



Università di  
Ferrara



Facoltà di  
Architettura



**FASSA  
BORTOLO**  
QUALITÀ PER L'EDILIZIA

## Premio Internazionale Architettura Sostenibile quinta edizione 2008

### *International Prize for Sustainable Architecture 2008 fifth edition*

#### **SEZIONE OPERE REALIZZATE BUILT PROJECTS SECTION**

**Vincitore ex aequo  
Equal Winner**

Centro di aviazione Lufthansa  
*Lufthansa Aviation Center*

**Progettista  
Designer**  
Ingenhoven Architekten

**Committente  
Client**  
Deutsche Lufthansa AG

**Localizzazione  
Location**  
Francoforte (Germania)  
*Frankfurt (Germany)*

**Realizzazione  
Date**  
2006

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## **Lufthansa Aviation Center, Frankfurt /Main**

The new Lufthansa Aviation Center is located at the centre of Europe's most efficient transport hub, between Frankfurt Airport, motorways and ICE high speed train lines. A certified low energy building, the Lufthansa Aviation Center requires only one-third the energy of a conventional office building.

The design is marked by simplicity, clarity and legibility. On plan, the building is shaped like a double comb with ten wings. Running between these wings on either side of a central passage are landscaped atriums which insulate the building against sound and emissions. The atrium gardens' vegetation is chosen from five continents to symbolise Lufthansa's global connections. All 1,850 workplaces have views onto the gardens and are naturally ventilated. The building is covered by a 55,000 square-metre roof which is reminiscent of the shape of a paraglider.

The Aviation Center's heating requirements are 60% below the limit given by German energy regulations for buildings of a similar size and use. This puts the building's requirements on a level with those of a low-energy house. In addition, efficient lighting in combination with an optimized mechanical air circulation system and a slab-integrated system for cooling and heating contributes to reducing the building's energy consumption.

The landscaped atriums are naturally ventilated and act as „climate buffers“, which help to keep temperatures in the offices at a comfortable level all year round.

The barrel-shaped grid shells above the atriums are composed of bend-resistant, welded rectangular steel sections and link the 25 metre high building sections across a span width of roughly 18 metres. A multifunctional structural element at the trough of the shells serves as drainage for the roof surfaces, and simultaneously as ventilation and smoke exhaust for the atriums.

The roof component has been aerodynamically optimized with the help of experiments in fluid mechanics. Spoilers were added to create a permanently neutral pressure zone above the component. Without these spoilers, wind would press down on the roof surfaces and force air, as well as smoke in case of fire, back into the atrium. The component can be opened or closed by means of a motorized flap depending on climate conditions.

The inner façades of the office wings are prefabricated, floor-high timber-glass structures with door openings arranged according to the building grid. The wrap-around balconies create a spatial link to the gardens and also serve as façade cleaning platforms.

Economy and ecology were balanced in a responsible and future-oriented manner. The minimised structure of the new Aviation Center is extremely efficient in terms of materials and primary energy usage. With its modular building wings, the building can be expanded in stages up to three times its current size. On completion of the second construction stage, the building will house 4,500 employees and include building wings embracing a total of 28 gardens.

The new Aviation Center is designed to be transparent, to offer a high level of user comfort and to respond to different parameters. Flexible office structures allow for unlimited reversibility and offer equality of workplace. Working conditions are multifaceted, inspiring, team-oriented, communicative and motivating. Work does not only take place in the classic workplace. Communication and spontaneous interaction are encouraged by open zones. All gardens are accessible, offer break-out spaces and even room for small conferences.















