



Cargolux and the Environment

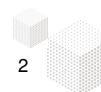
BCC Event May 4, 2011



New Hangar, a 'green' building, from design to operation



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New Hangar, a 'green' building, from design to operation

- **Origin of main building material:** Luxembourg
 - Steel, produced in Luxembourg (Arcelor Mittal), using recycled raw material
 - Concrete, produced in Luxembourg



Environmental advantage: Reduced carbon footprint (from production to the utilization on site)

- **Energy production plant :** Co-generation technology (heating / electricity)
 - Primary source of energy: natural gas
 - Production in parallel of heating and electricity



Environmental advantage: The electricity produced by the co-generation plant is fed into the national electricity grid

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New Hangar, a 'green' building, from design to operation

- **Heating of the maintenance hall:**

- Heating panels associated with hot air blowers help to reduce the entry of cold air in winter (doors). The hot air blowers are used as a “hot air barrier”



Environmental advantage: Great energy savings, by really heating the people and not the air

- **Vegetal roof (offices):**

- One of the best sustainable technologies for thermal insulation



Environmental advantage: Reduce the thermal shock for the people; Filter the rain water; Rain water is partially used by the plants to growth; Rain water is released to the water pipes with a certain delay, decreasing the risk of flooding

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New Hangar, a 'green' building, from design to operation

- **Natural light:**

- The roof is equipped with large 'sheds'



Environmental advantage: Great energy savings for lighting; improvement of the working conditions of mechanics.

- **During the construction phase:** “Green building concept”

- Green building Charter signed and respected by all companies involved in the construction



Environmental advantage: Reduce the environmental impact of the construction for the neighbourhood (focus on noise and dust emissions, water quality, waste reduction...)

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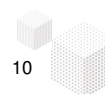
...and more at CARGOLUX ...

- **Environmental Policy**
 - Based on 8 principles (pollution prevention; compliance with regulations; continuous improvement...)
 - Signed by EXCOM in 2008

- **Certification ISO 14001**
 - Scope: Flight Operations division, including the Crew Training Organization
 - Certification received in 2008; validity until 2012
 - Development, implementation and maintenance of an Environmental Management System (EMS)
 - Main objectives:
 - Reduction of fuel burn
 - Reduction of CO2 emissions
 - Reduction of noise
 - *In Progress*: Preparation of ISO 14001 certification for Maintenance & Engineering division (deadline March 2012)

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....and more at CARGOLUX ...

- **SuperDreckskescht Label**



- The SDK label is a quality mark for an environmentally friendly waste management
- Cargolux has been certified since 2008 (New Hangar and main building)

- **Member of UN Global Compact**

- Signature of the charter in December 2007
- Commitment to support and enact a set of core values in the areas of Human Rights; Labour Standard; Environment and Anti-corruption
- Publication of an annual Communication on Progress (COP) available on the UN GC webpage

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....and more at CARGOLUX ...

- **Cargolux and the Sustainable Biofuels**



- Cargolux is a founding member of SAFUG (Sustainable Aviation Fuel User's Group) since 2008
- SAFUG is a cross-industry regrouping airlines, aircraft manufacturers, NGO's,....
- SAFUG focuses on the development and the commercialization of sustainable aviation biofuel
- SAFUG joined the RSB (Roundtable on Sustainable Biofuels) which develops sustainable principles and criteria for biofuels.
- SAFUG pledge states that aviation biofuels will not compete with food or cause deforestation; will minimise impact to biodiversity; will respect land, water and energy use; will deliver a positive socio-economic impact; will have a life-cycle greenhouse gas emission lower than fossil fuels

- **Luxembourg Aviation Noise (LAN) project**

- Joint project with Centre de Recherches Henri Tudor; Boeing and Cargolux
- Mathematical model to simulate the noise footprint at Findel Airport, by taking into account a certain number of flight parameters.
- As part of to this project, two scientific papers have been published

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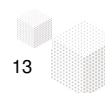


....and more at CARGOLUX ...

- **Cargolux and EU-ETS Compliance**
 - EU Commission decided to include the aviation sector into the EU-Emissions Trading Scheme in 2008; Airlines will join the Emissions Trading Scheme in 2012
 - EU Directive voted in NOV 2008
 - EU Directive translated into national law and Reglement Grand-Duocal in AUG 2010
 - EU-ETS concerns 30 countries (27 EU + Norway, Iceland and Liechtenstein)
 - EU-ETS concerns all flight sectors having an EU country as DEP or ARR.
 - EU-ETS requests operators to monitor and report ETS data, according certain rules:
 - Fuel burn and CO2 emissions for each ETS flight sector
 - TKm data (PAX + Net Payload) for each ETS flight sector. Airlines have to apply for free CO2 quotas by submitting their 2010 TKm
 - EU-ETS data have to be audited by an independent verifier and submitted to the competent authority
 - Cargolux passed the audit verification in MAR 2011
 - The EU Commission will allocate to airlines the CO2 quotas by DEC 2011

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More: www.cargolux.com/sustainability



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