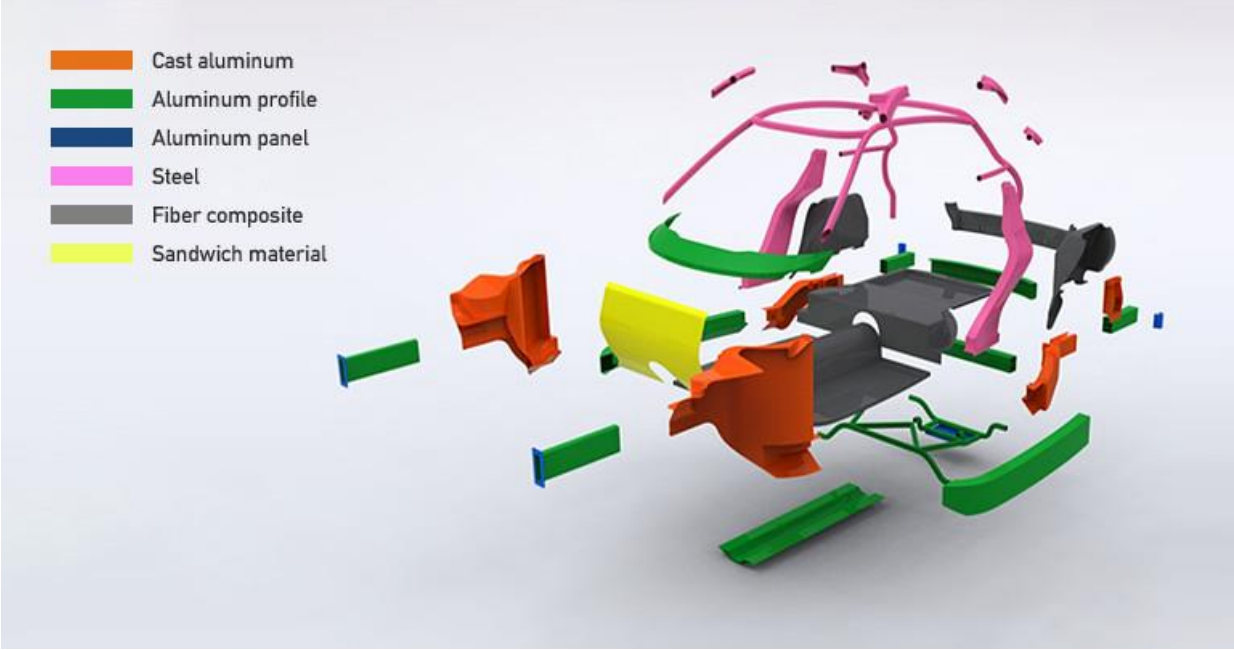
MILA Aerolight – Selected lightweight design solutions

Multi-material concept

The challenge is to find the suitable material for every part of the body.
However, the choice cannot be solely determined by the technical requirements. It must also take into account the production volume and the body concept associated with it.

- Reduction of the weight by 30% without unacceptable increase of costs
- Aluminum and steel spaceframe concept
- Use of fiber composite materials
- Use of new composite materials
- Functional integration of interior side panel with interior trim
- New production concept, shift of content from the body shop to assembly



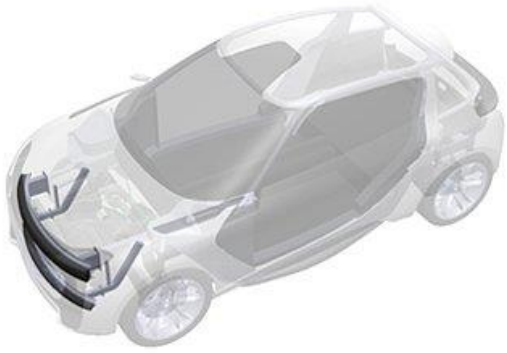
Doors and closures

Structural components in fiber-reinforced sandwich design with a honeycomb core.

Engine hood:
Optimal fulfillment of stiffness requirements and pedestrian protection
Improved acoustic and thermal insulation
Improved overall energy balance (life cycle assessment)
Weight reduction compared with steel variant: 75%

Door:
Interior door trim is integrated in door structure
Window frame and impact absorber made of aluminum profiles
Weight reduction compared with steel variant: 30%

Lightweight front crash system



Hybrid composite of a front crash system with fiber-reinforced materials (organic panels).
Weight reduction compared with an equivalent steel variant: - 45%