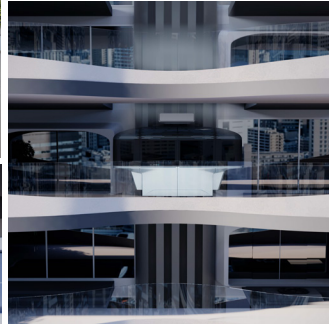


INTEGRATED APPROACH TO SUSTAINABLE MOBILITY

CLIMB

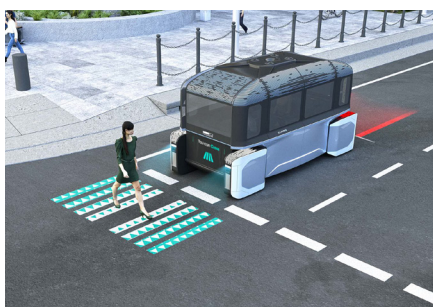
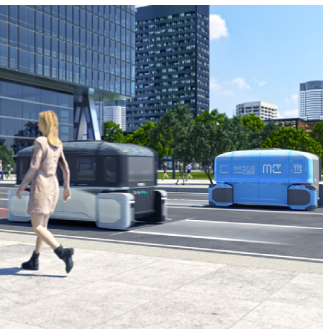


The fully electric and autonomous pod for horizontal and vertical mobility designed to be integrated as a built-in component into future and next-gen buildings and able to bring services directly to people.



Climb-E is a comprehensive project that addresses environmental, social, and governance (ESG) requirements and envisions a possible future urban scenario that is directly linked to the gradual development of sustainable, proximity-based urban mobility into sustainable continuity-based urban mobility.

Climb-E is an autonomous transport concept that integrates vertical and horizontal mobility with architectural systems to create a visionary, accessible, seamless private travel experience.



Thanks to its complete capacity to integrate into next-gen and future civil and residential building structures, Climb-E can also bring products, services, or customized experiences to consumers' apartments.

The next step will be a study to integrate Climb-E into the current and historical architectural heritage.

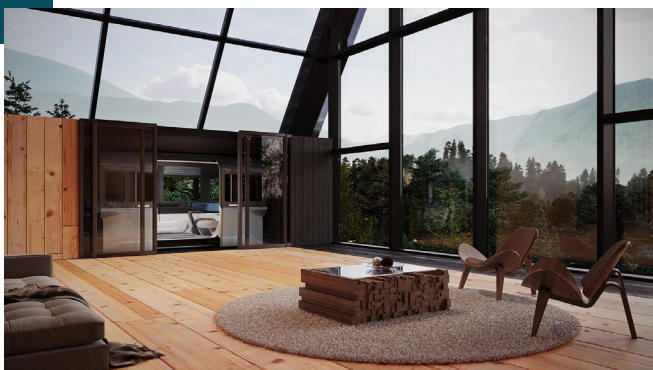
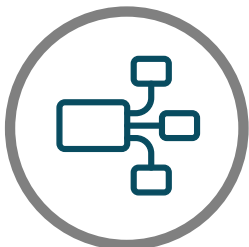


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THE CONCEPT

The concept is based on a modular system that includes autonomous skids, an elevator frame, and personal capsules able to autonomously move horizontally, but also vertically, so creating new opportunities for future cities. Seamless, autonomous and door-to-door travel offers comfort in a completely new dimension. Personalization of the capsules brings mobility to the next level, where car, elevator and apartment become one single space to be lived according to different situations. With this project, we mean to rethink building and façade design, as well as solve everyday city problems like traffic jams or limited parking slots by means of connectivity.

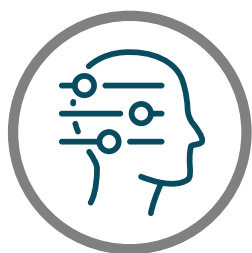


THE PROJECT

The project is called Climb-E and was created from the collaboration between Italdesign and the Politecnico di Torino - Department of Architecture and Design, and Interateneo Department of Land Science, Design and Policy.

This project confirms Italdesign's role as a "technology enabler and hub," capable of uniting different industrial sectors to promote and develop innovation, as already happened six years ago with the Pop.Up Next (page link <https://www.italdesign.it/project/pop-up-next/>) project.



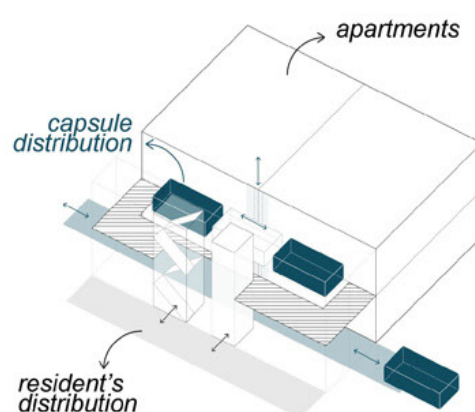
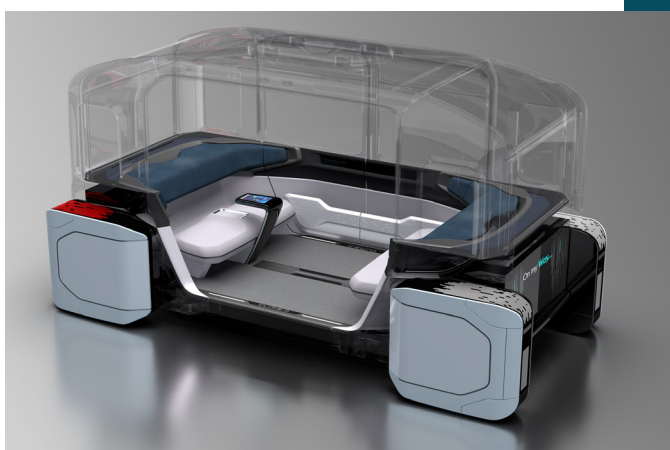


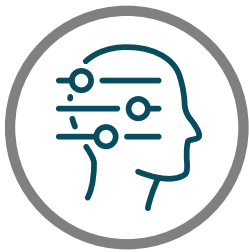
THE PROJECT'S PHILOSOPHY

Climb-E offers the possibility of traveling from point A to B, by starting right from your door or place of work, staying in your private environment without ever having to change vehicle, while also guaranteeing maximum comfort and completely breaking down any possible architectural barriers, an increasingly topical and sensitive issue in the development of urban areas.

Climb-E is a modular means of transport formed of a capsule, designed for private use, which can transport in a standard configuration up to four people and can be coupled, when moving, with a fully electric platform (hereinafter called the skid), which is not owned but rather shared and features autonomous driving.

The truly unique added value of this concept is the capsule's capacity to find its natural place as an integral part of various residential or working locations, switching from vehicle to elevator to an additional room and/or extension if needed.





Alongside private use of the Climb-E concept, the modular nature of the project allows for many different configurations that can offer a functional and exclusive private/public service. In fact, the capsule's interior configurations allow for many public services to be offered to private users right at their homes. The range of home services is endless: basic medical assistance services, telemedicine medical analysis or dental care, catering and show cooking services for private events, fully equipped home massages, home sales of various products, veterinary and pet grooming.

SOME EXAMPLES OF HOME SERVICES

HEALTH

- HOME HEALTH PROGRAMS
- BASIC CHECK-UP
- MEDICAL SUPPORT



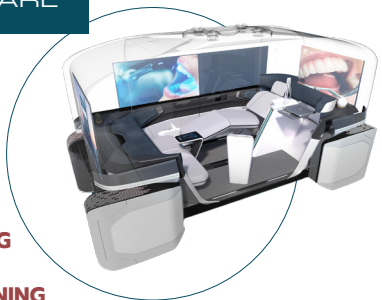
PERSONAL RESTAURANT

- CATERING
- SHOW COOKING
- PRIVATE DINNERS



DENTAL CARE

- TEETH CARE
- TEETH CLEANING
- TEETH WHITENING



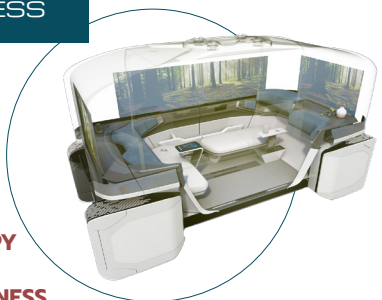
COFFEE TIME

- OFFICE BREAK
- COFFEE TASTING
- BAR SERVICE



WELLNESS

- RELAXING
- CHROMOTHERAPY
- MINDFULNESS



DJ-SET

- KARAOKE
- PRIVATE DISCO
- MUSIC PARTIES





THE APP

The entire system is managed through a special app that lets owners book their trip either around or out of town or book a specific service. Scheduling a journey involves the collection of the capsule in elevator mode right from your apartment, condominium, or office and the subsequent transfer to the street level to be coupled with the skid that is always pre-booked through the app.

Once you have reached your destination, the capsule is released from the skid to be coupled either with another hoist for positioning up to the right floor of the intended building (residential/office) or with another carrier for longer journeys, such as the hyperloop.

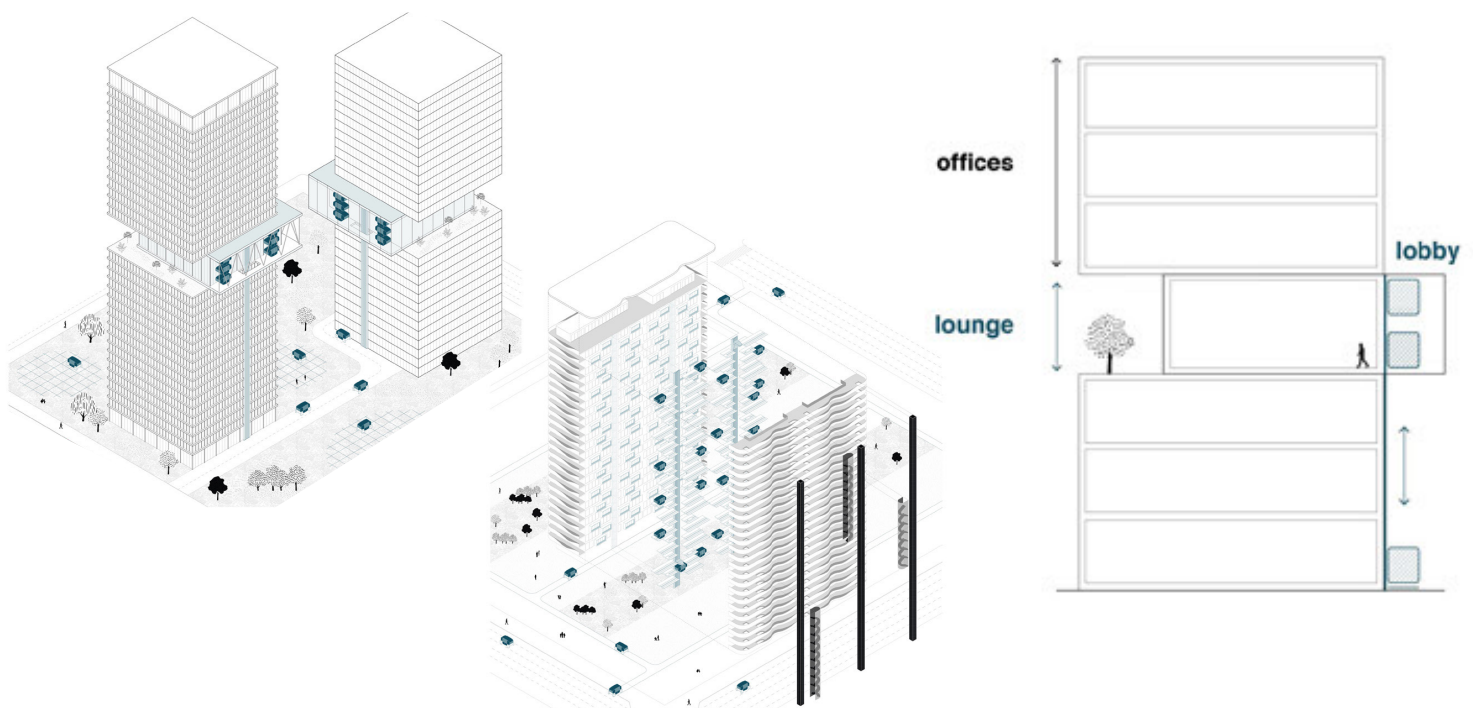
Once their service cycle is finished, skids can fulfill bookings from other users, or they can return autonomously to their charging and parking stations, so they are available for future calls.



INTEGRATION WITH ARCHITECTURE AND THE CITY

In its triple function of means of transport, elevator and home/office extension, Climbe-E blends mobility and architecture, offering a high-tech yet inviting space. When at home, the capsule can extend as a living room or bedroom, providing a cozy environment for various activities. At the office, it transforms into a small meeting room for private gatherings or calls.

The integration of Climbe-E into building façades introduces a new architectural feature, making the building's exterior adaptable and dynamic. The capsule's autonomous vertical movement ensures privacy and quick transportation, while its 3D design complements existing stairs and elevators. Additionally, the capsule can use lighting and graphic effects on its glass surface, displaying messages, logos, and colors.





In residential settings, Climb-E can directly reach the owner's residence, while in offices, it can be installed in hanging lobbies on different floors, creating exclusive lounges for meetings or private use. Unused capsules' skids are collected into underground containers or silos by the managing company.

From an architectural and urban perspective, Climb-E opens up various future possibilities. Apart from its existing uses, the capsules can be utilized for public services like catering, medical assistance, or entertainment events in open spaces around town, optimizing their usage throughout the day. Overall, Climb-E enhances architectural spaces and services with its advanced technology and versatile functionality.





THE EXTERIOR DESIGN OF THE CAPSULE

Thanks to its autonomous driving and electric power, Climbe-E can travel in both directions and therefore its exterior design stands out with the complete symmetry of its shape.

The sides of the capsule are designed to maximize accessibility and livability, with a clear separation between the lower body and the upper part made of a large window. This window allows natural light to brighten the interior while providing the option to block the glass for privacy.

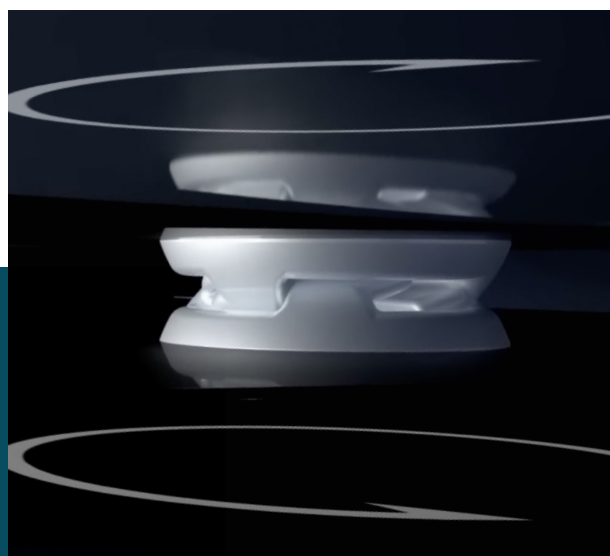
The capsule's doors integrate into the docking station of the host building and feature proximity sensors for registered users, as well as LED screens for customized messages.

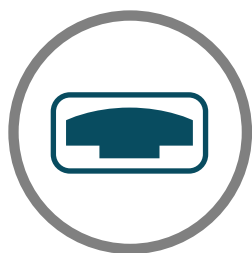
The roof has soft lines with continuous screen printing, creating an energetic and speedy appearance. It also incorporates a four-point attachment system that allows vertical movement between various levels of host buildings and street level for coupling with the skid.

The exterior color of the capsule is a metallic light blue, with a mix of gloss and matte paints, enhancing the bodywork's feature lines and surfaces.

This Climb-E latching system solution is taken from Italian Patent Application N. 102018000010623 (Applicant: Italdesign) in 2018. Moreover, a new Patent Application has been just filed (Applicant: Italdesign), focusing on projecting a system of ground-module self-driving capsules.

This new Patent Application (projecting system of ground-module self-driving capsule) and Design Patent Exterior and Interior are applicable to vehicles in general, especially for autonomous driving.





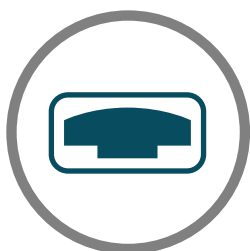
THE INTERIOR DESIGN OF THE CAPSULE

The interior design of the Climb-E capsule mirrors its exterior symmetry and offers great flexibility of use. The windows are equipped with semi-transparent screens, allowing passengers to access a wide range of multimedia content.

The capsule can be pre-configured based on user profiles, ensuring a seamless experience with the UX & HMI system. Different screen configurations and content can be used simultaneously for multiple passengers.

Inside, two touchscreens in front of the two sofas or voice control manage multimedia content, home automation functions, lighting, and air conditioning.



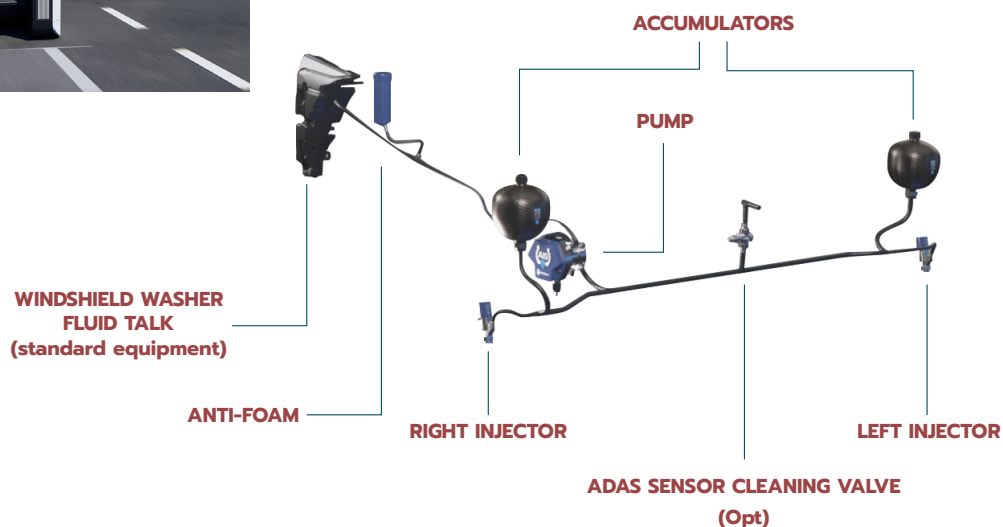


The minimalist seats, positioned perpendicular to the two travel directions, allow passengers to comfortably interact with screens on the sides, front, and rear surfaces.

The backrests, integrated with the sides and doors, create a continuous and enveloping environment, with a reconfigurable surface behind them that can be used as a desk.

The interior features LED strip lighting for a customizable ambiance, and all glass surfaces have an automatic blackout system for privacy. Additionally, the capsule includes storage compartments in the lower part of the door and seats that can rotate, slide forward, or be tipped upwards to accommodate medium/large-sized objects when needed.





EASYRAIN SAFETY ECOSYSTEM

Climb-E includes the entire Easyrain safety ecosystem, capable of providing active support to detect the grip offered by the road surface, restoring any traction, and sharing information on the grip with vehicles, infrastructures, and companies.

In order to detect the grip, Easyrain has developed and patented Digital Aquaplaning Information (DAI), an innovative piece of software that uses the network included as standard on board the car. By analyzing the car's parameters and driving dynamics, DAI recognizes hazardous situations linked to driving on low grip surfaces (wet, snow, ice, gravel, potholes) in just a few milliseconds and generates an alert message.

DATA SHEET

GROUND MODULE

Dimension

Length	3969 mm
Height	930 mm
Width (front/rear)	1900 mm
Front overhang	477 mm
Rear overhang	477 mm

Powertrain

Powertrain System	Electric
Electric Motor Power	80 kW
Powertrain layout	4 in wheel motors
Vehicle range	200 miles (321,8 km)
Vehicle energy	65 kWh
Battery pack voltage	800 V
Peak Charge Power	250 kW
Maximum speed	75 mph (120 km/h)
Fast charge (10%-80%)	15 minutes
CO ₂ Emission	0 g/km
Wireless charging time	30 minutes

DATA SHEET

CAPSULE

Dimension

Length	3669 mm
Height	2180 mm
Width	1900 mm
Number of Passangers	4



COMPANY PROFILES



Italdesign is a state-of-the-art customer-centric, method- and fact-based company operating in Styling, Engineering, Production and New Mobility Solutions. Part of the VW/AUDI Group since 2010, headquartered in Moncalieri, Turin, Italy, with over 1,000 employees working in Italy and abroad, for 55 years, it has been collaborating with major and emerging national and international players in the mobility, product and transportation design world.

Besides being a proven World Class coachbuilder, Italdesign has become system developer within automotive Electronics such as Infotainment, ADAS or High Voltage Battery Systems in the last years.

Open to partner in solutions for Software Devined Vehicles SDV, Italdesign can provide an organic and integrated set of methods, techniques and tools aiming to the industrialization of new products and offers services for every phase of the process that leads from the initial idea to series production, including the turnkey process.

From consultancy to creativity, from engineering to production of pre-series prototypes and street-legal ultra-limited series, project management, testing and validation activities, stretching to homologation, legal responsibility for product release and assistance during start of series production of the finished product.

Not to mention the mission of being an incubator and an acceleration platform for innovative technologies and radical prototyping: Italdesign is a reliable and expert partner and enabler, and a hub combing first-rate services with cutting-edge technology and strategy partnerships.

The company has been awarded with more than 200 design awards worldwide and has been named Top Employer Italy over the last years since 2016.

For more information, visit www.italdesign.it

POLITECNICO DI TORINO



**Politecnico
di Torino**

Politecnico di Torino (www.polito.it) was founded in 1906 and has its roots in the Technical School for Engineers created in 1859. It is internationally ranked among the most important universities in Europe for engineering and architecture studies, with 37,000 students (out of which 19% are international students coming from 120 different countries).

Politecnico is a center of excellence for education and research in engineering, architecture, design, and planning and it works in close cooperation with the socio-economic system. It is a comprehensive Research University where education and research complement each other and create synergies in order to address the needs of the economic system, of the local community, and, above all, of its students.



Foto: Cavaglia



Foto: Getty Images



Foto: Getty Images

Politecnico is committed to a strong internationalization process of its teaching, research, and technology transfer activities: not only does it work in cooperation with the best universities and research centers in the world, but it has also been signing agreements and contracts with important international corporations, as well as local businesses, meaning to be for the latter a focal point for innovation.

The Department of ARCHITECTURE AND DESIGN (DAD) is the leading branch of learning of the Politecnico di Torino focusing on design, architectural and urban buildings, and product and cultural heritage design. The DAD promotes, coordinates, and manages basic and applied research, teaching and training, technology transfer, and territorial services related to architectural and urban design including its sustainability, economics, and financial aspects, as well as restoration, enhancement, and management of architectural, urban and landscape heritage, and industrial, graphic and virtual design.

The INTERUNIVERSITY DEPARTMENT OF REGIONAL AND URBAN STUDIES AND PLANNING

(DIST) is the reference structure of the Politecnico di Torino in the cultural areas that study the processes of transformation and governance of the territory from the global to the local scale, considered in its physical, economic, social, political, cultural aspects and their interrelations, in a perspective of sustainability. The department promotes theoretical and applied research, teaching, and knowledge transfer.

Politecnico di Torino CLIMB-E Design team:

Michele Bonino, Chiara Di Presa, Francesca Merico, Pier Paolo Peruccio, Cristina Pronello.

EASYRAIN



Easyrain is an innovative startup founded in 2013 by Giovanni Blandina, current CEO, with the goal of reducing road fatalities and saving lives when driving on low-grip surfaces, making a key contribution to achieving the European goal of 0 road fatalities by 2050.

To meet these goals, Easyrain develops an entire ecosystem divided into three different areas: the hardware, consisting of the AIS; the software, the DAI; and the cloud, the ERC.

Its inventiveness and capabilities have earned Easyrain a multitude of awards, including a special recognition in the safety category from CLEPA, the European Association of Suppliers to the automotive industry.





CLIMB