

Aircraft *interiors* INTERNATIONAL

NOVEMBER 2019

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Why the aircraft and airline industries must put serious effort into improving assistance for passengers with disabilities

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Hot topic

IMMINENT REFORM OF
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COULD HAVE SIGNIFICANT
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Trends

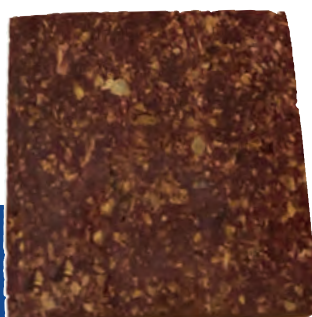
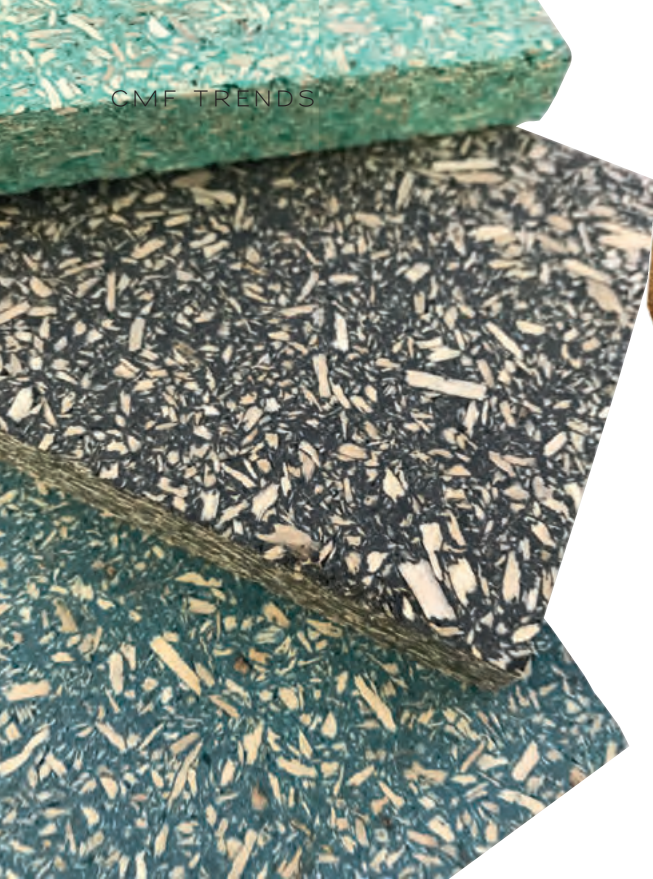
AIRLINES DESIGNING A CABIN TODAY NEED THE SCHEME TO LOOK APPEALING, CONTEMPORARY AND RELEVANT FOR AT LEAST THE NEXT FIVE YEARS. WE ASKED OUR PANEL OF DESIGN EXPERTS TO SHARE THEIR OBSERVATIONS ON COLOUR, MATERIAL AND FINISH TRENDS FROM THIS YEAR'S FURNITURE, DESIGN AND AUTOMOTIVE SHOWS, WHICH COULD INDICATE THE RIGHT WAY FORWARD





watch





LEFT: THE CANAPALITHOS BIOMATERIAL BY BAARS & BLOEMHOFF IS MADE FROM HEMP GRASS

BELOW: THE CHIP[S]BOARD RANGE OF BIOPLASTICS

CIRCULAR ECONOMY

EMMA PARTRIDGE, HEAD OF CMF AT TANGERINE HAS NOTED AN INCREASE IN ENVIRONMENTAL AWARENESS IN THE MATERIALS SECTOR AND IS HOPING TO PIONEER LOW-CARBON AIRCRAFT CABINS

For many years aircraft interior design has sought to be refined and polished. However, there has recently been a substantial change towards a more natural and unrefined look and feel in the cabin.

This shift is being driven by peoples' heightened interest in sustainability and increased awareness of the adverse consequences of global warming, with many of us experiencing first-hand extreme weather patterns this summer.

An ambition to be sustainable is influencing how material suppliers produce materials, with many now re-using the by-products of their manufacturing processes to limit waste. This is being informed by a concept called the 'circular economy', which is based on the principles of 'designing out' waste and pollution, keeping products and materials in use, and regenerating natural systems.

At a recent exhibition in the Victoria and Albert Museum in London, there were some outstanding examples of biomaterials that have been developed by designers. For example, the company 'Chip[s] Board' showcased a range of

industrial processing compatible bioplastics made from potato waste that are durable, recyclable and biodegradable.

An increased focus on environmental protection is also slowly shifting people's aesthetic tastes away from heavily fabricated products and materials, to those that are natural and minimalistic. At Milan Design Week 2019 there was a big presence of foliage and natural materials within interior environments, which were being harmonised with furniture elements to encourage a feeling of well-being within interior spaces and a greater affinity with nature.

As a major contributor to global CO₂ emissions, the aviation industry and its supply chain must shoulder its share of the responsibility to reduce its contribution to global warming. We would like to work with partners in the aviation industry to encourage the development of sustainable material solutions and help pioneer low-carbon cabins.

The desire and passion throughout the aviation supply chain is there. The big challenge though will be to find ways to develop materials that can be approved for certification on board aircraft.



Colour aids wellbeing

ALESSIA GIARDINO, CMF LEAD DESIGNER AT JPA DESIGN HAS FOUND THAT COLOUR CAN INFLUENCE WELLBEING, AND ALSO INFLUENCE IT IN DIFFERENT WAYS FOR PEOPLE FROM DIFFERENT CULTURES AND NATIONALITIES

We are seeing a mesmeric and meditative quality of colours injected into art, design and interior spaces. Colour is itself becoming a material, highlighting the tactile nature of an object, defining its shape and working to tap into people's emotions.

This is evident across a number of disciplines. In the 'field series' artwork by Ana Montiel, attention is focused on consciousness, neuroscience and perception as well as the design and technology, as showcased by Google in a 'space for being' at Milan Design Week this year.

Tapping into the neuro-aesthetic field, Google is measuring biological responses to a number of environments. At Milan people were given bracelets which monitored individuals' reactions on entering three different rooms, enabling an understanding of what type of space – for example those decorated in muted tones – the user felt most at ease in. Such work supports the theory that wellbeing is an experience connected to aesthetic, and colours are beautifully enabling this. Interestingly, diverse cultures and nationalities would react differently to colours in a particular space; for example, the room with the most vibrant and bright colours saw those from Latin America countries feel at their most comfortable. This bears a particular significance when it comes to introducing colours and finishes to aircraft cabins.

The fluid tension of colours is well reflected in new industrial processes; iridescent, gradient and ombre' effects sprayed over metals present an aesthetic that blurs the line between the digital and physical space. This approach lends new value to standardised processes while allowing for structural parts to become a visible feature, as was achieved beautifully in the M-L-XL furniture range, also featured during Milan Design Week.

Enhancing metal finishes and making the structures more appealing in aviation interiors can open a range of opportunities – negating the need to cover those structures with decorative panels, for example. Limiting the number of components on board an aircraft serves to reduce weight, which is what we strive for in designing onboard products, such as our Monocoque seat that recently launched in Singapore Airlines' business class cabins.

Additionally, reducing the number of elements used is accounting for a more sustainable and versatile product, one that can be easily assembled and disassembled – ideally tool free – offering a great opportunity for end of product life recycling and ease of transport in an era where people are moving globally and quickly. We need to rethink the design of structural elements, minimise components and use (where possible) the material's natural tension as a structural strength.



RIGHT: THE ELLE STOOL
FROM THE M-L-XL RANGE
BLENDS STYLE, STRENGTH
AND LIGHT WEIGHT

BACKGROUND: ANA MONTIEL'S
FIELD SERIES ARTWORK



WHATEVER
IT IS, WE
TRANSLATE
IT INTO
TEXTILE.

rohi

Creating Textile Values

rohi.com

Beyond aesthetics

AOIFE CHALLIS, CMF DESIGNER AT ACUMEN HAS NOTED RECYCLABLE MATERIALS AS A KEY THEME, AND IS ALREADY SEEING THE PRINCIPLES ENTER CABIN DESIGN

Climate change is reshaping aviation interior design, with airlines and designers becoming increasingly aware of their responsibilities to buy and design products which are sustainably made. People still need to fly, so to remain relevant to passengers – who understand how the money they spend can either contribute to or mitigate further damage to the environment – the aviation industry must move from linear models of 'make, use, dispose' to circular models which reduce waste and pollution through reuse of materials.

This means rethinking the design process, with consideration for the lifecycle of materials beyond their life as a product. We must design products to be dismantled and recycled. To do this we require systems which support these principles, from conception to disassembly and reuse.

We are already seeing suppliers do this. For example, Kvadrat has developed ReWool, a rich textile made by repurposing scrap wool from the yarn spinning process, which is reused to produce a range of elegant fabrics, while Tarkett is currently developing an aviation carpet which is manufactured within a closed material loop.

The AIRA (Aircraft Interior Recycling Association) is an initiative where seating and cabin components are broken down, separated

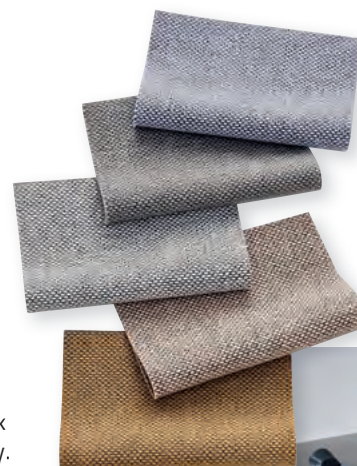
and segregated into material feedstock and recycled in an energy-efficient way.

As well as recycling products at the end of their service life, AIRA is working with Boltaron to capture waste plastic from the manufacturing process and recycle it into a reusable material.

In order for new cabin products to be suitable for recycling, their components must easily separate; this is a fundamental feature which needs to be factored in at the concept stage of the design process. For instance, the Pitch PF3000 seat has been designed in such a way that its plastic mouldings easily separate from the metal framework to allow all components of the seat to be segregated for recycling.

'Design for disassembly' was a key theme at Salone del Mobile this year too, as embodied by the Costume seat for Magis (developed by Diez Office). The seat cover wraps around the form of the seat and is easily removed, making it washable without degrading the quality of the fit once refitted – extending the lifecycle of the dress cover while also making it easier to recycle.

As we move forward, even more sustainably made materials will be used on-board aircraft, with the end goal being a cabin consisting solely of recyclable and reusable materials.



LEFT: REWOOL, KVADRAT'S REPURPOSED SCRAP WOOL PRODUCT

BELOW: THE BARE BASE OF THE MAGIS COSTUME SEAT



RIGHT: THE COSTUME SEAT DESIGNED BY BY STEFAN DIEZ FOR MAGIS, FITTED WITH A COVER



NATURAL TALENT

JOSÉ RUI MARCELINO, CEO AND DESIGN MANAGER AT ALMADESIGN, NOTES THE IMPORTANCE OF HAVING REAL DEPTH IN NATURAL TEXTILES, FROM THEIR FABRIC MAKEUP, TO THEIR PRODUCTION AND AESTHETIC

The landscape of materials is changing, combining the best features of nature and technology. The origin of the materials is becoming more important as informed passengers demand sustainable solutions, as is maintenance, durability, and the possibility to reuse materials retrofit at the end of their cycle.

In fabrics we see innovation from the beginning of the production process, with different blends and techniques being introduced. Natural fibres are being combined in a modern way and plain textiles embellished with embroideries as a tribute to traditional craftsmanship and heritage. It's interesting

to see textile weaving knowledge being transferred into flooring systems, resulting in resistant, easy maintenance solutions as well as a significant weight reduction. The lightweight flooring materials have recently been applied in Almadesign's latest project, the Alice electric aircraft from Eviation.

The value of texture and its tactility is being explored, and irregularities and the beauty of handcraft and imperfection being embraced as a reaction to increasingly automated production processes. In thermoplastics we see this trend in linen and denim texture effects, creating sophisticated materials with natural fibres and patterns.

A seamless travel experience with harmonious and neutral colour palettes of earthy tones and green effect shades reconnects passengers with nature. The leather industry is moving into chrome-free leather and naturally smooth materials such as nubuck that provide long-lasting durability, with imperfections that add character and age gracefully. Natural oak tanning processes offer a truly vegetable-based and sustainable process that creates a soft touch, high-quality material that is comfortable and durable.

ABOVE: ALMADESIGN'S MOOD BOARD FOR THE ALICE CABIN

Technology trends

NICK LONDON, LEAD INDUSTRIAL DESIGNER AT MORMEDI, EXPLORES TECH-ENABLED CMF TRENDS

The challenge with material selection has always been treading the fine line between selecting a range that is bold enough to make its mark without suffocating the form of the furniture itself. Fortunately, technology makes this easier, enabling us to approach CMF from different creative angles. Here are my three picks for tech-enabled CMF trends.

Firstly, textures are being used to great effect and are a good way to add visual interest to large surfaces. Aircraft Interiors Expo 2019 saw no shortage of suppliers focusing their efforts on refining embossing and moulding processes in order to create lightweight, cushioned panels to give a cosy feel to cabin furniture. The changing appearance of these panels under different lighting mean they can take advantage of

advances in illumination, for a holistic approach to cabin design.

Secondly, improvements in high-resolution printing are helping to achieve a domestic ambience. Sekisui's Infused Imaging, for example, allows us to integrate materials with the appearance of marble and wood. The usual restrictions on material selection are being bypassed by technology and, as such, I'm sure we will see aviation adopt general interior trends at a faster rate.

Finally, sustainability is at last being taken seriously. Airlines are holding themselves accountable and material suppliers will surely follow suit by ensuring the manufacturing processes and post-service life of their products stand up under scrutiny – a trend that is here to stay.

LEFT AND BELOW: SEKISUI SPI'S INFUSED IMAGING TECHNOLOGY ENABLES ATTRACTIVE EFFECTS



tisca textiles

living
commercial
mobility
sports



TISCA

Mobility textiles
from one single source





LEFT: BOLON'S BEAUTIFUL MISSONI
WOVEN CARPET DESIGN

BELOW: IKEA MARRIES STYLE WITH
FUNCTION WITH THIS COMBINED
TABLE LAMP AND SPEAKER



SERENITY AND STILLNESS

ATTENTION TO BIG WEAVE AND LITTLE WEAVE CAN ENHANCE PASSENGERS' FEELING OF WELLBEING, FINDS EMMA RICKARDS FROM WEST 6

Aspiring to a sense of calm when travelling is something we all recognise. At the Salone del Mobile in Milan this year, we observed an emphasis on the use of material finishes and carefully curated colour choices to deliver a gentle mindset and sense of wellbeing.

As technology takes over our everyday lives, our desire for tactility deepens. In Milan we saw IKEA's collaboration with Sonos on Symfonisk, a table lamp/speaker with a textile base combined with a glass shade. Technical clutter is reduced to a minimum and the textural value of the fabric is integral to the holistic success of the product.

At LDF (London Design Festival) in September a new Missoni Home collection was launched, delivered in collaboration with Bolon flooring, featuring Fireworks, an archetypal Missoni graphic pattern with flowing gradients that gains in character from the unexpected oversize of

the pattern. It's all in the weave choices. In our opinion big weaves and little weaves both add a much-needed focus on tactility and create a thoughtful and stress-free zone. Soft, moody colour palettes using shades like neo-mint and rose-oyster as an alternative to greys complete the scene.

Cabin interiors of the future can centre around the body and mind, creating an understated and carefully considered approach to serenity, uncluttered by technical detail. The flexible surfaces of constructed textiles absorb body movement and make sitting and leaning back especially comfortable. When combined with ergonomically and strategically placed quilted foam, passenger comfort is maximised. High-quality craftsmanship skills are required for designing and weaving top-performance textiles to create this mood dedicated to serenity.

Future luxury: space, light and material

THE LATEST DESIGN THINKING IN THE AUTOMOTIVE SECTOR SHOWS A GREAT FUTURE DIRECTION FOR AIRCRAFT CABINS, FINDS ELINA KOPOLA OF TRENDWORKS

In a recent interview to celebrate London Design Festival, the prolific designer and architect, Paola Navone defined future luxury as space, light and material.

To create a sense of luxury in any cabin class we can dial-up the perception of space, light and quality of material through carefully considered CMF application. At the 2019 Frankfurt Motor Show (IAA), the Honda E electric city car was a masterclass in spatial CMF treatment for the economy class sector. The continuous wood dash has a retro furniture feel as it spans the full width of the car, simultaneously emphasising the super-wide touchscreen infotainment system.

Audi's AI:Trail showcased a large natural wood kick-strip wrapping the complete car interior.

Sustainably sourced wood in matt finishes also continues as a strong trend across the furniture industry. The Sage collection by Benchmark is a good example, with rounded profiles and ergonomic shapes that show off the natural materials used.

The influence of nature on colour was clear to be seen at IAA. The new Land Rover Defender was revealed in seven muted natural shades and a satin metallic that allows light to play on the surface to create a soft, glowing, luxurious finish.

By benchmarking the auto industry and home interiors it becomes clear the passenger of tomorrow is accustomed to excellent build quality, a feeling of space and the clear use of light, and enjoys a tactile approach to materials. ☼



FROM TOP: THE AUDI AI:TRAIL INTERIOR; THE HONDA E CITY CAR CABIN; BENCHMARK'S SAGE COLLECTION