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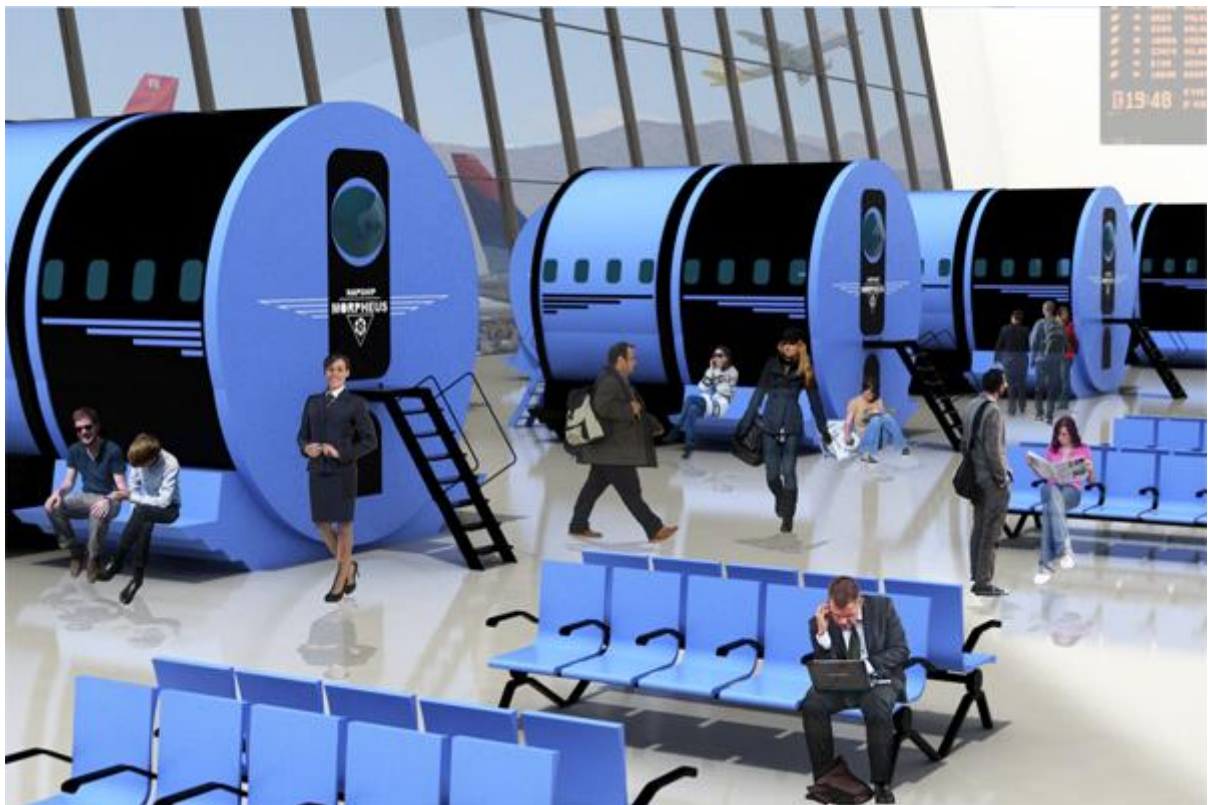
“MORPHEUS NapShip”. From a study of the life cycle of an aircraft to a technological project of a housing capsule obtained from the reuse of a Boeing 737 fuselage

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The goal of the MORPHEUS NapShip project is about making a mini residential capsule used as an hotel, which arises from the reuse of a Boeing 737 fuselage. The project idea was conceived with the aim of offering travelers a safe and comfortable place to spend a limited period of time (from few hours to few days) due to flights cancellation or delay, without departing from the airport.

The name of our project “Morpheus” refers to the mythological figure of Morpheus, the Greek God of dreams, depicted with large wings which were chosen as the project logo. The English idiom "NapShip" means "nap ship."



The present research and development's project was divided into seven steps:

- Analysis of the environmental impact of a plane when it's at the end of its life cycle.
- Knowledge of airplane components, structure and materials.
- Analysis of research projects related to the environmental impact of an airplane.
- Search and selection of aircraft reuse examples.
- Search and selection of reuse examples of airplane parts.
- Depth examination of various design solutions regarding Mini Hotels.
- Design and development of the technological project Morpheus NapShip.

It was decided to use a Boeing 737 because, according to AFRA statistics (Aircraft Fleet Recycling Association), it's the aircraft easier to recycle than others (about 54% of total recycled aircrafts are Boeing 737).

Morpheus NapShip is related to a selective aircraft demolition sponsored by the PAMELA research project (Process for Advanced Management of End of Life of Aircraft) which was initially proposed by the company Airbus. The PAMELA project showed that it's possible to recycle more than 85% of an aircraft weight in complete safety conditions, thanks to the work of an experts' team.

Specifically, a fuselage cutting is made after an interior removal, which is performed by using appropriate tools, such as circular saws capable of precision cuts.

Once cut, a fuselage is transported, by special means, to some qualified centers where, after several transformation processes, it will be transformed into a finished product.

The following objects are retained from an original fuselage: a structure, which consists in: ribs, battens and bridges, and the external aluminum cladding and windows.

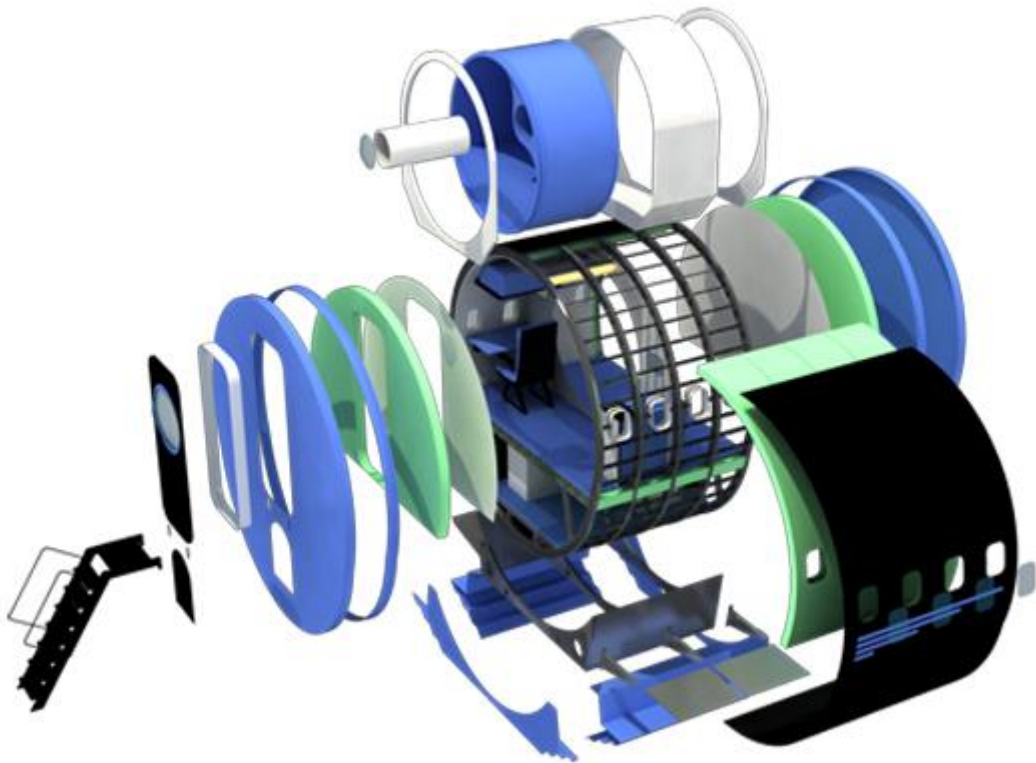
MORPHEUS NapShip provides the creation of two variants: a "single capsule", characterized by a Relax Structure, which is a monolithic element in polyurethane which takes a particular form; this solution offers a comfortable bed and, through its rotation within a plastic frame, allows a traveler to take advantage of different spaces such as a sitting with a desk, a reading area and a space where he can comfortably watch TV. However, a "double capsule" is provided with a bunk bed.



The present project wants to valorize the largest possible number of an airplane elements and components; thus, interior furnishing involves those objects collected from an airplane selective demolition steps. Particularly, it was possible to re-use hand luggage boxes, seats and a food cart, which was converted into a closet. However, some items, such as the buffering or partition ones, required an use materials made ad-hoc.

An axonometric exploded shows different layers of the Morpheus NapShip project. In fact, different technological solutions were designed to help us in getting an ideal connection between functional layers and technical elements.

Particularly, materials were chosen thanks to their characteristics such as flexibility, lightness and renewability, which make them suitable to ensure the right comfort inside a capsule.



The present project Morpheus NapShip, which can transform a giant of the skies in a design objects such as small functional units, finds its proper application in airports. However, due to its versatility, said project can be placed in different environments, such as railway stations, exhibition halls, expo, open air, etc.

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