panos Mytaros said: "Motion 2.0 combines techniques unique to Ecco Leather such as FSDX [the fusing of

leather with selected materials] and laundering. This new material is breathable, thermo-regulating, delicate yet strong."

A use for waste

A Toulouse-based company that collects waste and unwanted leather for reuse has won a place on the 2022 edition of an acceleration programme called La Maison des Startups.

Luxury group LVMH launched the programme four years ago, selecting start-ups to work with representatives of its own brands for a period of six months. LVMH received more than 400 applications for this new programme and from these has selected a group of 23 companies.

One of these, Authentic Material, collects leather from tanneries, traders and finished product manufacturing sites and gathers scraps and whole hides that have failed quality-tests or are surplus stock. It works with a partner to disassemble unwanted finished products to recover the material they are made from and is currently studying the possibility of carrying out this disassembly work itself.

It processes the waste it collects,

combining the leather with plant-based polymers, to make new raw materials for finished product brands to use.

Authentic Material says its aim is not to compete with finished leather but just to create value out of waste.

Santa Croce tie-up for CTC

Specialist French research and testing body CTC has announced a new partnership with Ars Tintoria, an Italian laboratory with a particular expertise in colourants. Its laboratory is located in the heart of the Tuscan leather cluster in Santa Croce Sull'Arno.

CTC president, Patrice Mignon, said the Lyon-based organisation wanted to continue to expand in international markets, and not only in Asia. He said: "Italy is a country that plays a leading role in the fashion and luxury sectors. With an exceptional partner such as Ars Tintoria we can strengthen our position there."

He said CTC's leather, leathersgoods and footwear manufacturer customers would benefit greatly from having access to Ars Tintoria's resources in Tuscany.

IULTCS EuroCongress call for papers

The organisers of the third IULTCS Eurocongress, which will take place in Vicenza from September 18-22, 2022, have issued a call for papers.

They have asked people interested in presenting a scientific paper at the event to submit abstracts, with February 28 as the cut-off date.

The theme of the conference is Renaissance: The Next Generation for Leather and there are four areas into which the organisers would like to group presentations.

These are: new developments in leather chemicals; innovative technologies for the leather manufacturing process; test methods and environmental management.

Leather law for Portugal

At the start of January, Portugal became the fifth European Union country to enact a law to protect leather's identity.

Official documents lay out mandatory leather authenticity rules, setting strict requirements for the use of the term 'leather'. These make it clear that material manufacturers, finished product brands, retailers and others must not use the term 'leather' with qualifiers, prefixes or suffixes that contradict the intrinsic nature of the material.

Using terms such as 'vegan', 'cactus', 'mushroom', 'synthetic', 'faux', 'artificial',



Pilot production plant in place for Respin

Wet blue and crust manufacturer KT Trading and bio-yarn producer Spinnova have announced that they now have a pilot production line in place and are ready to begin the start-up phase of production of Respin, a renewable yarn that includes leather fibre.

The two partners said they were setting up Respin in May and promised they would begin pilot-scale production of the new material before the end of 2021, which they achieved in December.

Spinnova's facilities in Jyväskylä, Finland, will house the Respin pilot production line. The partners said it would allow them to produce enough leather fibre for research and development purposes.

Respin uses wet blue shavings from tanneries to produce the yarn that can be woven or knitted into fabric for clothes, bags, shoes and other applications. Demo products, made from Respin, will also emerge as part of the pilot.

This pilot phase is likely to last one year and will involve the partners, plus KT Trading's long-term customer, Ecco Leather. After that, the joint-venture partners will welcome other brands to be part of the commercial phase of Respin.

'PU' in conjunction with the word 'leather' will now be regarded as deceptive practice in Portugal and will carry legal consequences, including fines and criminal prosecution.

COTANCE, the leather industry's representative body in the European Union, said this legislation seeks to protect consumers and help them to make informed choices by making sure the product information they see is correct and truthful.

Portugal has followed the example of Belgium, France, Spain and Italy, with Hungary likely to follow suit in the near future and a number of other countries already working towards the same end, COTANCE said.

Milan events on the move

After a flurry of announcements regarding the first editions of 2022 of the major Milan-based industry events, it can be confirmed that Lineapelle will go ahead as planned from February 22-24, providing a platform for tanners from all parts of the world to showcase the leather collections they believe will meet the

demands of customers for the spring-summer 2023 fashion season.

As announced previously, there was no intention to run Tanning Tech and Simac this February. Instead, these machinery-focused events will next run in September, in parallel with the autumn edition of Lineapelle.

This time, however, footwear exhibition Micam and its leather accessories-focused counterpart Mipel had been scheduled to overlap with Lineapelle, with the first day of the leather event coinciding with the final day of the finished product shows. This will not happen now.

Instead, Mipel and Micam have moved to new dates in March. They will now take place from March 13-15, still with the Rho exhibition centre in Milan as the venue.

Explaining the date change, the organisers of Micam said it had been requested by the market because the delay will offer more buyers the chance to travel to Milan if covid-19 restrictions continue to ease in many countries.

"Physical shows are indispensable in the fashion business," they said. 🌐



Senior industry figure retires

Leather chemicals manufacturer **Buckman** has announced that its strategic marketing manager for leather, **Elton Hurlow**, retired at the end of 2021.

Elton Hurlow has been leading figure in the industry for many years. He is a past-president of the International Union of Leather Chemists and Technologists Societies (IULTCS) and later became president of its commission for liaison and communications. He was the driving force behind the Global Leather Co-ordinating Committee (GLCC), a body that brings together the International Council of Hides, Skins and Leather Traders Association (ICHSLTA), the International Council of Tanners (ICT) and IULTCS to discuss matters of common interest. He also served as a member of the executive committee of multi-stakeholder body the Leather Working Group.

His colleague and successor as president of IULTCS, Buckman's global innovation manager, **Dr Luis Zugno**, said Elton Hurlow had combined academic, professional, and commercial roles in a career in the international leather industry that spanned more than 40 years.

Former VGCT president dies

A recent president of the German Leather Technicians and Chemists Association (VGCT), **Martin Heise**, died in December after a long period of illness.

Mr Heise spent his entire career in the leather industry and was a popular and well known figure across the sector. He had been the global product manager for wet-end leather chemicals at the Smit & Zoon group since the end of 2019, a role he took up after more than 20 years at Trumpler.

Earlier in his career he had spells at TFL, in raw materials buying at Naturin and at two tanneries: Bayern-Leder-GmbH (BLG) and, before that, Südleider, where he joined immediately after finishing the leather technician course at Reutlingen in 1986.

He was elected as president of VGCT in 2016 and remained in office until after the successful 2019 IULTCS Congress in Dresden.

Farm visit

Executive vice-president of the European Commission, **Frans Timmermans**, spent a day at a beef and dairy farm in Belgium in December at the invitation of multi-stakeholder group European Livestock Voice.

The group runs a campaign called #Meatthefacts to promote accurate information about the meat and livestock



Jitrois genius behind Ariana Grande's leather look

Paris-based **Jean Claude Jitrois** has emerged as the designer who conceived and made a stunning royal blue leather outfit that singer and actress **Ariana Grande** wore on The Voice on television in the US in late November.

Ms Grande made her debut as one of the coaches during the most recent season of the singing competition and attracted much comment for one of her wardrobe choices, a bandeau top, long skirt and long gloves, all in bright blue leather.

Several weeks later, Jean Claude Jitrois revealed that it was he who had created the garments.

The designer explained that it was the result of a collaborative project that he had worked on with Ariana Grande and stylist **Mimi Cuttrell**.

Mr Jitrois said it had been a proud moment to see Ms Grande wear the outfit on the show.

sector and it wanted to give Frans Timmermans some first-hand insight into what happens on farms in Europe.

Mr Timmermans, who plays a leading role in rolling out the Green Deal, the European Commission's far-reaching sustainability funding programme, also had the opportunity to engage with European Livestock Voice stakeholders, including leather industry body COTANCE. On the day, COTANCE presented the Commission vice-president with a leather apron.

Leather garments fit for a royal visit

Amsterdam-based designer **Mart Visser** has spoken of his admiration for leather, saying the qualities of the raw materials he works with often provide him with inspiration for the products he goes on to create.

This was exactly the experience he had in 2021 during a project involving leather produced using the Smit & Zoon Group's Zeology tanning system. This led to a set of chrome-free leather and suede samples in white and off-white that the Dutch designer found very attractive.

From these, he produced a long leather coat made from pieces in different tones of white and a pair of trousers in one of the off-white shades to complement it.

This outfit had a stellar first public showing. When **Queen Máxima of the Netherlands** went to Smit & Zoon's headquarters in Weesp at the end of May to mark the leather chemicals group's 200th anniversary, global director of marketing and communication, **Danielle Koenen**, hosted part of the visit. For the occasion, Ms Koenen wore the leather trousers and long leather coat that Mart Visser had created and she was able to share with the royal visitor why the garments were so special.

New Chanel chief executive will be based in London

An experienced executive from the world of fast moving consumer goods, **Leena Nair**, has been appointed as the new chief executive of Chanel.

Ms Nair has spent 30 years at Unilever, most recently as its chief human resources officer. She took up her new role at Chanel this January and will be based in London.

Unilever chief executive, **Alan Jope**, said Ms Nair had made "an outstanding contribution" to the consumer products group over the last three decades.

Virgil Abloh dies

American designer **Virgil Abloh** died in Chicago in late November, aged 41, following a more than two-year private battle with a rare cancer, cardiac angiosarcoma.

At the time of his death, Mr Abloh was artistic director of Louis Vuitton's menswear collections and chief creative officer of his own label, Off-White. He initially rose to prominence as creative director of Kanye West's creative incubator, Donda.

New chief executive for Church's

Prada has appointed its group commercial director, **Denni Manzatto**, to the position of chief executive of

footwear brand Church's. Mr Manzatto joined Prada in 2013 and worked in various roles before becoming group commercial director in 2019.

The group acquired Church's in 1999 and still manufactures the brand's shoes at the company's historical factory in Northampton.

Richemont names new Dunhill CEO

Luxury group Richemont has announced **Laurent Malecaze** as the new chief executive of its Alfred Dunhill leathergoods and fashion brand with immediate effect.

The group moved Mr Malecaze into this role from its AZ Factory brand, which he set up with the late **Alber Elbaz**. Earlier in his career, Laurent Malecaze was a consultant at luxury industry-focused analyst firm Bain & Company.

Richemont's chief executive for fashion and accessories, **Philippe Fortunato**, said: "Laurent comes with an entrepreneurial spirit and extensive experience in retail. He has demonstrated the ability to establish a strong design identity through a digital-first approach. He is the perfect fit to open a new chapter for Dunhill."

Television role

Arzignano-based leather manufacturer Gruppo Dani was one of a group of companies to feature in a new television programme that aired on Italian television on January 5.

The new programme, '*Ci Vuole Un Fiore*' (*It Takes a Flower*), takes its name from a famous song from the 1970s. Its aim is to highlight positive examples of good environmental practice in companies and other organisations across Italy.

Chief executive, **Giancarlo Dani**, who featured in the programme, said '*Ci Vuole Un Fiore*' highlighted the change that has taken place in Italy to embrace sustainability.

UK leather industry to feature in new book

Work will begin later this year on a history of the leather industry in the UK from the early 1800s until the present day. London-based historian and writer **Ian Stone** will be the author of the new history and anticipates publishing it in book form in 2024.

He will work with a team of senior figures in the industry in the UK, with **Jonathan Muirhead**, **Ian Michel**, **Mike Redwood** and **Paul Pearson** providing the editorial guidance.

In addition, industry body Leather UK has



New director general for CTC

Leather, leathergoods and footwear research and training organisation CTC appointed **Françoise Nicolas** as its new director general at the start of 2022. Ms Nicolas has worked at the Lyon-based organisation since 1990.

In her new role, she will spearhead CTC's work to help its member companies in France make their businesses more digital and more sustainable. She will also seek to develop CTC's work in the international arena.

asked any individual or company with historical texts, information, photographs, other illustrations or anecdotes to make the material available to Ian Stone for possible inclusion. He can be reached directly at is@ianstone.london.

Initial funding for the project has come from The Leathersellers' Company, the British Leather Industry Development Trust and private donations. The project has the support of Leather UK, which has said it will welcome further corporate and private donations to help fund the initiative.

Pittards apprentice scoops award

For the second year running, an apprentice at UK-based tannery and leathergoods maker Pittards has received the Apprentice of the Year Award from the UK's South West Apprenticeship Company (SWAC).

This time, **Ryan Smith** has taken the accolade. He joined the business at 16 and is now part of the company's IT team.

Artist hoist with his own NFT petard

Luxury leathergoods brand Hermès has taken a dim view of complaints from a California-based artist and entrepreneur, **Mason Rothschild**.

At the start of December, Mr Rothschild launched a series of non-fungible tokens (NFTs) based on the famous Hermès Birkin bag. NFTs are units of data, associated with objects, that are stored on a blockchain. Mr Rothschild's are called MetaBirkins; consumers began buying them immediately, paying in cryptocurrency and displaying them in online, 3D virtual environments.

As soon as Mr Rothschild began selling MetaBirkins, though, "fake versions" of them began to appear and to find buyers. Mason Rothschild quickly cried foul.

He has earned no sympathy whatsoever from Hermès. The leathergoods brand told the *Financial Times* it had not authorised the artist's use of its product name or image. It said the NFTs were an infringement of its intellectual property.

Literacy skills

Youth advocate and footballer **Marcus Rashford** is to work with luxury brand Burberry to support a children's literacy initiative.

Burberry asked the Manchester United and England striker to work with it to support a series of organisations that help disadvantaged children to develop their literacy skills.

It will provide funding to transform school libraries and donate books to make sure children have access to resources that can help them develop their potential.

Marcus Rashford, who previously developed a Book Club project for children, commented: "Far too many children do not currently have access to books, typically because of financial restraints, and there was a need to inspire them and allow them to see beyond the challenges they face daily."

Early start

Burberry has announced that its new chief executive, **Jonathan Akeroyd**, will take up the position sooner than planned. Burberry announced in October that Mr Akeroyd would be its new chief executive, replacing **Marco Gobbetti**.

Originally, Burberry said it would be April 2022 before he started work there, but it is bringing the start-date forward to March 15. 🌐

World Leather's publishing cycle and limitations on space make it impossible for us to run more than a carefully selected sample of news from across the industry. However, we publish hundreds more stories on leatherbiz.com. The site is updated every day with news from every continent and every part of the industry, making leatherbiz.com one of the most comprehensive archives of news anywhere on the web for the global leather industry.

We list below just a few of the headlines that have appeared on the site in recent weeks and can still be accessed.

20/01/2022

Monaco handbag sale a success for Artcurial
Milan events: Lineapelle sticks to February while others move to March
Prada Group sales soared 41% in 2021

19/01/2022

Optimism at ALCA for 2022 convention
Strong growth for Richemont
Regenerative sourcing scheme passes more than 2.5m acres

17/01/2022

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Latest Loewe collab full of international 'spirit'

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Bids invited for ETP upgrade contract in Pakistan
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AICC reflects on busy year

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Social media success continues for *World Leather*
Welcome return of AALF event
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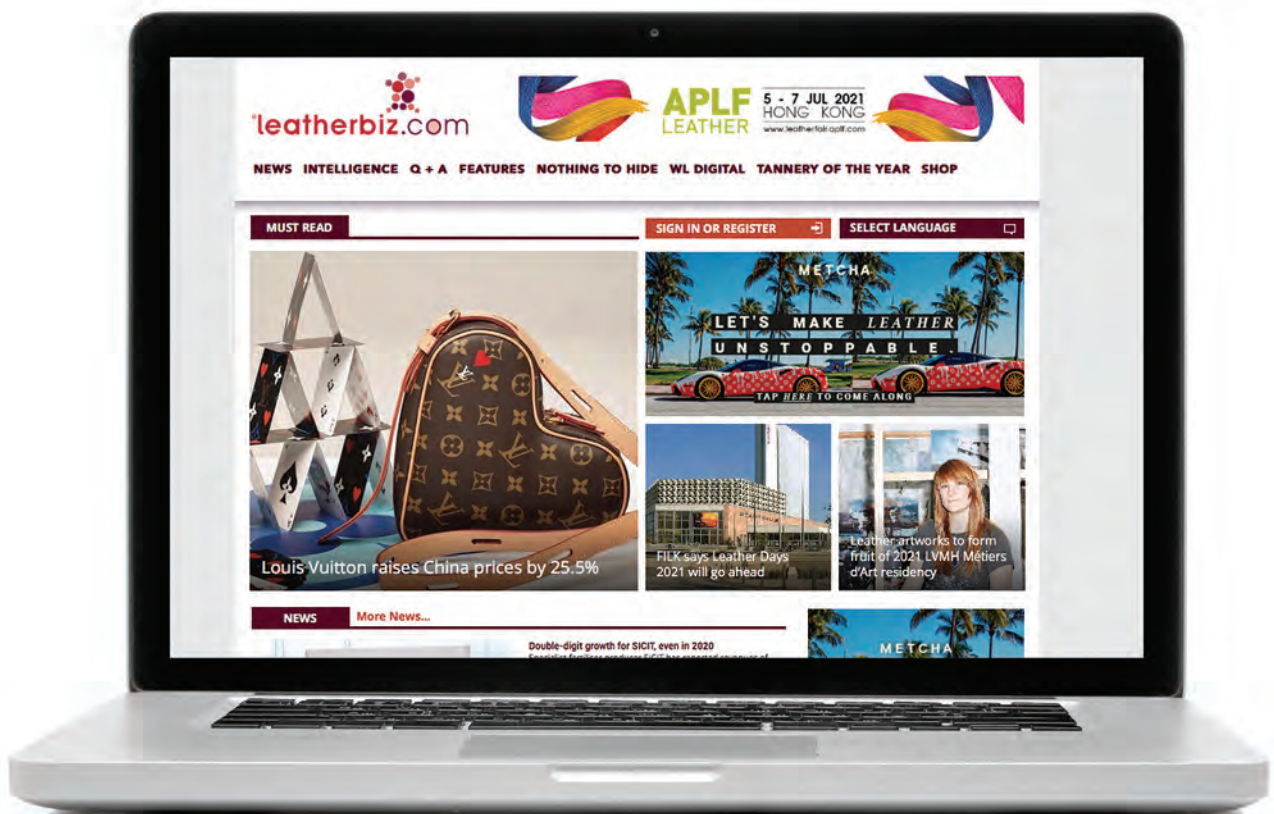
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Italy's national tanning industry association, UNIC, elected Fabrizio Nuti as its new president at the end of 2020. Based in Santa Croce sull'Arno in Tuscany, Mr Nuti runs the business founded by his father, Ivo Nuti, in 1955. It now comprises the Nuti Ivo, Lloyd, Everest, Papete and Deluxe tanneries in Italy and also has partnerships in Paraguay, Morocco and Hong Kong.

The globalised leather industry is here to stay

You said recently that there is a need for continuous improvement in sustainability, but that leather manufacturers in Italy have had sustainability as a priority for decades. To what extent has this focus on sustainability helped Italy's tanning sector become successful?

One of the reasons why sustainability has been a priority for the Italian tanning industry for decades derives from having always been organised in districts. The relationship with the local area has always been of fundamental importance to our companies. The first tanning wastewater treatment plant was created in the 1960s in Lombardy, in the district of Turbigo. This happened a few years before the first environmental regulation law was enacted in Italy.

This fact shows that Italian tanneries have been committed for many years now to minimising the environmental impact of production. It has been one of the keys to the success of Italian leather because selling a clean product that is the result of a healthy and transparent process has always been positively perceived by customers. They can add this element to other rewarding factors, such as style and technical performance. If previously sustainability was an intrinsic, positive feature in the product, this aspect is sought after in a more direct way now and with greater force.

If, in a discussion with UNIC, a member company questioned the return it might gain from investing in sustainability, what would you say to convince them the investment was worthwhile?

I would explain that an investment of this type is simply necessary if you want to develop your company in an efficient and successful way. Sustainability has become one of the elements that contribute to creating the overall quality of a leather product. Probably, at this moment in time, it is one of the main elements that make the quality of one product stand out compared to another. So, investing in sustainability means investing in the quality of your products and I would say that this type of investment always has a return.

To ask the same question in a slightly different way, how will a high level of excellence in sustainability help Italy's leather manufacturers recover from the effects of the covid-19 pandemic? How will you convince brands that this is worth investing in? Are the brands listening? Some of them seem to prefer to make up their own stories around sustainability and don't seem to care very much if these are based on truth or not.

In some respects, what you say is true. There are brands that address sustainability, or some aspects of sustainability, in a way that is a little too "personal" and subjective.

Sometimes their messages seem not very open or logical compared to technical and scientific evidence. It also happens that the solutions some brands want to put in place to resolve an aspect of sustainability are, on the whole, worse than the initial problem. I think these are some of the consequences of this great shift of opinion in favour of sustainability. There are people and companies who approach it with the aim of making it almost exclusively a marketing vehicle and those who experience it as the only possible way of doing things right, without shortcuts, tricks or red herrings. For us, improvement in the area of sustainability must be concrete, technically measurable and related to every aspect of the business at an environmental, social and ethical level.

Your father, Ivo Nuti, was renowned as a visionary man, and moreover, as having a global vision for this industry, helping to create demand across the global luxury sector for leather made in Italy. Which aspect of the industry in the 2020s do you think would have surprised him?

The market has changed a lot since my father's time. Customers have changed, relations with suppliers have changed, the pace and dynamic along the supply chain have changed, the very way of being a tanner and making leather has changed extensively. The tanning industry was a bit of a world apart in past years, while now it is a more open and well known subject. In terms of the market, perhaps he would not have expected this concentration of customers at the higher end of the market, where right now there are ten or maybe 20 brands competing with each other. I am sure he would not be surprised by the current focus on sustainability issues because he always considered it one of the drivers of the development of the sector.

What is your opinion of globalisation in the leather industry? Will it reduce in the post-covid world?

The leather supply chain has been deeply internationalised for decades and is now globalised, almost by nature. Hides, skins and leather, at every stage of the process, have always travelled between countries and continents and I am sure they will continue to do so. Indeed, they will do so more than before. Globalisation is an irreversible process because technological development is irreversible and, more and more, technology is helping us to eliminate distances and facilitate relations with any place on the planet. Covid, in some ways, has suspended the ease of movement but has accelerated the ability to relate at a distance. So it did not reduce globalisation but simply changed it temporarily. 🌐



“Sustainability has been a priority for decades because the relationship with the local area has always been of fundamental importance to our companies.”

UNIC president, Fabrizio Nuti, argues that improvements in sustainability must be concrete, measurable and related to every aspect of the business at an environmental, social and ethical level. CREDIT: UNIC

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Nothing to Hide: Chrome in leather manufacture: part one

Executive summary

The most common method used throughout the world for tanning leather is known as chrome tanning. Approximately 85% of all leather is manufactured using this process, and it has been established for more than 160 years. Tanning agents for this process are based on the element chromium, a metal that is naturally present in minerals, and the main use of which, after extraction, is in the manufacture of high-grade stainless steel and in chromium plating.

Chromium compounds are important in human nutrition; chromium is an essential trace element. It is also widely used as a colouring agent for tattoos, and is naturally present in many soils and woodlands.

There are two forms of chromium compounds that the leather industry must take into account. The first is found in chromium tanning materials that are used for tanning, where chromium is in the trivalent state, considered as non-sensitising and proven to be harmless. The second form is the hexavalent state, which is found in chemical manufacture as an intermediate product. Hexavalent chromium is toxic to humans and animals, and so these processes must be managed by professional chemical manufacturers under very strict conditions. This ensures that the chromium-based tanning products received by tanners are safe to use.

It is possible to convert chromium compounds from the trivalent state to the hexavalent state under extreme temperatures and oxidative conditions. Since the early 1990s, studies have revealed more detail about chrome tanning. This has led to understanding that an indirect oxidation route is possible under “normal” conditions. Exposure of a chrome-tanned hide to high levels of ultraviolet or to certain oxidative agents can convert small amounts of trivalent chromium to the hexavalent state. Recommendations for avoiding these conditions are well documented, and tanners using good recipes and good products will easily avoid these problems.

This paper shows that, although there is confusion between these two forms of chromium, there are no reasonable issues with trivalent chromium in leather. ☺

About this essay

We first published essay eight in the Nothing To Hide series in April-May 2015 issue of World Leather, the first of two essays on the subject of the use of chrome in leather manufacture. Its main author was Dr Dietrich Tegtmeier in his capacity as the then chair of the research commission of the International Union of Leather Technologists and Chemists Societies (IULTCS). Dr Tegtmeier is now the global head of business development and industry relations at leather chemicals group TFL. In 2015, he held a similar position at Lanxess and acknowledged the contribution that his colleague Dr Martin Kleban had made to the original essay. We, in turn, want to acknowledge the input we have received from Eurofins-BLC Leather Technology Centre, and especially from technical manager, Georgina Mawer, in updating essay eight.

ALL PHOTO CREDITS: WTP



Chrome-tanned, wet blue leather before further processing.

Nothing to Hide: Why tanners use chrome

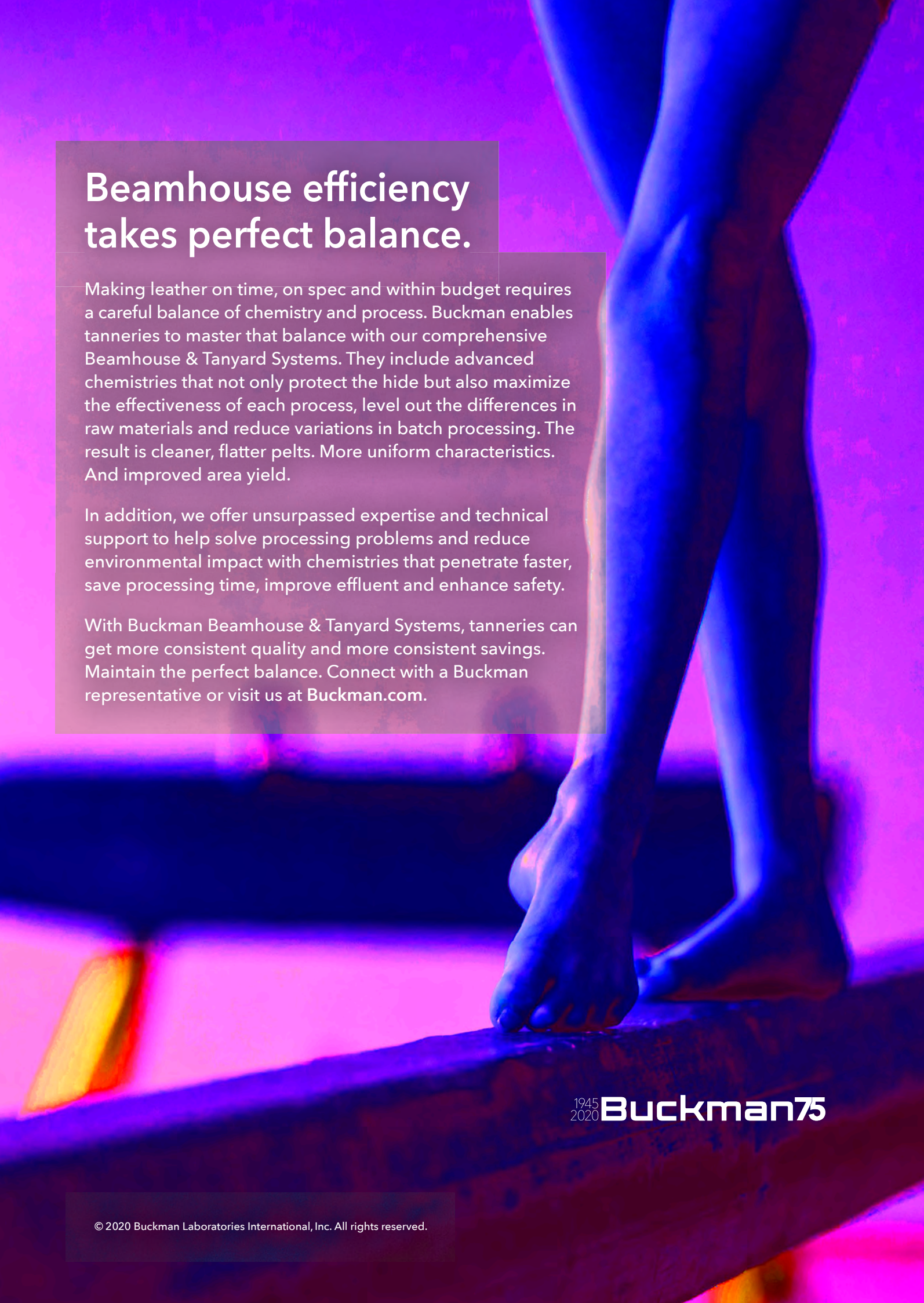
Tanning agents based on chromium have been in widespread use in the leather industry for more than 160 years and, because the chromium in the compounds tanners use is in the trivalent state, this is not considered harmful to workers or wearers of leather. As Dr Dietrich Tegtmeier, a former vice-president of the International Union of Leather Technologists and Chemists Societies (IULTCS), made clear in the original version of this essay in the Nothing to Hide series, the presence of harmful hexavalent chromium can be avoided if tanners and leather chemicals manufacturers treat the materials they use with due care and attention. The same author covered in detail the specific issues surrounding hexavalent chromium in a follow-up essay in the series.

Approximately 85% of all leather that is produced is tanned with a chromium-based process technology. Chrome-tanning was created in 1858, is very flexible, and is one of the best inventions in the history of making leather. It was the basis for the development of the leather business on an industrial scale. If this process is not operated correctly there is a potential risk in terms of toxicity relating to hexavalent chrome, Cr(VI). Since leather is a component in many consumer articles, and because some by-products and waste is generated in the leather manufacturing process, it is an important responsibility on the part of the leather industry to manage and fully control this potential risk. In order to be compliant with today's sustainability and regulatory standards, it is necessary to ensure 100% safety for people involved in making leather, for the environment, and

for the end users of the leather articles.

Huge progress has been made, especially in the last decades, and the vast majority of tanners take this potential risk very seriously. The research and development community is also continuously working on methods to avoid the formation of Cr(VI) so that it will have no negative impact on the environment or people, and to make it possible for tanners to recycle as much chromium as possible.

Unfortunately, a great deal of false or misleading information about the use of chromium in leather is appearing in the media. In these situations, the occasional case of a poorly operated tannery, which is not representative of the standard technologies in our industry, is taken and generalised. An impression is created that chrome-tanning in general is a process that has to be stopped and immediately forbidden.

A photograph of a person's legs walking on a wooden plank, symbolizing balance. The image is overlaid with a semi-transparent grey box containing text.

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A balanced view of the concerns, risks and results of scientific studies needs to be taken and placed in relation to the potential risks from using chrome-tanned leather. It is important not to belittle or even hide risks and dangers. However, if a risk is manageable, then correct and accurate information should be provided, to avoid the generation of false information, and leather manufacturers should focus on the application of procedures to address any potential risk.

Chromium, the element

Chromium is a special element, which is used in various applications. More than 95% of chromium is used outside the leather industry, and only a small portion of all mined chrome ore ends up in leather. The vast majority finds its application in premium stainless steel and chromium-plated articles. This is the reason why the overall recycling rate of chromium is very high. Chromium may even be the element with the highest recycling rate. There are different forms of chromium. The elementary and trivalent or Cr(III) forms are important basic components for many consumer goods as indicated in *Panel 1*.

Cr(III) is also important in human nutrition. The natural average content of Cr(III) in many woods and in soil is about 3-5 ppm. This is an entirely natural occurrence and not the result of any industrial contamination or application. Cr(III) oxide pigments are also used widely as green colour for tattoos without any harm or hypersensitive reaction to the skin or body.

Chromium as Cr(VI) is an important chemical intermediate to purify chromium for use in the manufacturing of all these applications. In this hexavalent form, chromium is known to be toxic to animals and humans so it needs to be handled with extremely high safety precautions by professional chemical companies only. In this situation, the in-house systems that are used are similar to those for many other hazardous chemical intermediates. This is a typical risk assessment process for a chemical company and it is completely manageable.

The fact that Cr(III) can be oxidised under certain condition to a hazardous hexavalent form is a similar risk to that found with many other organic chemicals that are used in multiple applications. For this reason there is a need for a scientific risk assessment of

Panel 1: The element Chromium is neither good or bad

Elementary Chromium Cr(0)	Trivalent Chromium Cr(III)	Hexavalent Chromium Cr(VI)
chromium plated articles & stainless steel → corrosion resistant → food contact cleared → surgical implants	Pigment Green → insoluble, not bioavailable → CLP 'not hazardous'	Intermediate in metallurgy & chemical synthesis → high solubility, bioavailable → acute toxic, CMR → strong sensitiser

the use of chromium for tanning leather in order to exclude these oxidations during normal conditions of use. This has been done in many scientific studies and these studies are the basis of legal requirements to protect consumers.

Starting mainly in the 1990s, studies have been carried out to fully understand the chemistry of chrome tanning, to evaluate the potential risk and to ensure a 100% safe use of chromium for tanning leather. Moreover, the United Nations Industrial Development Organization (UNIDO) has given clear recommendations on how to run a process to avoid any Cr(VI) contamination of the environment.

In particular, the leather manufacturing process was the basis of a thorough scientific study initiated by the European Commission and given the name "chrome6less". The full results of this study are available on the internet, but the overall outcome could be summarised in one sentence: "The formation of chromium (VI) in finished leather can be prevented". The leather industry has to make sure that these requirements are standard in the entire leather industry without any exception and without any disclaimer.

The chemistry of trivalent and hexavalent chromium

In order to manage any risk it is a precondition to understand the chemistry involved. In particular for leather, the trivalent and the hexavalent states of chromium are important.

In a dissolved form there is an equilibrium between the trivalent and the hexavalent form. This equilibrium is influenced by several factors, such as pH or concentrations. Cr(VI) is an extremely strong oxidising chemical, and this is one of the reasons for its hazard potential. Under the "normal" conditions of a leather matrix with pH values of between pH 3.5 and 5.0, concentration of extractable Cr(III) of between 50 and 500 ppm, and temperature below 100°C, the equilibrium between chromium in Cr(VI) and Cr(III) forms is almost completely on the side of the safe Cr(III) form, as illustrated in *Panel 2*. Estimations regarding this equilibrium refer to a factor of significantly higher than 10,000:1.

During the tanning process, most of the chromium in the hide is strongly fixed to the protein collagen. This phenomenon was the reason chromium was selected for this purpose in the first place and the reason

Panel 2: Chromium VI formation can be avoided with the correct process conditions

Theory about Chromium Cr(III) <-> Cr (VI) equilibrium	
In dissolved form there exists an equilibrium between Cr III and CrVI. The RedOx potential depends on many factors such as pH, anions, etc.	$\text{Cr III} \xrightleftharpoons[\text{f (pH, conc, etc)}]{\text{}} \text{Cr VI} + 3\text{e}^-$ $>10.000^{**}: 1$
Fixed chromium (Cr - collagen complex) makes significantly less Cr available for the RedOx equilibrium.	$\text{Fixed Cr} \rightleftharpoons \text{Cr (III)} \rightleftharpoons \text{Cr (VI)} + 3\text{e}^-$ $\text{Fixed 3-4\%} \quad \text{extractable 200 ppm}^{**} \quad <3\text{ppm}^{**}$
Solid Cr ₂ O ₃ starts oxidising directly to Cr VI under extreme conditions only.	$\text{Cr (III)} \xrightarrow{>500^\circ\text{C}^{**}} \text{Cr (VI)} + 3\text{e}^-$
A radical mechanism* can significantly lower the reaction enthalpy and speed for the oxidation.	$\text{Cr (III)} + 3 \text{R-O} \xrightarrow{>50^\circ\text{C}^{**}} \text{Cr (VI)} + 3 \text{R-OI}^{**}$

* Reactive Oxygen Species (ROS)

**all values are rough estimates for illustration and typical leather conditions

chrome-tanning came to be the dominant method for making leather around the world. Once the hide is tanned and the chromium fixed to the leather fibre, the availability of chromium for the equilibrium between Cr(III) and Cr(VI) is dramatically reduced. Only chromium that can be extracted from this leather by washing with water (extractable chrome) is fully available for this equilibrium. In standard chrome-tanned leather there is a chromium content of between 3% and 4% fixed to the fibre and the standard value for extractable Cr(III) will be in a range of between 50 and 500 ppm, although it depends very much upon the recipe and the process conditions. These details are summarised in *Panel 2*.

This 50 to 500 ppm is the amount that is available for the equilibrium, and accordingly this leads to a safe Cr(VI) concentration in the leather, one that is far below the detection limit of 3 ppm. Concentrations that have been shown to cause a risk for the consumer are higher by some orders of magnitude.

Oxidation of Cr(III) to Cr(VI)

A direct oxidation of fixed Cr(III) to the hexavalent form under standard conditions is very unlikely because the reaction speed is extremely slow. Only at temperatures greater than 800°C would the oxidation reaction start shifting towards Cr(VI). This means that for normal leather and under consumer conditions there is no risk at all.

However, there is one important fact to consider where there is a potential risk: an indirect oxidation route via an intermediate of a reactive organic species (ROS). Within the leather industry, chemicals and conditions can be found that generate these free radicals, such as by ultraviolet light exposure or bleaching and cleaning procedures. These radicals can oxidise trivalent chromium into the hexavalent form, even under “normal” conditions.

These radicals could be generated by unsaturated chemical groups, which can be found in cheap or low-quality fatliquors, waxes and oils. In order to avoid such an oxidation reaction, either these troublesome chemicals should be avoided, or a certain amount of scavengers and antioxidant auxiliaries have to be built into the leather matrix. If these scavengers are available, then any radicals will be caught immediately after generation and

irreversibly eliminated as they are transformed into stable components. These scavengers are a “built-in insurance” to avoid the formation of Cr(VI) through the indirect oxidation route. If these radicals are not present due to the avoidance of these chemicals, the much slower and more difficult oxidation process of trivalent chromium does not occur at all.

Chromium in the environment

If chromium is released into the environment, the same rules for an equilibrium will apply as with leather. Due to their strong oxidising power small amounts of any Cr(VI) will immediately react oxidatively with many of the organic components present in the environment. This means the Cr(VI) will become reduced to the safe form of Cr(III) according to the distribution of the equilibrium. In these small concentrations of Cr(VI) the process works like a “self-cleaning” mechanism.

However, as Cr(VI) is soluble, it could also be taken up by plants. In this situation the plant reacts in the same way and converts Cr(VI) into the safe form of Cr(III).

In the trivalent form in the environment, Cr(III) quickly ages to insoluble Cr(III) oxide. This is a final and fixed form of chromium under “normal” conditions, which, similar to the fixed form in leather, is no longer available for the equilibrium between Cr(III) and Cr(VI). In nature, the chemical system of different valency stages of chromium will automatically work against contamination from the hazardous form of Cr(VI). There is a belief that similar effects can be found if leather comes into contact with human sweat. The acid pH of sweat and the many microorganisms in sweat are a perfect environment to reduce any minuscule amounts Cr(VI) directly to harmless Cr(III). The stable form of Cr(III) is favoured as indicated in *Panel 3*. 🌱

Panel 3: Chromium is omnipresent and environmentally persistent - “chrome free” does not exist

Chromium: the equilibrium background and its persistency for the environment

- Cr (VI) ions are soluble in water, Cr (III) ions have a very low solubility
- Chromium (VI) is a strong oxidising agent, especially under acidic conditions
- Cr (VI) is highly soluble and can be reduced to Cr (III) by a variety of organic compounds
- In the environment, the equilibrium ends up >99.9% on Cr (III), and <0.1% on Cr (VI); it depends very much on pH and concentration
- Cr (III) components quickly age to form e.g. Cr (III) oxide. Becoming insoluble and bound to soil, the chromium is no longer bio-available and removed from the equilibrium.

$$\begin{array}{ccccc}
 \text{Cr}_2\text{O}_3 & \xleftarrow{\hspace{1cm}} & \text{Cr III} + 3\text{e} & \xrightleftharpoons[f(\text{conc, pH})]{\hspace{1cm}} & \text{Cr VI} + 6\text{e} \\
 \text{insoluble} & & \text{(stable)} & & \text{(hazardous)}
 \end{array}$$

Panel 4: Practical ways to avoid Cr(VI) formation in leather

It is important for the tanner to produce leather without any detectable amount of Cr(VI). This is manageable: a tanner only has to follow certain well established rules and use the right chemicals. These process technology guidelines are not rocket science. Key points have been developed to avoid a Cr(VI) formation during the process and to create a leather matrix. This provides a built-in insurance to avoid the generation of Cr(VI) during storage and use. This is normal practice for most tanners; however, these details are set down here as a matter of record.

- Always use premium chrome tanning salts.
- No use of oxidation agents (bleaching) on leather after tanning.
- Finish the wet-end processing at low pH conditions (3.5 to 4).
- Carry out a final wash after tanning.
- Avoid the use of excess ammonia before the dyeing process.
- Use high-performance chemicals for softening; do not use any unsaturated lipids or waxes.
- Use between 1% and 3% vegetable tannin extract within the process as this provides antioxidant protection.
- Use synthetic antioxidants where it is not possible to apply vegetable agents.
- Avoid the use of any chromate pigments (yellow and orange inorganic pigments).



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LIFEGOAST, aiming at enhanced environmental sustainability

The Green Organic Agents for Sustainable Tanneries (GOAST) project, under the European Commission LIFE programme — the funding instrument for environment and climate action — started in 2017. It was initiated to research improved chemical and technical formulations for leather manufacture in terms of environmental sustainability and further improve the circularity of the industry. The GOAST report was recently presented at an event in Montecchio Maggiore, in Vicenza. Costing over €2 million, the project was coordinated by leather chemicals group GSC and involved automotive leather producer Pasubio, specialist wastewater treatment partner Medio Chiampo, and the Ca' Foscari University of Venice.

If not treated properly, the wastewaters from traditional chrome tanning processes (TCTP) can pose serious environmental issues including damage to waterways and soil. At the start of the GOAST project, according to 2011 figures, the Italian tanning sector, on its own, was responsible for the use of over 47 million tonnes of chemical products. Of these, 31% contained what the Classification Labelling and Packaging (CLP) regulations class as “hazardous substances”. With 85% of global leather production relying on chrome tanning, a major goal of the project was the complete replacement of chromium salts with less hazardous substances. Alongside this, and understanding that chrome tanning in Italy utilises approximately 145 million m³/year of water, the project also hoped to reduce water consumption and pollution in line with the EU Water Framework Directive.

The partners

As a leading supplier of leather chemicals, Arzignano-based GSC group led the project. With over 40 years of experience in the industry, GSC has a global presence with a network of agents and distributors in 52 countries. Located in the province of Vicenza, after its recent investment and expansion, the company now has a footprint of over 20,000 sq.ft and produces over 32,000 tonnes of powders, liquids, and pigments per year. For the project, GSC produced an innovative, chrome-free tanning material.

Conceria Pasubio is a world-renowned tannery producing high quality leathers for the automotive industry and lists itself as prime suppliers to famous marques including Bentley, Porsche, BMW, and Maserati. With production spread across several different countries, Pasubio has roughly 1,800 employees and has a production capacity of just over 10,000 hides per day. As the lead tannery partner, Pasubio provided the processing expertise.

Medio Chiampo manages the integrated water treatment (aqueduct, sewerage, and purification) of the municipalities of Montebello Vicentino, Zermeghedo and Gambellara also in the province of Vicenza. It deals mostly with tannery waste, although it does include three wineries and some electroplating industry.

Scientific, technical and environmental support came from the Department of Molecular Sciences and Nanosystems of the Ca' Foscari University of Venice. The choice of these collaborators was said to be a “manifesto” for the district structure, to emphasise the relationship of the entire production chain in the sector.

Tanning agents

The tanning system employed was based on modified natural tannin polymers and organic acrylic polymers. Having first performed laboratory scale trials, the project moved to semi-industrial processing with the project partners. Following traditional beamhouse procedures, the new tanning material could be applied in a conventional manner by replacing chrome tanning salts at the tanning stage. Through further specialised processing, leathers were obtained that showed characteristics suitable for use in automotive leathers but also in other sectors such as footwear and leathergoods. In particular, the leathers showed excellent tensile strength with more than satisfactory tear strength and elongation at break. Moreover, gravimetric analysis also showed that at 2mg, the fogging properties were well below the test requirements for automotive leathers of ≤ 3 mg. This test has particular importance for automotive leathers as it is a measure of the release of volatile substances. Finally, possibly most importantly, the overall “metal free” nature of the leather was confirmed with a 300ppm test result – well below the 1000ppm maximum value classification.



Further goals identified

Almost all leathers will undergo thickness correction at some stage. If done in the lime, outlets for the splits can go in many directions, be it further tanning or used for protein recovery, among others. When in the tanned state, thickness correction is most often done by shaving, especially for finer tolerances. In this state, the shaving wastes can be more problematical. Although not part of the original goals set out by the GOAST project, it became apparent that attention should also be paid to any resultant solid waste and, to this end, the shaving waste was subjected to pyrolysis, a high temperature thermal process in the absence of oxidising agents, with the aim of producing a biochar.

Assessments

Quantifying and evaluating the performance of the project fell to Life Cycle Assessment (LCA) and Life Cycle Cost (LCC) analysis as well as socio-economic impact analysis, with the research aimed at comparing the new leather and its production against that of a TCTP lifecycle. Using these methods, the economic sustainability of the GOAST technology could also be measured. The contribution from all parties in the various stages was essential to facilitate the data collection and questionnaires and an online platform were developed for their compilation.



Biochar from LIFEGOAST leather shavings showed promising characteristics for use as a soil improver, replacement for cementitious aggregates, anode for lithium batteries and production of activated charcoal.

CREDIT: GOAST

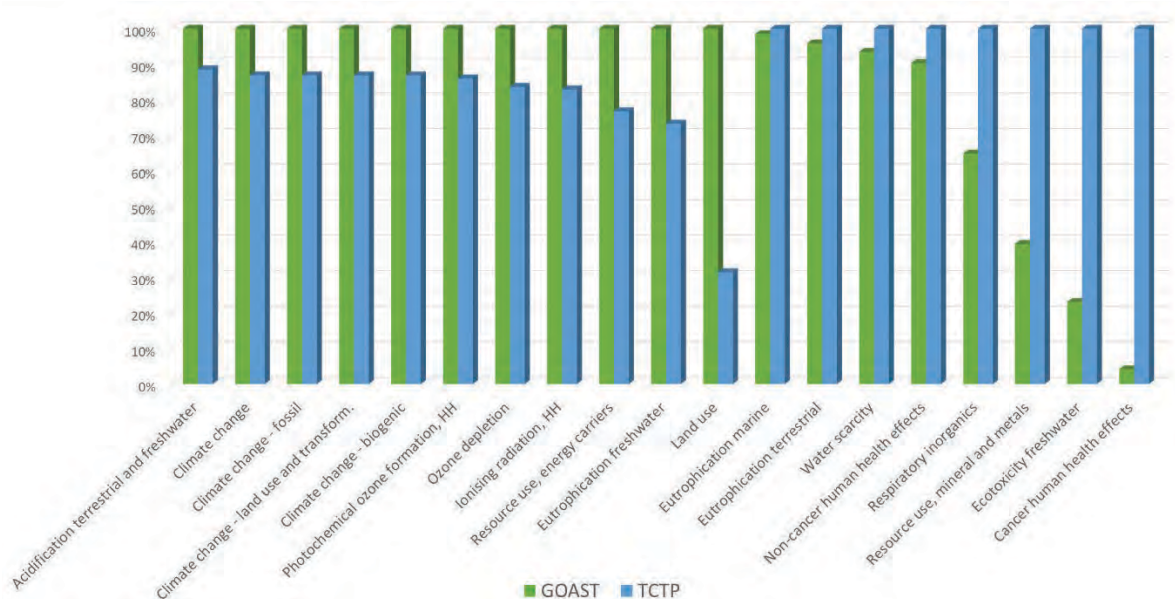
LCA Results

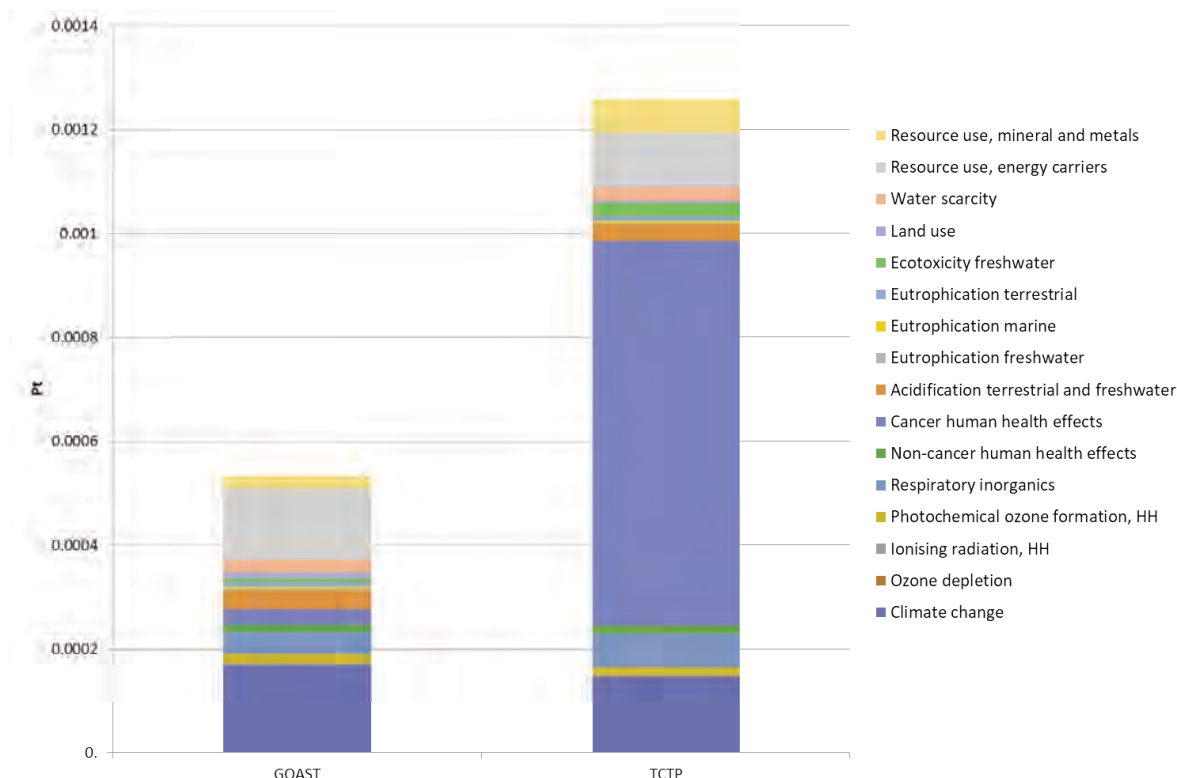
Comparative results between the two processes – GOAST and TCTP – when using the environmental footprint EF Method 2.0 for impact categorisation, the new process was found to be more impactful in 11 of the 19 categories. In particular, due to the use of vegetable tannins in its production, the land use category adversely affected the GOAST results but were less impactful on categories relating to toxicity and human health effects.

Other evident differences between the two processes were linked to climate change, resource use and energy for which the GOAST process was disadvantaged, linked to the production of the synthetic tannins. When viewed as

a single score, however, the overall impact associated with the two processes verified that the TCTP was more impactful with the results mainly attributed to the possible 'cancer human effects' category linked to the use of chromium as a tanning agent. The results of the LCA show that the GOAST innovative process is overall more sustainable than the TCTP, mostly linked to toxicity categories but it did highlight higher direct emissions in terms of kilograms of CO₂ equivalent, given the greater quantity of organic chemicals used in the processing. Offsetting some of this is already under investigation by GSC, utilising technology such as electricity generated through photovoltaic systems.

Graph 1: Impact Categorisation



**Graph 2: Single score analysis**

LCC Analysis

For cost analysis, the inclusion of purchase and disposal costs were included from the perspective of the producer, in line with proposed approaches for LCC analysis by the SETAC Europe Working group on LCC, and were based on the comparison of cost for tanning 1kg of leather for both processes. Overall, the TCTP had a lower cost by approximately 23%. The reasoning for this substantial cost difference was attributed to the purchase of the new product used as a tanning/retanning agent as all other costs were comparable.

Community impact

Socio-economic analysis was carried out to highlight any effect on the community or other specific entities that could benefit from the use of the GOAST technology. Investigation into both tanning companies and employees took the form of two different questionnaires and focused on the organisation of work, employee well-being and health and safety. With the data enabling analysis into strategic areas of the Italian production sector, this groundbreaking information also provided answers into how a new product could improve the sustainability of the sector. Speaking at the Montecchio Maggiore event, GSC group director Claudio Bortolati said, "The LIFEGOAST project has shown us that it is possible to produce leathers of excellent quality, free from chromium and other metals, with unique sustainability and circularity characteristics. This will help improve the environmental impact of the tanning industry, making our community safer and the industries in the supply chain more advanced."

Administered in 2019, the employee questionnaire was completed by 400 respondents, representing 30% of the workforce of the five different tanneries that were involved:

Pasubio, Conceria IC, Conceria Europa, Conceria 3C Lavorazioni Pelli and Conceria Belvedere.

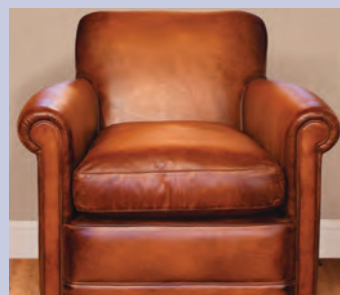
The results, somewhat varied, showed that in terms of well-being within their own company, 69.7% responded to it being at least as good with 23.3% citing it as sufficient, with 7% considering it poor. Additionally, 33.7% of the workers claimed not to know the type of tanning product or process being used – highlighting a possible inadequacy with training. With reference to the specific trial that was carried out, the majority (63.2%) were unaware that they were using a new product. However, more than three-quarters of the respondents felt that new technology could lead to better well-being in the workplace with the majority of these citing, as a primary cause, the reduction in inhalation of toxic substances while 19.1% referred to an improved corporate climate. For the corporate questionnaire, full participation was seen from the five tanneries but only one company, Pasubio, declared that having started the GOAST trial, it highlighted a possible increase in competitiveness. Furthermore, the company intended, at the time, to increase their workforce by 5% due to the trial.

Positive outcome

LIFEGOAST technology has proven potential to be a valid alternative to the TCTP process, the optimisation of which can certainly lead to a tanning process with a lower environmental impact. It is important to highlight that, despite the different chemical nature of the tanning agent, the LIFEGOAST technology can be applied following a standard procedure as a starting point, replacing the chromium salts and adapting them to new products. In addition, the greasing agents and retanning agents used are the same as in the TCTP process, underlining the versatility of the new technology. 🌱



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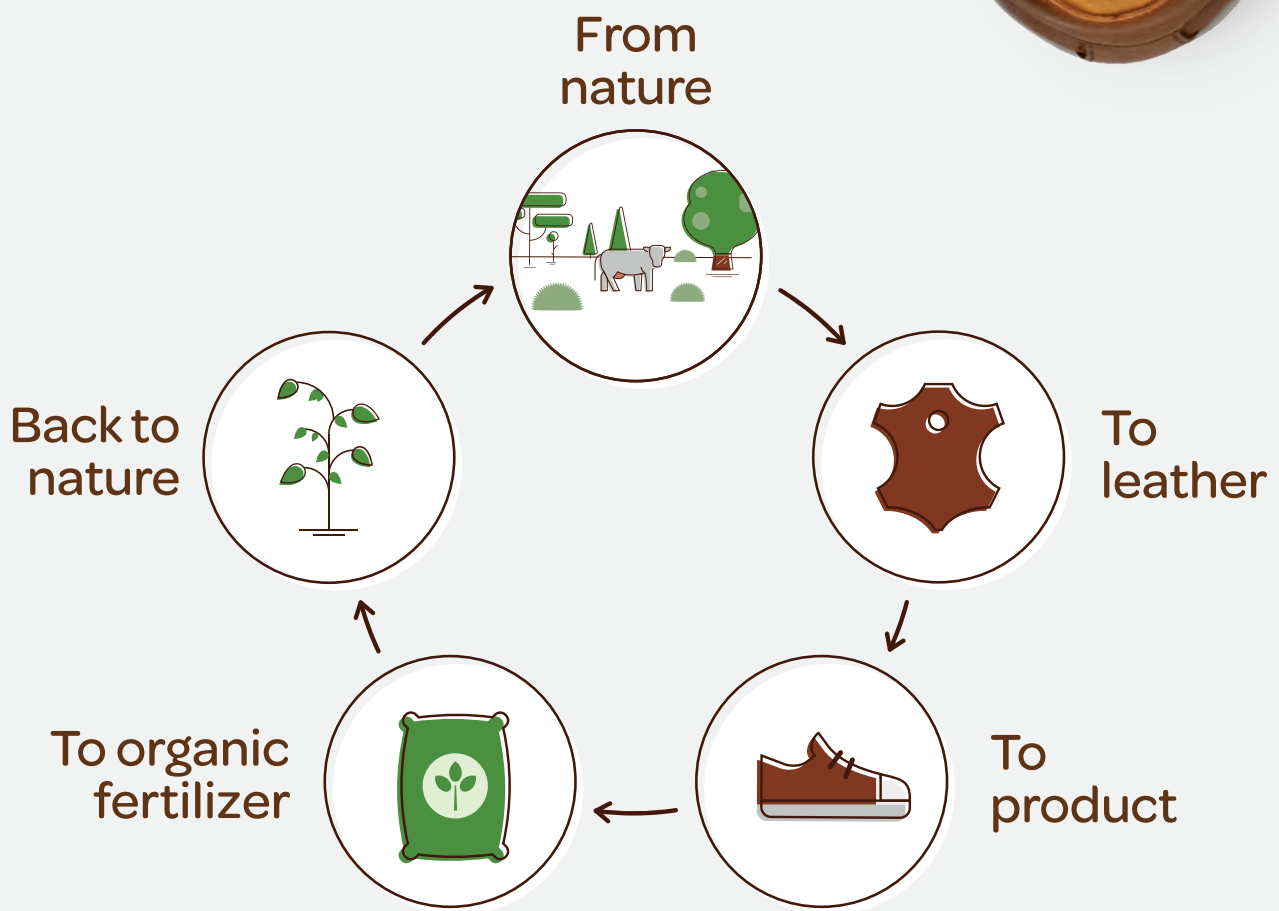
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- Professional Industry Management
- Reliable Industry Trade Standards – *The Standards Governing the Sale of North American Cattle Hides*



Find out more by visiting the U.S. Hide, Skin and Leather Association at www.ushsa.org



The first truly
bio-circular leather
with a proven path
back to nature



Ecotan leather is free from metals, glutaraldehyde and other hazardous substances. **At the end of its life, it can be recycled into a fertilizer for organic agriculture.**

This tanning technology uses patent pending tannin based products and has been developed thanks to a partnership between Silvateam, Biofin, Fertilizzanti Certaldo and some of the world's best tanneries.

Overview of Key Topics: IULTCS XXXVI International Congress

Matthew Abbott, Technical Editor

The IULTCS congress is an opportunity for the industry to showcase their work, whether this be practical applications of new technology from the chemical supply chain, or the culmination of theoretical work carried out in the more academic institutions; it must be said that the Ethiopian event did not fall short. Over 100 topics were included in the three-day event, with 36 as oral presentations and the remainder available as poster presentations. For the first time in its near 120-year history, the IULTCS XXXVI International congress was held as a hybrid event in Addis Ababa.

The covid-19 pandemic had clearly impacted the event. Nevertheless, IULTCS president Dr Luis Zugno acknowledged the work of all participants and the congress was still able to share the world class technical content with an international audience; he specifically thanked Professor Mwinyi Mwinyihija, IULTCS Congress president, for his foresight in bringing the congress to Africa and to Professor Hailemariam and his team, for four years of commitment and dedication to make the congress happen.

At the opening of the congress, the IULTCS 2021 Merit Award for Excellence in the Leather Industry was presented to Dr Thirumalachari Ramasami. Known for his significant scientific contribution to the chemistry of chromium and his leadership in the Indian leather sector for many years, he developed a “Unified theory of tanning” by probing molecular level understanding of tanning systems.

“What’s the use of leather science”

The keynote Heidemann lecture was given by Professor Anthony Covington, emeritus professor of leather science at the University of Northampton. He wanted to present a fresh way of thinking about leather making, entitled his presentation “What’s the use of leather science”. He wasted no time in telling the audience that many of the theories that had been relied upon for the last three quarters of a century were wrong, firstly in the unhairing process where the previously accepted mechanism for keratin degradation, with the presence of sulfide as S²⁻ cannot be correct, as S²⁻ does not exist in water. Gustavsson’s 1950’s model of chrome fixation was the second. “Forget it, it doesn’t exist in solution so it cannot be the basis for chrome tanning”. Discussing other areas of tanning, touching on the general theory of tanning, reagent fixation and reagent delivery, Professor Covington also made a bold statement that crosslinking does not exist! So confident is he in this that he never uses the phrase.

Looking at the implications of his new way of thinking,



Dr Thirumalachari Ramasami, received the IULTCS 2021 Merit Award for Excellence in the Leather Industry. CREDIT: IULTCS

specifically the link-lock theory, it can be used to explain the outcome of all tanning processes, known and unknown. Defining the conditions for moderate and high hydrothermal stability leads to a general theory of fixation mechanisms and by this understanding, allows the prediction of process outcomes. Looking to end of life options, he gave an



overview of what was currently possible but also noted that current work being carried out has found that a redox (reduction-oxidation) mechanism applies to collagen degradation — therefore the introduction of a redox element into the leather can go some way to “sow the seeds of the leather’s own destruction”. Returning to the lecture’s title, Professor Covington pointed out it makes research and development logical, stops it going down dead ends and tries to eliminate assumptions based on incorrect premises and allows quantum steps forward, to create a sustainable future for leather.

Professor Covington left the audience with a couple of quotes, “All science is right, until proved otherwise” by Henri Saumier. Supplementing this, he added his own “... assuming the science is feasible in the first place!”. His challenge to the upcoming new, young leather scientists? Prove him right or prove him wrong, either way leather science benefits.

Leather in the biosphere

The subject of biodegradability is very much in vogue. It is assumed that leather is by and large degradable as there are no mountains of historic and ancient leather products – but is this a fair statement? Karl Flowers, of Authenticae, gave some interesting findings to some recent research that he and his team had carried out to explore the effect of differing retannage to the biodegradability of leathers. By taking a fully biodegradable (as tested to ISO 20136) zeolite-tanned crust leather, retannages of differing chemical classes were investigated – these being Zeolite retan, phenolic syntan and a hydrolysable polyphenol. Using a collagen control in the form of untanned collagen powder, the biodegradability of the leathers was examined. In all cases, the post tannage operations of dyeing and fatliquoring were identical. Once dried and softened, the leathers underwent carbon content analysis, to allow understanding of the theoretical CO₂ release; biodegradability analysis was carried out following the ISO 20136 standard method. The results showed that chemical complexity poses a problem to microbiology, in that the more complex the retannage, the more difficulty the microbes have in breaking it down, as evidenced when compared to the collagen control, having an absolute biodegradation figure of 91.59%, polyphenol retannage having the lowest relative biodegradation figure (58.02%), followed by the phenolic (69.68%), with zeolite retannage having the highest (72.42%). It must be noted that the tests carried out were performed in an aqueous environment – as directed by the ISO method – and the results could be very different in a solid state “composting” environment. For this reason, Mr Flowers made it clear that grading the retannages into “good, bad or other” would not be a fair comparison.

A return to unhairing

Despite the comments of Professor Covington, a presentation on unhairing system comparisons was given by Julian Osgood of ATC. Well known for being the bulk contributor to tannery wastewater pollutants, the beamhouse operations represent an area of opportunity where the reduction of COD, BOD, TDS and sulphides stand to give the tanner the best returns, not only in terms of cost but also compliance, as well as health and safety. Aided by a video playback of the laboratory trials, Mr Osgood compared a traditional hair burn system with ATC’s Zero Sulphide Process



IULTCS Vice President Mr. Jean-Pierre Gualino, founder of French chemicals company ATC, welcoming delegates to the congress. CREDIT: IULTCS

(ZSP). Working on the principle of hair “immunisation”, whereby the keratin of the hair is protected from sulphide degradation, subsequent attack at the pre-keratinised hair root allows intact hair removal, the ZSP process employs a similar principle. By replacing the sulphide with some proprietary chemicals in the form of an unhairing enzyme designed to attack hair keratin and an inorganic sulphide-free unhairing agent, designed to reduce wrinkles and improve grain smoothness, the process trials claimed a reduction in solids of 41%, COD by 47%, BOD by 14% and sulphide by 100%. One issue identified with the process is the removal of the hair that could represent significant investment from the tannery to equip each drum with the necessary drains and filters to collect the hair.

Carbon footprint and communication

With the fallout from COP26 still being assessed, the subject of trustworthy communication of leather’s carbon footprint made a well-deserved entry to the programme. Daniele Pernigotti, CEO of Aequilibria Srl SB and Director of Carbon Footprint Italy, made his presentation whilst attending the Glasgow event. After a brief overview of the ISO standards on climate change – ISO 14067 pertaining to products and evaluating the sum of the GHG emissions and removals expressed as CO₂ equivalents and ISO 14064-1 pertaining to the principles and requirements to manage and report GHG inventories at the organisational level, it was suggested that some of the problems, when it comes to the communication, is from the proliferation of labels on the market where there is a risk of confusion and possible greenwashing.

To offer more clarity and perhaps avert self-declarations,



programme operators whose responsibility it is to manage the communication of carbon footprint have been set up. With work based on ISO standards, Carbon Footprint Italy (CFI) allows the use of its label, alongside a QR code directing the consumer to the dedicated product or organisation web page containing the relevant GHG information, to be used on the products. Using blockchain technology, the information is immutable and over time allows tracking of the progress achieved in the greenhouse gas emissions reduction pathways. Within the leather value chain, it was shown that, where there is a growing interest from customers to further understand the carbon footprint from their suppliers, there are increasing opportunities within virtuous value chains in standing out from competitors to gain a better position.

A sense of smell

Not everyone loves the smell of leather. Rodolfo Ampuero, TFL, started his presentation with a stark slide showing a comparison between China and the USA on consumer complaints about odour in cars. In the worst year, 2017 for some reason, 18 times more complaints were made about interior car odour, with the average being approximated 16 times over the last five years. What are the reasons? Sensitivities to external influences, such as pollution and associated health fears and cultural differences in reacting to odour, were stated as well as internal environments in how the car manufacturers have had to change in order to follow environmental regulations and automotive specifications. Whilst seemingly tenuous, the links were clearly explained.

In moving towards lowered energy consumption, reduced water usage and even increased heat fastness, tanners have employed various initiatives such as lower drying temperatures, reduced floats, and a move away from the more natural tannin and oil-based components to synthetic alternatives. By doing so, drying temperatures do not drive off the volatiles as much, washing operations are somewhat less efficient and car design with larger windscreens have seen in-car temperatures rising faster and to higher levels than ever before. All these factors concentrate on one issue, volatiles. Leather and its ability to “breathe” is constantly absorbing and releasing volatiles.

It is therefore essential that choice of chemicals during the whole leather making process is done with caution as only one bad candidate can seriously spoil the odour. To assess odours, Mr Ampuero showed several automotive brand's grading methods. In most cases these were ranging from a not perceptible odour up to not acceptable or even offensive and based on a one to ten style scale. As is the case with many OEMs though, a pass from one may not automatically mean acceptance by another. One thing is for sure though, a situation that is as emotive and complex as smell is here to stay.

Other major congress topics included the current situation on bisphenols (covered in *World Leather* October/November 2021); melamine ethoxylates: novel formaldehyde-free resin retanning agents; the pathway to a sustainable leather industry, and is leather still the ‘material of choice’ for footwear?

In closing, the IULTCS flag was symbolically handed to Mr. Chen Zhanguang of the China Leather Industry Association, as the host of the IULTCS XXXVII international congress in Chengdu, October 2023. 🌐

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5th World Leather Congress

Addis Ababa was the venue for the joint 5th World Leather Congress as well as the XXXVI IULTCS Congress in November. Under the heading “Leather, a gift of Nature!” the congress was followed later the same week by the 3-day IULTCS congress under with the theme of “Greening the leather value chain”. Both were held as hybrid events following the global covid-19 pandemic.

Previous gatherings had been held in Rio de Janeiro, 2011, Milan, 2015, Shanghai, 2017, and New York in 2019; the 5th World Leather Congress reinforced its global credentials by its presence on the African Continent. The congress was hosted by the Africa Leather and Leather Products Institute (ALLPI) and enjoyed organisational support from the International Council of Tanners (ICT) and sponsorship from TFL, Pittards Global, ATC, Cromogenia Units, Buckman International, CICB and ELICO.

Over 100 participants from 19 different countries attended, the majority taking part on-line and viewing the live proceedings in real time from the Ethiopian capital. Welcoming delegates, Mr. Ghebregziabher Ghebremedhin, Acting Executive Director & Programmes Coordinator of ALLPI, thanked the ICT secretariat for accepting their invitation and allowing them to host the congress. He believed the African leather sector would benefit from the congress, providing an opportunity to those engaged in the leather sector to discuss, listen, and learn about new production processes, new technologies and above all to establish or renew networks with the leather family across the rest of the world.

Secretary of ICT, Dr Kerry Senior, paid tribute to the ALLPI for organising the event under very difficult and changeable conditions. Having endured difficult times, the industry now has other challenges ahead. He highlighted the shift away from leather by notable car manufacturers under spurious sustainability claims that, to help reduce the number of cattle

on the planet, they would not use leather in their new electric cars. It was a cynical disregard of the fact that leather manufacture does not drive cattle rearing. It qualifies as virtue signalling on the part of those companies.

Dr Senior hoped that the insights from the two conferences would take the leather industry to a cleaner, more sustainable future, and demonstrate the relevance of the industry: “We are not a ‘sunset’ industry but one that is moving to keep pace with the modern world.”

Mr Tarekign Bululta, Ethiopia state minister for manufacturing industry competitiveness and development sector, opened the congress officially and expressed the hope that interaction between colleagues meeting from around the world would also create a rewarding and stimulating exchange of ideas.

Presentations covered three main areas: Global view on livestock, raw stock, value chains and supply chains; recent advances on leather development, processing and sustainability; and trade, policy and regulations.

Global and African footwear trends

Mr. Wondu Legesse Gizaw, National project coordinator - Ethiopia UNIDO, gave an unsettling overview of footwear trends at the expense of leather. Although often associated with low-cost products, the rise in textile footwear exports over the last ten years has been accompanied with new materials and the development of new product concepts, resulting in higher added value for the consumer. Between



2011 and 2019, textile footwear saw an increase in average price of 52%. Despite the impact of the pandemic, 2020 saw a continuation of this trend with a further 13% increase, and for the first time, average price per pair exceeded \$10 when prices reached \$11.20.

No strangers to the facts

Regular readers of *World Leather* will be well versed with the subject area chosen for discussion by Stephen Sothmann, president of the leather and hide council of America. The relationship between leather, livestock and the meat industry has been well documented by his organisation. His presentation showed that since 2016, demand for US beef in China has grown and is estimated to increase by over 420% by 2022. Imports of US beef in 2016 were 760,000 MT, by 2022 this is estimated to reach 3,250,000MT. By the end of 2021 the import figure was already at 2,782,000 MT. Whilst this is good for the meat sector, it was once again pointed out that of the 33 million cows that went to slaughter in the US in 2020, 4.8 million hides from these ended up in landfill. There is also an increasing availability of animal protein in the developing world.

Value of luxury goods

Luca Boltri, Vice-Director of UNIC in Italy gave a positive review of the future value of the global fashion and luxury markets. Although having seen a downturn in 2020, classed as the covid-19 effect, sales results for the first half of 2021 seemed so positive that, even when compared to the most positive recovery scenarios outlined by analysts, the rise in online sales and a partial return to tourism will yet see these scenarios overtaken by 2022. With breakdowns showing that luxury leathersgoods account for a 35% share of the total global fashion luxury goods market, Mr Boltri stated that overall, bovine leather had increased its quota because of its versatility and minor pricing changes as compared to calf, sheep and goat leathers and the uncertainty of exotics.

By 2030 luxury players will need to transform their operations and redefine excellence. Quality will remain key but inclusion of sustainability as a prime marker will be a major factor. A younger generation of "activists" are set to drive 180% of the growth in the market from 2019 to 2025 where unprecedented emphasis will be placed on environmental and sustainability issues.

Science Based Approach

Heading up the sustainability section, Kim Sena, sustainability manager at JBS Couros, gave an overview of its recent work on leather life cycle assessments. Examples showed how its Kind Leather product compares with other materials and where it sits in the, often criticised, Higg material index. Through this work, Mr Sena outlined the company's new decision-making process when approaching new product developments or even product constituent replacements; it is continually looking to improve not only the technical leather development but also the environmental impact that the production of leather has. Discussing future developments, in part dealing with understanding and influencing the importance of hide allocation, he illustrated how this greatly affects the end results of any LCA performed, in addition to the many other complex reasons including agriculture, geography and even animal breed. Mr Sena also introduced the concept of a competence centre for raw hides and biomaterials. Working in conjunction with other companies, NGOs, industry

associations and LCA technical specialists Spin 360, it is envisaged that work can be carried out in a pre-competitive environment for purely scientific-based discussions and evaluate how much of an impact should be allocated to all the different types of leather regarding all the different types of raw materials. The idea would then also be extended to other biomaterials that perhaps do not get the correct representation in currently available tools.

Brazilian sustainability drivers

Rogério Cunha, the trade intelligence manager for the centre for the Brazilian tanning industry (CICB), the official representative body of all Brazilian tanners, looked at the profile of the leather sector in his country. Encompassing more than 200 companies that directly employ over 32,000 people and with a turnover of more than \$2.5 billion, the Brazilian leather industry is spread throughout 23 states with the largest concentration of companies based in the more southern regions. Staking a confident claim to have the largest number of tanners operating with sustainability certificates and credentials, the CSCB certification programme offers a "tripod" of sustainability concepts in which a tannery's results are considered in economic, environmental, and social terms. Justification for the programme is evidenced by Brazil having the largest commercial cattle herd in the world and therefore being one of the main suppliers of raw material for the global tanning industry.

Sphere Technology

Closing out the sustainability and development section, Qualus CEO Vikrant Pratap discussed its polymer sphere technology. As published in *World Leather* February/March 2021: Improved chemical uptake in leather processing, readers may well be familiar with the polymer innovation in that it enables the reduction of both water and chemical addition to the process. Efficiency of the process is improved as the spheres help to drive the chemicals into the hide and, on completion, the inert spheres can be cleaned and reused. At the end of their life, the spheres can either be recycled into new spheres or into other consumer products.

Aiming for integrity

In the final section of the conference, Deborah Taylor, managing director of the newly formed Sustainable Leather Foundation (SLF) provided insight into its transparent sustainability dashboard and suite of documents that facilities are assessed against if they do not already have accreditation through a third party. Working with the leather industry, the SLF has formulated an Accessible Inclusive and Modular (AIM) approach and claims that until now, no comprehensive system of transparent information was available that could show prospective end users all the sustainability sensitivities in the value chain. Based on a three-pillar system of environmental, social and governance auditing, SLF introduces a non-commercial sustainability system that it claims did not exist for the leather industry until now.

Trade and policy

Turning the attention of the congress to matters more statistical, Mr Chen Zhanguang, general secretary of the China Leather Industry Association (CLIA) gave a summary of the development and prospects of the China leather industry. Most notably, first half figures for 2021 showed increased imports of



both raw hides and semi-finished leather when compared to the same period in 2020 – increases of 9.1% and 25.5% in volume and 29.3% and 42.6% in value. Mr Chen stated that the China leather industry is facing many challenges, along with many opportunities. CLIA has been centring on the orientation of “technology, fashion and green” and cooperating with counterparts worldwide to promote their industry development with emphasis on high quality and sustainability.

COTANCE secretary general Gustavo Gonzalez-Quijano put forward the Footprint of Leather, the reasons for allocating zero carbon to hides and skins generated by the meat producing animals. Discussions centred around the economic allocation rules, also referred to as the Product Environmental Footprint (PEF) methodological requirements where values for hides and skins differ depending on the animal (bovine, caprine, ovine) but also other allocation rules. Other examples of more default allocations were illustrated, these being assigned by bodies such as Higg, PEF default, Environmental Product Declaration (EPD) and also EN 16887– the European standard for the calculation of the carbon footprint of leather as defined in EN 15987. In all cases, there is no accord and values range from 0% up to 3.5%. To quote Mr Gonzalez-Quijano, economic allocation is nonsense. Anything other than zero makes leather non-competitive with alternatives, limits the ability to display the real environmental impact of leather and to make a real difference between tanners to drive improvements. Where a zero allocation changes little of the environmental footprint of meat, it makes all the difference for leather.

Self-assessment

Drawing the presentations to a close, Christina Trautmann, operations manager for the Leather Working Group, gave an overview of their Tannery of the Future programme. Originally launched in 2019, the self-assessment tool is designed to support leather manufacturers in moving towards LWG-certification and enables them to evaluate their current environmental and social performance, identify areas where there is room for improvement and understand their readiness to undergo an LWG audit. The self-assessment is split into three areas: critical evaluation where crucial elements are assessed to see if a tannery is operating in a safe and responsible manner; good practice, where additional elements show that a tanner is performing well and thinking about how to improve their performance are assessed; social responsibility – focusing on social and labour elements to give guidance on additional areas. By joining the programme, LWG claims the benefits include the broadening of networks with the other 1,400 members but it is also communicating a commitment to customers.

Dr Senior, in closing the congress, expressed his thanks to the speakers, “The calibre of which demonstrated so clearly why this leather congress is so important. We’ve had some excellent presentations from very well-respected speakers on where we are and where we need to go, particularly within the frame of sustainability which is the subject of the moment that needs attention.”

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State of the art drying

Using independent cell technology, Fratelli Carlessi claims that standardisation of leathers is possible across different batches, independent of tannage, thickness or even if the machines are stopped for a midday lunch break. The company used Simac Tanning Tech 2021 to display its top of the range CRC and MCC cell drying and conditioning systems.

The CRC, or cell rotary conditioner, is a versatile drying and conditioning machine, suited to the production of smooth grain or pebbled leathers. The drying tunnel is divided into cells with each module working as a single oven in which it is possible to set specific temperatures with independent humidity control coming from water vapour nozzles and ventilation patterns. This is said to avoid variations in quality and even contamination between different batches of leathers.

With optimised distance between the individual frames, drying time is reduced and the newly designed airflow system passes the heated air through the hides from the bottom upwards, giving a more uniform drying of the leather as, due to gravity. Humidity tends to accumulate in the lower part of the leather. Incorporating a crossflow system, the air reaches the central area of the hides more easily than with a traditional ventilation system, and so avoids the formation of darker areas along the edges of the skin or changes in colour.

Using patented expansion systems, stress control in the leather is perfected to achieve maximum area yield during drying whilst avoiding fibre and grain damage. Construction of the frames also considers the differences between structural stress in the hides ranging from the neck to the tail. Full automation is possible with the setting and recalling of drying cycle recipes as well as having complete management of the individual cells, frame by frame, for the duration of the cycle.

Working in much the same way, the MCC, or multi cell conditioner, represents the perfect application of the CRC cell drying and conditioning technology to a hang dryer format. Technically a dryer, it is characterised by a sophisticated environmental control system which makes it more suited to conditioning. Cells are managed individually and



With automated rotation, the loading and unloading of the frames is made more ergonomic, quicker and easier.

ALL CREDITS: FRATELLI CARLESSI

adjusted according to the loaded leather batches, with each climatic chamber performing independent drying and conditioning cycles with variable temperature, humidity, and counter current ventilation profiles.

In contrast to the CRC, where only the settings can be controlled automatically, the MCC can be automated for the entire process, as it features an automated unloading system for removing and piling the conditioned

leather. Using a double track transport system, the leather is kept safely away from the internal moving parts of the machinery, avoiding any contamination.

Being a modular design, the size of the machine can be varied to suit the individual customer and further customisation can be found in the source for heating as it is possible to choose electric, hybrid, superheated water, diathermic oil, gas or steam versions. ☉



The modular construction system of the MCC gives customers the ability to work with their available footprint.



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Leather and the circular economy



Leather uses renewable raw materials



Waste from other sectors (meat and dairy) is the input for making leather



The material is long-lasting



Leather products are eminently repairable



Leather is in keeping with sustainable consumption and sustainable production and, thus, supports the UN's Sustainable Development Goals (SDGs)



Use of leather aids the battle against marine pollution, also part of the SDGs



The leather industry opens up pathways into the circular economy for companies of all sizes, including many thousands of small and medium enterprises



Leather content fulfils finished product manufacturers' desire to use recycled material



Finished products made from leather will meet criteria for green tax relief and for green procurement exercises



Leather manufacturing supports green employment commitments

Credit: WTP/Flaticon

A fair COP for leather

There was plenty of talk about leather at the 2021 United Nations Climate Change Conference, COP26, in Glasgow in November, not all of it directly helpful. Fashion designer Stella McCartney generated many of the leather headlines. She used a fringe event at the conference to launch an installation called 'Future of Fashion: An innovation conversation with Stella McCartney.' She claimed to be the first designer to use mycelium material Mylo to make clothes and displayed these as a centrepiece for the installation. To emphasise the point, the clothes were displayed on mannikins that wore curious hats shaped like the caps of Amanita muscaria mushrooms.

CNN interview

This attracted plenty of attention and, although the maker of Mylo, Bolt Threads, has told *World Leather* that its aim is not to replace leather, the designer wasted no time in an interview opportunity with CNN to paint leather in a bad light. She said: "When we take a plant-based bag or shoe into America, for example, we are taxed at 30%. We have a 30% taxation. Leather has none. But if you put a sliver of pig leather onto that same product, your tax is removed. We are penalised, basically. We should be getting a 30% tax break for a vegan product and leather products should have a hit. It's all backwards."

The Leather and Hide Council of America (LHCA) found her breakdown of the complicated topic of tariff rates intriguing. It says more detailed information about any specific product

Leather had its ups and downs at COP26, but, in the end, it came out of the event well.

would be essential for analysing the claims in detail, but LHCA president, Stephen Sothmann, points out that what matters most is not the material the bag is made from but the country from which it is shipped to the US market. For leather bags imported from countries that have no free-trade agreement with the US, the tariff would be 8%, not zero. And if it were a non-leather bag, the tariff would range between 5% and 20%, depending on the material. "Bags made of cotton canvas are closer to 6%," he explains. "Bags made from plastic materials seem to be in the 20% range." He says he has seen no examples of tariffs of 30% on bags.

It's too soon, it seems, for any bags made from Mylo to be available on Stella McCartney's e-commerce site, but four of the top-ten bestsellers could be described as being plant-based: two are made from viscose, the other two from cotton. The other six bestsellers are made of plastic, typically a combination of polyurethane and recycled polyester. All of the top ten, prices of which range from \$1,395 to \$750, are made in Italy, from where imports to the US attract the same tariffs as products from other European Union countries and are in the ranges Mr Sothmann describes.

Petition mission

CNN aside, Ms McCartney set out to have her ‘innovation conversation’ with as many COP26 delegates as possible, inviting them to sign a petition she had drawn up calling for an end to the use of leather. This petition includes tiresomely familiar supposed links between leather and climate change, leather and biodiversity, and leather and the Amazon rainforests. It throws in a shocking statistic about the life expectancy of tannery workers in Bangladesh, claiming that 90% of them die before the age of 50.

The industrial development officer for leather at the United Nations Industrial Development Organisation (UNIDO), Ivan Kral, who has extensive experience of projects in the leather industry in Bangladesh, says he has seen no information that supports this claim. He thinks the suggestion may come from a 2012 report from Human Rights Watch and explains that UNIDO tried hard to engage with the campaign group about this at the time. He recalls putting questions to the report’s authors only to meet with a failure on their part to give clear answers. We have received clear answers from the Bangladesh Tanners Association (BTA). It says Ms McCartney’s claim is baseless. “BTA has never seen these statistics before,” chairman, Shaheen Ahamed, has told us.

Royal visit

One visitor to the Future of Fashion installation that Stella McCartney was particularly pleased to see was Charles, Prince of Wales. We know this because the designer published a COP26 diary in *Vogue* and she devoted one of the entries to the prince. “His Royal Highness was excited to learn about our innovative technologies,” she wrote. “We also spoke about the need for fashion to stop using leather if we want to hit our 2030 climate goals; we cannot wait another moment.” She may have convinced the prince and she may have persuaded him to sign her petition, but we think both outcomes unlikely for reasons we make clear below.

Her efforts certainly won her no favours in the eyes of the leather industry’s representative body in the European Union, COTANCE. It sent an open letter to the designer immediately after COP26, signed by president, Manuel Ríos. “We understand that there are people who do not want to use animal products,” the text said. “We respect that.” But it went on to say that her attempts to promote an anti-leather agenda at this global event ran “counter the logic of the circular economy”. It said livestock must be part of the solution for reaching the COP 26 objectives and that, as a by-product of the livestock industry, leather has to be part of the equation.

When in Rome

A few days before the encounter at ‘Future of Fashion’, Prince Charles was in Rome. A famous supporter of environmental causes for many decades now, the prince is the founder of a coalition called the Sustainable Markets Initiative (SMI). A fashion taskforce set up by SMI held an event to coincide with the 2021 G20 Rome Summit at the end of October, using the occasion to present a tool called Digital ID. The tool’s purpose is to provide a virtual certificate of the sustainability credentials of luxury products.

Leathergoods brands including Mulberry, Burberry, Chloé, Gabriela Hearst and Giorgio Armani are among the members of the taskforce. Representatives of some of these brands, including Mulberry chief executive, Thierry Andretta, attended the Rome event, at which the prince was a guest of honour.



One of the bags to have come from Mulberry’s ‘Made to Last’ strategy. Credit: Mulberry

Examining a Mulberry bag equipped with the new traceability tool, the SMI founder first asked Mr Andretta if the bag was made from leather. On confirming that it was, the Mulberry chief executive was able to offer extra details, including that the source of the leather was a cattle farm engaged in regenerative farming and that the leather was manufactured using low-carbon production methods (see below). Prince Charles reacted by saying he wished more people “knew the value” of ethically produced leather as part of the circular economy. He compared leather favourably to plastic or “strange, spun” synthetic material. He said the development of a tool to make it easier to communicate this information to consumers was encouraging. Whether he was able to find a diplomatic way later in the week of conveying the same sentiment to Stella McCartney about her choice of “strange, spun” synthetic material and her lack of knowledge of the value of leather is not recorded in the COP26 diary she submitted to *Vogue*.

Knowledge exchange

Meanwhile, across the city, at a parallel international trade and knowledge exchange, leather received a much fairer hearing. This event was hosted by the chamber of commerce of the host city; it views itself as a champion of the circular economy and has been running a specific Circular Glasgow initiative for more than five years. The sustainability and innovation director at Scottish Leather Group (SLG), Dr Warren Bowden, is an ambassador for Circular Glasgow and was one of the speakers at the COP26 trade and knowledge event. He invited the audience of global trade and industry leaders to look up and read the manifesto that the leather industry published in the build-up to COP26 and pointed out that the leather industry’s place in the circular economy is neither hypothetical nor aspirational. This is what the leather industry has been doing for years, he insisted.



Scottish Leather Group's own shift to circular began in 2003, he explained. Since then, its installation of a waste-to-energy plant at its Bridge of Weir tannery, its realisation that it can only "borrow" (Dr Bowden's word) the water it uses before putting it back into the watershed from whence it came, its careful sourcing of raw materials and a series of other measures have allowed the group to reduce the carbon intensity of its leather by 90%. Famously, it now claims to offer its customers "the lowest-carbon leather in the world", having reduced the average carbon intensity of its leather from 10.9 kilos of CO₂-equivalent per hide in 2003 to 1.1 kilos in 2020. COP26 visitors to Glasgow who made use of the electric buses that ferried delegates between venues would have sat on this low-carbon leather, he pointed out.

The group's contention is that data from lifecycle assessment, compiled by organisations external to SLG in accordance with ISO standards and sector guidelines, provides "layers of credibility" to back up the lowest-carbon leather claim. From this, a figure for finished leather emerges of a global warming potential of between 7.7 and 9.8 kilos of CO₂-equivalent per square-metre of finished leather, from core activities and a share of upstream impact.

To continue on this trajectory will mean, according to Warren Bowden, that SLG could achieve net zero by 2025, and do so without offsetting but through its own activities. "We could actually be producing a carbon-positive



A loch close to SLG's site at Bridge of Weir in Renfrewshire. The leather manufacturing group says it only "borrows" water for its production processes before returning it to the watershed it comes from. Credit: Scottish Leather Group

product," he insisted. "Making our product from this carefully sourced raw material through a circular manufacturing process and being able to recover it at end of life will mean we are able to be positive to the planet."

Planet-positive products

An early example of this recovery of the material at end of life is a new SLG partnership that helped Mulberry make the bag it showed to Prince Charles in Rome. Under a strategy it calls 'Made To Last', Mulberry will seek to buy back, restore and re-sell bags that its customers no longer want to use. With bags that it deems beyond repair, its intention is to

buy them back anyway and send them to SLG and for the leather manufacturer to feed them into its waste-to-energy set-up. In this way, these bags will provide fuel for making new leather and raw material for new bags.

"It's a positive impact on the planet," Dr Bowden told the COP26 audience. "I would ask you to contrast that with some of the other materials that we see in our everyday lives. The last 30, 40 or 50 years have seen a profusion of plastics, composites and fossil fuel-derived this and that. In my view, leather is already one of the most sustainable materials on the planet." He said the lifecycle assessment (LCA) numbers for SLG that he shared at the event in Glasgow proved this. "They are orders of magnitude lower than the data that is generally presented for this type of material," he said. "There are an awful lot of myths to be busted."

He extolled LCA's worth but pointed out that the focus of its analysis is on the production phase. He asked: "What about the use phase? How long will your leather boots, or handbag or jacket last? I dare say decades, possibly generations." He argued that this, too, should inform our choices as consumers. "You are going to drive the change," he told those in the room and those connecting online. "Wouldn't it be great if you could see the true cost of your products when you buy them, the true impact on the planet, not just the price-tag? If we had the choice, many of us would buy products that have a lower impact." 🌱



The value of ethically produced leather is the topic of conversation in Rome between Prince Charles (left) and Mulberry chief executive, Thierry Andretta. Credit: Clarence House

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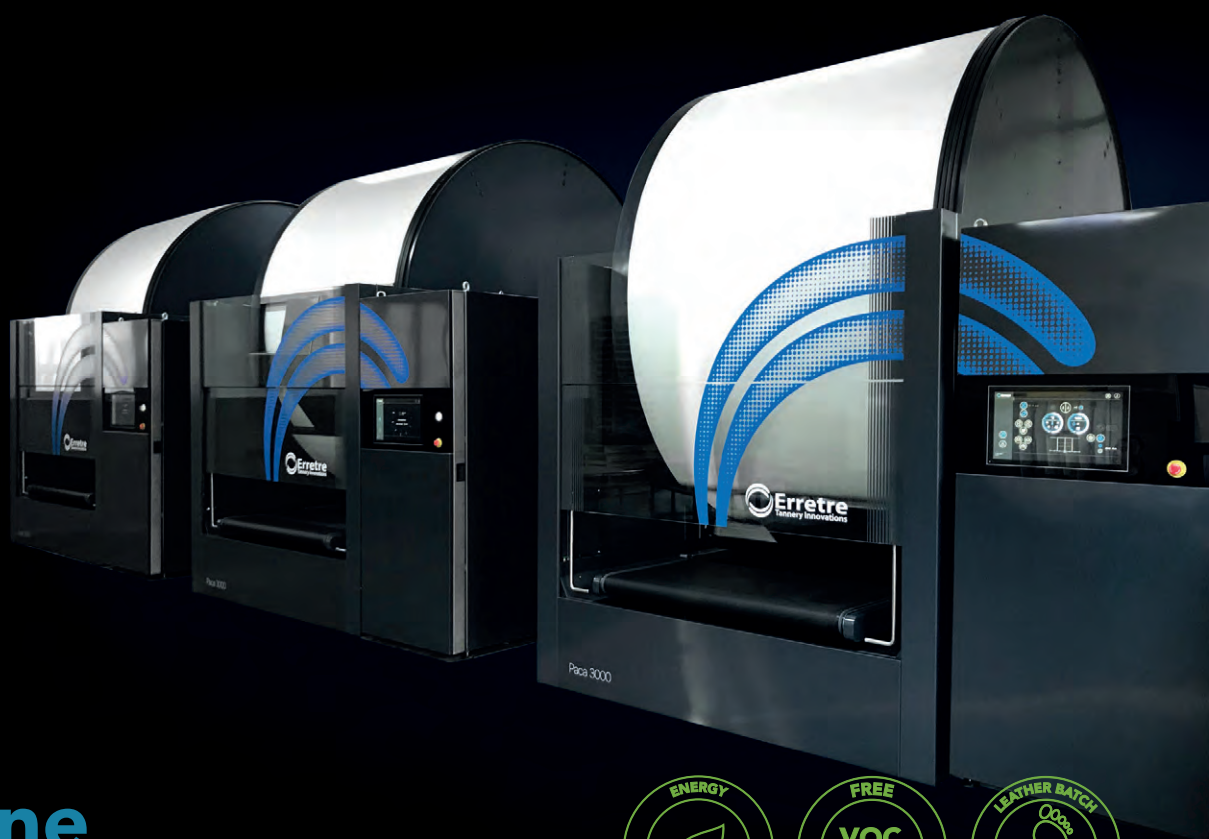
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An economist's message of hope



Italy's footwear sector reported a 16% rise in revenues during the first nine months of 2021 compared to the same period the year before. This was still between 10% and 15% less than the figure for the same months in 2019. Export revenues for the nine-month period in 2021 were in excess of €7.5 billion and Italy's shoe manufacturers shipped just under 150 million pairs over that time. Leather footwear accounted for 61.7% of total export value, while leather shoes' share of the total export volume was 44.6%.

In terms of the domestic Italian market, including imported shoes, consumers spent almost €3.7 billion on footwear in January-September 2021, buying just over 100 million pairs. These figures show an increase of 10.5% in value and of 8.8% in volume compared to the same months in 2020. But in making these comparisons, Assocalzaturifici refers to some distortion owing to "the shock of 2020" and the devastating impact of the first waves of covid-19. Compared to 2019 figures, last year's show decreases in domestic footwear consumption of 14.8% in value and of 10.6% in volume.

Optimism returns

Speaking about the market situation in general rather than about these figures specifically, Enrica Baccini, an economist who works for Fondazione Fiera Milano, the company that runs the Rho exhibition venue in Milan, says optimism is growing in Italy and has already returned to pre-covid levels. Consumer sentiment aside, she says that something else that gives her hope is the enduring ability of manufacturers in Italy to create products that satisfy the desires of consumers.

She believes domestic consumers pay too little attention to the importance that manufacturers still have in the Italian economy, focusing more on fashion and luxury trends, for example. "But we know that manufacturing matters," she says. "Luckily, that ability to realise products that consumers want still exists in Italy. Despite the crisis of the pandemic and other crises, such as the terrorist attacks in the US in 2001, the global financial crisis in 2008, we still have more than 4,000 companies producing beautiful shoes."

Regional picture

Exact figures she goes on to give show that there are 4,151 companies in Italy making footwear at the moment, employing a total of more 72,000 workers, people Ms Baccini describes as having "extraordinary know-how that we have to continue to value highly". Famous shoe-

Some of Italy's 4,000-plus footwear manufacturers are small and, at times, a little fragile, but Milan-based economist Enrica Baccini insists the Italian shoe industry as a whole is "anti-fragile".

producing region Le Marche has the most, with 1,315 manufacturers and 17,500 employees, followed by Tuscany with 952 companies and 14,000 workers, Veneto with 655 companies and 15,400 employees, Campania with 371 manufacturers employing 6,115 people and Lombardy with 343 manufacturers and 6,687 workers.

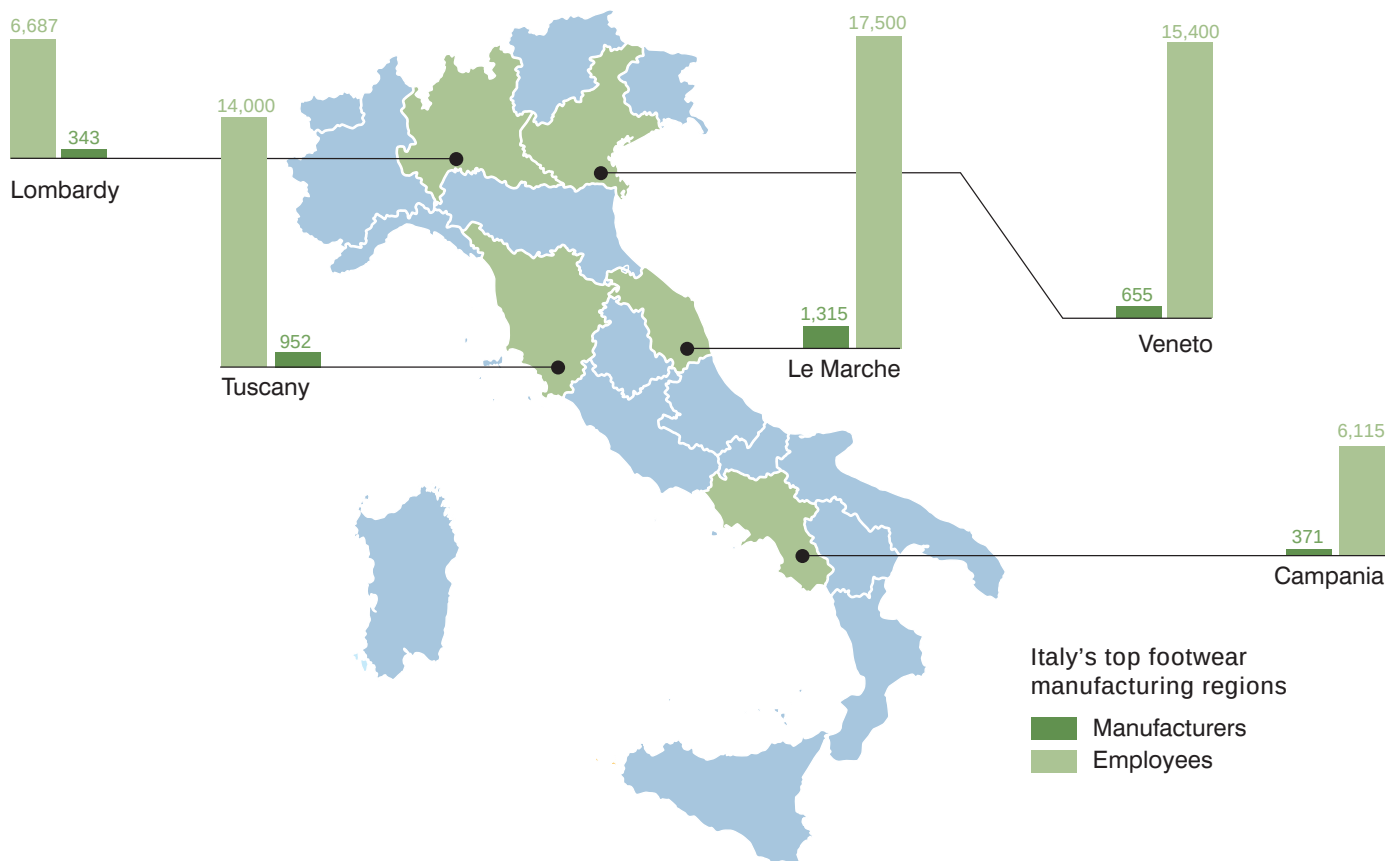
No monopoly for big luxury

To confirm the importance to the wider luxury sector of at least the top performers in this group, the Fondazione Fiera Milano economist cites a 2021 study by financial services group Intesa Sanpaolo. It found that the 11 biggest French and Italian luxury groups use a total of 1,867 manufacturers in Italy as suppliers, across the whole of their product ranges. Within that, 246 suppliers were footwear manufacturers with a combined annual turnover of €5.4 billion. Only ten of those manufacturers are companies owned by the luxury groups themselves, Ms Baccini explains, while 53 are strategic enough to be classified as tier-one suppliers and 42 are tier-two. This leaves 141 footwear companies that, while they enjoy enough prominence to be part of the value chains of these important luxury groups, are still non-strategic.

"This means that the luxury groups are snapping up some footwear manufacturers," Enrica Baccini says, "but they are not monopolising the footwear market." This is not what she terms "a worrying phenomenon" and there is still plenty of shoe manufacturing expertise to go round. She quotes a separate source, Italy's national statistics institute, ISTAT, to suggest that 1,700 footwear manufacturers in Italy, more than 40% of the total, bring their own shoes to market under their own brand names. "They are independent companies, expressing their creativity and entrepreneurship," she insists. "We still have a great number of companies that want to be in charge of their own destinies. This is positive."

A small number of Italian shoe manufacturers are now in the ownership of the major luxury groups. Most of them remain in control of their own destinies.

All credits: MICAM



More than just resilient

Surveys of its own that Fondazione Fiera Milano carries out among exhibitors at Micam and other industry events suggest that 40% of the Italian companies that take part make shoes only for their own brands. A further 53% make own-brand footwear at the same time as producing for third parties.

Clearly, some of these companies in the shoe manufacturing sector in Italy are quite small and some are fragile, but, according to Ms Baccini, more and more analysts of the wider economy are coming to see the shoe sector as “anti-fragile”. She explains that this means the industry is “more than resilient”, because companies that are resilient will withstand a shock or a crisis, surviving them but staying the same. Anti-fragile companies, on the other hand, do not just survive the shocks, but emerge from them in better shape than before.

The concept is one that Lebanese-born writer Nassim Nicholas Taleb came up with in a 2012 book called ‘Antifragile’. A part of the basic idea that Enrica Baccini particularly likes is that having some fragile companies in the eco-system makes the eco-system itself anti-fragile. She explains this by saying that exposure to fragility, not least during the lockdowns imposed by the

first waves of covid-19 in 2020 and early 2021, helped inspire innovation among Italian footwear manufacturers.

In Fondazione Fiera Milano surveys, it is in times of trouble that the highest numbers of footwear companies claim to be investing in innovation. Only 27% claimed to be innovating in the stable years around 2005, for example. This rose to 67% following the government-

imposed austerity and double-dip recession years of 2012 and 2013. “This is exactly what is happening again in our footwear sector now,” Ms Baccini points out. “The level of innovation among our exhibitors is always high, but it grows in periods of crisis. This is what we really can call anti-fragility, even if it is not the mainstream view of what is happening in the economy.”



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Working from crust, Bader Uruguay has the capacity to produce more than 50,000 square-metres of automotive leather per week at its facility in Ciudad del Plata. All credits: Bader Uruguay

National award winner



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GREEN JOBS

The Uruguayan division of automotive leather manufacturer Bader has come top in the large company category in the most recent Uruguay Circular Awards.

These awards, which took place for the third time in 2021, recognise the efforts of organisations across the country to integrate circular economy processes into their work. The United Nations Partnership for Action on the Green Economy (PAGE) and the United Nations Industrial Development Organisation (UNIDO) work with the country's ministry of industry and its national development agency to promote the awards.

Water work

Bader won for a water recycling project that it has put in place at its leather manufacturing plant in Ciudad del Plata, 35 kilometres west of the centre of Montevideo. Working from crust, the facility has the capacity to produce 52,000 square-metres of finished leather per week, although current production levels are 70% of that. There are around 500 people working there at the moment. Recycling water from finishing processes has led to a saving in the volume of water the company has to extract from an onsite well and a 40% reduction in the volume of wastewater it discharges into a nearby canal.

The debate about the circular economy is gathering pace in many parts of the world. Leather sometimes seems to be on the periphery of these discussions, but in one South American country, Uruguay, the industry is right at the heart of things.

The water project began in 2020. The company installed instruments on every machine in the tannery to measure the water consumption of each one. It then set up a software system to capture the data and highlight improvement strategies. This work confirmed that machines that use water curtains and spray technology to apply chemicals to hides were among those consuming most water. To address this, Bader Uruguay developed a method of reusing effluent from these machines in its production operations.



"The water is treated in our effluent treatment plant and goes back into the spray booths," the environmental manager at the tannery, Luciana Torres, explains. "We designed new pipes for this and installed specific storage tanks and the new system was ready to use by April 2021. Since then, we've been able to reduce the volume of water we consume by between 300 and 500 cubic-metres per month, helping us achieve that 40% reduction in our wastewater discharge."

On the right road

On receiving the award at a ceremony in Montevideo at the end of October, Luciana Torres, said it was an honour for the Bader team to win. She explains, however, that Bader Uruguay had been working towards an accolade such as this for years. It even featured among the second-place entries at a previous edition of the Uruguay Circular Awards.

Prizes aside, she points out that efforts are ongoing to integrate further sustainable practices and help Bader Uruguay fit its whole operation into a circular economy framework. "We always have projects on the go," Ms Torres explains. "We are always weighing up ways to improve. Some projects only go so far, but others have already brought good results. At the moment, we are reusing 50% of our waste in a circular way and we want to keep making progress until we are reusing all of it." Examples of current projects include ideas for finding a good use for scraps of finished leather, increasing energy efficiency and reducing carbon emissions. Some of these projects are group-wide initiatives and are running in parallel with similar initiatives at other Bader sites.

Political influence

"We've been walking this path for some time," Ms Torres insists. "And we're doing it to show leather in a positive light, not just in our country, but internationally. We are absolutely convinced that leather is the prime example of a circular economy industry because it adds value to a by-product from another sector, transforming it into a product that is noble, long-lasting and of great beauty."

A number of customers have sent their congratulations, which Ms Torres says is pleasing, but she insists progress, not prizes, is the main aim. "The award is a good sign," she insists, "but it's being



At the ceremony for the 2021 Uruguay Circular Awards. Left to right: Bader Uruguay managing director, Willie Tucci; Uruguay's vice-president, Beatriz Argimón; and the environmental manager at Bader Uruguay, Luciana Torres.

on the right path that's the important thing. Clients in the automotive industry are insisting more and more on the implementation of sustainable practices among suppliers."

Uruguay's vice-president, Beatriz Argimón, who presented the trophies at the 2021 Uruguay Circular Awards, has also been supportive. The environmental manager at the automotive leather manufacturer describes Ms Argimón as having paid close attention to discussions about the circular economy for some time now and to be "committed to the cause". On receiving the award from her at the event, Bader Uruguay managing director, Willie Tucci, and Luciana Torres took the opportunity to share more details about their winning water-saving project. "She was pleased to hear about it," Ms Torres says, "and she encouraged us to keep up the good work." There was also a suggestion from the vice-president that Bader can provide the example and the motivation for other manufacturing companies in the South American country to follow in its circular-economy footsteps.

Contamination question

A question Willie Tucci is fond of putting to critics of leather focuses on residues. "I know where residues of synthetic materials that claim to be environmentally friendly end up," he says. "They are contaminating the ocean." He quotes a projection from

Plastic Soup Foundation that warns that, at current rates, plastic production will increase by 40% in the next 10 years. This will mean that the oceans will carry more plastic than fish (by weight) by 2050, according to the Amsterdam-based campaign group. "People have been using leather for thousands of years," Mr Tucci says. "If leather were a less sustainable option than synthetics, residues would surely have built up over all this time and would be causing contamination. Where are all those residues? Where is the contamination? They don't exist." 🌱



Bader Uruguay has other circular projects in the pipeline and says it is always weighing up ways to improve.

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New Generation Of Leather



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Oak bark-tanned leather soles are synonymous with high-quality handmade shoes, so it was a blow to hear in recent months of the loss of one of the oldest manufacturers of this product, J R Rendenbach in Germany. There is better news now. Production under licence for the same products with the same recipes will continue, with another German tannery, Kilger, keeping the tradition alive.

Soling tradition will live on



LONG-LASTING



REPAIRABLE



SUSTAINABLE

Founded in 1871 by Johann Rendenbach, a stone's throw from the Moselle River and just 10 kilometres from Germany's border with Luxembourg, J R Rendenbach quickly became synonymous with traditional pit-tanning, using oak bark. So much so that a trefoil of oak leaves became the company's insignia. In a process that has remained relatively unchanged for centuries, the tanning process Rendenbach put in place requires a system of "layering", in which hides are tanned in pits more than three metres deep, interlaced with ground oak bark. It is a slow process, traditionally taking a year and a day.

Having survived World War II, and despite the buildings being demolished by bombs, the tanning pits were unscathed. By the end of the war, production had resumed. Fast forward almost 40 years and, in 1985, Hanns Rendenbach took the company forward into the fourth

generation. Modernisation was not a priority or a necessity, but diversification into cut products proved successful and, by 2007, modernisation had brought about a full production facility for pre-assembled units such as cut soles, half soles and stack heels.

In late 2021, however, news emerged that production at Rendenbach would have to cease. With a customer base comprising a Who's Who of handmade, Goodyear-welted shoes, this was received with obvious dismay. In the UK alone, companies such as Church, Cheaney, Edward Green and Crockett & Jones all rely on these leather soles for some of the shoes in their collections. Fifty years ago, almost all of

Ground bark from oak, valonia and spruce are used to replicate the Rendenbach production. All credits: Kilger



the shoes these brands made would have been finished with a leather sole. In the last few decades, the preference for a more weather-resistant product has meant a reduction in the popularity of these soles' and now productions equate to a 70:30 split in favour of rubber. To emphasise this point, it is a fact that over the last 15 years, Rendenbach had not lost a single customer but had seen order sizes reduce every year.

Modernisation is the key

A solution soon emerged. Some 600 kilometres away, not far from the border with the Czech Republic, on the opposite side of Germany in the town of Viechtach, sits Kilger, which has undertaken to make leather soles using Rendenbach's recipes.

Another renowned pit tanner in its own right, Kilger has a history almost matching that of Rendenbach. With a lineage going back six generations, Kilger is no stranger to sole leather tanning. Established in 1856, the original tannery was situated in the centre of the town and supplied sole leather to local shoemakers and saddlers. By 1970 and under the control of Anton Kilger, a representative of the fifth generation, production changed direction and the focus turned to the equestrian and orthopaedic sectors, with a small line in shoe manufacture and repair. More change was to come when the tannery relocated to its current site in 2002, with its modern, purpose-built tannery remains. Having seen the direction the domestic leather industry was taking, and with great foresight it would seem, as the 300 tanneries that flourished then have dwindled to less than 30 today, Anton Kilger saw that modernisation and diversification were the key to success.

Not just with the utilisation of more modern equipment but also by constructing a modern tannery with pits above ground, allowing for easier emptying of leather and liquid, and by having a single-storey production facility, logistics were greatly simplified, and efficiencies harnessed.

Working together

Anyone who has spent time in the leather industry knows that it is not just the recipe that counts. There are many examples of tanneries that have passed on their formulations to others only for these to fail. So how does Kilger hope to maintain both the Rendenbach name and association with quality? Michael Kilger,



Anton's son and now the sixth generation to run the tannery and the driving force behind the decision to take on the Rendenbach sole business, worked alongside Hanns Rendenbach Jr for almost a year to gain an understanding of not just the formula but also the machining operations.

This was far from a hostile takeover; Hanns Rendenbach reached out to Kilger as he knew of their capabilities and a partnership was forged. Understanding the pitfalls (pun intended), Michael Kilger is aware of the task at hand and is under no illusions as to what is needed. "Our competitors say that we can't do it like Rendenbach because we don't have the same pits", referring to the deep layering pits as opposed to the hanging pits Kilger currently uses. Quick to dispel this, Michael Kilger reveals that, through a close family contact who owns an old sole tannery, the right sort of pits are at the company's disposal. The company has also bought much of the Rendenbach raw stock. "We have so many things from the Rendenbach production," he explains. "We have the tanning liquors, the same raw material, the same bark and even the same method." Key members of the Rendenbach team will also make the move to help maintain quality and consistency.

Outlets matter

Having a more diverse range of end uses and customers will benefit Kilger, the company believes. The ability to

A symbolic handover, Michael Kilger (left) is seen with Hanns Rendenbach at the Rendenbach tannery.

select raw materials for a variety of customers at an earlier stage will give an advantage that Rendenbach could never enjoy. "If you pull a batch of leather from the pits and realise the thickness is not enough for a sole leather and you only produce soles, you need to find a market for it. We can put it towards something else," says Michael Kilger.

Room for expansion

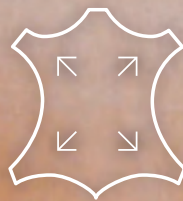
Time will tell what physical changes might need to be made at the Viechtach tannery but for the time being we are told the current capacities seem well able to cope. The pits in the alternate location will account for the bulk of production but the building of more pits on site has not been ruled out. With regards to raw materials, there is reportedly tens of tonnes of oak bark in the Rendenbach stores, enough for a good few years' production and with a domestic supply available, a by-product from the furniture industry, Michael Kilger is very optimistic about the message this puts out to further enhance sustainability.

It is envisaged that by February production could be under the control of Kilger and that customers will see little disruption to supply and notice little or no difference now that the product will be Rendenbach by Kilger. ☺

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The CEO of a new brand, and great-grandson of the Timberland founder, tells us how leather and sustainable materials are central to his desire to demonstrate a new way of working.

Erem's biocircular ambitions



RENEWABLE



WASTE-FREE



LONG-LASTING



REPAIRABLE

Eric Swartz thought he was finished with the footwear industry when he sold Timberland – a company founded by his grandfather, Nathan – to VF Corp in 2011 but his son Noah had other ideas. An avid adventurer, the youngest Swartz had spotted a gap in the market for hardwearing desert boots that would support wearers in the toughest terrain but that would also be made with exacting environmental standards. He convinced his father to partner him for Erem, a brand that officially launched at the end of 2021 and which hopes to demonstrate a new way of working.

“As a fourth-generation bootmaker, I absolutely insist that there is a different way to do things because there needs to be a different way to do things,” Noah Swartz tells *World Leather*. “The scale of the issues facing us requires a new paradigm and a new model; Erem believes that Biocircular, which we’ve already achieved, can be this model.”

‘Biocircular’, a trademarked term, refers to bio – made only from materials and constructions that have a proven path back to nature – and circular, where there is a responsible next life for each component. Noah Swartz believes this way of working is crucial because the climate crisis requires fundamentally different approaches to how we do things, including how we manufacture and enjoy products that seem as innocuous as hiking boots. “Most people don’t realise their favourite pair of performance footwear is likely just plastic layers or natural materials so processed with things like heavy metals that they are basically unrecognisable, glued together with toxic chemicals.”

Food-grade tannins

To counter this, Erem focuses on leather. It is sourced from a Leather Working Group gold-rated tannery and tanned with plant-based, food-grade formulations that are grown and processed sustainably. He says this delivers the



incredible performance of a conventionally tanned material but also breathes better, which is critical for the desert, while eliminating the heavy metals involved with chrome tanning and thus can be restreamed at the end of its life into organic fertiliser.

The Xerocole collection uses reverse grain leather which might include marks such as tick bites or scratches that, while functionally perfect, would normally be discarded. On its website, it explains that the boots might seem hairy, but this nap is also a natural part of the leather, and these materials have been selected to reduce the leather waste, contrary to most leathergoods. “The 2mm thick, reverse full-grain hide is incredibly durable and protective, both of which are critical for performance in extreme desert terrain,” adds Mr Swartz. “So, unbelievable performance, yet the ability to return to the earth as organic fertiliser. A very rare combination.”



Erem is targeting a way of working that is in tune with the environment. "Leather fits in extremely well into this standard," says Noah Swartz.

All credits: Erem

Erem has also partnered US-based non-governmental organisation Savory Institute to source leather from regenerative farms that improve soil health and sequester carbon through rotational techniques and restore grasslands through "holistic planned grazing". Timberland, Ugg and Burberry are also among investors in the programme, funding research into the benefits the system has for the soil and ecosystem, and how this affects the animals' lives and reflects in the leather.

The circularity of leather will be evident through the Reboot repair programme. While Noah is not expecting the boots to wear down any time soon, if they do eventually, customers will be able to send them back to be fixed. "Fundamentally, Erem believes that businesses should take responsibility for the entire life cycles of their products; collectively, we need to stop thinking just to the point of sale."

Component strategy

While many brands tout a more sustainable way of working, the answers, according to Mr Swartz, are "at our fingertips": replace nylon with linen, polyester with Tencel and EVA with cork.

Erem's one-piece outsole is made of 70% recycled rubber with a proprietary biodegradability accelerator that enables biodegradation in seven years or less. Erem works with a partner that can devulcanise the rubber soles, allowing them to be turned into new biodegradable rubber products, including new Erem gear.

The Tencel lyocell fibres for the lining come from sustainably managed forests, supplied by Lenzing in Austria. Erem shuns plastic and uses brass for the eyelets because of its durability and its ability to be recycled without losing its performance. The raw material used in Erem's insoles comes from the production waste of cork



stoppers and other products. The supplier transforms the cork "waste" into granules that can be used for shoe components.

Erem's launch was delayed by three months as they tested using linen instead of nylon for the outsole thread. "For a start-up like ours, three months is quite substantial. But three months of innovation to prove that we can take a source of bad plastics out of the supply chain? That is a trade I would make over and over again," explains Noah Swartz.

Prickly pears

Part of its ethos is investing back into ecosystems and the desert environment, and the company has committed to planting one million prickly pears. Valued by indigenous cultures, they are fast-growing, water-efficient plants that capture carbon dioxide, produce fruit and restore dehydrated rivers. Erem has planted 250 already and will use sales proceeds to plant more. The brand is also working with Natural Capital Partners to achieve CarbonNeutral certification.

Longer-term, it outlines goals for product expansion, performance innovation and sustainability. This includes building on the work it is doing with the Arizona Trail Association, making access to the outdoors more equitable, and increasing its work with software company Toxnot around environmental transparency in the supply chain.

With investors including his grandfather, Noah Swartz is confident in Erem's future. "We are a start-up, but have well over 150 years of footwear experience around our table. Nimble, expert and a bit audacious – we think this positions us very well to succeed as a challenger brand."



Erem's leather is sourced from a LWG gold tannery, and is treated with food-grade tannins.

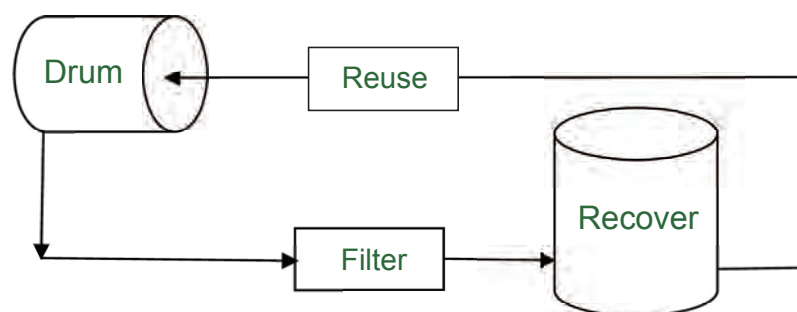
His father, co-founder Jeff, agrees: "My grandfather, Nathan, taught me responsibility and modelled resilience and courage. My dad, Sidney, taught me how to dream and what determination is. But it's my son, Noah, who is teaching me how to stretch imagination and deliver on our ideals. It took four generations, but we are getting somewhere with the launch of Erem." 🌱



The Xerocole boot collection will be joined by a sandal range this spring and two more designs later in the year.

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Longevity, not levity. Brands that care about the circular economy want their products to remain in use for as long as possible.

Credit: Manolo Blahnik/The Restory



In safe hands



Five years after launching its expert repair and aftercare service for high-end shoes and bags, 2021 was something of a breakthrough year for London-based The Restory. Two famous brands, Manolo Blahnik and Nicholas Kirkwood, announced The Restory as their specialist aftercare partner in 2021.

The message from these brands is clear: they want their products to remain in use for as long as possible. They want their customers to repair rather than replace accessories and footwear that show signs of having been loved and used, of having served the purpose they are designed to serve. They want wear, not waste; longevity, not levity. They could have tried to set up their own aftercare operations, but The Restory had already covered much of our ground and is happy to share the know-how it has built up.

Its customers use an online delivery form to arrange the collection of the items they want restoring. Once these arrive at The Restory's workshop, a team of in-house artisans assesses each job and sends a formal quote for it. If the customer gives the go-ahead, work begins right

Footwear and leathersgoods brands, keen to offer restoration services to their customers, have found a specialist partner they can rely on in The Restory.

away. Cleaning and standard repairs usually take two or three weeks; it can take longer to restore the colour of an item or repair or replace pieces of leather.

London and beyond

The service has expanded beyond London to the rest of the UK, where customers also have the option of dropping items off at a number of luxury retailers including Harvey Nichols, Selfridges and Harrods. Further expansion means customers in many parts of Europe, North America and the Middle East

can now book a repair at The Restory; global courier services will collect items from homes or offices and ship them to London for repair and back again when the work is complete.

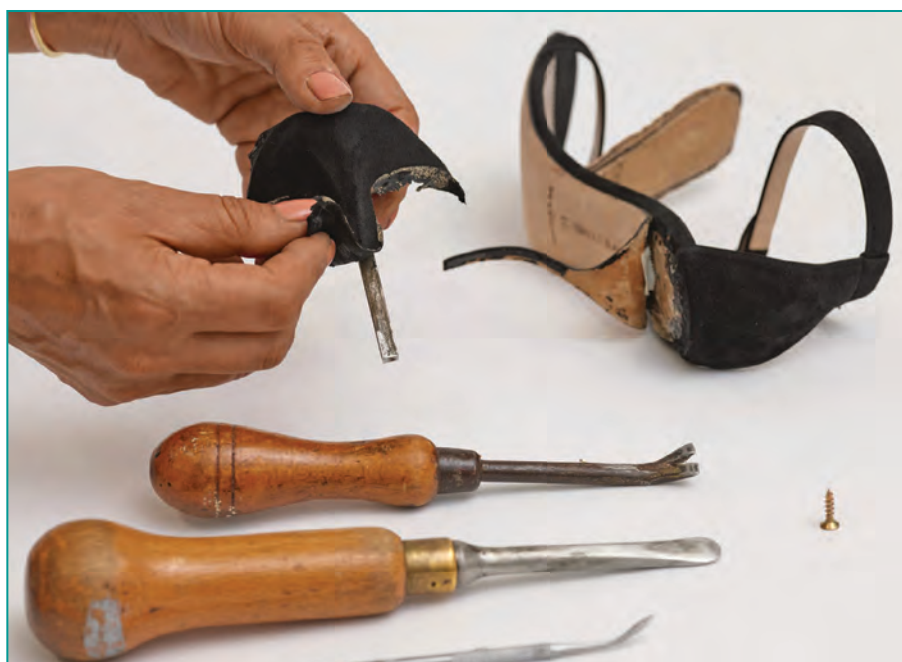
Chief executive of The Restory, Vanessa Jacobs, says her idea for the business sparked into life thanks to high-end footwear, although it germinated in her mind for around eight years while she pursued a consulting career at global services company Accenture.

After moving to London from New York, where she worked in the finance sector, an opportunity at Accenture came up and she picked out a pair of favourite shoes to wear with her power suit to the interview. She took the shoes to a local cobbler so that they would look their best on the big day and was dismayed by the poor quality of the service and, especially, by the fact that the people in the shoe repair shop hadn't even polished them. This came as a shock because, she insists, no self-respecting shoe repair outfit in New York would dream of neglecting to clean a customer's shoes before returning them. It had to be possible to improve what was on offer in London, she thought.

Gap in the market

In spite of this shoe set-back (she wore others on the day), the interview went well and eight successful years at Accenture followed. In the course of that time, Ms Jacobs built up extensive knowledge of the dry-cleaners and footwear artisans across London whom she felt she could trust with expensive shoes, luxury bags and delicate fabrics. Artisans with the required levels of expertise and attention to detail were around, even if they were often far away from Ms Jacobs' home and kept (from the point of view of a busy business woman) inconvenient customer hours. Mulling this over during a period of maternity leave in 2015, she recalled her original idea. Her certainty grew that there was a gap in the market for a London-based business that cared about helping consumers prolong the beauty and usefulness of high-end products and could provide New York levels of customer service. This led to the launch of The Restory with co-founder, Emily Rea, who is the company's head of marketing.

Online luxury retail platform Farfetch was an early admirer, naming The Restory as one of 11 start-ups to feature in the inaugural edition of its 'Dream



Once an item arrives at The Restory's workshop, a team of in-house artisans assesses the job and sends a formal quote for it. If the customer gives the go-ahead, work begins right away. Credit: Manolo Blahnik/The Restory

Academy' mentoring and funding programme in 2018. Farfetch still works with The Restory to offer repairs to its own customers and said that the aftercare service provider was one of the partners it relied on to make its business more circular.

Responsible approach

This was part of the appeal for Manolo Blahnik when it became The Restory's first monobrand partner in September 2021. It told its customers that having access to the care and repair services Ms Rea and Ms Jacobs have established would help them "extend the longevity of [their] most beloved Manolos". The footwear brand said it saw this programme for repairing shoes and extending their usefulness as part of wider efforts to take a responsible approach to business and support "a greener future". And when customers buy new Manolos, they can now do so with the confidence that their investment will be longer-lasting than ever. When the time comes to reheel, apply protective soles, replace toe pieces, dye the shoes or carry out any other restoration work, the service required will be straightforward to arrange. The partnership with The Restory, which it has called 'Mend My Manolos', covers Manolo Blahnik handbags too.

Later in the autumn, Nicholas Kirkwood followed a similar path and announced that The Restory would also "power" its aftercare service. The Central St Martin's and Cordwainers' College-trained designer, who launched his eponymous brand in 2005, says the partnership will help "give new life to our shoes" and will be part of the company's commitment to sustainability. He says the Nicholas Kirkwood brand will continue to choose "best-quality, durable materials", but The Restory's skill in restoring leather surfaces and colour will help make its products even more durable.

Falling in love again

The Restory's founders are positive about their new brand partners. And if other leathersgoods and footwear brands feel any reluctance to place their aftercare offering in the hands of a partner, they point out that it is Manolo Blahnik, Nicholas Kirkwood and the other finished product manufacturers who will retain "the nice bit". It is they who take worn and damaged items from the public and pass them right away to The Restory. It is their team that will then do "all the hard work" before sending the items back for the brands to present restored versions that will allow customers "to fall in love with them all over again".



A record year for Rolls-Royce Motor Cars for both sales and bespoke work means that its leather workshop is busier and more important than ever.



Commissioned to celebrate a couple's anniversary, this Phantom Tempus includes latitudinal and longitudinal coordinates marking the precise location they met.

ALL CREDITS: ROLLS-ROYCE MOTOR CARS

Truly remarkable

In an unprecedented and unpredictable year, Rolls-Royce Motor Cars bucked the trend of many companies and carmakers by reporting record sales in 2021, delivering 5,586 cars to clients around the world. It demonstrates that despite uncertainty and declining sales in the general market, the demand for luxury goods from very wealthy people is stronger than ever.

Every car that left the facility had some element of bespoke work – and the ability for highly skilled craftsmen and women to personalise the cars with high-end materials is what sets Rolls-Royce apart, according to its CEO, Torsten Müller-Ötvös. “Bespoke is the reason our clients come to us,” he says. “Bespoke gives owners the ability to personalise their Rolls-Royce, expressing their ambitions, tastes and legacies.” The record number of cars with bespoke work resulted in some truly remarkable commissions, he added.

Over 2,000 people are employed at the Rolls-Royce Motor Cars’ head office and manufacturing plant in Goodwood, England, the only place where the cars are built. The flexible manufacturing process, running two shifts and at near-maximum capacity, and the skilled staff are noted as the company’s greatest assets. “We have always recognised the fundamental importance of investing in future talent,” says Mr Müller-Ötvös of recent investments, “not just to support our business objectives, but to build the skills and knowledge base within UK luxury more widely.”

Apprenticeship drive

This year, the company will take on 37 apprentices, 15% more than in 2020 and the largest intake since the programme’s inception in 2006. Successful applicants will spend between two and four years preparing to work as craftspeople in the company’s leather workshop and other parts of its factory. Candidates will receive paid, on-the-job training and part-time formal education, leading to formal qualifications, up to and including degree-level qualifications.

Internships will also be available in the Bespoke Collective, a team of engineers, designers and craftspeople who take inspiration from historical events and figures, artworks, artefacts, nature and the architectural world to create a unique set of cars that represent their owner’s style and personality. The leather workshop is central to this and employs around 300 people.

Contemporary craftsmanship

During 2021, the level of detail included in some of the custom cars represented “some of the finest examples of contemporary craftsmanship ever seen”, according to Mr Müller-Ötvös. “Rolls-Royce is not, never has been and never will be a volume-driven business. We are no longer just an automotive manufacturer, we have transitioned to being a true luxury house focused on creating the very best and most precious luxury products in the world.”

Reflecting this, the carmaker teamed up with another luxury



house, Paris-based fashion group Hermès, to create a bespoke Phantom for billionaire Yusaku Maezawa, the founder of Japanese fashion e-commerce platform Zozotown. While the two companies had previously partnered on a custom Phantom for the Four Seasons Hotel George V in Paris in 2008, this exclusive collaboration marked the first for a private client. In a reflection of Mr Maezawa's taste for antique Japanese Oribe ware, which he collects, the car's green and cream exterior was inspired by the ceramics' traditional glazes – and Rolls-Royce made the Oribe Green paint available for the client's matching private jet.

The car's leather interior, designed with Mr Maezawa's jet in mind, has largely been finished in Hermès' Enea Green leather, complete with saddlery-inspired stitching. The brand's Toile H canvas features on the door armrests. Mr Müller-Ötvös comments it was a privilege to unite on such a creatively challenging and technically demanding commission. "This magnificent expression of our pinnacle product represents a landmark for Rolls-Royce, bringing together two houses with more than three centuries' combined experience and heritage," he says.

Another Phantom was commissioned to mark the 40th anniversary of California residents Glenn and Gigi Moss, with the date and time they met, and wed, etched in. The interior includes white hand-crafted leather offset by black highlights, piping and contrast stitching. Their Phantom Tempus was delivered to them at an exclusive celebration, together with a special Bespoke Dawn Black Badge.

A Shanghai-based client commissioned a Bespoke Wraith in Pebble Paradiso blue, described as a seaside-inspired paradise. Inside, there is an artwork featuring a baby girl's footprints, a

tribute to the client's long sought-after bundle of joy. The two-tone interior features shades of blue called Charles Blue and Seashell in natural grain leather. A Bespoke Starlight Headliner, which incorporates up to 1,600 hand-placed fibre-optic stars in the perforated leather roof lining, continues the celebration with a personalised constellation paying tribute to the daughter.

Another highlight in 2021 was a spectacular Cullinan, created to mark the UAE's Golden Jubilee. The exterior includes the national flag rendered in Hotspur Red, Fame Green and black. Bespoke illuminated treadplates read '50th' and the tailored interior mirrors the exterior, with matching leather and contrast stitching. The UAE's emblem is embroidered on each headrest.

Electric future

All models performed strongly during the year, particularly the Ghost, the Cullinan and the Phantom, which is described as the marque's pinnacle product and which uses 18 half-hides in the interior. Order books are full well into the third quarter of 2022.

Work is also under way to bring Rolls-Royce's first all-electric car, Spectre, to market by the fourth quarter of 2023. This 2.5-million-kilometre testing protocol will simulate more than 400 years of use. Rolls-Royce is targeting full electrification of its entire offering by 2030.

"Our extremely strong product portfolio, an exceptional Bespoke offering, together with the first full year of availability of Ghost and the continuing record demand for personalisation has contributed to our extremely strong performance," concludes Mr Müller-Ötvös. "Building on the year's success, we will continue to evolve as a true luxury brand, beyond the realms of automotive manufacturing." 🌐

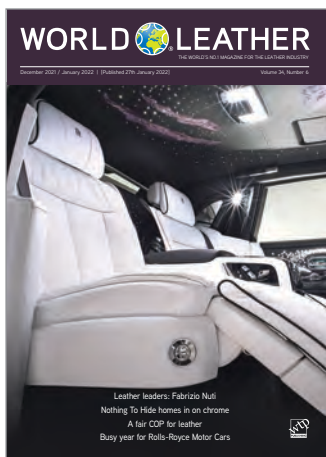


The interior of a Cullinan commissioned by the UAE has a gold 50th anniversary motif inlaid and a spectacular Starlight Headliner with a shooting star configuration perforated in the leather in a green-coloured hue.



The Bespoke Wraith in Pebble Paradiso blue for a Chinese client reflects "coastal hues, the infinite love of a child and the elegance of orchids".

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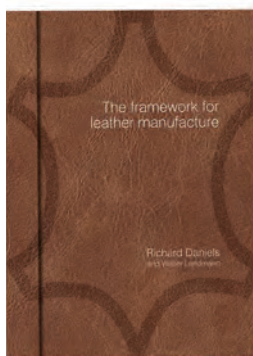
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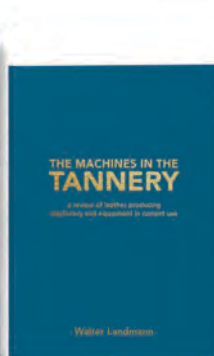
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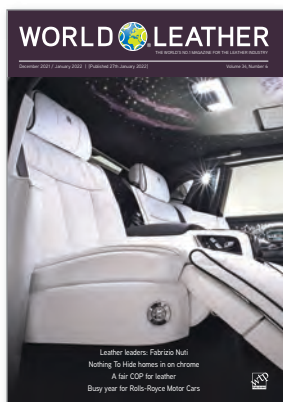
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