

Car, home or office? Stratasy's 3DFashion technology helps Italdesign create a space that's all three.

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Claudia Gilardi

**Color Material Finishing (CMF) Designer
at Italdesign**



As cities evolve, so too does the way people move around them. Electrification of mobility, autonomous vehicles and the idea that we may in the future never own a ‘car’ are causing automotive designers to re-think possibilities. For its latest innovative concept, Italdesign used Stratasys’ 3DFashion™ 3D printing technology to create a space that transcends the traditional ideas of automotive, residential and office spaces, while also retaining all three.

Italdesign, part of Volkswagen Group, started life as an automotive design bureau working with the likes of Alfa Romeo, Maserati, Hyundai, Volkswagen, and Audi, just to mention some. The company’s early automotive designs ranged from the sleek, striking Maserati Merak to the epitome of affordable functionality in the iconic Fiat Panda.

Since the mid-1970s the company has continued to apply its design and engineering prowess to cars and mobility while expanding into a plethora of consumer goods through its Industrial Design Division. Cameras, espresso machines, trains, tractors, and even white goods now show off the creativity of a distinctly Italian design house.



Italdesign used cutting-edge technologies, including Stratasys’ J850 TechStyle, to create a multi-functional interior space that was both familiar and new.

Challenge

At CES 2023 in Las Vegas, Italdesign, alongside partners Schindler and Politecnico di Torino, unveiled a new mobility concept, the Climb-E. The concept blends the idea of a seamless travel experience – moving into the third dimension – and residence, challenging what we traditionally think of automotive, domestic, work and entertainment spaces. Given the breadth of potential uses, the interior demanded meticulous design to enable the Climb-E to fulfil all these roles.

Climb-E is a modular mobility solution formed of a capsule that can transport up to four people in standard configuration. The capsule can be coupled with a fully electric, autonomous mobility platform, or ‘skid.’ The unique added value of this concept is the capsule’s capacity to find its natural place as an integral part of various future residential or working locations, becoming an additional room or extension. Users would be able to travel seamlessly from, for example, a 6th storey apartment to their place of work or leisure, entirely within the privacy and comfort of the Climb-E.

Italdesign faced the challenge of creating an environment within the Climb-E module that transcended the standard automotive design and allowed the space to accommodate different scenarios. The firm wanted to ‘reimagine’ materials well known in automotive manufacturing, such as Alcantara microfiber, to create a space that is both familiar as a mobility space and integrated with domestic and work environments.

Solution

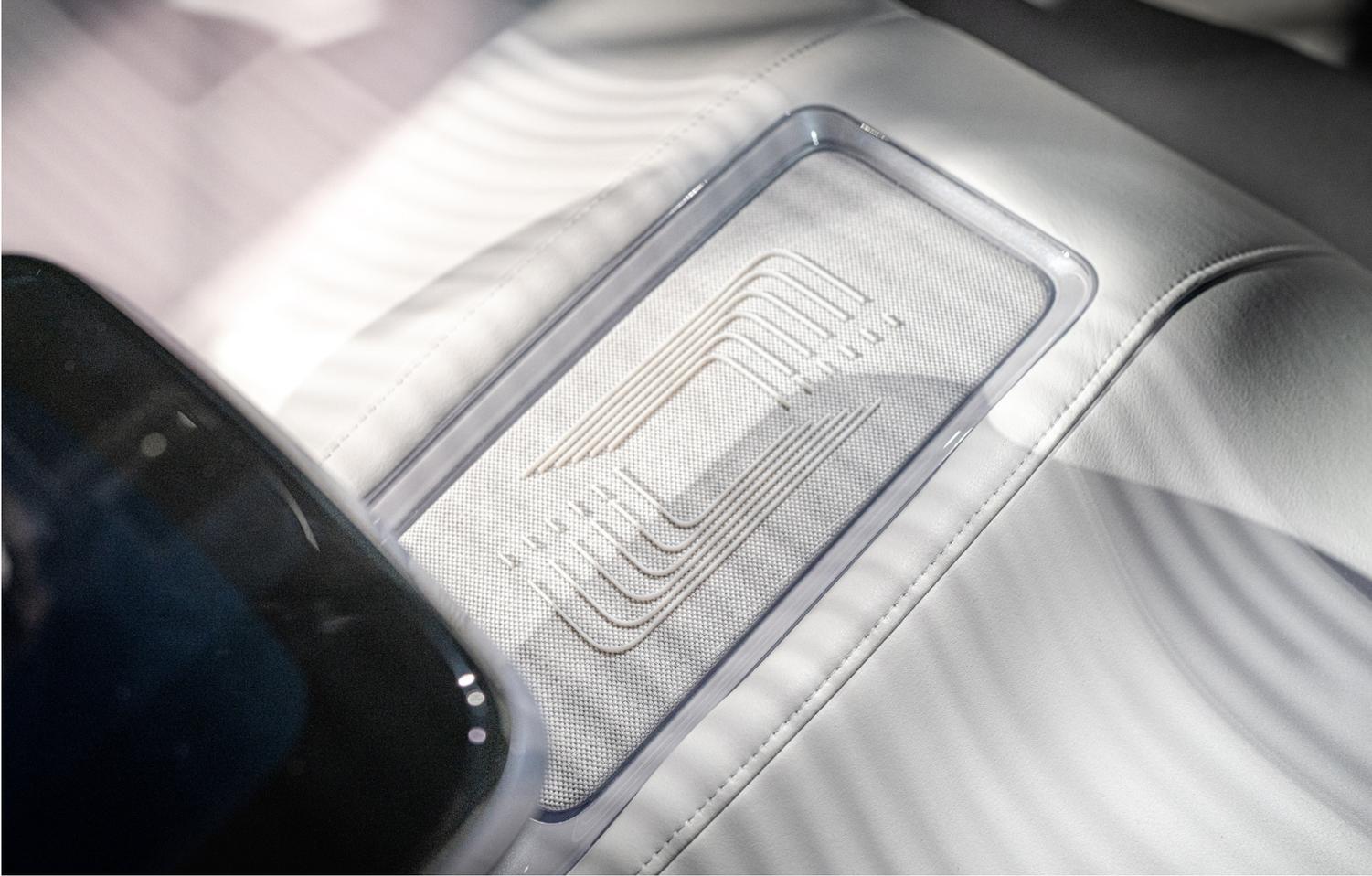
While 3D printing as a prototyping and manufacturing tool is now well known, 3D printing directly on fabric is an exciting new approach ideal for concept vehicles. Newly announced 3DFashion technology from Stratasys caught the eye of Claudia Gilardi, Color Material Finishing (CMF) Designer at Italdesign when she attended Milan Design Week in 2022. The technology enables full-color, multi-material printing directly onto fabric, garments, footwear and luxury accessories, delivering unique results that cannot be achieved any other way. Designers can 3D print in over 600,000 unique colors, with multiple shore values, simulating different textures and finishes.

Italdesign subsequently leveraged the Stratasys technology as part of a suite of innovative solutions used to realize breath-taking interior design for its latest creation.

“When the Climb-E project was born, I immediately thought that the Stratasys technology would be perfect for the vehicle interiors,” explains Gilardi. “Through its ability to uniquely combine transparencies and special chromatic effects, the 3DFashion technology can be used to convey a sense of real – and at the same time – virtual color. Because colors can change depending on the lighting and the point of view it is particularly able to integrate the different worlds of automotive design and fashion.”

The interior upholstery of the Climb-E uses eco-leathers, recycled polyester materials, and Alcantara, and made use of new technologies widely used in the fashion sector to customize materials, therefore giving complete free rein to designers' creativity. The graphics on the rear horizontal backrest surfaces are covered in Alcantara customized with 3D printing, using materials compatible with approved standards.





3D printed elements could eventually be incorporated with vehicle sensors and controls, allowing users to personalize not only the look and feel, but also how they interact with the Climb-E

Impact

The automotive industry is in a period of significant change, not least from the accelerating electrification of mobility and the changing relationship between people and their modes of transport. Wider trends are also impacting on auto makers, such as the desire for customized products.

Adds Gilardi: “I see two very interesting uses for the Stratasys 3DFashion technology in automotive. Firstly, for the production of prototypes, with the reduced lead times and costs, that also brings 3D printed textures to complement standard coating materials.

“Secondly, consumers increasingly want their products to be a reflection of themselves and customization of production vehicles is a rapidly growing trend. The potential is enormous. For example, 3D printing onto mesh through which light can shine can create very innovative effects with backlighting – an area ripe for experimentation! In future, combining 3D printing onto textiles with embedded electronics could give novel ways of interacting with the functions of the space,” she concludes.

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