

CASE STUDY:






HYPERSCALE DATA CENTRE: SINGAPORE

Exhaust solutions for backup
diesel gen-sets

DataFlue System

The System for Data Centers You Trust



-  Executive Summary
-  Initial challenges
-  Proposed Solution
-  Results & Benefits
-  Key Achievements
of The Project

EXECUTIVE SUMMARY

Hyperscale data centers are **large, essential facilities** built to handle **scalable, high-performance applications**. They need **optimized network infrastructure, seamless connectivity, and low latency**.

The project consisted of the **design, manufacturing, and supply** of Prefabricated Twin-Wall Insulated High-Temperature & High-Pressure Exhaust Systems for Back-Up Generator Sets.



“World's largest multi-story data center”



38 generator sets installed



1.800.000 square feet



11-story, hyper-efficient data center



More than 3000 workers involved

COMPANY OVERVIEW

jeremias

With 9 production plants across Europe and the USA, Jeremias is the global leader in the design, manufacture, and installation of exhaust solutions for backup power in Data Processing Centres.

Our expertise and technology allow us to handle highly complex projects such as this one, delivering precise and efficient solutions.

jeremias-asia.com

INITIAL CHALLENGES

The primary challenge was the complex multi-storey design of the data centre, which involved installing multiple generators sets on different levels of the building. This design **optimizes the use of available surface area** but introduces logistical complexities.

We are involved in all the phases of a Data Center Project

Jeremias was involved from the project's inception, collaborating with the engineering, construction, and generator installation teams. Continuous on-site monitoring and installation support posed additional challenges due to post-pandemic restrictions.



Collaborating with the engineering team



Collaborating with the construction team



Collaborating with the generator installation team



Continuous on-site monitoring and installation support



Installation



The world's most widely installed Prefabricated Exhaust Pipe System



High Pressure
Tightness of the inner
pipe up to 15.000 Pa



Up to 600 ° working
Temperature



Pre-Insulated with
minimum 50mm high
Density rigid mineral
wool



Pre cladded with
Stainless steel



25 years corrosion
warranty



More than 1,500
projects in 30
countries



PROPOSED SOLUTION

Jeremias

03

Jeremias provided its high-performance **DWKL-50** modular chimney system for this installation. The DWKL-50 system, built from corrosion-resistant stainless steel and insulated with high-density rigid mineral wool, is designed to withstand high temperatures and pressures up to 15,000 Pascals, without the need for sealants.

Its unique metallic conical connection guarantees **precision** and **reliability**, even under extreme operating conditions.

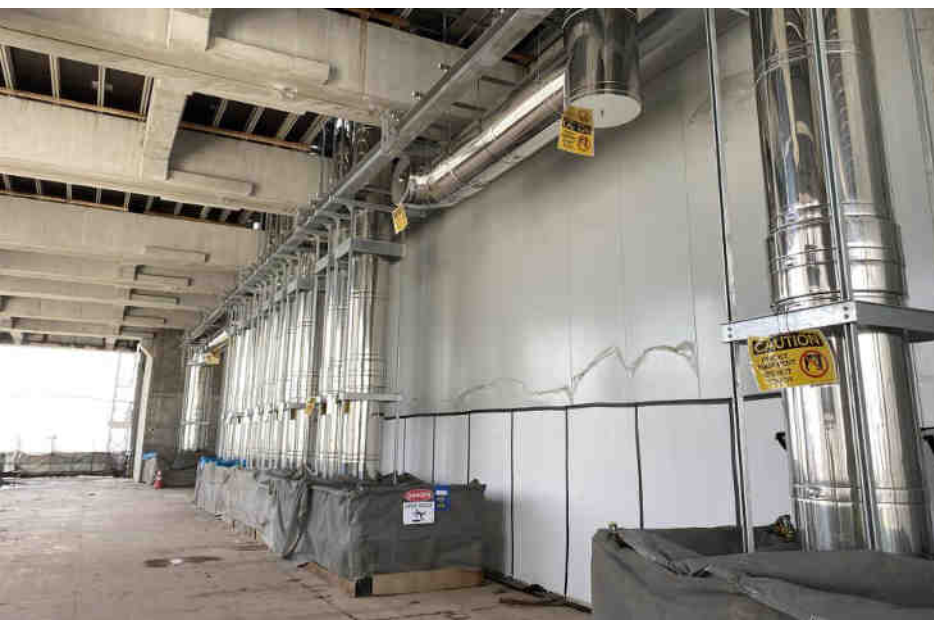
Leveraging the Jeremias **REVIT BIM Add-In**, our technical team designed the entire exhaust system layout with precision, ensuring optimal support structures for **easy, efficient, and cost-effective** installation.

Fast

Easy

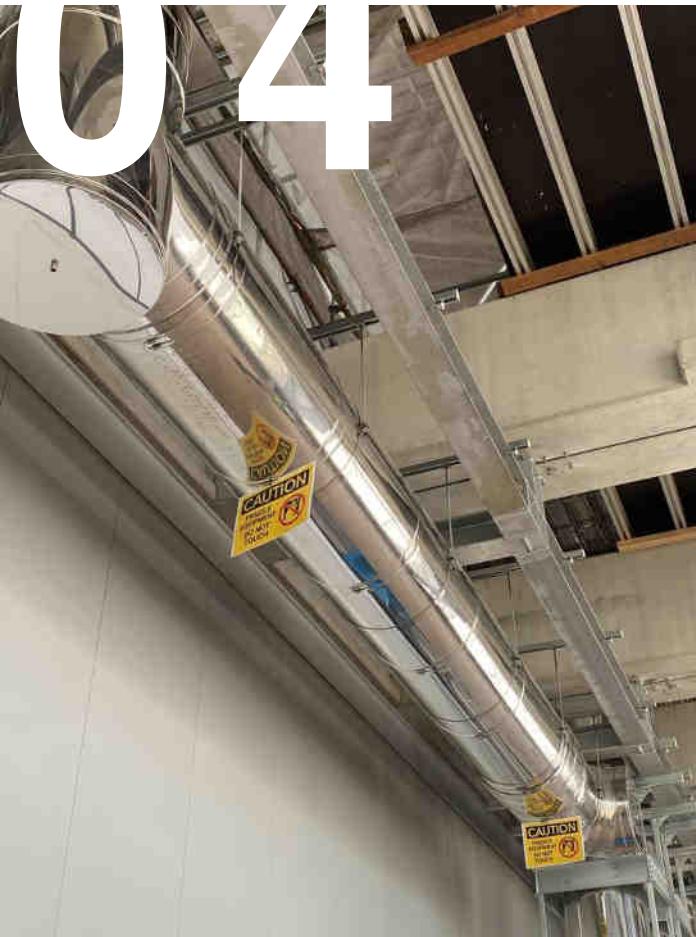
Precise

Effective



IMPLEMENTATION PROCESS

jeremias

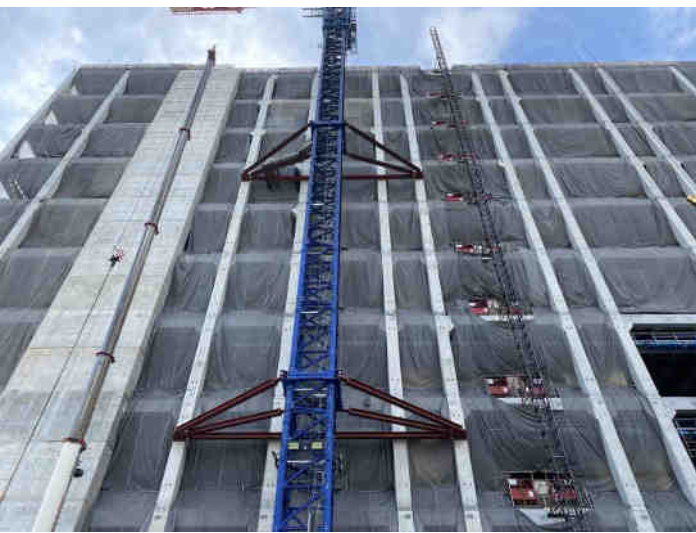
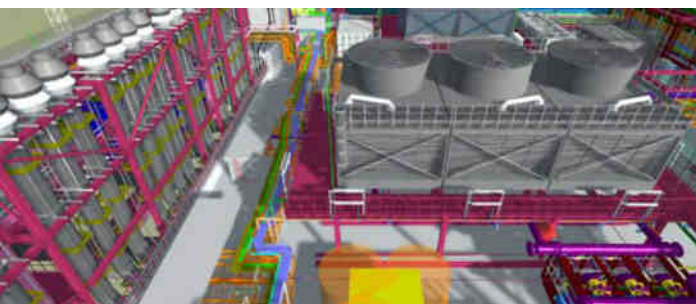


The installation process was carefully planned to **maximize efficiency**.

Preparation: Modular chimney components were hoisted to different floors using scaffolding and pulleys. The lightweight design of the Jeremias systems facilitated easy transport and positioning using the site's hoist.

Installation: The vertical flue sections and initial horizontal connections were installed before the generator sets, housed in soundproof containers, arrived on-site.

The final connections were completed in phases, coinciding with the delivery of the generators.



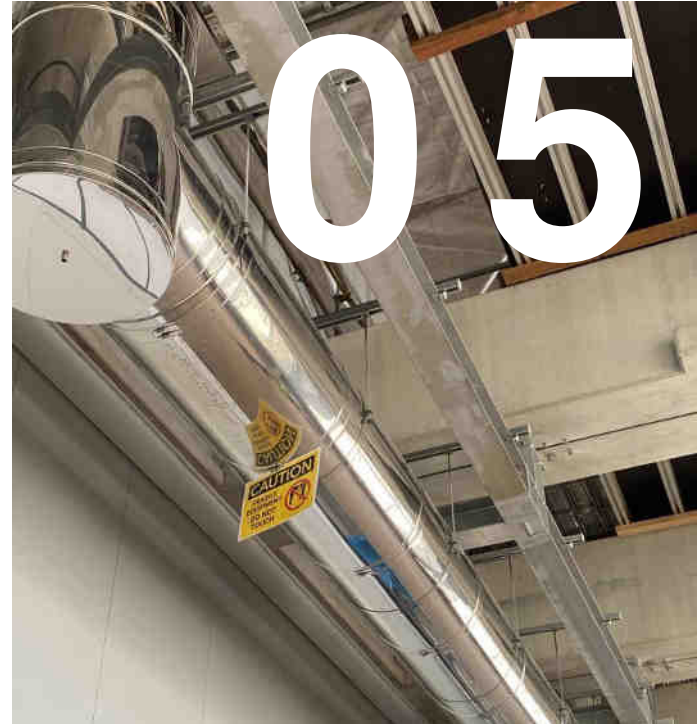
RESULTS AND BENEFITS

jeremias

The multi-storey generator setup saved valuable floor space, allocating more room for the data hall. The energy generation building is entirely separate from the server building, **reducing** the need for extensive fire protection measures.

Jeremias' modular system accelerated the installation process, eliminating the need for welding and insulation work on-site, thereby **reducing occupational risks**.

Thanks to the Revit Add-In and collaboration with the project's stakeholders, the chimney system was **seamlessly integrated** into the data centre's structure.



Space efficiency

Reduced fire protection needs

Accelerated installation

Lower occupational risks

Perfectly integrated

KEY ACHIEVEMENTS OF THE PROJECT



Modular prefabricated solution, **efficient and lightweight**



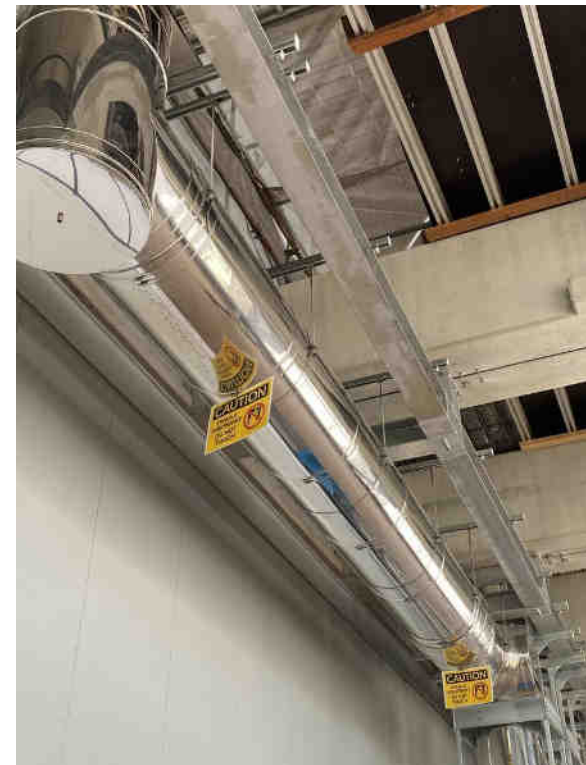
Collaborative design with the main contractor



Comprehensive delivery of design, production, and supervision under a **single provider**



Quick and safe installation



jeremias

06



The Data Centre Partner You Trust



Jeremias Group, Asia Office Level 40, Ocean
Financial Centre 10 Collyer Quay, Singapore
049315 SINGAPORE, Singapore

jeremias-asia.com