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THE TEAM

EDITOR Izzy Kington
izzy.kington@markallengroup.com

SENIOR ART EDITOR Anna Davie

DEPUTY ART EDITOR Louise Green

DESIGNERS Andy Bass, Danny Ledger, Julie Welby

PRODUCTION Chloe Jeakins
chloe.jeakins@markallengroup.com

CIRCULATION MANAGER Charley Nash
circulation@markallengroup.com

EDITORIAL DIRECTOR Tom Stone
tom.stone@markallengroup.com

PUBLISHER Simon Hughes
simon.hughes@markallengroup.com

COO Jon Benson
jon.benson@markallengroup.com

CEO Ben Allen
ben.allen@markallengroup.com

CHAIRMAN Mark Allen

FOR ADVERTISING QUERIES, PLEASE CONTACT
simon.hughes@markallengroup.com

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Cover image: Exploratory design ideas for the Sirius Business Jet interior by Designworks, a BMW Group company



TAKING OFF

Flying cars have held a special place in the public imagination for a long, long time. From *The Jetsons* to *James Bond* to *Blade Runner* to *The Fifth Element*, popular culture has many iconic fictional examples. Now the technology seems to be swiftly making its way towards commercial service. With many exterior designs already revealed, designers are sharing cabin ideas to match the dream.

The image on the cover, for example, shows some exploratory design ideas for the Sirius Business Jet interior, created by Designworks, a BMW Group company. These images – with more in the feature from page 18 – are being exclusively revealed in this magazine. The article contains lots of insights from stakeholders in this nascent industry on the unique considerations and challenges in designing interiors for these new vehicles.

The futuristic theme continues with the Design Forum from page 40, where VIP aircraft interior designers share their opinions on the utility of emerging design tools such as AI, AR

and more, as well as some wider trends they've observed recently, and what they hope to find at EBACE and Aircraft Interiors Expo (AIX).

Speaking of which, you will find a preview for each show in this edition. Interior suppliers reveal what they plan to showcase at the events, which are both to be held on 28-30 May. We're exhibiting at both – so do pop on over and say hello to the team!

Another highlight in this issue is the feature on installing artworks in private jet cabins (*page 12*) – where the experts weigh in on everything from material considerations to certification challenges, and even how artworks can be transported as cargo!

There's also a feature on the recently completed second ACJ TwoTwenty interior (*page 34*), where Comlux explains its plans for expediting outfitting times even further.

Last but not least, there are tons of options to peruse in our annual review (*page 26*) of leathers, faux leathers, carpets, fabrics and more for your next cabin project – enjoy!

Izzy Kington, editor



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PINBOARD



THE 'BIRD' A340 CONCEPT BY AGNÈS GUIU WAS DESIGNED WITH AS MUCH OPEN SPACE AS POSSIBLE. IN THE MASTER SUITE, DECORATIVE, TRANSPARENT SCREENS ARE USED TO STRUCTURE THE SPACE, WITH ONE DOUBLING AS A BED HEADER THAT ALSO CREATES A MINI HALLWAY. THE BED FACES THE WINDOWS/SCREEN, GIVING ROOM ON BOTH SIDES THAT IS USED FOR A LOW DESK/ COFFEE TABLE AND A LOW ASYMMETRIC CORNER SOFA WITH MINI SIDE TABLE. TO GIVE THE ILLUSION OF FULL-HEIGHT WINDOWS, WOODEN OR LEATHER LOUVRES ARE IMPLEMENTED, WITH RECESSED, BACKLIT WHITE LEXAN BANDS IN-BETWEEN. THE SUITE ALSO FEATURES A LARGE DRESSING ROOM AND WASHROOM AREA.

THE CONCEPT ALSO INCLUDES A BUSINESS LOUNGE SEPARATED FROM A MAJLIS BY TRANSPARENT, GREY-TINTED LEXAN PANNELLING; A BAR AREA THAT HAS A HI-LO COUNTER WITH EXTENDABLE TOP SO AS TO OFFER A LARGE DINING OR CONFERENCE TABLE; A GALLEY AREA; AND CREW REST. LOW FURNITURE FEATURES THROUGHOUT.



PER THE CLIENT'S REQUEST, AUTUMN ELIZABETH DESIGN CREATED A LUXURY AUTOMOBILE LOOK AND FEEL FOR THIS GLOBAL 5000 REFURBISHMENT. DETAILS INCLUDE FRENCH-STITCHED LEATHER WRAP DETAILING, AND BLACK AND WHITE CONTRASTING GEOMETRIC PATTERNS.

THE CLIENT WAS ESPECIALLY DRAWN TO THE COUNTERTOPS. CRAFTED FROM QUARTZ, THEY OFFER A STRIKING CONTRAST – A WHITE BASE STREAKED WITH BOLD VEINS OF BLACK.



DOY DESIGN IS DEVELOPING A RANGE OF ACCESSORIES FOR AIRCRAFT CUSTOMERS WHO WANT TO INDIVIDUALISE THEIR CABIN. THE 'AEROLIGHT' ADDS ANOTHER DIMENSION TO CABIN LIGHTING BY PROVIDING A LOW LEVEL, RELAXING, AMBIENT LIGHT.

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home from home



This Global 7500 design was created by Christopher Nobles in collaboration with Sarah Mespelt Larranaga, chief design officer at Freestream Aircraft, the client. It was intended to spark design discussions, with a focus on cabin spaces that can cater simultaneously to professional necessities and laid-back leisure, with dedicated areas for each. As well as aesthetic unity, design aims included ergonomic comfort, creative furniture design and sustainability.

Areas on board include a galley, a dining area, aft bedroom suite and a spacious seating area. The Global 7500 is capable of very long flights, so the layout was tailored with room for 17 passengers and eight full sleeping positions. "The cabin is divided into five zones with large spatial layouts for more light, better views, improved seat ergonomics and more private spaces for resting on long flights with multiple passengers on board," says Mespelt Larranaga. "The jewel on the Global 7500 is the nice Touch CMS. It offers touch dials, suite controls, phone app operation and 4K home theatre viewing on monitors."

The success of previous designs – including for G650, G700 and Boeing 787 airframes – guided the design direction. "Building on this foundation, we wanted to introduce a variety of soft materials into the seating spaces to create a more personal experience with our selection of textures and layers adding a tangible depth and a tactile richness to the interior," says Nobles. "We've consciously steered away from the conventional corporate aesthetic, aspiring instead to create an environment that is not only distinctive but also imbued with personality and character. The result is a space that exudes an inviting warmth, reflecting the individuality of the client and fostering a sense of personal sanctuary."

Special details include the use of white ebony, a custom Kalogridis carpet and lacing on the seatbacks. "The seats and woodwork within our designs are often the lynchpin of the entire interior aesthetic, carrying the potential to elevate or detract from the overall effect and mood," says Mespelt Larranaga. "Within these elements our dedication to craftsmanship truly comes to the fore. Quality is not just a component of our process; it is the cornerstone. It bears a profound influence on the success of our projects." ❖

SEAT LACING

Seatbacks are elevated with a special lacing detail. Christopher Nobles notes that the element requires flawless execution: "A single misstep in its creation could diminish the design's intent and dissipate the enchanting experience we strive to capture."





BULKHEADS

The bulkhead design mixes fabric and veneer, not only to help with sound dampening, but also to create continuity with the seat and divan inserts. The bulkheads, like the seatbacks, are implemented in hand-stitched leather and suede using a saddle stitch, chosen for its strength and durability.



CARPET

The exterior livery features a hand-sketched splash pattern in Giallo Clarus metallic paint. This statement pattern is carried into the interior with a Kalogridis Nagoya custom carpet. The perpendicular lines are softened with an overlay of the organic pattern in yellow silk.

High art

IMPLEMENTING ART WORK
ON PRIVATE JETS ENTAILS
REACHING A DELICATE
BALANCE BETWEEN CREATIVE
EXPRESSION AND RIGOROUS
AVIATION STANDARDS

Words by Marisa Garcia

Private jet owners seek to reflect their style in their cabins, and art is a popular channel for this. “All jet owners have an art collection, they are either art lovers or invest in art,” comments Matthieu Faëne, founder of Art&Jet, an art consultancy dedicated to private aviation.

David Vanderzwaag, CEO of Airhawke, which provides engineering and design services to completion centres, concurs that the demand is there: “It’s fairly common for us to get requests for paintings, as well as vases, lamps and clocks, all of which are intended to be an art statement.”

TEMPERATURE AND PRESSURE

Many technical challenges are involved in bringing art into private jets. Adam White, CEO, Comlux Completion, says the extreme environmental challenges that artworks face on aircraft, including fluctuating temperatures and pressures, necessitate carefully selecting artworks and materials. “These extreme temperature changes (from 115°F to sub-zero) can be detrimental to the art piece,” he explains. “In actuality, classic pieces of art should not be permanently installed in an aircraft.”

Reproductions of pieces from private collections can serve as an alternative. “It’s actually not uncommon for our clients to have custom artwork,” White adds.

Joerg Loewes, head of product sales completions and design at Lufthansa Technik, has seen a broad spectrum of requests for art installations on private jets, everything from “classic” paintings to photographs, sculptures and digital art. Metal or glass sculptures, unique glass bowls or sculpted lamps are common requests. Lufthansa Technik has also installed distinctive charred/carbonised pieces of withered wood crafted into an art exhibit. Plated metal engravings of various motifs or texts are more frequent, from famous quotes to verses to city skylines or other landmarks. In some cases, these metal inlays can also have a slightly three-dimensional appearance.

“A more recent trend involves NFTs [non-fungible tokens], digital art pieces that use crypto- and blockchain technology to certify their ownership and authenticity,”



AN INSTALLED BEAR
SCULPTURE - 'LE MIEL #5'
BY MICHEL BASSOMPIERRE
- FACILITATED BY ART&JET



says Loewes. “These can be presented via digital screens or even the giant ceiling projection system presented with our Explorer VIP cabin concept, which uses projection technology by German company Diehl. Tailor-made NFTs of various styles and dimensions can also be a unique eye-catcher in the cabin of a VIP aircraft.”

Art&Jet also sees potential in digital art to be displayed on installed screens. The company is exploring an art subscription programme allowing aircraft owners to select from a catalogue of artists. “New artworks can be displayed every few weeks,” says Faëne of Art&Jet.

SAFETY FIRST

Certification is a vital consideration for installed art. “Art must adhere to the same strict certification criteria as any other cabin monument or material installation,” says Loewes of Lufthansa Technik. “Adherence must be tested and documented for the certification process. Besides the requirements for flammability, smoke emissions or heat release, art pieces must safely withstand the mandatory 9g crash test.”

“Ensuring that installed art meets the airworthiness requirements typically involves modifying the art in some manner while also

Custom SCULPTURE

Art&Jet has developed a technique to create custom 3D-printed sculptures in aluminium. These lightweight structures are finished with materials to fit the artists’ specifications. This approach results in an original work of art intended to retain its value even when removed from the jet. Depending on the size of the piece, the sculpture can either be affixed to a credenza, on a stand that replaces cupholders, or on a larger stand in place of a seat.

“The idea is to make aviation-proof pieces with the same value you would find in a gallery,” says Matthieu Faëne of Art&Jet. “Whenever the owner wants to remove it, they can put it in their yacht, home or office, and it’s going to be an art piece like any other they have.”

When an art piece has to be replicated, Lufthansa Technik sometimes uses 3D scanning to derive its exact geometries



Lufthansa Technik once integrated a reprint of a famous Monet painting, the original of which was owned by the aircraft operator

striving to ensure that the visual appeal of the item is maintained,” says Vanderzwaag of Airhawke. “This involves reprints on flam-safe materials; careful design and integration of mounting points; or, in some cases, creating a replica that is shatter-resistant or reinforced to maintain its structural integrity in the event of a crash landing. In one case, we reprinted an oil painting on silkscreen to the owner’s satisfaction and in duplicate to facilitate flammability testing.”

INSTALLATION APPROACHES

Lufthansa Technik’s Loewes gives the example of a large metal statue of a prancing racing horse standing on its rear legs. “With only a minimal material connection (the two legs) to the ground support plate, it posed an enormous engineering task regarding the 9g certification,” he says.

Engineers addressed this with special restraints. “A steel mesh was invisibly routed through the horse’s legs into specifically engineered fixation points in the underlying piece of furniture and finally to the structural hardpoints and seat tracks,” Loewes says.

For another bronze animal statue, the furniture underneath was reinforced to support three to four times its normal point loads. Fixed

glass elements have proved challenging to certify in the past. However, Loewes says that multi-layer glass has advanced enough to fulfil many requests in this area.

LOCATION IS CRITICAL

“The respective position/placement in the aircraft cabin is also of utmost importance for the certification, especially concerning evacuation scenarios and pathways,” Loewes says. “Paintings or photographs on the wall are usually not critical in this

OPPOSITE PAGE & INSET ABOVE: ART&JET IS EXPLORING A SUBSCRIPTION SERVICE FOR DIGITAL ART FOR DISPLAY ON CABIN SCREENS

ABOVE: LUFTHANSA TECHNIK’S EXPLORER CONCEPT INCLUDES A PROJECTION SYSTEM, ANOTHER POSSIBILITY FOR ART DISPLAY

“The placement is also of utmost importance for the certification”



FEATURE *wall*

David Knowles of Artelier shares details of one of the various projects the company has worked on – a bespoke feature wall for a Bombardier Global 5000. “This refit turned a 10-year-old standard aircraft cabin into a unique interior statement,” says Knowles. “At the heart of the design lies the large art feature wall on the aft bulkhead.”

The piece was painted on the bulkhead in the London-based artist’s studio before integration at the completion centre. The unique paint mixture underwent flammability testing. The commission was arranged through a collaboration with Winch Design.

regard. Extensive sculptures, on the other hand, do have the potential to block an evacuation route or other vital safety features and hence have to be thoroughly engineered and certified. Weight and balance on the overall aircraft level is another essential aspect for cabin installations, but concentrated loads and the respective load paths are critical.”

MATERIAL CHOICES

Materials are chosen carefully. “To mitigate flammability risks, we opt for materials like silk, wool and precious metals when commissioning artworks,” says David Knowles, CEO and founder of art consultancy Artelier. “To combat toxicity, we select paints that emit minimal harmful fumes, like watercolours or specialised acrylics. If weight is an issue, we prioritise lightweight solutions by incorporating materials like carbon fibre honeycomb and certified polycarbonate materials. To guarantee the artwork’s robustness we opt for bronze, steel and aluminium. The ‘Grab Test’ assesses whether you need to clutch onto an object during turbulence,

and steel and bronze are preferred due to their durability, as they are less likely to break.”

ABOVE: AN AERIAL VIEW OF THE CLIENT’S HOMETOWN WAS HAND-ETCHED AND CUSTOM-PLATED TO ENHANCE THE ENTRYWAY OF THIS INTERIOR BY COMFLUX COMPLETION

INSET BELOW: A FEATURE ART WALL ON A GLOBAL 5000, THE RESULT OF COLLABORATION BETWEEN WINCH DESIGN, ARTELIER AND A LONDON-BASED ARTIST



LOOSE EQUIPMENT

Another alternative, suggested by Knowles of Artelier and Loewes of Lufthansa Technik, is to add art as non-integrated or ‘loose’ items, categorised as carry-ons. These must be safely stowed and latched during taxi, takeoff and landing. “There are very few off-limit ideas for art in private aircraft,” says Loewes. “Our engineers have decades of experience that helps realise most demanding requests. Only in some cases – for example where the aircraft is chartered, and thus the stricter commercial certification rules apply – might some ideas have to be rethought or rejected.”

“Nothing is strictly off-limit,” says Artelier’s Knowles. “Our job is to turn clients’ ambitions into tangible realities. The option to have carry-on artwork means that clients can have anything they want within reason. That said, we will avoid oil paint, combustible materials, or delicate materials like ceramics, porcelain or glass.”

PRECIOUS CARGO

Art sometimes has to be transported, carefully, as cargo. Private jet broker service Lunajets for example offers this service. Eymeric Segard, CEO and founder, recalls a client who wanted to return with a purchase from an art fair. With the customs paperwork prepared up-front, Lunajets organised a private jet flight to meet the request.

Art sometimes travels with the owner or a courier, but cargo arrangements are also made. “We can easily fit a cardboard package, a painting of up to 1.8m x 2m (5.9ft x 6.6ft), if a long-range jet is chartered for the passengers,” says Segard. “More pieces and bigger ones can fit in a VIP airliner.”

Sizes and numbers are pre-vetted. The company also transports fragile sculptures. Well-packed, these are secured in the luggage area or cabin. A 2m-tall tube-like piece was once secured to the divan in

the back of a Falcon 8X. Extra on-tarmac manpower is arranged for boarding if the object is heavy and sometimes, a forklift is used.

“Customs officials at departure and arrival are informed in advance to ensure they check the art’s paperwork and deal with the necessary permissions and taxes directly with the owner,” adds Segard. “Finally, cars, vans and sometimes escort vehicles and manpower can be organised for the transfer from the airport to the final destination.”

Segard says insurance for the transport is generally arranged by the person chartering the jet. “Only he knows the value of the piece or pieces and whether insurance already exists to cover the flight,” he adds. “If needed, we can introduce them to a Lloyds of London-approved insurance broker, who can offer special additional insurance cover just for the transportation – referred to as ‘nail-to-nail cover’”

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THE PROMISE OF ZERO-EMISSION FLIGHT VIA A NEW BREED OF VEHICLE IS STILL COMPELLING, AND DETAILS OF THE INTERIORS ARE STARTING TO PERCOLATE THROUGH

Words by Guy Bird



avenue



EXCLUSIVE FIRST PICTURES OF
EXPLORATORY DESIGN IDEAS
FOR THE SIRIUS BUSINESS JET
INTERIOR, BY DESIGNWORKS,
A BMW GROUP COMPANY

Despite initially unveiling a five-seat eVTOL design, in September 2023 Horizon Aircraft announced its shift to a seven-seat version, the Cavorite X7. Potential customers had advised the company that larger aircraft with lower passenger seat mile costs better aligned with their needs

So 2023 came and went without the most ambitious targets for electric vertical take-off and landing (eVTOL) vehicles flying commercially being met, but that's not to say the nascent industry has stalled – far from it. Bigger aviation and automotive players are still backing smaller tech start-ups and following up on slick exterior designs, their interior visions are starting to emerge in more fully realised form. Interesting examples of collaboration include Volkswagen calling on the aviation expertise of design agency tangerine for its China region-focused eVTOL, Sky Garden. Meanwhile, relative newcomer Sirius Aviation is drawing on the expertise of Designworks, a BMW Group company, for its forthcoming hydrogen-powered business jet.

Another eVTOL player AutoFlight, has employed the services of Frank Stephenson Design (FSD), best-known as an automotive designer whose CV includes in-house roles at BMW, Maserati, McLaren and Mini. “The main theme for the interior design was to create a living space in the skies that is bright, open and comfortable for passengers,” says Stephenson.

To that end, the AutoFlight Prosperity I cabin has a bigger window surface compared with a conventional small aircraft. “We make use of a 1+2+2 seating layout, with the pilot seated in the centre of the aircraft, with two rows of passenger seats behind, respecting the designated centre of gravity of the aircraft, which is also a



Certifying NEW MATERIALS

Despite the influence of non-traditional aviation designers in many of the eVTOLs being developed, there is acute awareness of the difficulty in certifying new proposed materials for aviation use.

As Weiwei He of tangerine, design director on the Volkswagen Sky Garden eVTOL project for China says: “We are sensitive to the fact that eVTOLs will likely be subject to similar regulatory

frameworks as the commercial aviation sector (the industry standards and regulations are still under development internationally). The cushion for the headrest is made from fully recyclable plastic 3D-printed to form a 3D knit. This material is currently used in the automotive industry but is not yet certified for aviation, while the faux leather used for the seating is bio-based.”

LEFT & RIGHT: VW AND TANGERINE'S VISION FOR THE SKY GARDEN EVTOL FOR CHINA



key design parameter, particularly during the transition phase from vertical to horizontal flight,” says Stephenson. “Futureproofing is also relevant in this case, as autonomous flight capabilities would then allow the pilot seat to be occupied by an additional passenger.”

DESIGN CONTINUITY

Successful vehicles often have a strong design continuity between exterior and interior and FSD says the AutoFlight Prosperity I is designed to offer this: “The interior volume and exterior shape are very closely related, with the aim to minimise cross-sectional area to increase efficiency, while giving sufficient room for up to five passengers. The widest point of the cabin is at the shoulders of the second-row passengers, with increased ‘tumble home’ [the angle of the side windows from the ceiling to the window line] in the upper fuselage area. One of the initial goals for the interior was to achieve a floor height similar to that of a large SUV, to allow for ease of ingress and egress.”

A more spacious passenger area is also the aim for the Sirius Business Jet. It's very early days for the interior design, but



LEFT & INSET ABOVE LEFT: THE AUTOFLIGHT PROSPERITY I INTERIOR, DESIGNED BY FSD

VIDEO: THE LILIUM JET PIONEER EDITION CABIN DESIGN

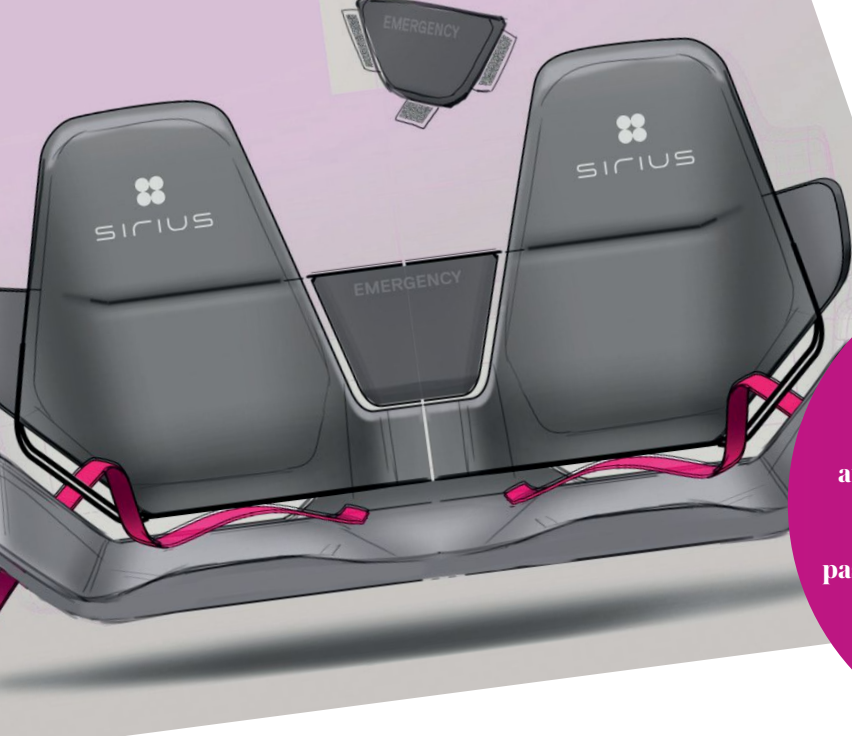


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Eve Air Mobility held a customer advisory board meeting in December 2023 at which customers and partners discussed topics including vehicle configuration and the passenger cabin experience. Recaro Aircraft Seating has been selected for the seats

LEFT & BELOW: MORE OF THE EXPLORATORY SKETCHES BY DESIGNWORKS, A BMW GROUP COMPANY, FOR THE SIRIUS BUSINESS JET INTERIOR

VIDEO: THE SUPERNAL S-A2 VEHICLE PRODUCT CONCEPT



Designworks and Sirius graciously shared their thoughts. “We were contacted quite early and tried to make it [the passenger cabin] a little wider, by getting more space in the cross-section at shoulder height while also looking into more interesting window cuts,” explains Tommy Forsgren, lead designer at Designworks. “That means it’s a little less egg-shaped and slightly more hexagonal. In this small cabin, when you’re walking to the back, every centimetre helps.”

AUTOMOTIVE INFLUENCE

Sirius Aviation’s CEO, Alexey Popov, and VP of design and director of product development, Dr Alexander Los, say they only ever had one partner in mind for the aircraft, due to a deep respect for its roots in aviation and pioneering work in hydrogen. Designworks and Sirius haven’t quite fixed an interior direction yet but given the former’s automotive expertise with both BMW and Rolls-Royce car interiors, those aesthetics will surely be strong pulls. “It will be a mix of traditional luxury well-being but with lightweight inspiration,” says Forsgren.

Sirius’ Dr Los sums up the brief as “nobility” – a good word given the target high- and ultra-high-net-worth customers. Expect materials to be lightweight and sustainable but within the bounds of certification. “As the [hydrogen] tech overall is

CAN YOU SMELL the difference?

Unique selling points (USPs) are hard to come by in crowded markets with lots of competition, but the new Sirius Business Jet is claiming one in the way that it will smell. There’s plenty of time to hone that before its late 2028 first delivery target, but the business is super-serious in how it intends to achieve its ends.

“Scent is one of the key elements of the design,” explains Dr Alexander Los, VP of design and director of product development at Sirius Aviation. “When you get into a BMW car you always know it’s a BMW. That takes a huge engineering effort, as each structural and interior material needs to be composed with a scent you recognise, which is attractive and pleasant for the passenger. It’s not about impregnation, it’s about the selection of the material itself that provides the smell. For high-end passengers, every aspect of the design matters, and what you smell is one of the design factors.”



revolutionary in its sustainability, we should reflect that in our [interior] material choices,” says Forsgren.

Given eVTOLs’ smaller size compared with business jets, maximising light, space and the feeling of space are common concerns. There are also details that some seem to have solved by making major changes to the cabins. For instance, in the AutoFlight Prosperity I, FSD has been able to increase localised passenger headroom, lower the seats’ H-points and made windows bigger. “The original concept sketches explored a full-height transparent side glass [panel] from floor to ceiling, however it was deemed too daunting for passengers,” says Stephenson. “Thus the belt line was shifted to align with the side armrests, which still provides an exceptional view out in comparison with conventional aircraft. Weight is critical, so the front windscreen was reduced 10% in size to allow for huge weight savings without impacting the overall view out.”

MAKING AN ENTRANCE

There’s also a bit of automotive-style drama to one of its doors. On the left a gullwing door opens upwards, which makes the second- and third-row passengers very accessible, while on the right, there is a single pilot door at the front that hinges upwards on the A-pillar with a folding armrest, to ease entry for the pilot.

It’s an entry approach also taken by tangerine for Volkswagen’s Sky Garden – with only one large upward swinging door plus a loop-shaped step well integrated into the vehicle’s body to aid ingress and egress. “The internal space of the eVTOL is very similar to a car,



TOP: THE AIRCRAFT MODULE OF THE XPENG AEROHT MODULAR FLYING CAR

ABOVE: THE XPENG AEROHT EVTOL FLYING CAR

so lots of automotive references were used as design inspiration,” explains Weiwei He of tangerine, design director of the project. “At the same time, this is a flying experience, so we prioritised the views of urban landscapes by maximising the size of the windows surrounding the seating.”

Time will tell which eVTOL brand will get into the skies commercially first. That’s still a fluid situation, although 2025 seems the earliest possibility, in part due to the arduous nature of obtaining various global certifications. Meanwhile, the cross-pollination of ideas resulting from the input of designers from different industries continues to fascinate. ☒

IMAGES: XPENG AEROHT

A modular flying car

While most of the eVTOLs creeping closer to commercial reality are more ‘flying taxi’ than ‘flying car’, Chinese automotive newcomer Xpeng – via its aviation offshoot Xpeng AeroHT – recently revealed two vehicles in the latter category.

The first is a MPV-like six-wheel vehicle called the Land Aircraft Carrier, which has

a two-person ‘air module’ for low-altitude flights. The second is an eVTOL that looks like a conventional car but with multiple rotors on arms that sprout from its roof. On the inside, when preparing for flying mode, the multifunctional yoke retracts to give better access to the screen, and a joystick becomes the primary method of control.

Of the two vehicles, Xpeng AeroHT’s official line is: “Considering policy, regulation and application factors, the production and delivery of the modular flying car will precede the eVTOL flying car.”

With electric cars already in production, and backing from Chinese tech giants Alibaba and Xiaomi, Xpeng is one to watch.



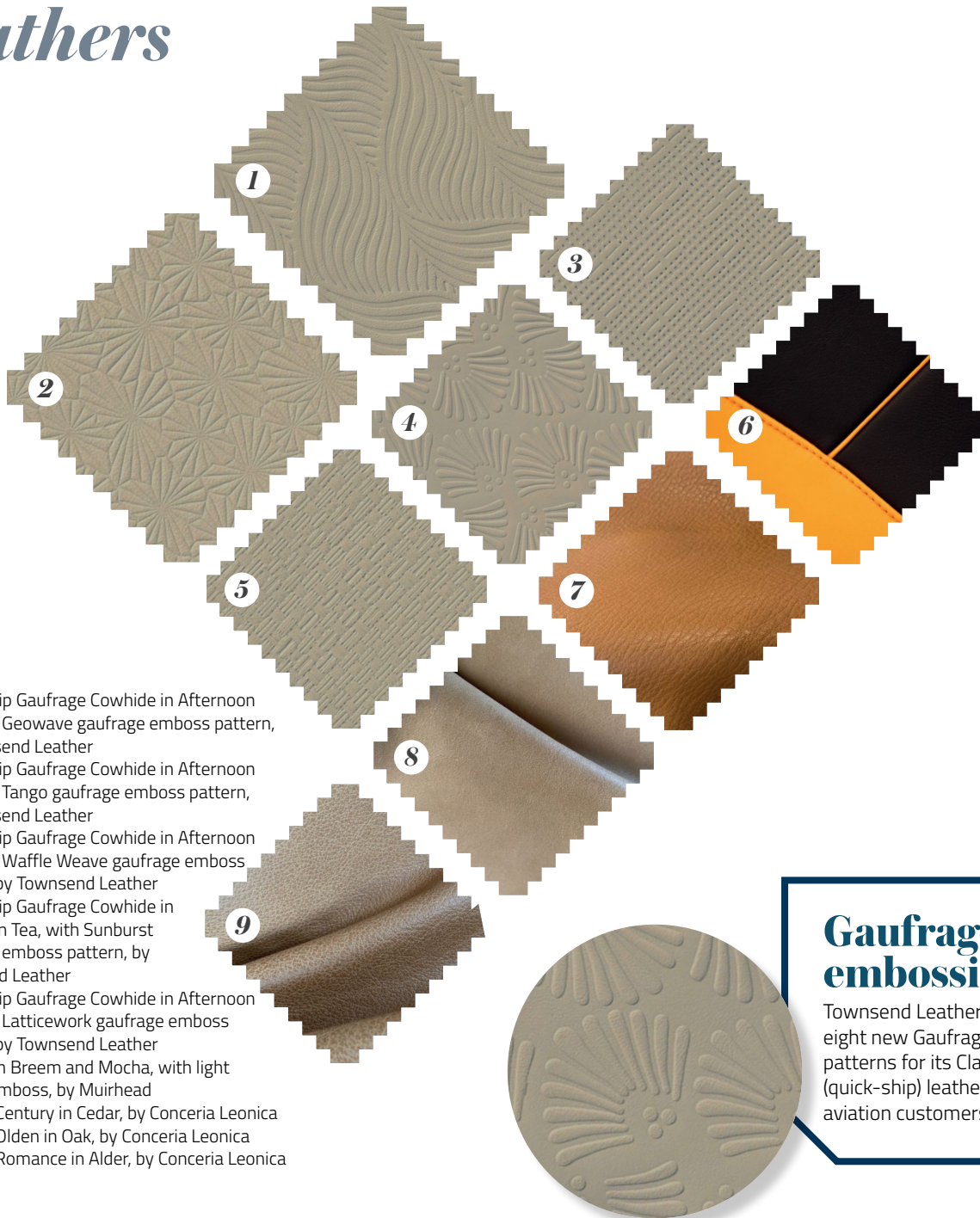
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Leathers



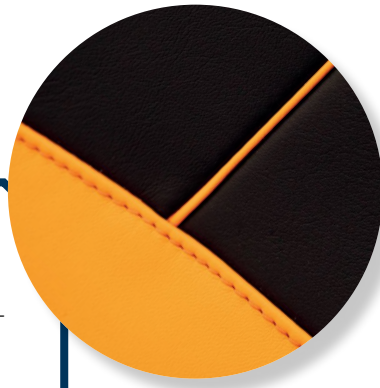
1. Quick-Ship Gaufrage Cowhide in Afternoon Tea, with Geowave gaufrage emboss pattern, by Townsend Leather
2. Quick-Ship Gaufrage Cowhide in Afternoon Tea, with Tango gaufrage emboss pattern, by Townsend Leather
3. Quick-Ship Gaufrage Cowhide in Afternoon Tea, with Waffle Weave gaufrage emboss pattern, by Townsend Leather
4. Quick-Ship Gaufrage Cowhide in Afternoon Tea, with Sunburst gaufrage emboss pattern, by Townsend Leather
5. Quick-Ship Gaufrage Cowhide in Afternoon Tea, with Latticework gaufrage emboss pattern, by Townsend Leather
6. FreeTan in Broom and Mocha, with light haircell emboss, by Muirhead
7. Leo-VIP Century in Cedar, by Conceria Leonica
8. Leo-VIP Olden in Oak, by Conceria Leonica
9. Leo-VIP Romance in Alder, by Conceria Leonica

Gaufrage embossing

Townsend Leather has launched eight new Gaufrage embossing patterns for its Classic in-stock (quick-ship) leather line for aviation customers.

FreeTan

The FreeTan range is a new offering from Muirhead. It is made in a heavy-metal and chromium-free tanning process designed to help reduce environmental impact. Muirhead says the free FR technology is a non-toxic, halogen-free, fire-retardant treatment that ensures adherence to the industry's strict safety standards without harming human health or the environment. The bespoke leather is available in a wide variety of colours and finishes.



10. Avion in Coal, by Garrett Leather
11. Flight in Condor, by Garrett Leather
12. Flight in Shrike, by Garrett Leather
13. Avion in Whitetail, by Garrett Leather
14. Flight in Peregrine, by Garrett Leather
15. Avion in Lily, by Garrett Leather
16. Piper embossed aniline leather in PPO2, by Foglizzo 1921
17. Venezia embossed nubuck in VE01, by Foglizzo 1921
18. Lugano Grain nubuck in LGRN03, by Foglizzo 1921
19. Vision Am gr 101 in Menthe AM 06, by Tannerie Sovos Grosjean
20. Timeless aniline leather in TI01, by Foglizzo 1921



Avion and Flight

Garrett Leather's aviation leathers, Avion and Flight, provide antibacterial protection, are water- and stain-resistant, and LBC Red List Free. In addition, all colours in both collections are flame-treated during production to minimise lead times. All 80 Avion colours and 30 Flight colours are available for immediate shipping, within two business days of purchase. Designers may add texture with embossing, perforating, quilting or special finishing techniques, such as hand-tipping.





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Carpets

Song of Solitude

Tai Ping's Song of Solitude Collection, created in collaboration with artist Qin Feng, blends Chinese ink traditions and Western abstract expressionism. This collection re-imagines Qin's early works, showcasing ethereal landscapes and mythical realms. Intended to represent the energy of the artist's hand in motion, the rugs feature effects like swift brushstrokes and dramatic black ink washes, found in the gradations of Jiuquand Tianshan. Architectural effects like sculpting, carving, high and low piles are carefully applied to create depth beyond Yaochi. An intricate mix of wool and silk is seen in the expressive Kunlun design.

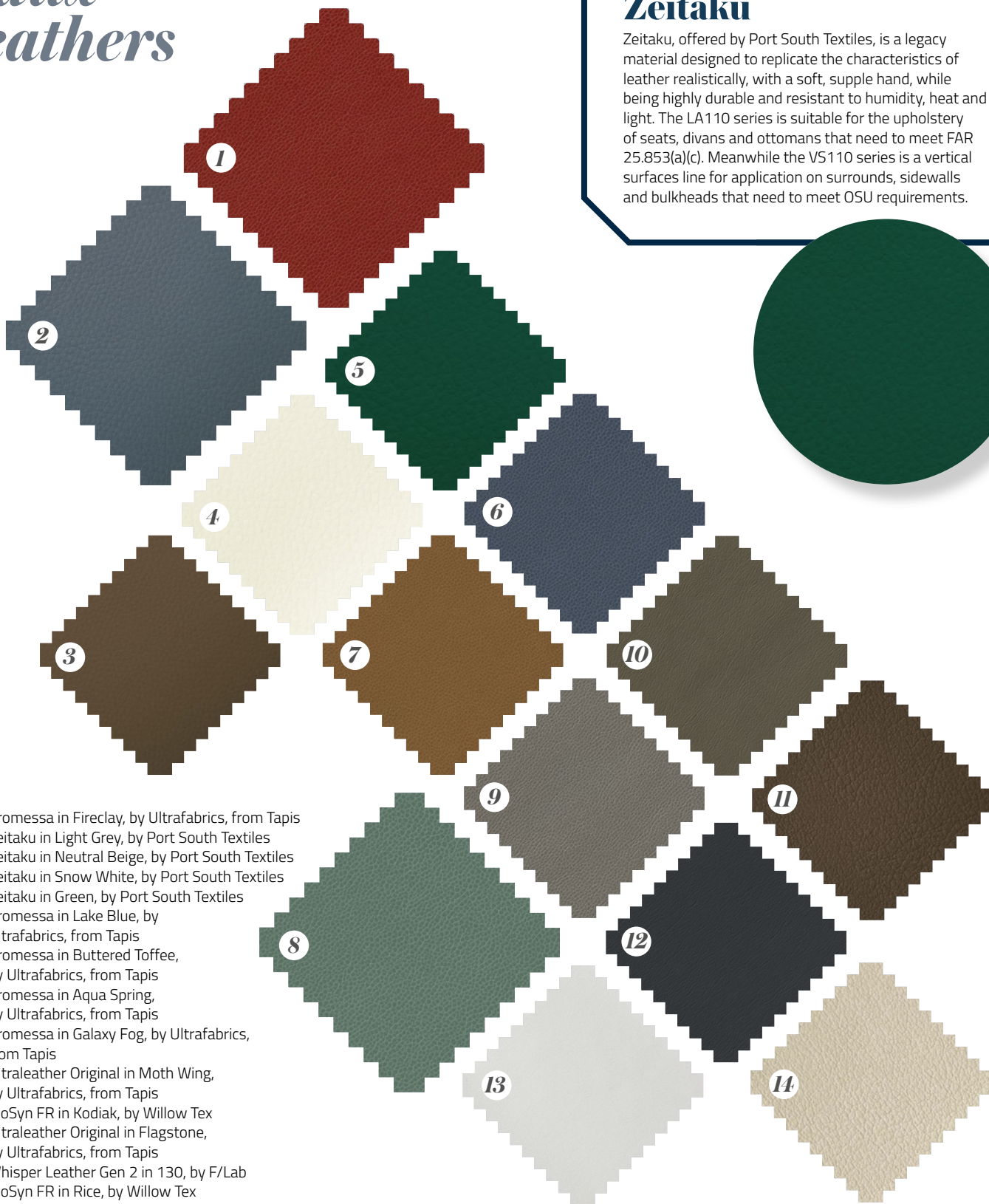
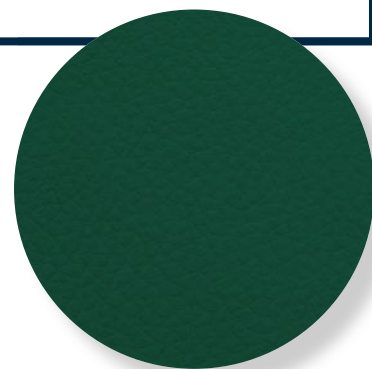


1. Song of Solitude Collection, Yaochi, by Tai Ping
2. Song of Solitude Collection, Jiuqu, by Tai Ping
3. The Elizabeth Harvey Design Collection, Solis, by Kalogridis
4. Song of Solitude Collection, Xixing, by Tai Ping
5. Song of Solitude Collection, Kunlun, by Tai Ping
6. Sinus in White, by Tisca
7. Song of Solitude Collection, Tianshan, by Tai Ping
8. Wollrips in Linen, by Tisca
9. Wilton Luxe II TV in Sand, by Tisca
10. Sinus in Hazel, by Tisca
11. Tensleep by Scott Group Studio
12. Soma with silk and WW, by Scott Group Studio
13. Lorona with silk, by Scott Group Studio
14. Signe with silk, by Scott Group Studio

Faux leathers

Zeitaku

Zeitaku, offered by Port South Textiles, is a legacy material designed to replicate the characteristics of leather realistically, with a soft, supple hand, while being highly durable and resistant to humidity, heat and light. The LA110 series is suitable for the upholstery of seats, divans and ottomans that need to meet FAR 25.853(a)(c). Meanwhile the VS110 series is a vertical surfaces line for application on surrounds, sidewalls and bulkheads that need to meet OSU requirements.



1. Promessa in Fireclay, by Ultrafabrics, from Tapis
2. Zeitaku in Light Grey, by Port South Textiles
3. Zeitaku in Neutral Beige, by Port South Textiles
4. Zeitaku in Snow White, by Port South Textiles
5. Zeitaku in Green, by Port South Textiles
6. Promessa in Lake Blue, by Ultrafabrics, from Tapis
7. Promessa in Buttered Toffee, by Ultrafabrics, from Tapis
8. Promessa in Aqua Spring, by Ultrafabrics, from Tapis
9. Promessa in Galaxy Fog, by Ultrafabrics, from Tapis
10. Ultraleather Original in Moth Wing, by Ultrafabrics, from Tapis
11. BioSyn FR in Kodiak, by Willow Tex
12. Ultraleather Original in Flagstone, by Ultrafabrics, from Tapis
13. Whisper Leather Gen 2 in 130, by F/Lab
14. BioSyn FR in Rice, by Willow Tex

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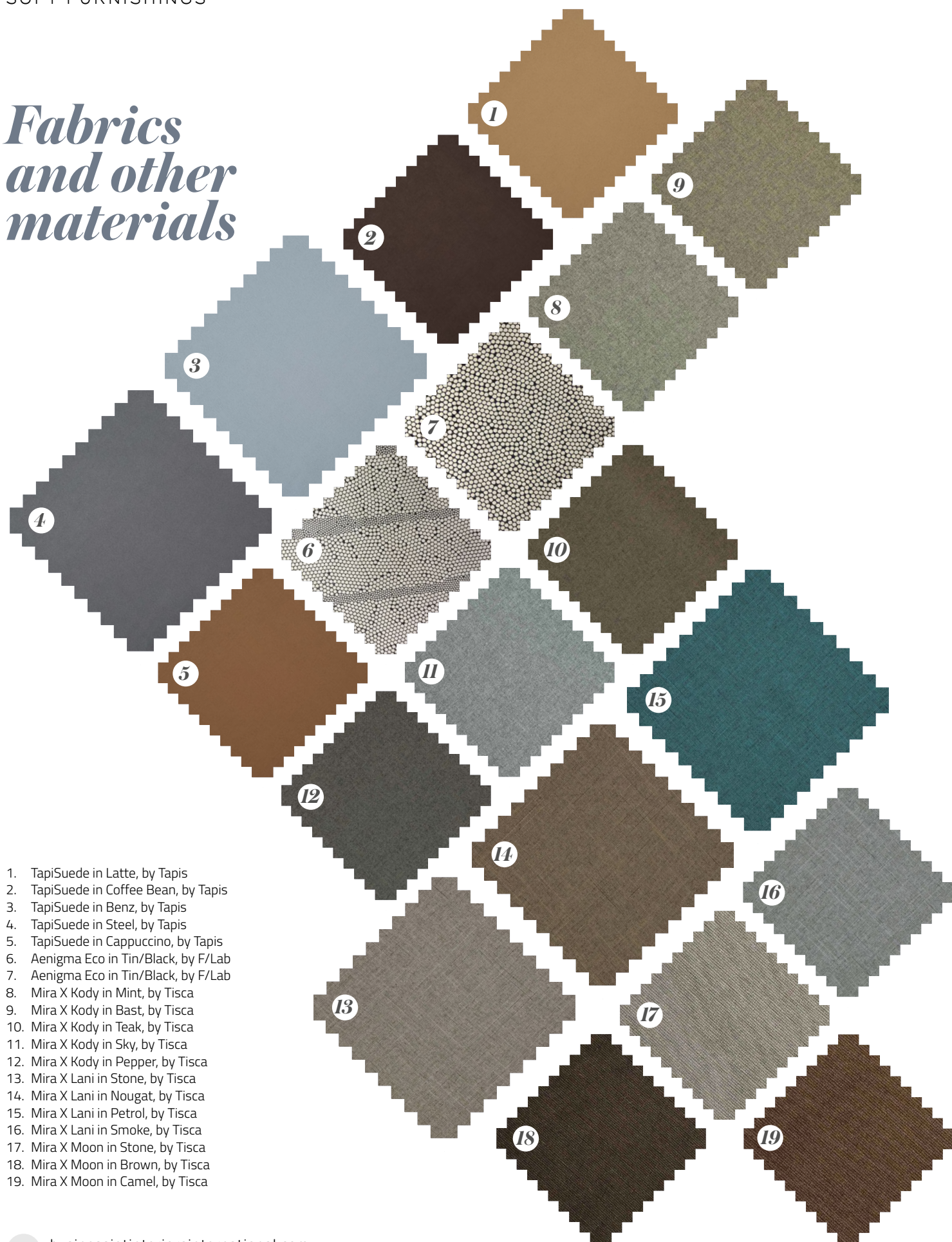
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Fabrics and other materials



1. TapiSuede in Latte, by Tapis
2. TapiSuede in Coffee Bean, by Tapis
3. TapiSuede in Benz, by Tapis
4. TapiSuede in Steel, by Tapis
5. TapiSuede in Cappuccino, by Tapis
6. Aenigma Eco in Tin/Black, by F/Lab
7. Aenigma Eco in Tin/Black, by F/Lab
8. Mira X Kody in Mint, by Tisca
9. Mira X Kody in Bast, by Tisca
10. Mira X Kody in Teak, by Tisca
11. Mira X Kody in Sky, by Tisca
12. Mira X Kody in Pepper, by Tisca
13. Mira X Lani in Stone, by Tisca
14. Mira X Lani in Nougat, by Tisca
15. Mira X Lani in Petrol, by Tisca
16. Mira X Lani in Smoke, by Tisca
17. Mira X Moon in Stone, by Tisca
18. Mira X Moon in Brown, by Tisca
19. Mira X Moon in Camel, by Tisca

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FRESH FROM
REDELIVERING THE
SECOND ACJ TWOTWENTY
CABIN, COMLUX COMPLETION
EXPLAINS HOW OUTFITTING
TIMES CAN GET
PROGRESSIVELY SHORTER

Words by Izzy Kington



The ACJ TwoTwenty programme was announced by Airbus Corporate Jets (ACJ) in 2020, with the aircraft marketed as an 'extra-large bizjet'. Uniquely among ACJ's line-up, the ACJ TwoTwenty interior is selected by customers using a flexible cabin catalogue.

Comlux Completion in Indianapolis, Indiana, was chosen as ACJ's exclusive partner to outfit the first 15 cabins. It inducted the first in January 2022 and announced its handover in May 2023. Comlux announced the second redelivery in February 2024, and shares the completion was just above the 12-month mark. The company has the goal to reduce the lead time with each aircraft.

"The first aircraft was completely new and it's a very modern aircraft, a lot of things are controlled by software," says Richard Gaona, Comlux's executive chairman and CEO. "When you do the first one, you're discovering the plan and must adapt your engineering to that. Then at the end of the programme, you say what didn't work so well, what could be better next time, and you try to integrate this improvement for the next aircraft."

The aircraft type offers 73m² (786ft²) of cabin space

MAINTENANCE KNOW-HOW

Most of Comlux's mechanics and technicians assigned to this programme trained at Airbus' training facility to "learn more about the ACJ TwoTwenty before the aircraft arrived to make sure that when we have to do something on the plane we are fully qualified," Richard Gaona of Comlux says.

In October 2022, Comlux Completion received approval from Airbus Corporate Jets to provide maintenance services for the ACJ TwoTwenty aircraft type, thus becoming the first ACJ Service Center Network member to be authorised to provide line and base maintenance services on the airframe, systems and engines.

Comlux has enough space to work on six of the aircraft simultaneously

MAIN: THE PALETTE INCLUDES TONES OF SLATE BLUE AND STONE

TOP LEFT: THE AFT CABIN HAS TWO DIVANS THAT CAN BE MADE WIDER FOR SLEEPING

BOTTOM LEFT: A GALLEY

TOP RIGHT: THE SHOWER ROOM

because the people are trained and they work from one plane to another,” he adds.

Gaona does caution this is dependent on the interiors sticking to the catalogue and being similar to previous ones – and this is not a sure thing because the company does work flexibly with its customers. “When you launch a programme like this, you define a strategy and you say ‘OK, the clients will be taking this and we will not do something different,’” he explains. “The reality is different. As long as this difference is not huge, or completely breaks the concept, then we try to accommodate the customer’s requests as much as we can.”

COLLABORATION WITH AIRBUS

Gaona says the collaboration with Airbus came about because Comlux offers not only completion centre

“We try to accommodate the customer’s requests as much as we can”

“Aircraft two was already in the facility when aircraft one was still there, so there was a lot of transfer of know-how during this programme,” Gaona continues. “It would be very, very difficult for someone who had never done a cabin like that to understand how things have been done, it’s completely modern and new – but just a learning curve.”

TIME SAVINGS

Cabin completion is also now progressing on the third and fourth aircraft of the type, with the third due for delivery by the end of 2024. By 2025, Comlux hopes to deliver four to six of the aircraft per year, and Gaona believes timelines will condense further. “Our goal is to achieve eight months from aircraft induction to the delivery of the aircraft,” he explains. “We’re not yet there, but by repetition of the interiors we will become more and more efficient.”

“If you get three or four aircraft on a regular basis, then you can really optimise the lead time

Design styles

In terms of design styles, Airbus has defined three schemes for the ACJ TwoTwenty – Avant-Garde, Quintessence and Timeless – and there is also the Cyril Kongo special edition. Richard Gaona of Comlux says clients are not limited to these, and “at the end

the customer chooses”. Details such as custom marquetry are possible.

Gaona describes the second completed aircraft as having a “really modern and corporate style” with seats upholstered in leather of two tones – slate blue and a beige ‘stone’ colour.



LEFT: THE AIRCRAFT IS OPERATED BY COMLUX

Comlux clients buying the ACJ TwoTwenty now have access to engine maintenance services provided directly by Pratt & Whitney

expertise, but insights on functionality from more than 20 years as an operator. “We always use the experience of in-service aircraft to define the new one,” he says. “I think this is a strong asset we have put at the disposal of Airbus because we say, ‘This is a theory but the practice shows that we have to do it a little bit differently for operational reasons, for maintenance costs, a lot of things like that.’”

“Airbus did the artistic design of the cabin and we did all the rest – the engineering design, engineering drawings, price calculation, then production, installation and certification,” explains Gaona. “We are in regular meetings with Airbus to be sure that the product matches their expectations in terms of reference; we have a very good collaboration with them.”

DECISIONS, DECISIONS

The catalogue is not short of options – there are around 80 possible configurations, and all elements have been pre-engineered. This meant aircraft two presented no real difficulties, Gaona says.

“The table is the same in dimensions as on aircraft one, the seats are the same, and so on,” he adds. “It’s not exactly the same interior as the first one, because this time the customer is a corporation. They wanted a partition in the middle of the main cabin to have one more room. There is an additional galley in the mid cabin. In the aft bedroom, the first aircraft has a big bed, whereas this one has two face-to-face couches, which can expand to be wider during the night. Except for that I would say the rest is just a matter of colours and fabrics. This has the same kind of kitchen galley at the front, but the colour of the stone is different.”

IFE AND CONNECTIVITY

The IFE system (from supplier CCC) and the satcom wi-fi system (from Panasonic), is “more or less the same” as on the first aircraft, Gaona shares, except for where the parts are installed. On the first aircraft, screens were installed on credenzas, not on the walls. On the second aircraft, the client wanted wall-mounted screens installed in two rooms.

THE exterior

The second ACJ TwoTwenty is operated by Comlux Aviation. Given the customers’ desire for confidentiality, and Comlux’s plans to use the aircraft as a demonstrator, the exterior was painted in Comlux branding.

“It’s very good for the programme that more and more aircraft are coming, because in this market, seeing is believing,” says Richard Gaona. “When you’re trying to sell more aircraft, you need to show how they look.”

ACJ TWOTWENTY TIMELINE

OCTOBER 2020
Programme announced

SEPTEMBER 2021
Cyril Kongo special-edition interior unveiled

DECEMBER 2021
Maiden flight

JANUARY 2022
First aircraft inducted at Comlux

MAY 2022
ACJ opens creative studio for the type

OCTOBER 2022
Comlux approved to provide maintenance on the type; second aircraft inducted

MAY 2023
Announcement of first aircraft’s completion

NOVEMBER 2023
Third aircraft inducted at Comlux

FEBRUARY 2024
Announcement of second aircraft’s completion; fourth aircraft inducted

Both aircraft have electrochromatic windows and inductive chargers. One difference is the second has a humidification system. A catalogue option, the system was developed by ACJ in partnership with CTT Systems and is available as a system with its own STC. The ACJ TwoTwenty humidification system is designed to increase cabin humidity up to 22% relative humidity. It’s based on evaporative cooling technology and installed along with a CTT Anti-Fuselage-Condensation system.

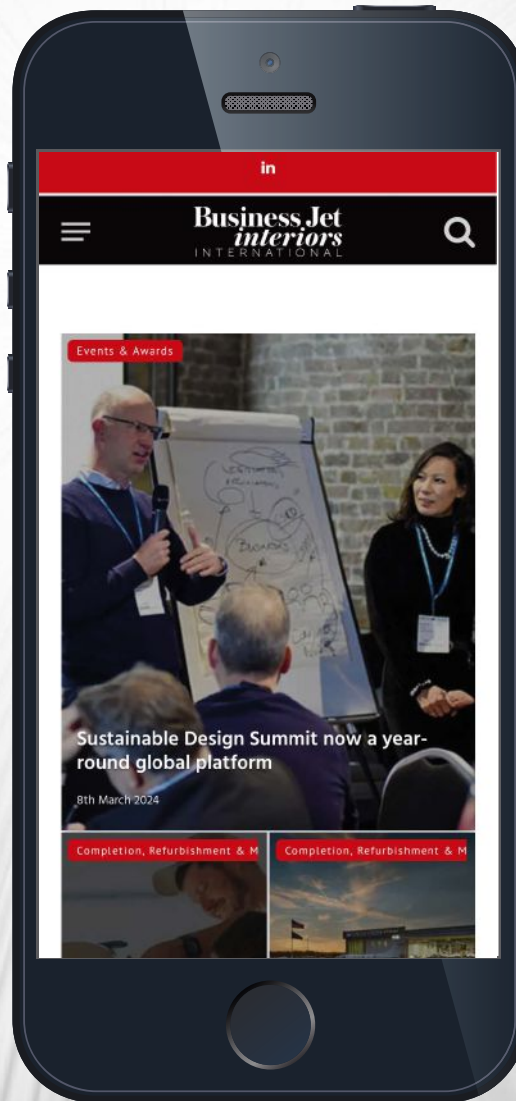
LIGHT AND SOUND

Both completed aircraft have full-colour spectrum LED ceiling lights. Quiet was more of a priority for the second customer, and so noise abatement was a key focus. Gaona says Comlux’s efforts on this front can include patented systems, adding insulation, sometimes between the carpet and the floor, and testing to aid in fine-tuning. However, material choices play a big role. “Aircraft one has a bedroom and then a credenza, while aircraft two has two couches done with fabrics, not leather,” he says. “The fabrics absorb noise better than something like a credenza, which is hard. We have already remarked that this room on aircraft two is quieter than on aircraft one. It’s not because we’ve been using different technology, it’s just we have a different configuration and materials. Our role is to deliver the best with what we have, and this is an example.”

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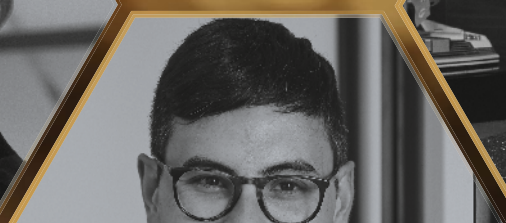
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SUPPORT

VIP AIRCRAFT INTERIOR DESIGNERS SHARE THEIR THOUGHTS ON KEY TECHNOLOGICAL TRENDS INCLUDING AI, AUGMENTED REALITY AND OTHER POTENTIAL DESIGN TOOLS

Words by Izzy Kington





Agnès Guiu

senior aircraft interior designer,
Agnès Guiu Design

Q&A

HOW DO YOU FEEL ABOUT THE POTENTIAL OF AI FOR DESIGN?

I feel that using AI for design applications is like 'riding the tiger'! It is a rather ambiguous feeling combining both excitement and slight reluctance or mistrust. On one side, I find AI extremely exciting and challenging. To explore new possibilities, shapes, directions, horizons, to make the impossible possible, is a dream for a designer and provides an incredible feeling of total freedom in creativity. For instance, I am amazed by the quality of AI renderings presented by talented designers and architects on LinkedIn. AI offers exponential perspectives and it is or will be extremely hard to resist it.

On the other side, the problem is the idea of control. If the tool takes so much space in the process of conceiving a project, then to what extent is this still my project? If AI starts to suggest, propose, offer, how long shall I consider myself as a creator and not a follower? AI will become extremely addictive: where shall I put the limits? Shall I want or be able to stop; I'm not so sure!

ARE THERE USES FOR AUGMENTED REALITY (AR) IN CABIN DESIGN?

Absolutely! For instance AR provides the client with an immediate understanding of the project. It also gives you the possibility to enhance, to emphasise your concept with the view to provide the best. AR helps to push things beyond your limits.

WHAT OTHER TECHNOLOGIES DO YOU THINK COULD BENEFIT THE DESIGN PROCESS?

Immersive design with interactive headsets could definitely benefit the design process. You create a concept and can check immediately if it is OK or not. It gives you better control over what you design. However, I think we should find something lighter such as connected glasses. Considering what happened with smartphones, these new tools will soon become a part of designers' everyday lives.

WHAT CABIN INNOVATIONS HAVE CAUGHT YOUR EYE RECENTLY?

Lighting, display technologies, interactive windows and shades and new materials.

WHAT EMERGING TRENDS WILL IMPACT CABIN DESIGN IN 2024?

Wider open spaces, more colourful environments, more welcoming furniture design, more life on board.

WHAT ARE YOUR HOPES FOR EBACE AND/OR AIRCRAFT INTERIORS EXPO (AIX)?

A creative exchange of inspiring ideas.



BELOW LEFT: AN ACJ320 DESIGN,
'EIDER' BY AGNÈS GUIU DESIGN

Greig Jolly

partner, Winch Design



Q&A

HOW DO YOU FEEL ABOUT THE POTENTIAL OF AI FOR DESIGN?

As a tool for sparking thoughts or ideas, it's great to quickly visualise what you're thinking about or to generate initial ideas. However, the text-to-image software we've been experimenting with is generative AI – meaning it takes huge amounts of data and through machine learning, regurgitates it based on the user's input to produce new data – so it doesn't really match the boundless creativity of a designer's brain.

We live in a very visual and design-literate world now – every time we pick up our phone we're bombarded with cutting-edge designs. Apps like Instagram or Pinterest intensified this and now there's a tsunami of visual stimuli created in AI. The skill of a designer is to be selective; to sift through all this content and validate what's good and bad, what's right for the client or the project and what isn't. This applies to AI too – anyone can use it to quickly generate professional-looking images, but that doesn't mean the core idea or concept behind the



LEFT: A GLOBAL 5000 INTERIOR BY WINCH DESIGN

image is good. You need to filter through the noise to get to the right solution, and you still need experience and knowledge to be able to take that flashy concept image and turn it into a successful project.

I don't envisage AI displacing designers – it will change their workflows, provide design inspiration, alter how they visualise ideas, how they communicate and likely myriad other elements of their jobs, but it won't replicate the expertise that comes from years of experience, knowledge and skill.

ARE THERE USES FOR AR/VR?

Virtual reality (VR) is something we've been using for a while at the Winch Design studio, but we are now using more and more. It allows the client to explore every inch of the interior, inspecting the layout and design details in a three-dimensional space. This not only enhances client engagement but also facilitates effective communication between client and designer.

WHAT EMERGING TRENDS WILL IMPACT CABIN DESIGN IN 2024?

Private jet owners are looking for a seamless transition between the house, office and aircraft. They want consistency of design quality and elegance. By creating a bespoke interior and using a colour palette and materials normally found in a residence, we can fulfil this home-from-home dream. Flexibility is also key – often an aircraft must be used as a business tool one minute and a place of relaxation the next.

We're also seeing clients becoming more interested in using sustainable materials throughout interiors and we are committed to demonstrating that sustainability is synonymous with bespoke, top-end design. We embed sustainable solutions in our designs and educate clients and partners in choosing the best option for them and the environment. We have a dedicated in-house sustainability specialist who manages our sustainable interiors library.

Q&A

WHAT CABIN INNOVATIONS HAVE CAUGHT YOUR ATTENTION RECENTLY?

We're seeing more sensorial approaches to experiences and attention to the tailoring of environments – from personalisation of light and sound, to the curation of airflow and temperature control from seat suppliers such as Caynova.

It's interesting to see how other industries innovate. An example is the eVTOL sector choosing to embrace accessibility to drive change. We've recently seen concepts that fully integrate different and reduced mobilities through modular layouts on Eve Air Mobility's latest concept. Another example is how a major carrier like Delta Air Lines is investing in modular front-row seats that accommodate wheelchairs. At NewTerritory we believe accessibility is a driver and that by solving the needs of the few we can improve experiences for the many.

WHAT EMERGING TRENDS WILL IMPACT CABIN DESIGN IN 2024?

This year we hope to see more substantial innovation in the sustainability realm – new ways to embed circularity or create regenerative design. It's a real challenge in an industry driven by strict rules and regulations, but we see these evolving quickly in the auto industry and it's our responsibility to catch up. Seeing what's happening on the eVTOL front, we believe there is potential for smaller jets to become greener ahead of larger aircraft. We're keen to explore how interior design can support advancement with lighter, more circular materials and better builds.

Parallel advancements in terms of connectivity and spatial computing (or AR/VR) will offer new ways to expand the physical cabin environment and how we experience travel, with augmented layers. A determining factor for this adoption will be how meaningful those experiences will be and how they answer current travel pain points to become a sustained evolution rather than just a passing trend.

HOW DO YOU FEEL ABOUT THE POTENTIAL OF AI FOR DESIGN?

AI is now proven to dramatically accelerate parts of the design process, stretching what is achievable in standard project timelines, and helping operators and manufacturers to react faster to evolving trends. This requires us to regularly advance our processes.

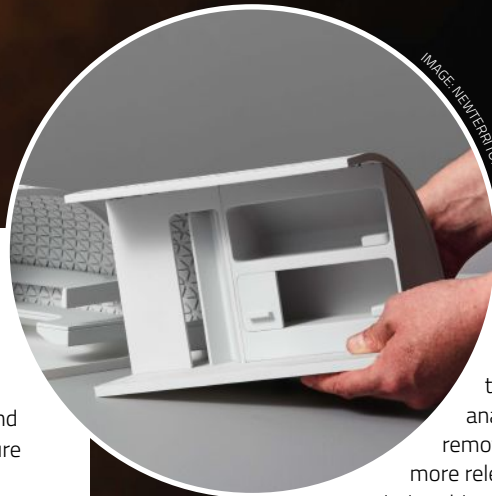


IMAGE: NEWTERRITORY

LEFT: A NEWTERRITORY MODULAR SCALE MODEL FOR THE AIRBUS TRANSPOSE PROJECT

AI has become a rich curatorial tool allowing for more exhaustive qualitative research, helping organisations to better survey, sort and analyse customer insights, removing subjectivity and producing more relevant data-driven solutions. In

aviation this could allow for more relevant business cases, new models of ownership, routes and services, or new interior designs and features.

AI also offers new capabilities when it comes to user interaction. This is seen through hyper-personalisation of interfaces and environments that react or adapt to passengers' needs or moods, and also through new types of interaction, allowing us to design interfaces beyond traditional IFE, using sensing technologies or voice for example.

From a product development perspective, AI has the potential to help with critical aircraft interior challenges by generating more efficient designs through weight and material optimisation. It has the potential to help with the product lifecycle, embedding maintenance services into the design, creating products that better sustain wear and tear and ease operational maintenance through the integration of smart sensors and predictive maintenance.

We see homogenisation as a potential threat to creativity, with industries already sharing tools we risk seeing fewer original propositions. However, we see value in harnessing AI to generate innovation, ensuring our industry is responsible and ready for long-term environmental challenges.



Jérôme Nelet

associate creative director, NewTerritory

Q&A

HOW DO YOU FEEL ABOUT THE POTENTIAL OF AI FOR DESIGN?

We are seeing AI used in the design process to support the generation of multiple ideas and provide generative tools to refine the workflow. These AI tools can provide quick visual responses to the designer's inputs as part of the creative process. Although the visuals from AI are very impressive, we find the tools tend to generate familiar solutions and work on a more superficial level when it comes to resolving design issues. Asking the right question is an important part of the creative process.

The ability to produce quick polished visuals at an early stage in the design process can be a challenge as it sets up an expectation from customers to see early 'finished' designs that can lack design thinking and originality. A talented team of designers with experience in their field makes a myriad decisions during the creative process and like method actors really get under the skin of design problems. The challenge with AI is to complement our non-linear approach to design and help drive creative solutions that draw on unpredictable sources for inspiration.

ARE THERE USES FOR AR?

We currently use AR to superimpose our design updates within a real-world environment both as a sales tool and as part of the design process. This is particularly useful when combining real-world architectural models with virtual design concepts, allowing the user to experience both the design and physical space at the same time. The step change we have seen over the past few years is the freedom to physically move around the cabin in real-time and start to immerse yourself within the virtual world. We are experimenting with tools to build sketch models in the virtual



LEFT: DOY DESIGN IS INVOLVED WITH F/LIST'S F/LAB MORPHING SIDELEDGE TABLE DESIGN

world over full-scale products in the real world. This is likely to develop into an additional toolkit for designers to develop and communicate ideas.

WHAT OTHER TECHNOLOGIES COULD BENEFIT DESIGN?

As we all take more interest in the lifecycle of our products to minimise their impact on our environment, and with more intelligent products collecting data, we need to find efficient ways to analyse this data and provide clear inputs to the design team. AI can play a significant role in identifying how the customer uses the product in service and which materials could be used to maximise the customer benefits and develop more sustainable products for the future.

WHAT EMERGING TRENDS WILL IMPACT CABIN DESIGN IN 2024?

We're likely to see new aesthetic finishes developed with generative design tools used in combination with smart materials.

Some of these materials will have embedded technology and additional functionality. Further development in sustainable materials will certainly be a key design direction.

We will see a trend towards highly detailed and complex forms in some areas of the cabin with micro mechanisms leveraging the opportunities and freedom given by additive manufacturing. We are using this in high-end luxury cars today to create showcase 'halo' products.



Gary Doy

director, Doy Design

BELOW: THE AIRTEK
LIGHTWEIGHT SEAT FOR
NARROW-BODY AIRCRAFT –
A JPA DESIGN COLLABORATION
WITH WILLIAMS ADVANCED
ENGINEERING AND SWS
AIRCRAFT CERTIFICATION



*Elliott
Koehler*
creative director, JPA Design

Q&A

HOW DO YOU FEEL ABOUT THE POTENTIAL OF AI FOR DESIGN?

AI is powerful and has the capability to become an essential digital tool for designers within certain applications. JPA Design has started implementing AI visualisation as a limited part of our project development. We think in general the potential is unexplored but will increase over time. AI can help speed up workflow – generating high-fidelity renders just from an initial thumbnail sketch. Like bouncing ideas off in a collaboration, AI's interpretation of a design (sketch) can trigger additional ideas. It's a tool that could help build a design team's concept through its rapid visualisation power in different styles. The main challenge is the current limitation in styles and the AI's understanding of the image presented. With time we expect this to improve.

However, there's a danger that truly innovative design development and human-centric considerations for the user experience could be compromised if designers become too reliant on AI for concept direction. AI also currently faces challenges in understanding diversity, accessibility and inclusivity – limitations that will perhaps always divide design from a human and a machine. The integration of AI in the aviation industry could bring challenges such as safety and ownable IP. Striking the right balance between automation and human oversight is crucial to ensure the reliability and safety of AI applications in aviation design as well as appropriate regional applications.

ARE THERE USES FOR AR?

For any spatial design, a mix of physical mock-up and digital detailing/CMF can assist in understanding a space and its challenges better. We can see the benefits in presenting AR work, however VR is a more appropriate tool.

WHAT OTHER TECHNOLOGIES COULD BENEFIT DESIGN?

Technologies that could make the experience of working between different software applications more seamless. Some smaller start-up apps are more open to collaborative software applications, but established companies tend to try to limit designers within their own specific tools.

WHAT CABIN INNOVATIONS HAVE CAUGHT YOUR EYE RECENTLY?

The Airtek concept JPA worked on over the pandemic would be hugely beneficial in saving CO₂ emissions. The Starlux bulkhead was interesting to see, with the possibility of a much more exciting execution.

WHAT EMERGING TRENDS WILL IMPACT CABIN DESIGN IN 2024?

Besides the usual buzzwords of 'sustainability' and 'experience-driven' we hope to see new materials and production methods being welcomed by seat manufacturers, allowing for new design directions. We were one of the first design agencies to join the Green Cabin Alliance in recognition of the need to reduce the environmental impact of cabin interiors.



Q&A

BELOW: A RENDERING OF A RECENT BBJ2 REFURBISHMENT PROJECT BY ALTEA



HOW DO YOU FEEL ABOUT THE POTENTIAL OF AI FOR DESIGN?

There will be initial challenges as we start to see more AI in design applications. Any such technology raises customers' expectations, particularly as far as time is concerned – we still have customers who think a CGI-rendered image can be accomplished in a few hours from scratch. So, while AI will become a mainstay design tool – often embedded in existing software – there will be initial shortcomings.

Stock images – as used by Altea for mood boards – are a great source of inspiration in helping to present design directions for our clients to review. Sometimes finding that 'hero' image can be time-consuming or it may be impossible to find exactly what we have in mind. Designers can now work with AI to produce potentially inspirational images, but this is not design, it just widens possibilities and expedites some aspects of the process. This allows more time for development and finer details.

ARE THERE USES FOR AR?

AR is already used in design processes, particularly in projects where customers have the space and budget. The Airbus ACJ TwoTwenty creative studio is one example but we have seen this trend emerging in commercial architecture and residential projects for a while. It's a great tool, especially for the planning and configuration of large areas.

It also begs the question as to whether independent designers can utilise it to optimal effect. It depends on your budget. If a customer wants to use such a tool for initial insights into a design, then sure – Altea has digital partners that can support the process. Many completion centres offer full-scale mock-ups (made from foam board, MDF and cardboard) and these

are incredibly useful for all stakeholders when coupled with AR to add context and detail.

WHAT OTHER TECHNOLOGIES COULD BENEFIT DESIGN?

Design processes are certainly aided by technologies such as digital twins, which we know as CAD – but better utilisation of digital versions of the real product/environment could assist in training, maintenance and operations. In addition, 1:1-scale floor planning, which is used in architecture and by Airbus, is definitely useful. If more third-party facilities pop up then a cabin designer could utilise this for early presentations.

Finally, 3D printing in organic materials – bio-printing – is steadily growing and I'm excited to see how it will impact the industry.

WHAT INNOVATIONS HAVE CAUGHT YOUR EYE LATELY?

One is the magnet fasteners used in automotive panel fittings that are aircraft compliant, enabling a better flush fit and a quick and efficient installation.

WHAT ARE YOUR HOPES FOR EBACE/AIX?

More attractive, everyday products (for our industry), and better maintenance-free systems will be our focus at both.



Robin Dunlop

founding partner, Altea



BELOW: A G650 CONCEPT
BY AURORA SABOIR DESIGN

Aurora Saboir

founder, Aurora Saboir Design

Q&A

HOW DO YOU FEEL ABOUT THE POTENTIAL OF AI FOR DESIGN?

AI and what it has to offer – both useful and concerning – is something we can't just calmly watch from the side as it evolves. Even though I do not yet have a defined methodology for when, where and how to use AI in design, it is certainly something that could be incorporated in the extended complex design and project development phases.

As far as my experience goes, I haven't found generative AI image creation options – such as Midjourney – useful during the early stage of conceptualisation of realistic projects; I still find traditional sketching and inspiration research the best way to express complex visions. However detailed and precise the prompts, the result was still not even close compared to the vision of the mind. Also, I do not believe in using other creators' works to feed AI, hence I would not apply it until I had my own base concept to work with. Though after the initial conceptualisation there might be a useful way of integrating AI in the process, to create variations and alterations of the preliminary concept.

The other area where I see great potential to utilise AI is for administration and project management support during design development, such as for calculating raw material quantities and updating database documents, connected with suppliers' stock availability for example.

ARE THERE USES FOR AR?

AR is a great way to extend our perception of 'reality', mixing it with real-time computer-generated applications. Within the design process, AR could be useful for free-hand 3D sketching and sculpting, and applying real-time modifications. On the passenger experience side, extending the

perception of reality is a fascinating idea, meaning adding AR-supported activities or plug-ins.

WHAT OTHER TECHNOLOGIES COULD BENEFIT DESIGN?

VR presentations and cabin walk-throughs are now a standard option for high-quality visualisations and presentations. Besides VR I'm excited to see where rapid prototyping technologies, mixed-reality presentations and commerce will take us. I believe the core methodology of the design development process won't change, but we will have to adapt the tools we use to visualise, prototype, produce and manufacture. Also, having access to such large amounts of high-precision data provided by AI, VR or AR, such as instant measurements, calculations and simulations, I expect more efficient production preparation and management practices.

HAVE YOU GOT ANY NEWS?

I'm beyond proud to announce a collaboration with Aloft AeroArchitects and Stephanie Hunt of Flairehunter. Project Horizon is a BBJ Max8 concept interior and inflight experience design development project, established in January 2024. We aim to dive deep into the research and early adaptation of the latest passenger experience-related innovations, integrated in an interior with the utmost luxury. Our joint goal is to research and implement solutions to be adapted within the next five years.



Q&A

HOW DO YOU FEEL ABOUT THE POTENTIAL OF AI FOR DESIGN?

VLA: We've been integrating AI into our design process and it's been wild. It's certainly fascinating to see our design language being captured and co-created using these tools. The challenge is that they lack precision of course, and even more so with aviation than when we work with architecture. As a result it can take hours of refining the parameters to get the look we are seeking. Even then, we often post-process with Photoshop to integrate our design language, changing architectural elements, colours and materials, decorative items, or the majority of the cabin if needed! Our G650ER Law of Opulence concept is a prime example where we used AI and Photoshop to create a very unique design. For us it's a great way to exercise what the 'Ancient Future' could look like, and push the boundaries of the known.

ARE THERE USES FOR AR IN CABIN DESIGN?

EB: AR offers the advantage of projecting designs in real-time over long distances. For instance, using Ray Ban's AR glasses, I can showcase a live 3D projection of design changes to a client remotely while making real-time adjustments from my office.

WHAT OTHER TECHNOLOGIES DO YOU THINK COULD BENEFIT THE DESIGN PROCESS?

VLA: While we are using AI, a lot of our design process is artistic. I cannot think of other technologies at the moment other than our good old pencil and paper, watercolours, picking material swatches and such!

WHAT CABIN INNOVATIONS HAVE CAUGHT YOUR EYE RECENTLY?

EB: The new Bombardier Nuage aircraft seat functions are



interesting. It has a built-in tilt system that allows it to pivot as it reclines. The most interesting part is the floating base, which enables the chair to swivel left and right, making it one of the most manoeuvrable chairs on the market right now. It's stimulating to see different designs being implemented in the industry and thinking of new ways we can customise them.

WHAT EMERGING TRENDS WILL IMPACT CABIN DESIGN IN 2024?

DLA: We see two main trends. With the advancement of technology, one trend is cabin design following a futuristic and linear approach, where there is minimal use of colours and finishes, geometrical shapes, and basic use of aesthetic embellishment. On the opposite side, cabin design will be heavily influenced by a more natural and elemental way of living. The designs will be characterised by organic shapes, the natural beauty of material finishes, adornments, and an overall sense of ease, grace and connection with the divine. This is where we are heading, and why we are creating rich designs rooted by higher ideals, redefining what luxury is – a transcendental experience for the soul. ✕



*Valeria Lie Alonso,
Eric Batdorff,
Diana Lie Alonso*

partners, Lie Alonso Dynasty

ABOVE: A G650ER DESIGN
BY LIE ALONSO DYNASTY

BACKGROUND IMAGE: KITIPOL @STOCKXDOBE.COM

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EBACE 2024

preview

THE EUROPEAN BUSINESS AVIATION CONVENTION & EXHIBITION (EBACE) RETURNS TO GENEVA, SWITZERLAND, ON 28-30 MAY 2024. THE SHOW'S FOCUS IS ON ALL ASPECTS OF BUSINESS AVIATION. READ ON FOR A SNEAK PEAK AT THE PLANS OF SELECTED CABIN INTERIOR PRODUCT AND SERVICE PROVIDERS

Carpet launch

A new hand-tufted carpet collection for business jets, the result of a collaboration with Elizabeth Harvey Design, will be launched at EBACE by Kalogridis. The carpet manufacturer began the Bold Ideas platform in 2022 to facilitate collaboration between its in-house design team and exceptional creators.

For the Elizabeth Harvey Design Collection, the partners indulged their mutual passion for sustainable interiors by leveraging the firm's Undyed programme. This strives to save up to 1,600 gallons of water by eliminating the dye process.

They created Earth Story, a conceptual piece that will be on display. This was brought to life with New Zealand wool, silk and a Merino-Cashmere blend, and features intricate tufting and sculpted carving techniques. Inspired by this, the collection is an abstract exploration of aerial landscapes. Patterns and textures mimic water, sand and stone from a bird's eye view. "While they are beautiful from a few feet away with the absence of dye enhancing the natural hues of the undyed yarn, you can only truly appreciate the intricate details and organic textures up close," says Harvey.



Simon Haining

president, High Tech Finishing



The expo will be held at the Palexpo with an aircraft display at the adjacent Geneva International Airport

Q&A

WHAT DO YOU PLAN TO HIGHLIGHT AT THIS YEAR'S EBACE?

Our plans are two-fold: to increase our European presence and to present our new facility. We have several meetings scheduled with our European clients to discuss their growth plans for 2024 and 2025. It is imperative that High Tech Finishing (HTF) can absorb this demand with no change to our exceptional quality and turn-time.

HOW HAVE YOU RECOVERED FROM THE FIRE AT YOUR SITE LAST MAY?

A faulty level-safety switch on an electric heater was the source of the fire that destroyed one of our six buildings last year. However, the 'It can't happen to us' mindset was equally to blame. Importantly, no-one was hurt.

The mark of a great company is how it reacts to adversity, and my team reacted incredibly. The day after the incident, we enacted our emergency plan, alerted our customers, leased a new building and began buying equipment. During the first two weeks, we were assisted by our friends at City Plating. By the end of the month, we were plating our basic finishes. By the end of month two, we had restored all capabilities. By the end of month three we reduced our backlog of work to normal. It was a truly incredible accomplishment – a real team effort and an expression of our world-class company.

HOW ARE YOU CELEBRATING THE COMPANY'S 40TH ANNIVERSARY?

The company was founded by Carl Bartuch in 1984 and while the fire was painful it did offer an opportunity. HTF is a partner to all the world's top business jet OEMs, and we have developed world-renowned processes with quality craftsmen, but our existing facility did not match up. That's changing. We recently purchased a new 70,000ft² (6,503m²) building in Houston (Texas) that will allow me to re-situate our departments with Toyota Production System and lean manufacturing philosophies, to revolutionise how we process components.

WHAT ARE YOUR FUTURE PLANS?

Over the next eight to 12 months, we will invest over US\$3m (€2.76m) on new plating and polishing equipment. My vision is to maximise process efficiency while retaining our bespoke processes that deliver unmatched quality with a rapid turn-time. We also have some new capabilities to bring to market but more on that later.

I also look forward to hosting customers at our new facility. This is what excites me the most; I want our customers to feel the same awe that I do and realise that there is nowhere else for their projects. Our customers utilise the highest level of technology in aerospace. I want them to know that if you're not High Tech, you're low tech.

Antenna updates

Following the successful roll-out of the SD Plane Simple Ku-band tail-mount antenna terminal, powered by the Intelsat FlexExec constellation, Satcom Direct (SD) is highlighting the Ka-band variant. Powered by the Viasat Jet ConneX constellation and with DO-160 approval, SD is

generating STCs across all major business aviation platforms. SD says the tail-mount terminals offer high-speed data transfer for teleconferencing, HD video streaming and multiple digital applications for mid- to large jets.

SD will also unveil its latest ESA flat panel antenna.





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FINE LINENS

International Jet Interiors, which specialises in bespoke private aircraft design, modification and refurbishment, will talk about its collaboration with Sferra, an Italian fine linen and lifestyle brand, to offer fine linen tailored for private jets.

The Jet Essentials collection features 100%-linen placemats, dinner napkins, cocktail napkins, and tablecloths for sideedge and conference tables. Each piece has been custom designed to fit all makes and models of private jets, including Boeing, Bombardier, Falcon and Gulfstream types.

Available exclusively through International Jet Interiors, the linens are available in Alpha, Echo and Romeo shades – named as a nod to the aviation industry. The colours were selected as being the most popular for coordination on luxury aircraft. The linens are in stock and ready for take-off.

“The collaboration between International Jet Interiors and Sferra is extraordinary for private aviation and will elevate the in-the-air dining experience,” comments Adrienne Roth, private client relations, International Jet Interiors. “Our philosophy is ‘Experience Something Extraordinary’, and that is exactly what we achieved with this expertly tailored line of fine linens.”



160 years of leather

Founded in 1864, Sovos Grosjean tannery is celebrating 160 years of history and expertise. This family tannery experienced the great tragedies of the two world wars and was almost completely destroyed in 1944. Each time, it was the tanners’ passion for their craft that enabled them to bounce back, the company notes.

In 2010, six former employees relaunched the tannery’s activities, focusing on leather for luxury furnishings. The Sovos Grosjean tannery now produces full-grain leather for saddlery, leathergoods and for use in the nautical and aeronautical sectors.

Produced in a factory in the Vosges region of France, the leathers are manufactured in compliance with environmental standards (in particular REACH) and social ethics (Ecovadis), the company explains. Its cattle skins come from Normandy, Bavaria and Brittany.

The Sovos Grosjean tannery is ISO 9001 certified. The manufacturing process is approved by Bureau Veritas for IMO SOLAS MED certification. With a range of 1,300 colours, the leathers are, on request, treated for fire retardancy according to the FAR25853, BS5852, NFPA260 and CAL117 standards.

NEW MANAGEMENT TEAM

Aero-Dienst will attend to showcase its portfolio of business aviation and air ambulance services. In December 2023 the company welcomed Dr Oliver Kosing to its management team, taking over from Viktor Peters, who moved on to a new role with the ADAC Group. Dr Kosing (pictured right) shares management responsibility with André Ebach (pictured left), both as co-CEOs for Aero-Dienst.

Dr Kosing studied aerospace engineering at RWTH Aachen University and earned a doctorate in gas dynamics at the University of the Witwatersrand. His career has encompassed roles at MTU Aero Engines, Atena Engineering and IABG. In his role as CEO, Dr Kosing will focus on further strengthening

the brand and expanding the development of the operations and ambulance business.

In addition to its headquarters in Nuremberg, Germany, Aero-Dienst also operates a maintenance station in Oberpfaffenhofen near Munich, Germany, as well as two stations in Austria (Vienna and Klagenfurt), and a component shop in Landsberg am Lech, Germany.



TOUCHLESS TECHNOLOGY

Touchless and disinfection technology designed to reduce the need for crew and passengers to come into physical contact with areas such as lavatories will be displayed by International Water-Guard (IWG). The Healthy Lav offering is intended to help business jet OEMs, luxury charter airlines, fractional ownership companies and other corporate jet operators meet the challenges of improving lavatory hygiene.

IWG shares that the Healthy Lav range includes a touchless faucet and flush; a weight-saving lavatory water heater upgrade (the HE heater); and a compact LED UV water disinfection unit (the UVL1). Next, IWG will develop a touchless soap dispenser and touchless trash can lid. The products can be taken as one package or separately. They are designed for ease of integration across multiple platforms.



BBJ expertise

At EBACE this year, Greenpoint Technologies will engage with clients and industry partners to discuss projects and strengthen relationships, while exploring emerging trends and technologies.

The company is currently overseeing two BBJ 787-9 VVIP interior completion projects, several large military programmes, and the interior for Boeing Business Jets' BBJ Select programme in partnership with Aloft AeroArchitects. All this in addition to creating design concepts for confidential clients.

The BBJ 787-9 projects are Greenpoint's sixth and seventh BBJ 787 VVIP interior completion programmes, solidifying the company's position as a premier 787 completion centre. One of these BBJ 787-9s is slated

for induction into Greenpoint's hangar in Moses Lake, Washington, in April 2024.

Boeing Business Jets selected Greenpoint and Aloft as the exclusive completion provider for the BBJ Select cabin interiors. The programme offers clients streamlined design and installation options while maintaining flexibility and customisation.

Greenpoint will unveil its latest interior design concept, Dichotomy, ahead of EBACE. Dichotomy is described as "a verdant interior that harmonises advancing technology with biophilic design principles", incorporating a helix architecture and atrium effect for a special sensory experience.

Education sessions will run across all three days of the show

BACKGROUND IMAGE: JASON YU @STOCK.ADOBE.COM



LEO BROADBAND DEMOS

Gogo Business Aviation will provide demos of Gogo Galileo, its new Low Earth Orbit (LEO) satellite broadband service, at its aircraft at the static display. Gogo will also have an engineering prototype of the HDX antenna for Gogo Galileo on its booth. The company, in conjunction with Hughes, has produced a handful of prototypes it is using for software integration and over-the-air testing on the Eutelsat OneWeb network that powers Gogo Galileo.

Gogo also recently announced a new agreement that enables NetJets to upgrade its US aircraft to Gogo Avance L5, 5G and Gogo Galileo. NetJets owners in Europe will also have the benefit of Gogo Galileo. "Our owners require reliable connectivity to

continue their workday or connect with entertainment in flight, which made Avance L5 and Gogo 5G the right platform to meet their needs, especially when travelling across America," says Brad Ferrell, EVP and chief administrative officer for NetJets. "Meanwhile, Gogo Galileo is an ideal solution for our European jets: It delivers high performance, it can be installed on any of our aircraft, and it's backed by Gogo's award-winning global customer support."

The 10-year agreement gives NetJets the opportunity to upgrade its entire fleet of aircraft to the Avance platform, including 5G and Gogo's global LEO broadband satellite service, depending on the aircraft's mission.

Connectivity solutions

This year is the first time Viasat will exhibit at EBACE since its acquisition of Inmarsat. "The industry has embraced these two IFC leaders coming together, with a combined offering that includes advanced, high-speed solutions over Ka-band for a broad range of business jets, from super-midsize to large cabin, in addition to resilient L-band services that can either be used as primary connectivity for smaller or older aircraft, or as

a complementary system to Ka-band," said Kai Tang (pictured right), head of business aviation at Viasat.

Towards the end of last year, Viasat provided initial details about integrating its two Ka-band solutions for business aviation. Next-gen terminals from partners SD, Honeywell and Orbit will provide access to the firm's full Ka-band network. Viasat will also showcase SwiftJet, its fastest ever L-band service for business aviation. ✕





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AIRCRAFT INTERIORS EXPO *preview*

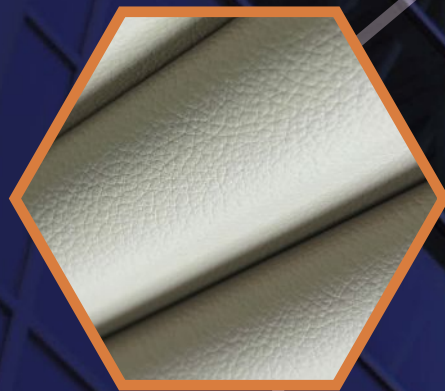
Bio-synthetic material

A new bio-based, lightweight, animal-free PU leather will be showcased by Willow Tex. BioSyn FR is manufactured using renewable, plant-based polymers and biomass. The company shares that the manufacturing process uses responsibly sourced plant-based raw materials and patented Dimethylformamide (DMF)-free Ecocel micro-foam technology.

"This manufacturing process never requires post-production, emission-laden energy to decontaminate toxic DMF-filled water and our eco-friendly products exclude halogenated FR, plasticisers and PFOA/PFAS," explains Drew Clabough, president of Willow Tex. "BioSyn FR is designed and engineered for use in business jet aviation headliner and

sidewall surfaces compliant with stringent FAA flammability and continues to exceed durability and performance requirements expected in the aviation industry."

"Reducing the global dependency on petroleum is one of the most critical factors when discussing the environment and the impacts of climate change," Clabough adds. "Some manufacturers including Willow Tex are leading the way by investing in new technologies for energy reduction, localised sourcing, and most importantly the use of rapidly renewable content. Our decade-long journey towards 'going green' has proven that environmental stewardship can be stylish, smart and sustainable."



AIRCRAFT INTERIORS EXPO (AIX) RETURNS TO HAMBURG, GERMANY, AT THE EARLIER TIME THIS YEAR OF 28-30 MAY. READ ON FOR SOME OF THE PRODUCTS AND SERVICES TO BE HIGHLIGHTED AT THE EVENT, WHICH IS FOCUSED SOLELY ON AIRCRAFT INTERIORS, ACROSS BOTH COMMERCIAL AND BUSINESS AVIATION

The Passenger Experience Conference is also held at the Hamburg Messe, on 27 May, a day before AIX opens

Sustainability focus

Muirhead is set to launch FreeTan with free FR technology at AIX, a product it bills as “the most sustainable aviation leather”. In response to aviation sector trends and sustainability expectations, the Scottish leather manufacturer has fully replaced its existing tanning chemistry with compostable technology. The company shares that it has advanced its manufacturing process to enhance the biodegradability and compostability of its lowest-carbon aviation products with increased plant/bio-content, removing as many oil-derived components and heavy metals as possible without compromising on technical excellence.

Muirhead’s new FreeTan with free FR technology is completely free from heavy metals, chrome and glutaraldehyde, the company shares. The products are free from Bisphenol A, a chemical compound primarily used in manufacturing various plastics.

In terms of flame-retardancy, Muirhead says FreeTan “regularly outperforms the industry standard”. “The free FR technology is an efficient, environmentally friendly, non-toxic, halogen-free fire-retardant treatment,” says Myles Hobbs, aviation director, EMEA and Americas, at Muirhead. “It has been refined through rigorous testing and years of development and is free of many harmful substances.”

In a lifecycle analysis, Muirhead’s aviation leather has scored 8kg CO₂e/m². The company’s patented circular manufacturing process incorporates energy recovery, water reuse, renewable energy, locally sourced materials with 100% traceability, and a take-back scheme for end-of-life leather.

“This makes Muirhead FreeTan with free FR one of the most environmentally friendly aviation leathers, meeting the industry’s strictest regulations whilst ensuring lasting passenger comfort,” says Hobbs.

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LEO IFC ADVANCES

Eutelsat OneWeb, which has a GEO-LEO integrated satellite group, is on track to launch its LEO space-based IFC solutions for business aviation later this year. Recent steps forward include the completion of the constellation of 634 satellites and the deployment of ground infrastructure ahead of commercial launch. Working with distribution partners Satcom Direct and Gogo Business Aviation, Eutelsat OneWeb will deliver a connected ecosystem including hardware, software, cabin integration, aftermarket

support, user management applications and tools.

Eutelsat OneWeb expects the network-capable business aviation terminals to be flying this summer, ahead of certification, installation and commercial operation later this year. With a range of terminals to suit all manner of business aircraft from light jets to bizliners, Eutelsat OneWeb is confident of delivering on the promise of a seamless, reliable and consistent online experience in the sky, backed by service level agreements.



Wireless mood-lighting

Designed to create a unique passenger experience, IFPL's Cobalt Spectrum is a drop-in LED mood-lighting system that utilises a "virtually unlimited" spectrum of colours. The wireless controller can be programmed to mimic sunrises and sunsets, gradually filling the cabin with soft orange hues in the morning and a soothing palette of lavender light when it's time to sleep.

"Using lighting in this way recreates the body's natural response," says Tommy Nelms, VP of global sales at IFPL.

"Flying can be disruptive to a passenger's routine, and with that can come discomfort. Lighting is a highly effective way to create a sense of routine, giving the brain subtle prompts, ultimately inducing sleep and reducing the effects of jet lag."

Scenes can be pre-programmed and selected from anywhere in the cabin. The controller is designed to be easily mounted, stored in any crew area, conveniently accessed when required, and user-friendly.

"Its Bluetooth convention communicates with the LED tubes quickly and accurately," Nelms elaborates. "This functionality requires no changes to the aircraft wiring or software. It is as simple as removing the old lighting tubes, fitting Cobalt Spectrum, and flying away."



4K OLED DISPLAYS

Carbon-fibre OLED displays powered by the latest Qualcomm mobile processor will feature on Rosen's stand alongside supporting tech such as li-fi connectivity. The company will introduce its Personally Optimized, Real Time, Augmented Luxury (PO-RT-AL) technology. The private demo

combines 4K IFE with curved 42in 4K OLED technology; lifelike OLED digital windows and skylights; and an array of smart surfaces.

A line of 4K OLED seatback displays will be launched for economy through to first-class cabins, with sizes from 12.6in to 22in and beyond. The firm says the displays are lightweight with carbon-fibre composite-chassis while also providing a "next-level viewing experience" thanks to 4K OLED panels and Qualcomm processors.

"Boasting an evolutionary architecture that simplifies system configuration coupled with li-fi connectivity for increased aircraft bandwidth, our seatback displays are set to raise the bar in airline IFE," says Lee Clark, senior VP of strategy at Rosen. "The Qualcomm-powered displays will be first in the industry running Flightpath 3D's 4K moving map."



PRESSURE-SENSITIVE ADHESIVES

A long-time source for thermal and acoustic insulation materials, along with non-textile flooring for executive aircraft, Duracote has recently developed and begun marketing non-solvent pressure-sensitive adhesive tapes, both in double-sided and free-film forms.

These adhesives were developed to meet the flammability and strength requirements of all types of aviation and can be customised for different applications for any area of the aircraft. Duracote's adhesives have been tested against different substrates within the frame of the aircraft, from honeycomb sidewall and flooring panels, to felt insulation and numerous textiles.

The goal with these adhesives was to create a workhorse that could be used from nose to tail. For decades Duracote has been focused on green and sustainable practices, and continues to manufacture with only water-based or 100% solids formulations.

Duracote technical, quality and upper management personnel will be on-site at the show. The company is celebrating its 77th year in business.

Luxury leather

Aeristo has been hard at work to showcase innovation within the aviation industry. Recently it has doubled its usual quota of seats, show frames and displayable material.

Utilising its ever-growing array of tools and technologies, Aeristo is pulling all the stops to create industry-forward designs and patterns. In keeping up with modern design trends, it has begun shifting focus towards a Bauhaus style that encompasses current colours within the aviation industry, as well as those in other luxury markets. Aeristo will showcase designs that incorporate

all its available elements including quilting, embroidery, perforation, lasering and embossing, as well as experimenting with on-leather printing to bring those patterns an additional level of artistic acuity.

Expect to see Aeristo's senior management representatives at this year's booth, including Alexander Schmidt (president), Steven Rotthoff (AeristoCraft general manager), and Henry Beddingfield (sales coordinator). They will be there to answer inquiries about services, products and current and upcoming designs.

RETROFIT LED LIGHTING

New products and existing favourites will be highlighted this year by Aircraft Lighting International (ALI).

Launched last year, the Aura RGBW LED system is a simple retrofit solution (with only three wires) for nearly every business and regional jet. ALI says this leads to decreased installation time, labour costs and wiring weight. Operating on a 28VDC current, Aura can be integrated with customers' existing CMS systems. It also enables lighting to be controlled via ALI's proprietary app. The system additionally offers customisable presets, variable colour temperature, and millions of colours.



OPENING BACKGROUND IMAGE: GOURMECANA @STOCKADOBEE.COM



KA-BAND CONNECTIVITY

Viasat will showcase its connectivity solutions, which have been activated on more than 3,500 commercial aircraft with more than 60 airline customers globally.

Alongside its commercial aviation expertise, Viasat has three decades of experience in business aviation connectivity. The firm announced two Ka-band solutions for business aviation in 2023. Next-generation terminals from its partners Satcom Direct, Honeywell and Orbit will provide access to Viasat's full Ka-band network, comprising



the GX and ViaSat-3 satellites.

Viasat says this enables passengers to connect even more devices at the same time and enjoy "unchallenged access to the most data-hungry applications", including HD video conferencing.

Attendees can also learn about SwiftJet, Viasat's fastest-ever L-band service for business aviation. Delivering IFC that's up to six times faster than Viasat's existing business aviation solution over L-band, SwiftJet will enter commercial service this year, enabling connection wherever customers fly.

Custom seat lights

Schott will present several customer projects in the field of premium seat lighting. "Our tailored Feature Lights were developed in close collaboration with our customers Finnair and Aeroflot, highlighting the individual aesthetic designs of these airlines'

modern interiors," emphasises Philip Fischer, VP of aviation, automotive and industrial at Schott. "These personalised designs showcase our versatility and extensive experience in creating premium-quality, customised products." ✕



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WOVEN WOODS

For more than two decades, Skywoods has focused on elevating aircraft interiors with innovative wood solutions

Since its foundation in 2004, Skywoods has contributed to more than 250 VIP and VVIP aircraft projects. The company delivers complete wood veneer shipsets, with the possibilities extending from composite wood veneer to natural wood types and occasionally precious woods such as Birds Eye Maple, Macassar Ebony and burls. Also possible are figured woods of all kinds – sometimes a challenging ask for very large cabins such as that offered by the B747.

CORE OFFERING

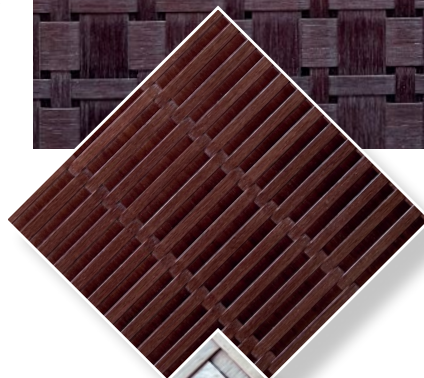
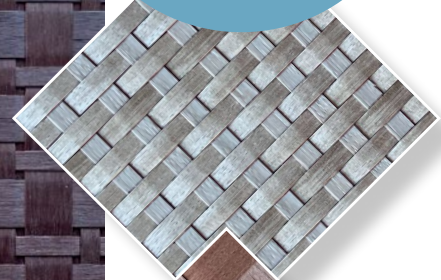
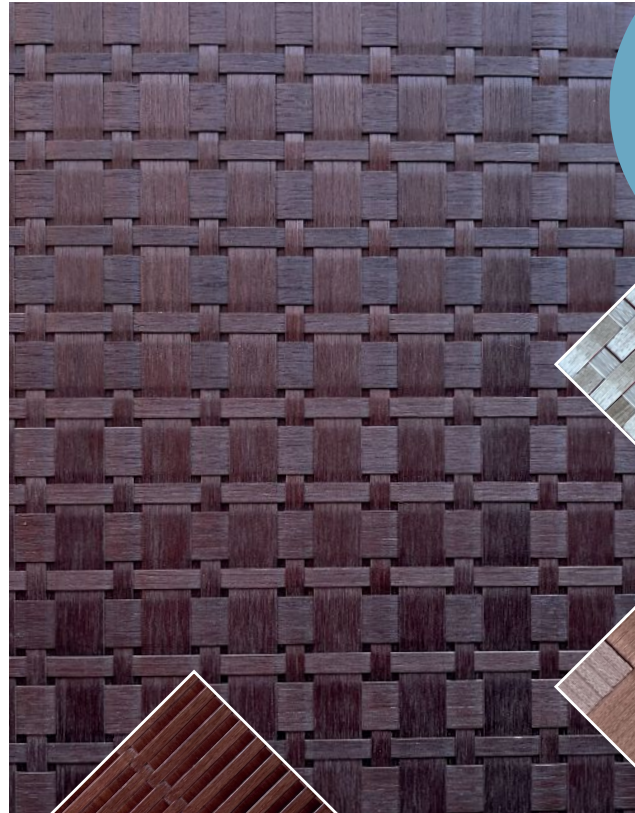
At the heart of Skywoods' proposition is its aluminium core, offering fire retardancy without potentially harmful chemicals. Capitalising on this innovation, Skywoods can create 1mm-thick wood veneer laminates to pass FAR 25 fire tests.

Over two decades of operation, Skywoods has developed various iterations of its core product to cater to the unique requirements of aviation woodshops. Whether the client requires something more flexible, thicker, stiffer, thinner or oversized, or entirely bespoke wood veneers, Skywoods promises to accommodate every project's demands.

WOOD WEAVING

To captivate designers and end clients, Skywoods has expanded its capabilities over the years, offering custom marquetry, embossing and more recently wood weaving. The latter technique has been tested to pass the fire requirements needed for installation in VIP aviation cabins. Different types of weave can be created in cooperation with the designer, using various types of veneers.

"Today, Skywoods is thriving, known far and wide for its unparalleled craftsmanship, highly regarded by many VVIP aviation designers, and respected by numerous leading VIP sector firms,"



ABOVE:
SKYWOODS
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WOOD WEAVING
TO ADD A
SPECIAL TOUCH
TO CABINS

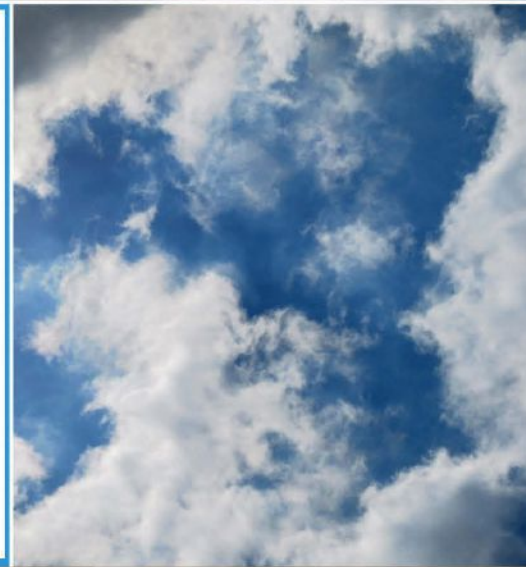
says Philippe Seidenbinder, CEO. "Our motto, 'What you imagine, we can create,' is an open invitation to all those aircraft owners who dream of beautiful woods and marquetry in the skies. Skywoods continues to push the boundaries of excellence, innovation and passion for wood, elevating aircraft interiors to new heights for new aircraft or for refurbishment projects." ✕

FREE READER ENQUIRY SERVICE

To request more details from Skywoods, visit www.magupdate.co.uk/pbjj



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CHARACTER DRIVEN

A successful aircraft interior design project at AMAC Aerospace begins with a strong focus on the customer

In addition to calling on the talents of its in-house design team, AMAC Aerospace will also collaborate with third-party designers

Where do aircraft interior designers start with their work? What inspires them so they can start to sketch and draw? Christelle Dietsch, manager of interior design at AMAC Aerospace in Basel, Switzerland, explains: "The customer is always the focus point of our creation process. It can be a vague idea, a concrete need or just a dream the client had."

From this starting point follows an iterative, non-linear process, focused on a lively collaboration between the customer and the design team. "It relates very closely to the client's unique way of life and puts his or her experiences first, always keeping in mind the specific requirements that are linked to the aircraft environment," says Dietsch of the first steps of her work.



ABOVE: A MASTER SUITE CONCEPT

CULTURAL TREASURES

At AMAC Aerospace, the cultural background of the customer has a profound impact on the interior design, whereby spaces are infused with deeper meanings and connections to historical heritage. "We draw inspiration from the tales, legends and customs of various cultures to give our designs a sense of timelessness and uniqueness," Dietsch elaborates. "By incorporating elements of these narratives into the designs, we create spaces that resonate emotionally with our clients."

This is a challenging task and requires sensitivity. Modern aesthetics need to be combined well with classical cultural motifs to create a harmonious balance between the past and the present.

Dietsch believes only the fusion of tradition and innovation results in spaces that feel both timeless and relevant: "Such a personalised approach promotes a sense of belonging and comfort in the environment, making it a true reflection of the inhabitants' personality."

She shares that effective space planning is the first, crucial step in aircraft interior design; the careful arrangement of furniture, the flow of rooms, and the optimisation of space contribute to an interior that feels both comfortable and grand. Every element is crucial; from a functional layout to the final decor touches.

Dietsch opines that luxury design involves exploring fresh ideas, paying close attention to details and carefully considering materials and finishes.

"It's a passion – every single element is carefully chosen and crafted to perfection," she says. "We are always challenging our team searching for new trends, profound knowledge, exclusive materials and innovative products to create a unique design for each customer."

UNITING SKILLS

Then the realisation of the concept starts. "Along the way, we will have to solve one or two problems, to achieve the goal and

create something special and unique," she comments. "On this matter, our design team can count on the high-quality craftsmanship and expertise available in-house at AMAC Aerospace, from project management to workshops."

"Many colleagues have worked here since the founding of the company and trust each other, she continues. "That's an important ingredient in making a dream concept come true."

When does the designer know that she was successful? "A strong concept means the overall design is well-executed without losing authenticity, reflecting the user's personal needs and taste, and improving their quality of life as the experience of their interior environment," Dietsch explains. ☘

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To request more details from AMAC Aerospace, visit www.magupdate.co.uk/pbj

flash forward

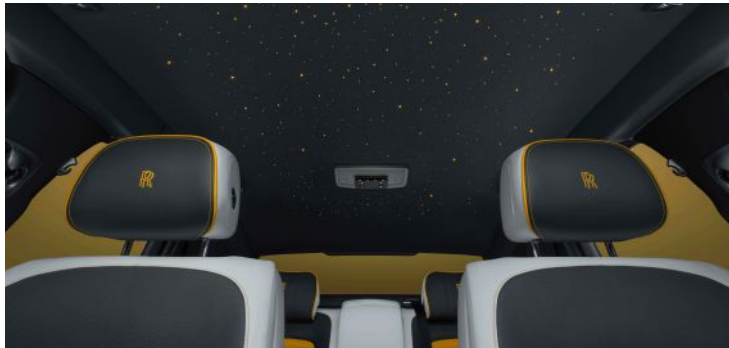
ROLLS-ROYCE HAS LOOKED TO TRENDS FROM THE FASHION, DESIGN AND LUXURY SECTORS FOR A NEW LIMITED-EDITION CAR – GHOST PRISM

In common with the business jet sector, many Rolls-Royce clients are influential in the fields of fashion, design and super-luxury. Such clients are often known to commission livery and interior schemes to make a car their own. Rolls-Royce has monitored trends and anticipated demand for an emerging aesthetic movement. The result is Prism, a limited-edition version of the Ghost.

Drawing inspiration from contemporary design, Rolls-Royce Ghost Prism showcases dark, neutral tones subtly accented with bold strokes of colour. The example

presented is shown in Gunmetal grey. Clients have a choice of four bold accent colours – Phoenix Red, Turchese, Mandarin and Forge Yellow – to complement their chosen exterior colour. This is applied to the lower bumper inserts, brake callipers and coachline. Subtle flashes of colour continue in the cabin, including the 1,040 coloured ‘stars’ in the Bespoke Starlight Headliner.

While clients can appoint the interior with near-limitless bespoke colourways, early Ghost Prism commissions incorporate a light and vibrant palette. ✕



OTHER EYE-CATCHING DESIGNS FROM VARIOUS INDUSTRIES...



1 Cabin customisation options for the Militem Magnum 700 pickup include leathers, Alcantara inserts, carbon-fibre details and contrast stitching. The front and rear seats are wraparound and feature heating and cooling.



2 The Waldorf Astoria Ras Al Khaimah in the UAE has been refurbished. The updated suites feature notes of greens and blues inspired by the waters of the Arabian Gulf. Nine restaurants and lounges, outdoor space, and the 6m clock in the lobby were also refurbished.



3 For its concept for The Alchemist's new bar in London, UK, DesignLSM worked with a theme: cosmic alchemy. The illuminated entrance tunnel invites patrons to embark on a voyage through the cosmos – or at least to the central bar, which is adorned with an arched lighting feature.



THE PREFERRED CHOICE

All of AERISTO's inventoried leather articles have been Greenguard Gold certified and are sourced from premium South German bull hides. The picturesque region of Europe is known in the industry for its large, clean raw material ideally suited for high-end upholstery projects.

AERISTO has also become the go-to specialist for custom leathers- whether pertaining to color, texture or technical requirements. Design oriented services such as leather, quilting, perforating, embroidery and embossing are also done in-house for quick turnaround times.

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and well-being

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