



THE ZERO EMISSION HANGAR

REDUCING THE ENERGY CONSUMPTION OF THE AIRCRAFT HANGAR THROUGH LOCAL HEATING



PROBLEM

KLM has set the goal for net-zero ground operations by 2030. The heating of the huge aircraft hangars accounts for a large portion of the ground operation emissions. The hangar takes a long time to heat up and when the hangar doors are opened in winter to let an aircraft in or out of the hangar, the temperature in the hangar drops drastically.

The current way of heating the hangar is not only **expensive, unsustainable** and **energy consuming**, it is also **not effective**.

The long time it takes to heat up the hangar means that mechanics often have to work in the cold which is uncomfortable. Apart from that, the fluctuations in temperature increase the drying time of sealants used in repairs.

SOLUTION

The goal of the study is to provide an actionable solution that can be implemented by 2024 and does not require infrastructural changes to the hangar.

The proposed solution consists of two main parts:

1. LOWER THE BASE TEMPERATURE TO **10°C** TO MINIMIZE TEMPERATURE FLUCTUATIONS AND TO SAVE **69%** IN ENERGY AND COSTS
2. **HEAT LOCALLY** IN THE HANGAR AND PROVIDE THE MECHANICS WITH HEATED JACKETS

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Integrated Product Design

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