

# Case Study of Intelligent Cold Aisle Construction in German Data Centers





## Overview

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This study proposes the container data center with the featured cold aisle containment (CAC) as effective thermal control strategy.



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### **Cold Aisle Containment in Data Centers , Subzero**

Minimize your data center's footprint, establish optimal operating efficiencies and save money with cold aisle containment. Learn more here!

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### **FOCUSED COOLING USING COLD AISLE CONTAINMENT**

Arranging racks into a hot aisle/cold aisle configuration (discussed at right) is a cooling best practice that has been implemented to improve the efficiency of raised floor data centers.

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## **Optimizing Thermal Performance in Data Centers: A**

Through a combination of theoretical insights and practical examples, this study provides engineers, designers, and stakeholders a comprehensive

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## **Cold Aisle Containment: The Ultimate Guide To**

In the fast-paced world of Data Centres, efficiency and performance are very important. Data Centre professionals see cold aisle containment as a key

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## **Hot and Cold Aisle Rack Optimization/Data Center Cabinet**

Read our case study on how we optimize airflow and control temperature in data centers' hot and cold aisle cabinets to maintain proper IT operating conditions.

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## **A Comparative Numerical Study of Effectiveness of Cold**

In this paper, the performance of a data center is investigated using computational fluid dynamics, and the influence of porosity on cold aisle

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## **Modeling and Control for Cooling Management of Data Centers With**

To minimize recirculation and hence increase cooling efficiency, hot aisle containment has been employed in an increasing number of data centers.

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## **Impact of Hot and Cold Aisle Containment on Data Center**



Cold-aisle containment, although not optimal, may be the best feasible option in these cases. For guidance on air containment for existing data centers, see White Paper 153, Implementing Hot and

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## **Speedbone , Cold aisle containment**

Speedbone, Datacenter Berlin, Datacenter, Cold, aisle, containment With Free Cooling  
With free cooling, warm air is only cooled down by the compressors when the outside temperature exceeds

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## **Speedbone , Cold aisle containment**

With Free Cooling With free cooling, warm air is only cooled down by the compressors when the outside temperature exceeds 18°C. Below 18°C, the outside air is drawn in, filtered, and directed to the

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## **Cold & Hot Aisle Containment For Data Center Efficiency**

Learn how cold and hot aisle containment improves airflow, reduces energy use, and boosts reliability in data centers. Backed by CFD insights from

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## **Increasing the thermal efficiency of an operational data center using**

In this case study, by applying the proposed method, SHI, RCI and COP of the cooling system have been improved by more than 0.45, 17% and 19.5%, respectively. These results

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## **Numerical Investigation of Thermal Performance with**



Chen H, Li D, Wang S, Chen T, Zhong M, Ding Y, Li Y, Huo X. Numerical Investigation of Thermal Performance with Adaptive Terminal Devices

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## **Experimental characterization of cold aisle containment for data**

The data center industry has experienced significant growth over the last decade, mainly due to the increased use of the internet for our day to day activities such as e-commerce, social media, video

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## **A DEEP DIVE INTO THE WORLD OF HOT & COLD AISLE**

**AISLECONTAINMENT**Aislecontainmentisacrucialstrategyindatacentermanagement. It involves the use of physical barriers or enclosures at the end of server aisles to separate hot and cold

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## **Numerical and experimental investigation of thermal performance in**

An innovative method of airflow optimization applying deflector in cold aisle containment (CAC) is proposed to improve the uniformity of airflow distribution in this paper.

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## **Smarter Hot & Cold Aisle Containment for Data Centers**

Discover how hot and cold aisle containment systems, enhanced with polycarbonate multiwall panels provided by thyssenkrupp Engineered Plastics, help data centers cut energy costs,

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## **FOCUSED COOLING USING COLD AISLE CONTAINMENT**



Introduction Cooling is the hot topic in data center circles today. As heat densities and cooling costs rise, data center professionals are looking for more efficient cooling solutions. Aisle containment can

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## **Effects of airflow distribution changes on the thermal environment of**

This study was conducted at a data center in a financial information building in Taipei, Taiwan. The data center had an area of approximately 117 m<sup>2</sup>. Computational fluid dynamics

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## **Hot aisle/Cold Aisle Containment in Data Centers For Most Energy**

Topics Why is energy efficiency important for data centers? Basics of Airflow Management for Data centers Hot and Cold Aisle Containment - Configurations Hot Aisle vs Cold

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## **Combining Cold Aisle Containment with Intelligent Control to Optimize**

Introduction Data centers consume between 8 and 35 percent of total energy used by non-manufacturing, information-intensive companies, which makes the data center the single largest and

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## **Experimental characterization of cold aisle containment for data centers**

Arghode et al. - performed large-scale temperature measurement in real data centers in order to study the hot air entrainment characteristics in the cold aisle using the open aisle

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## **Cold Aisle Containment: Complete Implementation Guide for Data Center**

Complete cold aisle containment guide for data centers. Learn CAC benefits, implementation steps, and achieve 35% cooling cost reduction.

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